

Comprehensive Historic Preservation Plan

for

Nine Historic Buildings Owned by the City of Norwalk, Connecticut

Mathews Park Buildings:

Lockwood-Mathews Mansion Museum
Lockwood-Mathews Gate Lodge
Lockwood-Mathews Carriage House
Lockwood-Mathews Gardener's Cottage

Mill Hill Buildings:

Norwalk Town House
Governor Fitch Law Office
Downtown District Schoolhouse

Smith Street Buildings (at the Edge of Mill Hill):

Old Jail
Smith Street Barn

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INTRODUCTION / GENERAL INFORMATION ON THE BUILDINGS

The report that follows was prepared by John Milner Associates, Inc., between October 2009 and May 2010. It is a review of current conditions at nine historic buildings owned by the City of Norwalk, Connecticut, and a plan for their preservation and maintenance in upcoming years. The buildings are located in two locations: Mathews Park and Mill Hill, including two buildings along Smith Street, at the edge of Mill Hill.

The report is arranged with a chapter for each building so that all condition assessments, current photographs, drawings, engineering reports, and similar documents specific to a given building and generated for this project are found together. The Lockwood-Mathews Mansion is first, followed by the mansion's outbuildings from nearest to furthest away. The Norwalk Town House is the first building after those related to the mansion, and it is followed by the two frame buildings directly behind it, after which are the reports on the two nearby buildings facing Smith Street. In addition to physical proximity, this order provided a way to place the largest building at the beginning of the report and one of the smallest and simplest buildings at the end. It also places the buildings roughly in the order of significance as well as permanence of materials. The text immediately below begins with the Norwalk Town House because of its unusually long tenure as a civic building.

The Buildings and the Two Parks They Occupy

The Three Buildings on Mill Hill — Mill Hill is a complex that centers on Norwalk's original 1836 town meeting hall, known locally as the "Town House." Next to the Town House is a triangular tract of open land surrounded by trees, an early town green. At the south end of the green and across the street is a burial ground with burials dating largely from the late eighteenth and early nineteenth centuries. Two small frame buildings were moved in 1971 to sites directly behind the Town House, between the ca.1921 rear addition to the Town House and the burial ground.¹ The Town House serves as office space, exhibit space for interpretive exhibits, and a meeting room for the local historical society. The Historical Society staff, which operates the three buildings, is housed in the Town House. The two frame buildings serve solely as exhibit spaces depicting the original use of each building. The taller of the two buildings is a reconstruction built from part of the eighteenth century residence of the family of Governor Thomas Fitch (governor of the Colony of Connecticut, 1754-1766).² At the time it was moved to this site, it was considered one of the few surviving mid-eighteenth century buildings in Norwalk. The reconstruction represents Governor Fitch's Law Office as it was in the 1740s. The other is a wood frame one-room school building originally built in 1826 known historically as the East

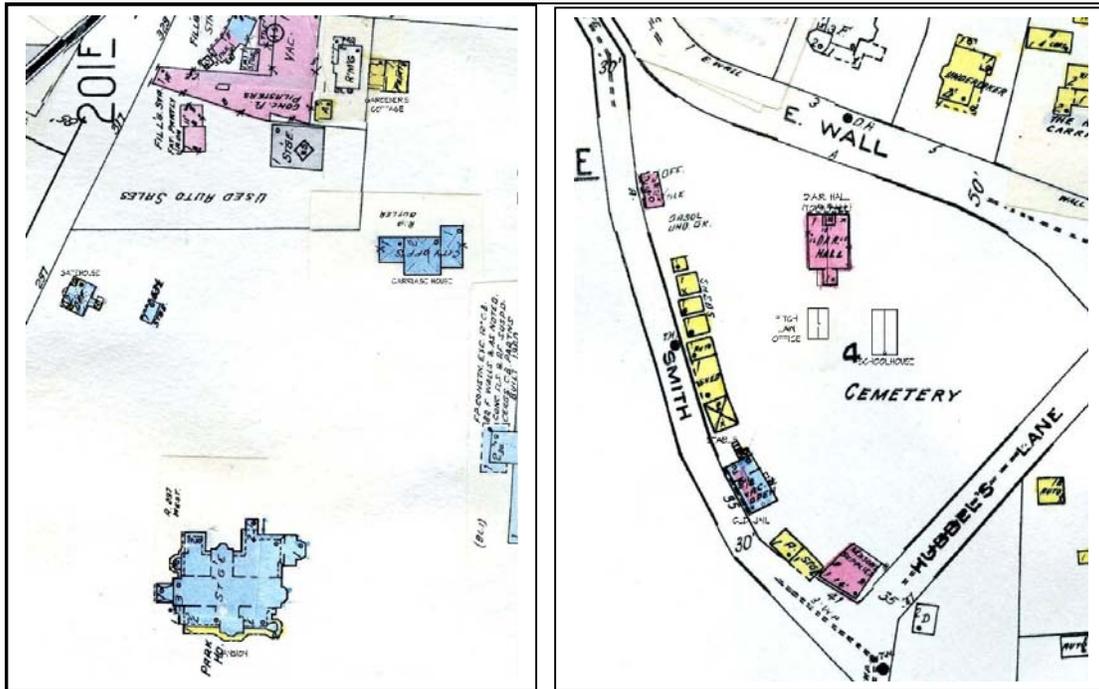
¹ This is the date used by the client in information about the move itself. Some drawings for the project in now the possession of the Norwalk Museum were prepared in September 1969. The drawings were revised as late as August 1972, indicating that the construction work was still underway at that time.

General Note: Throughout this report, the dates, names of designers, and similar historical information come from sources provided by the client and their tenants. The request for proposals for the project contains historical information about the buildings. Some information was retrieved from the web sites of the tenant organizations, or from publications they have issued, and some of this information was provided by the client directly to the team. A limited number of other sources were used to confirm basic facts, such as the National Register nomination for the Lockwood-Mathews Mansion. Additional historical research or evaluation of the significance of individual buildings was not part of the scope of work for the project. However, the report does contain the team's assessment of the history and relative significance of details and features that are not documented in the above sources and can be dated only by physical evidence.

² Connecticut State Library web site, <http://www.cslib.org/gov/ficht.htm>.

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Avenue District School or Downtown District Schoolhouse.³ The two frame buildings are generally kept locked and are opened and occupied only when visitors come to see them. When school groups visit, the students tour the three buildings with costumed guides. They assemble in the school and are seated in the benches, which are reproductions based on a historic description, while an actor dressed in early nineteenth century garb and performing as a teacher tells them about early schools.



The two excerpts above are from the 1957 Sanborn Map (with some 1960s additions and with building labels added by JMA). The left excerpt shows the Mathews Park area, with the Lockwood-Mathews Mansion at the bottom, the Gate Lodge to the left, Gardener's Cottage in upper right corner, and the Carriage House just below the Gardener's Cottage. The excerpt on the right shows Mill Hill, with the Town House at the top, just south of Wall Street, the Governor Fitch Law Office building just southwest of it (added by JMA), the Downtown District Schoolhouse (added by JMA) east of the Law Office, and the Old Jail and Barn along Smith Street. The barn is directly west of the word "Cemetery," and the Old Jail is directly below it.

Two Buildings on Smith Street at the edge of Mill Hill — Banked into a hillside adjoining the Mill Hill buildings, just out of view as the terrain drops toward the river are two small buildings that face Smith Street. The larger of the two is a stone and brick building the oldest part of which is thought to have been associated in some way with the Smith Pottery complex, although the extant historic details of the current design reflect its use when it was the town jail. Next to it is a small wooden barn. The Old Jail presently contains two apartments and a work shop used by city employees. The Smith Street Barn is in poor condition and vacant apart from limited use as a storage space. The city hopes to rehabilitate the barn and convert it to a new use, and they look toward a time when the jail might be restored to serve as a museum depicting its original use.

The Mathews Park Buildings — The other complex, Mathews Park, consists of the Lockwood-Mathews Mansion, the extensive grounds surrounding the mansion, and five historic ancillary buildings built in association with the mansion. The historic buildings are in the western half of

³ The schoolhouse is referred to throughout this report as the "Downtown District Schoolhouse" because that name is on a plaque attached to the building.

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the park, as one enters the grounds from West Avenue. They include the Lockwood-Mathews Mansion and four historic outbuildings: the Gate Lodge, the Carriage House, the Gardener's Cottage, and a small wash house that now contains public rest rooms. All are constructed of stone except the Gardener's Cottage, which is frame and is clad in wood shingles. The four larger buildings are included in the current project, but the wash house was excluded. The mansion, now a museum is a tourist attraction in its own right. It was designed by Detlef Lienau with a significant interior that features built-in furnishings by important interior designers of the 1860s, and it also shows the contrast between the lives of the owners and their servants. Currently a museum, interior spaces include a gift shop, offices, and a catering kitchen. Portions of the building are rented out periodically for private events. The Gate Lodge, which is located as its name suggests on the street side of the mansion near the entrance to the estate driveway, is a modest-sized but high-style Gothic Revival house. It became the first residence of LeGrand Lockwood's son and his bride. They supervised the building of the mansion for his parents.⁴ It now serves as the offices and visitors' center of the tourism bureau that covers Fairfield County, the southwestern corner of Connecticut.⁵ The Carriage House and Gardener's Cottage are occupied by an organization that teaches and promotes the art of printmaking. These buildings are mainly used as studio and teaching spaces, although one contains an apartment for an artist-in-residence, and the other has a gallery and offices.

Leasing Arrangements and How Repairs Are Handled

Most of the buildings included in this study are operated by non-profit organizations who lease them from the city. The lessees are: Lockwood-Mathews Mansion Museum (a non-profit organization occupying and operating the mansion of the same name as a museum), the Western Connecticut Convention & Visitors Bureau (occupying the Gate Lodge), the Center for Contemporary Printmaking (occupying the Carriage House and the Gardener's Cottage), and the Norwalk Historical Society (occupying and operating the Town House as a museum and periodically opening the Governor Fitch Law Office and the Downtown District Schoolhouse to school groups and visitors). The two studio apartments in the Old Jail are directly rented by the city to private individuals. The lower level of the jail is used by the Historical Commission's part-time handyman as a workshop. The city, through the Historical Commission, has used the barn for storage over a number of years without a leasing arrangement.

The way maintenance and repairs are handled at these buildings is unusual because some of the responsibilities lie with the tenants as part of their leases while the city also handles some repairs in-house using city staff. In addition to the smaller repairs that the city makes on an ongoing basis using city personnel, some more extensive repairs can be undertaken only when a group of larger rehabilitation projects is packaged together to secure funding, and when this is the case, the projects are usually bid out to outside contractors. Several large projects have been completed at the Lockwood-Mathews Mansion and Mill Hill Park in the last few years involving design professionals and a public bidding procedure.

⁴ Information provided by the client.

⁵ With the larger cities of Stamford and Bridgeport to its west and east, respectively, Norwalk is central to the main traffic spine of Fairfield County. In October 1960, Connecticut abolished the county governments that had been in place since the Colonial era, but the county boundaries are still recognized. With easy access to Rt. 95, which connects New York City to Southern New England, and at the crossroads of several connecting routes, the visitors' bureau serves the Fairfield County area, one of the state's most populous and heavily-traveled areas. Connecticut consolidated two tourism offices, dropping the name "Fairfield County" from the name, while this report was in the final stages of completion.

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Small rehabilitation projects have been occurring recently at the nine buildings in question at a faster pace than usual, and several have occurred while the project to prepare the present report has been underway. In part, this is due to a reorganization of the city's Historical Commission which oversees the care of the buildings. Realizing the rapid decline of some of the properties, the current board has addressed a number of issues aggressively in the last year or two. In April, 2009, when the current study was going out to bid, the city was in the midst of replacing deteriorated window sashes at the Downtown District Schoolhouse. At the time that the present study was beginning in October 2009, the city was in the midst of a project to paint the trim at the stone buildings in the Lockwood-Mathews complex (the Lockwood-Mathews Mansion, the Gate Lodge, and the Carriage House). This work was completed prior to the end of 2009. In order to prepare for painting, it was determined that some of the window sills at the Lockwood-Mathews Mansion, Carriage House, and Gate Lodge were in need of replacement. The city also began to look closely at the conditions in the ceiling of the porte-cochere at the Lockwood-Mathews Mansion, where a decorative quarter-finial had slipped loose exposing rotted wood that had previously been concealed. The replacement sills were made by city staff member Tony Mauro. Mr. Mauro also made some replacement trim members for the Downtown District Schoolhouse because differences in the details of the newly milled sash members necessitated the installation of a few pieces of slightly different trim to fill gaps. The sash installation at the school was completed in early 2010. Other recent work at the buildings included reconstruction of some window sashes at the Lockwood Mathews Mansion, Gate Lodge, and Carriage House; restoration and replication of some of the Town House shutters; repair of the Town House façade; and installation of a gravel-lined ground apron around the three Mill Hill buildings (Town House, Governor Fitch Law Office, and Downtown District Schoolhouse).

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Purposes of the Present Study

The present study is to provide a comprehensive plan addressing rehabilitation and repair needs at the nine designated buildings. Both large and small problems are addressed, and the team's recommendations have been prioritized on the basis of need. This prioritization was also based on the systemic nature of many of the problems. This also created an opportunity to illustrate construction details at window and door openings, cornices, and similar locations in most of the buildings. Several questions were raised by the client during the course of the project relating to the construction assemblies of building elements that were under repair while the report was being completed, and these illustrations are designed to assist the city in any future analysis of these kinds of systemic issues. As an example, the City of Norwalk staff encountered difficulties when replacing wood sills at the base of window jambs where the jamb details (added over the sills in the original construction) now lock the piece of wood that is rotting in place. An effort was made to illustrate this condition in the wall drawings of various buildings included in the report. The illustrations may also be useful in the future when other questions arise about how similar building details are assembled.

The city produced the Request for Proposals (RFP) for the project in early 2009 and selected the team led by John Milner Associates, Inc. (JMA) to conduct the project. The team included staff from four JMA offices in Pennsylvania, New York, and Virginia, as well as two engineering firms. The contract was signed in September 2009. Although the original plan had been to complete the project by the end of summer 2009, the timeframe was extended by the client before the work began and the project was completed by mid 2010.

The scope of work was for the project team to assess perimeter architectural conditions in nine buildings. The intent was to provide drawings and assess conditions directly related to the exterior envelope of each building, including interior problems caused by exterior envelope conditions. Several areas of the Lockwood-Mathews Mansion were excluded from this project, both because of the size of the mansion and because a number of reports have been prepared in the past. Prior reports included analysis of roof conditions, interior conditions, electrical and mechanical systems, and similar topics. The team for this project, therefore, focused on two or three areas of the mansion, notably the porte-cochere. Assessment of exterior envelope conditions, roof plans, perimeter plans, and other drawings, was the primary responsibility of JMA as the architectural firm leading the team, while other team members were tasked with analysis of interior systems. The project was designed to include a comprehensive review of mechanical (HVAC), electrical, and plumbing (MEP) issues, as well as related fire protection issues, by the team's MEP engineering firm, Landmark Facilities Group (LFG) of Norwalk. Structural Engineering analysis was conducted by staff from the New York City office of Robert Silman Associates (RSA). RSA's work focused on five buildings with the worst apparent structural conditions, but also included review of conditions at all or part of the remaining four buildings.

Systemic Nature of the Problems — In deciding to undertake this study and in developing the scope for it, the city came to a realization that the kinds of repair work needed at these buildings is complex and interconnected. Most of the problems the city has recently identified or addressed by making repairs have involved surface materials in the exterior envelope where deterioration has been caused by exposure to the elements. The complexity arises from both the hidden sources of the problems and the way certain vulnerable building elements are situated within walls that are otherwise in good condition and exhibit a high degree of historic design integrity.

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The design of the buildings has been changed only in minor ways over the years. Generally, the current uses are compatible and are not causing conflicts with the historic fabric. There are only a few places where newly designed alterations would be appropriate, such as to create accessible entrances. Therefore, the architectural needs in most places are for repair and restoration of deteriorating materials rather than for design changes or for restoration to reverse incompatible alterations.

In the fieldwork phase of the work, JMA realized the systemic nature of most of the issues that need to be covered in the current report. The city has been grappling with a number of problems that JMA was able to observe where the exterior materials are breaking down due to the malfunction of concealed drainage systems above and below the visible elements. In order to explain this issue and focus attention on the systemic nature of the problems, JMA prepared a wall drawing of each building. A site plan was developed covering a limited area around each building. To show relationships between site issues and the exterior envelope of the buildings, the site plan information was integrated into both a perimeter floor plan and a roof plan for each.

JMA was able to identify and explain problems in the exterior envelope of each building that are due to the gradual breakdown of the original systems provided for drainage of moisture. This kind of problem is often subtle in nature: the underlying conditions that cause the larger or more visible problems are often difficult to identify, and the deteriorated elements observed in the exposed areas of the buildings are often symptoms of other problems that have developed elsewhere. The problems frequently come from above the visible areas, in the roofing, gutter, and roof drainage systems, or below them in the moisture that accumulates in the soil when site drainage is poor. Efforts to correct the obvious problems in the visible parts of any of the buildings, without considering the hidden sources of the problem, are likely to be futile. The work has to be designed to address the systemic nature of the problems, and the team's recommendations have been prioritized accordingly. JMA observed a number of places where problems had been addressed in the past in a way that was too specific and overlooked underlying issues or other related problems; the specific focus on one part of the problem actually caused additional problems in some areas, as explained further in the respective sections of the report.

A number of different kinds of damage that are commonly seen in the lower portions of the buildings are due to moisture. Typically, in historic buildings, moisture attacks the masonry materials directly, but the masonry at the base of the Norwalk buildings is extremely hard stone (or, in the case of the Town House, a very hard parging of Portland cement-based concrete over stone). The moisture problems in almost all of the buildings in this study are related either directly or indirectly to roof configurations and the design of roof drainage systems. This would include drainage conditions in the terrain immediately surrounding the foundations. In some cases, moisture damage is coming from surface water that has accumulated due to roof problems. In several of the buildings, the relationship between roof-edge conditions and site drainage conditions at the building perimeter is more obvious because downspouts in the gutter systems have failed (rotted away and/or broken due to wind, ice, or direct impact). In other buildings, the relationship is less apparent.

At the Gate Lodge, to cite one example, the site drainage is not adequate due to altered grading around the buildings compounding problems that were always likely to develop with the kind of

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roof the building has, especially in the absence of a gutter and drainage system. The loss of a porch on one side of the building greatly exacerbated the problem because the porch roof previously had a gutter system that served to drain one fourth of the total roof area and because the porch floor slab that remains now has moisture flowing onto it that ultimately gets trapped in the soils below it. Similar systemic issues are causing substantial problems at the Gardener's Cottage and the Governor Fitch Law Office. Analogous conditions are present at the Carriage House, the Downtown District Schoolhouse, the Old Jail, the Smith Street Barn, and to a lesser degree at the Lockwood-Mathews Mansion and the Town House.

Based on these issues, the report took shape. Because the buildings are so different in character, the decision was made to provide a comprehensive chapter on each individual building. Each chapter is organized with an introduction, followed by a matrix of character-defining features, the elements that are essential to the historic composition of the building. Following this is a condition assessment in the form of a bulleted list. For each building, a systemic analysis follows the condition assessment. The systemic analysis is illustrated with a drawing of a portion of a wall. For seven of the buildings, this drawing is a wall section extended in the form of an axonometric. For the Gate Lodge, a porch detail was provided in place of an axonometric wall section. For the Lockwood-Mathews Mansion, a section drawing was developed of the Porte-Cochere. As part of the systemic analysis, the perimeter plan and roof plan are provided, both with surrounding landscape features. For each building, a separate assessment has been provided by the structural engineer and the MEP engineer covering those issues. A summary list of recommendations serves as a closing document for each chapter. A composite list of recommendations follows, prioritized in phases according to the time frames the client has requested.

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METHODOLOGY

The project was undertaken in a series of steps that involved several field visits to Norwalk. The collection of data on site came from observations about the buildings, discussions with city staff and the Norwalk Historical Commission members, and interviews with key staff members of the tenant organizations at the seven buildings that are leased to outside organizations. The team also met the two residential tenants and toured their units. Two team members spent some time with city staff member Tony Mauro in his work shop in the basement of the Old Jail where he showed moldings that he had in temporary storage while window projects were underway at the Downtown District Schoolhouse and other buildings. This was very helpful. Team members also met with several members of the Norwalk Historical Commission on-site at Mathews Park and later, over lunch, during one visit. City staff member Susan Gunn Bromley provided valuable information to the team during the various site visits and over the telephone. She was able to provide electronic copies of historic and current photographs, some access to prints of large-format drawings, reports and other hardcopy documents, and similar items. This included over 90 sheets of drawings, most of which related to work completed between 1970 and 1990 at the frame buildings at Mill Hill as well as the Old Jail and the Smith Street Barn.

The contract for the project was signed on 29 September 2009, and the project began with a kick-off meeting on 29 October 2009. On the latter date, two planners who are also historians on JMA's staff toured the buildings with the tenants and interviewed them about building conditions that concerned them. Having planners and historians interview tenants was an unusual step in a project that was otherwise largely an analysis by preservation architects, engineers, and a conservator. The notes and photographs compiled during these initial interviews provided excellent insights, though, as the remaining parts of the analysis were undertaken.

A team of three JMA staff members made a second trip to Norwalk on 9 and 10 November to assess conditions and to take basic measurements of the perimeter walls of each building. JMA architectural conservator Lori Aument surveyed the buildings for conditions as part of this visit. JMA Team leader Terry Necciai assisted Lori Aument in assessing the conditions and also assisted architect Michael Falstad in taking measurements. During this visit, Ernie Conrad of Landmark Facilities Group (LFG), the team's MEP engineering firm, toured the buildings and conferred with Terry Necciai on the conditions he was finding. Terry Necciai visited Norwalk again on 2 December with Ed Meade and Gretchen Lear from Robert Silman Associates (RSA), the structural engineers on the team. Ernie Conrad checked conditions in some of the buildings again as part of the 2 December site visit. Terry Necciai made a return visit on 27 January 2010, to make a preliminary slide presentation to the Norwalk Historical Commission on the team's findings and to get input from the Commission members on any suggestions they might have for additional topics or problematic conditions that should be included in the document. Nearly 1,500 photographs were shot during six visits to Norwalk. Additional Photographs, both current and historic, were provided by Susan Gunn Bromley of the City of Norwalk. The photographs document many specific areas where buildings conditions are becoming problematic.

The report was developed from the material that was collected in the above steps. As mentioned elsewhere, the over-riding issue that came to light in assessing the conditions was how many systemic moisture problems there were. Structural issues have been addressed where they were apparent, as well as the need to upgrade mechanical and electrical systems in a number of the

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buildings. In general, though, because of the attention that the city has paid to these buildings over time, and because of the awareness of historic preservation considerations, there were very few areas where restoration is needed to return to an earlier or more historically appropriate architectural design. The notable exceptions to this statement, however, were the missing porch at the Gate Lodge and the belvedere that was removed from the roof of the Carriage House some time ago. Instead, most of the architectural issues relating to the exterior envelope of each building were due to moisture and site grading considerations. Unfortunately, in a number of areas, meticulous restoration that has been undertaken in the last forty years is now being destroyed as a result of both material selections and design configurations. Recent modifications that may seem to be minor have led to the buildings being systemically attacked by moisture. About half of the places where material failure was observed are in areas where the materials are recent replacements, an indication that the real problems have not been addressed and also, in some cases, an indication that the recent replacement materials may not have been the most appropriate quality for the task or may even be contributing to the problem.

A Note on the History of the Buildings and Historic Source Materials

The RFP for this project makes it clear that the city was not looking for an analysis to establish the architectural history of these buildings. For the most part, the history and significance of the buildings is well established. Some additional work should probably be done. For instance, the National Register status of Mathews Park should be revisited to revise the documents to include the outbuildings and landscape or to clarify whether they were intended to be included in the previously prepared nominations (NR and NHL). Likewise, the Historic American Buildings Survey (HABS) file on the Mansion should include photographs and other documents on the outbuildings. John Milner Associates routinely performs historical analysis as a component in other reports. However, for purposes of this project, the historical information provided in the RFP and that available on the web sites of the tenant organizations, plus the drawings and historic photographs provided by the city, were taken together on face value as all the documentation of the general facts regarding the history of the buildings that would be needed in the present study.

The question of the relative importance and care of historic details, on the other hand, is a different matter. Part of JMA's responsibility in addressing the care of these buildings is to evaluate which details are original to which construction campaign, which are significant and character-defining, and which are not. Such an understanding of details is necessary groundwork in making the kind of recommendations contained in a study of this kind. This level of information was generally not given in the above-mentioned documents, and it is usually not available in existing documentation for most historic buildings. An example is the reasons for the sloped floor in the attic of the Old Jail. Although the explanation given, that it was once the surface of a flat roof behind a parapet, is a hypothesis, it is actually as reliable an explanation as the client is likely to find. This kind of assessment of the history of architectural details is based on years of experience with historic buildings on the part of the team members. The assessment that the current shutters on the Old Jail are not original is similarly based on physical evidence and, at some level, hypothesis. The same is true of the configuration of the doors at the Smith Street Barn, the reason there are remnants of iron bars in the Carriage House windows, and several other statements in this report.

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Lockwood-Mathews Mansion

Building Profile/History/Current Use

Status: National Historic Landmark; America's Treasure

The Lockwood-Mathews Mansion is a very large, high-style, stone summer house built in the 1860s to resemble a French château. Prominent in some of the first views visitors see of Norwalk, it is located at the northern edge of a major interchange on the Connecticut Turnpike (Interstate 95). The interchange leads to U.S. Route 1 and is the point where U.S. Route 7, the main north-south highway through Norwalk, begins. Surrounded by other buildings that were part of the original estate, including two substantial stone outbuildings that are also visible from Norwalk's West Avenue (covered separately in this report), it is strategically located on the original dividing line for the Borough of Norwalk and the formerly separate City of South Norwalk. In its grandeur, this house dominates its impressive hilltop setting commanding attention from travelers passing by on the highway, river, Danbury Norwalk Railroad line, and now those traveling on I-95 and Rt. 7, people entering the city, and local citizens as they pass from one part of Norwalk to another.

The Lockwood-Mathews Mansion is the centerpiece of the estate built by LeGrand Lockwood and his wife Ann Louisa as their residence (RFP). It occupies the last intact piece of the once-expansive grounds assembled by Lockwood, a steamboat and railroad magnate, financier, and treasurer of the New York Stock Exchange at the time. The project was believed to be the most expensive residence under construction anywhere in the United States in the late 1860s.

Lockwood-Mathews Mansion

John Milner Associates, Inc., June 2010

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Lockwood was unable to complete the final details of the house having repaid his clients for their losses resulting from the Gold Crash of 1869, one of several financial setbacks that unfolded as the result of wild speculation in new railroad lines in the nineteenth century. After he died, his wife was not able to pay off the mortgage he had taken out on the house, losing the property in 1872. In 1875, it became the home of Charles D. and Rebecca Mathews and their family. Although the house remained in their possession for almost three-quarters of a century, the Mathews family made only minor aesthetic changes to the interior, such as painting the walls of the rotunda, the house's center atrium. However, they did add the Gardener's Cottage which also served for a period as a laundry. In 1942, after years of living there only part time, Florence Mathews, a daughter of Charles and Rebecca Mathews, along with several relatives, made the estate available to the City of Norwalk for a nominal fee. For a period, the City treated the house itself as an office space and storage facility, but they made only a few changes to accommodate that particular use. The minor changes were relatively sensitive. They included covering the rotunda floor with linoleum tiles thus protecting the earlier flooring, and cutting two new doors into the exterior of the house; the doors they added, as required for egress at the time, were metal. In the 1960s, demolition of the mansion was considered. A strong alliance of preservationists fought to keep the house standing and to set it up as a museum. It was only after that that major steps were taken to make it available to the public as a house museum.

The Lockwoods had assembled the property by acquiring smaller contiguous parcels, aggregating them into a thirty-five acre tract. Before finishing the mansion, they had completed construction of most of the outbuildings. Several outbuildings (barns, ice house, and an extensive greenhouse) have been demolished, but three of the original ones remain: the Gate Lodge, the Carriage House, and a small wash house that now contains public restrooms. All three are constructed of light gray stone from eastern Connecticut, mostly granite, and although they differ greatly in style and detailing from the mansion and from one another, the color of the stone unifies them. Behind the Carriage House is a small frame bungalow, the Gardener's Cottage, built around or shortly after 1900 during the Mathews family's ownership. After the City of Norwalk acquired the property, the State acquired much of the southern part of the estate in 1956 for the building of I-95 and the exit ramp. The grounds associated with the house were further reduced by the building of large public buildings and park facilities in the area east and northeast of the house. For a short while, the city used the Carriage House as a police headquarters and town jail, until they built a large modern building northeast of the mansion to serve as the City police headquarters.

Now part of a city-owned multi-use complex known as Mathews Park, the house is surrounded by more than just the original Gate Lodge, Carriage house, and wash house and the Mathews-era Gardener's Cottage (see the respective sections of the report, below), as well as the intact grounds immediately surrounding the mansion: newer non-historic buildings and landscape features (including several large parking areas paved with asphalt accessed by sidewalks that are often wider than usual) create a sense of a crisp line between the historic and non-historic parts of the property. The non-historic components include the former police headquarters building, a large children's museum, and park facilities (e.g., tennis courts and a special needs playground). The property has always abutted the sizable, Pine Island Cemetery, bordering the southeast corner of the grounds, which was established at an early date.

The mansion was built between 1864 and 1868 to a design by noted architect Detlef Lienau. Born in 1818, Lienau was a native of Uetersen, Denmark, a city just across the border from the German state of Schleswig-Holstein (the border has moved so that the city is now within Germany). Like most formally trained architects of his generation, he studied at the Ecole des

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Beaux Arts in Paris. He immigrated to the United States and settled in New York City in 1848. Based largely on buildings he designed in New York, he is credited with playing a major role in the introduction of French architectural elements in this country at the time when the American version of the “Second Empire” style was taking shape. This is one of his latter buildings with a mansard roof, the detail most often associated with the style. In its lavish and layered stone details, the house is more directly reflective of a French château than most American interpretations of the Second Empire style. However, the strong linear verandah on the south side is a distinctive American design detail.

After its use by the city as a storage facility, the house gradually found a market as a museum. Although the exterior displays a wide variety of “textbook” architectural details executed with remarkable craftsmanship, the real attraction has always been the interior, where the main rooms are appointed with built-in furnishings by several of the top furniture designers and craftsmen in the country at the time and built with the state of the art materials of the period. The furnishings include bookcases and cabinets that are integral to fireplace surrounds, etched glass, decorative wainscot, door and window casings, staircases, and other related items. In the second story, several bathrooms, including one for the servants, were designed in the same fashion, with custom-built cabinetry containing sinks, tubs with hot and cold running water, and cupboards, installed in an era when indoor plumbing was found in only a handful of American houses (generally, only in other substantial mansions that rivaled or at least approached this house’s caliber). The plaster wall surfaces have decorative paint finishes between the woodwork elements in most of the rooms on the first, second, and third floors of the house, which were also executed by the interior designer’s team. In the majority of the cases, the wall treatments are integral to the larger design and are thus as important as the woodwork.

Beyond the main entertainment rooms and larger bedrooms of the house, the mansion is also significant for the small rooms and passages provided for the servants. In an unusual design that revolves around an octagonal, center atrium or rotunda, lit and vented through operable skylights, the larger rooms generally occupy the four main compass directions, with many smaller spaces tucked in between them. Narrow passages were tucked between parallel walls that encircle the outer wall of the atrium allowing servants to move into and through the larger rooms with minimal disturbance to the owners and their guests. The interstitial cavities also contained special spaces, such as a silver vault and a rare book storage room. The servants’ passages enter the rooms through small doors in the side reveals of larger doorways that open between the main rooms and the rotunda. The parallel placement of the walls creates an effect where the passage way essentially appears to be hidden between the surfaces of a thicker masonry wall. The layered door casings of the main openings that can be seen from the rotunda draw the attention to the unity of the larger opening and the relationship between the large room and the rotunda, while drawing attention away from the smaller doors to the cross corridors that effectively fall between them. The way that the two worlds were superimposed on each other in the design is unusual even for large houses with large numbers of servants. Other innovative features included a battery-powered security system that used rows of wires in set in grooves in the floor boards, between rooms, in front of windows, and just inside the main doorway leading into each room. The house’s ducted hot and cold air system was also extremely innovative for its time.

The Lockwood-Mathews Mansion functions mainly as a museum that tells its own story. Several rooms have been lovingly restored, in some cases with original furnishings that have been re-acquired, and a few rooms contain small interpretive exhibits that give a deeper understanding of key parts of the house. The museum has a small staff backed up by docents. As at most museums, the staff and docents also operate a gift shop. While the gift shop retains some built-in

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cupboards, the built-in furnishings in adjoining rooms of the former kitchen suite were removed, at some point, along with a wall that separated the suite into pantry and work spaces, and the space was reconfigured to serve as a kitchen for caterers. Several of the more spacious rooms in the house are rented out from time to time to private groups who have held meetings and parties there.

The Lockwood-Mathews Mansion is large and complex enough and its significance is well enough recognized that a number of other studies have been completed in the past. In setting up the arrangements for the present report, the client made it clear that the intent at this time is to analyze the exterior envelope of the mansion, particularly those areas that have not been covered in other recent studies or construction projects. Since the roof has recently been replaced including repairs to the drainage system, and since the upper portions of the masonry walls appear to be in good condition (with the exception of the stone mullion of one third story window), this report has focused on the lower parts of the building where the masonry and other elements, such as the veranda and other doorway-related features, meet the ground. The client has pointed out some limited areas in the upper walls where recommendations were needed (notably the stone mullion at the third story window), as well as problems that have developed in the ceiling system of the porte-cochere.

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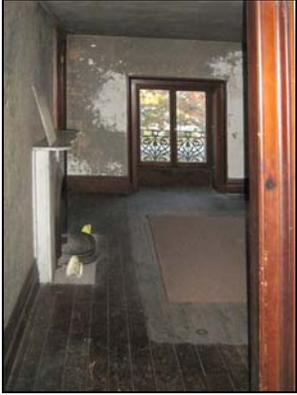
Lockwood-Mathews Mansion Character-Defining Features

1	Building Form / Massing	<ul style="list-style-type: none"> • High-style Second Empire style design with mansard roof and turrets 	
2	Wall Material	<ul style="list-style-type: none"> • Finely cut stone with carved window surrounds; at least two different colors of stone 	
3	Roof Type	<ul style="list-style-type: none"> • Combination of cruciform mass with gable at two-and-a-half stories and infill areas with mansard roofs at second story, plus turrets and verandas with other roof types 	
4	<ul style="list-style-type: none"> • Wraparound Veranda 	<ul style="list-style-type: none"> • Veranda extends across south-facing façade, but wraps around curved form at center and turret at southeast corner 	

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5	Fenestration Patterns and Window Types	<ul style="list-style-type: none"> Windows are 1/1 (requiring very large panes of glass for what was available in the 1860s), sloped wood sills over the stone sills, layered curvilinear profiles at the jamb molding, chamfered stone surrounds using granite that is slightly pink against the gray granite body of the building. Some windows at the veranda extend to the floor line 	
6	Wood Trim	<ul style="list-style-type: none"> The veranda, jambs, doors, and windows are the only notable wooden components in the historic exterior 	
7	Detailing at Grade	<ul style="list-style-type: none"> Tall beveled watertable 	
8	Interior Wall Surfaces and Interior Details	<ul style="list-style-type: none"> Plaster walls with decorative paint and some gilding, high-end wood trim and fine built-in furnishings by important interior designers of the period 	

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9	Servant's Wing Details	<ul style="list-style-type: none">• Sinks en suite• A servants' bathroom with a bathtub• Shorter room height to create three floors at the same height as the two main floors of the house's more grand rooms	
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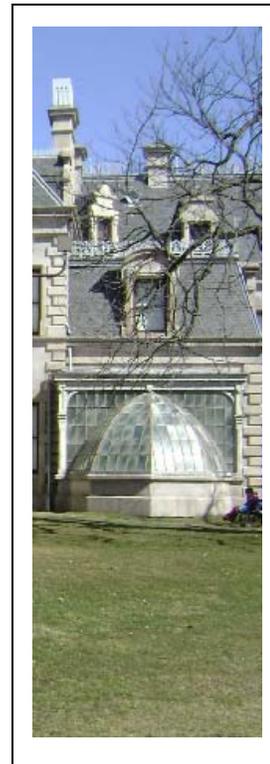
Systemic Analysis / Building Assembly Conditions at the Lockwood-Mathews Mansion

Other studies have addressed many issues at the Lockwood-Mathews Mansion. Therefore, only basic information was gathered on the perimeter conditions with a specific focus on issues that the client pointed out to the JMA team.

The Lockwood-Mathews Mansion has an unusually complex roof design. The design includes many places where water could affect the building. On the other hand, the building has walls of substantial construction, gutters whose structural form is stone rather than wood or sheet metal, and a slate roof that was recently replaced with good craftsmanship and the appropriate materials. The roof is a combination of flat areas, gables, mansards, and a large skylight at the center over the decorative glass ceiling of the atrium. The visible sloped surfaces are slate, and the flat areas have membrane roofing. As with most slate roofs, the design allows air to flow around the individual slates. The skylight was designed to be operable. The roof drains into gutters that are built into the decorative stone cornices of the walls. The water from the gutters is carried down the outer side of the walls by way of metal rain leaders.

The exterior stone walls contain narrow cavities between two layers of stone at least in the lower stories (as shown on the historic drawings by Detlef Lienau). The cavities allow the stone to dry through air circulation. The cavity wall design also diminishes the effect of exterior conditions on the interior surface materials such as plaster and the wood work that is fastened to it. The ventilated walls not only shield the inner layer from most moisture penetration, but also from expansion and contraction cycles caused by exterior climatic changes. This makes it less likely that great differences in temperature between the inside and outside of the walls or changes in humidity would affect the interior finish materials. Features such as the molded upper edges of the stone details, including hoods and moldings over the windows, and the beveled stone watertable at the base of the wall all help to ensure that water moves out and away from the main wall surfaces of the building during most episodes of rain and other forms of precipitation.

At the first floor, a conservatory protrudes from the southwest wall. It is a blended form in design, a porch-like enclosure with a modified quarter-sphere dome projecting from it. The dome has a low, semi-octagonal stone wall at its base. In the original design, the conservatory was clad in pressed glass tiles that have a chevron-like diamond pattern with fleur-de-lis motifs in royal blue at the center of some of the diamonds. The glass tiles have been replaced with a reproduction of the original design made of a synthetic material such as Plexiglas (almost all of the originals were retained and are stored in the building). The arrangement of the transparent tiles is lapped, like roof slates, and thus the dome was designed to be open and naturally self-ventilated rather than air-tight. At the point where the dome meets the rectangular framed section that



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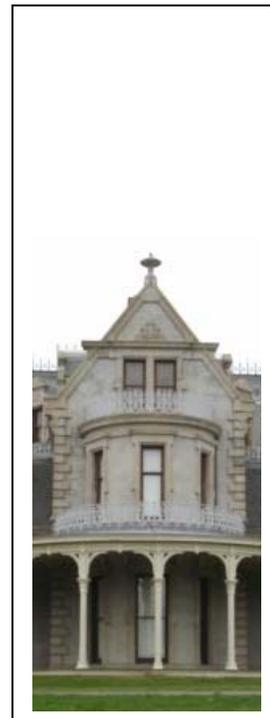
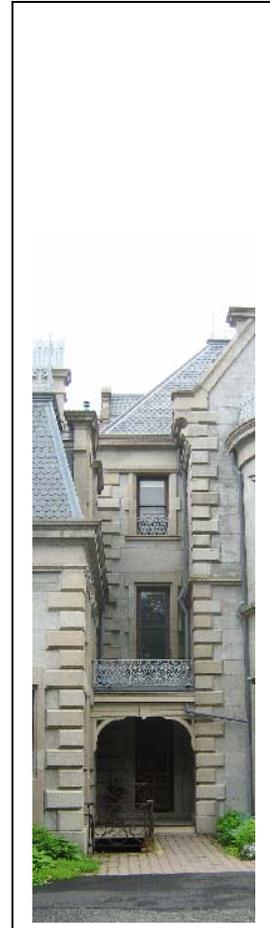
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resembles a small porch, the vertical walls between the porch columns were also clad in the glass tiles in a frame work that is structured between the columns. The columns are detailed as porch posts. The conservatory floor is covered with tiles arranged in a pattern. The present tiles are reproduced encaustic Minton tiles, matching the original in design and material, that were replaced after a tree fell on the Conservatory and it was restored in the 1960s. Most of the original Minton tiles are in storage in the building.

The most delicate part of the exterior of the mansion is likely the veranda. Not only is it the one major part of the exterior that is constructed of exposed wood, but it also faces south where the paint coatings that protect the wood are constantly exposed to direct sunlight. Like most porches, it has a low-pitched metal roof. Historically, porches often had metal roofs because the main alternative in the era when porches were first popular was shingles, and shingles do not shed water well enough at a low pitch. This particular roof was problematic because the form incorporates pitched curves and shallow valleys. The posts supporting the porch roof are also unusual in that they are very tall and pass through the porch floor, to be fastened at their sides to the sill boards below. Vertical wood members passing through floors was a typical characteristic of “balloon framing” from the mid-nineteenth century. In more recent construction, ever since platform framing evolved and replaced balloon framing, the wood members have been shorter and have rested on the flooring, the way walls have been also typically framed in platform framing since about 1910. When problems develop at the base of porch posts, adding a metal spacer between the post and the floor can be helpful; however, this is not as appropriate with the configuration at the Lockwood-Mathews veranda because the columns continue through the flooring.

In a recent re-roofing project, a problem developed at the valleys which contributed to deterioration of the porch posts. As a result of moisture accumulating from the roof design, mitered wood base trim, nailed on to the bottoms of the posts, deteriorated and broke off. The posts were repaired with new base trim, but this also rotted and broke off. The base pieces and some of the post bases were replaced again at the beginning of the present project with mahogany. It is possible that other problems were involved, such as moisture wicking up from below into the posts as a result of the design.

The Lockwood-Mathews Mansion benefits from being situated at a high point in the terrain and having grass at the edge of the building across about 80% of the perimeter. Although the rain leaders serving the roof drainage system have been hooked up by the City to the drainage system for Mathews Park, the site itself also drains well. It appears to have positive drainage in general away from the mansion, although this is less true on the north side where the asphalt pad of the parking area is roughly level with the grade at the house. Where pavement touches the



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building, it consists almost entirely of square paver bricks that allow for some moisture to be absorbed naturally into the ground below without retaining an undue amount of it. The only area where the soil may be prone to retain moisture and cause damage is under the veranda. This is because the wooden sill plate of the veranda floor framing is very close to the ground. As long as a large amount of water is not flowing into this area, it should not be a problem by itself. However, if organic materials like leaves and soil pile up at the edge of the wood, filling the gap, the soil will retain a higher amount of moisture and the wood will be more likely to remain wet and will also be easier for pests, such as termites and rodents, to reach. (An effort has been made recently to remove a family of groundhogs that had taken up residence under the porch over a period of many years).



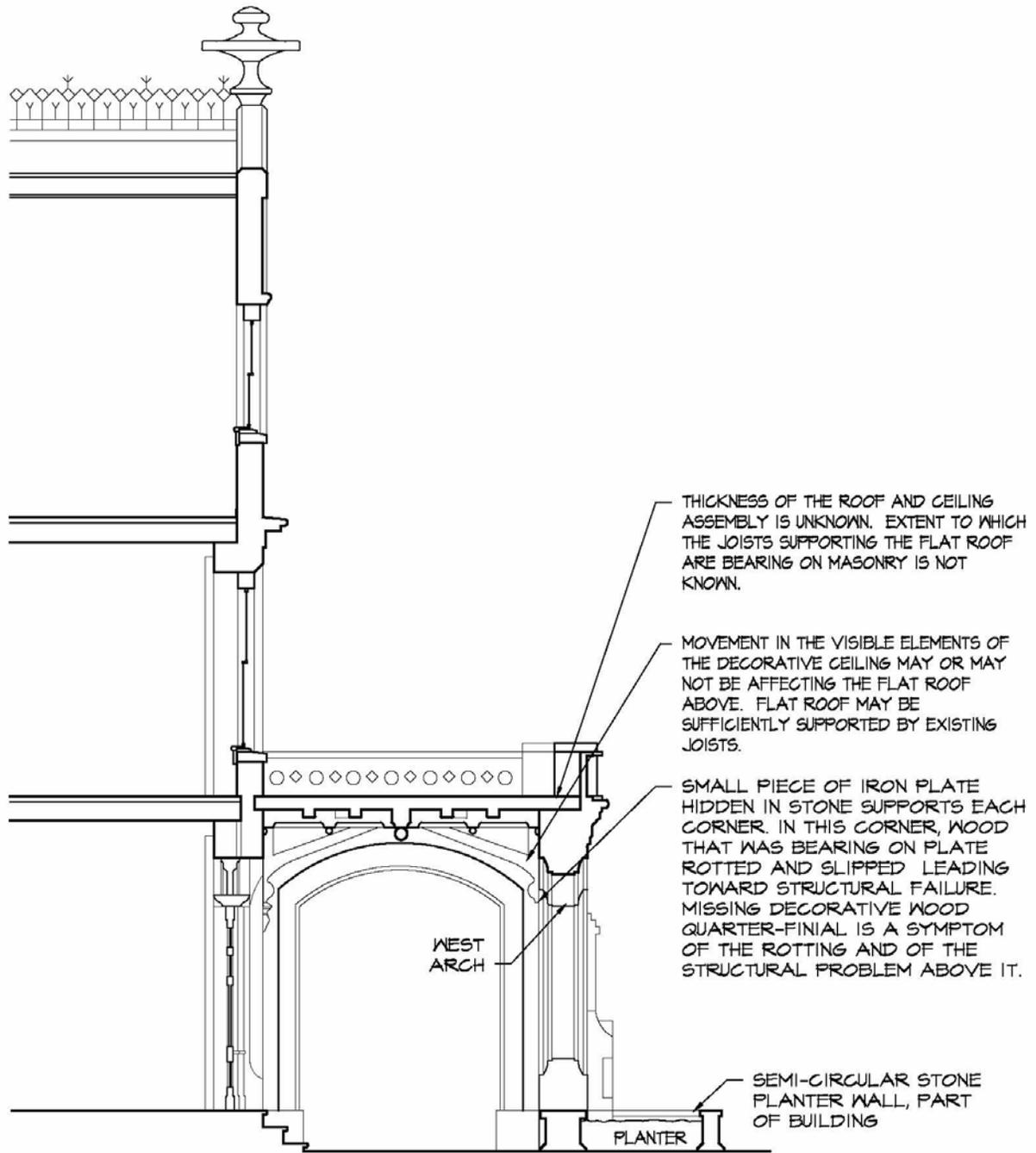
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Lockwood-Mathews Mansion Outline Condition Assessment

Conditions

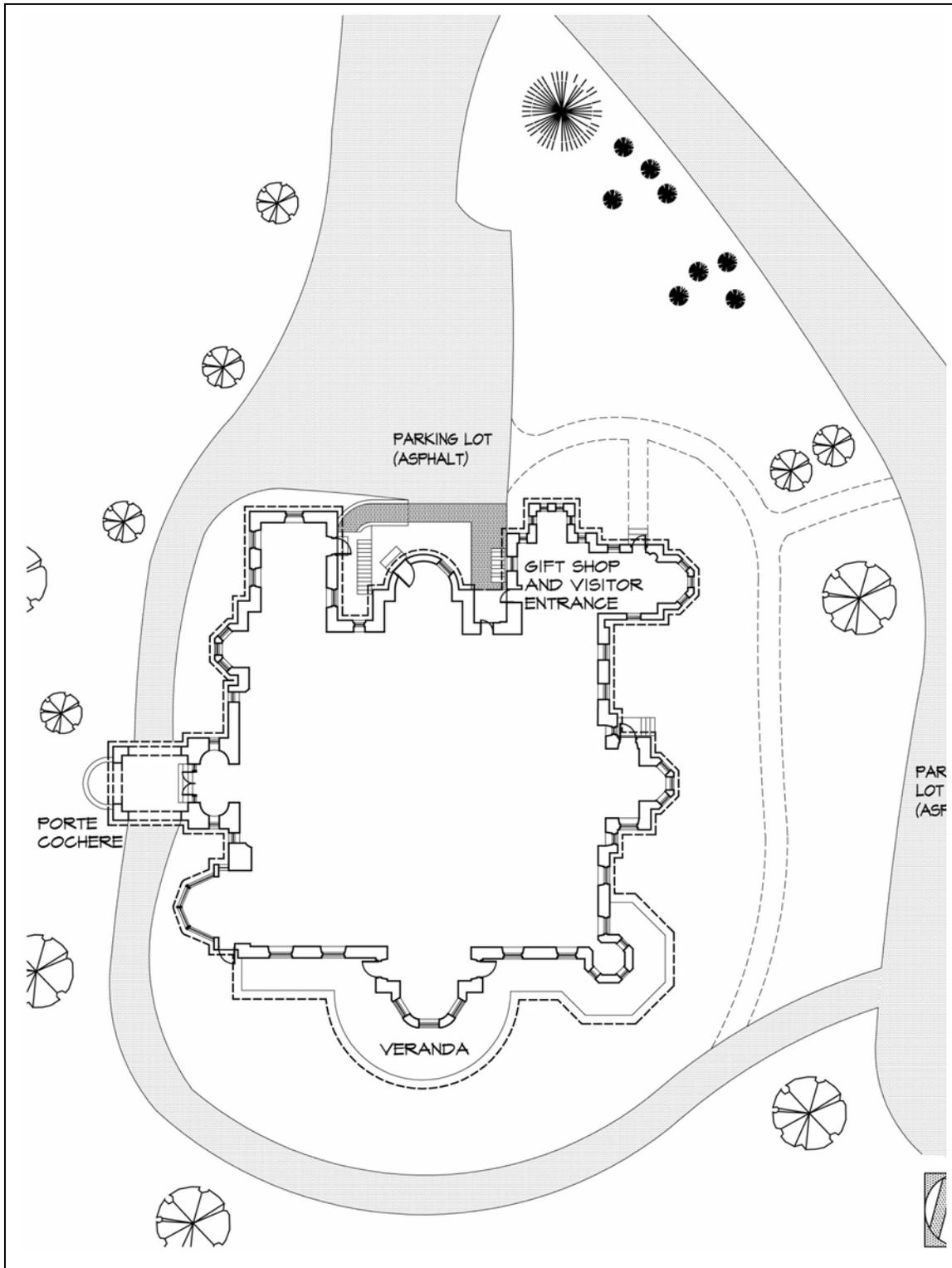
- The vaulted wood ceiling of the porte-cochere is failing due to rotting wood that rests on support ledgers made of small pieces of ferrous metal. The metal is also badly rusted.
- The porte-cochere roof laminate has deteriorated causing water to rot the wood deck and other wood members of the roof.
- A section of the exterior stone wall, the stone mullion between the paired windows at the center of the third floor (south elevation, the “Nanny’s Room” above the “Oriental Room”) is moving, in part due to failure in the mortar.
- The downspouts used to drain into the basement but have recently been retrofitted to drain into new PVC boots and underground drainage system.
- The slate and flat roof surfaces were recently redone in 2001.
- Some slates have fallen off and the flat roof membrane roofs need to be checked and replaced to solve water infiltration problems recently observed in the interior.
- The conservatory is covered with synthetic copies (made of Plexiglas or a similar product) designed to replicate the appearance of the original pressed and etched glass tiles. The tiles have begun to cloud and darken with age, decreasing their translucency.
- The wood door to the conservatory has failing paint.
- Grass grows to edge of foundation.
- All of the wooden exterior doors need restoration.

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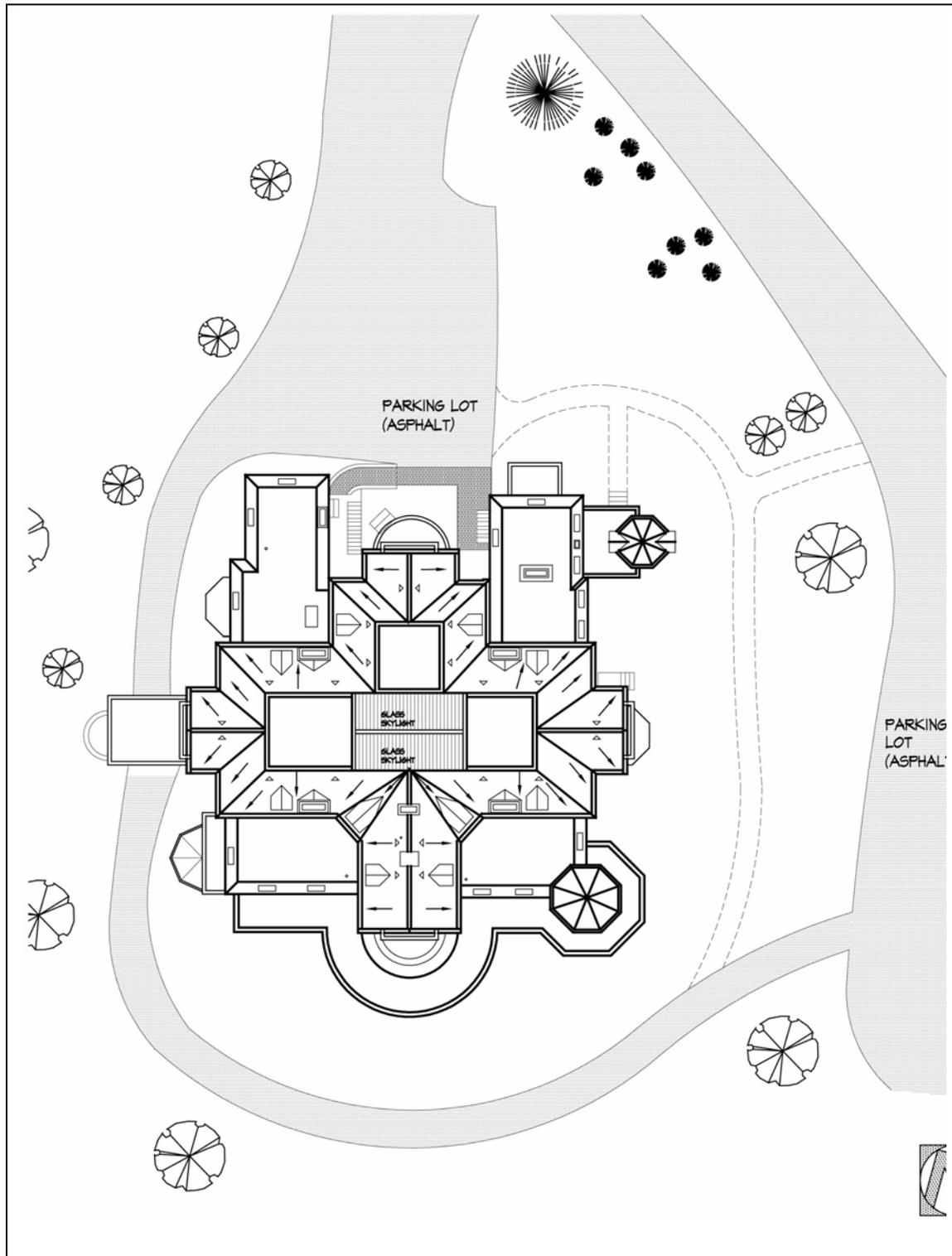
Wall Drawing

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Perimeter Plan

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Roof Plan

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Structural Engineer's Report

Ed Meade and Gretchen Lear, Robert Silman Associates

Lockwood-Mathews Mansion Porte-Cochere

RSA took a brief look at the mansion porte-cochere where there was concern related to the deterioration and movement in the roof and its components. Work was being performed while RSA was on site, to remove the decorative wood molding at the underside of a roof corner that appeared to have displaced by several inches. The connection appeared to be a ferrous metal plate supporting a wood member of the roof (or ceiling structure), both components exhibiting deterioration (the wood had rotted and the iron was rusting). RSA was also told that the roof had some water leakage problems and there were accounts from workers that there were soft spots in the roof when observed from above.

Based on the displacement that was visible from the ground and the observed deterioration in the supports and wood members, RSA suggests installing shoring at the displaced corner to prevent further movement and possible damage to the existing roof structure. RSA suggests hiring a wood expert to do non-destructive testing of the structural wood framing to determine the extent of deterioration that will aid in future structural repair schemes. Full restoration may require removal of the deteriorated wood, both the decorative molding and roof structural members, and replacement with new sound timber; we recommend removal of the rusting iron elements and replacement with new stainless steel members.

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Lockwood-Mathews Mansion Recommendations

Recommendations

Immediately:

- Test the wood in the porte-cochere ceiling, including structural members above the ceiling, to determine the depth to which the wood has rotted.
- Jack up the porte-cochere ceiling, replace support fasteners with stainless steel, and replace all rotted wood members with matching wood of appropriate quality and species.
- Repair/Re-point section of south wall (third floor stone mullion) that is out of plumb.
- Restore wooden exterior doors.
- Repair all roof drainage features including hooking rain leaders up to boots where the connection has been severed.

Five Years:

- Replace the framing system and transparent tiles at the conservatory with newly made reproductions of the original tiles.

Ongoing Maintenance:

- Check the air space between the veranda floor and grade several times each year to make certain that it is free of any accumulation of organic matter and any signs of pests.
- If base details of veranda columns continue to show signs of moisture, or if applied base trim will not remain fastened, additional work may be needed to separate the columns from moisture and to repair or replace rotted wood in the posts themselves. In that case, periodically check moisture content of the wood to ensure that it is below (and remains below) 20%. If rotted wood is found and moisture content is above 20%, wood will have to be replaced in part (dutchman repairs) or whole elements with water-resistant wood such as mahogany or cypress.

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The Lockwood-Mathews Gate Lodge

Building Profile/History/Current Use

The Gate Lodge is a Gothic Revival style cottage with a richly detailed exterior and interior. Although it is designed to look small, it is actually a substantial house of about eight rooms. Nevertheless, the rooms are restricted by layers of high-style details that seem like they were designed for a larger house. The building has served as a visitors' center and offices for the local tourist bureau for some time. It has served similar functions over the six decades since the City acquired the estate.

The exterior walls of the Gate Lodge consist of large, rectangular blocks of rock-faced ashlar laid in regular courses, evenly overlapped like stretcher-bond brick, with very thin mortar joints. Some of the blocks have tooled margins. The margins at the corners of the building are detailed to resemble corner-beads. In various places, the rock-faced surfaces also contain distinct tool marks from the round chisels and rods used to split the blocks free at the quarry. Additional tooling is seen in the ghosting where the stone was cut to accommodate elements that are now missing, such as rain leaders and the pilasters at the corners of a missing porch.

One-and-a-half stories in height, the house has a cross-gable roof with richly detailed wood trim in the sloped surfaces of the gable-ends and eaves, mainly consisting of regularly spaced ornamental modillions that resemble brackets. Although one porch is missing, another of identical design is intact. Like the detailing at the eaves, the porch has heavy wood profiles including chamfered posts with large, mitered moldings at the top to create the sense of capitals.

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The wood bulkhead forms a segmental arch between every two posts. Other exterior details include a semi-octagonal bay window constructed of smoothly dressed stone that contrasts with the rock-faced surfaces around it, 1/1 wood sash windows including two that extend to the floor at the extant porch, and window openings with pointed arches in the various gable ends of the upper story. While the upper story windows in the side and rear elevations have triangular points at the top of the openings (both in the stone opening and in a matching triangular sash), the pointed top at each of the façade (front wall) windows is a three-sided semi-hexagon in form.

Located to the side at the beginning of the present entrance to Mathews Park that leads into the grounds of the Lockwood-Mathews estate, the Gate Lodge was constructed before the Lockwood-Mathews Mansion was completed, and it was designed by a different architect, not Detlef Lienau, the architect of the mansion. The original driveway entrance to the estate was located south of the Gate Lodge, which explains to locations of the two porches that face the side where the driveway was and the avenue. It initially served as a residence for Lockwood's newly wedded son, LeGrand Lockwood, Jr.¹ It continued to be occupied as a private residence after Mathews family acquired the estate in 1876. Once it came into the possession of the City as the Mathews Park property in 1942, it was used for City offices.

The Visitors' Bureau operated the public functions of their facilities from the main interior rooms for a number of years before creating the current visitors' center in a wood-framed rear addition the date of which is not known, although it appears to incorporate parts of an early kitchen wing (the corner of a similar wood wing is visible in one of the known historic photographs of the house). However, although there may be early construction within the wing, the wing was expanded by the 1980s using a very low roof and plywood siding (scored to resemble barn siding, apparently the product known as "Texture 111"). Both parts of the frame addition have very thin lines of trim over the plywood, and there is almost no overhang at the edge of the roof, giving it a very different character from the older construction. Part of the addition (1980s) was constructed on round piers (poured-in-place concrete cast in cardboard tubes) over an open crawl space. The addition is inaccessible to those with mobility disabilities as it is entered by way of a small porch with a six-riser set of steps (two risers in the sidewalk followed by four risers of wood steps and then a step at the threshold into the building). The two front entrances from the porch locations (from both the extant porch and the missing porch), meanwhile, are only two steps up from grade, one at the porch floor slab and one at the threshold into the house.

The interior of the house is characterized by high-end finishes, including ornate mantelpieces that cover the entire chimneybreast, heavy moldings at the windows surrounding paneled reveals with built-in interior shutters, parquet floors, and similar details. There is a metal ventilation grate built into the molding at the head of each window reveal, apparently providing air flow either to ducts or to cavities within the walls (as evidenced by matching floor registers, this feature may have also been part of an original gravity-fed furnace system, a furnace type used before electric fans existed, that relied on drafts, such as around window openings, to pull warm air up into the house). Recently, an air-conditioning Univac system was installed with the equipment in the small attic crawl space; the air compressor serving this system is on the south side of the building. The second story has simpler trim but still has built-in shutters and ventilated heads at window openings. Because of the story-and-a-half construction, the second floor rooms have areas of low headroom, a potential conflict since three of the rooms are used as offices.

¹ Information provided by the client.

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The building has experienced advanced moisture problems in certain areas. Stains in the second story ceilings next to chimney locations indicate that the flashing has failed. In the basement, simulated wood paneling and similar materials were added over the masonry walls as an expedient way to make the spaces useable as office or storage space. The basement walls were also painted in various places, apparently for the same reason. About a third of the basement is now in use as a utility space for servers and other electronic equipment associated with the visitors' center's computer system, and the same space contains equipment for the electrical, security, and fire protection systems, as well as storage for supplies used by the Visitors' Center, such as brochures the center offers on sites in the area. The moisture infiltration has heavily damaged the paneling in the unused rooms. In the room with the equipment, there is steady use of dehumidifiers. The moisture problems need to be addressed more effectively, the damaged non-historic surface materials need to be removed, and the stained plaster needs to be repaired.

In the late 1990s a new asphalt roof was installed. The vent at the roof peak was too wide, requiring repairs to reduce the size of the vented openings (after animals got into the building causing damage). The valleys formed by the cross-gable roof form were not flashed with metal flashing. The original roof was slate, as can be seen in historic photographs.

The visitors' bureau and the city have shown an interest in the possibility of addressing the accessibility issues by moving the public part of the visitors' center into one of the front rooms. This would be an opportunity to remove, restore, or redesign the frame addition.

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Lockwood-Mathews Gate Lodge Character-Defining Features

1	Building Style	<ul style="list-style-type: none"> • Gothic Revival style with some pointed arches, steep roof slopes, and icicle-like brackets in eaves 	
2	Building Form / Massing and Roof Type	<ul style="list-style-type: none"> • One-and-a-half story design with cross-gable roof and cruciform plan, offset for two front porches, one at each corner (one is missing) 	
3	Window Type	<ul style="list-style-type: none"> • Pointed attic windows • Floor-to-ceiling porch windows • 1/1 window pane pattern 	
4	Wall Material	<ul style="list-style-type: none"> • Walls constructed of large ashlar blocks crisply cut on mortared sides to form thin joints, but rock-faced; some blocks have tooled margins, some forming with beaded edges at all corners 	
5	Wall Details	<ul style="list-style-type: none"> • Stone watertable at base of exterior walls 	

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6	Chimney Detail	<ul style="list-style-type: none"> • Brick chimneys with stone-corbelled tops, one stack (south) is paired 	
7	Window Features	<ul style="list-style-type: none"> • Cut stone bay window contrasts with rock-faced walls 	
8	Porch Details	<ul style="list-style-type: none"> • The original floor plan included two porches, one of which is now missing 	
9	Main Window Details	<ul style="list-style-type: none"> • 1/1 windows with unusually tall glass for the time period in the first story openings, sometimes extending to porch floors 	

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10	Door Details	<ul style="list-style-type: none"> • Four-panel (and/or pane) doors with square bottom panels and the knob set above the lock rail 	
11	Roof and Roof Edge Details	<ul style="list-style-type: none"> • Cross-gable roof form originally had slate roofing • Eaves have ornamentally cut modillions • There is evidence of only a limited roof drainage system (downspouts in a few locations and channels in stone at former rain leader locations) 	
12	Porch Details	<ul style="list-style-type: none"> • Ornate porch posts, chamfered in the shaft, with heavily profiled, mitered moldings serving as capitals, connected by segmental arches at the bulkhead 	
13	Interior Details	<ul style="list-style-type: none"> • Richly detailed interior: parquet floors, carved marble mantels, gas lighting fixtures, heavy multi-stage ogee casings, ornamental ceiling plaster 	

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Systemic Analysis / Building Assembly Conditions

The Gate Lodge has developed a series of systemic moisture problems. The problems are bad enough that the building's basement was very moist when the team made field visits, and non-historic remodeling materials have not only been destroyed in the process, but they are now holding enough moisture that they are part of the problem and need to be removed. The problems begin with the roof form, but they also include contributing factors in the perimeter grading and landscaping of the house.

The roofing was originally a fish-scale patterned material, apparently slate, that can be seen in historic photographs. The current roof is asphalt shingles. The shingles were installed with shingled valleys instead of metal flashing, a cost-saving measure that diminishes the drainage capacity of the valleys. The main roof, or at least large sections of it, may have never had gutters, although gutters and downspouts on the porches provided drainage for the roof slopes that drained onto the porch roofs from the beginning. The roof has failed recently in the areas where flashing surrounds the chimney penetrations. While the roof has apparently been repaired in these areas, the plaster damage in the second story ceiling is still apparent.

Although the attractive cross-gable roof is part of the house's Gothic Revival style, the design can be problematic if neglected. The roof funnels a large percentage of the water by way of four valleys toward the four indentations of the cruciform plan.

The two indentations facing west contained porches in the original design. The porch that remains in place, at the southwest corner of the house, carries about a fourth of the rain water effectively into at least one downspout (a second downspout is found at the inside corner of the porch, but it may not be functioning at present). The removal of the northwest porch resulted in the water from that quadrant of the roof falling directly onto the concrete slab that had served as the porch floor. Water hitting and splashing this slab has caused biological growth on the stone and decay in the bottom components of the wooden door that opens onto the former porch. In the original design, the porch probably had a wood floor, as found at the veranda of the mansion, since concrete was a rare material at the time. The north orientation of this area is also a contributing factor because the areas that are bombarded with the moisture are in shade much of the day, particularly in certain seasons of the year.

The concrete slabs may not be the original porch floor material. Modern concrete with a strength and exterior durability needed in a floor slab was not generally available by the 1860s, and it would be highly unusual to have used it in this application. It is more likely that the porches had wood floors that rotted and were replaced around 1890-1910. The concrete appears in historic photographs from that time period, and it is detailed in a way, with drafted lines in the surface and rounded edges that are consistent with concrete work from the early twentieth century.



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The eastern slopes of the roof drain toward two valleys that discharge at the corners of the kitchen wing of the house. There are remnants of downspouts in this area that are not currently connected. The two indentations at the kitchen wing side of the plan were designed to be out-of-view, and they now contain a service entrance to the basement (northeast corner) and electrical equipment (southeast corner). To beautify the house and camouflage the equipment, raised flower beds were created on three sides of the house. The raised beds and vegetation trap moisture in areas of the walls which were not intended to be covered. They also trap debris, such as leaves, in the indented areas, and both the raised shape of the beds and the debris that accumulates in these areas make it more difficult for the soil to dry. This is even more a problem on the north side of the kitchen wing, where the indented area is almost always in the shade.

The Gate Lodge, like the mansion, has some kind of ventilation cavities within the stone walls, as is apparent at the tops of the interior window casings. As seen from the interior side, the windows are in deep reveals, detailed with wood surrounds. The ceiling board of each reveal contains a metal grate allowing air to flow up either directly into the wall cavities or into ducts. As mentioned above, this ventilation feature may have also been part of an original gravity-fed furnace system, and as such, may have been ducted.

Historically, the building has been surrounded by foundation plantings (shrubs and similar plants along the perimeter, shading and touching the bottom edge of the building), and ivy has been allowed to grow on the walls from time to time. In general, both kinds of plant life are bad for buildings. Both foundation plantings and ivy retain moisture. When planted close to the building, the roots hold moisture against the foundation masonry. In time, the underground roots of all the plants and the climbing roots of the ivy vines will find their way into the smallest openings in the walls, usually at the mortar. The roots eventually damage the integrity of the wall materials which are weakened, in part, by the moisture that the plants retain. It is better to remove all ivy and to relocate shrubbery so that the root systems are at least a couple of feet away from the wall. Flower bed plantings, by themselves, are not problematic. However, raised beds, mulches, and synthetic materials like plastic sheeting used to keep out weeds are all detrimental to the building because they retain too much moisture. The ideal is grass on a gentle slope that provides for positive drainage away from all walls of the building. Grass has very small roots and it drains and dries in ways that are compatible with traditional building materials.

The deterioration and leaks that have developed over the years at the Gate Lodge are due to these systemic issues. As at most of the Norwalk Buildings, wood is the most vulnerable building material at the Gate Lodge. The wood was generally covered by other materials that protected it in the original design. Among other aspects of the system, the porches were critical components in a sequence of wood trim elements and other details that made up the roof drainage system. It is possible that the porch floors rotted at an early date and were then replaced with concrete. The concrete may have led to additional rotting in the posts at the northwest porch, leading to its removal. The lack of gutters and the location of the concrete slab have led to damage at the wooden door that accessed the house from the missing porch. If so, the concrete may be part of the problem as it may be trapping more moisture than a ventilated wood floor would have.

One or two north-facing windows suffered enough water damage that major components had to be replaced with new materials in a project completed in 2009. This also may have been moisture-related. Restoring the missing roof and adding gutters to the house would safeguard against further damage. The foundation plantings, raised beds with mulch, and other perimeter materials need to be redesigned or removed to address the building's current moisture problems.

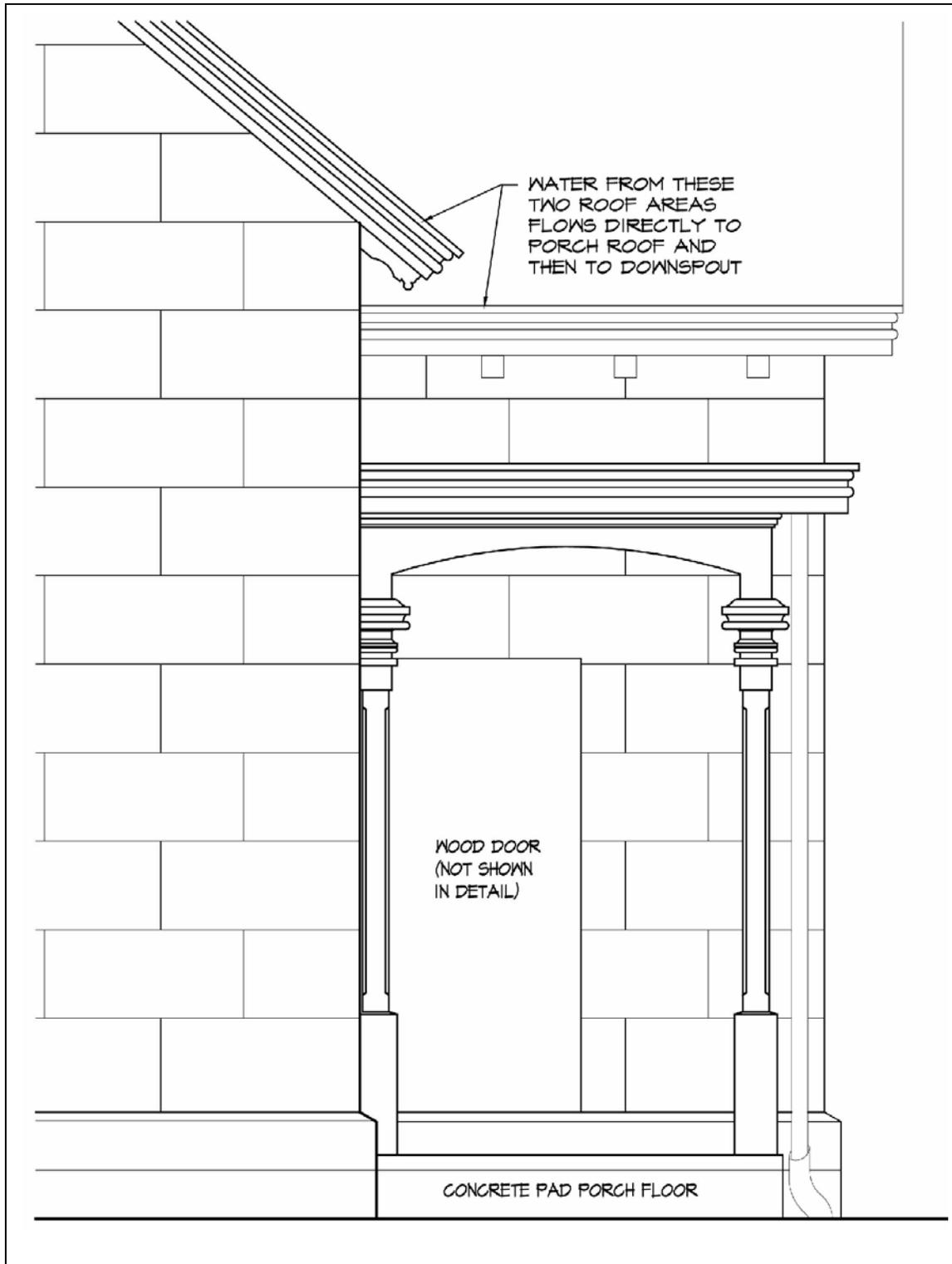
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Lockwood-Mathews Gate Lodge Outline Condition Assessment

Conditions

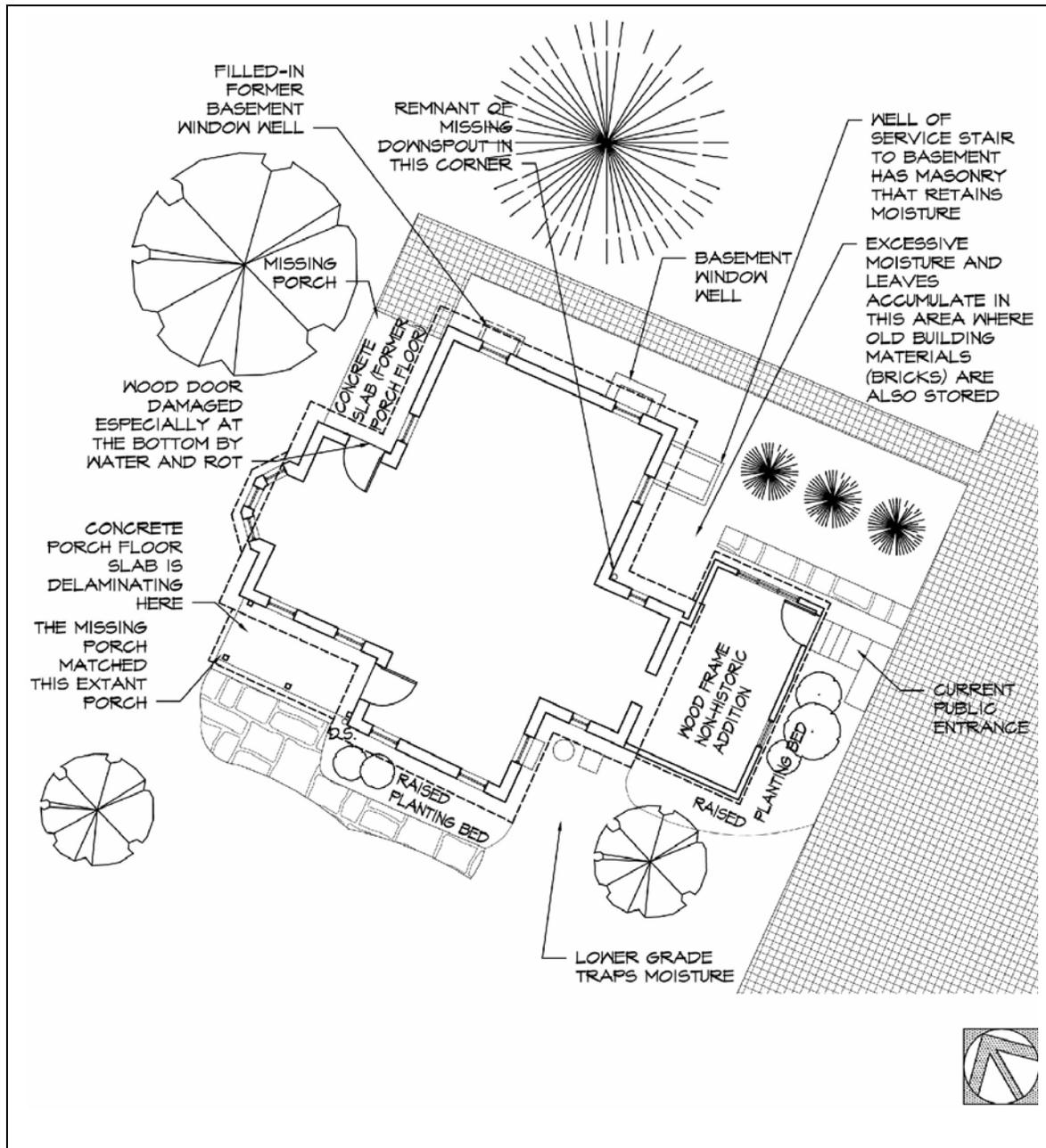
- Poor site drainage: In areas where the roof drains directly to grade, the site shows signs of poor site drainage. At the southeast corner, the soil is eroded allowing water to collect around HVAC equipment. At the northeast corner, roof water is trapped between the original house, the wood frame addition, and the basement stairwell. The basement entrance had wet walls on the sides of the stairwell, particularly the side that faces the area where most of this quadrant of the roof drains directly to the ground. At the northwest corner, surrounding the former north porch door, there is biological growth at the foundation and wood rot in the bottom half of the door.
- Concrete deterioration: The southwest porch concrete floor slab is cracking and delaminating in horizontal lines an inch or two below the finished floor elevation.
- Failed mortar: The mortar has failed at the building foundation masonry, generally in selected areas around the decorative stone watertable, most likely caused by areas of heavy flow in the roof drainage and the corresponding areas where the soil becomes excessively moist.
- Deterioration of exterior doors: The northeast exterior door exhibits the loss of a varnish and/or stain coating. The door has severe wood rot from the threshold up about one foot and requires replacement of the entire bottom rail and one foot of each of the side rails. The deterioration may be bad enough to merit replacement of the entire door with a duplicate of the original design.
- The City's recent window maintenance has been well-done. The Gate House has retained most of its original wood windows, which are in good condition, and they have recently been repainted. Some rotted window sills and trim have been recently replaced.
- Roof deterioration: Water infiltration problems continue around both brick chimneys as indicated by staining and failure of plaster finishes in upper floors. A hole was recently detected in the north bay window roof structure, which was replaced immediately with a replicated metal roof.
- The wooden steps to the new addition have had to be replaced frequently due to moisture and rot.

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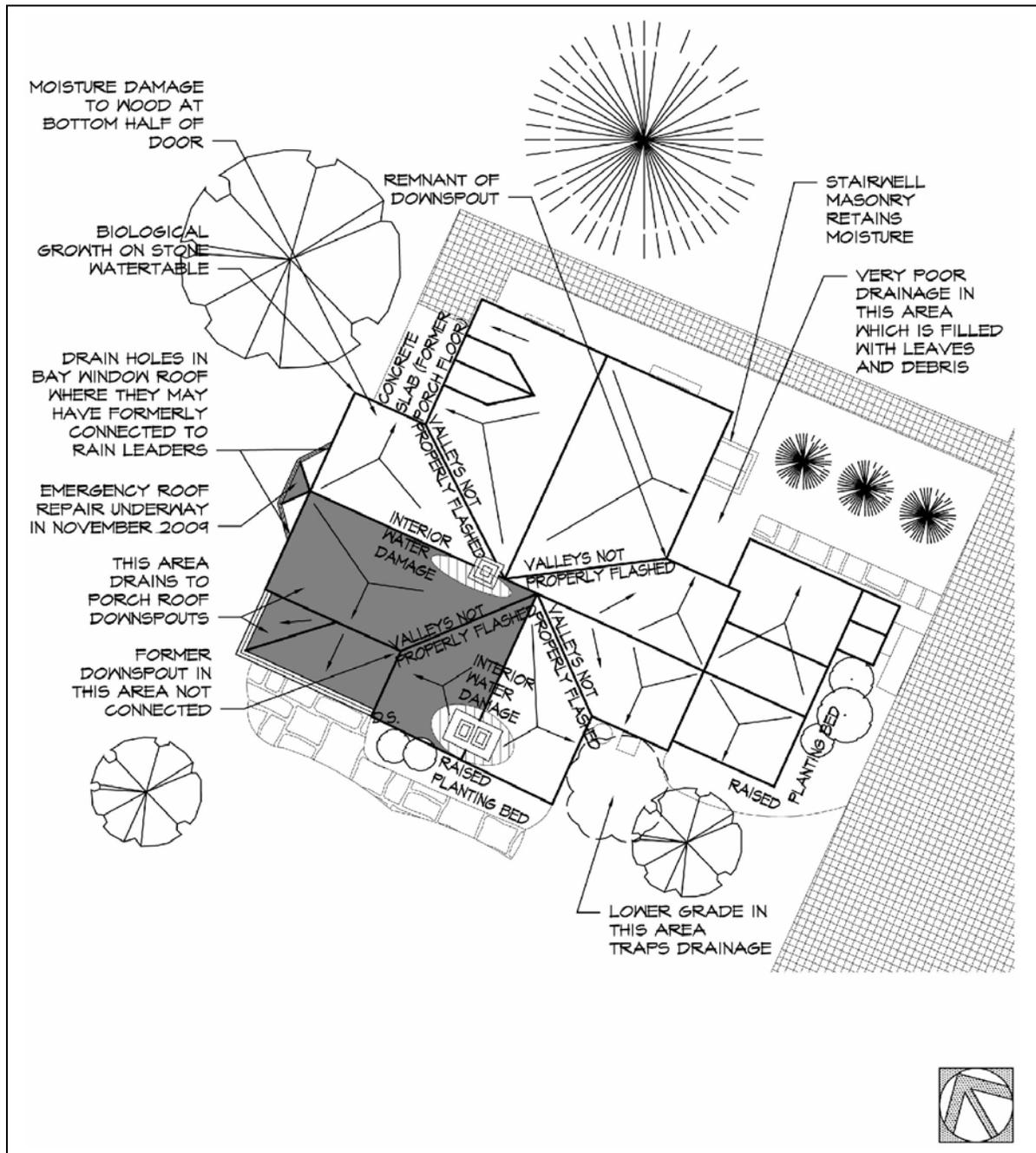
Wall Drawing

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Perimeter Wall Floor/Site Plan

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Roof/Site Plan

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Structural Engineer's Report

Ed Meade and Gretchen Lear, Robert Silman Associates

The Gate Lodge was not on the list of buildings initially identified as needing structural observation; however, RSA did have a chance to walk the perimeter of the house and discuss the possible future work. This work included creating a handicap accessible entrance and rebuilding the original porch in the front of the house. While there, we noted that the roof drainage/gutter system consisted of components of differing metal materials which creates a galvanic cell and will cause deterioration of the components.

This should be corrected by using uniform materials that will not react to one another. Additionally, conversation on the chimney and the interior heating of the house led to our suggestion that the masonry work to the flue be checked to ensure that the flue was properly sealed. We were not able to make any observations about the one-story addition that was made for the visitor's center portion of the Gate Lodge.

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Mechanical/Electrical/Plumbing/Fire Protection Engineer's Report

Ernest Conrad, Landmark Facilities Group

Description

The Gate Lodge is a two-story masonry building once used as a residence. The building has a full basement largely used for storage. There is also a small attic space which contains an HVAC air handler at present. The building also has a small addition used as a visitor information center. The building has no gutters.

Thermal Characteristics

The perimeter walls of the Gate Lodge are a heavy masonry construction with a lath and plaster finish on the interior side. There is no known insulation other than the natural insulation characteristics of the masonry. The ceiling areas of the window reveals contain ceiling grilles that match the floor registers and appear to be original to the construction. They may connect to ducts from the building's earliest furnace system; they could also be related to a system of wall cavities as found at the Lockwood-Mathews Mansion. Most of the windows have recently installed, removable interior storm sashes which help thermally. The basement is completely below grade and its perimeter walls are constructed of stone and mortar. The flooring is concrete. The basement was notably damp with active water stains at the exterior stair and brick columns.

MEP/F Systems

Mechanical

The first floor of the Gate Lodge is conditioned by a Bryant ducted oil-fired furnace and a duct-mounted dx cooling coil. The ducts are connected to floor grilles which appear original to the building. The furnace appears to be new and in good working condition. Its size is estimated to be about 200,000 BTU/hr. The small addition containing the visitor's information center has electric heaters.

The upper floor of the Gate Lodge is conditioned by a UNICO heat pump system. This is a specialty HVAC system which consists of an air handler located in the attic which distributes heating or cooling air to each room through a series of small round nozzles. Its condensing unit is located outside the building on the ground. This system is also reported to be fairly new, circa 2004. Some nozzles were observed to be causing condensation stains in the ceiling and one had fallen from its ceiling mount.

There are several dehumidifiers located in the basement which get used year-round to prevent mold. The dehumidifiers were working at capacity when the team was there. They drain to a sump pump that is automatic.

Electrical

The building has a 200 Ampere modern electric service. Its main distribution panel is in the basement. The panel has 42 circuits all of which are in use. There are no spare circuits. The building has been reported to have been rewired and has grounded outlets now. The basement contains a large amount of electronic equipment that was originally installed to provide security and internet service to other buildings in the complex.

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Plumbing

The building contains a municipal domestic water service and a municipal sanitary sewer connection. The domestic water service is a 1-inch size and the sanitary waste is a 4-inch cast iron line. There is a small electric 10-gallon domestic hot water heater in the basement.

Life Safety

The building has a combination Sonitrol security and hard-wired fire alarm system. It contains smoke detectors and horn strobes throughout which are connected to a remote supervisory service. There are also hand-held fire extinguishers strategically placed throughout the house.

Improvement Needs

Consideration for adding gutters with drainage to the storm sewer system is recommended. Rain water roof runoff is the likely cause for the damp basement. Some routine maintenance for the UNICO system is needed.

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Lockwood-Mathews Gate Lodge Recommendations

Recommendations

Immediately

- Remove modern interior basement wall surface materials to decrease the retention of moisture in the basement.
- Establish routine maintenance of the HVAC system.
- Recommend checking the masonry of the chimney flues
- Consider adding gutters and a complete drainage system taking water away from the building site, as soon as possible.

Within the next 5 years:

- Improve site drainage, particularly in the corner where the HVAC equipment is (south of the frame addition) and next to the exterior stairway to the basement (north of the frame addition).
- Repair deteriorated exterior doors. Remove doors to a wood shop to rebuild and install dutchman repairs. Refinish exterior doors using a stain and/or varnish to match the original.
- Improve ventilation in attic and basement levels. Dehumidifiers currently run constantly; if other measures are not effective, a rigorous system for emptying and checking dehumidifiers will be necessary.
- Replace the existing asphalt shingle roof with either 1) a new slate roof to match existing examples of original slate roofs, including slate size, shape, color, and pattern, or 2) a similar appropriate replacement. The new roof must have adequate flashing at valleys and in other locations to direct water to perimeter gutter and downspouts. A slate roof is recommended for this building because it is prominent at the entrance to the Lockwood-Mathews site.
- After moisture problems are definitely solved, extensive interior repairs are needed in the basement and the second story to remove water-damaged materials (nearly all of which are non-historic), correct hidden moisture problems, restore any damaged historic materials, and remove all aesthetically inappropriate remodeling materials from the 1970s.

Ongoing maintenance

- Some routine maintenance for the UNICO system is needed (See Mechanical Engineer's Report).

Other Issues:

- The Historical Commission would like to reconstruct the missing porch and use the project to create an accessible entrance.
- The Historical Commission would like to remove the non-historic portions of the frame addition on the south side of the building. Some portions appear to be older construction covered with material from the newer campaign. Removal of the addition will be part of a program that will involve moving the visitor's bureau functions back into the original rooms of the Gate Lodge. Impacts on fine interior finishes will have to be taken into account in the design.
- We recommend removing the non-historic addition incrementally and looking very carefully for evidence of a much earlier rear addition before making any final design decisions or contracting work that might destroy an early domestic wing of the building (in other words, do not hire a demolition contractor under a general contract to do total demolition, but instead someone monitoring the work to identify currently concealed historic materials). If no major

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hidden features are found, consider a simple new addition or a porch. New work can be designed to be compatible. Use the *Secretary of the Interior's Standards for Rehabilitation* as guidance (the *Standards* are more subjective on the subject of new design than on other points; seek out good examples of simple projects that have met the *Standards* to get an adequate sense of how to meet *Standards* #9 and #10, and to remain in keeping with *Standard* #3).

- Incorporate the provision of an accessible entrance in the restoration of the northwest porch.
- Check chimney flue linings for water-tightness and check metals used around chimneys incompatible metals or for any signs of damage from galvanic action.

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The Lockwood-Mathews Carriage House

Building Profile/History/Current Use

The Carriage House was built roughly at the same time as the Lockwood-Mathews Gate Lodge and the Lockwood-Mathews Mansion, although it was completed before the mansion and was not designed by Detlef Lienau.¹ Contemporary in age and style and complementary in effect, it represents a remarkably different approach to the stylistic trends of the 1860s from either the Mansion or the Gate Lodge. Like the other two buildings, its exterior walls are constructed of ashlar blocks. However, at the Carriage House, the blocks are arranged and detailed differently and have a subdued effect. Larger and smaller blocks are placed in a random-laid pattern, with angled voussoirs over the door and window openings. Most of the first story openings have segmental arches, while at the second story, they have round-arches. The face of the stone is not dressed to a perfect plane, but when the building is viewed from a distance, equal treatment of all stone elements places the emphasis on a single plane leaving the block sizes and mortar joints as a subtle second level of information. The edge of the roof has a wood cornice with modillions. The design of the cornice, particularly the modest overhang and scale of the modillions, give the building a Spartan simplicity by contrast to most buildings from the era in the same style. In this regard, the contrast with the nearby Mansion and Gate Lodge is particularly notable.

¹ Information provided by the client.

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The building has a hipped roof and is arranged as three pavilions. The center pavilion is two full stories. The hipped roof over the second story has a flat area centered at the top where the design once included a belvedere surrounded by a widow's walk. The west wing of the building originally had three segmentally arched carriage door openings which were later closed-in with stucco. The openings are separated by chamfered stone pillars, each one cut from a single piece of stone. The east wing, originally the stable, is longer on its north-south axis and has a row of small, square windows facing east that correspond to where the individual stalls were. The building is distinguished by its bevel-topped stone watertable that originally contained ventilation openings. The openings were sealed in the wings and in the rear wall of the center pavilion, in most cases apparently as a result of pouring a concrete floor in the wings. Further discussion on the air circulation characteristics related to these openings is covered in the systemic analysis, below.

The Carriage House is referred to as a barn in historic maps of Norwalk (Sanborn 1957). It was apparently designed to have hay stored in the second story, with carriages in the west wing and horses stabled in the east wing. The first story of the center pavilion was most likely a multi-purpose area for repairs and storage of equipment. People currently using the building have reported that there are still chutes built into the walls of the east wing, now hidden behind equipment, which were used for sending hay and feed down to the animal stalls. The east and west wings apparently had dirt floors, though they are now concrete, while the center wing has a wood floor on both levels. The wood framing of the lower floor was constructed only a few inches above grade, leaving a very low air space.

In the 1940s, when the city acquired the property, the Carriage House was converted to a police facility. The stable stalls in the east wing were converted to jail cells. The wing was well suited to this conversion, because of the sturdy stone walls and the limited size of the windows. Iron bars were in the windows of the stable wing at this time; it is not known for certain if they were added as part of the building's conversion to a jail use, or if they were in place when the stable contained horses. Although they have been removed by cutting them at the horizontal stone surfaces, remnants of the iron are found in the sills and heads of the windows. The bars were actually pipes each of which spanned from a hole drilled into the head of the window to a corresponding hole drilled into the sill. The police department's use of this particular building does not appear to have lasted for more than a decade or two after the city acquired the Mathews Park property in 1942.

At some point after the police department relocated, the city moved its planning department into the building, and the second story area of the center pavilion became a drafting room. At that time, to accommodate large drafting tables, the columns that had been in place to support the belvedere were removed. They were removed in the first story as well as the second. The belvedere was either removed when the columns were removed or it had already been removed. In place of the columns, diagonal framing members that were already in place in the roof structure were converted to serve as trusses. It is believed that their original purpose was to resist lateral loads caused by wind striking the sides of the belvedere. Although the diagonal framing members resembled trusses, the members that needed to carry tension had not been designed for that purpose, and this was addressed by adding several steel rods with turn buckles at the bottom edge of the corresponding wood members. At some point, a sloped ceiling of gypsum wall board was added at the bottom edge of the roof rafters leaving this truss work open for its aesthetic effect. The interior layer of stone in the second story was painted with several layers of a coating,

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probably while the police were using the building. The coating may have been Portland-cement-based paint (such as Thoro-Seal). This may have been done for cleanliness, color/light, or possibly water-proofing reasons. Remnants of the coating are still visible at the corners of some of the smaller rooms. The interior surfaces of the walls were later sandblasted to remove the coating from visible areas in and near the main second story room.

In the 1990s, the building became home to the Center for Contemporary Printmaking. The large, open, upper level room became a studio teaching space for students of printmaking. To support the weight of the tables, equipment, and students, new columns were installed in the first floor where there had been columns previously. The second story was left open. A portion of the first floor of the center pavilion was closed-in to create a gallery space. Much of the eastern half of the first floor is used by artists who teach at the printmaking society and as studio space where prints are produced. About a third of the second floor is used as office space for the society, and another portion over the stables contains a dark room, storage areas, and similar spaces for technical equipment and supplies. In converting the building to printmaking facilities, only a few other changes were made. Most of the changes involved the installation of ventilation systems, including a number of ventilation fans mounted in the roof and some in window openings.

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Lockwood-Mathews Carriage House Character-Defining Features

1	Building Form / Massing	<ul style="list-style-type: none"> • Symmetrical center pavilion with hipped roof flanked by lower masses for parking carriages (west of center pavilion) and stabling horses (east of center pavilion) 	
2	Wall Material	<ul style="list-style-type: none"> • Cut stone (granite) ashlar walls with distinctive tool marks and light gray pointing 	
3	Wall Material Details	<ul style="list-style-type: none"> • Raised square ribbon mortar joints are found in some areas 	
4	Roof Type	<ul style="list-style-type: none"> • Hipped roof of center pavilion was originally crowned by a large belvedere. At that time, center door was solid and both door and sash members were painted in very dark colors by contrast to lighter-colored trim at the cornice and belvedere 	

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5	Fenestration Patterns	<ul style="list-style-type: none"> • Windows vary to emphasize design: symmetrically placed round-arched windows in center pavilion, square windows in stable stalls, etc. 	
6	Window Types	<ul style="list-style-type: none"> • Window variety includes paired casements, double hung sash, French doors. Original windows are double hung sash in the center section of the building and single-pane casements 	 
7	Wood Trim	<ul style="list-style-type: none"> • Layered, curved mouldings at jambs contrast with more rectilinear profiles in cornices 	
8	Detailing at Grade	<ul style="list-style-type: none"> • Cut stone beveled watertable with ventilation openings at grade 	
9	Interior Wall Surfaces	<ul style="list-style-type: none"> • Beadboard over interior side of stone walls in a number of places, first story 	

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10	Interior Wall Surfaces	<ul style="list-style-type: none">Exposed interior masonry surfaces, especially in second story	
11	Interior Details	<ul style="list-style-type: none">Exposed interior framing especially in the open ceiling of the second floor	

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Lockwood-Mathews Carriage House Systemic Analysis / Building Assembly Conditions

The Carriage House has fewer systemic problems than the other buildings included in this study. This is in part because the roof is relatively new, the walls are protected by a cornice that contains a working gutter and downspout system (all of which are in good condition), and the granite walls, which are in good condition, meet the ground with a well-designed stone watertable that is generally free of foundation plantings. Another reason may be that it tends to be thoroughly ventilated because the printmaking processes carried on inside require it. However, the building does have some systemic moisture problems and also some conditions that could lead to others.

The Carriage House is designed as three pavilions, the center one being taller. The east pavilion was built as a stable and most of its windows are very small. The west pavilion was a garage for carriages, as evidenced by the three arched openings that have since been in-filled in its façade. The center pavilion is two stories and has wood floors in both stories, while the flanking wings have concrete floors presumably a replacement for earlier dirt floors in the original design.

The asphalt shingle roof was installed recently. A large level section at its center above the middle pavilion once had a belvedere that provided an additional way to ventilate the building. The belvedere was surrounded by a wood railing, or widow walk. The belvedere was removed about fifty years ago, and the flat-roofed area now has a membrane roof. There is a smaller flat-roofed area at the peak of the roof over the east wing of the building, the section of the building built as a stable. About half of the flat-roofed section in that location is covered by a piece of mechanical equipment. The roofs drain into built-in box gutters that are part of the building's cornice. Rain leaders at or near the four corners of the center pavilion empty directly onto the roofs of the lower pavilions almost immediately over the downspouts that serve the lower gutters. The rain leaders from the lower gutters lead directly down to the stone watertable where most of them empty onto grade with splash guards. In one or two instances, there is a boot for a connection to below-ground drainage, but in each of these cases, the rain leader merely discharges over the opening without connecting to it. The roof is penetrated in no fewer than 12 places by ventilation features of various kinds. This includes a brick chimney stack that appears to date from the original nineteenth century construction, one or two plumbing vents, and at least one large piece of mechanical equipment. It also includes four or five ventilation fans mounted to the roof surface. Additionally, a ventilation pipe taking combustion exhaust air away from the furnace passes through a pane of glass in a first story window, and there are other ventilation features in current or former first story door and window openings. The building is cooled in the summer by use of window air-conditioning units, one of which is permanently mounted in the transom area of an entrance door near the building's front.



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The walls are designed with a cut-stone exterior layer of granite and a random-laid rubble inner layer. It is not known for certain if there is a ventilation cavity between the two layers, but it appears to be a likely possibility. At the watertable at the base of the walls, ventilation openings were left in the stone in at least eight locations. Six of these openings have been filled with concrete and one has been covered with a solid ferrous metal plate, leaving only one of them open, to the left of the building's main entrance in the middle pavilion. Photographs taken into this cavity show that the openings in the middle pavilion provided ventilation beneath the wood joists that support the floor. The joists are only a few inches above grade, and the ventilation may have been felt necessary because of that condition. The first floor has vertical bead-board on most of the wall surfaces, and it is clear that air from the ventilation openings flowed behind the boards. While that may have been a benefit when the building was not heated, the current occupants have experienced draftiness at these edge areas and have installed baseboard in an effort to limit the air-flow directly into the building. It is less clear whether or not there is a cavity between the two layers of stone, as there is at the Lockwood-Mathews Mansion and possibly also at the Gate Lodge. However, if there is, the ventilation openings may have been intended to ventilate the stone as well, as a means to control condensation, changes in humidity, and similar factors. Only four of the ventilation openings were at the perimeter of the center pavilion. At least four others ventilated the perimeter of the original dirt floor of the stable pavilion. When it was used as a stable, the openings at the perimeter of this wing may have also served to reduce odors from the animals and drain liquids from animal waste, as well as water from the periodic cleaning of the animals and stalls. A current staff member at the printmaking facility has suggested that the ventilation openings may not have been needed since the building ceased to serve as a stable. While it may be true in part that they were there due to animal odors and refuse, ventilation of the walls may have also been intended when the building was constructed, or even if not intended, it may have served important purposes in that regard. At least four of the openings appear to have been closed-in with concrete as part of the installation of the interior concrete slab floor. With the slab in place, it may be difficult and also possibly pointless to reopening these openings. However, it is the conclusion of this study that the openings leading to the cavity under the wood floor should be kept open, or reopened as the case may be. To keep animals out, screen or grates should be installed a half inch to an inch behind the face plane of the watertable.

The stone sills and heads of several of the window openings in the stable wing contain remnants of ferrous metal bars (actually pipes) that were embedded in the stone when the building was used as a police facility and the stable area served as the jail. Rather than completely removing the pipes when the jail function was moved elsewhere, the bars were cut off flush with the stone and left in place. The metal will continue to rust and expand in these locations, eventually staining the surfaces of the building and possibly breaking the stone itself. Of the eight windows on the east wall of the stable wing, two have been closed-in with concrete block and one has been removed to use the opening for an exhaust fan. The remaining windows on that side of the building had gaps between the jambs and the stone wall, and the wood appeared to be in poor condition when the team visited in November. At the time, the project to paint the building was in progress. The jambs on six of the small windows were restored prior to painting. Several wood window sills were replaced here and in other buildings as part of the paint job because the wood was felt to be rotted to the degree that it could not be made suitable for painting without replacing the entire sill. The two filled-in windows remain as they were. A number of the

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window frames and the double doors in the second story (above the main doorway) still need to be restored, potentially by reconstructing them to match the original design.

The walls are granite, cut in ashlar blocks in the exterior layer of each wall, with light gray mortar. The visible exterior surfaces of the stone are uniformly in good condition. A small percentage of the mortar is tooled to form raised square ribbon joints. Some of the raised joints are heavily weathered, possibly an indication that they could be original or from an early re-pointing project. Others, by their less weathered appearance and deeper gray mortar color, appear to be more recent work. Beneath the ribbon joint, the mortar is of a lighter color, suggesting even the oldest raised joints may have been added over the original.

Each window opening has a stone lug sill (a sill extending into the wall to each side of the opening, as opposed to slip sills, which are only as wide as the opening), sometimes supported on paired consoles. The mortar (or a similar substance) that is found in the joint immediately beneath each sill appears to be from a different pointing campaign by its stark white color and unevenness. This joint was traditionally left open beneath lug sills to allow the sill more space in expansion and contraction cycles. Filling it can lead to the sill breaking; however, that has not happened in any visible locations, possibly because of the hardness of the granite and the size of the stone profiles.

The team did not observe many chronic moisture problems at the lower edge of the walls. However, the conditions are not ideal, and there are some problems. The building has driveway paving (asphalt) touching the south wall along all but a small portion of its length. Although it was designed to function as a carriage house, the driveway surface was probably gravel or at least a more porous material than modern asphalt when the building was built. An expanse of asphalt touching a building this way potentially traps moisture, and it can harbor pests such as termites who like the cool, moist environment. The problem with subterranean termites in such a configuration is not only that the movement of the insects into the building materials is easy, but that the telltale signs of termites (the mud tunnels they build against the walls leading from below ground to the nearest moist wood) will not be seen by those caring for the building. The situation should be watched carefully for any signs of accumulating moisture or any kind of pests.

On the west, north, and east sides of the building, there are more expanses of asphalt and other kinds of paving but they are well away from the walls of the building. However, the lawn area between the building and the asphalt on the west and north sides does not have positive drainage away from the building. This area should be re-graded so that most of the grade slopes away from the building. There is also a small area near the building's northwest corner where soil has been piled up over the building's watertable. This may have come about in an effort to hide an amorphous piece of concrete, about a cubic foot in size, that is attached to the watertable, possibly at one of the original ventilation openings. It would be better to remove the unsightly concrete and expose the watertable, and then create a slight rise in grade to a high point a short distance from the building, causing most of the water in this area to shed away from the building.

Small areas of biological growth and moss were also observed on the north side of the building. These occur in close proximity to rain leaders that empty onto grade. In at least one case on this side of the building, the rain leader discharges over a boot to a below-ground drainage system. The system should be checked and expanded to provide off-site drainage for all the rain leaders, and the leaders should all be connected directly into boots to the underground system. The

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underground drainage should lead to a low point away from the buildings on the grounds. It does not need to connect to a larger system leading off of the grounds.

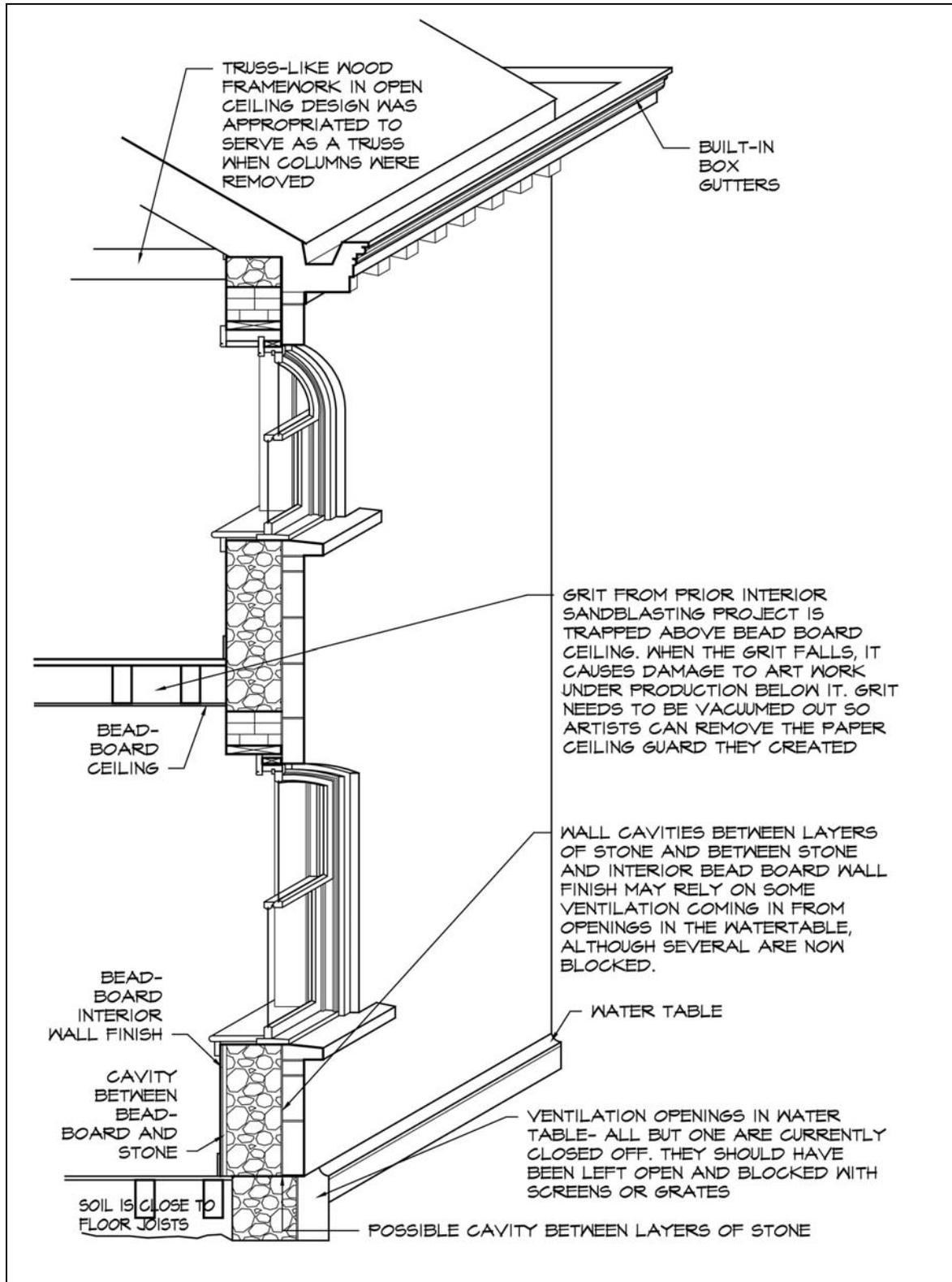
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Lockwood-Mathews Carriage House Outline Condition Assessment

Conditions

- Poor site drainage: Downspouts that previously drained into boots and an underground drainage system now drain to grade, but there has been little provision to get the rainwater away from the building foundation. Results include: biological growth, ponding water, and eroding soil at the foundation. Many downspouts drain directly to grade and drop water a foot above grade. Some others drain to two-foot-long concrete splash blocks. The downspout at the building's southwest corner directs water across the west entrance.
- Mismatched mortar and failing mortar joints: The granite masonry exhibits at least two campaigns of mortar with minor failing mortar joints overall.
- Rust staining on masonry from corroding equipment.
- Cracking at stucco: Stucco infill panels at main building walls and brick chimneys have cracking through the finish.
- Corrosion of embedded metal elements: Windows at the east end of the building had metal bars that have been cut flush with the masonry surface. Metal remains embedded in the masonry and will corrode and eventually cause damage to the masonry.
- Window deterioration: the small rectangular windows on the east side have been partially blocked up, boarded-over, or are failing overall. Five of the single pane wood windows will need to be rebuilt and repainted. There were large gaps between the wood trim and the masonry. (Subsequent to the conditions survey, these windows have been restored with mahogany jambs.)
- Water infiltration at doors: The second story fire escape door at the north elevation requires flashing or other measures to keep water from entering the building.
- Paint failure on wood trim: The wood cornice was in the process of being painted at the time of survey.

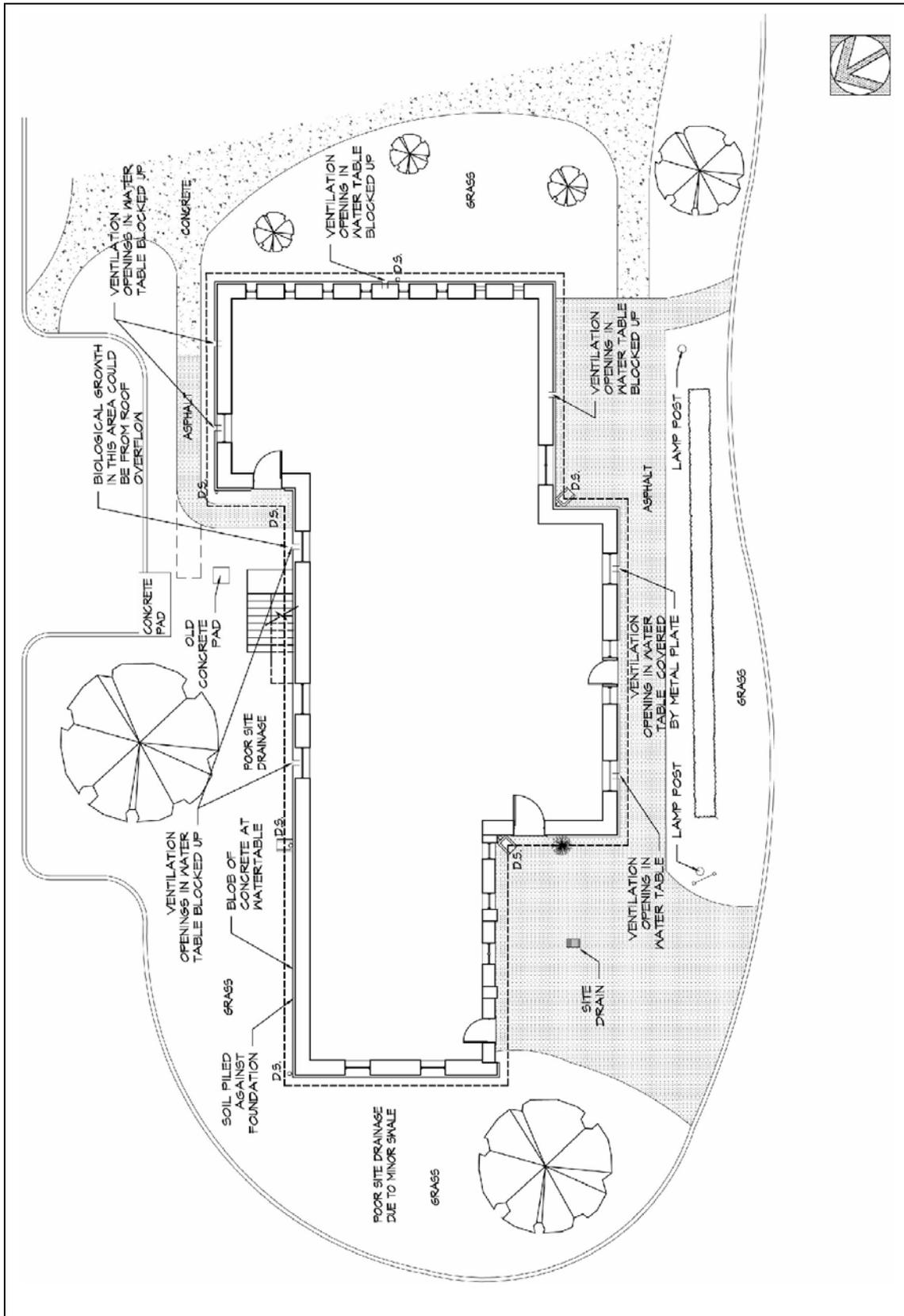
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Wall Drawing

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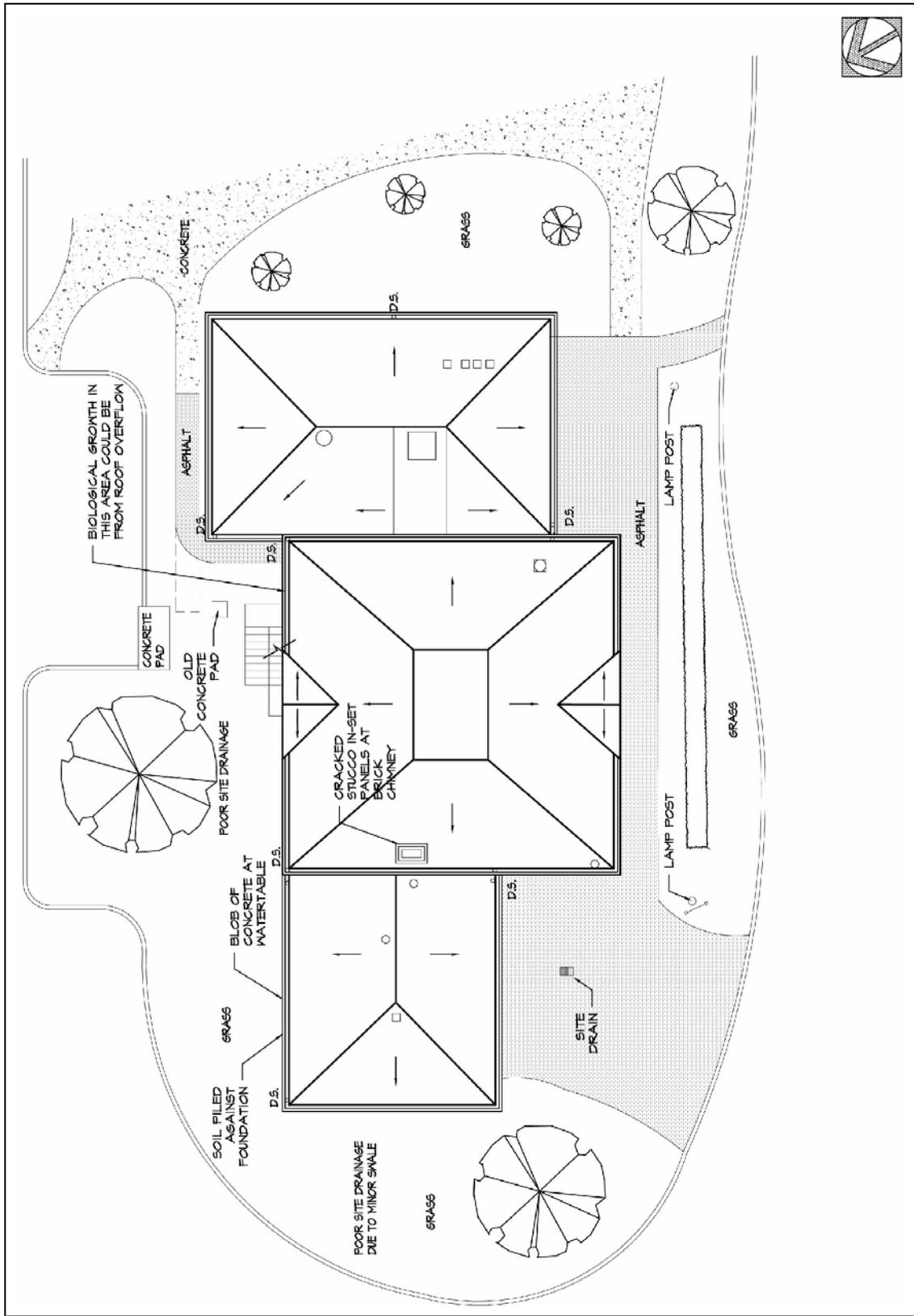


Technical Plan

Lockwood-Williams Carriage House

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Roof Plan

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Structural Engineer’s Report

Ed Meade and Gretchen Lear, Robert Silman Associates

It is our understanding that the Carriage House at Mathews Park originally had a large cupola or belvedere above the main roof (that no longer remains as part of the structure that is seen today). Restoring the belvedere to the roof of the Carriage House is one aspect of the preservation plan for this building. As such, RSA focused our observation of this building on the existing roof system to form a preliminary opinion on the appropriateness of reintroducing the cupola to the structure.

The roof structure of the Carriage House has been altered over the lifetime of the building. It is our understanding that, in the 1970’s, four interior wood columns were removed from the roof down to the first floor. The wood columns were later replaced, but only from the first floor up to the underside of the first floor ceiling. This was said to have been done “to support heavy printing presses” that were used in the attic space above. It appears that the columns installed at the first floor were installed in a green state and have since dried and have undergone some warping.

In altering the structure, it appears that the designers of the 1970’s modification attempted to create a “truss” using the existing framing and adding steel elements. Steel rods (both horizontal and vertical) were added to the existing wood framing, presumably to carry the tension loads entirely or reinforce the existing wood members that were in tension within the newly created “truss.”

Although the original framework of the roof structure may have resembled a truss configuration, RSA believes that the original roof framing was intended to be a post and beam structure with diagonals to provide stiffness to support the belvedere above. It appears that the present roof framing is a result of an attempt to convert the original structural system into a truss system. It is unknown if this “conversion” of the structural system was done under the design and supervision of a licensed professional engineer. If it was, it would be very helpful to the review of this work if any drawings and calculations could be found and copied for our use. Below is the plan of the Carriage House with the approximate location of the first floor interior columns indicated in red, as well as a photo of the “trusses” supporting the roof.

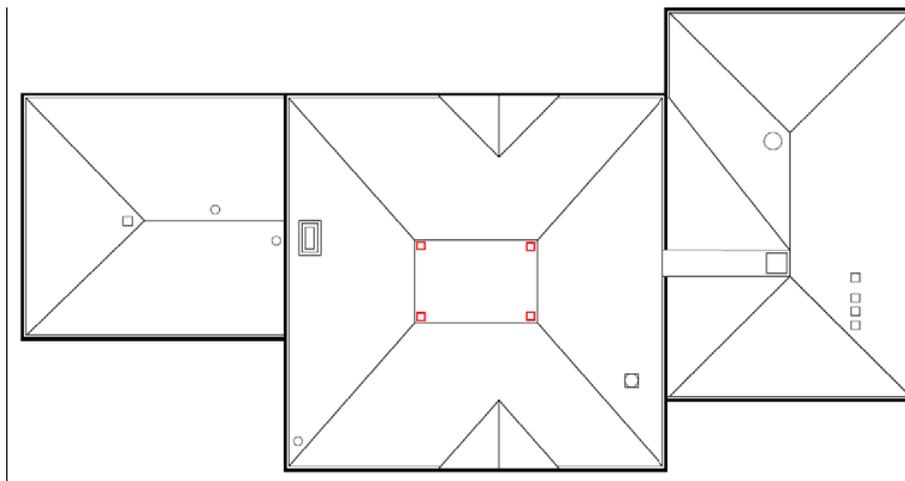


Figure 1: Carriage House Plan

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Picture 1: Partial view of Carriage House roof “truss”

There are a number of signs that indicate to us that the roof structure of the Carriage House was not intended to perform as a truss system. Beyond the fact that originally there were columns that would not have been required if there was a truss system in place, it appears the bottom chord of the truss was not designed to be a tension member. The bottom chord (i.e., the bottom horizontal line or member of the truss) is not a continuous member, and it would be uncommon to find a discontinuous member designed as a tension member.

Observation of the framing also revealed open joints and twisting members in numerous locations within the “trusses.” The open joints and twisting of members that would be intended to act as compression members of the truss indicate to RSA that the truss is not behaving as it was intended to behave and not receiving the compression load it was meant to resist. Additionally, there are signs of distress in the nailers that were added to the wood members of the bottom chord, indicating they could be taking on load they were not designed for. It is unclear if the tension rods were added at the time of the column removals to create a truss from the existing roof members, or if they were added after the column removals to address movement and indications of structural problems. In either case the addition of the tension rods has not created a truss system that is behaving as the truss would be expected to. There continue to be open joints and twisting or out of plan movement of members and signs of distress in members such as cracking.

These issues with the roof framing system present themselves without the presence of the belvedere load, in and of itself, or the additional wind load the structure will see with the cupola added. Before considering the additional loading associated with the cupola addition, we would recommend further study to see how the current system is performing and determine its structural capacity. The study would include measurements of the existing structural members and their spatial relationship to one another followed by a structural analysis of the roof system under various loading conditions. This will give us a baseline on the structural capacity of the current system and allow for us to explore options for supporting the cupola structure. It is possible that some elements of the current roof system may be overstressed or at least poorly performing. We recommend that a structural analysis of the roof framing be undertaken as soon as possible to help determine what the state of stress is in these members.

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Mechanical/Electrical/Plumbing/Fire Protection Engineer's Report

Ernest Conrad, Landmark Facilities Group

Description

The Carriage House is a two-story masonry structure. Its original use was a carriage house for horses and carriages with a second floor hay loft. The center portion of the building has a wood floor over a low air space, and the wings have a poured concrete floor where there was originally a dirt floor under the animal stalls and carriages. The wood-floored section is ventilated at the masonry water table, and identical openings in the water table at the stable perimeter apparently served as drainage openings in the original construction. The openings in the stable wing were filled with concrete when the floor was poured. Three of the four openings ventilating the wood floor have been closed-in, one with a steel plate on the south elevation and the other two, on the north elevation, with concrete. The remaining opening in the south elevation may be letting animals into the crawl space; the occupants have also complained of drafts on the south side of the building in this perimeter area and have recently added a baseboard to the bottom of the interior beadboard wall to address the problem. The building is presently used as print-making facility on all floors.

Thermal Characteristics

The perimeter walls of Carriage House are a heavy masonry construction. Their interior side is unfinished at the second floor level and sided with beadboard on the first floor. The presence of insulation is unknown. The windows are all single-glazed. The building is reported to be poorly weather sealed.

MEP/F Systems

Mechanical

The building is heated by hot water radiators connected to an aging hot water boiler. The boiler is a gas-fired Utica Boiler with an output of 288,000 BTU/hr. The entire building is one single thermostatic zone. Both the boiler and its piping distribution system appear to be at its useful life limit. It should be scheduled for replacement.

The building has no centralized air-conditioning; however, window air-conditioning units are used throughout the building.

Unlike the Gardner's Cottage, the Carriage House has no central means of exhaust ventilation for the various chemicals used in the print-making process. However, there are small local exhaust fans in three rooms, venting through the roof surface. They only ventilate small, attic-like rooms in the second story in these locations. There is no exhaust ventilation for the large, second story studio room where classes are taught. There are also ventilating fans in some of the first story windows, including one in the northeast corner of the first story, serving a large area where they use chemicals in the former stable area.

Electrical

The building has a modern, 200-Ampere, single-phase electric service. Power is distributed throughout the building by a 40-circuit breaker panel which has about 50% spare circuits. All

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distribution wiring is in modern commercial grade conduit. This service is ample for the building's present use.

Plumbing

The building contains a municipal domestic water service and a municipal sanitary sewer connection. The domestic water size is 1-inch copper, and the sanitary waste line is 4-inch.

There is an instantaneous electric hot water heater located in the boiler room that produces domestic hot water for the occupants' needs.

Life Safety

The building has a hard-wired combination security and fire alarm system. It contains smoke detectors throughout which are connected to a remote supervisory service. There are also hand-held fire extinguishers strategically placed throughout the building.

Improvement Needs

The present mechanical systems are aging and inefficient. It is recommended that the boiler and radiator system be scheduled for an upgrade to a centralized form of efficient heating and air-conditioning through a ducted forced-air approach which is zoned for each room.

The various rooms used for print-making processes should have an improved exhaust ventilation system.

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Lockwood-Mathews Carriage House Recommendations

Recommendations

Immediately

- Open the ground-level vents in the middle section and secure the openings with metal grills.

Within the next 5 years:

- Assess the site adjacent to the Carriage House during and immediately after a rain.
- Install downspout extenders to direct water away from the building foundation, and reattach the rain leaders into boots leading to below-grade drainage where they are present.
- Install or improve site drains to drain water on hard site surfaces.
- Re-point the masonry in areas where the mortar is missing or visually uneven. Before pointing, analyze the original pointing mortar in order to characterize the original binder and sand and guide replication mortar selection. Produce site mockups to refine the final mortar mix. Consider removing some of more-recent mortar that does not match in order to restore the mortar design to a consistent design based on laboratory evidence of whichever mortar appears to be original.
- Remove corroding metal elements (smaller items attached to masonry surfaces, as opposed to the metal bars embedded in the stone sills and window heads that are discussed under “long term” below).
- Restore single-pane wood windows in the east elevation.
- Consider installing interior storm windows to help reduce drafts.
- Introduce flashing or other measures to stop water infiltration at north second story fire escape door.

Long Term:

- Grind out the remnants of metal bars that are embedded in the stone in their entirety because corroding metal elements will expand and crack the masonry over time.

Other Issues:

- Remove (vacuum) sand/grit from former sandblasting job from cavity above bead-board ceiling because it is interfering with the print-making society’s activities.
- Reconstruction of belvedere will require complete analysis of existing upper story ceiling area truss work by a structural engineer and design of new truss work to support the belvedere.
- A complete ventilation system should be designed, removing the pipe that passes through glass, etc. Part of a new system could be incorporated into the design of the restored belvedere.
- The Historical Commission is interested in replacing the roof with slate. This should be done only in coordination with a plan for new ventilation systems, as the current roof is penetrated in many places by fans, plumbing vents, chimneys, and other ventilation features, and it should include structural analysis to assess issues relating to the weight of the slate.
- The present mechanical systems are aging and inefficient. It is recommended that the boiler and radiator system be scheduled for an upgrade to a centralized form of efficient heating and air-conditioning through a ducted forced-air approach which is zoned for each room.

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The Mathews-Era Gardener's Cottage

Building Profile/History/Current Use

The Mathews-Era Gardener's Cottage was built in the first quarter of the twentieth century, when bungalow-style frame houses were popular. A simple building, it is distinguished by its clipped gable roof form, its exposed rafter ends, canopies on knee-brace brackets over entrances, and wood shingled exterior walls. When it ceased to be a gardener's residence and laundry for the Lockwood-Mathews Mansion grounds, the building fell into disrepair. It was rescued by a group of citizens associated with the Center for Contemporary Printmaking who led the effort to have it rehabilitated around 2002. In its rebuilt form, it became an artist-in-residence facility for the Center for Contemporary Printmaking, and in this capacity, it serves as both studio space and temporary housing for artists selected by the Center.

The rehabilitation of the house was a restoration of exterior details and a practical adaptation of the interior. The front area within the original house and the entire "T" wing that extends to the west became a large, interconnected studio area. The wing was newly constructed at the time with a slab-on-grade floor, French doors at the front and rear of the addition flanked in both cases by additional windows, and an open ceiling. The design provides plenty of light and flexibility. The apartment space occupies the northeast portion of the building, the back area of the original frame house.

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Photographs documenting the rehabilitation show the poor condition of the house before work began. In rehabilitating the house, a decision was made not to install gutters because they had not been there historically. However, this decision combined with a few design flaws has led to deterioration of several newly restored and original details of this attractive and useful rehabilitation project.

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Mathews-era Gardener's Cottage Character-Defining Features

1	Building Form / Massing and Roof Type	<ul style="list-style-type: none"> • One-story clipped gable Bungalow form 	
2	Wall Material	<ul style="list-style-type: none"> • Stained wood shingles as siding 	
3	Roof Edge Details	<ul style="list-style-type: none"> • Exposed rafter-ends 	
4	Porch Detail	<ul style="list-style-type: none"> • Gabled hoods on knee-braces at historic entrances 	

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5	Window Details	<ul style="list-style-type: none"> 6/6 wood sash windows (covered with storm windows / screens) 	
6	Fenestration Pattern	<ul style="list-style-type: none"> Symmetrical arrangement of doors and windows 	
7	Basement Wall Detail	<ul style="list-style-type: none"> Rubble (stone) foundation 	
8	Landscape Details	<ul style="list-style-type: none"> Garden-like landscape around the house 	

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9	Hardscape Details	<ul style="list-style-type: none">• Ten-foot-tall original garden wall on two sides	
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Mathews-era Gardener's Cottage Systemic Analysis / Building Assembly Conditions

The Gardener's Cottage has major systemic problems. Most of the water from the roof drains directly onto hard pavement and splashes onto the wood-shingled walls of the house. The pavement is not sloped correctly to drain away from the house. Some of the wood framing is below the pavement that touches it, where the trapped water is likely to be causing the wood to rot. Some of the roof drainage falls on mechanical equipment and directly onto the basement entrance which, though sloped, is not designed to shed water. The building was very nicely rehabilitated several years ago, but now many of the restored exterior materials are damaged by wood rot and other problems to the extent that they need to be replaced.

In rehabilitating the building, the decision was made not to install gutters because they were not there in historic images of the house. This decision was logical in a way, but flawed due to two other considerations: the house needed to be restored because it had not held up well without gutters, and the rehabilitation project came with the installation of asphalt walkways that touch the house on three sides, a situation that demanded a better roof drainage system. The pavement is primarily encircling a new addition on the west side of the house. The addition was constructed on a slab-on-grade base. At the perimeter of the slab, about six inches of exposed concrete block separates the asphalt from the wood. There is the normal rule of thumb for separating wood walls from soils and pavement. The present conditions would have been adequate if the pavement had been sloped properly, if the garden wall were not so close, and if water from the roof had been carried away by gutters. However, on the north side of the addition, enough moisture was retained in the area around the back door that it led to wood rot in the exterior trim boards.

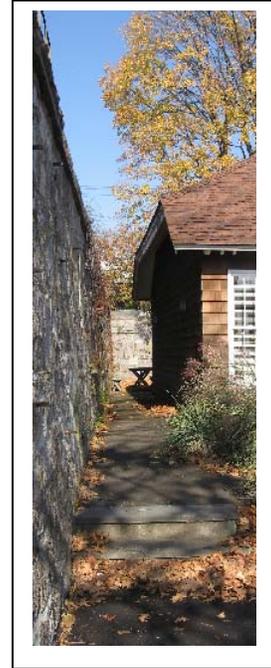
Of more serious concern, the wing meets the original house at a right angle near this doorway. Although the asphalt is spaced six inches below the wood portion of the new construction materials of the wing, the original house has a frame floor, and the asphalt extends to the corner, partially covering the wood sill plate of the floor framing. The contractor was apparently aware of the conflict, as a piece of metal flashing was placed over the wood before the asphalt was installed. Above the asphalt, when the exterior walls were shingled, wood shingles were installed over the flashing, so they originally touched, or nearly touched, the asphalt. Although they are treated wood, which is hard and resistant to moisture, the shingles in the bottom row became saturated, began to rot, and have begun to fall out.

The Gardener's Cottage has similar problems on all sides, although the worse problems are on the north side of the house at the asphalt edge



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of the patio. On the west side of the house, the asphalt walkway fills the space between the house and the neighboring stone garden wall, which is approximately ten feet tall. The garden wall was suffering from severely deteriorated pointing when the project (for preparing this report) began, and it appeared to be in danger of falling on the Gardener's Cottage. It has since been repaired and repointed. However, the constrained configuration of the asphalt, with the slab-on-grade construction to one side and the garden wall on the other, is likely to cause problems in the future because it leaves little room for the natural movement of materials in seasonal expansion and contraction, as well as normal settling. It is possible that the wall could become destabilized at a future date if the surrounding soils move causing the building, the walkway, or the wall to shift toward one another. On the south side of the building, the asphalt serves as an accessibility ramp. While this is a good thing, it also results in more hard surfaced materials at the edge of the building. The ramp encircles an open planting area that contains some shrubs in addition to tall ornamental grasses and flowers in the warmer seasons. As attractive as they are, the planting may be further retaining the moisture and keeping the building in the shade deterring natural evaporation from rain water.



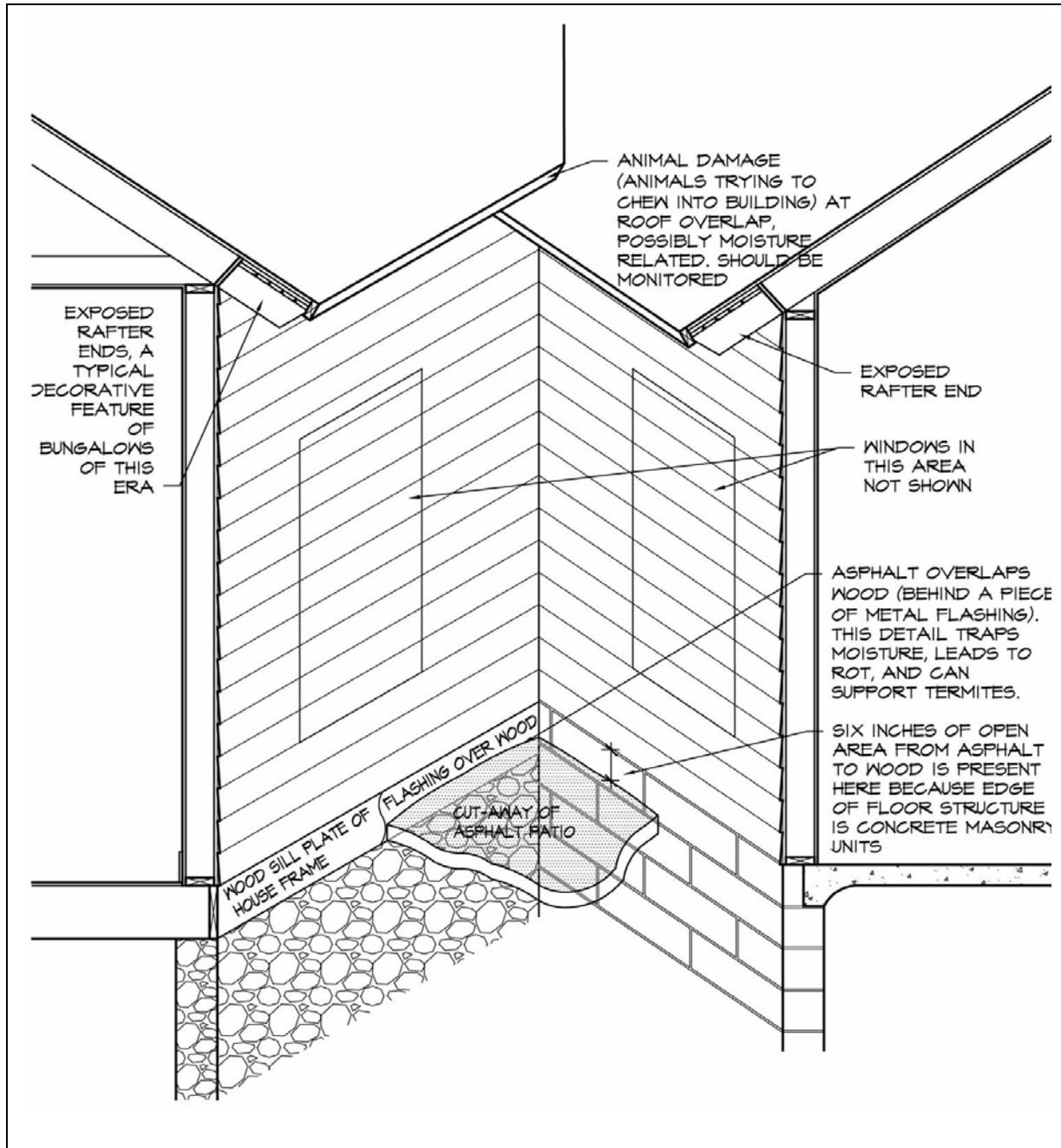
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Mathews-era Gardener's Cottage Outline Condition Assessment

Conditions

- Site drainage problems: The roof has no gutters and drains directly to grade, which is problematic given the constrained site and the amount of hard surface touching the building. At the east, the roof drains directly onto HVAC equipment. At the west addition, the roof drains directly onto asphalt that has no provision for site drainage, causing biological growth at the building foundation. At the rear (north) elevation of the original building, water falling from the roof has eroded soil at the foundation.
- The asphalt patio at the back of the addition is covering the edge of the wood sill of the northwest corner of the original building. The error was caused by locating the asphalt with respect to the concrete-floored addition, where the wood starts about eight inches higher.
- Leaks in basement: There is a gap at the basement door at the main (south) façade.
- Wood rot: There is wood rot in several areas, typically in areas of recent repairs. There is rot at the front door sill under the threshold. This looks like a recent repair and indicates rapid deterioration. At the west addition, the base areas of the door jambs are rotted at both north and south doorways.
- Paint failure: Paint at the window trim is beginning to fail overall. At the west addition, the wood at the door sill and sidelights is badly weathered and is no longer protected by paint. On the east, the main door threshold has no paint. Wood trim at the roof eave and all wood doors have failing paint overall.
- Concrete and stone cracking: Metal handrails at the east entrance are corroding and cracking the slate treads. The cast-in-place concrete base has cracking at cold joint locations with efflorescence, indicating that water is moving through the steps.
- Lack of mortar: Granite wall to the west of the Gardener's Cottage has missing mortar overall. The wall needs to be repointed to assure stability.

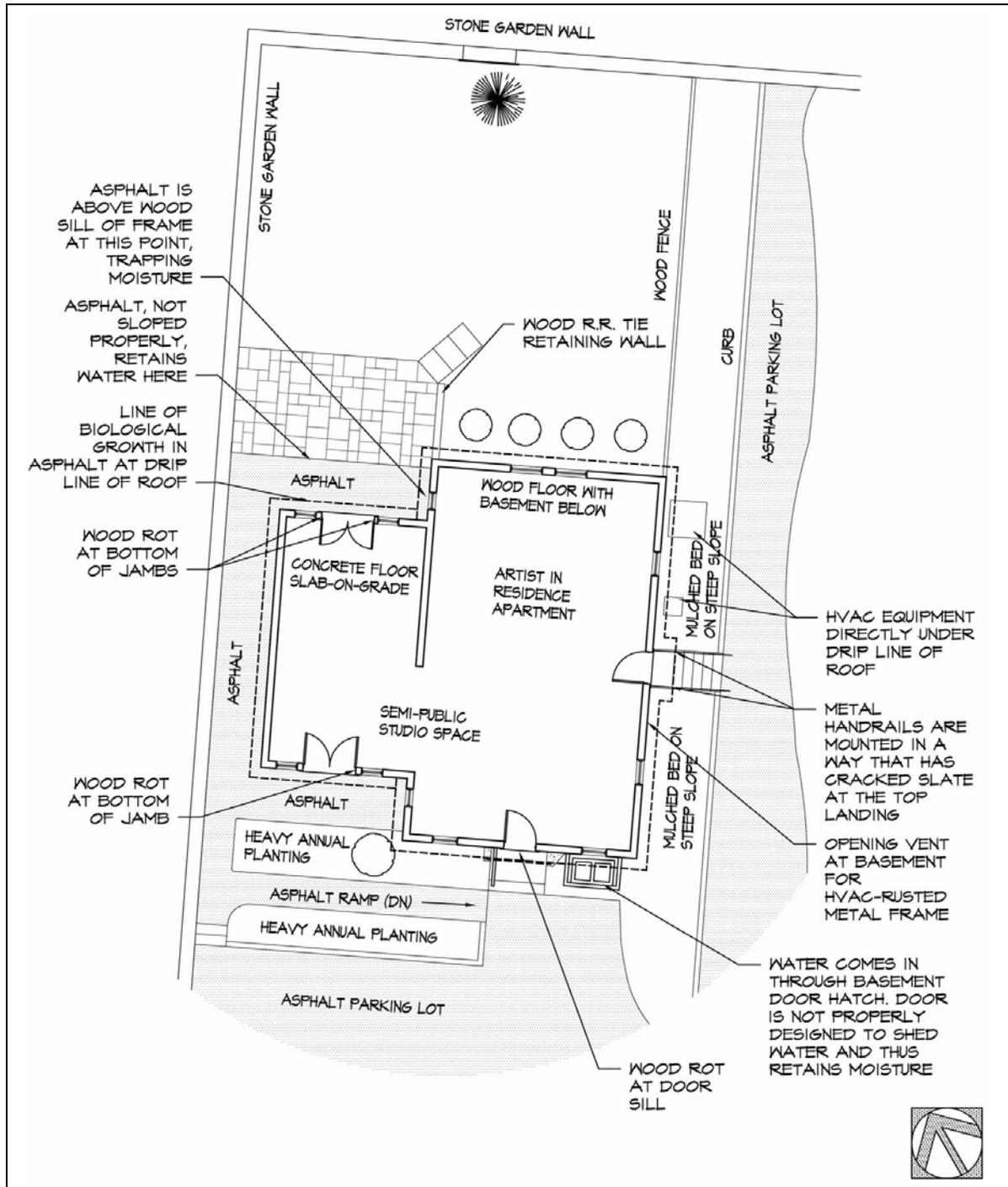
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Wall Drawing

Matthews-Era Gardener's Cottage
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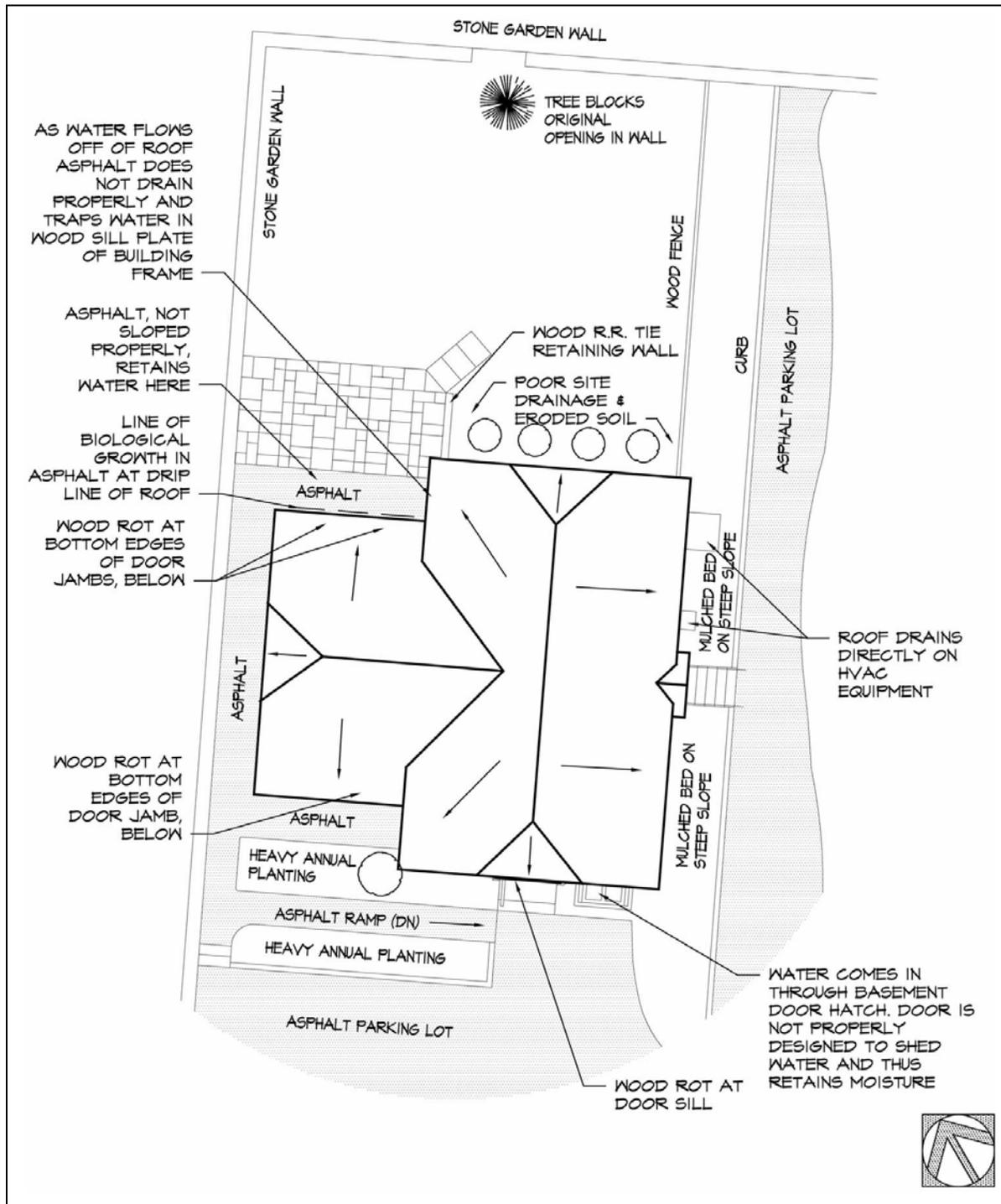
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Perimeter Plan

Matthews-Era Gardener's Cottage
John Milner Associates, Inc., June 2010

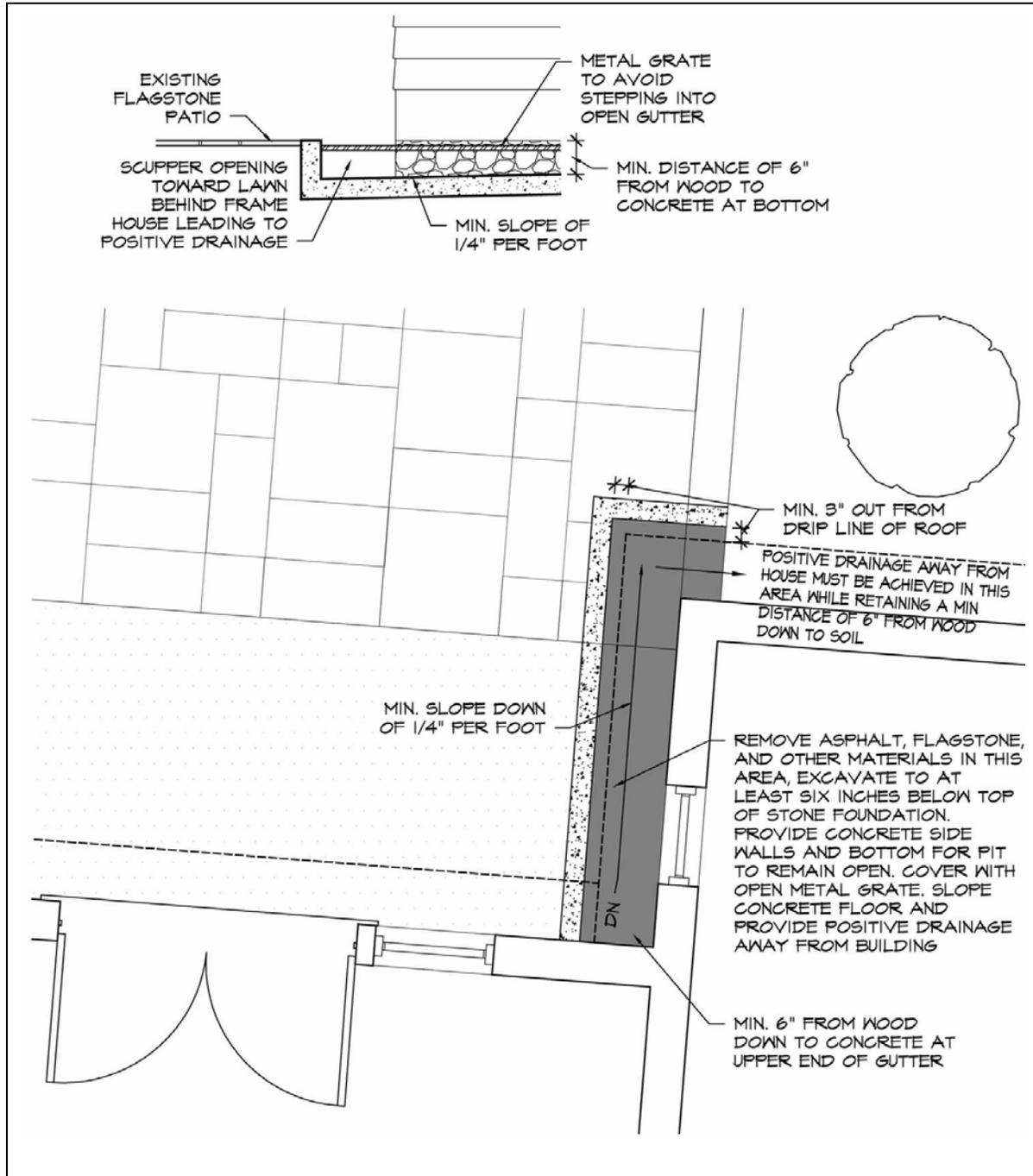
*Comprehensive Historic Preservation Plan for Nine Historic Buildings
Owned by the City of Norwalk, Connecticut*



Roof Plan

*Matthews-Era Gardener's Cottage
John Milner Associates, Inc., June 2010*

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Suggested Detail for Edge of Rear Patio

Matthews-Era Gardener's Cottage
 John Milner Associates, Inc., June 2010

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Structural Engineer's Report

Ed Meade and Gretchen Lear, Robert Silman Associates

The Gardener's Cottage was not on the list of buildings identified as needing structural observation; however, RSA did have a chance to walk the perimeter of the house as the architect and mechanical engineer discussed the building. As noted by the architect and observed by RSA, the grading of the house is very close to the sill, and in fact above the sill in some locations. This creates an opportunity for moisture damage, deterioration and insect infestation and should be corrected to maintain the building. It is possible that there is some perimeter deterioration of the wood elements that are immediately adjacent to the poorly draining soil. We recommend that the condition of these elements be investigated with one or two limited probes.

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Mechanical/Electrical/Plumbing/Fire Protection Engineer's Report

Ernest Conrad, Landmark Facilities Group

Description

The Gardner's Cottage is a small, wood-frame-construction, single story building presently used as an artist-in-residence facility. The building consists of a small apartment and a painting studio. The building has been recently completely renovated and structurally reinforced with engineered wood floor joists and Lally column shoring in the basement which is under one half the building. The printing studio is slab on grade.

Thermal Characteristics

The presence of insulation in the building envelope is uncertain; however the extensive recent structural restorations may have added insulation to part or all of the building. Evidence of fiberglass insulation could be seen in the basement and the first floor. The windows are single-glazed throughout. During a site visit on December 2, 2009, heavy condensation was observed on the room side of these windows. This excessive moisture is likely the result of having no gutters and rain leaders to carry roof runoff safely away from the building's exterior siding. The attic space was not accessible for inspections.

The basement is predominantly below grade. Its foundation walls are mortared field stone, and the flooring is concrete. Conditions in the basement were dry.

MEP/F Systems

Mechanical

There are two relatively new air handling systems installed in the building's basement. The studio portion of the building is provided heating and air conditioning by a Trane model XE90 gas-fired furnace with a dx cooling coil for summer cooling. The furnace is a pulse type which has high efficiency. This air handler also contains an electric humidifier. There is an air-cooled condensing unit for the dx cooling located outdoors adjacent to the building. We estimate its cooling capacity to be about 3 tons.

The apartment portion of the building is provided heating and air conditioning by an air to air heat pump system. It is a Johnson Controls model AHP36C3XH21A unit with air-cooled condenser for its dx cooling located outdoors adjacent to the building. Its cooling capacity is a nominal 3 tons.

Both air handler systems are controlled by a programmable thermostat. When inspected on December 2, 2009, the outdoor weather was 40°F and clear. The indoor temperature was in the low 50's °F and no air handlers were running.

The studio portion of the building also has an extensive ducted exhaust system for fumes control which also serves to assist drying of prints. No information was found relating to the system's design; however, it appears to be fairly new. It is operated manually.

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Electrical

The building has a modern 200 Ampere, single phase electric service. Its distribution panel is a relatively new 42 circuit panel. There are 5 spare circuit breaker positions in the panel. All the electrical branch wiring is Romex. It appears that the building has been completely rewired when it was recently restored.

Each occupied space has ample electrical receptacles for appliances. All are grounded.

Lighting throughout the building is a modern style for comfort needs. The studio has been provided good lighting for an artist's needs.

Plumbing

The building contains a municipal domestic water service and a municipal sanitary sewer connection. The domestic water size is one inch copper and the sanitary waste line is 4 inch PVC.

The Domestic hot water heater is a 40 gallon capacity electric unit in good serviceable condition. It is more than adequate capacity.

There is also a small sump pump in the basement. It appears to be in fair serviceable condition.

Life Safety

The building has a combination security and hard-wired fire alarm system. It contains smoke detectors throughout which are connected to a remote supervisory service. There are also hand-held fire extinguishers strategically placed throughout the studio.

Improvement Needs

The various utility systems serving the building are adequate for its present use and are in good working order.

A system of roof gutters and leaders which drain to remote dry wells is needed. Their absence at present is causing roof runoff to infiltrate through the building's exterior siding. As a result, much of the recent restoration work is showing accelerated deterioration. Wood trim near the ground is visibly rotting, and condensation damage is occurring at windows, doors, and likely other concealed perimeter surfaces.

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Mathews-era Gardener's Cottage Recommendations

Recommendations

Immediate

- Remove the current ornamental plantings in front of the cottage and replant the area with lower plants with smaller roots to retain less moisture and to allow for sunlight to keep the soils and adjoining materials (especially wood) dry.
- Consider removing asphalt from the immediate perimeter of the building and replacing it with short grass for drainage until major drainage work can be completed.
- Repair any rotted pieces or sections of wood trim and windows, and repaint
- Re-design top surface of basement door to shed water and pair gaps to prevent water infiltration into the building at this point.

Within the next 5 years:

- Review pros and cons of installing gutter system at Gardener's Cottage. Though the Cottage did not have gutters historically, the current built up site may require a re-evaluation to improve site drainage. Explore use of site drains to improve site drainage.
- Remove portion of asphalt pad at wood sill, replace it with a steel grate over a well that drains to the side and will allow water to drain and the wood to dry itself out. Consider replacing the entire asphalt pad on the north side to replace it with something angled correctly to drain away from the building, and preferably a surface that is penetrable.
- Check all wood in areas prone to moisture, probing exterior finish materials and structural members within the building near perimeter areas where moisture problems are noted in the report. Repair areas of rotting wood, using small sections where appropriate in any place where there is original wood. Where the wood is not original, replace entire pieces.
- Review design of steps and handrails at entrances. Provide appropriate detailing of handrails at junction with masonry foundation (remove the metal posts and insert sleeves between the railing and the concrete/stone before reassembly).
- Re-point the garden wall west and north of the cottage. First analyze the original pointing mortar in order to characterize the original binder and sand and guide replication mortar selection. Produce site mockups to refine the final mortar mix.

Ongoing maintenance

- Maintain paint at wood trim. Use good quality paint [MPI—Master Painting Institute, Premium Grade Paint] and proper preparation techniques.
- Maintain paint at metal handrails to prevent corrosion and damage to masonry foundations.
- Use rot-resistant wood types for exterior wood trim repairs.

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The Norwalk Town House

Building Profile/History/Current Use

The Town House was built in 1835, shortly before the community was first chartered as a borough. It replaced an existing meeting house, a frame building, which had been the second building built for this purpose on this site after the Town of Norwalk was incorporated in 1651. The frame buildings that predated the present Town House apparently served the larger land area known that comprised the town. In 1893, the borough was reorganized as the City of Norwalk. In 1913, it was reorganized again, and at that time, several governmental entities, including the City of Norwalk, the City of South Norwalk, and what remained outside their boundaries of the Town of Norwalk, merged. The municipal activities and meetings that had operated from the

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brick Town House were moved, as a consequence of these mergers, into newer municipal buildings. City functions were transferred at that time to the former City Hall built by the City of South Norwalk, about a mile southwest of Mill Hill. The Town House appears to have been recognized as a community landmark before it was taken over by the Colonial Green Daughters of the American Revolution (DAR) in the 1920s. Although the DAR occupied the building for many years, the Norwalk Historical Society came to share the space with them and eventually became the sole occupant.¹

The Town House is a good example of a modest-sized Greek Revival style civic building. Oriented with its gable toward the street which it overlooks from a steep embankment, it has a pedimented façade, an allusion to the architecture of Greek temples such as the temple at the Parthenon. In fact, it once had the pediment detail in both gable ends (ghosting of the bottom molding of the triangle can still be seen in the rear elevation). The windows are squarish in proportion and modest in size, typical of Greek Revival designs at the time. An early example of the Greek Revival, a movement which is regarded as having begun about 1835, the gable ends also have elliptical arches. This particular detail is typical of the first wave of Greek Revival buildings, a transitional carry-over from the Neo-Classical architecture of the late Federal era. Several aspects of the design make it seem a little overly controlled, such as the height of the windows, almost exactly one third the height of the building's side walls and centered accordingly. To achieve this, the brick walls continue upward about three feet above the ceiling of the meeting room, creating extra height in the attic, a space not currently accessed by stairs and not known to have been created for any practical purpose that would have warranted the added height of the walls. The building was designed to be used as a one-room meeting space. The symmetrical placement of two single-leaf front doors in the façade is another example. Though typical of small churches in this era, the dual doors keep the façade from having one central focal point. Like the placement of the windows and other symmetrical elements, they add to the "boxy" and static appearance of the building as a whole.

A drawing of the building appears in an early history of Norwalk. Although only a drawing, it provides a sense of the proportions and detailing of the belfry around the time that the building was constructed. In the 1880s or 1890s, the belfry was modified by adding a skirt-like layer of angled walls over the original base below the louvered openings. The added surfaces were finished with fish-scale wood shingles, a characteristic surface detail of the 1880s and 1890s. This modification could easily correspond with the reorganization of Norwalk as a City in 1893.

In the 1920s, after the DAR took the building over through a joint leasing agreement with the City, the rear wing was added to provide space for a small kitchen, bathrooms, and an office area. The addition matches the older construction in many ways, including brick that looks nearly identical, 6/6 windows with similar proportions, and an entrance placed in a symmetrical composition in the addition's east elevation. Details that differ are the use of concealed steel lintels instead of stone, a set of concrete monumental stairs that have an unusual design, and asymmetrically placed practical elements such as the stair well leading down to the basement mechanical room as well as the mechanical room's out-built chimney (both are placed off-center in the south gable end of the addition, the rear wall of the building).

The green area next to the Town House has contained a burial plot (cemetery) since at least the late 1700s. The Cemetery belonged to the First Congregational Church on the Green which was originally located at the southernmost tip of the larger Norwalk Green, across the street from the

¹ Information from the client (City of Norwalk) and the Norwalk Historical Society web site.

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Mill Hill Cemetery. In 1971, two frame buildings, the Governor Fitch Law Office and the Downtown District Schoolhouse, were rescued from the sweep of demolition caused by the building of I-95 and moved to the space south of the Town House, abutting the burial ground. They are treated separately in this report, below, as are two other buildings owned by the City, the Old Jail and the Smith Street Barn. The latter two buildings are part of the contiguous City real estate, but they lie at the bottom of a steep, wooded hillside (Mill Hill, named because the first millwright had his house on this hill) where they are barely visible from the hilltop buildings and are more closely associated with a short section of Smith Street, a partially closed street through a swath of industrial land along the river.

The lease arrangement between the DAR and Historical Society with the City was dissolved recently so that the Historical Society is now the only lessee of record for the Town House, the Governor Fitch Law Office, and the Downtown District Schoolhouse. The Town House serves as the offices of the Historical Society, and the Historical Society staff members who work in the building and lead the team of docents who greet visitors when they come to see the Society's exhibits and programs on days that the facility is open (primarily a couple of days a week during the summer months). The Society provides access to the Governor Fitch Law Office and the Downtown District Schoolhouse next door, both of which are otherwise kept locked.

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Norwalk Townhouse Character-Defining Features

1	Building Form / Massing and Roof Type	<ul style="list-style-type: none"> • Stark, gabled, single cube Greek Revival form 	
2	Rooftop Detail	<ul style="list-style-type: none"> • Cubic belfry with four spires and two round-arched louvered openings on each of the four sides; corner boards are detailed as Classical pilasters 	
3	Gable-End Detail	<ul style="list-style-type: none"> • Elliptical-arched attic window, with half-circle fanlight in larger elliptical sunburst panel in front and back gable ends 	

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4	Roof Edge Detail	<ul style="list-style-type: none"> • Bold wood frieze at eaves, pedimented on façade (front wall) only (rear wall pediment was altered, apparently by the 1920s) 	
5	Wall Details	Façade (front wall) brick is laid in Flemish bond (by contrast to the side and rear walls, which are laid in common bond)	
6	Façade Fenestration Pattern	<ul style="list-style-type: none"> • Symmetrical arrangement of doors and windows • Two symmetrically placed, narrow front doors, accessed by stone steps • Front doors have classical architraves with tall lintels and paneled reveals • Front doors have five horizontal panels each with no lights and the panels in the reveals match 	
7	Window Details and Side Elevation Fenestration Pattern	<ul style="list-style-type: none"> • 6/6 windows with equal brownstone lintels and lug sills (slightly lugged) • Windows centered, height-wise, in brick wall (brick continues as far above as below) • Paneled wood shutters 	
8	Commemorative Detail	<ul style="list-style-type: none"> • Datestone in façade gable end 	

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9	Historic Alteration Details	<ul style="list-style-type: none">• Later rear addition matches, with minor differences	
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Norwalk Town House Systemic Analysis / Building Assembly Conditions

The Town House has only a limited number of problems that are systemic in nature. The building is a simple brick assembly, built to contain one meeting room and no other spaces, although a modest-sized addition was added at the rear around 1920 to provide a space for restrooms, a small kitchen area, and an office for Historical Society staff. The original brick building was constructed on a stone base that places the bottom bricks and the interior floor a little over two feet above grade, an ideal situation to separate the upper walls from sources of ground moisture.

The building has a gable roof clad in asphalt shingles. At each side of the roof is a wood cornice which, from below, resembles a box gutter. The top surface of the cornice projects out on a nearly horizontal plane from the sloped surface of the roof. The team did not directly access the roof, but from the ground or the interior of the building, there is no evidence that this detail ever contained gutters or that it has or had any kind of a system of downspouts. Therefore, in addition to being a decorative feature, it serves as a drip edge directing water and snow away from the walls.

The Town House belfry is cubic in form. It is square in plan, and from the ground, it appears to be only slightly taller in the area between its two cornices than it is wide. This gives it a static and less-than-elegant appearance. Although it is clad in aluminum siding, the current appearance is close to the way it is shown in an illustration in the 1836 book *Connecticut Historical Collections* by John Warner Barber. The artist who drew the 1836 rendering represented the proportions of both the building as a whole and the tower as more slender than they actually are. Also, the 1836 view shows rectangular areas that may have been louvers in place of the current design of paired round-arched openings. The arches that are in the tower now are similar to what was there around 1900. However, at that time, the openings were much taller and the tops of arches nearly touched the upper cornice. The images of the building from around 1900 also show that it then had sloped sides from the roof up to the lower cornice, and the sloped, trapezoidal surfaces were clad at that time with fish-scale wood shingles (see historic images).

The structure of the building is very straightforward. The brick walls rest on the stone foundation walls. They are tied together by floor joists and by the ceiling joists that support the attic floor. Two rows of columns rise through the floors and support the attic framing. Above the attic floor, the walls and columns continue to rise about three more feet, and at that point, there are tie beams that connect the exterior brickwork to the columns. The columns continue up to a purlin that supports the rafters at mid-span.



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The brick walls of the Town House appear to have been cleaned about 25 years ago. The front wall is laid in Flemish bond, a dressy way to treat a façade that was used on the most important side of street-facing buildings in the early decades of the Greek Revival as a special detail and a sign of refinement. The side walls have cracks in several places that may indicate minor structural movement. When the addition was built to the rear, the new brick walls were tied in to the existing brick. The addition appears to have settled, causing a broken stone lintel in the south elevation at the building's original southeast corner, one of two original windows that adjoin the 1920 brick work. Another crack is visible in the southwest corner. It corresponds roughly with the broken grate in one of the ventilation openings.

The building was built over a crawl space. The space is ventilated at four points, and it is accessible from a small service opening in the masonry wall at the back of the mechanical room that occupies the basement of the addition. There is a ventilation opening beneath the first and last window in each side elevation, near the building's four corners. About 1960, the stone base of the building was parged with Portland-cement-based concrete. The foundation ventilation grates were apparently installed at the same time. The concrete material is very hard and has only a few cracks in it. The basement access grates were inserted into the very tightly defined openings left when the walls were parged. Because of its hardness, the concrete parging can move only monolithically, even with the slightest movement in the wall, and this may have caused the grate to break.

With the exception of four or five small shrubs, the building has no foundation plantings. A semi-circular expanse of concrete pavement lies in front of the building connecting the four stone steps that lead up to each of the two front doors to a longer set of steps that descends to the street in front. Apart from this and the small set of steps and walkway at the rear entrance, the building is surrounded by grass. Tall trees keep the building generally shaded. The lack of gutters and the shade from the trees apparently keep the building just moist enough to sustain the green biological growth that can be seen on the concrete parging at the side elevations.

While the original building has brownstone lintels, the addition has concealed lintels (bricks continuing over the openings without any apparent lintels because there steel I-beams behind and under the bricks are actually supporting them). The lintels have begun to develop rust. At both the right and left ends of the concealed lintel over the door, rust jacking, a masonry problem that can result from rust pushing the bricks apart, has begun to affect the integrity of the wall containing the entrance to the addition. Water and snow are kept from flowing directly onto the door and stoop at this location by a small lip of metal at the bottom of the roofing.

The shutters may not be original. They reportedly date from the 1920s when the Colonial Green chapter of the Daughters of the American Revolution took the building over and built the addition.² However, they are hung on traditional shutter hinges, and they resemble the shutters that can be seen in the shut position on the building when it was photographed during Norwalk's 250th anniversary celebration in 1901.

² It was the client's understanding that the current shutters may be replacements from the 1920s.

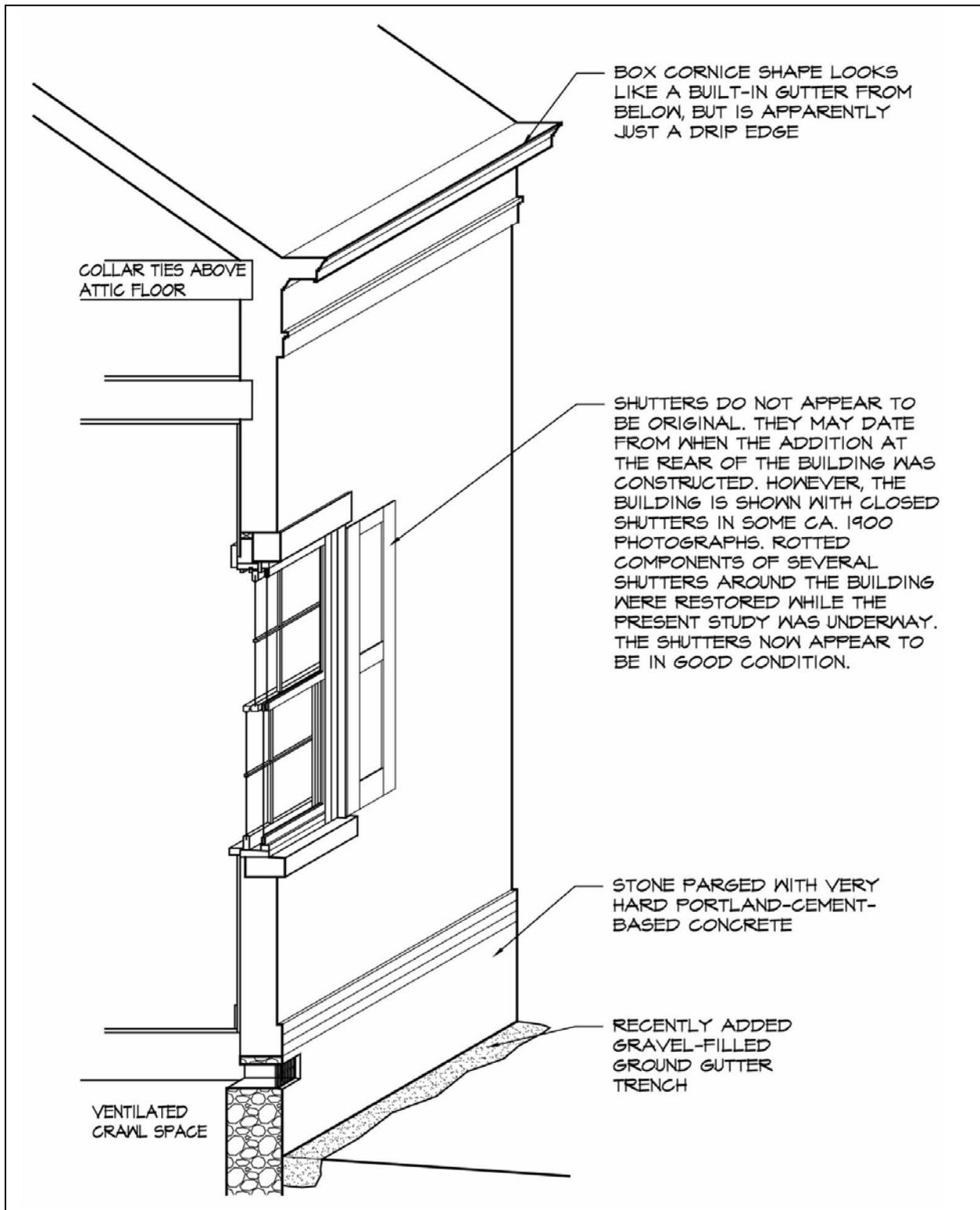
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Norwalk Town House Outline Condition Assessment

Conditions

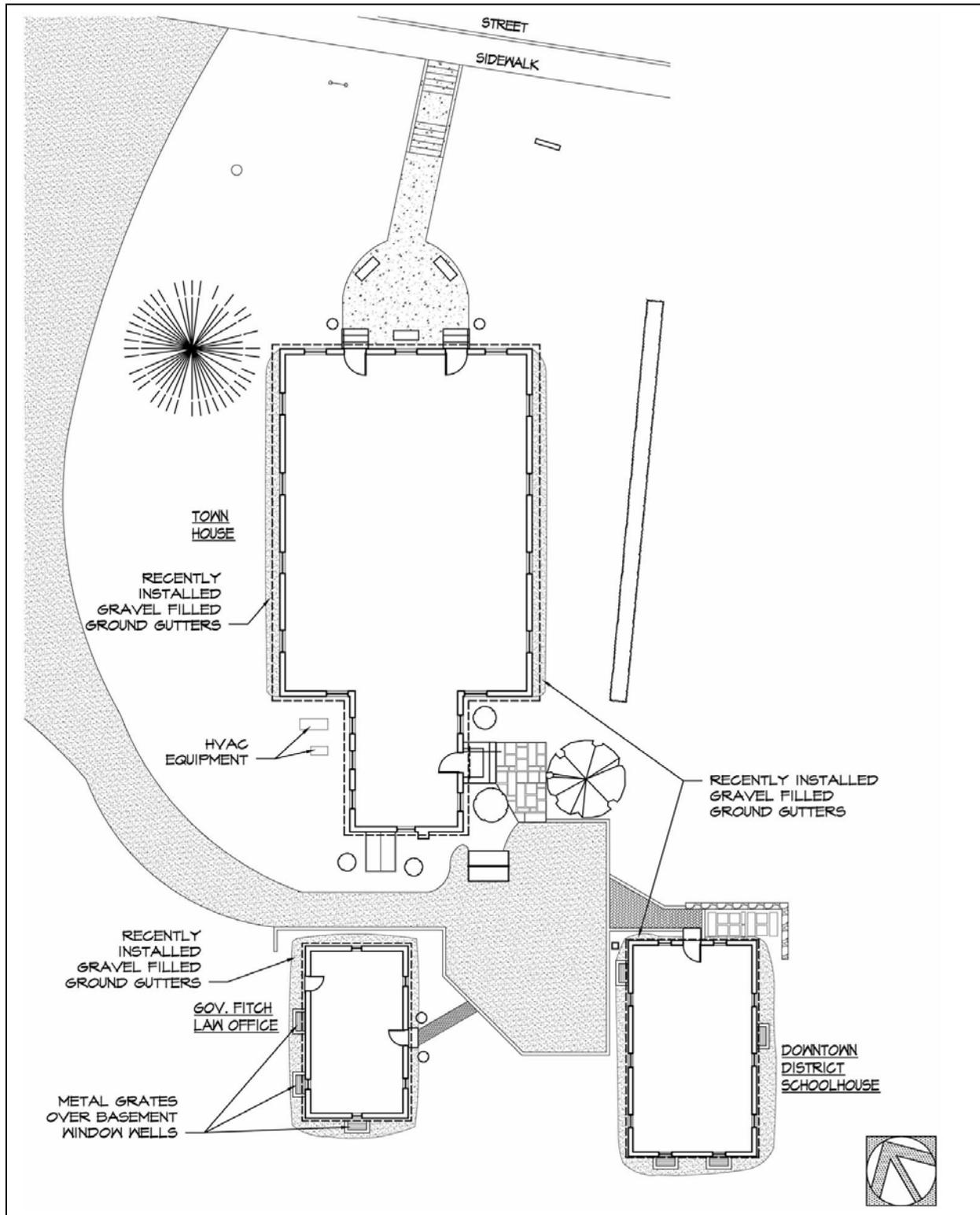
- Inadequate site drainage: Foundations at the east and west elevations have heavy biological growth at the foundation, indicating that the perimeter “drip strip” gravel aprons may not be sufficient to keep water away from the building foundation.
- Deterioration of sandstone: The sandstone trim exhibits some delamination and cracking, including one crack at a window lintel on the south façade.
- Loss of fire skin on bricks: The bricks appear to have been grit blasted in the past, causing the loss or deterioration of the protective fire skin.
- Cracking at walls: There is cracking through brick units at the east façade, northeast corner, and also at the west façade southwest corner. The crack at the southwest corner shows signs of movement in the surface materials.
- Mortar failure: Minor failure of pointing mortar at brick masonry.
- Stucco failure: The foundation stucco exhibits some cracking.
- Failed paint at wood: Paint is failing overall at wood elements on secondary elevations, especially at the cornice, and also at the north fanlight and door thresholds. The tower exhibits paint failure at the finials, which appear to be pressed metal with a painted (unlike the vinyl-clad design elements below them). The rear modern addition also has paint failure overall at the wood trim.
- Corrosion of louver vents: At least one louvered basement vent in the modern rear addition is corroding. At least one crawl space vent cover in the main part of the building is broken beyond repair.

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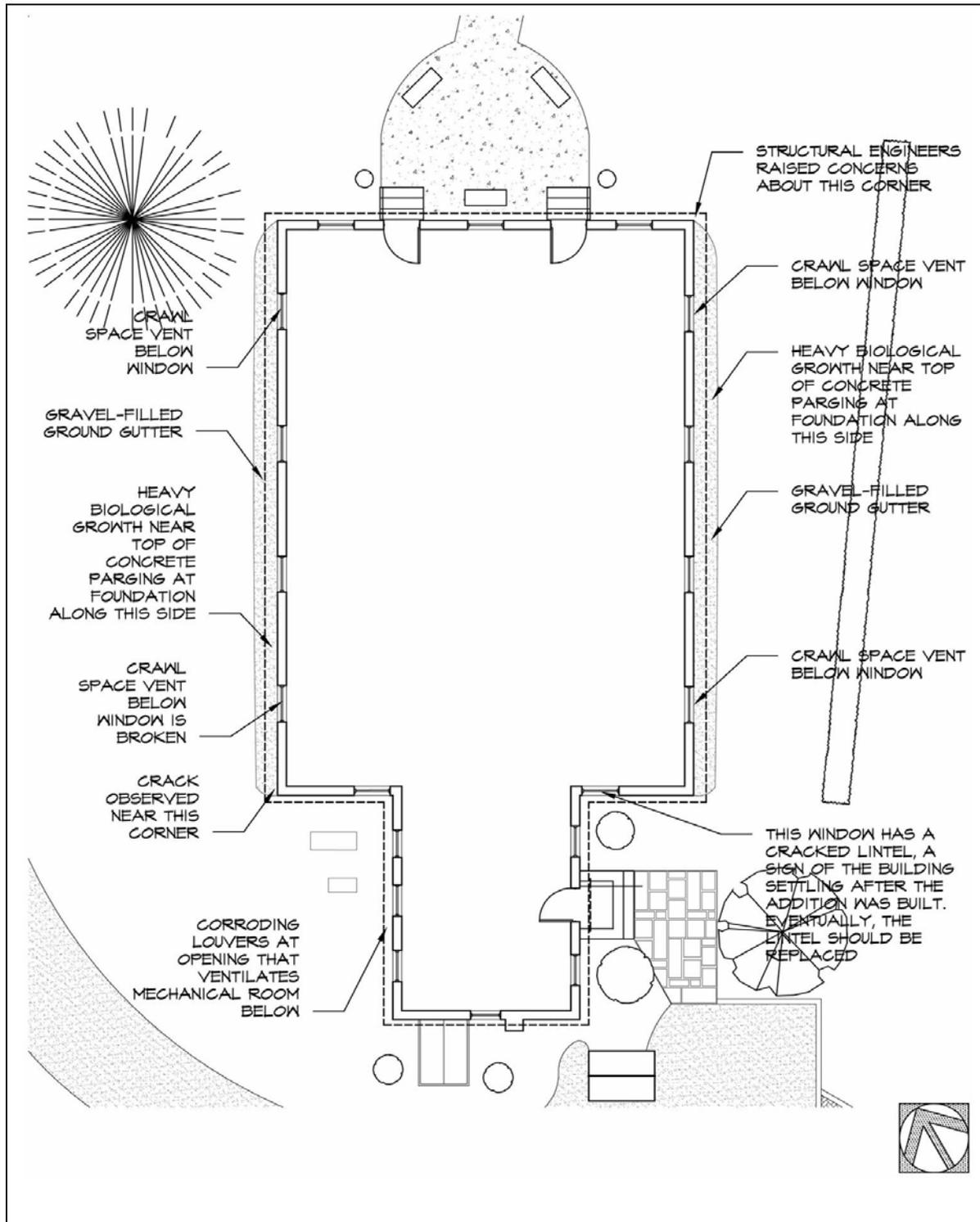
Wall Drawing

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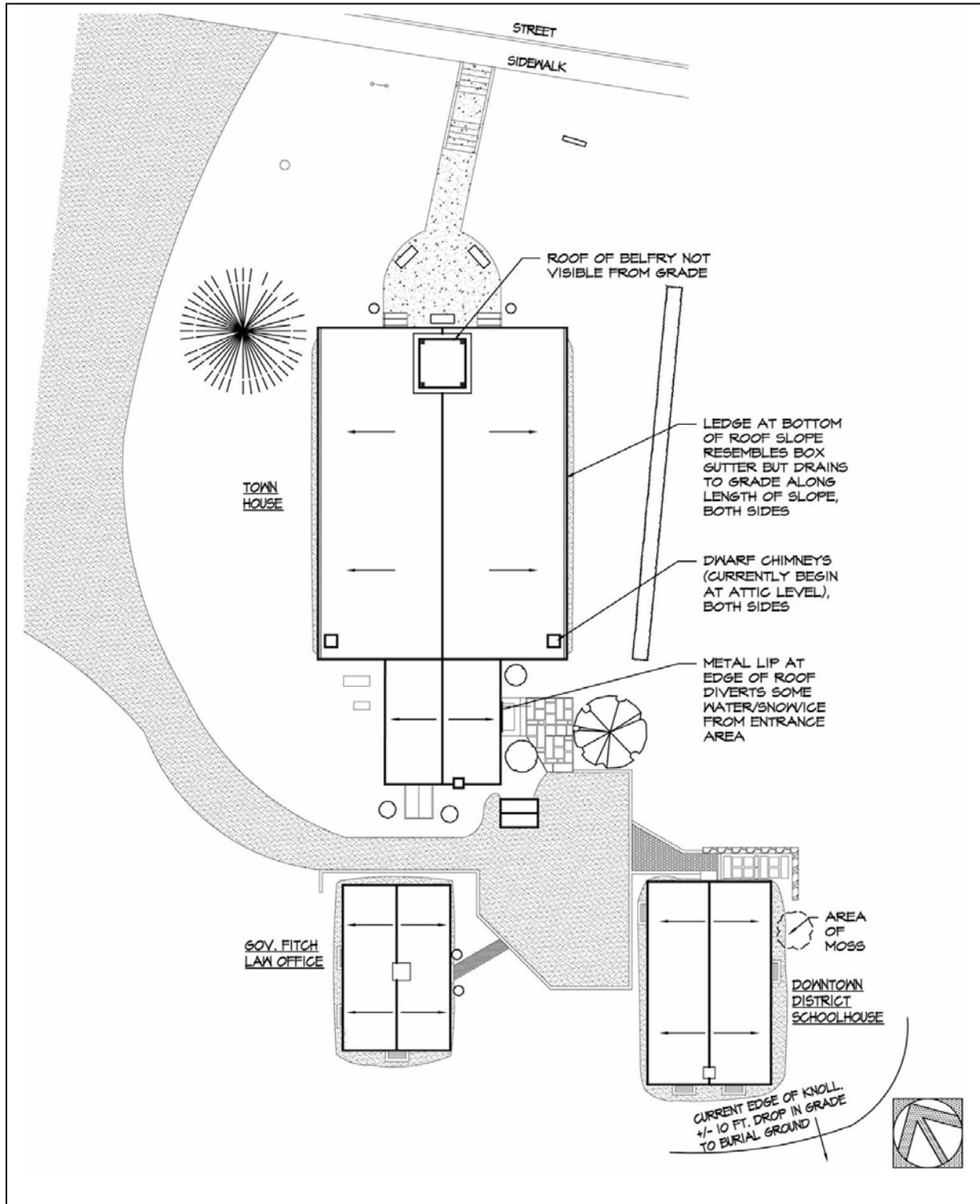
Perimeter Wall Plan / Site Plan for the Entire Mill Hill Complex

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Perimeter Plan

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Roof Plan

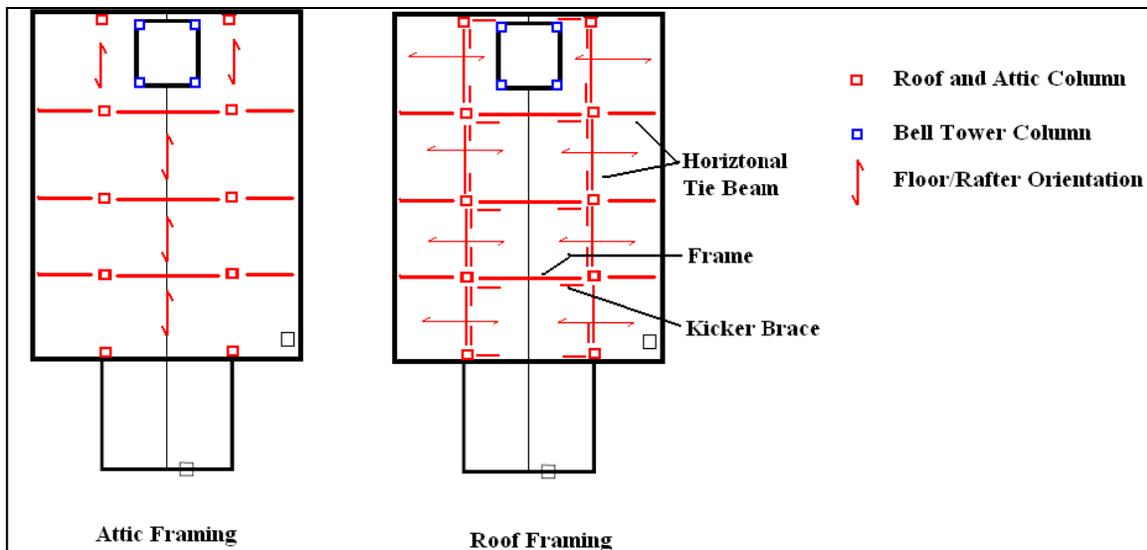
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Structural Engineer's Report

Ed Meade and Gretchen Lear, Robert Silman Associates

The 1830's-era Town House at Mill Hill was observed by RSA, focusing on the roof and attic framing. Alterations to the bell tower of the building changed its exterior profile at some point and there are questions on the feasibility of restoring the bell tower profile to its original form.

RSA viewed the attic space as well as the bell tower framing to gain a sense of how the existing structure is laid out and is supporting the roof and bell tower. The Town House has brick masonry bearing walls at the perimeter with six interior wood columns, plus two wood columns at each end of the building (plan diagram below). The columns extend from the first floor up into the attic space to participate in frames that support the roof. The frames are tied to the exterior masonry walls with horizontal wood beams that are mortised into the column at one end and the top plate at the top of the masonry wall at the other end (all within the attic). The frames are also tied to one another with horizontal beams running between columns from the front of the building to the back of the building. Kicker braces extend from each column in two directions, parallel to the length of the building between the column and the beams that tie the frames together, and perpendicular to the length of the building between the column and the horizontal member of the frame.



Town House Attic and Roof Framing

(Schematic; based on brief visual observations (not based on any probes or removal of architectural finishes); to be verified prior to any repairs.)

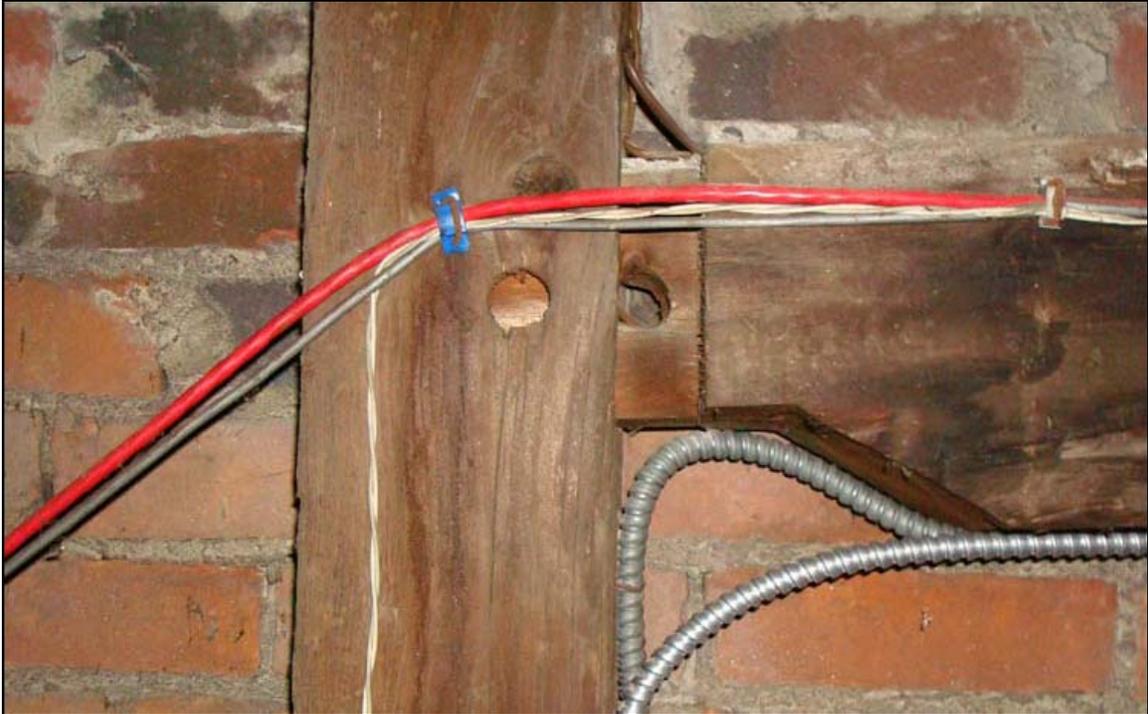
Four separate columns that bear on the attic floor framing support the bell tower and appear to extend to the top of the bell tower. Horizontal beams tie the bell tower columns together with diagonal members providing lateral support and stiffness. The bell tower has two separate platforms/floors below the roof framing. The bell is housed on the higher of the two platforms with the mechanics for the bell tower clock on the lower level.

The general condition of the roof framing appeared to be fair to good. The attic floor framing was below wood flooring and not visible to make an observation on its condition. There were some localized areas with water staining, most notably at the front of the building below the bell tower. Some deterioration was noted on framing members; however, lighting was poor and members should be given a second assessment under appropriate lighting conditions.

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At two locations in the northeast corner, where the horizontal tie beams from the column bears on the east perimeter wall, there is significant cracking in the masonry wall which radiates from the bearing point. The connections from the tie beams between the column and the perimeter wall at the northeast corner have displaced from their original mortise position in the column (see photograph, below). Cracks were also noted at the southwest corner of the building, at the foundation level as well as in the lintel of an adjacent window.

The cracking and joint movement prompts RSA to suspect possible movement in the eastern perimeter wall. We would suggest a plumb survey of the eastern wall to see if there is displacement along the length and height of the wall.



Joint displacement, tie beam to column connection

There was limited access to the top two highest levels of the bell tower (because of safety concerns on the existing ladder and platforms). We recommend that the platforms and ladder system be improved and repaired. This will make all future examinations and repairs easier to perform. Because of the presence of some visible water staining in the building we recommend that a future program of wood resistance drilling be implemented to check for hidden deterioration within the large timber members that frame the bell tower.

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Mechanical/Electrical/Plumbing/Fire Protection Engineer's Report

Ernest Conrad, Landmark Facilities Group

Description

The Town House, the centerpiece of the three-building complex at Mill Hill, is a one-story masonry structure with a partial basement. It has a large attic space with a clock tower and steeple. The building has been used by various user groups since it was first constructed at this site in the 1830s. It has always been a public meeting space, but since the 1920s, it has also contained office space and museum exhibits. The attic is largely inaccessible and not used except for long-term storage.

Thermal Characteristics

The building's perimeter envelope is comprised of three courses of brick finished on their interior by metal lath and plaster over an older original layer of direct-applied plaster. It is not insulated beyond the natural insulating value of the brick and plaster composition. All the windows have exterior storm sashes which help thermally. There appears to be blown in insulation under the attic floor boards. Beneath the wood flooring of the main room and part of the office area addition, the building has a crawl space with a dirt floor where the ducts for the building heating system are located.

MEP/F Systems

Mechanical

At present, the building has a gas-fired furnace that produces winter heating via ducts and floor grilles throughout the building. The furnace was manufactured by Thermo Pride Model L33-37-39. We estimate its installation date to have been about 1960-1970. Our inspection of the furnace found it to be in reasonably fair serviceable condition. We estimate its heating output to be about 400,000 BTU/hr, which is adequate for comfort heating.

Recently, two ductless dx air conditioning units were installed to provide summer air conditioning in the small office room and the large assembly space. Their installation is not considered in character with the building's historic appearance, however the installations are reversible and can be removed without damage in the future as other heating and air conditioning improvements are funded.

Electrical

The building has a modern electric service with 200 ampere capacity. There is a relatively new electrical distribution panel installed in the assembly room to provide all the power needs of the building. It is a 42-circuit panel with about 50% spare circuit breaker positions. The installation workmanship was left in an unfinished condition. Wiring is not properly concealed and patching is still needed. [Isn't there a new electrical panel in the office area?]

The branch wiring throughout the facility consists of a mix of conduit, Romex, and BX, all of which meet residential code. The installed power capacity is ample for the present use of the building.

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Plumbing

The plumbing is supplied by municipal domestic water and sanitary sewer service. The domestic water service is a 1-inch copper metered service and the sanitary discharge is 4-inch cast iron.

There is a relatively new (2003) electric domestic hot water heater in the basement mechanical room. It has a 40-gallon capacity.

The building has rest rooms that are too small. They are not sufficient to serve a large group when the building is used as a public space.

Life Safety

The building has a basic hard-wired fire alarm system which is monitored by a remote supervisory service. There are smoke detectors throughout and an audible horn strobe alarm system.

Hand held fire extinguishers are strategically placed throughout the building.

Improvement Needs

The mechanical systems and fixtures in this building need to be relocated or redesigned to be more in keeping with the building's historic design. The electrical panel exposed in the assembly area and the ductless air conditioners are not in keeping with the building's character and do not follow the guidance provided in the *Secretary of Interiors Standards*.

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Norwalk Town House Recommendations

Recommendations

Immediate:

- Paint wood trim where paint is failing, especially at the wood cornice.
- Restore / repair the bell tower platform and interior structure.

Within the next 5 years:

- Review effectiveness of “drip strip” gravel apron areas at building perimeter and roof drainage to ensure that the site is draining water properly away from the foundation.
- Review cracking at lintels and walls to identify any active structural movement.
- Consult on structural concerns, i.e. at two locations in the northeast corner, where the horizontal tie beams from the column bears on the east perimeter wall, there is significant cracking in the masonry wall which radiates from the bearing point. The connections from the tie beams between the column and the perimeter wall at the northeast corner have displaced, moved from their original mortise position in the column. Cracks were also noted at the southwest corner of the building, at the foundation level as well as in the lintel of an adjacent window.

Within the next 10 years:

- Assess the condition of the sandstone trim and install appropriate repairs.

Within the next 15 years:

- Analyze the original pointing mortar and stucco in order to characterize the original binder and sand and guide replication mortar and stucco selection. Produce site mockups to refine the final mortar and stucco mixes.

Ongoing maintenance:

- The bricks at the Town House appear to have been damaged by grit blasting at some point in the past. Monitor damaged bricks for signs of continuing/advanced deterioration.
- To reduce biological growth, bricks and parging can be washed gently with a detergent containing a biocide. Pressure washing is not recommended.

Other Issues:

- The Historical Commission is considering removing the siding and louvers from the belfry. Since there appears to have been more than one version of the design over time, the Commission is in need of input on which design to restore to. We believe that the flared design with fish-scale wood shingles was an add-on from the 1890s, over the older wood siding, and that the return to the original shape was the correct decision when the tower was previously restored. The structural engineers have looked at the framing of the bell tower and have made additional recommendations concerning it in their report.
- The Historical Commission is considering redesigning the rear addition to have an accessible entrance and an accessible restroom, path, etc. We believe this is a good strategy, but will require architectural design services to accomplish.
- The cornice-line design looks like a box cornice but isn't. Although it appears to be the original design, the cornice shape is not ideal for shedding water and may be leading to wood deterioration. The design should not be changed visually, but the areas that are hidden from view need to be checked and possibly need to be repaired or redesigned (such as to add

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angled flashing that is not visible from below). This will require architectural design services to accomplish.

- Basement ventilation grates in the main part of the building need to be repaired, replaced, or redesigned. It may be possible to retain the design of the cast grates (the smaller openings) if an intact one can be removed to be used as a pattern.
- The electrical systems should be upgraded, and the HVAC system should be replaced with equipment that is not visually intrusive and meets the *Secretary of Interiors Standards*.

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The Governor Fitch Law Office

Building Profile/History/Current Use

The Governor Fitch Law Office is a small, gabled frame building used exclusively as a museum. Tours are given by staff members and volunteers who are associated with and whose offices are housed in the Norwalk Historical Society's office space in the neighboring Town House building. The Law Office building is unlocked only when the Mill Hill Park site has visitors who are interested in seeing it.

The building depicts what the office of Thomas Fitch IV (c. 1700 – July 18, 1774), who was governor of the Connecticut Colony from 1754 to 1766, may have looked like in the 1740s and 50s. It also depicts a small town kitchen, a farm hand's or child's bedroom, and a stone cellar. This building was once part of the kitchen wing of the Fitch house but was reconstructed with the intention of representing a colonial law office. It was the portion of the Fitch house that survived the burning of Norwalk by the British on July 11, 1779. Originally located on East Avenue it was in the path of the Connecticut Turnpike, *Interstate* 95. Through community efforts it was saved in 1956 and stored until the funds were raised to move it to Mill Hill Park. The building was restored in 1971.

The interior of the Governor Fitch Law Office building consists of two first story rooms, a finished bedroom in half of the attic story, and a full basement. There is a large center chimney with a winding center stairway next to it accessing all floors. The rooms contain fireplaces and antique furnishings (or in some cases reproductions of antiques). Some of the furnishings are

*Governor Fitch Law Office
John Milner Associates, Inc., June 2010*

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valuable pieces that are contemporary with the 1740s or as late as the mid-nineteenth century. There is also profiled wood paneling in the law office, and the stairway features a number of interesting wood details, some of which may have been designed for the reconstruction. Public circulation occurs throughout the spaces, with no physical barrier between visitors and artifacts. The exhibit area includes the basement which has its own fireplaces. The unfinished half of the attic story contains mechanical systems and storage.

The building is a restoration / reconstruction from 1971. As explained above the framework did not really begin as Governor Fitch's 1740s law office, but rather was erected in the construction of a kitchen wing of the Fitch house. It reportedly was built or rebuilt after Norwalk was burned by the British in July 1779. The wing was relocated from the top of Earl's Hill on the east side of East Avenue as a result of the demolition of the house for the construction of Interstate 95. According to the Norwalk Historical Society's web site, The O'Brien Company was the prime contractor on the 1971 restoration working under the direction of John Gaydosh, Architect, of Norwalk.

The building was in storage at the south-bound parking lot of I-95 at the East Avenue exit (16) until the site was prepared for it on Mill Hill. The Downtown School House and the Fitch building were placed on flatbed trucks and moved to their present sites in 1971. The first and second floor framework and roof were largely preserved. The siding and other materials that were dismantled, and some other elements were redesigned at the time. Based on the photographic record, there is some evidence that the building was substantially redesigned as part of the reconstruction. For instance, the current building appears to have a smaller footprint than the wing of the Fitch house as well as a different roof line (as a result of removal of an added section), and the fenestration is different from the way it is shown in photographs taken prior to the move. An early brochure on the building (see Appendix) indicates that the fireplaces and other details were based on interior features from other eighteenth century Norwalk houses that had been studied and documented in the area (apparently because there was inadequate information about the details of Governor Fitch's property and the building had gone through many changes overtime).

In reconstructing this facsimile of Governor Fitch's Law Office, new materials were introduced into the design replicating historic details and providing for some modern amenities such as heating, wiring, and lighting. Although photographs and other evidence dating from the time of the move indicate that an effort was made to reconstruct the plaster walls, the masonry foundation walls and chimney, and the wood exterior using traditional materials and methods, they also show that modern materials were also used in a number of hidden locations.

As indicated in the pages that follow, the building is currently suffering from excessive moisture that comes from a combination of roof problems, foundation problems, and the density of the landscape (trees) immediately surrounding the building. The roof is in need of replacement. The building is also at risk because the moisture remediation program that relies on the use of dehumidifiers is difficult to maintain. Other problems are minor in comparison or are symptomatic of the larger systemic problems caused by water infiltration. The results of the moisture problems have led to a strong odor of mildew periodically inside the house, especially after heavy rains. Moisture and mold have already permanently affected some of the collections. A wooden barrel in the basement, for instance, has a noticeable mold stain and is falling apart. Modifications that were made using epoxies to repair water-damaged structural members without addressing the source of the moisture may have unintentionally contributed to further advancement of moisture damage.

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When the frame was placed on the stone foundation at this site, the soil around the building was back-filled to an elevation too close to the bottom edge of the building's wood details, a situation that also occurred at the neighboring Downtown District Schoolhouse for slightly different reasons. As a result of this circumstance, moisture has wicked up into the lower members causing the wood exterior baseboard to rot. Sections of the exterior baseboard over the sill plate were recently replaced with a synthetic product that resembles wood. The moisture damage extended into the house at the threshold of the front door, resulting in deterioration of the wood in the joists that support the flooring at the entry way. To address earlier moisture damage and repair the structural members, an epoxy consolidant was used on some of the support members in the basement. Since the source of the moisture problems was not addressed correctly at that time, additional damage is believed to have occurred in the adjoining wood fibers of these joists, a common problem that can arise from the use of consolidants and epoxy type repairs because the consolidants trap moisture in the remaining wood.

Contour maps prepared before and after the move indicate that, although the older grade level may be closer to the bottom of the foundation (i.e., approximately the floor level in the basement) than to the current grade, at least half of the soil currently surrounding the building near the top of the foundation is fill. In other words, the ground could be lowered without disturbing long-term natural topographic features or any archeological resources. A "drip strip" gravel apron was recently installed at the edges of this building, at the same time that similar "drip strip" gravel aprons were installed surrounding the Schoolhouse and the Town House. The purpose of these apron-like bands of gravel was to stop the splash back onto the buildings of water dropping from the eaves and to keep grasses and other plant material from collecting and holding moisture near the lower wood frame components of the buildings. Although they resemble ground gutters or French drains, the aprons were installed on grade. The grade was not lowered or angled to provide a way for the sites to drain away from the walls.

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Governor Fitch Law Office Character-Defining Features

1	<p>Building Form / Massing and Roof Type</p>	<ul style="list-style-type: none"> • Simple, symmetrical gabled mass with elegant proportions • 1 ½ story with large central chimney 	
2	<p>Window Details</p>	<ul style="list-style-type: none"> • Tall 9/6 single hung windows (i.e., only the lower sash moves) • Attic windows are 4/4 	

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3	Door Detail	<ul style="list-style-type: none"> • Nearly centered board door with eighteenth century hardware and narrow, five-pane transom above it (second door near corner of opposing elevation is similar) • Actual current front door is a 2009 replication of the original board door design (replacing a modern composite door). 	
4	Chimney Detail	<ul style="list-style-type: none"> • Stone chimney stack, large in plan dimensions, set off-center (reconstruction; also, the cap, which was installed to keep animals out of the chimney and to keep the chimney from smoking when cooking demonstrations were running in the fireplace, is a modern design element. 	
5	Wall Material Details	<ul style="list-style-type: none"> • Wood lap siding with beaded edge and beaded corner-boards • Exterior baseboard • Rear wall has wider siding boards which are beaded • Lapped wood siding (clapboard) with rosehead nails 	 

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6	Roof Edge Detail	<ul style="list-style-type: none">• Wood shingle roofing and subtle overhang at eaves	
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Governor Fitch Law Office Systemic Analysis / Building Assembly Conditions

The Governor Fitch Law Office suffers from a combination of problems that are due to moisture and are systemic in nature. The building is a simple rectangular house with beaded lap siding and a gable roof with wood shingle roofing. It contains two first story rooms with a fireplace, entranceway, and staircase at the center. Above is a half-story, or attic space, divided by the chimney and stair into two spaces, with the area north of the chimney finished as a bedroom.

The Governor Fitch Law Office roof does not have gutters. Water is directed off of the roof and slightly away from the walls by a wood cornice that projects out about eight inches from the face of the two longer walls. The lowest row of shingles hangs out slightly over the edge of the cornice. By contrast, the roof has almost no overhang at the gable ends. Rainwater drains directly from the edge of the roof to grade. Throughout most of the footprint of this building the grade was much lower before the building was relocated to this site, and after the frame building was reconstructed on the newly built foundation, the grade was raised with fill until it was within a few inches of the sill members of the wood frame. Ever since the building was relocated, the wood has been too close to the ground, although the grade has probably risen even higher with the accumulation of organic matter over time.

When the exterior distance between grade and the bottom wood members of a frame building is less than six inches, the accumulation of moisture can result in disastrous damage to the wood. This is especially true when there is no gutter system. Water can both splash onto the wood and migrate into the wood from below. If the moisture content rises above 20% for any length of time, it is likely to become host to decay fungi. Once that has happened, the wood rots and the structural members can no longer be considered reliable. Moist and rotted wood in close proximity to the ground is also inviting to subterranean termites and other pests.

Several years ago, the sill plate and some parts of adjoining joists were found to be deteriorated from wood rot at the Governor Fitch Law Office building in the area around the building's main entrance. A chemical consolidant process was used to restore the structural capacity of the damaged wood joists. This was a good solution at the time, as the consolidants make the wood hard and restore some of its structural capacities. However, use of consolidants in situations where the source of the moisture is not stopped is likely to lead to more rotting. In its natural state, wood like most organic building materials overcomes episodes of moisture by allowing the water to migrate through the material at approximately the same rate that the water is evaporating and the material is returning to its dry state. A chemical change in the material stops the migration at the edge of the repair, creating the possibility that the damage will advance into the parts of the original material that were not damaged before the repair. Therefore, it is critical



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that the sources of moisture be stopped. Ideally, the material would be returned as much as possible to its original state, so the material would dry out naturally during normal rain events and seasonal cycles of humidity and precipitation. Because the consolidants are in place, and because they are not reversible without replacing the wood, the wood needs to be monitored regularly to ensure that the moisture content remains below 20%. This needs to be after the sources of chronic exposure to water have been completely eliminated.

The installation of a band of synthetic material as a replacement baseboard on the sections of the building is another step that was taken to address the rot. This solution works in terms of the piece of the baseboard itself, as the new material will not hold water and will not rot. However, it doesn't solve the systemic problems that may be in adjoining materials. The material behind the baseboard is a wood sill (a band of horizontal wood members) that holds the entire building together. If the sill continues to be moist, it will now be less likely that anyone will see the problem until it is too late. It is also possible that the new synthetic material will conduct water by condensation "sweating," or merely because the moisture can not move through it as it migrates through adjoining wood and other organic building materials, and moisture will thus accumulate at the new barrier. This is one more reason that the wood and moisture content in these areas needs to be monitored carefully into the future.

The "drip strip" gravel aprons that were installed around the perimeter of the building help in a small way to keep the building dry by allowing soils adjoining the building to dry out more than if grass or other plants were growing there. However, they look somewhat unnatural with light gray gravel as their main material, and they will not eliminate all moisture, particularly because leaves and other organic matter accumulate at the building's edge. As long as the bottom edge of the wood construction is as close as it is to grade, the gap that is there will tend to catch organic matter, and at any time that such material builds up in this small gap, the material is likely to channel moisture into the wood and camouflage insects and other pests that may be working their way into the moist wood. In the long run, this may evolve into a larger problem.

The Governor Fitch Law Office has a shingle roof that has reached the end of its life. The roof needs to be replaced as part of the effort to remove all sources of moisture. Wood shingle roofs do not have long lives. One reason is that the modern material is usually made by sawing the wood to form the shingles. Sawing opens up the grain in the wood, creating a texture of small cavities that water can rest in leading to wood rot. Many people know the modern distinction between sawn shingles and wood shakes, which are pieces of wood split out of a log with a knife. Modern wood shakes are marketed on the basis of the wavy appearance they develop in a short time. The historic material of wood roofing was very different from both modern products. In the eighteenth and nineteenth centuries, craftsmen carefully selected logs with very straight grain to make shingles. The shingles needed to be tapered, and the craftsmen carefully cut the profiles from the log to get this shape with as little sawing as possible. When sawing was used, the surfaces of the shingles were heavily worked afterward by a craftsman on a bench using a drawknife to get the tapered shape that was needed without leaving the grain open. The labor it takes to make shingles this way is generally cost-prohibitive for most of today's historic properties.

Chemical treatment can be used to make the shingles last longer. However, it also changes the nature and appearance as well as the color of the wood. There are other chemicals that can be used to make shingles more fireproof. However, the chemicals that prohibit fire result in shingles with a shorter life. Neither situation is ideal.

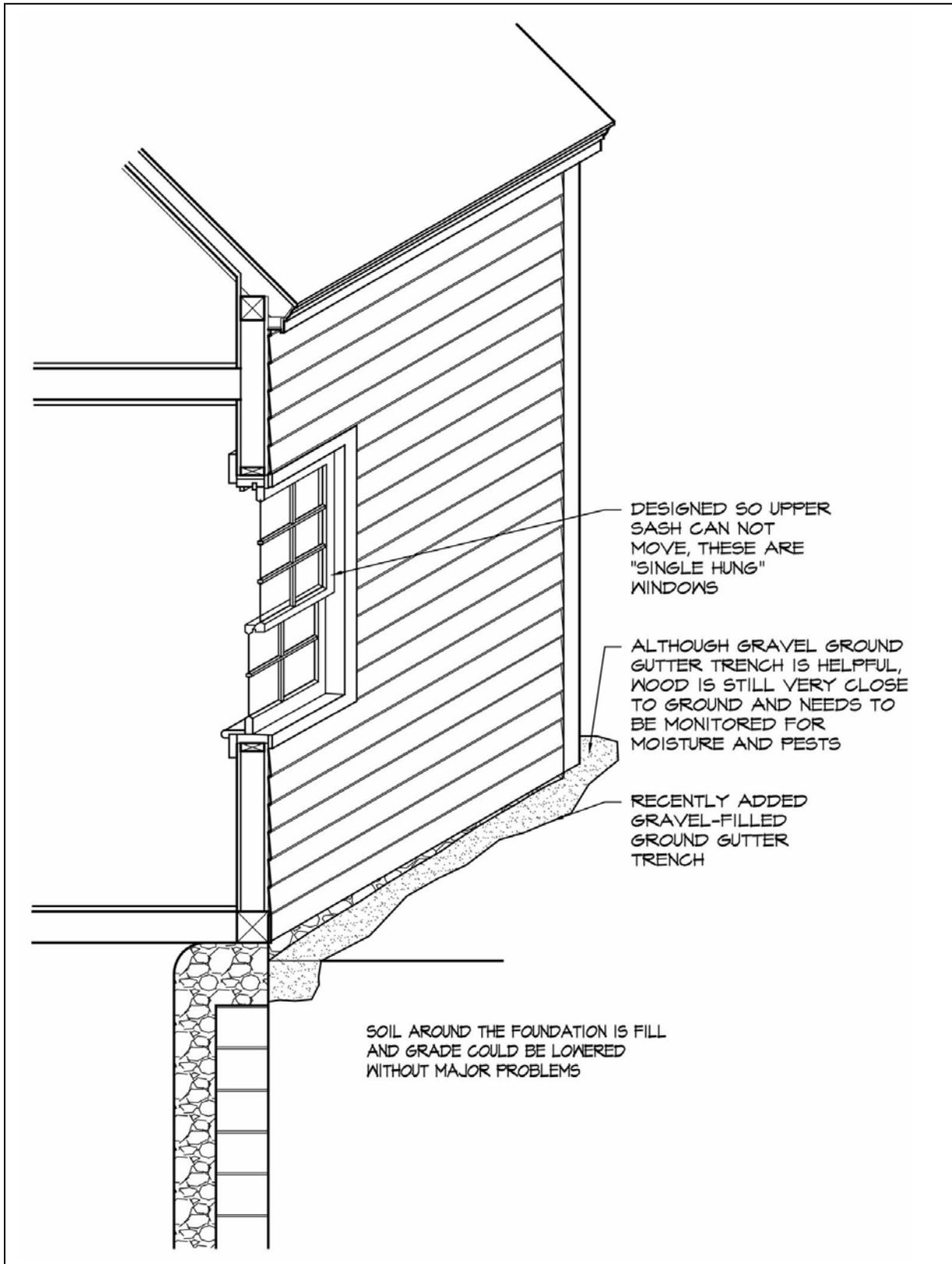
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Governor Fitch Law Office Outline Condition Assessment

Conditions

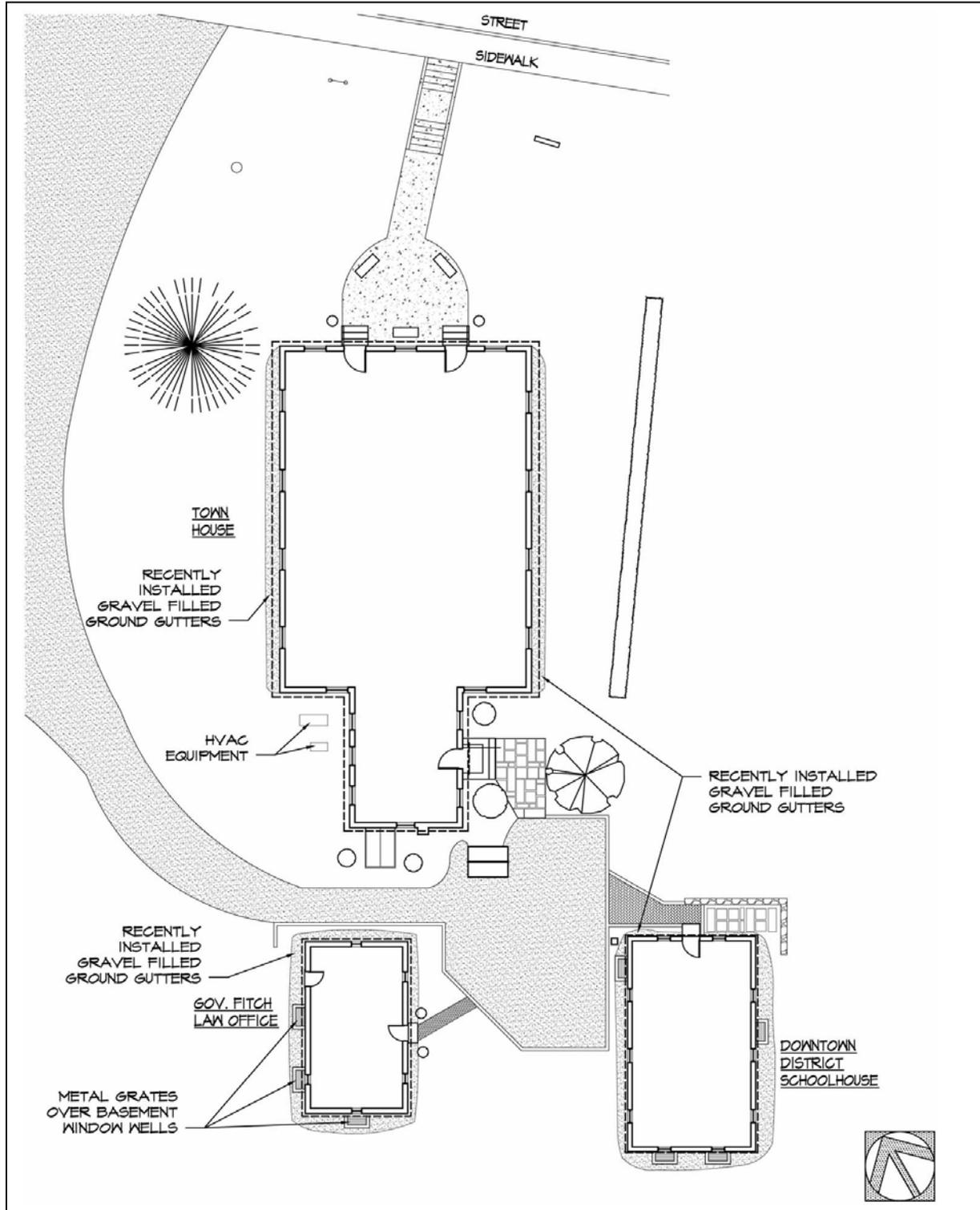
- Inappropriate foundation height: The wood frame building sits almost at grade, promoting rot at lower portions of the wood frame and siding. Recently installed site “drip strip” gravel aprons may improve site drainage and splashing onto the clapboards, but they do not do so adequately.
- Wood rot: The wood is rotting at the base of the door jambs at the building’s façade (east elevation). The wood threshold here is weathered and loose. On the west, the bottom of the wood door is very soft and probably rotted.
- Broken glass: One pane at the main east entrance light is broken.
- Biological growth: Biological growth at the wood shingles and wood siding has been identified as a problem.
- Water is coming into the building in various ways. The basement and interior finishes throughout the building are very damp. The dehumidifier system we observed does not work properly and requires more constant attention than what was apparent the day we were there.
- The roof needs to be replaced.
- A rotted section of flooring and associated materials at the entrance threshold needs to be repaired.

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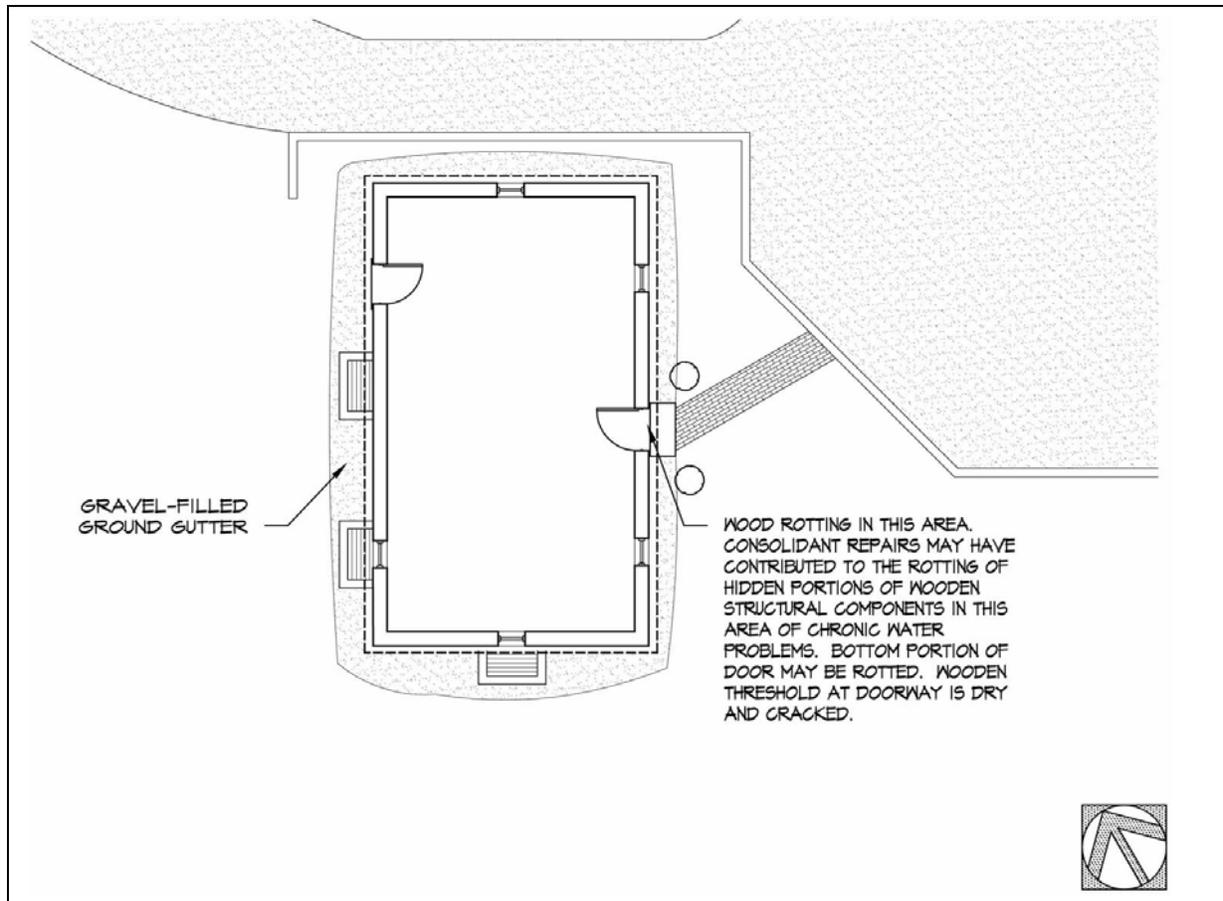
Wall Drawing

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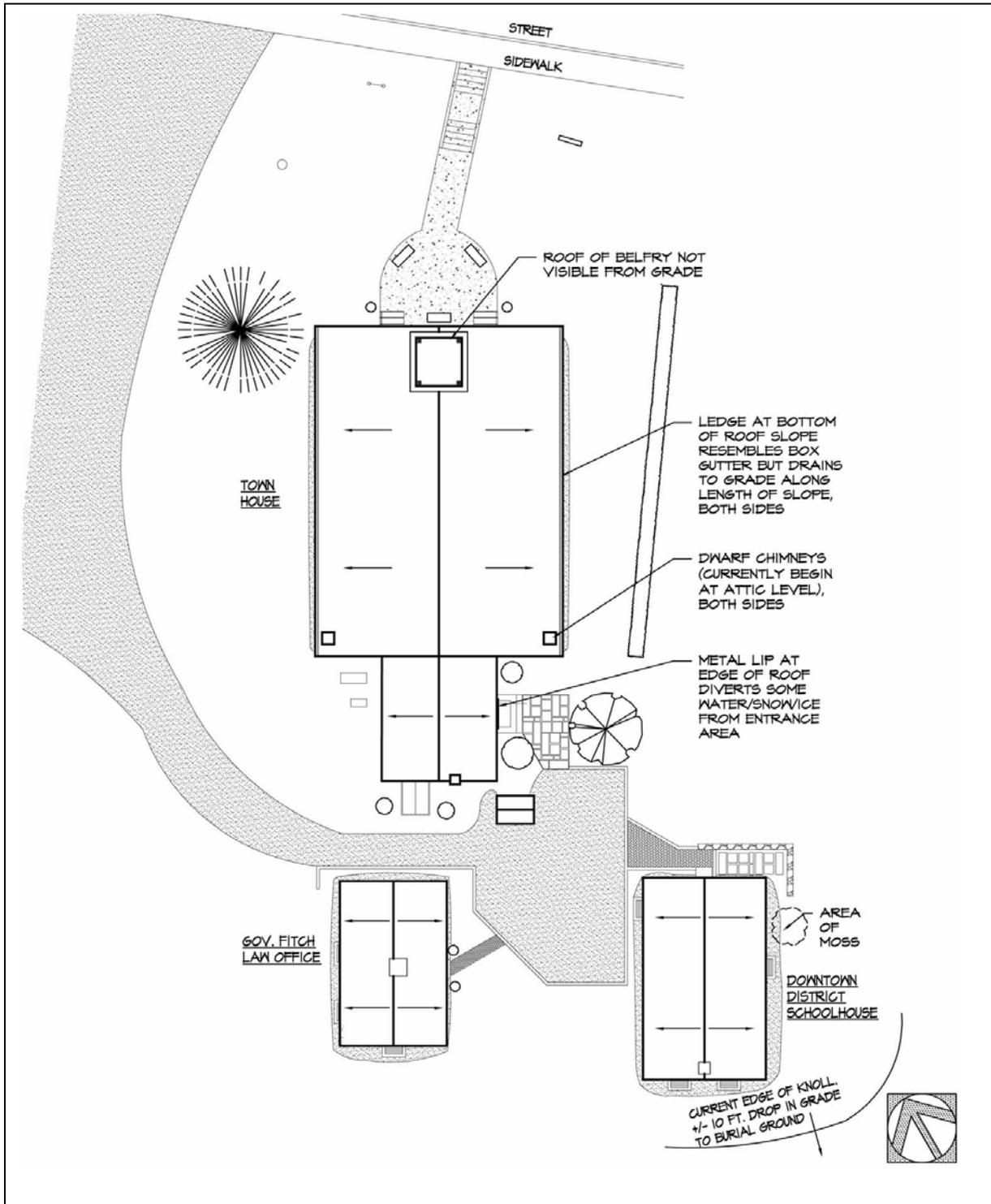
Perimeter Plan for Entire Mill Hill Complex

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Perimeter Wall Floor/Site Plan

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Roof/Site Plan

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Structural Engineer's Report

Ed Meade and Gretchen Lear, Robert Silman Associates

In the attic of the law office, the roof rafters are visible. The rafters typically frame opposite of each other on either side of the roof, coming to a point at the peak of the roof; there is no ridge beam in the roof construction. In two locations however there is a rafter on the west side of the roof without a mate on the east to be its support. It is not clear what the purpose of the un-mated rafters is but there do not appear to be signs of distress at these rafters suggesting the structural adequacy is not an issue. There is some surface deterioration on the roof rafters in several locations, but this appears to be limited to the surface of the rafters and not compromising the structural capacity of the roof.

In the basement, there was evidence of moisture exposure at the bases of wood posts and foundation walls. Upon inspection of the three wood posts supporting the stairs (two round, one square), the first round post had complete deterioration at the base and was no longer bearing at the cellar slab, the second round post had some significant deterioration at its base, and the third square post was wet but appeared to be solid at its base. There may be hidden deterioration on this third base (within the post itself); we recommend testing to determine the soundness of the column base.

We recommend that the framing related to the deteriorated round posts be shored immediately or have the posts replaced with sound material that will reestablish the support of the stair framing. More generally, the exposure to moisture at the bases of the column should be addressed to prevent further and future damage to existing or new wood framing members. Elevated moisture levels create an environment prone to insect infestation and susceptible the fungal decay.

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Mechanical/Electrical/Plumbing/Fire Protection Engineer's Report

Ernest Conrad, Landmark Facilities Group

Description

The Governor Fitch Law Office is 1½ story wood post-and-beam construction facility. The building has a full basement and partial attic space. The building is furnished as a period exhibit space on the first floor and half of the upper floor. The basement appears to be used for visitor education purposes. The building is not an occupied facility.

Thermal Characteristics

The perimeter walls of the Governor Fitch Law Office appear to be similar wood construction to that of the Old School House. It has wood clapboard siding over sheathing boards and is finished on the interior with wood lath and plaster over a vertical system of wood studs. There is no evidence of any insulation in these walls. The windows are all single glazed. The basement is a reconstructed space of mortared field stone foundation walls with concrete block back-up and a reinforced concrete floor. The City of Norwalk staff recently came to the conclusion that the roof at this building has been leaking “much more than they had realized” and needs to be replaced.

MEP/F Systems

Mechanical

The building has an electric baseboard heating system controlled by local thermostats at each heater and a master ASCO switch panel in the attic. Although, these heaters are not in character with the rest of the period room furnishings, they are reversible if a change is ever made. At each of three site visits, the heaters were found to be shut off.

There is no other form of heating or ventilation. However, two dehumidifiers were observed in the basement. They were not connected at the times of the site visits, but there was evidence of their use at other times to attempt to reduce the high humidity in the basement. Our observations indicate the source of this humidity is natural outdoor air infiltration as opposed to roof rain water run off into the foundation. Further monitoring is needed to verify this.

Electrical

It is believed that the electric service for this building comes underground from the Mill Hill Town House. At the front entry there are two “kill” switches concealed in the wall. One operates the building’s lights and the second operates the electric baseboard system.

The electric distribution panel for all the building’s power is located in the attic. It is in fair serviceable condition.

Plumbing

There is no plumbing in the building except for a sump pump used to pump condensate from the dehumidifiers through a window to a remote location.

Life Safety

The building has a basic hard-wired fire alarm system which is monitored by a remote supervisory service. It contains smoke detectors, horn strobes, and a pull station at the entry door.

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According to the client, the building also had a security alarm system, but it may not be functioning at present.

Improvement Needs

The necessity of roof gutters and leaders is uncertain. A formal temperature and humidity monitoring system is needed to pinpoint the source of moisture in the basement. It would also help to determine the need for the electric baseboard heaters.

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Governor Fitch Law Office Recommendations

Recommendations

Immediately:

- Replace wood roof with a high quality wood roof, using fire retardant shingles.
- Identify and take measures to eliminate all sources of water infiltration, including installing gutters.
- After eliminating all sources of moisture, monitor interior materials including the collections/props in the building to assure that water damage, wood decay, mold, and mold odor have all been addressed and eliminated.
- Repair /replace the thresholds of the two doorways and repair any rotting members or flooring by the two doorways.
- Consider cutting down the surrounding hillside trees or substantially trimming them back to allow for greater air-flow.
- Consider upgrading the “drip strip” gravel apron to an excavated trench of six or more inches filled with gravel with a concealed drainage system that will lead water away from the building.
- Repair / replace the basement stairway support posts.

Within the next 5 years:

- Monitor the condition of the wood at the foundation to see if the recently installed gravel drains improve site drainage and keep wood dry.
- After all sources of moisture have been eliminated, evaluate how well the baseboard heating system works and how effective it is in keeping the interior dry (see Mechanical Engineer’s report).
- Remove overhanging invasive species trees to help reduce biological growth on building surfaces.
- Investigate the structural components of wood framing at the foundation for wood rot.
- It may be possible to control biological growth on the roof shingles, and thus lengthen the life of the shingles, by spraying the surface with a chemical biocide from time to time. However, further research is needed before this step would be recommended by the JMA team. Most importantly, since wood shingle roofs have many openings allowing air to flow around the shingles, it is important to control any spraying process in a way that keeps the solution from coming into the building or into crevices where it could be detrimental.

Within the next 10 years:

- If the bottom wood members remain moist despite the drip strip gravel aprons, lower the soil line around the building, in keeping with older photographs on the lower side and at least 6 inches (measured from soil to wood) on the uphill side of the building.

Ongoing maintenance:

- Decrease biological growth by improving site drainage and removing overhanging trees.
- If periodic cleaning is used to remove biological growth from the roof, we caution that it is critical to assure that water is not driven into the spaces between shingles in the process.

Other Issues:

- There is a loose stair support column in the basement. See structural engineers’ report.

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The Downtown District Schoolhouse

Building Profile/History/Current Use

The Downtown District Schoolhouse is, like the Governor Fitch Law Office, a small gabled building used exclusively for interpretation of the past. Tours are given by staff members and volunteers who are housed in the Norwalk Historical Society's office space in the neighboring Town House building. The school building is unlocked only when the larger Mill Hill Park site has visitors who are interested in seeing it. A portion of the visitors are school children who come in groups. Classes from nearby schools are brought to see the building and experience what instruction was like in a one-room school house in the early nineteenth century. The students make use of the benches and writing ledges, which are 1971 reproductions based on an early description of the interior.

The school consists of one large classroom entered through a vestibule, or narthex, that extends across one end of the building. The vestibule is labeled "wardrobe" on the drawings for the restoration, because it was designed to depict a cloak room. The exterior design is that of a very plain box, wider in proportion than most one-room school prototypes, clad in wood siding with window and door details that are remarkably plain in design. The plaster ceiling of the classroom is vaulted in the form of a segmental arch. There is no useable attic space or basement. The gable-end entrance and consequently the vestibule (located just inside the entrance) may not be

*Downtown District Schoolhouse
John Milner Associates, Inc., June 2010*

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the original design: old images of the building show a door that is no longer there, centered on a street-facing side elevation and a slightly different fenestration pattern.

Although the building had been converted to a house prior to the move, and thus most evidence of interior finishes and furnishings was lost long ago, the interior of the classroom space has been reconstructed based on a description written by someone who had attended school here in the nineteenth century.¹ The writer described writing ledges located along the exterior walls in place of desks, and the seating was described as a line of benches that placed the students near the windows with their backs to the teacher. When the building was moved and restored, this seating arrangement became a key aspect of the reconstructed interior design. Another key feature of the design is a large, cubic, wood-burning iron stove at the center of the room. It sits on a base of gravel and/or concrete within a trimmed-out opening in the wood flooring. A second set of benches faces the stove on three sides. On the fourth side, at the end of the room nearest to the vestibule, there is a standing desk for the teacher. A section of wall covered by a large rectangle of horizontal wood boards painted with matte-finish black paint and framed by a stained wood casing serves as the chalkboard. The benches facing the stove have backs, but those facing the walls do not.

Originally constructed in 1826 on an East Avenue site near where Interstate 95 now intersects East Avenue, the building had been moved and rebuilt several times before it was relocated to the current Mill Hill Park site. As it stands, it is partly a reconstruction using some new materials where they were needed to replicate historic details, some modern materials that are not accurately replicating earlier features, and some modern amenities, such as wiring and lighting. According to drawings prepared in 1972, it contains a radiant electric heat system provided through wires embedded in the arched ceiling. The modern amenities are not readily apparent, but the interior finishes, on the other hand, generally look no older than the move to this location. All of the windows were replaced in 2009 because of severe rotting.

When it was placed at this site, the building was erected on a new stone foundation over a low crawl space with the bottom edge of the sill plate and other wood details too close to the soil line. Moisture has wicked up into the lower members causing the wood exterior baseboard and at least one inch at the bottom of each corner board to rot. Contour maps prepared before and after the move indicate that the building is almost entirely located on fill, although at the upper end, there is a natural rise to a slightly higher elevation which had to be cut back slightly necessitating a small retaining wall a couple of feet out from the building's northeast corner. A "drip line" gravel apron was recently placed along the edges of this building, similar to the ones that surround the Governor Fitch Law Office and the Town House. The gravel was laid on grade to provide a way to keep the grass, weeds, and other foliage away and to keep water from the roof from splashing on the building. The gravel helps the site to drain, keeping the wall materials a little drier than they would be otherwise. However, it would be more effective if the grade were lowered around most of the building's perimeter and if a trench filled with gravel were provided in this location, with a drainage system carrying water away from the building.

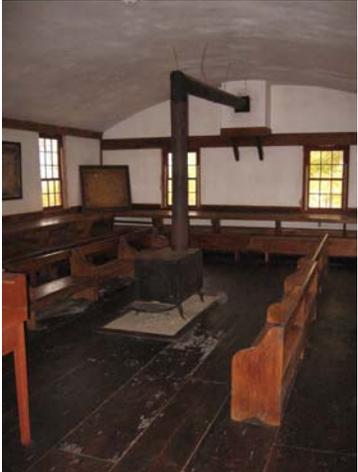
¹ See web site of Norwalk Historical Society.

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Downtown District Schoolhouse Character-Defining Features

1	Building Form / Massing and Roof Type	<ul style="list-style-type: none"> • One story, plain, frame building with low-pitched gable roof 	
2	Wall Material Details	<ul style="list-style-type: none"> • Lapped wood siding (clapboard) with rosehead nails 	
3	Trim Details	<ul style="list-style-type: none"> • Subdued trim at windows and almost no overhang at eaves 	
4	Window Types	<ul style="list-style-type: none"> • 9/6 windows in classroom and 6/6 in vestibule 	
5	Door Detail	<ul style="list-style-type: none"> • Exterior Plank door with church-key hardware 	

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6	Interior Details	<ul style="list-style-type: none">• Distinctive interior features include segmental-arched ceiling, built-in bench, chalkboard of wood planks painted matte-finished black, stove, exposed wood rail at top of walls• Unusual interior trim at window assembly	 A photograph of the interior of a historic schoolhouse. The room features a segmental-arched ceiling, wooden benches on either side of a central aisle, and a large wooden chalkboard at the front. A stove is visible in the center, and a wooden rail runs along the top of the walls. The floor is made of dark wood planks.
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Downtown District Schoolhouse Systemic Analysis / Building Assembly Conditions

Like the Governor Fitch Law Office, the Downtown is postured to suffer from problems that are due to moisture and are systemic in nature. The building is a simple rectangular one story schoolhouse with clapboard-style lap siding and a gable roof with wood shingle roofing. It contains two rooms: a large classroom with built-in desks around the perimeter and benches encircling a cast iron stove, next to which is an entrance vestibule.

The building does not have gutters and only has a very small overhang at the edge of the roof. The only feature to direct water off of the roof and away from the walls is this narrow overhang and the edge of the lowest row of shingles, which hangs out only slightly past the edge of the overhang. The roof has even less overhang at the gable ends. Rainwater drains directly from the edge of the roof to grade. Throughout most of the footprint of this building the grade was much lower before the building was relocated to this site, and after the frame building was reconstructed on the newly built foundation, the grade was raised with fill until it was within a few inches of the sill members of the wood frame. Ever since the building was relocated, the wood has been too close to the ground, although the grade has probably risen even higher with the accumulation of organic matter over time.

As explained in the systemic analysis for the neighboring Governor Fitch Law Office, when the exterior distance between grade and the bottom wood members of a frame building is less than six inches, the accumulation of moisture can result in disastrous damage to the wood. This is especially true when there is no gutter system. Water can both splash onto the wood and migrate into the wood from below. If the moisture content rises above 20% for any length of time, it is likely to become host to decay fungi. Once that has happened, the wood rots, and the structural members can no longer be considered reliable. Moist and rotted wood in close proximity to the ground is also inviting to subterranean termites and other pests.

The bottom edges of the exterior wood components of the building that lie closest to the ground are moist and visibly rotting. This wood will have to be replaced.

As at the Governor Fitch Law Office and the Town House, “drip edge” gravel aprons were installed in the last few years around the perimeter of the building to keep grass, weeds, and other foliage away from the building perimeter, allow the soils to dry out, and keep water and mud from splashing onto the wood when it rains. However, the gravel looks somewhat unnatural due to its light gray color, and the aprons will not eliminate enough moisture to protect the wood, particularly because leaves and other organic matter accumulate at the building’s edge. As long as the bottom edge of the wood construction is as close as it is to grade, the gap that is there will tend to catch organic matter, and at any time that such material builds up in this small gap, the



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material is likely to channel moisture into the wood and camouflage insects and other pests that may be working their way into the moist wood. In the long run, this may evolve into a larger problem. A better solution would be to lower the grade around most of the perimeter of the building so that the distance between soil and wood is at least six inches and also dig a trench approximately six inches deep at the edges of the building, provide a drainage system within the trench to carry water away from the building, and fill the trench with gravel. Ideally, the gravel would be brown in color, similar to the color of dry exposed soil in the area.

Like the Governor Fitch Law Office, the Downtown District Schoolhouse has a wood shingle roof. Although moisture has not begun to attack the interior of the schoolhouse as has been the case at the law office, the roof appears to have reached the end of its life and needs to be replaced as part of the effort to remove all sources of moisture. Wood shingle roofs do not have long lives. One reason is that the modern material is usually made by sawing the wood to form the shingles. Sawing opens up the grain in the wood, creating a texture of small cavities that water can rest in leading to wood rot. Many people know the modern distinction between sawn shingles and wood shakes, which are pieces of wood split out of a log with a knife. Modern wood shakes are marketed on the basis of the wavy appearance they develop in a short time. The historic material of wood roofing was very different from both modern products. In the eighteenth and nineteenth centuries, craftsmen carefully selected logs with very straight grain to make shingles. The shingles needed to be tapered, and the craftsmen carefully cut the profiles from the log to get this shape with as little sawing as possible. When sawing was used, the surfaces of the shingles were heavily worked afterward by a craftsman on a bench using a drawknife to get the tapered shape that was needed without leaving the grain open. The labor it takes to make shingles this way is generally cost-prohibitive for most of today's historic properties.

Chemical treatment can be used to make the shingles last longer. However, it also changes the nature and appearance as well as the color of the wood. There are other chemicals that can be used to make shingles more fireproof. However, the chemicals that prohibit fire result in shingles with a shorter life. Neither situation is ideal.

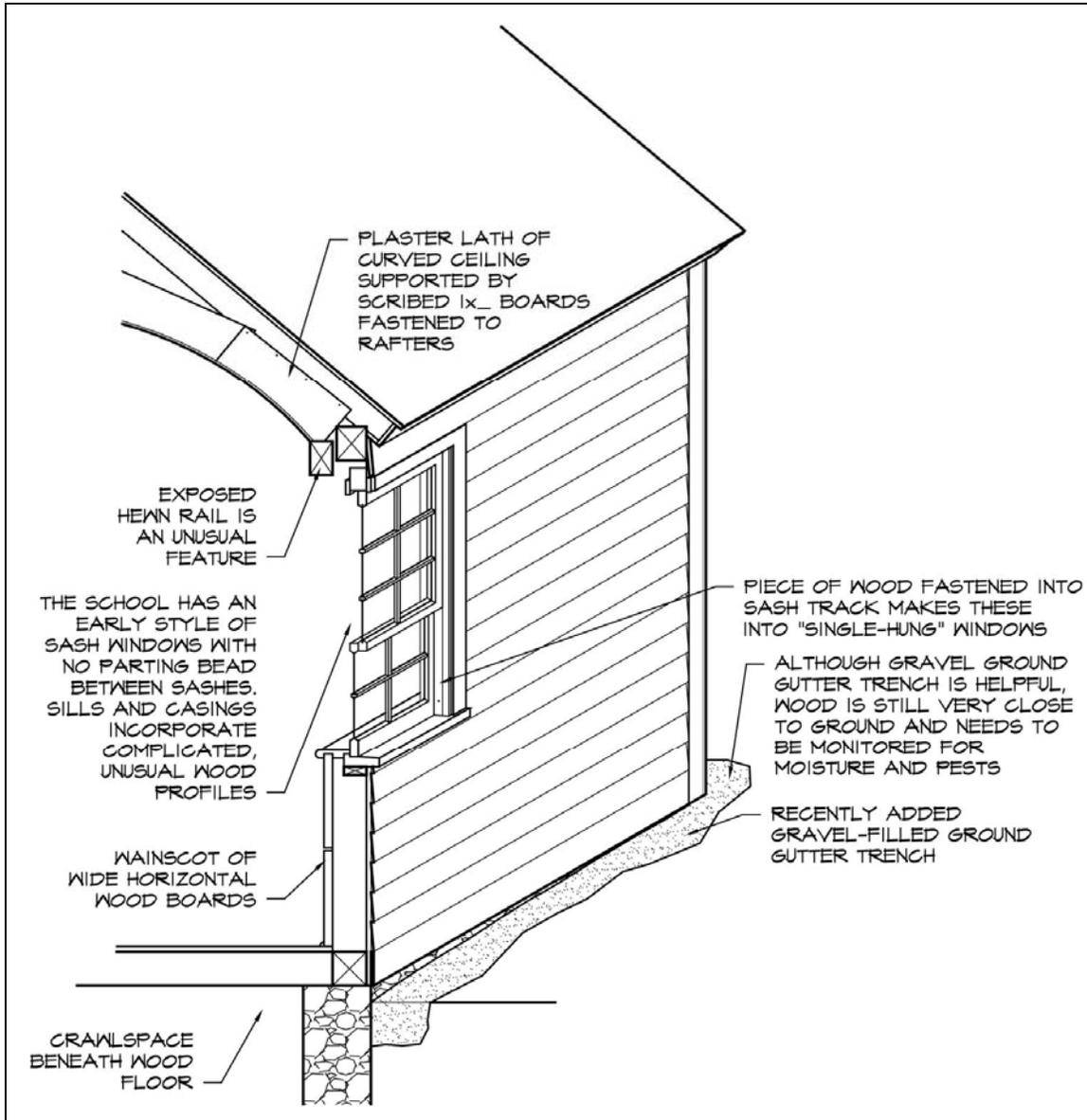
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Downtown District Schoolhouse Outline Condition Assessment

Conditions

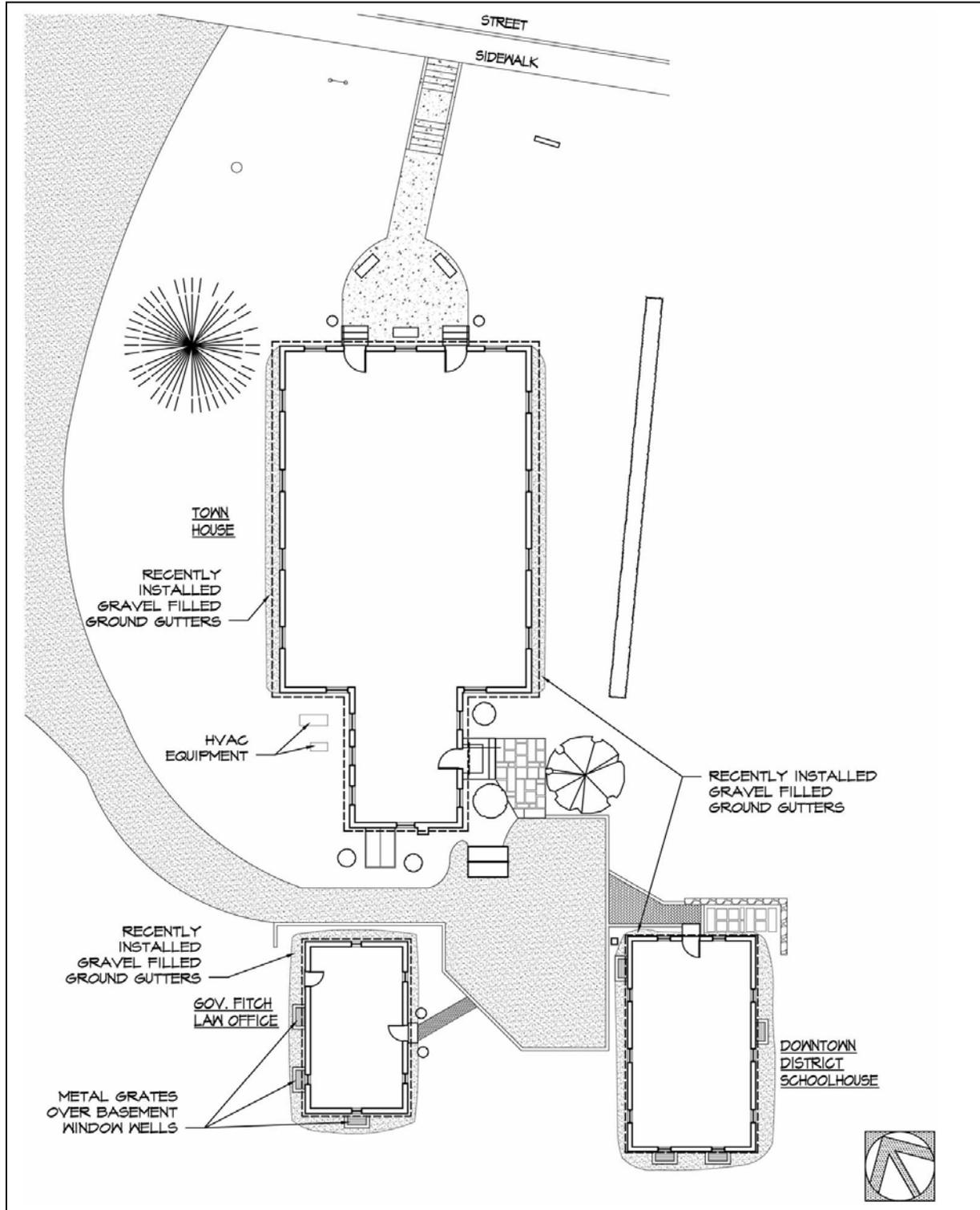
- Inappropriate foundation height: The wood frame building sits almost at grade, promoting rot at lower portions of the wood frame and siding. The recently installed “drip strip” gravel aprons may improve site drainage, but they need to be monitored to make certain.
- Poor site drainage: There is evidence of poor site drainage to the east and southeast of the building where there are large areas of moss. There is a small knoll to the east and southeast of the site, which contains water in this area.
- Wood rot: The wood is rotting at the main north entrance at the threshold and the lower three inches of the vertical board door. There is also wood rot at the northeast and southwest corners at the foundation. Unprimed edges of the wood siding at windows are accelerating rot at the end grain of bead boards.
- Paint failure: There is minor paint failure at the wood siding.

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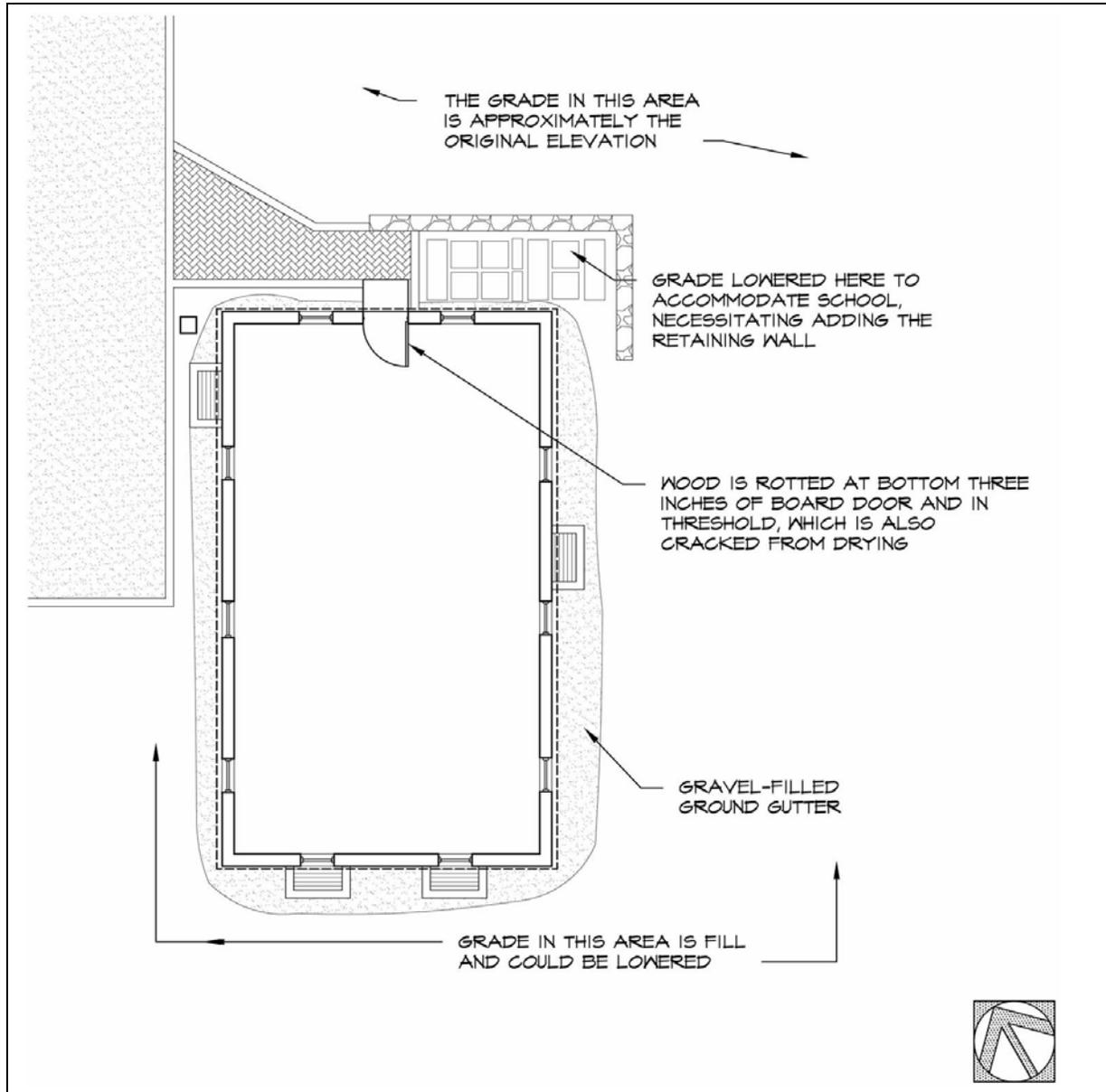
Wall Drawing

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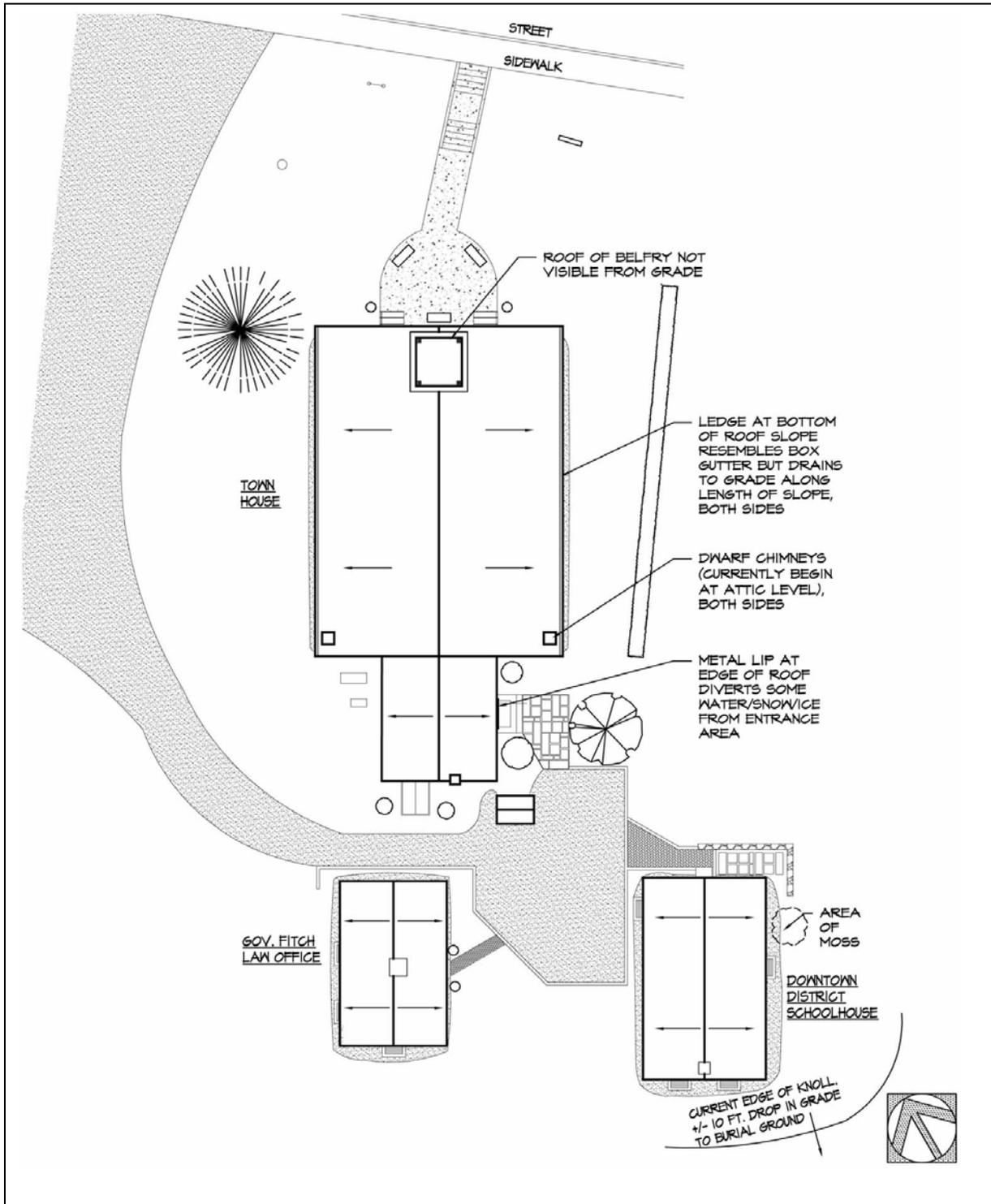
Perimeter Plan for Entire Mill Hill Complex

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Perimeter Wall Floor/Site Plan

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Roof/Site Plan

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Structural Engineer's Report

Ed Meade and Gretchen Lear, Robert Silman Associates

The schoolhouse at Mill Hill was not on the list of buildings identified as needing structural observation; however, RSA did have a chance to walk the perimeter of the house. When the school house was moved to the Mill Hill site it was placed on a low crawl space and the surrounding site was back-filled to the top of the crawlspace walls. As a result, the wood sill plate that runs the perimeter of the building is in close proximity to grade and exposed to elevated moisture levels. A brief investigation of the sill plate with an awl when walking around the perimeter of the building found several locations in which the sill appears to have deterioration as well as the posts of the corners of the building.

RSA recommends re-grading the soil around the perimeter to encourage water to shed away from the building to decrease the moisture exposure of the wood sill. The extent of deterioration is not clear and requires further investigation to determine if sill and post replacement would be required.

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Mechanical/Electrical/Plumbing/Fire Protection Engineer's Report

Ernest Conrad, Landmark Facilities Group

Description

The Downtown District Schoolhouse is a one-story wood frame structure with wood clapboard siding and recently restored single pane windows. There is an apparent crawl space under the building, accessed by a trap door in the vestibule. The building is appointed with period reproduction school-house furnishings including numerous built-in features; the building serves exclusively as an educational display of a one room school house.

Thermal Characteristics

The building's perimeter envelope appears to be wood clapboard siding over wood plank sheathing finished on the interior side with wood lath and plaster. Portions of the interior finish are horizontal wood plank construction. There is no apparent air cavity or insulation in these walls.

MEP/F Systems

Mechanical

The building contains a period wood burning stove used as a historic display piece. No other form of heating or ventilation is visibly present. Electric heating is shown in the ceiling of the classroom in the 1972 drawings, but it was so well hidden that apparently the staff forgot about it and quit using it, and the team did not see any evidence of it. It is not intended to be an occupied building. It is strictly for exhibit to interpret school room activities to visitors. School groups periodically visit the building and sit in the benches, which are reproductions from an early description of the interior, while a teacher or docent instructs them on the history of one-room schools and educating / teaching in the early nineteenth century.

Electrical

In the attic cavity, there is what appears to be NM wire (non-metallic wire such as Romex) stapled onto one of the rafters and near it is a run of BX wire, although it was inaccessible and was not investigated further by the team. The drawings for the 1970-72 restoration call for an electric radiant heat system in the ceiling plaster. They also have details showing how to hide all the light switches and outlets behind little wood doors. The drawings call for outlets in several places around the room. There are light fixtures with exposed incandescent bulbs hidden under the desks.

Plumbing

The building has no indoor plumbing.

Life Safety

The building contains fire alarm devices and their source of power is concealed in the attic. There are hand held fire extinguishers in strategic locations.

Improvement Needs

The building appears to be in relatively good physical preserved condition as is. Conditions under the building are unknown and a probe should be considered to assess the building underside.

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Downtown District Schoolhouse Recommendations

Recommendations

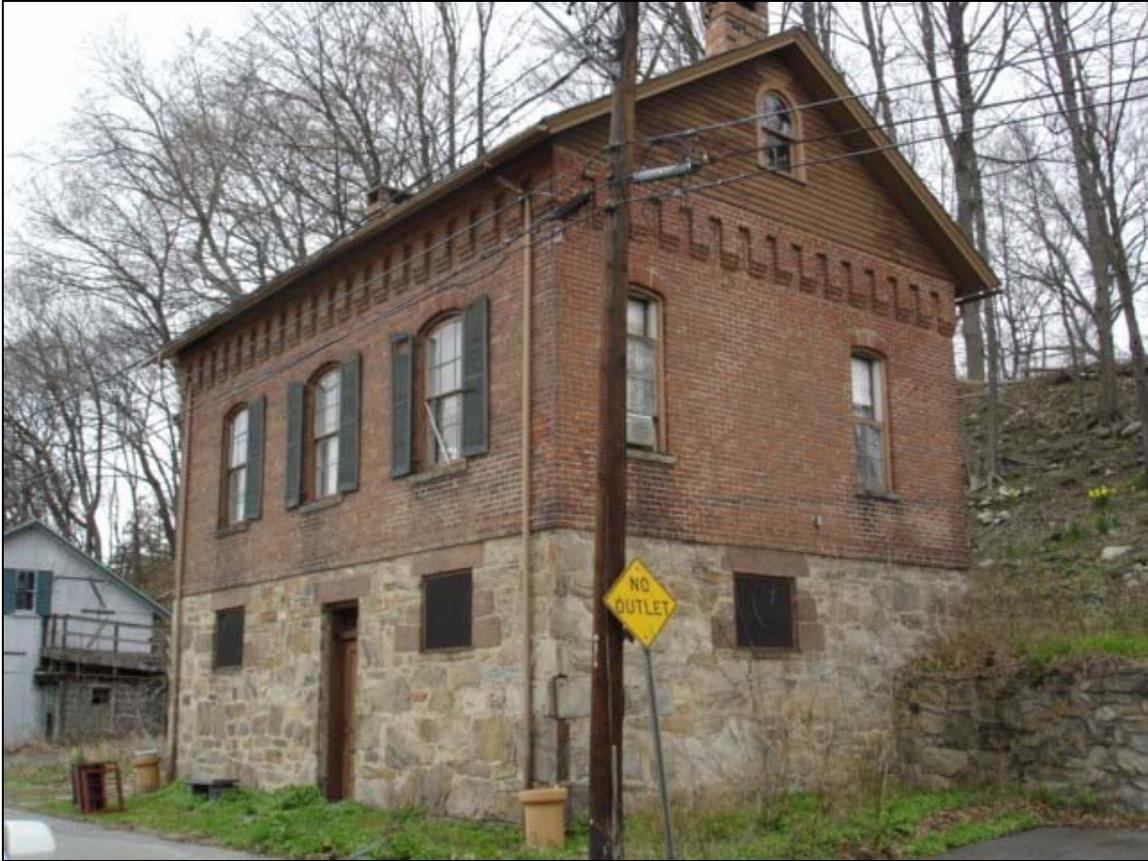
Within the next 5 years:

- Monitor the condition of the wood at the foundation to see if the recently installed “drip strip” gravel aprons improve site drainage. If moisture is still a problem, consider digging gravel drains around the building.
- Investigate the structural components of wood framing at the foundation for wood rot.
- Monitor the condition of the ceiling above the classroom for condensation caused by the heating of the plaster. (The ceiling in the Governor Fitch Law Office was heated in the same manner, and one winter the entire ceiling fell damaging some of the collections as well as the plaster.)

Within the next 10 years:

- Investigate the original foundation height. If the bottom wood members remain moist despite the ground gutter, lower the soil line around the building, in keeping with older photographs on the lower side and at least 6 inches (measured from soil to wood) on the uphill side of the building.

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The Old Jail

Building Profile/History/Current Use

The Old Jail is a modest-sized building that contains, at the basement or first story level, the former jail (or “lock-up”) which is now used as a woodworking workshop for a City staff member who makes repairs to the City’s historic buildings. It is not known if the stone ground floor was originally a one-story building associated with the Smith Street Pottery businesses. However, the brick portion of the building, which now contains two small apartments above the workshop, was built by the 1850s. It was constructed over the older stone building to serve as a residence for the jailer. The two apartments are rented out to private individuals. The building is not open to the public, although the City has expressed an interest in restoring the jail at some point in the future to use at least the ground floor as a museum site.

The building was built in at least three stages. The basement, or first story, is constructed almost entirely of stone and backs into the hillside so that the rear wall is completely underground. Part of it was constructed in the early 1800s. It was built to serve as the City lock-up, and it still contains cells along the back wall. The upper story brick addition has segmentally arched double hung windows as typically found in Italianate style buildings in the second half of the nineteenth century. The attic was added at some point after 1910 over what had been a slightly angled flat roof. The roof was apparently surrounded on three sides by the brick corbels which reinforced the walls of a decorative brick parapet when the roof was flat, imitating castellation. The densely packed, bracket-like corbels, though a typical detail for parapets at the time, are dominant enough to have given the building a somewhat castle-like appearance, when they had nothing over them.

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However, that effect was diminished when the gable roof was added with rather plain clapboard-sided gable ends from which rise two small chimneys with modern caps.

The lower level exterior walls are random-laid stone more than half of which are large, irregular-shaped blocks. The largest pieces are sedimentary stone laid with vertical bedding planes, while much smaller pieces in random-laid horizontal courses fill the interstitial cavities. Large, nearly square stones at the corners and next to the door and window openings are arranged to serve as unfinished quoins. While the majority of the stone is light gray, roughly cut brownstone blocks were used as lintels and as some of the quoin-like elements flanking the window and door openings. At the base of the stone wall, a slate water table about an inch in height projects a little over an inch forward.

Inside, the majority of the lower level space consists of two large open rooms with a few small windows set high in the walls in the building's three exposed sides. The cells, which occupy the smaller portion of the footprint, on the side that is banked into the hill, have no windows. They have brick and stone walls, stone slabs for ceilings, and wrought iron door jambs with one knuckle of each hinge still in place (the iron doors have been removed). They are currently used for storage. A small cell-sized space toward the center has an open pit for a floor and was reportedly used as an earth closet (an indoor equivalent of a privy). The narrow space immediately opposite the main doorway once contained a staircase leading to the second floor which was the residence of the jailer and his family. An additional earth closet was in a small addition to the north of the second floor (family) entrance door.

The upper story contains a one-room studio apartment on one side, with a large fireplace, a bathroom, and a partitioned kitchen. The other side has a separate kitchen through which one enters the apartment, after which are two small rooms (living room and bedroom), and a bathroom. The interior finishes of the apartments are modern materials and fixtures dating from the 1950s through the 1980s. The northern studio apartment was repaired and redone in 2008-09. The window openings, for instance, have ranch casing, a type of narrow wood trim used to finish doorway openings and windows; the ranch casing used here has a stepped surface, a typical post-1970 variation on a wood casing profile that has been in use since the 1950s. The entrance to the apartments is on the upper side of the building near the center of the wall. From a small stone and brick stoop, the door leads into a small vestibule that serves both apartments. A third doorway from the vestibule, opposite the entrance door, leads to a shared closet that contains a pull-down stair accessing the attic.

The attic, which is used for storage, was constructed by adding roof rafters and gable-end walls onto the top of a brick parapet. The design of the parapet is apparent in the corbels at the top of the exterior walls. While decorative, the corbels also served as a way to strengthen the parapet part of the wall as it rose above the original flat roof. (The client has asked about the reason for the slope in the attic floor, and it is believed by the JMA team to be the slope of the flat roof that was in place before the current gable roof was added.) Near the center of the attic, remnants of a U-shaped bead-board half-wall rise from the floor to the height of the surrounding brick walls. Within the half-wall are remnants of an older stairway that formerly descended into what is now the bathroom of one of the apartments. The half-wall configuration is further evidence of the older flat-roof design, as it was apparently once part of a roof access penthouse. The walls remnants that are still in place were constructed so that they rose up to roughly the same height as the parapet. The penthouse may have been taller than the piece that remains. The bead-board walls may end where they do as a result of the use of a different material, such as windows, in the now-missing upper half of the enclosure.

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For a building that is City-owned and occupied as apartments, the Old Jail is in surprisingly poor condition. The original wood sash windows have been allowed to become weathered, are usually not closed properly, and have begun to show instability in the meeting rails, typically the first part of a double sash wood window to fail. Failure of the meeting rail is particularly worrisome in upper-story locations of buildings where the public is likely to pass by below, because at the time of complete failure, the glass falls out of the sash. On the other hand, this particular problem is easily repaired by restoring the mechanical parts of the sash and jamb to proper working condition or fixing the upper sash in place with braces that are fastened to the jambs. Similarly, the louvered shutters, which are not believed to be original, are in very poor condition, at the point of being a potential public hazard. The upper sections of the downspouts have completely failed so that large sections are missing and the system is no longer functional. The interior also is cluttered with heavy-weight items in storage, not only within the apartments, but also in the attic and at the top and bottom of the attic stairs where disheveled items are blocking access to the stairs and keeping the door that accesses the attic stairs from being closed. The building has problems of a smaller scale, as well, such as missing pointing in the masonry and brickwork. Some of the pointing problems are due to the failure of the drainage system, but others are not.

NOTE: After this report was completed, but approximately one week before the final draft was formatted and submitted, in the early morning hours of 19 June 2010, a fire occurred gutting the south apartment of the Old Jail building. Windows were broken out, destroying most of the glass and sash frames throughout the second story apartments, and smoke and water damage severely affected the north apartment. The fire burned through the attic and through the southwest corner of the building's roof. The lower level reputedly suffered mainly, if not exclusively, from water damage. The City of Norwalk and the Norwalk Historical Commission are currently considering whether to restore the building as apartments or adapt it to some other use.

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Old Jail Character-Defining Features

1	Building Form / Massing and Roof Type	<ul style="list-style-type: none"> • Stone first story lock-up, banked into hillside, brick upper story residence • Built in at least three phases: stone section is the original building, with brick section added later, and gable roof added even more recently 	
2	Exterior Material	<ul style="list-style-type: none"> • Stone and brick walls with brownstone lintels in stone section and segmental arches in brick section • Corbeled design at top of three sides of brick walls 	
3	Window Details	<ul style="list-style-type: none"> • Wood sash windows in brick story in segmental arches with arched daylight openings, 6/6 on Smith Street façade with segmentally arched, louvered shutters (which appear to be replacements); and 4/4 in side elevations • “Eyebrow windows” under the eaves on east side on top story, lighting the attic. • Single sash windows in bottom story, layered with materials such as iron bars, metal cloth screening, and blocked from the interior, in openings with brownstone lintels 	  

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4	Door Detail	<ul style="list-style-type: none"> • Brownstone lintels and quoins at first story windows and doors • Four-panel wood doors at lower level 	
5	Detail as Building Meets Ground	<ul style="list-style-type: none"> • Slate watertable 	
6	Gable-end Details	<ul style="list-style-type: none"> • Lap siding in gable ends • Round-arched windows in gable ends 	
7	Gutter Details	<ul style="list-style-type: none"> • Half-round hanging gutters 	

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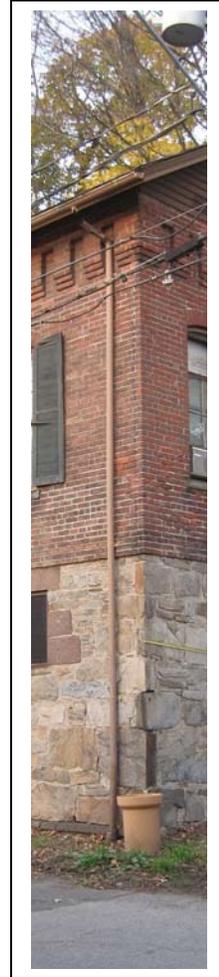
Old Jail Systemic Analysis / Building Assembly Conditions

The systemic problems at the Old Jail, unlike most of the buildings covered in this report, are due to deferred maintenance as much as they are to the underlying causes of moisture and general exposure to the elements. Most of the exterior maintenance issues began as relatively minor problems, such as failed paint, damage from broken gutters, and components of windows that gradually slipped out of place. The conditions arose from the building being attacked by moisture and other climatic conditions, but they have become exaggerated because the building, though occupied, has not been consistently maintained. While maintenance appears to have been deferred for a variety of reasons, nature has continued to attack the building, exposing vulnerable areas in the construction assembly to deterioration.

The problems are concentrated at the bottom edge of the roof and in the nearby wood sash windows of the upper level apartments. The gutters are completely dysfunctional, and perhaps relatedly, the paint is failing on all the wood trim, nearly all the upper story windows appear to be coming apart at the joints, and the building's shutters were falling apart and at the point of becoming dangerous when the present project began, all as a result of problems that began small but grew as they went unnoticed. The unusual upper sashes of the original wood windows have begun to fail in several locations; these are a special kind of window sash used in the nineteenth century, and the segmentally arched openings of the upper story brick walls were built to match them. While these are some minor issues with the building's pointing, problems in the wall surfaces, however, are comparably minor.

The mixed design, which evolved in at least four stages over the course of more than a century, is one of several factors contributing to the systemic deterioration. Each of the three floors of the building (counting the attic) represents a completely different construction campaign, and the interior of the two apartments represents at least one more (according to a set of drawings in the possession of the City, the interior was rehabilitated about 1981). Each phase of construction has different kinds of existing and potential systemic problems.

The stone construction makes the bottom level of the building very different from the brick upper story. When the original lock-up was built, it was designed for a simple set of circumstances, to contain a small number of people who had committed or been accused of committing crimes. It was typical to use masonry walls composed of large pieces of quarried stone and fieldstone to build small jails of this type. Notably, each cell within the jail also has brick or stone side walls and some appear to have stone slab ceilings. Because masonry was the construction material, and because the possibility of prisoners escaping through the ceilings of the cells had been addressed, the sloped site represented an opportunity to bank the building into the hillside, making escape through the back wall even more difficult. This created a building that was more like a basement on one side, even though about two thirds of the perimeter walls remained completely exposed. The stone, therefore, serves a very different function on the banked side, where it is holding back a hillside, than it does on the three exposed sides.



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Below-grade construction places forces on masonry walls that can lead to problems. Not only are the walls subjected to moisture, which can destroy mortar and even attack the stone, but moist soil on the uphill side of a banked building tends to move downhill, placing horizontal forces on the walls. The Old Jail site is an extreme example of this in one sense: the building was built at the base of a long, steep hillside, and the slope sends a substantial amount of water toward the building. The vegetation on the hillside, while helping to hold the soil in place, also keeps the sloped area shaded and covered with organic material that retains water.

Effectively, all below-grade walls that have open space on one side act as retaining walls, and all retaining walls have to resist the same kind of horizontal forces that dams are designed to resist. The moist soils that press against the building are, in essence, the same as the water held back by a dam, except that they are thicker and move more slowly. In the construction of typical basement walls, these horizontal forces tend to be equalized by the fact that they occur on all sides of the building. In banked buildings, on the other hand, they are greater on one side than on the other, and the main factor that keeps the wall (or the building as a whole) from gradually toppling is the sheer weight of the masonry. Typical below-grade building walls also resist horizontal forces by having perpendicular walls meeting them at corners. The longer the wall, from corner to corner, the more likely it is that the forces might cause it to buckle toward the center. At the old Jail, the distribution of the perpendicular side walls of the four cells that meet the banked wall actually makes the construction much stronger than most below-grade walls. Thus, the Old Jail does not appear to have structural problems in the masonry walls of the first level, because the design appears to be more than adequate to resist the forces it needs to resist. However, the potential for structural problems in such a building should be kept in mind as all other problems are evaluated. It is important to take these design issues into consideration as any changes are made that may improve or diminish site drainage on the uphill side of the building or that may affect the structural integrity and natural drying systems of the masonry on all sides.

It is also typical in the below-grade walls and at-grade walls of old buildings to experience problems with moisture that wicks up from the soil directly beneath the masonry. The moisture moves upward, through capillary action, within the natural cavities that exist within the building materials. Since the external sources of moisture come in cycles, the water that is retained in the masonry tends to stop at a certain point, then recede partway back down the wall as the masonry begins to dry itself out. This action, which is called rising damp, typically causes a visible mark, a wide "horizon" line, to appear on the interior surface of the masonry, often about three to four feet above the floor. Above the line, the masonry typically shows no sign of moisture. Below the line, the masonry often remains continually wet. As the line between the two moves up and down, the material that has recently dried often develops a wide zone of efflorescence, the residue of salts that are formed by water that has picked up certain combinations of chemical from the masonry, the mortar, and sometimes the water itself. If the walls have direct-applied plaster, the plaster tends to dissolve at the horizon line as it effloresces into a salt-like compound that can only be repaired by completely removing all material containing the salts. Only limited evidence of rising damp was observed at the Old Jail, but the signs that were observed likely point to chronic problems in the lower sections of the rear wall which were blocked with storage when the team visited the site.

The brick partitions to the sides and front of the jail cells have coatings in the upper half and exposed brick at the bottom where the coatings have worn away. This appears to be a sign either of a current rising damp problem or one at some point in the past. The coatings appear to be a combination of traditional whitewash and other materials, such as oil-based paint and possibly

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Portland-cement-based paint. Portland-cement-based paint was a common material for basement waterproofing in the 1950s and 1960s. If the coatings were placed over the brick in an attempt to keep out moisture, they probably had the opposite effect. Modern coatings, especially ones that are not engineered to be sufficiently breathable, tend to trap moisture in traditional building materials. This can be disastrous in older types of brick, the softer handmade variety of brick that was fired on-site before the development of modern brick manufacturing facilities around 1900. When moisture is trapped in the brick, entire bricks sometimes dissolve. The coatings have failed in various places on the interior walls, but the fact that the brick is completely exposed at the base of the wall and completely covered at the top of the wall is most likely an indication of rising damp.

To counteract rising damp, one technique is to install a thin band of slate or harder stone directly under the wall to interrupt the wicking effect. Essentially, this kind of a course already exists at the Old Jail. It is visible at the exterior, at the base of the exposed walls, in the form of a slate water table. Although the team was not able to confirm this, it is possible that the course is there as part of an original stone floor installed before the walls were erected to keep prisoners from digging tunnels under them.

While the team did not directly observe any actual structural damage in the interior surfaces of the lower level of the building, related symptoms were observed around the building. For instance, there is a slate walkway along the east side of the building used to access the apartments, and on the uphill side of it, there is a low retaining wall constructed of wood that resembles railroad ties. The water that sheds down the hill toward the building has caused moist, mud-like soil to accumulate directly behind this wall. As a result, just northeast of the building, the wall has moved out of alignment at the joint between two of the wood members. Another possible indication of moisture problems is found in a few places where mortar is missing in the stone wall at the north side of the building along the wooden steps that descend from the walkway to the lower grade. The mortar may have been weakened by the flow of water over the wood steps in heavy rains. The damage is also likely due in part to impact because it is at the edge of the stairs. Some of the missing mortar is high enough in the wall that it is not due to water from site drainage.

The north elevation of the Old Jail building has a whitish residue that looks like it could be moisture-related. However, it is believed that this is only ghosting from a wing of the building that was demolished in the 1980s. The wing was a shed-roofed addition that filled part of the space between the original footprint of the Old Jail and the Smith Street Barn. It was apparently removed in accordance with 1981 plans prepared by architect David Bruce Falconer. The residue appears to be from plaster (and/or other kinds of coatings such as stucco, whitewash, or paint) applied directly onto what had previously been an exterior brick surface after it became an interior wall in the construction of the addition.

The handmade brick walls of the upper story of the Old Jail Building are completely different from the stone walls below. This type of brick can be fragile, especially when exposed to water for extended periods of time, or when it is exposed to water after being damaged mechanically or chemically in activities such as exterior masonry cleaning projects. Mortar repairs can also lead to mechanical damage and moisture damage to the brick, because modern mortar tends to be much harder than pre-1900 brick. The harder mortar expands and contracts at a different ratio, and the brick, being the softer substance, gives way and breaks. Cracks and gaps in the mortar can trap water that can also lead to breakage in the freeze-thaw cycles of a given year. The exposed surfaces of intact handmade brick are usually harder than the core of the material

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because in building the walls, the masons carefully selected the bricks with the hardest faces from the original on-site firing process to be used in the building's face. The face of each brick also tends to become harder over time from exposure to the sun and from material that accumulates on the surface, including some pollutants and some kinds of biological growth. But the faces are also easily damaged, as sometimes occurs when they are cleaned or when heavy flow of water is directed onto them from chronic problems caused by failure of gutters, downspouts, and other components of drainage systems. The faces of some of the brick in the building's west wall are eroded along the course of the rain leaders below the broken elbows that connect the gutters to the leaders. Notably, the damage occurs about six feet below gutters because the area above that is protected by the building's wide overhang at the eaves.

The Old Jail has a considerable amount of patched mortar from several different re-pointing projects. The mortar most likely contains Portland cement from old repair projects. However, while any mortar that is too hard for the brick could cause problems, there are few if any signs of such problems at present. Considering that there are several places where small areas of open joints need to be re-pointed, any new project should include an analysis and testing of the current mortar type(s) to determine if some of the old pointing should be removed and replaced. Removal should be done using hand tools, and not using any power saws, as permanent damage is easily done to the bricks above and below a given joint when power tools slip, especially in the vertical head joints.

The Old Jail's roof appears to be in water-tight condition at present, but it may need to be replaced soon. The gutter and drainage system is in very poor condition, with key elements missing, and the system needs to be replaced immediately.

The coatings have failed on the wood surfaces, especially in the windows of the two apartments. The lower level and attic have windows that are less difficult to maintain and/or repair or replace. The apartment windows, however, are unusual segmentally arched units from the original construction that are key to the building's character. They have begun to fall apart because the paint coatings have not been maintained. The first item to fail on a double-hung window is typically the bottom rail (i.e., the bottom horizontal strip of wood, also called the meeting rail) of the upper sash. Since the top sash is placed in front of the bottom sash to ensure that the window sheds water, the lowest member of this component is the window component most vulnerable to damage from moisture. Water tends to accumulate at the joinery at the lower right and lower left corners of this sash, especially any horizontal surfaces within the joints, causing the meeting rail to slip loose. If the window panes are also loose as a result of dried-out glazier's putty, then the glass will slip down with the rail. The weight of the glass causes the displacement to happen faster, and eventually, the wood rail and glass will fall out of the window endangering anyone who is passing by.

Double-hung windows are designed so that the upper sash may be lowered and the lower sash may be raised, theoretically allowing accumulated hot air to flow out at the top in warm weather while cooler air flows in the bottom. However, in old buildings, one rarely sees the upper sashes lowered. They are likely to become fixed over time. Normally, the upper sashes are kept in place by counterweights or by mechanical pins. Keeping the two sashes latched together also helps to hold the upper sashes up. If they remain operational, there is the possibility that the systems set up to hold them up (e.g., counterweights) will fail, and the sash will drop from its own weight, leaving an open gap at the top. This appears to have been the reason that the upper sashes were open when the team visited the building. If they were not intentionally open, the fact that they were not securely closed is one of several sign of failing systems that the team observed. Wood

The Old Jail

John Milner Associates, Inc., June 2010

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braces had been placed under some of the upper sashes to hold the meeting rail and/or the entire sash up. The braces were not executed well, because the strips were too long and consequently had to be kept on diagonals. However, since lowering the upper sashes may not be necessary, it may be appropriate to cut similar strips to correct height so they can be fastened in the upper sash's track at each side of these windows, permanently fixing each top sash in a closed position and holding the corresponding meeting rail in place.

The louvered shutters on the upper story windows of west wall (Smith Street side of the building) appear to have been installed around 1980 to enhance the appearance of the building, possibly replacing older shutters. They were shaped correctly, to match the segmental arches of the openings, and unlike many decorative shutters, they were placed on real hinges. However, they appear to have been made by adding a piece of wood to the top of stock manufactured shutters and then custom-cutting the added piece to match the curve. The wood used does not appear to have been of a high quality, as evidenced by the fact that some of the louvers have broken out and some of the added wood in the curved top piece appears to be broken or rotted.

The team advised the client half way through the project that the shutters should be removed immediately and that braces should be added to fix the upper sashes, where they are loose, in a closed position, with the meeting rails simultaneously secured in place.

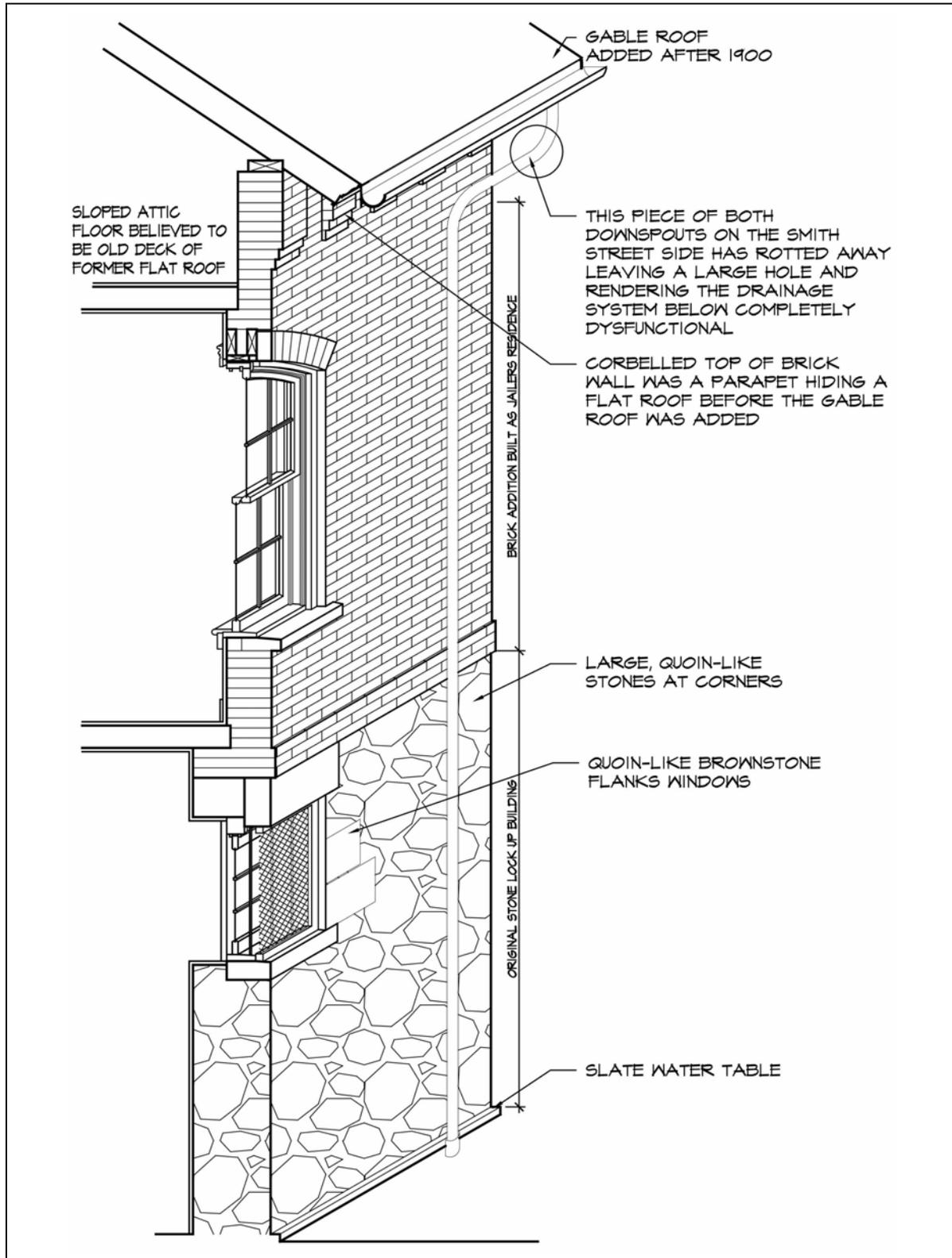
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Old Jail Outline Condition Assessment

Conditions

- Cracking at masonry foundation: There is cracking through the foundation masonry under the southeast basement window.
- Mortar failure: The brick and foundation masonry exhibit loss of pointing mortar.
- Paint failure on wood: The wood siding at the southeast gable end has failing paint. Paint at the windows is failing overall.
- Deterioration of louvered shutters: The wood louvered shutters are deteriorating and falling apart.
- Roof shingle repairs: The wood shingles are loose on the southwest side of the roof.
- Lack of downspouts: The two round corrugated downspouts at the southwest are no longer connected to the gutter. Water drains directly from the gutter opening to the ground.

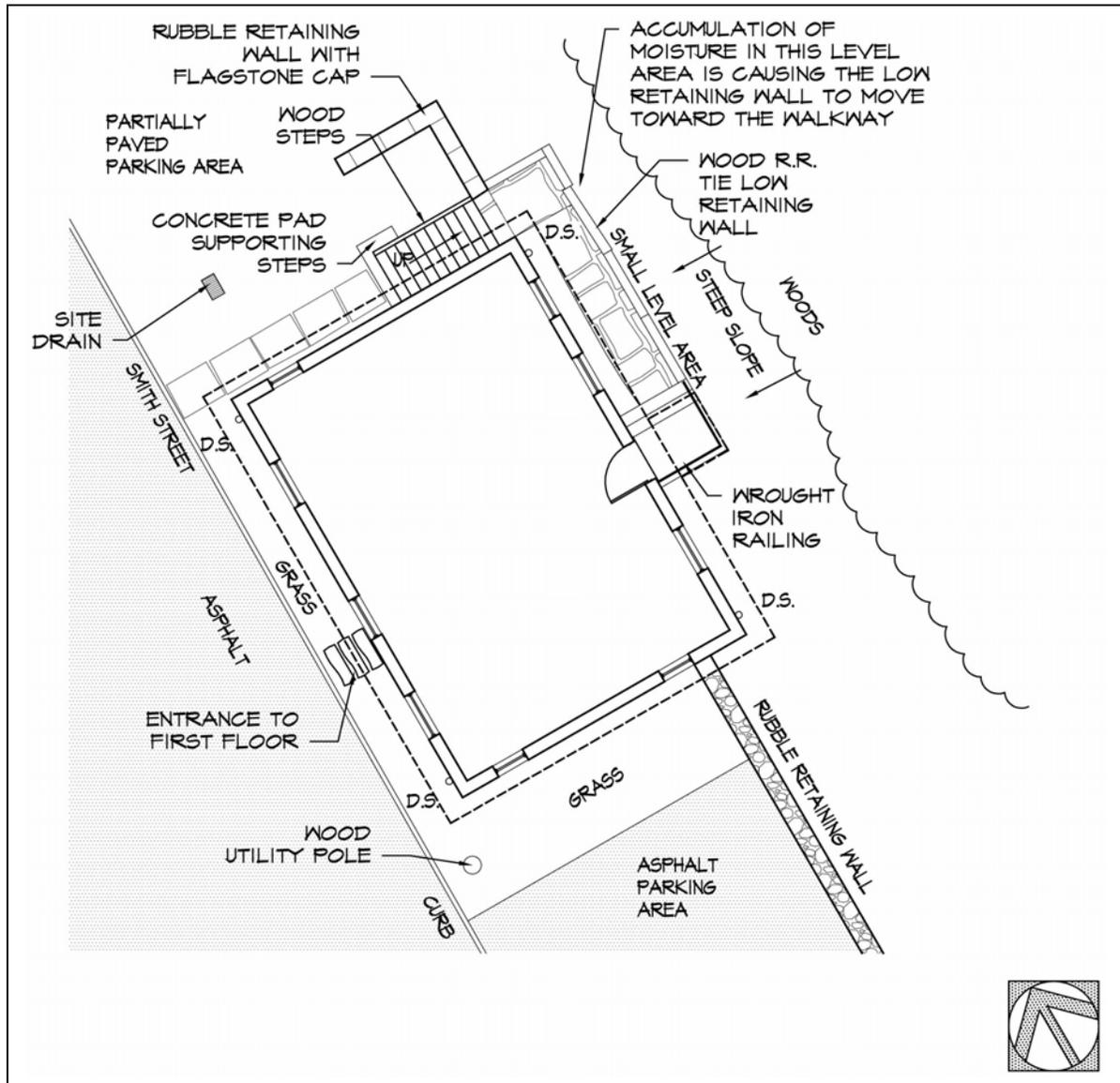
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Wall Drawing

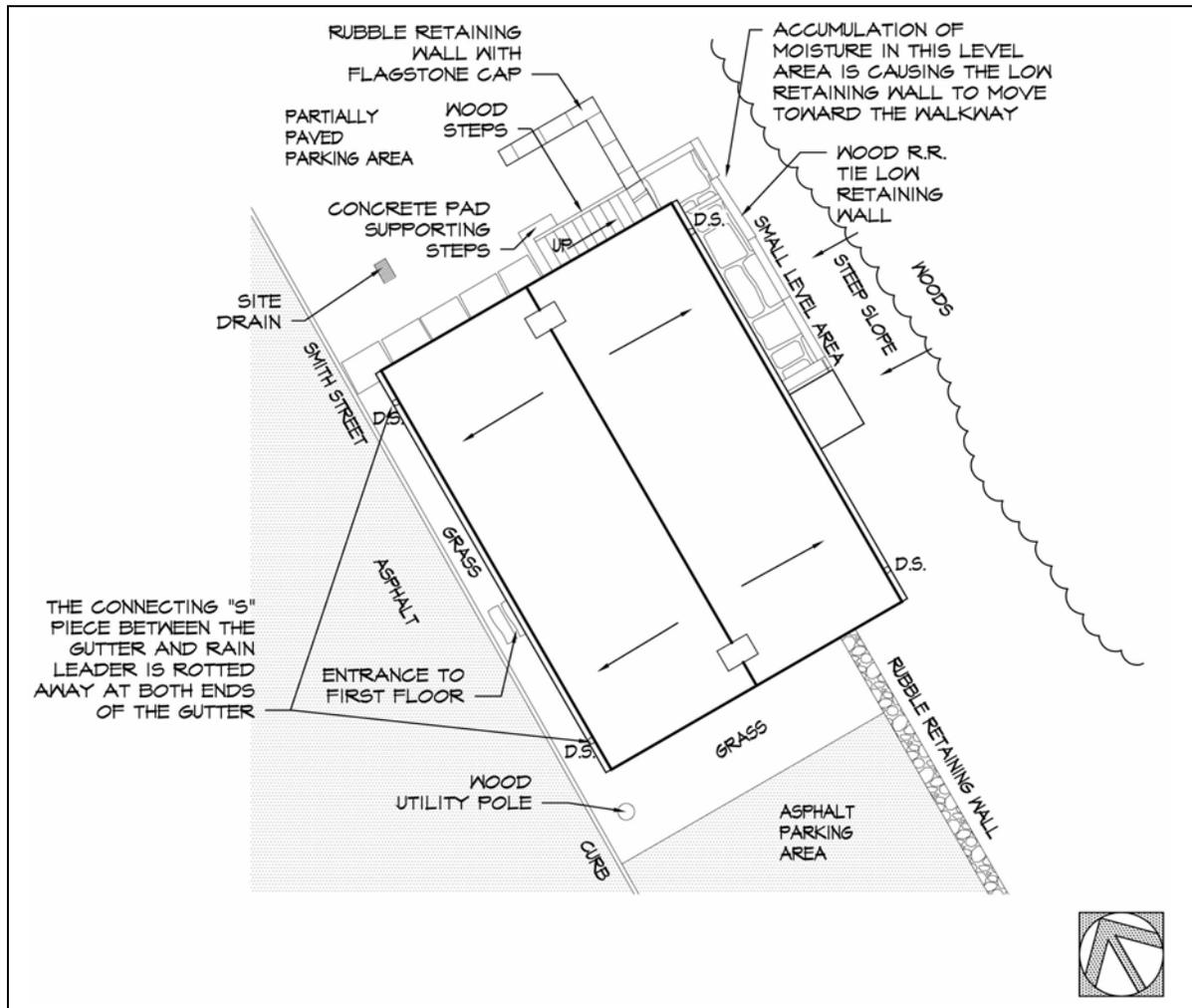
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Perimeter Wall Floor/Site Plan

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Roof/Site Plan

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Structural Engineer's Report

Ed Meade and Gretchen Lear, Robert Silman Associates

RSA was only able to view the basement and attic of the Old Jail. The basement level brick walls at the interior had some cracking and spalling of the bricks, neither of which appears to be severe. There were also wall areas with mortar loss. Deterioration of steel supporting masonry was noted in one location (see photograph, below).



Jail House basement, corroding steel supporting masonry

The attic floor of the Jail House has wood joists framed at a slope. The brick perimeter walls extend above the level of the attic joists creating an approximate two-foot wall above the framing. The gabled roof rafters bear on the extension of the perimeter walls at the southwest and northeast walls. The ends of the gable roof have wood stud gable-end walls that span between the brick wall extension and the peak of the roof. These infill walls as well as the rafters have plywood sheathing on them and the framing members appear to be more modern than the attic floor framing. The attic joists measured approximately 3x8 (full) spaced at 19" on center. Some joists have been cut to allow for new openings in the floor framing and have not been re-supported with additional framing members. Additionally, there is a large amount of debris in the attic area that should be removed to reduce the load on the attic floor framing. We recommend that the floor framing be repaired so that all joists are properly "headed off" (frame on all sides of the floor opening, especially in the direction perpendicular to the joists that have been cut to make the opening) and/or are doubled up to span the full distance. Right now there appear to be several overstressed or poorly supported attic floor joists.

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Mechanical/Electrical/Plumbing/Fire Protection Engineer's Report

Ernest Conrad, Landmark Facilities Group

Description

The Old Jail is a two-story brick and stone masonry structure. The lower level, or first floor, is constructed of stone and is built as a banked basement that is completely exposed on the front elevation so that its floor line is just above grade; at the rear elevation, it is completely below grade. The first floor interior is the remains of an historic jail now used as a workshop by a city employee who makes repairs to wood trim and other details on City-owned buildings. The second floor consists of two small apartments which are in the area that was once the Jailor's residence. There is an attic space above these apartments, but is not easily accessed. It is heavily cluttered with disheveled storage and debris.

Thermal Characteristics

The perimeter envelope walls are about 3 courses of brick and the stone portion below are the same thickness but finished on the interior by direct applied plaster. The interior face of the brick second floor is direct applied plaster in most, although in some areas, such as the chimneybreast in the southeast apartment, it is simply painted brick. The windows are single glazed. During the site visit, the upper sashes of the second story windows in the southeast gable end wall were not closed and had slipped down as far as they could go, leaving the upper half of the window openings protected only by interior window blinds.

MEP/F Systems

Mechanical

Each space in the Old Jail is heated by electric baseboard heat. The occupants also use electric space heaters for local heating in some rooms.

One apartment tenant has a window air conditioner but reports that it is not used. Instead he uses a window fan.

Electrical

The building is an all electric facility including, heating, cooking, domestic hot water and all else. Electric service is provided by adjacent pole mounted transformers. The actual service point location is presumed to be somewhere on the first floor or the basement. We could not get access to the basement.

Plumbing

The plumbing is supplied by municipal domestic water and sanitary sewer service. The domestic water is a 1 inch copper service and the sanitary is a modern PVC system in both apartments. Both apartments each have relatively new electric domestic hot water heaters.

Life Safety

The building has a basic fire alarm system consisting of smoke detectors.

Improvement Needs

These are tenant occupied apartments with poor insulation and electric heat. As a minimum, the apartments should have additional insulation installed.

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One apartment and the first floor workshop have an excessive quantity of stored combustible material. This represents a potential fire hazard. Compounding matters, the apartments have only a single egress route.

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Old Jail Recommendations

Recommendations

Immediately

- Reconnect downspouts to half-round gutters at the southwest. Replace any missing gutters and/or downspouts.
- Return window sashes in correct position (provide support for upper sash if needed).
- Remove deteriorated shutters until new ones can be made.
- Provide better insulation for the apartments.
- Remove combustible materials such as paints and paint-related chemicals to a safe location. Take steps to reduce the amount of combustible materials in apartments and debris blocking access areas such as the area around the pull-down stairs to the attic.

Within the next 5 years:

- Check all floor framing for structural adequacy and joinery, repair as needed, and assure that all openings are properly framed with headers, etc.
- Investigate cracking at southeast foundation.
- Rebuild louvered wood shutters.
- Re-point in select areas after analyzing the original pointing mortar in order to characterize the original binder and sand and guide replication mortar selection. Produce site mockups to refine the final mortar mix.
- Paint all exterior wood trim.
- Investigate the roof shingles and repair as needed.
- Provide a second means of egress from apartments as soon as possible (this might include removing or altering the fixed iron grates on the east elevation windows so it would be possible to exit from windows in the case of a fire).

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The Smith Street Barn

Building Profile/History/Current Use

The Smith Street Barn appears to date from around 1900. It is not currently in use except for storage. The building has been altered several times. According to the staff of the Norwalk Museum, the building may have been part of the Smith Street Pottery before it closed or the St. George Papermill that was on Smith Street. The façade was changed to add an overhead garage door at the center, between two older pairs of side-hinged barn doors which may not have been original either as there appears to be evidence of a barn door track for a larger sliding door. The current doors occupy almost the entire first floor façade allowing the building to serve as garage space for three vehicles. A smaller cross buck hay doorway on the second floor is centered in the façade. It was probably used to hoist hay or similar materials to the second floor from Smith Street. Another pair of side-hinged doors is found just around the corner in the western half of the south elevation. In the eastern half of the south elevation, toward the building's rear, a one-room addition was constructed using cinderblock at some point between the 1940s and 1960s (the brief period in which this kind of concrete block, charcoal gray with cinders in the aggregate, was in use). A wood deck and stairway were constructed over the cinderblock addition, probably in the late 1970s or early 1980s, to provide exterior access to the second story. The second story doorway has been closed off. Some parts of the barn are in very poor condition, particularly the deck.

From the interior, the barn appears to have had a stairway in the original construction, located just behind the center garage door, where there is a shaft-like opening in the ceiling. However, there is no stairway currently in the opening, possibly because it conflicted with the garage door and was replaced by the exterior access provided by the deck. Since the deck no longer appears to be strong enough to walk on, the exterior stairway is no longer functional, and thus the second story is inaccessible in its current state. To the north side of the first floor, in the building's northeast corner, are the partial remains of horse stalls and a tack room.

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The barn has a distinctive appearance due to several typical barn features such as the cross-buck design of the hay door in the second story and the cross-gable roof form that makes a place for the hay door (the “cross-gable” is actually found only in the front or west face of the roof).

Based on Sanborn Fire Insurance Maps of the area,¹ the building was once part of a continuous row of similar wood frame buildings. The graphic symbol used on the maps at the barn location (an “X” from corner to corner over the rectangular building footprint) usually indicates that the building was a stable for horses (although it is found on the 1957 Sanborn Map, at a time when horses were no longer normally kept cities, this symbol often appears as a carry-over from much earlier editions of the map; the evidence of horse stalls reinforces the use as a stable at some point in the building’s history). On the map, the remainder of the row extends to the north along Smith Street. None of the other buildings have the stable symbol, but several are labeled as sheds. One small rectangle within the row is labeled “auto” to indicate it was a garage. The shed label signifies that the buildings were less substantial in their construction, were not designed to be heated or for human habitation, and probably also that they had shed roofs rather than gables. The shed adjoining the barn may have been built as a three-sided infill building connecting the barn to the one-car garage north of it. This shed, which is slightly larger than the barn and almost three times as large as the garage, is shown with a dotted line in place of a front wall, indicating the construction was open on the front (west) side. North of the garage, the map shows four small, freestanding buildings in a line which are labeled as sheds and are smaller than the garage. The city has suggested² that these buildings may have been associated with a large pottery manufacturing facility that stood across the street or with the papermill that later moved in to the Pottery site. The pottery building was architecturally distinguished and the subject of some interest at the time of its demolition.³

Currently, the barn is the only building still standing on either side of Smith Street between the “Y” intersection to the north where Smith Street meets Wall Street and the Old Jail. Although there is an industrial building on the west side of Smith Street across from the jail, the property from there north, where the pottery once stood, is open land surrounded by chain link fencing, part of which defines a construction yard with industrial equipment. Otherwise, the barn sits by itself on the east side of the street, at the edge of the wooded bluff of Mill Hill. The only evidence of the sheds and garage is the way the strip of land between Smith Street and the woods is graded, leaving a level area that apparently once served as the floor of the row of sheds. The City staff has indicated that they have been told by other City representatives that there was a period of time when the City used this strip as a dump site. A single strip of wood attached to the side of the barn on an angle is apparently a remnant of the shed roof of the large open-fronted shed. It indicates the height and slope of the first part of the former row.

On the south side of the barn, the cinderblock addition may have been constructed to serve as a rest room. The rear half of it contains a toilet, and the front half contains a kitchen-type sink on a metal base. The dark gray masonry units that the one-room addition is built of are typical of concrete block used between World War II and approximately 1960. Their dark gray color comes from the use of cinders (a by-product of burning coal) as filler in the concrete, a way of making the units lighter in weight than typical concrete. The interior of the cinderblock enclosure is filled with rotting and rusting debris which is visible through an interior broken wood door.

¹ Sanborn Map, 1957.

² In the Request for Proposals for this report.

³ Information from client, conveyed in an interview.

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The wood deck was built over the nearly-flat roof of the cinderblock addition, trapping roofing material under it. The roof, which was presumably twenty or more years old when the deck was added, was clad in tarpaper, an inexpensive kind of bituminous roofing used especially where aesthetics was not an issue and often for nearly flat roofs. Tarpaper was common at the time in this kind of applications, before membrane roofing was available. However, tarpaper was not a roofing material with an especially long life, and it was prone to failure when other materials touched it or when people walked on it in cold weather when the bituminous sealants were brittle. Constructing the deck over the roof trapped the roofing material and not only made failure of the roofing material likely, but it also made it almost impossible to repair without removing the deck.

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Barn Character-Defining Features

1	Building Form / Massing and Roof Type	<ul style="list-style-type: none"> • Almost square massing typical for a barn, crowned by cross-gabled form (the roof is a cross-gable on the front side only) 	
2	Exterior Material	<ul style="list-style-type: none"> • Vertical barn siding with evidence of a sliding barn door • Evidence of the roofline of a previous shed on the north side of the Barn. 	
3	Door Detail	<ul style="list-style-type: none"> • Cross-buck hay door emphasizes bilateral symmetry, as do the three doors below (the center first story door is not historic, but the flanking swing doors are constructed of barn siding and may date to an early date) 	
4	Detail at Grade	<ul style="list-style-type: none"> • Siding that meets the ground as is typical of ground floor barns 	
5	Alterations / Additions	<ul style="list-style-type: none"> • Cinder block addition to side resembles a typical mid-twentieth century milk house (although not original, and although it is visually conflicting, the addition is over 50 years old and could be thought of as historic; the deck above is much newer; also front doors, shutters, and some windows are not original) 	

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Smith Street Barn Systemic Analysis / Building Assembly Conditions

Like most of the other buildings included in this report, the Smith Street Barn has signs of moisture infiltration and other kinds of problems that are systemic in nature, but they differ from the systemic problems found at the other buildings as a result of differences in construction, use, and location. The building was constructed of light wood framing with the wood-frame exterior walls (light frame with barn siding) apparently resting directly on grade, or at most, on stone or concrete footings that are completely below grade. At the time of construction, the barn may have had a dirt floor. Today, the building is surrounded by patches of asphalt, gravel, and some seasonal grasses. It was also placed very close to the steep hillside that separates Smith Street from the Mill Hill area. The hillside was probably cut back to make room for the barn, as a retaining wall about four feet in height is found directly behind the barn. The space between the building and the wall is about two feet wide. The close proximity between the wood materials in the barn walls and the soil line make the barn vulnerable to moisture and pests. The situation is likely to be more serious at the rear of the building because the space next to the retaining wall collects leaves and debris which never completely dry out. As is often the case, the wood materials added to the building in the last forty years appear to have suffered more deterioration than the wood elements that appear to be older. This may be an indication that the older wood was of a higher quality, or at least from old-growth trees. It is also an indication that the older elements that have survived have some kind of natural systems in place that allow the building to protect itself from moisture. The building appears to have been built as a stable and for storage. It was not designed to be heated or used for human habitation, except possibly as a daytime work space. The proximity of the steep hillside to the building sends water and some debris from the wooded area behind the building toward the rear wall. Increasingly heavy tree cover leads to leaves accumulating against the building and diminishes the amount sunlight and air, leading the debris that accumulates behind the building to remain perpetually wet. The building's isolated location also means that the conditions require vigilant monitoring because fewer people are paying attention to the problems.

Alterations that have occurred over the years have changed the character and design of the barn, and it is consequently difficult to know the building's original characteristics. Beneath the vertical "barn siding" boards, the walls appear to be constructed of light wood frame. Much of the framing is hidden behind non-historic interior finishes, but the visible framing is the kind of light-weight materials usually used in houses rather than in typical barn construction. The building was not designed to be heated, and therefore, it may have always been intended as a storage space as well as a stable. The interior wall surface materials concealing much of the framing appear to consist of plywood



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and other similar sheet goods installed for expedience without concern for consistency (not all wall areas were visible at the time of the site visit because the barn was filled with storage, and some areas were blocked by falling ceiling materials and other obstacles). Generally, they have remained unpainted. Heavy wire “cloth” was also used in a number of places. As the building has fallen into disrepair, many layered remodeling materials have begun to come loose and disheveled. As the building declines and is attacked by moisture and pests, some of the layered modern materials may be more conducive to retaining moisture than the older materials are.



Infiltration of moisture from the bottom of the building and at exposed horizontal surfaces, such as the wood deck, may have contributed to the deterioration of the barn. The building is in poor, even precarious condition, but the structure has been reinforced by a steel I-beam and round steel columns that were added at the center of the interior. The I-beam and columns support the original summer beam on which the second story floor boards rest. In length, each of the joists is only a little more than half the depth of the building. The joists are lapped over the summer beam, which runs from side to side below the ridge of the roof. The summer beam was originally supported on wood columns, as evidenced by ghosting in the paint at the bottom surface of the beam. The original columns were apparently removed, or replaced by steel, in order to reconfigure the barn as a three-vehicle garage when the center garage door was added. It is also possible that the replacement was because they had rotted or failed structurally.



The biggest concerns at the barn are in three areas: inadequate gutter and roof drainage systems, the collection of leaves, debris, and moisture in the narrow space at the back of the barn between the rear wall and the retaining wall, and the presence of many layers of rotting materials, mostly non-historic materials from recent remodeling projects.

The building was designed with a cross-gable form in the west face of the roof. This roof shape sends all the water from that half of the roof in two streams, toward the northwest and southwest corners. There are short sections of gutter at these two corners to collect the water, but they are not functioning because the rain leaders are completely missing. The front sections of the building have signs of decay and rotting, such as walls that are out of plumb and small holes in the siding, although the wood was generally dry at the time of the team’s site visit.



The back slope of the roof is one large surface draining without a gutter into the space between the building and the retaining wall. The space has piles of leaves and debris in it which are retaining moisture. The inner side of the same wall was inaccessible during the team’s field visit because of the amount of storage in the building and because of the falling layers of remodeling materials generally just behind the stored items. However, it appears that there was plenty of material on the inside of the rear wall to retain the moisture that is likely to come in as a

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result of the exterior debris, as well as to harbor the pests that follow this kind of moisture from decay fungi to termites and rodents.

Most of the storage should be relocated, and the non-historic materials layered on inside surfaces should be removed, especially if they are retaining moisture. The cinderblock addition and deck should be removed. The debris should be cleared from behind the building, and the trees shading the building should be trimmed back as much as possible.

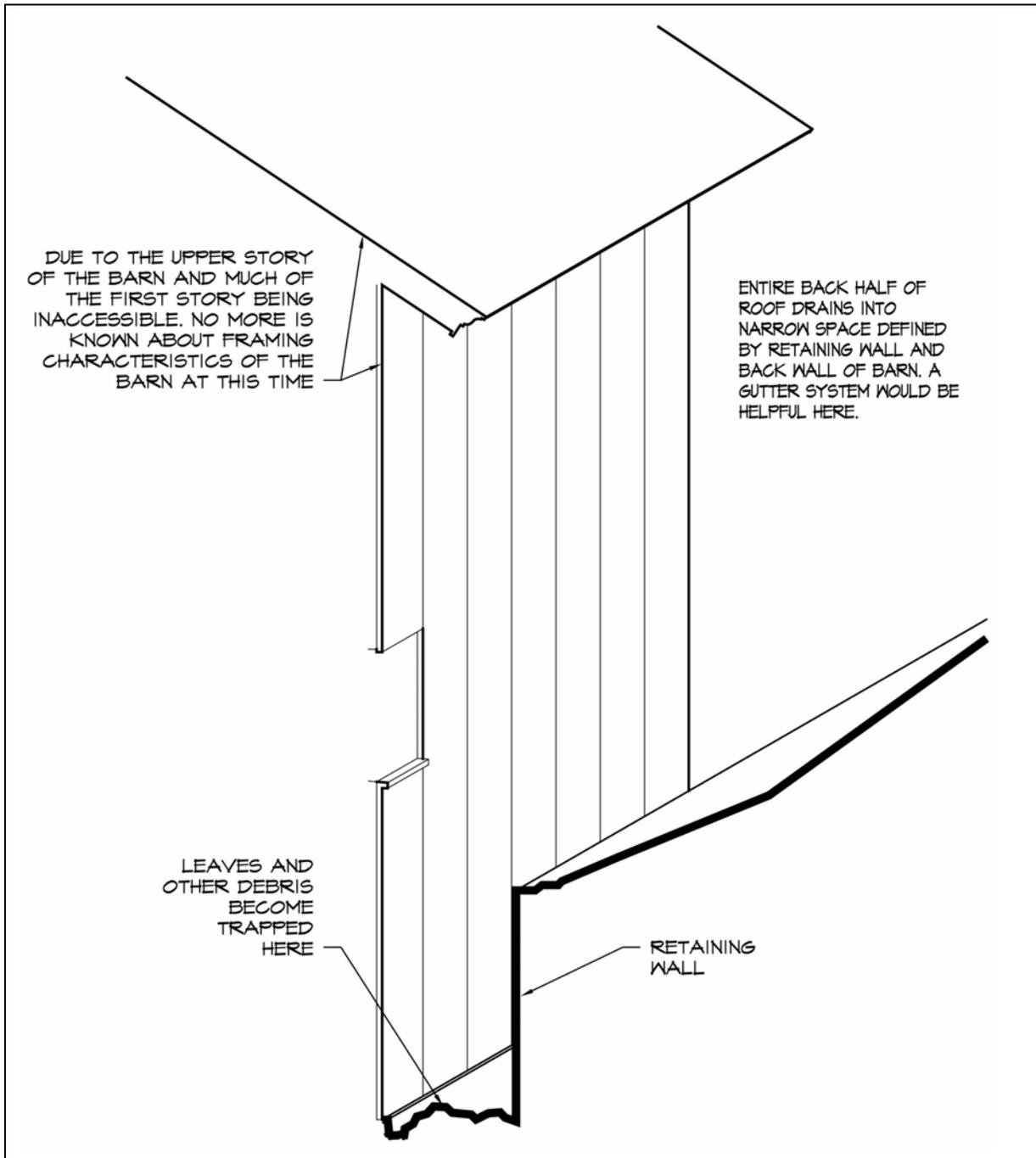
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Smith Street Barn Outline Condition Assessment

Conditions

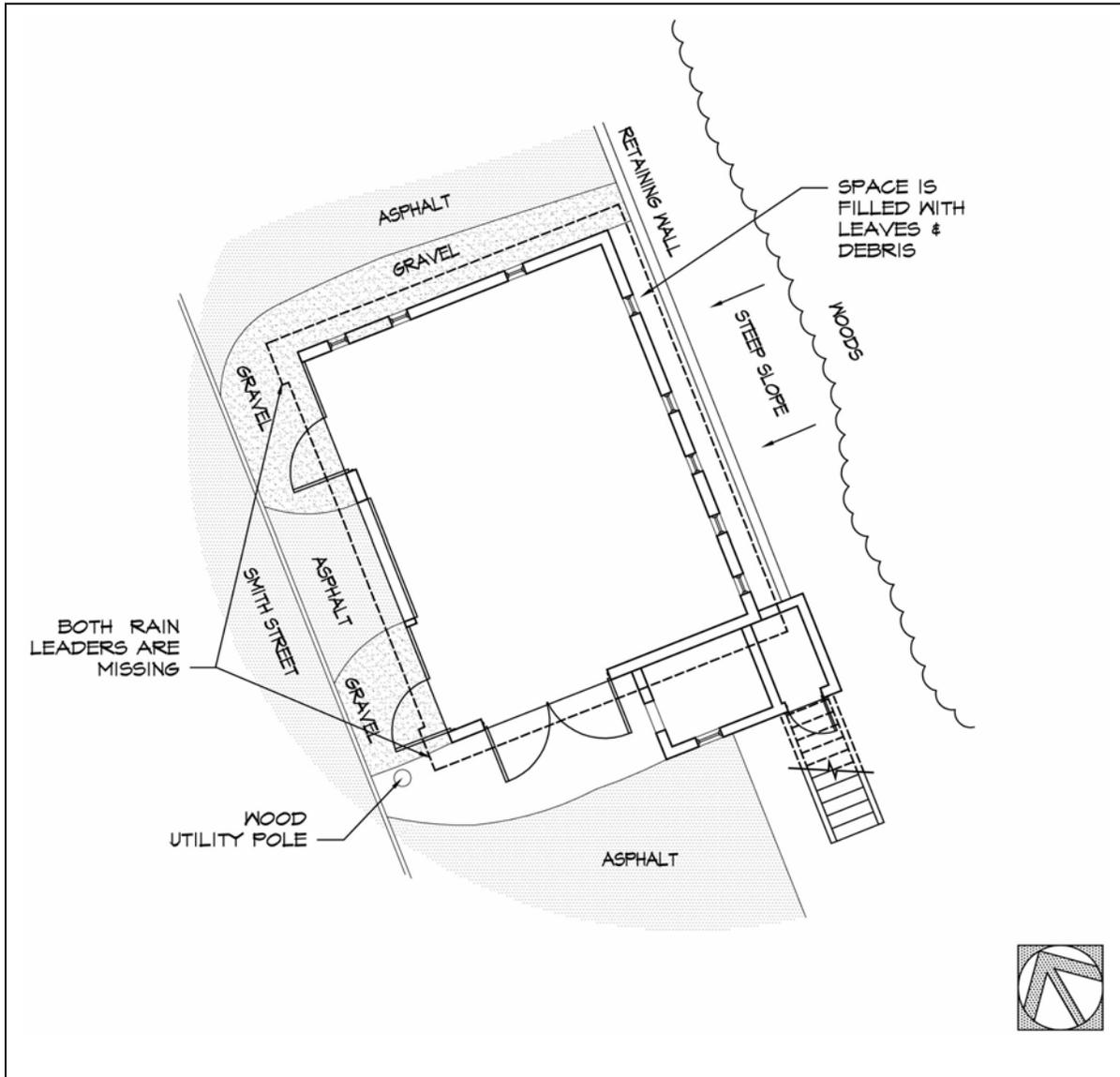
- Poor site drainage: The steep slope behind the barn stops at a narrow walkway to the rear of the barn. This area appears to be chronically damp.
- Inappropriate foundation/soil height: The vertical wood siding is in contact with the ground which is promoting rot at the bottom of the wood siding.
- Unsafe conditions: The cinder block addition and the deck structure above it at the building's southeast corner are in unsafe condition and should be demolished.
- Clogged gutters: The gutters at the southwest elevation are full of debris and the rain leaders are missing.

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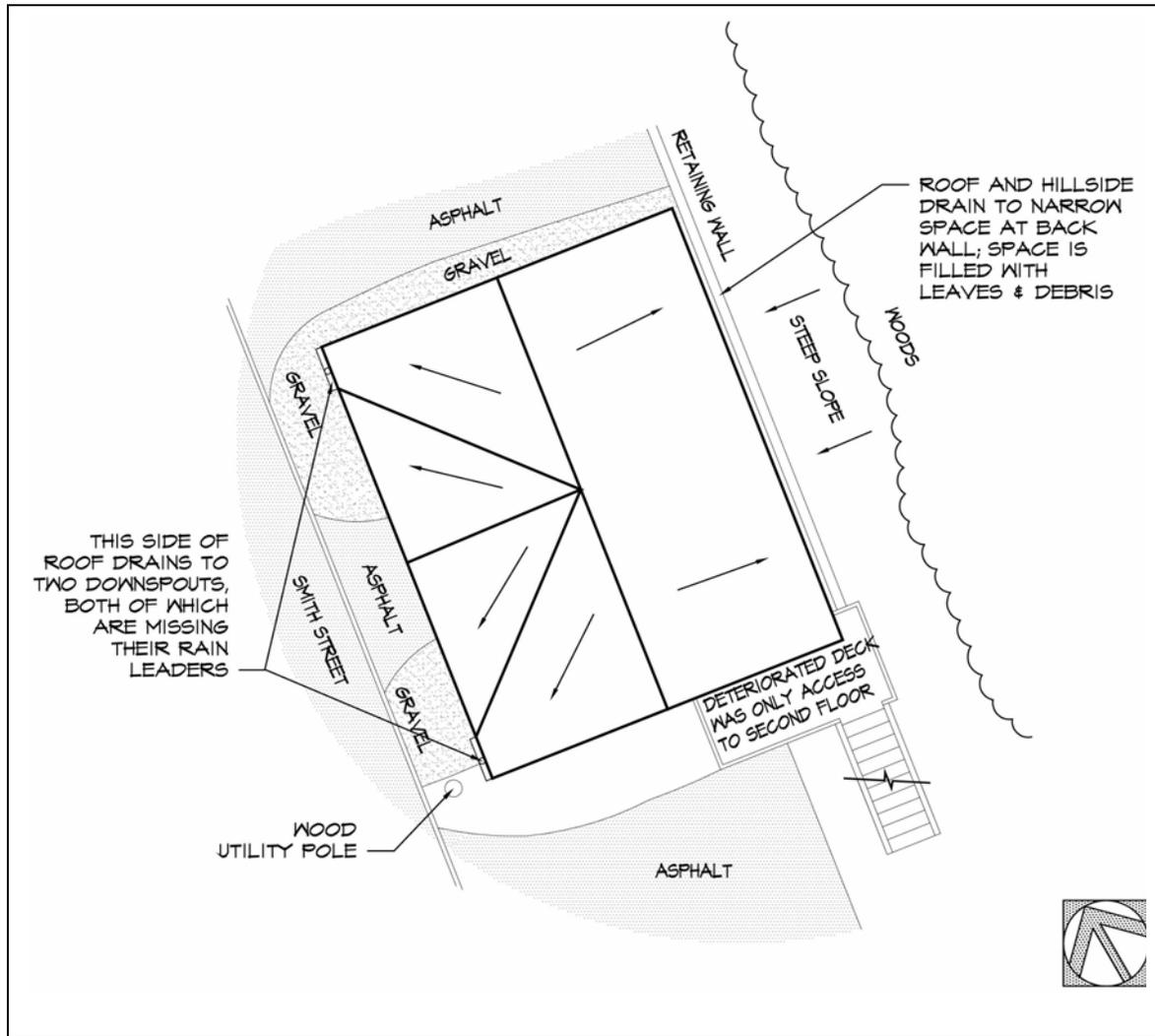
Wall Drawing

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Perimeter Wall Floor/Site Plan

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Roof/Site Plan and

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Structural Engineer's Report

Ed Meade and Gretchen Lear, Robert Silman Associates

RSA briefly looked at the Smith Street Barn for the purpose of giving a general comment on the feasibility of restoring the structure. Restoration is possible, however, test pits to gain information on the foundations and survey and analysis of the condition and stress levels within the existing framing would be required. No access was available to the second floor of the barn and access to the first floor of the barn was limited due to the extensive debris in the space.

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Mechanical/Electrical/Plumbing/Fire Protection Engineer's Report

Ernest Conrad, Landmark Facilities Group

Description

The Smith Street Barn is a one-story wood frame structure with a loft space above it. It has no basement. The upper story was accessed from the interior at one time, through a stairway or ladder that was removed to make way for a roll-up garage door. Access to the second story was moved to the side at apparently the same time when a deck and stairway of pressure-treated wood was constructed over the flat roof of a somewhat older cinderblock addition. The barn has been used for miscellaneous materials storage, but most of the materials that had been there for over a decade were moved out of the building during the course of this project.

Thermal Characteristics

At some point in the past this building was a well-insulated structure with fiberglass insulation throughout. This is now largely demolished and poorly weather sealed.

MEP/F Systems

Mechanical

There is evidence of a previous rudimentary heating system in an adjacent concrete block shed. It is no longer functional.

Electrical

The source of electric power for the Smith Street Barn is uncertain. It is likely a branch circuit connected to the nearby Old Jail. There is evidence of exposed electrical circuits but no electric power is active at this time.

Plumbing

The concrete block addition contains the remnants of a lavatory and water closet. However there is no active plumbing at this time.

Life Safety

The building is currently closed to any use pending a decision for its future. A large amount of building salvage materials was moved out of the building while this project was underway.

Improvement Needs

This structure is in very poor condition. It can be restored once a future use is chosen.

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Smith Street Barn Recommendations

Recommendations

Immediately:

- Clean and remove the collected debris in the narrow space next to the retaining wall on the east side of the Barn.
- Keep the foliage away from the barn walls.

Within the next 5 years:

- Demolish the concrete block structure at the southeast façade which is unsafe. Consider including a new stairway, either interior or exterior, to the second story.
- Repair windows and provide for adequate ventilation for preservation purposes as a “mothballed” unheated building.
- Repair openings in wood siding to keep out moisture and animals.
- Develop plans for future re-use.

Compilation of Recommendations from All Sections of the Report

Part I: by Building

Lockwood-Mathews Mansion Recommendations

Recommendations

Immediately:

- Test the wood in the porte-cochere ceiling, including structural members above the ceiling, to determine the depth to which the wood has rotted.
- Jack up the porte-cochere ceiling, replace support fasteners with stainless steel, replace all rotted wood members with matching wood of appropriate quality and species.
- Repair/Re-point section of south wall (third floor stone mullion) that is out of plumb.
- Restore wooden exterior doors.
- Repair all roof drainage features including hooking rain leaders up to boots where the connection has been severed.

Five Years:

- Replace the framing system and transparent tiles at the conservatory with newly made reproductions of the original tiles.

Ongoing Maintenance:

- Check the air space between the veranda floor and grade several times each year to make certain that it is free of any accumulation of organic matter and any signs of pests.
- If base details of veranda columns continue to show signs of moisture, or if applied base trim will not remain fastened, additional work may be needed to separate the columns from moisture and to repair or replace rotted wood in the posts themselves. In that case, periodically check moisture content of the wood to ensure that it is below (and remains below) 20%. If rotted wood is found and moisture content is above 20%, wood will have to be replaced in part (dutchman repairs) or whole elements with water-resistant wood such as mahogany or cypress.

Lockwood-Mathews Gate Lodge Recommendations

Recommendations

Immediately

- Remove modern interior basement wall surface materials to decrease the retention of moisture in the basement.
- Establish routine maintenance of the HVAC system.
- Recommend checking the masonry of the chimney flues
- Consider adding gutters and a complete drainage system taking water away from the building site, as soon as possible.

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Within the next 5 years:

- Improve site drainage, particularly in the corner where the HVAC equipment is (south of the frame addition) and next to the exterior stairway to the basement (north of the frame addition).
- Repair deteriorated exterior doors. Remove doors to a wood shop to rebuild and install dutchman repairs. Refinish exterior doors using a stain and/or varnish to match the original.
- Improve ventilation in attic and basement levels. Dehumidifiers currently run constantly; if other measures are not effective, a rigorous system for emptying and checking dehumidifiers will be necessary.
- Replace the existing asphalt shingle roof with either 1) a new slate roof to match existing examples of original slate roofs, including slate size, shape, color, and pattern, or 2) a similar appropriate replacement. The new roof must have adequate flashing at valleys and in other locations to direct water to perimeter gutter and downspouts. A slate roof is recommended for this building because it is prominent at the entrance to the Lockwood-Mathews site.
- After moisture problems are definitely solved, extensive interior repairs are needed in the basement and the second story to remove water-damaged materials (nearly all of which are non-historic), correct hidden moisture problems, restore any damaged historic materials, and remove all aesthetically inappropriate remodeling materials from the 1970s.

Ongoing maintenance

- Some routine maintenance for the UNICO system is needed (See Mechanical Engineer's Report).

Other Issues

- The Historical Commission would like to reconstruct the missing porch and use the project to create an accessible entrance.
- The Historical Commission would like to remove the non-historic portions of the frame addition on the south side of the building. Some portions appear to be older construction covered with material from the newer campaign. Removal of the addition will be part of a program that will involve moving the visitor's bureau functions back into the original rooms of the Gate Lodge. Impacts on fine interior finishes will have to be taken into account in the design.
- We recommend removing the non-historic addition incrementally and looking very carefully for evidence of a much earlier rear addition before making any final design decisions or contracting work that might destroy an early domestic wing of the building (in other words, do not hire a demolition contractor to do total demolition, and have someone monitoring the work to identify currently concealed historic materials). If no major hidden features are found, consider a simple new addition or a porch. New work can be designed to be compatible. Use the *Secretary of the Interior's Standards for Rehabilitation* as guidance (the *Standards* are more subjective on the subject of new design than on other points; seek out good examples of simple projects that have met the *Standards* to get an adequate sense of how to meet *Standards* #9 and #10, and to remain in keeping with *Standard* #3).
- Incorporate the provision of an accessible entrance in the restoration of the northwest porch.
- Check chimney flue linings for water-tightness and check metals used around chimneys incompatible metals or for any signs of damage from galvanic action.

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Lockwood-Mathews Carriage House Recommendations

Recommendations

Immediately

- Open the ground-level vents in the middle section and secure the openings with metal grills.

Within the next 5 years:

- Assess the site adjacent to the Carriage House during and immediately after a rain.
- Install downspout extenders to direct water away from the building foundation, and reattach the rain leaders into boots leading to below-grade drainage where they are present.
- Install or improve site drains to drain water on hard site surfaces.
- Re-point the masonry in areas where the mortar is missing or visually uneven. Before pointing, analyze the original pointing mortar in order to characterize the original binder and sand and guide replication mortar selection. Produce site mockups to refine the final mortar mix. Consider removing some of more-recent mortar that does not match in order to restore the mortar design to a consistent design based on laboratory evidence of whichever mortar appears to be original.
- Remove corroding metal elements (smaller items attached to masonry surfaces, as opposed to the metal bars embedded in the stone sills and window heads that are discussed under “long term” below).
- Restore single pane wood windows in the east elevation.
- Consider installing interior storm windows to help reduce drafts.
- Introduce flashing or other measures to stop water infiltration at north second story fire escape door.

Long Term:

- Grind out the remnants of metal bars that are embedded in the stone in their entirety because corroding metal elements will expand and crack the masonry over time.

Other Issues:

- Remove (vacuum) sand/grit from former sandblasting job from cavity above bead-board ceiling because it is interfering with the print-making society’s activities.
- Reconstruction of belvedere will require complete analysis of existing upper story ceiling area truss work by a structural engineer and design of new truss work to support the belvedere.
- A complete ventilation system should be designed, removing the pipe that passes through glass, etc. Part of a new system could be incorporated into the design of the restored belvedere.
- The Historical Commission is interested in replacing the roof with slate. This should be done only in coordination with a plan for new ventilation systems, as the current roof is penetrated in many places by fans, plumbing vents, chimneys, and other ventilation features, and it should include structural analysis to assess issues relating to the weight of the slate.
- The present mechanical systems are aging and inefficient. It is recommended that the boiler and radiator system be scheduled for an upgrade to a centralized form of efficient heating and air-conditioning through a ducted forced-air approach which is zoned for each room.

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Mathews-era Gardener's Cottage Recommendations

Recommendations

Within the next 5 years:

- Review pros and cons of installing gutter system at Gardener's Cottage. Though the Cottage did not have gutters historically, the current built up site may require a re-evaluation to improve site drainage. Explore use of site drains to improve site drainage.
- Remove portion of asphalt pad at wood sill, replace it with a steel grate over a well that drains to the side and will allow water to drain and the wood to dry itself out. Consider replacing the entire asphalt pad on the north side to replace it with something angled correctly to drain away from the building, and preferably a surface that is penetrable.
- Check all wood in areas prone to moisture, probing exterior finish materials and structural members within the building near perimeter areas where moisture problems are noted in the report. Repair areas of rotting wood, using small sections where appropriate in any place where there is original wood. Where the wood is not original, replace entire pieces.
- Repair gaps at basement door to prevent water infiltration at this point.
- Review design of steps and handrails at entrances. Provide appropriate detailing of handrails at junction with masonry foundation (remove the metal posts and insert sleeves between the railing and the concrete/stone before reassembly).
- Re-point the garden wall west and north of the cottage. First analyze the original pointing mortar in order to characterize the original binder and sand and guide replication mortar selection. Produce site mockups to refine the final mortar mix.

Ongoing maintenance

- Maintain paint at wood trim. Use good quality paint [MPI—Master Painting Institute, Premium Grade Paint] and proper preparation techniques.
- Maintain paint at metal handrails to prevent corrosion and damage to masonry foundations.
- Use rot resistant wood types for exterior wood trim repairs.

Norwalk Town House Recommendations

Recommendations

Immediate:

- Paint wood trim where paint is failing, especially at the wood cornice.
- Restore / repair the bell tower platform and interior structure.

Within the next 5 years:

- Review effectiveness of "drip strip" gravel apron areas at building perimeter and roof drainage to ensure that the site is draining water properly away from the foundation.
- Review cracking at lintels and walls to identify any active structural movement.
- Consult on structural concerns, i.e. at two locations in the northeast corner, where the horizontal tie beams from the column bears on the east perimeter wall, there is significant cracking in the masonry wall which radiates from the bearing point. The connections from the tie beams between the column and the perimeter wall at the northeast corner have displaced, moved from their original mortise position in the column. Cracks were also noted at the southwest corner of the building, at the foundation level as well as in the lintel of an adjacent window.

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Within the next 10 years:

- Assess the condition of the sandstone trim and install appropriate repairs.

Within the next 15 years:

- Analyze the original pointing mortar and stucco in order to characterize the original binder and sand and guide replication mortar and stucco selection. Produce site mockups to refine the final mortar and stucco mixes.

Ongoing maintenance:

- The bricks at the Town House appear to have been damaged by grit blasting at some point in the past. Monitor damaged bricks for signs of continuing/advanced deterioration.
- To reduce biological growth, bricks and parging can be washed gently with a detergent containing a biocide. Pressure washing is not recommended.

Other Issues:

- The Historical Commission is considering removing the siding and louvers from the belfry. Since there appears to have been more than one version of the design over time, the Commission is in need of input on which design to restore to. We believe that the flared design with fish-scale wood shingles was an add-on from the 1890s, over the older wood siding, and that the return to the original shape was the correct decision when the tower was previously restored. The structural engineers have looked at the framing of the bell tower and have made additional recommendations concerning it in their report.
- The Historical Commission is considering redesigning the rear addition to have an accessible entrance and an accessible restroom, path, etc. We believe this is a good strategy, but will require architectural design services to accomplish.
- The cornice-line design looks like a box cornice but isn't. Although it appears to be the original design, the cornice shape is not ideal for shedding water and may be leading to wood deterioration. The design should not be changed visually, but the areas that are hidden from view need to be checked and possibly need to be repaired or redesigned (such as to add angled flashing that is not visible from below). This will require architectural design services to accomplish.
- Basement ventilation grates in the main part of the building need to be repaired, replaced, or redesigned. It may be possible to retain the design of the cast grates (the smaller openings) if an intact one can be removed to be used as a pattern.
- The electrical systems should be upgraded, and the HVAC system should be replaced with equipment that is not visually intrusive and meets the *Secretary of Interiors Standards*.

Governor Fitch Law Office Recommendations

Recommendations

Immediately:

- Replace wood roof with a high quality wood roof, using fire retardant shingles.
- Identify and take measures to eliminate all sources of water infiltration, including installing gutters.
- After eliminating all sources of moisture, monitor interior materials including the collections/props in the building to assure that water damage, wood decay, mold, and mold odor have all been addressed and eliminated.

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- Repair /replace the thresholds of the two doorways and repair any rotting members or flooring by the two doorways.
- Consider cutting down the surrounding hillside trees or substantially trimming them back to allow for greater air-flow.
- Consider upgrading the “drip strip” gravel apron to an excavated trench of six or more inches filled with gravel with a concealed drainage system that will lead water away from the building.
- Repair / replace the basement stairway support posts.

Within the next 5 years:

- Monitor the condition of the wood at the foundation to see if the recently installed gravel drains improve site drainage and keep wood dry.
- After all sources of moisture have been eliminated, evaluate how well the baseboard heating system works and how effective it is in keeping the interior dry (see Mechanical Engineer’s report).
- Remove overhanging invasive species trees to help reduce biological growth on building surfaces.
- Investigate the structural components of wood framing at the foundation for wood rot.
- It may be possible to control biological growth on the roof shingles, and thus lengthen the life of the shingles, by spraying the surface with a chemical biocide from time to time. However, further research is needed before this step would be recommended by the JMA team. Most importantly, since wood shingle roofs have many openings allowing air to flow around the shingles, it is important to control any spraying process in a way that keeps the solution from coming into the building or into crevices where it could be detrimental.

Within the next 10 years:

- If the bottom wood members remain moist despite the drip strip gravel aprons, lower the soil line around the building, in keeping with older photographs on the lower side and at least 6 inches (measured from soil to wood) on the uphill side of the building.

Ongoing maintenance:

- Decrease biological growth by improving site drainage and removing overhanging trees.
- If periodic cleaning is used to remove biological growth from the roof, we caution that it is critical to assure that water is not driven into the spaces between shingles in the process.

Other Issues:

- There is a loose column in the basement. See structural engineers’ report.

Downtown District Schoolhouse Recommendations

Recommendations

Within the next 5 years:

- Monitor the condition of the wood at the foundation to see if the recently installed “drip strip” gravel aprons improve site drainage. If moisture is still a problem, consider digging gravel drains around the building.
- Investigate the structural components of wood framing at the foundation for wood rot.
- Monitor the condition of the ceiling above the classroom for condensation caused by the heating of the plaster. (The ceiling in the Governor Fitch Law Office was heated in the same

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manner, and one winter the entire ceiling fell damaging some of the collections as well as the plaster.)

Within the next 10 years:

- Investigate the original foundation height. If the bottom wood members remain moist despite the ground gutter, lower the soil line around the building, in keeping with older photographs on the lower side and at least 6 inches (measured from soil to wood) on the uphill side of the building.

Old Jail Recommendations

Recommendations

Immediately

- Reconnect downspouts to half-round gutters at the southwest. Replace any missing gutters and/or downspouts.
- Return window sashes in correct position (provide support for upper sash if needed).
- Remove deteriorated shutters until new ones can be made.
- Provide better insulation for the apartments.
- Remove combustible materials such as paints and paint-related chemicals to a safe location. Take steps to reduce the amount of combustible materials in apartments and debris blocking access areas such as the area around the pull-down stairs to the attic.

Within the next 5 years:

- Check all floor framing for structural adequacy and joinery, repair as needed, and assure that all openings are properly framed with headers, etc.
- Investigate cracking at southeast foundation.
- Rebuild louvered wood shutters.
- Re-point in select areas after analyzing the original pointing mortar in order to characterize the original binder and sand and guide replication mortar selection. Produce site mockups to refine the final mortar mix.
- Paint all exterior wood trim.
- Investigate the roof shingles and repair as needed.
- Provide a second means of egress from apartments as soon as possible (this might include removing or altering the fixed iron grates on the east elevation windows so it would be possible to exit from windows in the case of a fire).

Smith Street Barn Recommendations

Recommendations

Immediately:

- Clean and remove the collected debris in the narrow space next to the retaining wall on the east side of the Barn.
- Keep the foliage away from the barn walls.

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Within the next 5 years:

- Demolish the concrete block structure at the southeast façade which is unsafe. Consider including a new stairway, either interior or exterior, to the second story.
- Repair windows and provide for adequate ventilation for preservation purposes as a “mothballed” unheated building.
- Repair openings in wood siding to keep out moisture and animals.
- Develop plans for future re-use.

Compilation of Recommendations from All Sections of the Report

Part II: by Time Frame

Immediate Issues:

Lockwood-Mathews Mansion

- Test the wood in the porte-cochere ceiling, including structural members above the ceiling, to determine the depth to which the wood has rotted.
- Jack up the porte-cochere ceiling, replace support fasteners with stainless steel, replace all rotted wood members with matching wood of appropriate quality and species.
- Repair/Re-point section of south wall (third floor stone mullion) that is out of plumb.
- Restore wooden exterior doors.
- Repair all roof drainage features including hooking rain leaders up to boots where the connection has been severed.

Lockwood-Mathews Gate Lodge

- Remove modern interior basement wall surface materials to decrease the retention of moisture in the basement.
- Establish routine maintenance of the HVAC system.
- Recommend checking the masonry of the chimney flues
- Consider adding gutters and a complete drainage system taking water away from the building site, as soon as possible.

Lockwood-Mathews Carriage House

- Open the ground-level vents in the middle section and secure the openings with metal grills.

Norwalk Town House

- Paint wood trim where paint is failing, especially at the wood cornice.
- Restore / repair the bell tower platform and interior structure.

Governor Fitch Law Office

- Replace wood roof with a high quality wood roof, using fire retardant shingles.
- Identify and take measures to eliminate all sources of water infiltration, including installing gutters.
- After eliminating all sources of moisture, monitor interior materials including the collections/props in the building to assure that water damage, wood decay, mold, and mold odor have all been addressed and eliminated.

Old Jail

- Reconnect downspouts to half-round gutters at the southwest. Replace any missing gutters and/or downspouts.
- Return window sashes in correct position (provide support for upper sash if needed).
- Remove deteriorated shutters until new ones can be made.
- Provide better insulation for the apartments.
- Remove combustible materials such as paints and paint-related chemicals to a safe location. Take steps to reduce the amount of combustible materials in apartments and debris blocking access areas such as the area around the pull-down stairs to the attic.

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Smith Street Barn

- Clean and remove the collected debris in the narrow space next to the retaining wall on the east side of the Barn.
- Keep the foliage away from the barn walls.

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Issues to Address within the next 5 years:

Lockwood-Mathews Mansion

- Replace the framing system and transparent tiles at the conservatory with newly made reproductions of the original tiles.

Lockwood-Mathews Gate Lodge

- Improve site drainage, particularly in the corner where the HVAC equipment is (south of the frame addition) and next to the exterior stairway to the basement (north of the frame addition).
- Repair deteriorated exterior doors. Remove doors to a wood shop to rebuild and install dutchman repairs. Refinish exterior doors using a stain and/or varnish to match the original.
- Improve ventilation in attic and basement levels. Dehumidifiers currently run constantly; if other measures are not effective, a rigorous system for emptying and checking dehumidifiers will be necessary.
- Replace the existing asphalt shingle roof with either 1) a new slate roof to match existing examples of original slate roofs, including slate size, shape, color, and pattern, or 2) a similar appropriate replacement. The new roof must have adequate flashing at valleys and in other locations to direct water to perimeter gutter and downspouts. A slate roof is recommended for this building because it is prominent at the entrance to the Lockwood-Mathews site.
- After moisture problems are definitely solved, extensive interior repairs are needed in the basement and the second story to remove water-damaged materials (nearly all of which are non-historic), correct hidden moisture problems, restore any damaged historic materials, and remove all aesthetically inappropriate remodeling materials from the 1970s.

Lockwood-Mathews Carriage House

- Assess the site adjacent to the Carriage House during and immediately after a rain.
- Install downspout extenders to direct water away from the building foundation, and reattach the rain leaders into boots leading to below-grade drainage where they are present.
- Install or improve site drains to drain water on hard site surfaces.
- Re-point the masonry in areas where the mortar is missing or visually uneven. Before pointing, analyze the original pointing mortar in order to characterize the original binder and sand and guide replication mortar selection. Produce site mockups to refine the final mortar mix. Consider removing some of more-recent mortar that does not match in order to restore the mortar design to a consistent design based on laboratory evidence of whichever mortar appears to be original.
- Remove corroding metal elements (smaller items attached to masonry surfaces, as opposed to the metal bars embedded in the stone sills and window heads that are discussed under “long term” below).
- Restore single pane wood windows in the east elevation.
- Consider installing interior storm windows to help reduce drafts.
- Introduce flashing or other measures to stop water infiltration at north second story fire escape door.

Mathews-era Gardener’s Cottage

- Review pros and cons of installing gutter system at Gardener’s Cottage. Though the Cottage did not have gutters historically, the current built up site may require a re-evaluation to improve site drainage. Explore use of site drains to improve site drainage.

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- Remove portion of asphalt pad at wood sill, replace it with a steel grate over a well that drains to the side and will allow water to drain and the wood to dry itself out. Consider replacing the entire asphalt pad on the north side to replace it with something angled correctly to drain away from the building, and preferably a surface that is penetrable.
- Check all wood in areas prone to moisture, probing exterior finish materials and structural members within the building near perimeter areas where moisture problems are noted in the report. Repair areas of rotting wood, using small sections where appropriate in any place where there is original wood. Where the wood is not original, replace entire pieces.
- Repair gaps at basement door to prevent water infiltration at this point.
- Review design of steps and handrails at entrances. Provide appropriate detailing of handrails at junction with masonry foundation (remove the metal posts and insert sleeves between the railing and the concrete/stone before reassembly).
- Re-point the garden wall west and north of the cottage. First analyze the original pointing mortar in order to characterize the original binder and sand and guide replication mortar selection. Produce site mockups to refine the final mortar mix.

Norwalk Town House

- Review effectiveness of “drip strip” gravel apron areas at building perimeter and roof drainage to ensure that the site is draining water properly away from the foundation.
- Review cracking at lintels and walls to identify any active structural movement.
- Consult on structural concerns, i.e. at two locations in the northeast corner, where the horizontal tie beams from the column bears on the east perimeter wall, there is significant cracking in the masonry wall which radiates from the bearing point. The connections from the tie beams between the column and the perimeter wall at the northeast corner have displaced, moved from their original mortise position in the column. Cracks were also noted at the southwest corner of the building, at the foundation level as well as in the lintel of an adjacent window.

Governor Fitch Law Office

- Monitor the condition of the wood at the foundation to see if the recently installed gravel drains improve site drainage and keep wood dry.
- After all sources of moisture have been eliminated, evaluate how well the baseboard heating system works and how effective it is in keeping the interior dry (see Mechanical Engineer’s report).
- Remove overhanging invasive species trees to help reduce biological growth on building surfaces.
- Investigate the structural components of wood framing at the foundation for wood rot.
- It may be possible to control biological growth on the roof shingles, and thus lengthen the life of the shingles, by spraying the surface with a chemical biocide from time to time. However, further research is needed before this step would be recommended by the JMA team. Most importantly, since wood shingle roofs have many openings allowing air to flow around the shingles, it is important to control any spraying process in a way that keeps the solution from coming into the building or into crevices where it could be detrimental.

Downtown District Schoolhouse

- Monitor the condition of the wood at the foundation to see if the recently installed “drip strip” gravel aprons improve site drainage. If moisture is still a problem, consider digging gravel drains around the building.
- Investigate the structural components of wood framing at the foundation for wood rot.

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- Monitor the condition of the ceiling above the classroom for condensation caused by the heating of the plaster. (The ceiling in the Governor Fitch Law Office was heated in the same manner, and one winter the entire ceiling fell damaging some of the collections as well as the plaster.)

Old Jail

- Check all floor framing for structural adequacy and joinery, repair as needed, and assure that all openings are properly framed with headers, etc.
- Investigate cracking at southeast foundation.
- Rebuild louvered wood shutters.
- Re-point in select areas after analyzing the original pointing mortar in order to characterize the original binder and sand and guide replication mortar selection. Produce site mockups to refine the final mortar mix.
- Paint all exterior wood trim.
- Investigate the roof shingles and repair as needed.
- Provide a second means of egress from apartments as soon as possible (this might include removing or altering the fixed iron grates on the east elevation windows so it would be possible to exit from windows in the case of a fire).

Smith Street Barn

- Demolish the concrete block structure at the southeast façade which is unsafe. Consider including a new stairway, either interior or exterior, to the second story.
- Repair windows and provide for adequate ventilation for preservation purposes as a “mothballed” unheated building.
- Repair openings in wood siding to keep out moisture and animals.
- Develop plans for future re-use.

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Issues to Address within the next 10 years:

Norwalk Town House

- Assess the condition of the sandstone trim and install appropriate repairs.

Governor Fitch Law Office

- If the bottom wood members remain moist despite the drip strip gravel aprons, lower the soil line around the building, in keeping with older photographs on the lower side and at least 6 inches (measured from soil to wood) on the uphill side of the building.

Downtown District Schoolhouse

- Investigate the original foundation height. If the bottom wood members remain moist despite the ground gutter, lower the soil line around the building, in keeping with older photographs on the lower side and at least 6 inches (measured from soil to wood) on the uphill side of the building.

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Issues to Address within the next 15 years:

Norwalk Town House

- Analyze the original pointing mortar and stucco in order to characterize the original binder and sand and guide replication mortar and stucco selection. Produce site mockups to refine the final mortar and stucco mixes.

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Ongoing Maintenance Issues:

Lockwood-Mathews Mansion

- Check the air space between the veranda floor and grade several times each year to make certain that it is free of any accumulation of organic matter and any signs of pests.
- If base details of veranda columns continue to show signs of moisture, or if applied base trim will not remain fastened, additional work may be needed to separate the columns from moisture and to repair or replace rotted wood in the posts themselves. In that case, periodically check moisture content of the wood to ensure that it is below (and remains below) 20%. If rotted wood is found and moisture content is above 20%, wood will have to be replaced in part (dutchman repairs) or whole elements with water-resistant wood such as mahogany or cypress.

Lockwood-Mathews Gate Lodge

- Some routine maintenance for the UNICO system is needed (See Mechanical Engineer's Report).

Mathews-era Gardener's Cottage

- Maintain paint at wood trim. Use good quality paint [MPI—Master Painting Institute, Premium Grade Paint] and proper preparation techniques.
- Maintain paint at metal handrails to prevent corrosion and damage to masonry foundations.
- Use rot resistant wood types for exterior wood trim repairs.

Norwalk Town House

- The bricks at the Town House appear to have been damaged by grit blasting at some point in the past. Monitor damaged bricks for signs of continuing/advanced deterioration.
- To reduce biological growth, bricks and parging can be washed gently with a detergent containing a biocide. Pressure washing is not recommended.

Governor Fitch Law Office

- Decrease biological growth by improving site drainage and removing overhanging trees.
- If periodic cleaning is used to remove biological growth from the roof, we caution that it is critical to assure that water is not driven into the spaces between shingles in the process.

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Long Term Issues:

Lockwood-Mathews Carriage House

- Grind out the remnants of metal bars that are embedded in the stone in their entirety because corroding metal elements will expand and crack the masonry over time.

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Other Issues:

Lockwood-Mathews Gate Lodge

- The Historical Commission would like to reconstruct the missing porch and use the project to create an accessible entrance.
- The Historical Commission would like to remove the non-historic portions of the frame addition on the south side of the building. Some portions appear to be older construction covered with material from the newer campaign. Removal of the addition will be part of a program that will involve moving the visitor's bureau functions back into the original rooms of the Gate Lodge. Impacts on fine interior finishes will have to be taken into account in the design.
- We recommend removing the non-historic addition incrementally and looking very carefully for evidence of a much earlier rear addition before making any final design decisions or contracting work that might destroy an early domestic wing of the building (in other words, do not hire a demolition contractor to do total demolition, and have someone monitoring the work to identify currently concealed historic materials). If no major hidden features are found, consider a simple new addition or a porch. New work can be designed to be compatible. Use the *Secretary of the Interior's Standards for Rehabilitation* as guidance (the *Standards* are more subjective on the subject of new design than on other points; seek out good examples of simple projects that have met the *Standards* to get an adequate sense of how to meet *Standards* #9 and #10, and to remain in keeping with *Standard* #3).
- Incorporate the provision of an accessible entrance in the restoration of the northwest porch.
- Check chimney flue linings for water-tightness and check metals used around chimneys incompatible metals or for any signs of damage from galvanic action.

Lockwood-Mathews Carriage House

- Remove (vacuum) sand/grit from former sandblasting job from cavity above bead-board ceiling because it is interfering with the print-making society's activities.
- Reconstruction of belvedere will require complete analysis of existing upper story ceiling area truss work by a structural engineer and design of new truss work to support the belvedere.
- A complete ventilation system should be designed, removing the pipe that passes through glass, etc. Part of a new system could be incorporated into the design of the restored belvedere.
- The Historical Commission is interested in replacing the roof with slate. This should be done only in coordination with a plan for new ventilation systems, as the current roof is penetrated in many places by fans, plumbing vents, chimneys, and other ventilation features, and it should include structural analysis to assess issues relating to the weight of the slate.
- The present mechanical systems are aging and inefficient. It is recommended that the boiler and radiator system be scheduled for an upgrade to a centralized form of efficient heating and air-conditioning through a ducted forced-air approach which is zoned for each room.

Norwalk Town House

- The Historical Commission is considering removing the siding and louvers from the belfry. Since there appears to have been more than one version of the design over time, the Commission is in need of input on which design to restore to. We believe that the flared design with fish-scale wood shingles was an add-on from the 1890s, over the older wood siding, and that the return to the original shape was the correct decision when the tower was previously restored. The structural engineers have looked at the framing of the bell tower and have made additional recommendations concerning it in their report.

*Comprehensive Historic Preservation Plan for Nine Historic Buildings
Owned by the City of Norwalk, Connecticut*

- The Historical Commission is considering redesigning the rear addition to have an accessible entrance and an accessible restroom, path, etc. We believe this is a good strategy, but will require architectural design services to accomplish.
- The cornice-line design looks like a box cornice but isn't. Although it appears to be the original design, the cornice shape is not ideal for shedding water and may be leading to wood deterioration. The design should not be changed visually, but the areas that are hidden from view need to be checked and possibly need to be repaired or redesigned (such as to add angled flashing that is not visible from below). This will require architectural design services to accomplish.
- Basement ventilation grates in the main part of the building need to be repaired, replaced, or redesigned. It may be possible to retain the design of the cast grates (the smaller openings) if an intact one can be removed to be used as a pattern.
- The electrical systems should be upgraded, and the HVAC system should be replaced with equipment that is not visually intrusive and meets the *Secretary of Interiors Standards*.

Governor Fitch Law Office

- There is a loose column in the basement. See structural engineers' report.



List of Drawings and Similar Documents Provided by the City

*Comprehensive Historic Preservation Plan for Nine Historic Buildings
Owned by the City of Norwalk, Connecticut*

List of Drawings provided to JMA by Norwalk Museum

<u>NAME OF DRAWING SET</u>	<u>NAME OF ARCHITECT OR FIRM</u>	<u>NAME OF DRAWING</u>	<u>SHEET NUMBER</u>	<u>DATE</u>	<u>REVISED</u>
<u>School House Design Development</u>					
	Gaydosh, John, Architect	Site Plan, Restoration of the Fitch House and Schoolhouse	DD1	6/12/1970	
	Gaydosh, John, Architect	First Floor Plan	DD2	6/12/1970	
	Gaydosh, John, Architect	North and South Elevations	DD3	6/12/1970	
	Gaydosh, John, Architect	East and West Elevations	DD4	6/12/1970	
	Gaydosh, John, Architect	Cross Section and Interior Elevation	DD5	6/12/1970	
	Gaydosh, John, Architect	Longitudinal Section	DD6	6/12/1970	
<u>Restoration of the Governor Fitch House and the Old Schoolhouse Phase 2</u>					
	Gaydosh, John, Architect	Index to Drawings	1	9/28/1970	
	Gaydosh, John, Architect	Site Plan	2	9/28/1970	
	Gaydosh, John, Architect	Cellar Floor Plan Details Fitch House	3	9/28/1970	
	Gaydosh, John, Architect	Foundation Plan Schoolhouse	4	9/28/1970	
	Gaydosh, John, Architect	First & Attic Floor Plans Fitch House	5	9/28/1970	
	Gaydosh, John, Architect	North and South Elevations and Cornice Details Fitch House	6	9/28/1970	
	Gaydosh, John, Architect	East Elevation Fitch House	7	9/28/1970	
	Gaydosh, John, Architect	West Elevation Fitch House	8	9/28/1970	
	Gaydosh, John, Architect	Cross Section and Details Fitch House	9	9/28/1970	
	Gaydosh, John, Architect	Longitudinal Section & Details Fitch House	10	9/28/1970	
	Gaydosh, John, Architect	Interior Elevation Fitch House	11	9/28/1970	
	Gaydosh, John, Architect	Interior Elevation Fitch House	12	9/28/1970	
	Gaydosh, John, Architect	Details of Stairs and Entrance Door	13	9/28/1970	
	Gaydosh, John, Architect	Alternate #1 Details Fitch House	14	9/28/1970	
	Gaydosh, John, Architect	Revision to Front Door Hardware	110	1/5/1971	
	Gaydosh, John, Architect	Cellar Plan Fitch House	E-1	9/28/1970	
	Gaydosh, John, Architect	First Floor Plan Fitch House	E-2	9/28/1970	

John Milner Associates, Inc., March 2010

*Comprehensive Historic Preservation Plan for Nine Historic Buildings
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Gaydosh, John, Architect	Attic Plan Fitch House	E-3	9/28/1970
Gaydosh, John, Architect	Riser Diagram & Panel Schedule Fitch House	E-4	9/28/1970
Gaydosh, John, Architect	First Floor Ceiling Plan - Electric Heat Fitch House	E-5	9/28/1970
Gaydosh, John, Architect	Site Plan, Stage#1- Site Work and Temporary Repairs	1 of 2	9/8/1969
Gaydosh, John, Architect	Foundation Plans & Details	2 of 2	9/8/1969
Gaydosh, John, Architect	Full Size Details of Cornice Mouldings	101	2/9/1971
Gaydosh, John, Architect	1 1/2" & Full Size Details Door Frame # 100	102	2/11/1971
Gaydosh, John, Architect	FSD Main Entrance Door Sill Typical FSD- Water Table	103	2/12/1971
Gaydosh, John, Architect	Revised Details of Door #104	105	2/22/1971

Restoration of the Old Schoolhouse

Gaydosh, John, Architect	First Floor Plan Existing Conditions, Restoration of the Old Schoolhouse	PS-1	Undated
Gaydosh, John, Architect	Norht and South Elevations Existing Conditions	PS-2	Undated
Gaydosh, John, Architect	East Elevation Existing Conditions	PS-3	Undated
Gaydosh, John, Architect	West Elevation Existing Conditions	PS-4	Undated
Gaydosh, John, Architect	Sections S-1 & S-2 Existing Conditions	PS-5	Undated
Gaydosh, John, Architect	Sections S-3 Existing Conditions	PS-6	Undated

Phase 4 Restoration The Old Schoolhouse

Gaydosh, John, Architect	Title & Index	1	8/1/1972
Gaydosh, John, Architect	Floor Plan	2	8/1/1972
Gaydosh, John, Architect	Classroom Elevations	3	8/1/1972
Gaydosh, John, Architect	Wardrobe Elevations	4	8/1/1972
Gaydosh, John, Architect	Details	5	8/1/1972
Gaydosh, John, Architect	Site Plan & Symbol List	E-1	8/1/1972
Gaydosh, John, Architect	Plan Layout Light & Power System	E-2	8/1/1972
Gaydosh, John, Architect	Plan Layout Elec. Heating System	E-3	8/1/1972
Gaydosh, John, Architect	Plan Layout Crawl & Attic Space	E-4	8/1/1972
Gaydosh, John, Architect	Details & Sections	E-5	8/1/1972
Gaydosh, John, Architect	Plan Layout Premises Protection Security Alarm System	E-6	8/1/1972

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<u>NAME OF DRAWING SET</u>		<u>SHEET</u>		
<u>NAME OF ARCHITECT OR FIRM</u>	<u>NAME OF DRAWING</u>	<u>NUMBER</u>	<u>DATE</u>	<u>REVISED</u>
<u>Loose Paper</u>				
N/A	Study Sheet Fitch House	N/A	Undated	
<u>Renovations of the Smith Street Jail</u>				
Falconer, David B., Architect	Site Plan Tree Removal Plan	S1	5/13/1980	5/28/1980
Falconer, David B., Architect	Roof Plan	A1	5/13/1980	5/28/1980
Falconer, David B., Architect	Attic Floor Plan	A2	5/13/1980	5/28/1980
Falconer, David B., Architect	Second Floor Plan	A3	5/13/1980	5/28/1980
Falconer, David B., Architect	Elevations	A4	5/13/1980	5/28/1980
Falconer, David B., Architect	Chimney Details	A5	5/13/1980	5/28/1980
Falconer, David B., Architect	Details	A6	5/13/1980	5/28/1980
Falconer, David B., Architect	Existing First Floor	EX-1	2/25/1980	
Falconer, David B., Architect	Existing Second Floor	EX-2	2/25/1980	
Falconer, David B., Architect	Existing Third Floor	EX-3	2/25/1980	
Falconer, David B., Architect	Exist. Front Elev.	EX-4	2/25/1980	
Falconer, David B., Architect	Exist. Rear Elevation	EX-5	2/25/1980	
Falconer, David B., Architect	Exist. Side Elevations	EX-6	2/25/1980	
Falconer, David B., Architect	Exist. Bldg. Section	EX-7	2/25/1980	
Falconer, David B., Architect	Demolition Site Plan	D1	Undated	
Falconer, David B., Architect	First Floor Plan, Interior Elevations	A1	10/28/1981	
Falconer, David B., Architect	Exterior Elevation	N/A	10/28/1981	
Falconer, David B., Architect	Exterior Elevation	N/A	10/28/1981	
Falconer, David B., Architect	Exterior Elevation	N/A	10/28/1981	
Falconer, David B., Architect	N/A	N/A	Undated	
Falconer, David B., Architect	Site Plan	S1	7/26/1982	
Falconer, David B., Architect	First Level Plan Second Level Plan Door Schedules	A1	7/29/1982	
Falconer, David B., Architect	Building Section Interior Elevations	A2	6/25/1982	7/26/1982, 7/29/1982

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<u>NAME OF DRAWING SET</u>	<u>NAME OF ARCHITECT OR FIRM</u>	<u>NAME OF DRAWING</u>	<u>SHEET NUMBER</u>	<u>DATE</u>	<u>REVISED</u>
<u>Smith Street Barn Restoration</u>					
	Desalvo, Arthur Jr., Architect, Group.Six	Existing Plan	N/A	Undated	
	Desalvo, Arthur Jr., Architect, Group.Six	Existing Elevations	N/A	11/2/1983	
	Desalvo, Arthur Jr., Architect, Group.Six	Elevations	N/A	11/11/1983	
	Desalvo, Arthur Jr., Architect, Group.Six	BLDG. Floor Plans	N/A	11/11/1983	
<u>Lockwood-Mathews Mansion</u>					
	Jennewein Architects & Builders, Inc.	Kitchen Alterations	N/A	12/20/1983	
<u>(Site Survey Map) Map Prepared for The Norwalk Historical Commissions</u>					
	Barbee and Seymour Land Surveyors	Map Prepared for The Norwalk Historical Commissions	N/A	11/24/1981	
<u>(Site Survey Map) Map Showing Property of The City of Norwalk East Wall Street, Humbell's Lane and Smith Street</u>					
	(Unattributed)	Map Showing Property of The City of Norwalk East Wall Street, Humbell's Lane and Smith Street	N/A	7/1/1963	
<u>Planometric and Topographic Maps of the City of Norwalk, Connecticut, Map No. 861084</u>					
	Department of Public Works	(Portion of city building footprint map showing all Mill Hill and Smith Street buildings, also continuing north to north side of Lewis Street and east to east side of East Avenue)	N/A	Undated	
<u>Copy of Map of Property Belonging to Rebecca Matthews (sic) at Norwalk, Conn.</u>					
	C.N. Wood, C.E.	Building and topographic survey drafted on linen, copied in July 1924 from a June 1907 original	N/A	6/1/1907	
<u>Lockwood-Mathews Mansion Master Plan Services (Report)</u>					
	David Scott Parker Architects	Plans of all parts of the building	N/A	4/14/2008	9/9/2008
<u>Roof Rehabilitation--The Lockwood-Mathews Mansion (Stapled set of 11 sheets)</u>					
	Hoffmann Architects	Roof Plan, North Elevation, South Elevation, East Elevation, West Elevation, & (6 sheets) Details	A1 - A11	7/7/2000	
<u>Exterior Restoration of the Gate House (Stapled set of 10 sheets)</u>					
	Nicholas M. Pacella & Associates	Cover Sheet, Notes & Symbols, Specifications (2 sheets), Proposed & Future Site Work, Proposed Site Work & Exterior Work, North & East Elevations, Existing & New Trim Details, New Porch Details	A0, A__, A001, A002, A101, A111, A310, A311, A310, A311, A610, A611	8/18/99, 11/23/99, 12/27/99, 1/5/00	

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Comprehensive Historic Preservation Plan for Nine Historic Buildings

Owned by the City of Norwalk, Connecticut

LOCKWOOD-MATHEWS MANSION

The images on this page are from: Library of Congress, Prints and Photographs Division, Historic American Buildings Survey, accessed online at: <http://www.loc.gov/index.html>



Photo 1 Historic American Buildings Survey, Cervin Robinson, Photographer, March 1961, WEST ELEVATION, looking southeast



Photo 2 Historic American Buildings Survey, Cervin Robinson, Photographer, March 1961, WEST ELEVATION, looking east



Photo 3 Historic American Buildings Survey, Cervin Robinson, Photographer, March 1961, WEST (FRONT) AND SOUTH ELEVATIONS, looking northeast



Photo 4 Historic American Buildings Survey, Cervin Robinson, Photographer, April 1961, SOUTH ELEVATION, looking northeast



Photo 5 Historic American Buildings Survey, Cervin Robinson, Photographer, March 1961, SOUTH AND EAST ELEVATIONS, looking northwest



Photo 6 Historic American Buildings Survey, Cervin Robinson, Photographer, April 1961, EAST ELEVATION, looking west

LOCKWOOD-MATHEWS MANSION

The images on this page are from: Library of Congress, Prints and Photographs Division,
Historic American Buildings Survey, accessed online at: <http://www.loc.gov/index.html>



Photo 7 Historic American Buildings Survey, Cervin Robinson, Photographer, April 1961, EAST ELEVATION, looking southwest



Photo 8 Historic American Buildings Survey, Cervin Robinson, Photographer, March 1961, NORTH ELEVATION, looking south



Photo 9 Historic American Buildings Survey, Cervin Robinson, Photographer, March 1961, CONSERVATORY ON WEST ELEVATION, as viewed through Porte Cochere looking southeast



Photo 10 Historic American Buildings Survey, Cervin Robinson, Photographer, March 1961, interior STAIRWAY DETAIL, looking northwest

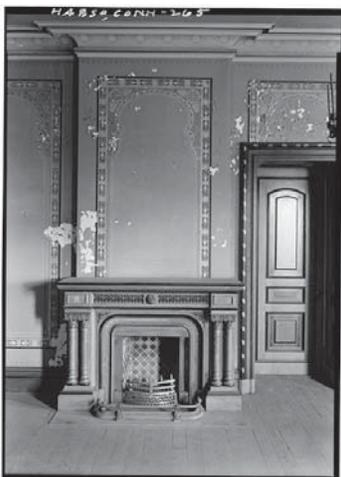


Photo 11 Historic American Buildings Survey, Cervin Robinson, Photographer, April 1961, MANTEL-PIECE AND DOORWAY IN THE SOUTH CENTER CHAMBER OF THE SECOND FLOOR



Photo 12 Historic American Buildings Survey, Cervin Robinson, Photographer, April 1961, FIREPLACE WALL IN SOUTHEAST ROOM ON SECOND FLOOR

LOCKWOOD-MATHEWS MANSION

The images on this page are from: Library of Congress, Prints and Photographs Division, Historic American Buildings Survey, accessed online at: <http://www.loc.gov/index.html>



Photo 13 Historic American Buildings Survey (photographer and date not given), INTERIOR VIEW SOUTH, FROM MAIN STAIR LANDING



Photo 14 Historic American Buildings Survey (photographer and date not given), INTERIOR VIEW FROM HEAD OF MAIN STAIRCASE OF WALL



Photo 15 Historic American Buildings Survey (photographer and date not given), DINING ROOM MANTEL



Photo 16 Historic American Buildings Survey (photographer and date not given), LIBRARY MANTEL



Photo 17 Historic American Buildings Survey (photographer and date not given), ETCHED GLASS OVER MANTEL



Photo 18 Historic American Buildings Survey (photographer and date not given), VESTIBULE

LOCKWOOD-MATHEWS MANSION

The images on this page are from: Library of Congress, Prints and Photographs Division, Historic American Buildings Survey, accessed online at: <http://www.loc.gov/index.html>



Photo 19 Historic American Buildings Survey (photographer and date not given), BATHROOM, SECOND FLOOR, EAST OF SERIVE STAIRCASE



Photo 20 Historic American Buildings Survey (photographer and date not given), BATHROOM, EAST OF SOUTH CENTRAL SECOND FLOOR ROOM



Photo 21 Historic American Buildings Survey (photographer and date not given), VIEW ACROSS ROTUNDA FROM DINNING ROOM DOOR



Photo 22 Historic American Buildings Survey (photographer and date not given), VIEW SOUTHWEST ACROSS ROTUNDA FROM SECOND FLOOR EAST DOOR



Photo 23 Historic American Buildings Survey (photographer and date not given), VIEW OF SKYLIGHT ABOVE GLASS CEILING OF ROTUNDA, IN ATTIC

LOCKWOOD-MATHEWS MANSION

The images on this page were taken by staff of the Lockwood-Mathews Mansion Museum and provided to the team by the staff of the Norwalk Museum.



Photo 24 Lockwood-Mathews Mansion, INTERIOR VIEW OF CONSERVATORY, from the Norwalk Museum courtesy City of Norwalk.



Photo 25 Lockwood-Mathews Mansion, DETAIL VIEW OF HISTORIC GLASS PANES IN STORAGE, from the Norwalk Museum courtesy City of Norwalk.



Photo 26 Lockwood-Mathews Mansion, DETAIL VIEW OF HISTORIC GLASS PANES IN STORAGE, from the Norwalk Museum courtesy City of Norwalk.



Photo 27 Lockwood-Mathews Mansion, DETAIL VIEW OF HISTORIC GLASS PANES IN STORAGE, from the Norwalk Museum courtesy City of Norwalk.



Photo 28 Lockwood-Mathews Mansion, DETAIL VIEW OF HISTORIC GLASS PANES IN STORAGE, from the Norwalk Museum courtesy City of Norwalk.



Photo 29 Lockwood-Mathews Mansion, DETAIL VIEW OF HISTORIC GLASS PANES IN STORAGE, from the Norwalk Museum courtesy City of Norwalk.

LOCKWOOD-MATHEWS MANSION

The images on this page were taken by staff of the Lockwood-Mathews Mansion Museum and provided to the team by the staff of the Norwalk Museum.



Photo 30 Lockwood-Mathews Mansion, INTERIOR VIEW OF CONSERVATORY SKYLIGHT, from the Norwalk Museum courtesy City of Norwalk.



Photo 31 Lockwood-Mathews Mansion, INTERIOR VIEW OF CONSERVATORY CLOSEUP OF SKYLIGHT, from the Norwalk Museum courtesy City of Norwalk.



Photo 32 Lockwood-Mathews Mansion, INTERIOR VIEW OF CONSERVATORY OF FLOOR, from the Norwalk Museum courtesy City of Norwalk.



Photo 33 Lockwood-Mathews Mansion, INTERIOR VIEW OF CONSERVATORY CLOSEUP OF FLOOR, from the Norwalk Museum courtesy City of Norwalk.

LOCKWOOD-MATHEWS MANSION

The images on this page were taken by city staff and provided to the team by the staff of the Norwalk Museum.



Photo 34 Lockwood Matthew Mansion Porte-Cochere, DURING 2009 PAINTING PROJECT, courtesy City of Norwalk.



Photo 35 Lockwood Matthew Mansion Porte-Cochere, DURING 2009 PAINTING PROJECT, courtesy City of Norwalk.



Photo 36 Lockwood Matthew Mansion Porte-Cochere, DURING 2009 PAINTING PROJECT, courtesy City of Norwalk.

LOCKWOOD-MATHEWS GATE LODGE

The images on this page were taken by city staff and provided to the team by the staff of the Norwalk Museum.



Photo 3 Lockwood-Mathews Gate Lodge, DURING 2009 PAINTING PROJECT, courtesy City of Norwalk.



Photo 4 Lockwood-Mathews Gate Lodge, DURING 2009 PAINTING PROJECT, courtesy City of Norwalk.



Photo 5 Lockwood-Mathews Gate Lodge, DURING 2009 PAINTING PROJECT, courtesy City of Norwalk.

LOCKWOOD-MATHEWS GATE LODGE

The images on this page are from the collections of the Lockwood-Mathews Mansion Museum and Norwalk Museum and were provided to the team by the staff of the Norwalk Museum.



Photo 1 Lockwood-Mathews Gate Lodge, Jack with parents South side of the Gate Lodge at a distance, Norwalk Museum courtesy City of Norwalk.



Photo 2 Lockwood-Mathews Gate Lodge, Whyte Family - Jack with parents and Boris, Norwalk Museum courtesy City of Norwalk.

LOCKWOOD-MATHEWS CARRIAGE HOUSE

The images on this page were provided by staff of the Center for Contemporary Printmaking from copies on file in their office.



Photo 1 Lockwood-Mathews Carriage House,
PHOTOGRAPH OF BUILDING BEFORE
BELVEDERE WAS REMOVED, copy from print kept in
the offices of the Society for Contemporary Printmaking.

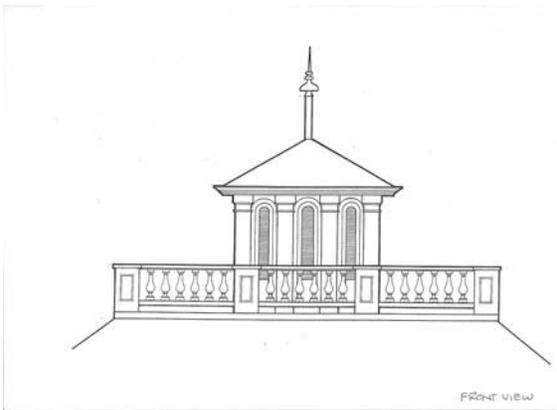


Photo 2 Lockwood-Mathews Carriage House,
DETAIL OF BELVEDERE, SOUTH ELEVATION,
attributed to Richard Bergmann, Architect.

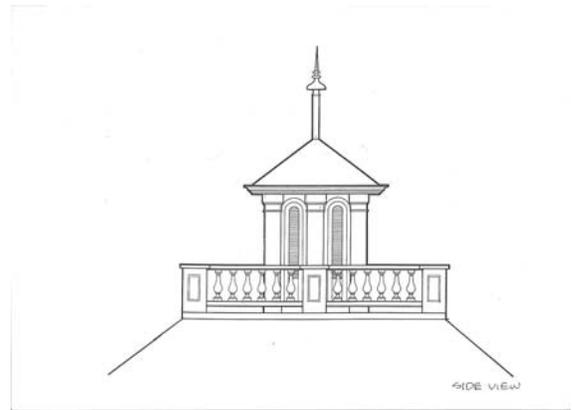


Photo 3 Lockwood-Mathews Carriage House,
DETAIL OF BELVEDERE, SIDE ELEVATION, at-
tributed to Richard Bergmann, Architect.

MATHEWS-ERA GARDENER'S COTTAGE

The images on this page are from the collections of the Lockwood-Mathews Mansion Museum and were provided to the team by the staff of the Norwalk Museum.



Photo 1 Gardener's Cottage, VIEW OF GARDENER'S COTTAGE AND GARDEN WALL, from the Norwalk Museum courtesy City of Norwalk.



Photo 2. Gardener's Cottage, VIEW OF BUILDING BEFORE REHABILITATION, from the Norwalk Museum courtesy City of Norwalk.



Photo 3. Gardener's Cottage, VIEW OF BUILDING DURING ROOFING PROJECT AFTER SHINGLE SIDING WERE REMOVED, from the Norwalk Museum courtesy City of Norwalk.



Photo 4. Gardener's Cottage, VIEW OF BUILDING WITH NEW WINDOWS BEFORE SHINGLE SIDING WAS INSTALLED, from the Norwalk Museum courtesy City of Norwalk.

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TOWN HOUSE

The images are from the Norwalk Historical Society's web site and/or the Norwalk Museum, as indicated.



Photo 1 Norwalk Town House, VIEW OF EXTERIOR WITH SHUTTERS CLOSED, CA.1920, looking southwest, from web site of Norwalk Historical Society, <http://www.norwalkhistoricalsociety.org>



Photo 2 Norwalk Town House, D.A.R. GATHERING AT THE TOWN HOUSE, 1924, looking southeast, from web site of Norwalk Historical Society, <http://www.norwalkhistoricalsociety.org>



Photo 3 Norwalk Town House, "THE OLD PAGODA ON THE HILL," VIEW OF EXTERIOR WITH SHUTTERS CLOSED, CA.1900, looking southeast, from web site of Norwalk Historical Society, <http://www.norwalkhistoricalsociety.org>

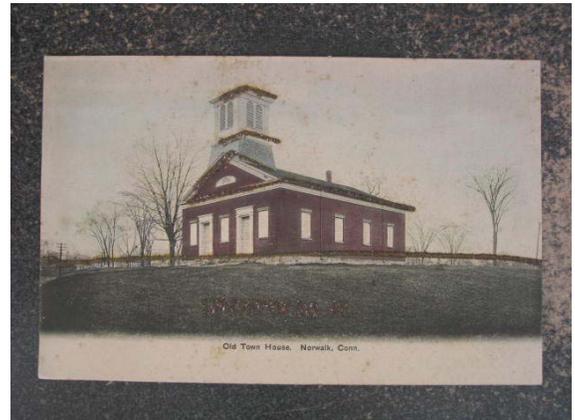


Photo 4 Norwalk Town House, CHRISTMAS-TIME VIEW OF EXTERIOR WITH SHUTTERS CLOSED, CA.1900, looking southeast, from the Norwalk Museum courtesy City of Norwalk.



Photo 5 Norwalk Town House, VIEW OF EXTERIOR WITH SHUTTERS CLOSED DECKED OUT WITH BUNTING, CA.1895, looking southwest, from the Norwalk Museum courtesy City of Norwalk.

GOVERNOR FITCH LAW OFFICE

Photographs at time of move, provided by the City of Norwalk from the files of the Norwalk Museum.



Photo 1 Governor Fitch Law Office Before Move, EXTERIOR VIEW, Norwalk Museum



Photo 2 Governor Fitch Law Office Before Move, INTERIOR & EXTERIOR DETAILS, Norwalk Museum



Photo 3 Governor Fitch Law Office Before Move, INTERIOR DETAILS, Norwalk Museum



Photo 4 Governor Fitch Law Office Before Move, PARTIALLY DISMANTLED, Norwalk Museum



Photo 5 Governor Fitch Law Office Before Move, ATTIC PARTIALLY DISMANTLED FOR MOVE, Norwalk Museum



Photo 6 Governor Fitch Law Office at Time of Move, VIEW OF WORKERS DISASSEMBLING FRAMING AT BEGINNING OF THE MOVE, Norwalk Museum.

*Comprehensive Historic Preservation Plan for Nine Historic Buildings
Owned by the City of Norwalk, Connecticut*

GOVERNOR FITCH LAW OFFICE

Photographs at time of move, provided by the City of Norwalk from the files of the Norwalk Museum.



Photo 7 Governor Fitch Law Office During Move, Norwalk Museum



Photo 8 Governor Fitch Law Office During Move, Norwalk Museum



Photo 9 Governor Fitch Law Office at end of move, UNDER CONSTRUCTION, Norwalk Museum



Photo 10 Governor Fitch Law Office at Time of Move, EXTERIOR, looking northwest, Norwalk Museum.



Photo 11 Governor Fitch Law Office at Time of Move, CHIMNEYBREAST SHOWING STONE, CONCRETE BLOCK, FURRING STRIPS, AND LATH, Norwalk Museum.

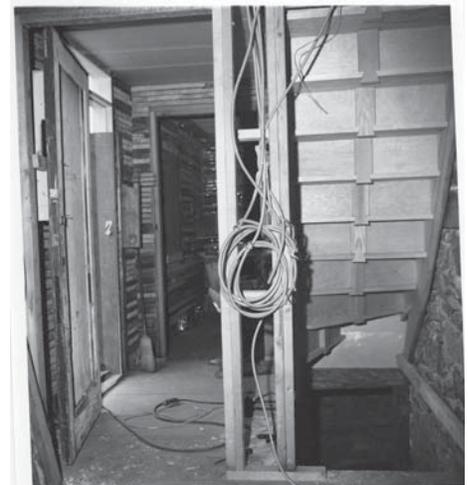


Photo 12 Governor Fitch Law Office at Time of Move, STAIRWELL DESCENDING TO BASEMENT SHOWING JOINERY AT BACK OF RISERS OF UPPER STAIRWAY, looking south, Norwalk Museum.

GOVERNOR FITCH LAW OFFICE

Photographs at time of move, provided by the City of Norwalk from the files of the Norwalk Museum.



Photo 13 Governor Fitch Law Office at Time of Move, LOOKING INTO STAIRWELL FROM THE UPPER LEVEL, looking south, Norwalk Museum.



Photo 14 Governor Fitch Law Office at Time of Move, UPPER LEVEL BEDROOM WITH LATH, BEFORE PLASTER WAS APPLIED, looking north, Norwalk Museum.



Photo 15 Governor Fitch Law Office at Time of Move, BASEMENT LEVEL LOOKING UP STAIRWELL, looking north, Norwalk Museum.



Photo 16 Governor Fitch Law Office at Time of Move, VIEW OF DOORWAY AFTER THE RECONSTRUCTION, Norwalk Museum.



Photo 17 Governor Fitch Law Office at Time of Move, INTERIOR VIEW OF DOORWAY AFTER THE RECONSTRUCTION, looking east, Norwalk Museum.



Photo 18 Governor Fitch Law Office at Time of Move, VIEW TOWARD ENTRANCE VESTIBULE AND STAIRWAY FROM SOUTHEAST CORNER OF FIRST FLOOR, looking northwest, Norwalk Museum.

*Comprehensive Historic Preservation Plan for Nine Historic Buildings
Owned by the City of Norwalk, Connecticut*

GOVERNOR FITCH LAW OFFICE

Photographs at time of move, provided by the City of Norwalk from the files of the Norwalk Museum.



Photo 19 Governor Fitch Law Office at Time of Move, VIEW TOWARD SOUTHWEST CORNER OF FIRST FLOOR, looking southwest, Norwalk Museum.



Photo 20 Governor Fitch Law Office at Time of Move, VIEW TOWARD SOUTHEAST CORNER OF FIRST FLOOR, looking southeast, Norwalk Museum.



Photo 21 Governor Fitch Law Office at Time of Move, VIEW OF---, looking south, Norwalk Museum.



Photo 22 Governor Fitch Law Office at Time of Move, DETAIL OF BOOK CUPBOARD, Norwalk Museum.



Photo 23 Governor Fitch Law Office at Time of Move, VIEW TOWARD ENTRANCE VESTIBULE FROM SOUTHWEST CORNER OF FIRST FLOOR, looking northeast, Norwalk Museum.



Photo 24 Governor Fitch Law Office at Time of Move, VIEW TOWARD COOKING FIREPLACE, looking southwest, Norwalk Museum.

GOVERNOR FITCH LAW OFFICE

Photographs at time of move, provided by the City of Norwalk from the files of the Norwalk Museum.



Photo 25 Governor Fitch Law Office at Time of Move, WEST WALL OF NORTHERN FIRST FLOOR ROOM AT FIREPLACE AND DOORWAY, looking west, Norwalk Museum.



Photo 26 Governor Fitch Law Office at Time of Move, NORTH HALF OF FIREPLACE, INCLUDING OVEN NICHE AND WOOD BOX, looking southwest, Norwalk Museum.



Photo 27 Governor Fitch Law Office at Time of Move, VIEW TOWARD ENTRANCE VESTIBULE AND SOUTHEAST CORNER OF NORTH ROOM, looking southeast, Norwalk Museum.



Photo 28 Governor Fitch Law Office at Time of Move, DETAIL OF PUNCHED TIN LANTERN NEXT TO ENTRANCE DOOR, looking southeast, Norwalk Museum.



Photo 29 Governor Fitch Law Office at Time of Move, DETAIL OF STAIRWAY, looking west, Norwalk Museum.



Photo 30 Governor Fitch Law Office at Time of Move, VIEW DOWN STAIRS FROM UPPER LEVEL TO ENTRANCE VESTIBULE, looking down and southeast, Norwalk Museum.

GOVERNOR FITCH LAW OFFICE

Photographs at time of move, provided by the City of Norwalk from the files of the Norwalk Museum.



Photo 31 Governor Fitch Law Office at Time of Move, VIEW OF “WINDOW” IN STAIRWAY WALL PLASTER LEFT TO SHOW LATH AND PLASTER LAYERS, looking south, Norwalk Museum.



Photo 32 Governor Fitch Law Office at Time of Move, VIEW OF TRAPEZOIDAL DOORWAY FROM BEDROOM TO STAIRWAY, looking south, Norwalk Museum.



Photo 33 Governor Fitch Law Office at Time of Move, VIEW OF TRAPEZOIDAL ACCESS DOOR FROM BEDROOM TO MECHANICAL ROOM, looking south, Norwalk Museum.

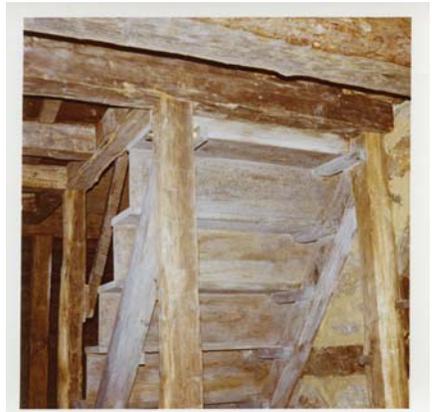


Photo 34 Governor Fitch Law Office at Time of Move, VIEW OF BASEMENT STAIRS TOWARD BACK SIDE OF RISERS, looking southwest, Norwalk Museum.

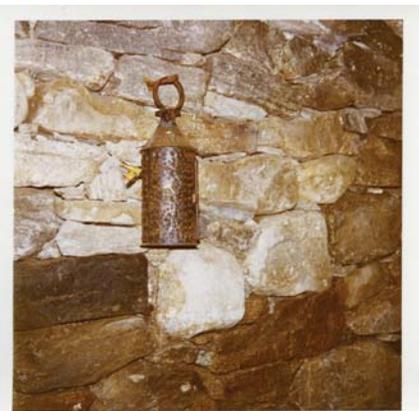


Photo 35 Governor Fitch Law Office at Time of Move, VIEW OF PUNCHED TIN LANTERN ABOVE BASEMENT FIREPLACE, Norwalk Museum.

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DOWNTOWN DISTRICT SCHOOL

The images are from the internet and/or the Norwalk Museum, as indicated.



Photo 1 Old Post Card of Downtown District School house before it was moved, retrieved electronically from E-Bay.

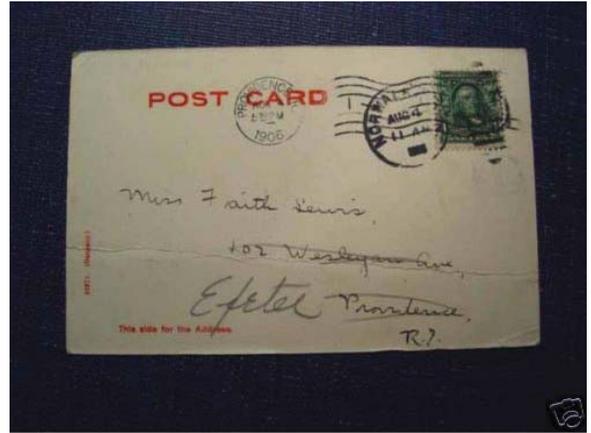


Photo 2 Old Post Card of Downtown District Schoolhouse before it was moved, reverse of image in photo 1, retrieved electronically from E-Bay.



Photo 3 Old Post Card of DOWNTOWN DISTRICT SCHOOLHOUSE before it was moved, from the Norwalk Museum courtesy City of Norwalk



Photo 4 DOWNTOWN DISTRICT SCHOOLHOUSE, ca. 1975, after it was moved, looking NW, from the Norwalk Museum courtesy of the City of Norwalk

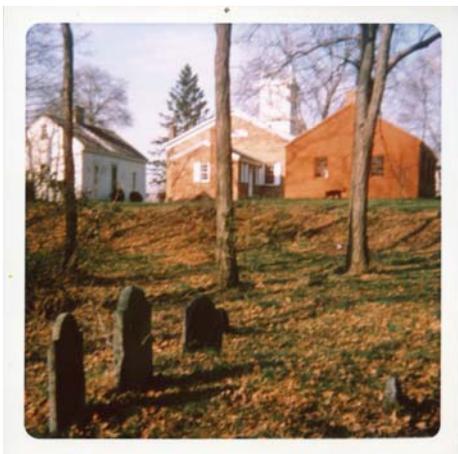


Photo 5 DOWNTOWN DISTRICT SCHOOLHOUSE, ca. 1975, after it was moved, looking north, from the Norwalk Museum courtesy City of Norwalk



Photo 6 DOWNTOWN DISTRICT SCHOOLHOUSE, ca. 1975, after it was moved, looking northeast, from the Norwalk Museum courtesy City of Norwalk

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SMITH STREET BARN

This image is from the Norwalk Museum.

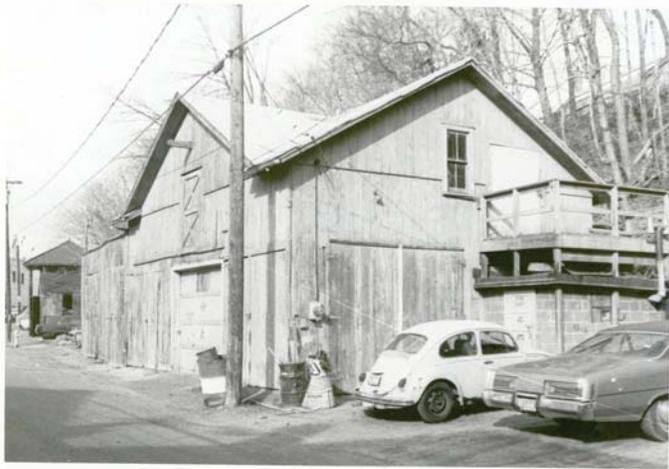
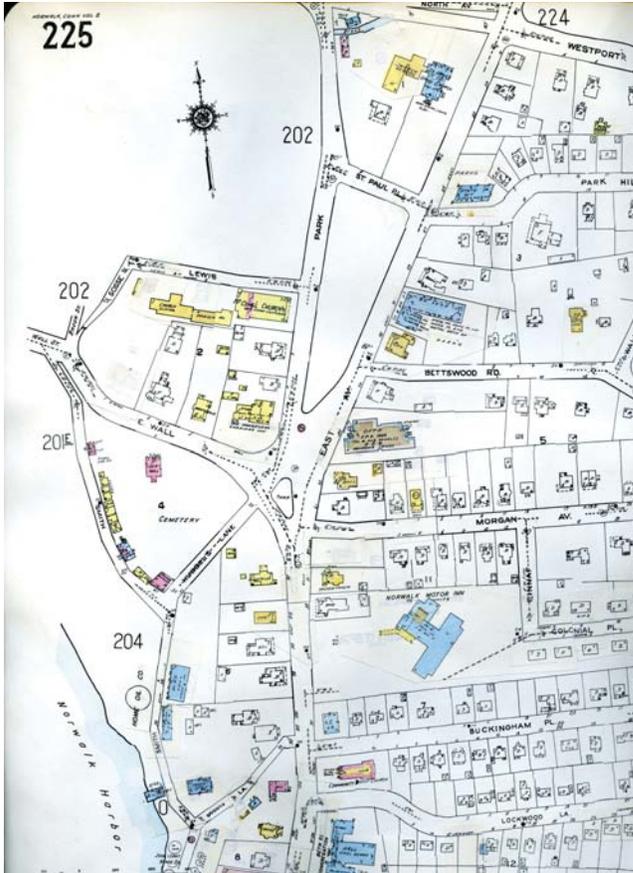


Photo 1. Smith Street Barn, WHEN ADJOINING SHED AND AT LEAST ONE OTHER BUILDING WERE STILL STANDING, from the Norwalk Museum courtesy City of Norwalk.

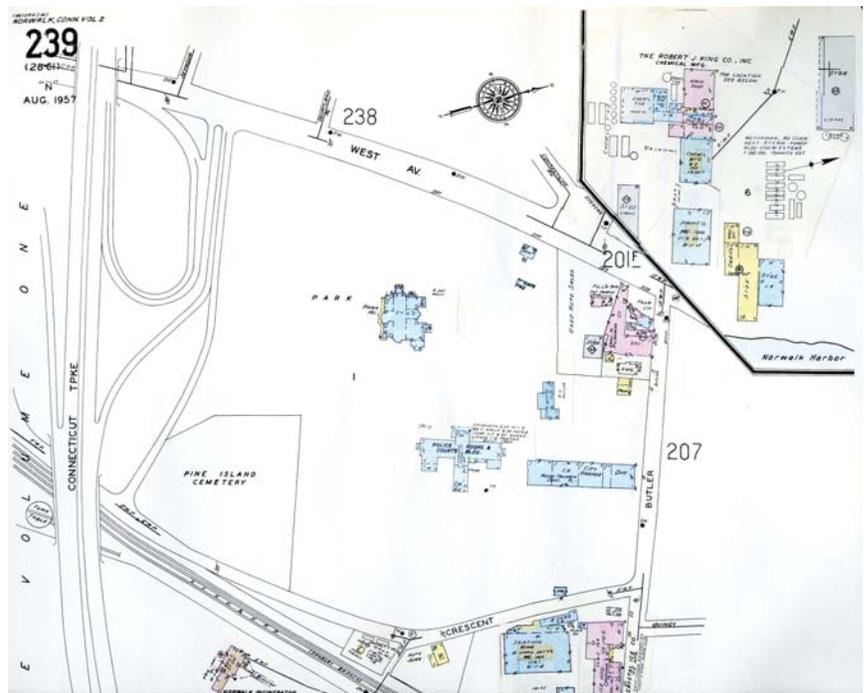
JMA architects
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John Milner Associates, Inc.

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Sanborn Fire Insurance Map, 1957 (with updates made until at least 1964, as marked), from the collections of the Norwalk Museum courtesy of the City of Norwalk, SECTION OF MAP THAT SHOWS MILL HILL, THE TOWN HOUSE, AND SMITH STREET

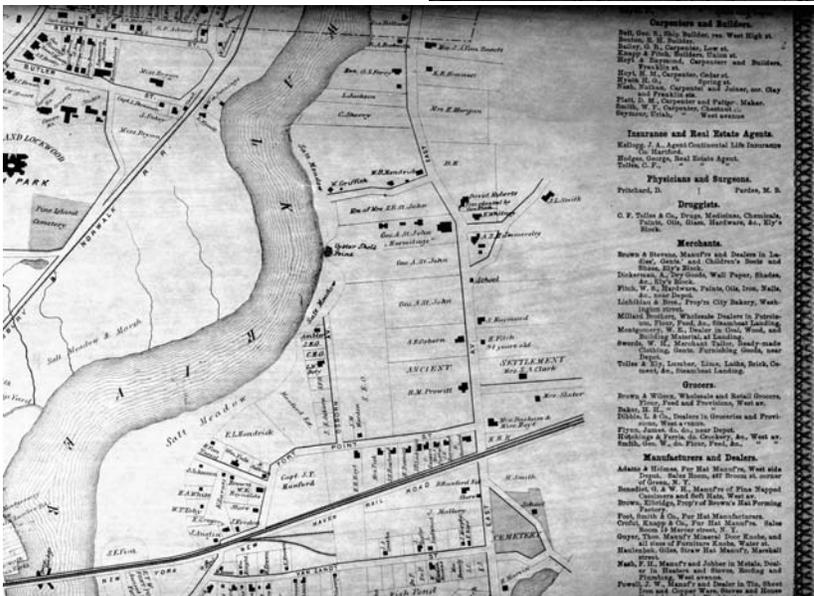
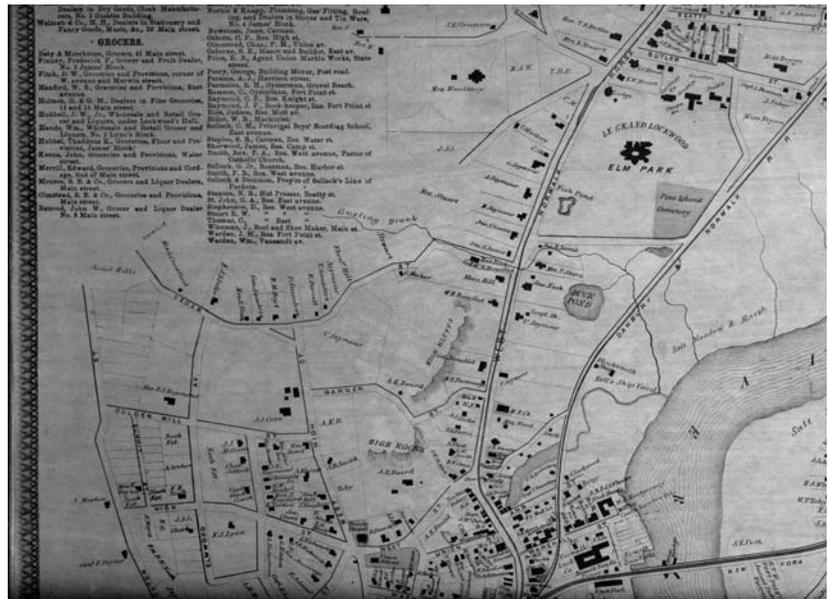


Comprehensive Historic Preservation Plan for Nine Historic Buildings
Owned by the City of Norwalk, Connecticut



Detail of Beers Map, ca. 1865, Head of the Harbor Area, including Mill Hill Town House, from the Norwalk Museum courtesy City of Norwalk.

Detail of Beers Map, ca. 1865, Lockwood-Mathews estate ("Elm Park") and surrounding areas, from the Norwalk Museum courtesy City of Norwalk.



Detail of Beers Map, ca. 1865, showing Fitch properties and former location of East Avenue District School, from the Norwalk Museum courtesy City of Norwalk.

*Comprehensive Historic Preservation Plan for Nine Historic Buildings
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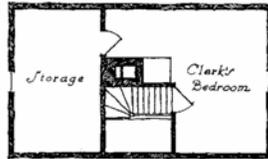


Aerial View of Mathews Park before Route 95 was Constructed, from the Norwalk Museum courtesy City of Norwalk.

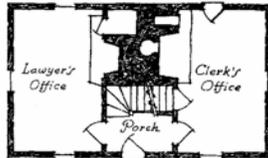
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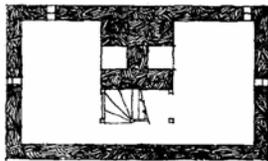
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Attic



First Floor



Cellar

If Thomas Fitch V, the fourteenth governor of the Colony of Connecticut (1754-1766), were with us today, he would find himself quite at home in the familiar surroundings of the restored law office. He would recognize the warmth of the pine boarding and the aroma of linseed oil paint, as well as the friendly scale of the small building and the spaces within.

To him, all would seem as it should be, except for the electric lamps and the exposed hewn timbers. The lamps, he simply would not believe. The exposed hewn timbers, visible in the cellar and attic, would appear to him to be strangely aged with a dusty-brown pallor brought on by the wear and tear of two centuries.

In his use of the building today, the Governor would have no idea that his office was being heated by electric coils buried in the ceiling, or that there were devices called convenience outlets concealed in walls and floors. Aside from the twentieth-century metal dampers in the fireplaces, he would find no further visible changes in the law office building.

Typical reconstruction of all historical buildings, this restoration involved a tremendous amount of research and investigation to determine the layout, design and detail. To this was added the work of locating sources for materials and arriving at the correct methods in their installation. The result is the two-room law office completed in November of 1971.

The following notes present some of the more interesting facts about the restoration.

Stones from the cellar walls of the original Fitch House were used in constructing the foundations and chimney of the law office. The small screened openings in the tops of the walls are not traditional however, and are installed to provide ventilation.

Inside the building, the joints in the chimney are clay, fine salt hay, and cattle hair. The clay came from the original 1699 chimney in the Old Hoyt Farmhouse in Stamford, Connecticut. This house is now the headquarters of the Stamford Historical Society.

Hewn timber repairs were made with the use of material salvaged from the kitchen wing of the post-revolutionary Fitch House, supplemented by old broad-axed beams from Roxbury, Connecticut.

Joining and fastening of the windows matches the old sash in the Judson House in Stratford, Connecticut, with the frames and muntins mortised and pinned with wood dowels. This house is a fine example of a 1720 building and is owned by the Stratford Historical Society.

Glass used in glazing the windows is of the colonial period, obtained from East Haddam, Connecticut. Special skill was required in cutting the panes to size,

since old glass varies in thickness, is out of plane and tends to be very brittle.

Nails and hardware are hand-wrought, and were fashioned by an expert in the field, using traditional tools and an old forge. Close inspection will reveal the characteristic "maker's mark" on some of the pieces.

Details of the design were taken from typical examples of early 18th century work. This involved measuring and photographing many of the original examples.

The front entrance was patterned after the 1725 Philo Bishop House in Guilford, with proportions scaled down and simplified for our smaller building. The rear door is the original, with battens added for additional strength.

The mantel in the Lawyer's Office follows the design of one at "White Farm," in Long Hill. This has the typical batten door to the wood box, and cupboard door above.

Many examples exist of fireplaces similar to the one in the Clerk's Office, which is quite small for a cooking fireplace of the period. However, the size of both the fireplace and the dutch oven are adequate for the needs of the law clerk. A fireplace very similar to this exists in the Lewis House, in Norwalk.

The wood wainscot in the Clerk's Office matches the original. Evidence of this woodwork was discovered in a corner under many layers of paint and wallpaper.

Inspection of the stairs will reveal two different types of construction, neither of which are used in building today. The cellar stairs, with continuous oak stringers and bracketed risers, have their counterpart in the Bushnell House, in Saybrook. The Pierpoint House, in New Haven, has a flight of attic stairs with construction matching the Fitch stairs. Both have housed treads and risers, together with dovetailed block supports for the treads underneath the steps.

General design of the railing at the attic stairs follows the pattern of the Pardee House in Montowese. The vertical boarding at this stair run was donated by Andrew Kish and Warren Palmer, of Norwalk, and came from the Jarvis-Grumman House on East Ave.

A close look at the floor boards in the Lawyer's Office and Attic Chamber will reveal the characteristic marks of the "up and down" saw used in early work. Much of the material utilized in repairs to the flooring came from old houses that had been demolished in the Norwalk Redevelopment Area.

Coming down the stairs from the Attic, a visitor may notice a small square panel in the plaster wall ahead. The panel shows the construction of the plastering, starting with split wood lath, which was fastened

with hand-made nails. As in the original work, the plaster contains clay and cattle hair.

Except for the wiring and lamps, the lighting fixtures are exact reproductions of colonial pieces, and were hand-produced in the shop of Gates Moore, in Silvermine. Notice should be made of the owner's initials worked into the cut-out pattern on the large lantern in the Porch.

All of the paint colors were carefully chosen to match examples of the period. The grey color is the original shade of the rear door to the Clerk's Office, and a door in the Attic. The green in the Lawyer's Office is from the 1710 Rose House in Branford. This building is not far removed from Yale College, which was attended by Thomas Fitch.

The balance of the colors were taken from the authentic room exhibits of the period at the Metropolitan Museum of Art.

Restoration of the Governor Fitch Law Office proved to be a very demanding, yet fascinating project for the architect. A multitude of people were contacted, and countless places were visited in piecing together the puzzle of the restoration.

Credit for outstanding help in sharing their store of knowledge of 1740 buildings should be given to Mrs. F. Doughty Kingsbury, Mr. F. Bralford Taylor and Mr. Harry Boyd, all of Norwalk. Much advice was also received from Mr. John D. Curtis, of Old Sturbridge Village, and Mr. Herbert Darbee, Associate Director of the Connecticut State Historical Commission.

This project would not be a reality today except for the foresightedness and diligence of many people, including members of the Mayor's Historical Sites Committee: the Norwalk Chamber of Commerce; former mayor of Norwalk, Frank Zullo; the Norwalk Historical Society, under the leadership of Mr. Ferenz Fedor; Mr. Ralph Bloom, Curator of Historic Buildings for the City of Norwalk; Mr. John Vassos; and Mr. Eric DeMarsh.

The restoration work on the building was directed by the Mayor's Historical Sites Committee, under the chairmanship of Mr. John Cuneo, attorney and local historian.

This building restoration was constructed by the George O'Brien Company, of Greenwich, Conn., with funds provided by the City of Norwalk and the State Historical Commission.

John Gaydosh, Architect
William Blum, Associate

About the Restoration.



*The Governor Thomas
Fitch Law Office*

*Mill Hill Historical Site
Norwalk, Connecticut*

JMA architects
archeologists
planners
John Milner Associates, Inc.

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*Comprehensive Historic Preservation Plan for Nine Historic Buildings
Owned by the City of Norwalk, Connecticut*

Tenant Interview Notes

Taken by Taylor Cooper

Thursday, October 29, 2009

Building: **Gate Lodge** (Matthews Park)
 97 West Avenue
 Norwalk, CT 06850
Tenant: Fairfield County Convention & Visitor's Bureau
Contact: Susan Crotinger, Director

General

Kitchen has mice; mouse traps have been placed under kitchen counter. There have also been issues with groundhogs outside in the past.

Visitors stay mainly in the addition to the back of the Gate Lodge.

Only some of the original shutters function properly.

Security: There is exterior lighting by the restrooms outside, but not all of the exterior lighting works.

In 2004, a full remediation was done for mold problems upstairs and in the basement.

Dehumidifiers run constantly downstairs and upstairs.

Chimney has been repointed.

The tenants have not noticed any soft spots in the floors.

There is paint peeling upstairs.

Systems

There are three different heating systems: (1) electric system for visitor/tourism addition, (2) ground floor oil-based system, and (3) upstairs electric system installed c. 2004

Windows are leaky and drafty, but they use plastic, temporary storm windows which helps a lot with cold air during winter months.

Windows stay closed year-round. If they are opened, there is too much noise from the highway and road just outside the Gate Lodge.

They have probably had a wiring upgrade, but the tenants are not sure when it occurred.

There are two different central air systems.

The tenants have noticed leaks around windows and ducts.

*Comprehensive Historic Preservation Plan for Nine Historic Buildings
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Tenant Interview Notes

Taken by Taylor Cooper

Thursday, October 29, 2009

Building: **Carriage House**
 299 West Avenue
 Norwalk, CT 06850
Tenant: Center for Contemporary Printmaking
Contact: Chris Shore, Workshop Manager

General

- Roof repairs completed c. 2006 because of leaks. There has not been significant leaking since repairs were made.
- There are a lot of coverings over walls (paneling, plaster, etc), so it's hard to know exactly what the problems with the exterior structure may be.
- The city has fixed the stone wall outside and pulled vines from the building.
- Exterior lighting doesn't work.
- At front of building, there is an opening through which animals can get under the building.
- There used to be a "cupola" on the flat part of roof.

Downstairs "Paper Room"

- Some loose bricks around lintels, some gaps between bricks (in arches at tops of windows in interior layer of wall, visible only from interior).

Downstairs Gallery

- Walls installed in 1995.

Downstairs Etching Room (East side of building)

- No insulation on back wall; air leaks through the wall/wood paneling.
- They have attempted to "winter-proof" the side wall by installing temporary, thin insulation in windows.
- Electricity here is good; outlets are about every 10'-12'.
- Concrete floor is chipping in some places, especially in Acid Room/Rosin Room.
- Dust and grit from a sandblasting event sometimes falls from/through ceiling. This is a huge problem in the printmaking process.

Upstairs Main Studio

- There was a leak in the ceiling that has been fixed.
- The tenants say that the windows are "adequate."
- Water comes in at the top at the door at back of studio by fire escape.

Upstairs Dark Room/Storage

- Very hot with no ventilation.
- Wiring is not good for larger equipment.

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Systems

- No Central A.C. Have window A.C. units in year-round. (The day we visited the window units were out due to painting of window frames.)
- The furnace seems to be “on its last leg.”
- Pipes are old.
- Radiators seem to work well once the system is “bled out.”
- Electrical is adequate, though they tend to blow outlets often, especially in the computer room area. They could use a few more outlets, especially in the main studio upstairs.

- No problems with infrastructure. They fix small things as needed: gaskets get replaced, toilet seal leaked once, hot water tank failed once.
- The pipes have never frozen.
- The building could use better ventilation system for print-making.

Windows

- All of the windows are old single-pane glass.

*Comprehensive Historic Preservation Plan for Nine Historic Buildings
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Tenant Interview Notes

Taken by Taylor Cooper

Thursday, October 29, 2009

Building: **Gardener's Cottage**
 299 West Avenue
 Norwalk, CT 06850
Tenant: Center for Contemporary Printmaking
Contact: Chris Shore, Workshop Manager

General

- Before the print-making center moved in, the structure was used by the city for sign painting and storage.
- Building is currently used as extra work space and as a residence for resident artists, visitors, etc.
- Stone foundation w/concrete slab floor in basement, as well as slab-on-grade at addition.
- There is a basement/crawl space with access from the outside; basement has leaks but could be remediated with downspouts.
- There are not gutters because they were told by Historical Commission that they “were not original.”
- Outside back roof—squirrel has chewed on it.
- Door sill at front entrance broke off because of water/rot.
- Side entrance (actually the formal entrance) is rarely used.
- Interior is totally new—not many problems.
- Gardener's son still lives in the area and has good stories about the building.

Access Ramp Area

- Sills are falling apart.
- Shingles and door frame are rotting.
- Shingles are warping, nails are popping out.

Systems

- Windows are sealed.
- Electrical is good.
- Central heat and air.
- Ventilation system.

*Comprehensive Historic Preservation Plan for Nine Historic Buildings
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Tenant Interview Notes

Taken by Taylor Cooper

Thursday, October 29, 2009

Building: **Norwalk Town House** (D.A.R. Town House, Town Hall, Mill Hill Park)
 2 East Wall Street
 Norwalk, CT 06850
Tenant: Norwalk Historical Society
Contact: Mr. David Westmoreland, President Norwalk Historical Society

General

- The Historical Society plans to re-do office space at back of Town House (take out cabinets, install modular units, etc) in 2010 and re-do larger exhibit space in 2011. They would also like to convert the two separate bathrooms into one accessible restroom.
- The overall Town House was built in 1835/36, but the office space section of the building was added in the 1920s.
- The Historical Society has hours 4 days/week, and during the summer they are open on Sunday afternoon. They host about 4-6 lectures every year. They hold events and are open to the public on Memorial Day and the 4th of July. They also sponsor a Schoolhouse Program every year for Norwalk third graders.
- They hope we include ADA Access information.
- They would like recommendation on a ramp to get into the building.
- Squirrels have gotten into the attic before (none currently that they know of).
- They received money from the city to re-paint the façade of the building, but they cannot get money to repaint the other sides.

Systems

- They recently installed new, flexible lighting in the main part of Town House.
- They recently installed a new ductless A.C. system; this helps with humidity.
- Have a forced hot air heating system that is natural gas based. The furnace was converted; it seems to be inefficient.
- They get a grant of \$7,000/year from the city for utilities (because Historical Society performs a service for the city by maintaining Mill Hill Park).

Misc. Issues

- Volunteers have to write specifications for RFP's. This is not efficient/effective.
- It took over a year to get a timer light on the back door.
- There is a part-time handyman that gets stuck doing major projects and is therefore not able to do small electrical projects and upkeep.
- The city only plows snow w/in 10' of the building.
- DPW should be responsible for maintaining historic buildings, just as they are responsible for maintaining other city-owned buildings.

Summary of Major Concerns

1. ADA – Bathroom and ramp.

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2. Office needs to be re-wired; dangerous, lots of blown circuits.
3. Painting/wood replacement outside.
4. Steeple/tower – wood replacement; They previously put vinyl siding over original brick/wood structure thinking it was the best way to “protect bell” (there was an asphalt plant on Smith Street, and the paint kept turning yellow, apparently from the pollution coming up from the plant).

*Comprehensive Historic Preservation Plan for Nine Historic Buildings
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Tenant Interview Notes

Taken by Taylor Cooper

Thursday, October 29, 2009

Building: **Governor Fitch Law Office** (Mill Hill Park)
 2 East Wall Street
 Norwalk, CT 06850
Tenant: Norwalk Historical Society
Contact: Mr. David Westmoreland, President Norwalk Historical Society

General

- Two years ago, they replaced some rotting siding.
- The “drip strip” (ground gutter) around the building (crushed stone, wood beam) was put in recently as a Boy Scout project.
- Would like a recommendation about power-washing the roof.
- The stoop and floor in the entrance are rotting.
- Trees behind the building are an invasive species; they would like to remove the trees.
- Inside of the roof is very wet; shingles/wood upstairs are rotting. Paint is starting to peel in the adjacent room.

Systems

- Electric baseboard heaters.
- They keep dehumidifiers on in the basement.

*Comprehensive Historic Preservation Plan for Nine Historic Buildings
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Tenant Interview Notes

Taken by Taylor Cooper

Thursday, October 29, 2009

Building: **Downtown District Schoolhouse** (Mill Hill Park)
 2 East Wall Street
 Norwalk, CT 06850
Tenant: Norwalk Historical Society
Contact: Mr. David Westmoreland, President Norwalk Historical Society

General

Windows were replaced recently, but they have not yet been caulked.
Not very many problems with this building.

Systems

No heat or air conditioning. This is not a concern unless it is needed for climate control.

Misc. Historical Society Info

Developers are doing a redevelopment plan for a nearby area; AKRF is doing a Master Plan for the Mill Hill Complex to complement/mitigate the redevelopment plan.

Some archaeology at the Mill Hill site has been completed. There was a Pottery Factory in the area that was torn down about 10 years ago; archaeology study done there.

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Tenant Interview Notes

Taken by Taylor Cooper

Thursday, October 29, 2009

Building: **Old Jail & Smith Street Barn**
 Smith Street
 Norwalk, CT 06850
Tenant: Richard Winfield (Apartment tenant, northern apartment)
 Leo Esposito (Apartment tenant, southern apartment)
Tenant: Anthony Mauro (City Carpenter, uses the basement as his wood shop)

Apartment

- No maintenance issues.
- Squirrel lived inside of window at one point.
- There is a new roof but no new gutters.
- Window stays closed with a wood bar (makeshift).
- Screens are on inside of windows.
- There is no lock on the windows.
- Baseboard heating.
- Window A.C. unit.
- Not too drafty; a lot of dust.
- Tenant currently uses two fans and a space heater to cut electrical costs.
- Need more electrical outlets
- Attic ladder seems dangerous

Basement

- We did not go in the basement on 10/29/2009.

Smith Street Barn

- We did not go in the barn on 10/29/2009.