HISTORIC STRUCTURES REPORT

the RICHARDSON OLMSTED COMPLEX *Buffalo, NY*

July 2008

GOODY CLANCY
ARCHITECTURE
PLANNING
PRESERVATION

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Submitted to Richardson Center Corporation

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with

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Heritage Landscapes, Preservation Landscape Architects
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EXECUTIVE SUMMARY

The significance and importance of the Richardson Olmsted Complex cannot be overstated both for its architecture and landscape but as an intact site thoroughly illustrating the evolution of the treatment of mental health in the United States from 1870 to the present. The site must be walked and the buildings entered to experience the full impact of the history and evolution of the complex. The current site retains much of the original therapeutic setting and sense that motivated its creation 130 years ago.

The Richardson Olmsted Complex currently consists of a 100 acre site bordered by Forest Avenue to the south, Rees Street to the west, Rockwell Road to the north and Elmwood Avenue to the east, containing 38 buildings, parking lots, driveways and remnants of the historic landscape. The complex as originally designed in 1872, began as a 203 acre site for the Buffalo State Asylum for the Insane. The name changed to Buffalo State Hospital in 1890 to reflect the changing developments in mental health. Reflecting continued transformation, the name changed again in 1972 to the Buffalo Psychiatric Center.

The site received *National Register of Historic Places (NRHP)* and *National Historic Landmark (NHL)* designations prepared in 1973 and 1986 respectively. The NHL designation subsumed the NRHP nomination and defined a period of significance extending from 1870-1896. This refers to the construction phase of the main core of buildings (Administration Building + 10 wards). The NHL boundary covered the entire site area (south of Rockwell Road) but pushed the east boundary almost 900' to the west to exclude that portion of the site which was altered by demolition of three outermost historic ward buildings and construction of new buildings after 1950's. Only those buildings within this boundary that date to the period of significance of 1870-1896 are considered contributing to the NHL designation.

Fig EX.1 **A 2008 aerial photograph of the Richardson-Olmsted Complex situated at 400 Forest Avenue, Buffalo, NY**
Image courtesy Google Maps

Fig EX.2 **Early 20th century photograph of the central Administration Building**
Image courtesy Buffalo Psychiatric Center

Fig EX.3 **2008 photograph of the central Administration Building**
Image courtesy GCA

Distinct yet overlapping perspectives can be assumed when analyzing this property in the present time – a remarkable collection of buildings by one of America's greatest architects, Henry Hobson Richardson; a great example of the distinctive 'Kirkbride Plan' typology; or an architectural complex reflecting the development of mental health institutions in the United States during the nineteenth and twentieth centuries. The architecture of this complex is also significant for bearing the stamp of eminent local and state architects. And last, but not the least, the construction of this institution is linked with persons significant within Buffalo's political and social history. These varied contexts are not exclusive, yet each merits individual and focused attention to clearly decipher the various pieces of American history that this complex drew from and impacted in turn.

The early buildings of the site are all equally significant. The Administration Building and the Wards – both brick and stone – form the core buildings of the site and begin the incredible story of the complex. These buildings are the most significant structures on the site, are generally in good (or at least repairable) condition, and all merit retention and eventual rehabilitation. The core buildings are significant due to their level of intact original historic fabric and the story that their architectural design and implementation tell. While the core buildings are the most significant, there are many other buildings sprinkled throughout the site that warrant evaluation and consideration. These are the buildings that pick up the story of the treatment of mental illness where the core buildings leave off.

The site illustrates the evolution of the treatment of mental health in the United States from the 1870's to the present day. There are examples of the architectural manifestations of different psychological theory of the treatment of mental illness present on the site. These include Kirkbride's 'linear plan', the 'cottage plan' of the early 20th century, and the contemporary Strozzi Building which is focused on in-patient services. This physical memory of the evolution in attitude is one of the most unique and character defining features of the site as a whole.

It is due to this long evolution of the treatment of mental illness that the Period of Significance for the site was determined to be 1870-1969. The date of 1870 reflects the finalization of the site for establishing the Buffalo State Asylum for the Insane by the New York State Legislature. The end date reflects the demolition of the three outermost male ward buildings, thus disturbing the original Kirkbride 'linear' plan layout.

Physical Description

The plan finalized by Richardson consisted of ten independent wards joined by curved connectors to each other and to the central Administration Building (AB). In plan, the wings step back forming a V shape. Five wards on the east of the Administration Building were for male patients; five wards on the west were for female patients. The most severely afflicted patients were housed in wards farthest from the main building. All of the ward buildings were connected by enclosed fireproof corridors on all floors. The ward buildings were designated by letters of the alphabet A, B, C, D and E, to the east of the Administration Building, and by F, G, H, I and J on the west. Each of the two buildings on either side of the center were three stories tall, the next two on either side were two stories tall; and the last buildings on each end were single story. All of the buildings have a basement and attic. The central Administration Building and two wings directly flanking each side were constructed of Medina sandstone. The three outermost wings on each side were constructed of red brick.

The Administration Building, with two towers, steeply pitched roofs and positioned in the center of the site, is the iconic structure on the site. The towers are 180 feet tall and were constructed purely for ornament. The roofs over the Administration Building were originally covered in slate shingles, with decorative iron cresting along the ridge. They are currently covered in asphalt shingle with copper flashings and gutters. The steep tower roofs were originally clad in diamond shaped clay tiles, and are currently clad in copper.

The stone buildings are constructed with masonry load bearing walls, stone faced with multi-wythe masonry backup, and timber framed roof structure. The stone is Medina sandstone and is laid up in a rusticated, random ashlar pattern. Most of the trim stones (window arches, belt courses, etc.) have a honed surface, and the ashlar blocks are rock faced. James O'Gorman, H. H. Richardson scholar, notes that the original requirements for the design stipulated that ornamental detail be limited. Instead of relying on obvious flourishes, Richardson used various stone surface treatments, trim elements and joint details to produce patterns and textures that went on to define Richardson's signature style.

The brick wards were designed with the same massing and overall style as the stone buildings. Details were limited to brick patterning and sandstone trim elements. The brick male wards (since demolished) contained additional patterns created by tarred brick.

All of the buildings have combinations of gabled and hipped roofs. Originally, all of the roofs were covered in slate

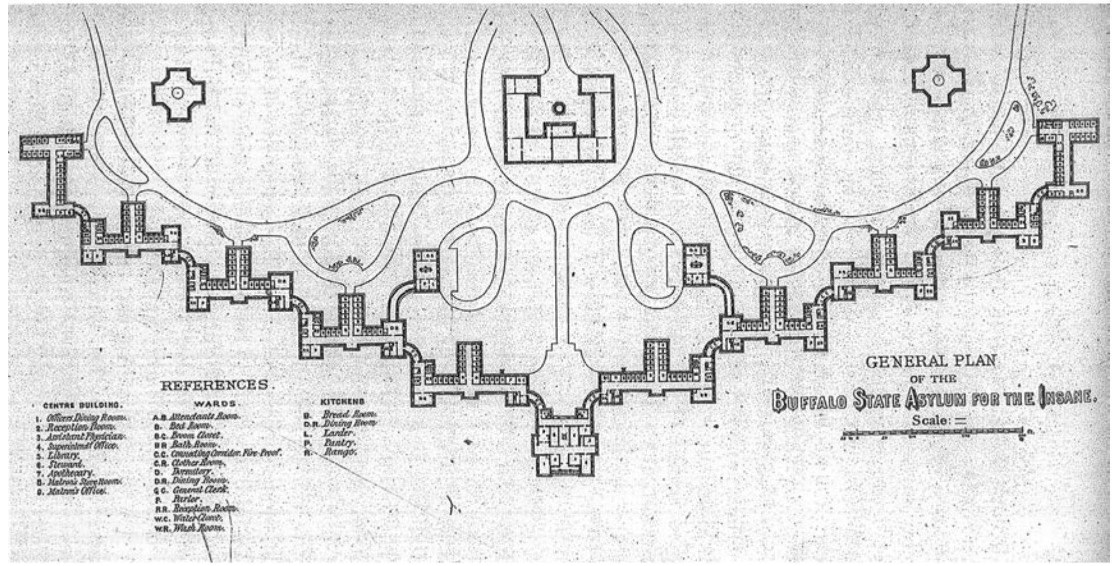


Fig EX. 4 **Plan of the Buffalo State Hospital for the Insane, 1872**
Image reproduced from Yanni 2007, 136

shingles, with copper gutters and flashings. Some buildings had decorative copper finials and ventilation cupolas. With the exception of Female Ward I, all of the roofs have been reroofed with asphalt shingles. Female Ward I is the only building that retains the original slate roof; copper gutters and flashing; and copper ventilation cupolas remaining from the original passive ventilation system.

A Note on Terminology

The use of historically grounded language is the convention amongst historians of medicine. While original language may provide a more historically correct perspective on the subject, it can offend the modern reader. Words such as 'insane' and 'lunatic' were terms used at the time of the construction of the Complex but are inappropriate for contemporary use. For the purpose of this Historic Structures Report on the Richardson Olmsted Complex, we have used such terms

Fig. EX.5 **Female Ward H - one of the 3 remaining brick wards**
Image courtesy GCA

Fig. EX.6 **Interior of a typical ward, 2008**
Image courtesy GCA

Fig EX.7 **Undated historic interior of a typical ward**
Image courtesy Buffalo Psychiatric Center

Fig EX.8 **Thomas Story Kirkbride - creator of the 'Kirkbride Plan' of Asylum design**
Image courtesy www.wikipedia.com

only in instances where the historic words are necessary to convey an idea or concept, where there is no modern substitute that can adequately convey the meaning, or in a direct quote. Where possible, we have substituted more appropriate, contemporary language, replacing 'insane' with 'mentally ill' and 'asylum' with 'psychiatric center'. Yet the archaic terminology is sometimes appropriate in re-creating a cultural context for the reader. A chronological rule has been applied in using terms and phasing them out - - for example, while the word 'asylum' is used when talking about the 19th Century institution, it is replaced by 'hospital' or 'psychiatric center' in accounts of later years, to mirror the evolution in prevailing ideas.

Historic Structures Report

The Historic Structures Report is laid out in three main sections: Developmental History, Existing Conditions Assessment and Treatment & Recommendations. The Appendices include the Glossary, Bibliography and structural engineering reports about Floor Capacities Assessment and Exploratory Probes Summary.

Developmental History

Historical Background and Context

The first chapter of Development History, titled 'Historical Background and Context' places the architecture of the Richardson Olmsted Complex within six appropriate historical contexts that provide an overall framework for discussion and determination of its significance.

1. **'Insane' Asylums in America in the Nineteenth Century:** The idea of the 'Buffalo State Asylum for the Insane' was born during the 1860's - at a time in history when care for the mentally ill reflected a newfound faith in the power of architecture and environment to 'cure' patients. In its surviving built form, the Richardson Center Complex exemplifies the culmination of these nineteenth century ideas and values. It is one of only a few examples of nineteenth century asylums that have survived in a fairly extant manner to the present day.

2. **The Kirkbride Plan:** Not only is the Richardson Olmsted Complex an important example of a nineteenth century 'insane asylum' in the United States, it is additionally based upon a specific typology known as the 'Kirkbride Plan' – arguably the first scientific architectural response

to treatment of the mentally ill. Although it was used at almost 70 hospitals by 1890, the Buffalo State Asylum for the Insane is an important example, owing to the rigor with which it not only adhered to, but also improved upon the Plan stipulations.

3. **Early Twentieth Century Evolution of State 'Insane' Asylums:** By the close of the nineteenth century, the 'cottage plan' that relied on smaller 'domestic-type' buildings was being used to expand Kirkbride-plan asylums. This led to a hybrid form - as exemplified at the Buffalo State Hospital. Its impact is evident in alterations to the 'Kirkbride' ward buildings, such as the addition of porches, verandas etc. - features more commonly associated with cottages; and the construction of specialized out-buildings such as tuberculosis pavilions, chapel, library, staff residences, and others.

4. **The Client: Representatives of the State of New York:** The establishment of the Buffalo State Asylum for the Insane was made possible due to influential politicians and physicians within Buffalo and New York State. In its surviving built form, the complex serves as a commemoration to these individuals. Moreover, prominent physicians such as Dr. John Gray of Utica and Dr. James White of Buffalo provided first-hand design input in laying out the asylum plan. The association of the Richardson Olmsted Complex with these personalities lends it an additional layer of significance in a local and regional context.

5. **The Architect: Henry Hobson Richardson:** The architect for the Buffalo State Asylum for the Insane, Henry Hobson Richardson, is one of the most well-known American architects of the nineteenth century. The style that he pioneered was emulated by a variety of other designers and is generally referred to as 'Richardsonian Romanesque'. As one of his early works, and the largest in his career, the 'Buffalo State Asylum for the Insane' is where the architect embarked on the journey to evolve this signature style. For Richardson, this project marked a crucial early step in his seminal career.

6. **Contributions of Local and State Architects:** Although now known as the Richardson Olmsted Complex, the buildings and architecture of the former 'Buffalo State Asylum for the Insane' bear the stamp of many important local and state architects, such as Andrew J. Warner, William W. Carlin and Edward B. Green amongst others. The contributions of these architects, who added to the complex after the original work of Richardson and

Fig. EX.9 **Tile mosaic at main entrance to Administration Building**
Image courtesy GCA

Fig. EX.10 **Decorative central staircase in Administration Building**
Image courtesy GCA

Fig EX.11 **Architect Henry Hobson Richardson**
Image courtesy www.britannica.com

his associates, are a major part of the history of this institution.

Chronology of Development and Use

The second chapter in Developmental History, titled 'Chronology of Development and Use' attempts to trace the physical evolution of the Richardson Olmsted Complex from the beginning of its construction in 1871 to the present day.

1. **1871-1899: Construction Phase:** This time-frame marks the construction and completion of the whole 'Kirkbride Plan' configuration- it is the most crucial period in the history of this complex, because it was during this time that a substantial part of the complex as originally designed, was realized in built form.

2. **1900-1945: Expansion Phase:** The period from 1900 to 1945 saw a constant increase in patient population, necessitating construction of many new buildings, yet most of these buildings were small, freestanding structures reflecting the prevalent 'cottage-plan' typology. The most prominent development was the ceding of the north half of the site to the city. In all, while the physical fabric of the Buffalo State Hospital changed remarkably, yet, all new architectural additions were, for the most part, built in a manner sympathetic to existing historic surroundings.

3. **1946-1974: Post WWII and Deinstitutionalization:** This era, usually referred to as "Deinstitutionalization", saw an increasing preference for out-patient community care over in-patient hospital treatment. The buildings were constructed in the predominant architectural style of 'Modernism', featured materials such as steel and concrete and shunned all historical precedents. The three outermost 'Kirkbride Plan' male wards were demolished in 1969 to make way for a modern rehabilitation building.

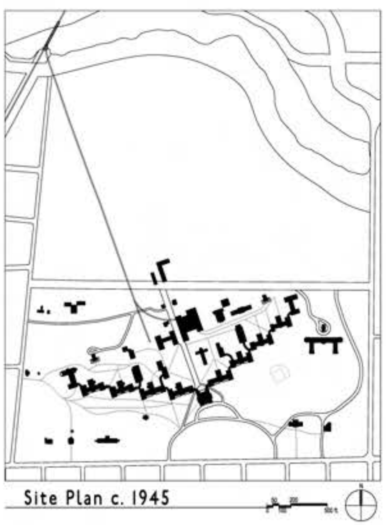
Fig EX.12 (continues on next page) **Series of maps showing the chronological development of buildings on the site of the Richardson-Olmsted Complex from 1876 - 2008**
Image courtesy GCA

In 1974, the last patients were moved out of the original historic wards.

4. **1975-2008: Partial vacancy & Preservation:** The time period from 1975 onwards is marked by a growing interest among professionals and the general community in the rehabilitation of this historically significant complex. The site was added to the National Register of Historic Places in 1973 and was designated a National Historic Landmark in 1986, one of only fifteen hospitals so distinguished in the United States and one of only eight buildings in Western New York to have the distinction. However, the physical condition of the buildings has continually deteriorated. In 2006, with the creation of the Richardson Center Corporation, there has been a strong, new-found impetus to rehabilitate this site.

Evaluation of Significance

The final Developmental History chapter titled "Evaluation of Significance" utilizes the historical research presented in the previous sections to frame a 'Statement of Significance' for the Richardson Olmsted Complex. After revisiting the NRHP and NHL designations for the property, several recommendations were made by the HSR, culminating in a determination that the 'Period of Significance' for the 'Main Building' spans from 1870-1969.The start date reflects the finalization of this site for establishing the Buffalo State Asylum for the Insane by the New York State Legislature and the end date reflects the demolition of the three outermost male ward buildings on the west side, thus disturbing the original 'Kirkbride Plan' layout. Not only did this demolition disturb the original form, but more importantly it signified an imminent demise of the whole era of institutional care for the mentally ill. The section concludes with identification of specific character defining



Site Plan c. 1945

Site Plan c. 1968

Site Plan c. 1974

Site Plan c. 2008

Fig. EX. 13

Image courtesy GCA

Fig. EX.14 **Step crack through mortar joints in stone facade**
Image courtesy GCA

architectural features of the Richardson Olmsted Complex. However, this information is combined with notes on existing condition, integrity, and treatment and is presented in Part C of Chapter IV. Treatment and Recommendations.

Existing Conditions Assessment

The Existing Conditions Assessment section is broken into four chapters, each addressing different buildings on the site. The Main Building chapter addresses the Administration Building and Wards A-B and F-J. These buildings are the most significant on the site and received the most detailed level of investigation. The exterior of the buildings are overall in good condition and all are considered by the HSR team to be viable candidates for rehabilitation. The stone Wards (A, B, F & G) and the Administration building are in good condition overall, with isolated areas of deteriorated stone, mortar and roofing material. The brick Wards (H-I) are in worse condition, with areas of the walls that are deteriorated to the point of collapse. The areas of collapse appear to be isolated and not affecting the overall structural integrity of the buildings. All of the roofs, except Ward I that retains the original slate roof, are all covered with asphalt shingles.

The second Existing Conditions Assessment chapter addresses the Connector Buildings. There are eight curved connectors that join the eight remaining Administration and Ward buildings. There are four stone connectors and four brick connectors. In general, the stone connectors are in good condition and the brick connectors are experiencing more deterioration and collapse.

The third Existing Conditions Assessment chapter addresses the Kitchen and Dining Hall Buildings connected to the Ward buildings. These buildings are the second tier of significance. They were reviewed from the exterior and found to be in various states of deterioration. The Male Kitchen, Male Dining Hall and Female Dining Hall are all in fair to good condition with some deterioration evident. The Female Kitchen is in poor condition due to roof failures that have allowed ongoing deterioration of the masonry walls and dormers. Temporary shoring and protection of the buildings to halt further deterioration was underway during the writing of this report.

The final Existing Conditions Assessment chapter, titled Site Inventory, addresses the remaining buildings on the site. This section records the building name, year built, architect (if known), original use, subsequent use and current use. A brief description of each building is included and a general statement of condition based on review from the exterior.

Treatment and Recommendations

The Treatment and Recommendations section is broken into three chapters – Historic Preservation Objectives, Requirements for Work and Treatment Recommendations and Alternatives.

The Historic Preservation Objectives have been identified and recommendations for treatment approaches made. The *Secretary of the Interior's Standards for the Treatment of Historic Properties* are the guidelines used to characterize the appropriate treatment recommendations for the Richardson Olmsted Complex. The Standards provide a philosophical framework from which decisions about the appropriate treatment of the historic resources can be made, and provide options: restoration, preservation, rehabilitation and reconstruction.

The report recommends "Rehabilitation" for the core buildings on site. Rehabilitation is defined in the *Secretary of the Interior's Standards for the Treatment of Historic Properties* as:

> *"the act or process of making possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features which convey its historical, cultural, or architectural values."*

A Rehabilitation Approach acknowledges the need for the site to continue to evolve and change and is the only approach that allows for alterations and additions. New additions and alterations to the exterior of the historic building are common treatments to a Rehabilitation Approach. These changes should be designed in a way that do not destroy historic materials, features or spatial relationships that are character defining features of the site. It is also recommended that new work be differentiated from the old and be compatible with the historic materials, features, size, scale, proportion and massing. The new features should protect the integrity of the original property.

Conclusion

The Richardson Olmsted Complex site is large, and contains multiple buildings that vary widely in their current physical condition and significance. Each building must be assessed on its own merits, as well as its context on the entire site. This juxtaposition of the significance of the building and its location within the site makes the task of treatment recommendations complicated.

One might expect that the preferred treatment of the complex would be restoration, but the highly specialized design of the complex as an asylum and the rigidly organized hierarchy of mostly small support spaces and patient rooms make a strict restoration approach highly unlikely. The buildings have been allowed to deteriorate severely, making their reuse costly. Richard Moe, President of the National Trust for Historic Preservation, calls this the most ambitious challenge he has seen of a former mental hospital.

A new use must be found, and the viable reuse options might range from preserving the complex as a ruin, to rehabilitation for reuse. For these reasons, and others, the Richardson Center Corporation will have to have the latitude to be innovative to repair the buildings and find other uses for it. Failing that, it is inevitable that the complex will just deteriorate further.

Fig. EX.15 **Brick failure at north elevation in Female Ward I**
Image courtesy GCA

Fig. EX.16 **Typical fireplace in hallway of Female Wards**
Image courtesy GCA

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INTRODUCTION

The original design of the Buffalo State Asylum for the Insane is significant due to its collaborative architectural and landscape design influenced by the theories of innovative treatment of the mentally ill by Dr. Thomas Story Kirkbride, the unique understanding and implementation of therapeutic landscape architecture by Frederick Law Olmsted and Calvert Vaux, and the architectural culmination of Kirkbride's theories by Henry Hobson Richardson.

The Historic Structures Report focuses on the original Asylum buildings designed by Richardson and built between 1871 and 1896. The buildings considered the original or core buildings are: The Administration Building and the Wards flanking it (A-E to the east and F-J to the west). The later additions and ancillary buildings on the site, built after the core Richardson designed buildings (defined as 1895) are briefly described, but do not receive the same level of research, physical examination or condition assessment.

Administrative Data

The Richardson Olmsted Complex currently consists of a 91 acre site bordered by Forest Avenue to the south, Rees Street to the west, Rockwell Road to the north and Elmwood Avenue to the east, containing 38 buildings, parking lots, driveways and remnants of the historic landscape. The complex as originally designed in 1872, began as a 203 acre site for the Buffalo State Asylum for the Insane. The name changed to Buffalo State Hospital in 1890 to reflect the changing developments in mental health. Reflecting continued transformation, the name changed again in 1972 to the Buffalo Psychiatric Center.

The site received *National Register of Historic Places (NRHP)* and *National Historic Landmark (NHL)* designations prepared in 1973 and 1986 respectively. The NHL designation subsumed the NRHP nomination and defined a period of significance extending from 1870-1896. This refers to the construction phase of the main core of buildings (Administration Building + 10 wards). The NHL boundary covered the entire site area (south of Rockwell Road) but pushed the east boundary almost 900' to the west to exclude that portion of the site which was altered by demolition of three outermost historic ward buildings and construction of new buildings after 1950's. Only those buildings within this boundary that date to the period of significance of 1870-1896 are considered contributing to the NHL designation.

The site is currently owned by the State of New York/Office of Mental Health via the Dormatory Authority of the State of New York. Rehabilitation of the Complex is the mission of the Richardson Center Corporation, a not for profit 501(c)(3) organization.

Purpose and Scope

Goody Clancy was engaged by The Richardson Center Corporation in August 2007 to complete a Historic Structures Report (HSR) for the Richardson Olmsted Complex. An HSR is considered the first step in adopting a disciplined approach

Fig IN.1 **View of Administration Building with Male Wards A & B**
Image courtesy Buffalo Psychiatric Center

Fig IN.2 **Undated historic photo showing farming at Buffalo State Asylum**
Image courtesy Buffalo Psychiatric Center

to the care of a historic property and is essentially a guide for the treatment of significant historic properties- including buildings, landscapes and other elements.

As building and site research progressed, it became apparent that a separate Cultural Landscape Report was necessary to provide adequate research and information on the landscape elements of the site. Goody Clancy hired Heritage Landscapes to complete the CLR which is a separate volume.

As defined in the Request for Proposal for the HSR, the scope of work completed by Goody Clancy included: site inspection, historical research, developmental history, structural evaluation, historic materials evaluation, determination of character defining features, determination of hierarchy/ history/condition of interior and exterior spaces, and recommendations for structural, architectural, and materials conservation/restoration treatments. This combination of field work, research and collaborative team work culminated in a full understanding of the historic significance of the buildings, their current conditions, the character defining features and significance, and the appropriate treatment recommendations.

The stated goal of the Richardson Olmsted Complex Historic Structures Report was to provide the Richardson Center Corporation with a useful guide for the Corporation's decisions about rehabilitating the Complex more than a definitive scholarly work. While some scholarly aspects were important to understand the context of the site, the report is also the useful guide for rehabilitation that the RCC requested. The HSR, combined with the Cultural Landscape Report, will provide the Board with a comprehensive understanding of the buildings and the site and will set the ground work for future planning.

Methodology

The Historic Structures Report has incorporated research from many sources, including:

- Review of recent (1965 through 2007) reports, studies and architectural designs completed by architects and engineers for various agencies for the stabilization or reuse of the buildings.
- Books, articles and papers on Buffalo architecture and parks, H. H. Richardson, Frederick Law Olmsted, Dr. Thomas Kirkbride, and the development of mental health institutions.
- Archival research on H. H. Richardson at Houghton Library at Harvard University.
- Archival research on Frederick Law Olmsted at the Frederick Law Olmsted National Historic Site.
- Annual Reports of the Buffalo State Asylum for the Insane/ Hospital (1872-1959).
- Review of photographs, maps, written correspondence and drawings at Buffalo and Erie County Public Library, Buffalo and Erie County Historical Society, and libraries at University of Buffalo and Buffalo State College.
- Conversations with members of The Campaign for Greater Buffalo, Preservation Coalition of Erie County and the Landmark Society of the Niagara Frontier.

In addition to historic research, multiple visits were made to the site by the team to evaluate the current physical condition of the interior and exterior of the core buildings (Male Wards A&B; Female Wards F-J; and the Administration Building). Room by room inspections were conducted inside, noting general conditions. Exterior review was completed using high powered binoculars to inspect each elevation. The building systems – mechanical, electrical, plumbing, fire detection and fire suppression systems – were not reviewed as part of this report.

Additional field investigations to review the physical condition of the Administration Building components were completed in April 2008. The first floor through the roof was inspected from an aerial lift. The higher elevations of the towers were inspected using high powered binoculars from the lift. All areas of the interior were visually inspected. The attic and framing members were accessible via stairs to the main building attic and the tower framing, and all locations were inspected by Simpson, Gumpertz and Heger (SGH) the structural engineer.

The ancillary buildings were reviewed from the exterior, using binoculars. Their overall condition, as observed from the exterior, was noted for inclusion in the report as an inventory of the ancillary buildings.

Presentation of Information in Report

Chapter I and **Chapter II** comprise of the Executive Summary and Introduction, respectively.

Chapter III, Developmental History contains a narrative based on the historic research conducted and is comprised of three parts. The first part titled 'Historical Background and Context' places the architecture of this complex within appropriate historical contexts such as the Kirkbride Plan and evolution of nineteeenth century 'insane' asylums, amongst others. The Chronology of Development and Use divides the timeline of the complex from 1871 to the present time into four periods and describes the changes that took place within each. The Evaluation of Significance lays out the materials and components that are significant to the site, and defines a period of significance for the main core of buildings.

Chapter IV, Existing Conditions Assessment is a description of the current conditions of building materials and elements with identification of causes of deterioration. The Architectural and Structural section includes full written and graphic existing conditions evaluations of the Administration and Wards A-B and F-J and the Connectors between the core buildings. The Kitchen and Dining Hall Buildings that are connected to the Wards received an external review and evaluation of conditions. The Site Inventory lists the remaining ancillary buildings on the site, their date of construction, general condition and current use.

Chapter V, Treatment and Recommendations presents the historic preservation objectives and a rationale for recommended treatment for the buildings. The Historic Preservation Objectives have been identified and recommendations for treatment approaches made. The Requirements for Work section, addresses the Accessibility and Energy & Environmental Issues relating the complex. The Treatment Recommendations and Alternatives section contains two sections:

Fig IN.3 **Aerial lift survey being undertaken by GCA & SGH team**
Image courtesy GCA

Fig IN.4 **Exploratory probe in brick wall**
Image courtesy GCA

Fig IN.5- IN.7 **Images of survey work undertaken by GCA & SGH**
Image courtesy GCA

1. Recommendations for the Administration Buildings, Wards and Connectors that addresses specific materials treatment recommendations for these buildings.

2. Recommendations by Character Defining Features provides recommendations for what elements are significant and should be retained. Specific treatment methods are covered in the prior section

Project Team

Goody Clancy's team for the production of the HSR was a combination of in-house expertise and outstanding consultants. Goody Clancy's Principal in Charge of the HSR effort was Jean Carroon, FAIA. The report production team was lead by Lisa Howe, Director of Preservation as the Project Manager for the field survey work, and primary author of the existing conditions and treatment recommendations sections of the report; and Priya Jain served as the Project Manager and primary author for historic research and the history sections of the report. Additional Goody Clancy team members included Cara Speziale, Katie Gerner, Stephen Feige and Jill Verhosek.

Goody Clancy's consultants included:

- Frances Kowsky - local architectural and landscape history consultant;
- James O'Gorman - H. H. Richardson scholar and the primary author of "The Architect – H. H. Richardson";
- Simpson Gumpertz and Heger - structural engineers and forensic building specialists - James Parker, Matthew Bronski, Michael Lynch and Erik Farrington;
- Martin Wachadlo - local architectural historian and primary author of "Contributions of Local and State Architects".

Heritage Landscapes, the historic landscape consultant, completed a Cultural Landscape Report that is a separate, companion volume to the Historic Structures Report. While the significance of the architecture and landscape are intertwined, the completion of separate reports allows each report to follow the appropriate chronological time frame for the architecture or landscape.

Acknowledgements

Goody Clancy would like to thank the Richardson Center Corporation and the Historic Structures Report Committee for the opportunity to produce the HSR. It has been an honor to research and explore the site, and a great pleasure to provide a document that we hope will help in the resurrection of this great and important site.

Many people in Buffalo shared information freely with us. Without their generosity this report would not have been as thorough, nor as interesting to research and write. Goody Clancy wishes to thank the following people for their invaluable contribution to these documents.

- The Campaign for Greater Buffalo – Tim Tielman, Elizabeth Kauffman, Paul McDonnell, Richard Lippes and Meg Albers
- Sue Joffe of the Buffalo Psychiatric Center for sharing her files with us

- State University of New York (SUNY) – Dorothy Tao, Librarian, School of Architecture & Planning
- Mike Masterman - Buffalo Psychiatric Center maintenance department
- Ken Abram – Dormitory Authority of the State of New York
- Preservation Coalition of Erie County – Cynthia Van Ness
- Buffalo and Erie County Historical Society

In addition, the following local architectural firms shared information about their previous examination and work at the Richardson Olmsted Complex:

- Foit Albert Associates
- Architectural Resources
- Cannon Design
- Flynn Battaglia Architects

We want to thank the Historic Structures Committee, Stanford Lipsey, Clinton Brown, Julian Adams, Peter Atkinson and Howard Zemsky, for their dedication to producing a quality report. We would especially like to thank Monica Pellegrino Faix, the Project Coordinator for the Richardson Center Corporation for her calm and quiet dedication to the process and the site.

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A. HISTORICAL BACKGROUND AND CONTEXT

The concept of historic contexts has been fundamental to the study of history for a long time. Historic contexts are those patterns or trends in history by which a specific occurrence, property, or site is understood and its meaning (and ultimately its significance) within history or prehistory is made clear.

This chapter titled 'Historical Background and Context' will place the buildings and architecture of the Richardson-Olmsted Complex within appropriate historical contexts that will provide an overall framework for discussion and subsequent determination of its significance. Distinct yet overlapping perspectives can be assumed when analyzing this property in the present times – some might look at the remarkable collection of buildings and see the work of one of America's greatest architects, Henry Hobson Richardson, while others might view the buildings as a great example of the distinctive 'Kirkbride Plan' typology. Still others may analyze the architecture of this complex in light of the development of mental health institutions in the United States during the nineteenth and twentieth centuries. In addition, the architecture of this complex may also be significant for bearing the stamp of eminent local and state architects. And last, but not the least, the construction of this institution may be linked with persons significant within Buffalo's political and social history. These varied contexts are hardly exclusive, yet each merit individual and focused attention to clearly lay down the various pieces of American history that this complex evidently drew from and impacted in turn.

Accordingly, for the purpose of our study, we will place the architecture of the former 'Buffalo State Asylum for the Insane' within six historical contexts, listed below:

- 'Insane Asylums' in America in the Nineteenth Century
- The Kirkbride Plan
- Early Twentieth Century Evolution of State 'Insane Asylums'
- The Client: Representatives of the State of New York
- The Architect: Henry Hobson Richardson
- Contributions of Local and State Architects

While determined to be most relevant for the purpose of this Historic Structures Report at the present time, these above-mentioned contexts are by no means definitive. For example, with the passage of time as research on modern-era mental health institutions becomes more developed in the fields of architectural and social history, it may be relevant to investigate if such contexts will be applicable to this property.

Based on the best current understanding, these six contexts do, however, lay down a crucial framework for understanding and interpreting this property with regards to its associations with larger significant patterns, events and personalities in history.

I. 'INSANE ASYLUMS' IN AMERICA IN THE NINETEENTH CENTURY

Fig A.1 **New Bethlem Hospital, London, 1815**
Image reproduced from Yanni 2007, 19

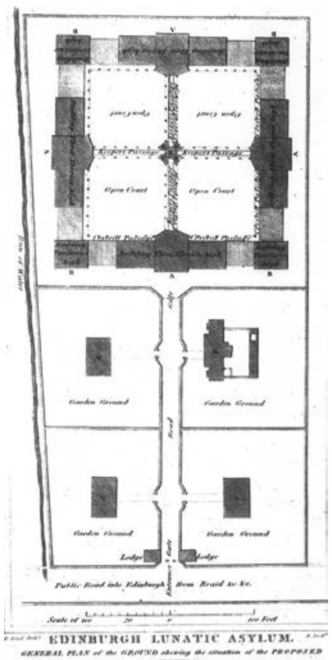


Fig A.2 **Edinburgh Lunatic Asylum, plan**
Image reproduced from Yanni 2007, 23

The idea of the 'Buffalo State Insane Asylum' was born during the 1860's - at a time in history when care for the mentally ill reflected a newfound faith in the power of architecture and environment to 'cure' patients. Although almost 130 years have passed since then and the Buffalo State Insane Asylum has seen numerous changes in policy and built form, it still serves as an important expression of the ideas and values of that period. In doing so, it continues to serve as an exemplar of a nineteenth-century 'insane asylum', and allows us to explore this broader context that gave rise to a number of similar institutions throughout the United States.

Dedicated facilities for the mentally ill began to appear on the outskirts of many American cities after the Civil War, and by the turn of the twentieth century almost 300 'insane asylums' had been built in the country (Yanni 2007, 1). Although they are today perceived as rather dismal reminders of an often brutal system, one needs to appreciate their emergence and development within an appropriate historical context. Such a study will reveal that the construction of these facilities was actually viewed as a huge step towards humane care of the mentally ill, and the buildings that housed them once exemplified innovation and progress. Most important though, was the supreme emphasis that medical practitioners, scientists and philanthropists alike, placed upon the architecture of the buildings and its surroundings. Never before had the relationship between built form and its impact on perception and well-being been so directly addressed and explored. The very design and layout of these institutions was supposed to not only impact, but actually *cure* the mentally ill. How this relationship came about, and in what ways it manifested itself in the construction of numerous asylums in America, are a few questions that will be addressed in the following text.

Historians of medicine have pointed to 'insanity' as the first illness to be isolated. Within western tradition, hospitals for the mentally ill are found as early as the thirteenth century. Because of this long period of specialization, mental illness was perhaps the most advanced area of medicine until the late nineteenth century (Coolidge 1992, 85). Before understanding the dramatic rise of 'insane asylums', it is worthwhile to first investigate how they came about as a response to the miserable conditions that prevailed in preceding centuries.

Before the nineteenth century, there was no clear consensus in the western world as to what really constituted 'insanity'. Varying societies adopted different interpretations, and accordingly their responses ranged from wary tolerance to rigorous confinement. Unable to fully understand the disease, those thought to be mentally ill were often confined in shackles in dingy cells and basements of jails, almshouses and poorhouses. The nineteenth century, on the other hand, witnessed a growing understanding of the disease and its inherently dual nature -that it was, in fact, borne out of an interaction of environmental and biological factors. This, coupled with increasing industrialization and changes in family structure, led to the need for 'institutions' outside the home where the mentally ill could be housed.

Carla Yanni in her book *'The Architecture of Madness'* traces the birth of the idea of 'insane asylums' to Bethlem in England[1] (Fig. A.1), which over time became infamous for ill-treatment, disorganization and chaos, and was often cited as a counter-example by American doctors in years to come[2] (2007, 17). Most European institutions for the mentally ill were housed in old buildings intended for different purposes, and thus failed to provide a good prototype for a purpose-built 'asylum'. Nonetheless, the various iterations of the Bethlem hospital constructed from 1674 to 1815 did establish the early institutional vocabulary of a bilaterally symmetrical building composed of a central structure, flanked by two long ward blocks punctuated by projecting gables and pediments. Greater architectural refinement was achieved in the Edinburgh Asylum of 1813 (Fig. A.2) which attempted stratification of patients based on severity and social rank. This was achieved by building wards arranged on a quadrangle looking upon an enclosed courtyard.[3] However, the York Retreat[4] of 1796 (Fig. A.3) was by far the most important influence on American asylums, primarily because it strongly introduced the concept of **'moral treatment'**; and its building was purpose-built to reflect this new ideology. The key points of the Retreat were its secluded location in pastoral surroundings, a central administrative structure and ward buildings on either side with double-loaded corridors lined with single patient rooms.

1 It was first established in 1247 and received the first significant building in 1674 (Yanni 2007, 18).

2 The hospital's reputation for disorder gave birth to the term 'bedlam' which is used to denote 'a scene or state of wild uproar and confusion'.

3 The corners were reserved for people of higher ranks (Yanni 2007, 24).

4 Note the use of the term 'retreat' which suggested a 'haven'-a refuge from the ills of society.

The 'Moral Treatment of Insanity'

Moral treatment was an approach to mental illness that emerged in the late eighteenth century and influenced much professional and public thought for most of the nineteenth century. Its origins have often been tied to the Enlightenment which brought about an increased focus on individuality, rights and overall social reform. The Frenchman Philippe Pinel and the Englishman William Tuke are often credited with being the fathers of this movement (The Moral Treatment 1847). Pinel is best known for his bold act of liberating about fifty mentally ill patients from the chains that were used to confine them at the Bicetre Hospital in 1792 and at Saltpetriere two years later[5]. His first work on insanity, *Traité médico-philosophique sur l'aléniation mentale ou la manie*[6], was published in 1801.

5 Another Frenchman Jean-Baptiste Pussin (1745-1811) is also credited along with Pinel for introducing moral treatment at Bicetre and Saltpetriere. In fact, some sources reveal that it was Pussin who replaced iron shackles with straitjackets at Bicêtre in 1797.

6 Translated as the 'Medico-Philosophical Treatise on Mental Alienation or Mania' by D. D. Davis. New York: Published under the Auspices of the Library of the New York Academy of Medicine by Hafner Publishing Co., 1962.

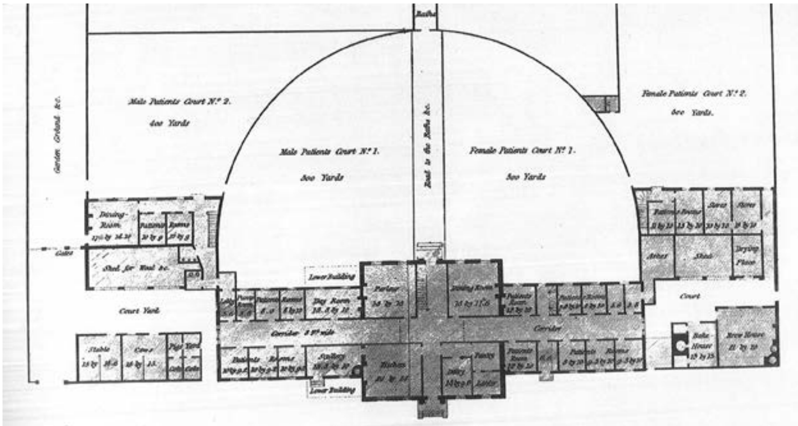


Fig A.3 **York Retreat, plan 1792**
Image reproduced from Yanni 2007, 29

William Tuke was a Quaker, who was moved by a family tragedy to establish the York Retreat in England on a similar concept, espousing humane treatment for all who were mentally distressed. An important distinction in the Englishman's approach was his emphasis on the environment and regimen as defining factors in this treatment. Accordingly, the York Retreat was set within pastoral surroundings at the crest of a hill, where about 30 patients lived as part of a small community in quiet country houses and engaged in a daily routine of rest and manual work. The doctors abstained from harsh medical treatments such as bloodletting and emphasized comfort, encouraged outdoor activity and insisted upon kindness towards all patients (Yanni 2007, 28).

Samuel Tuke (grandson of William Tuke) borrowed the term "moral treatment" from the term "traitement moral" which was used to describe the work of Pinel. The original French term referred more to treatment of the morale, in the sense of emotions and self-esteem, rather than the sense of "rights and wrong" that are now more commonly associated with the word "moral". This has led to some misunderstanding about the term. Nonetheless, moral treatment revolutionized the treatment of the mentally ill. Its hallmarks were the belief that an asylum ought to be a 'curative', not punitive place. Other key aspects included the removal of the patient from home and former associations, the establishment of regular habits and self control, routine manual labor and religious attendance, and the use of respect and kindness in all treatments and under all circumstances. This philosophy had crucial implications for the creation of purpose-built asylum designs that were to follow in the United States – it clearly laid down the foundation that asylum environments had a direct impact on the patients' minds - a key to their hopes for cure.

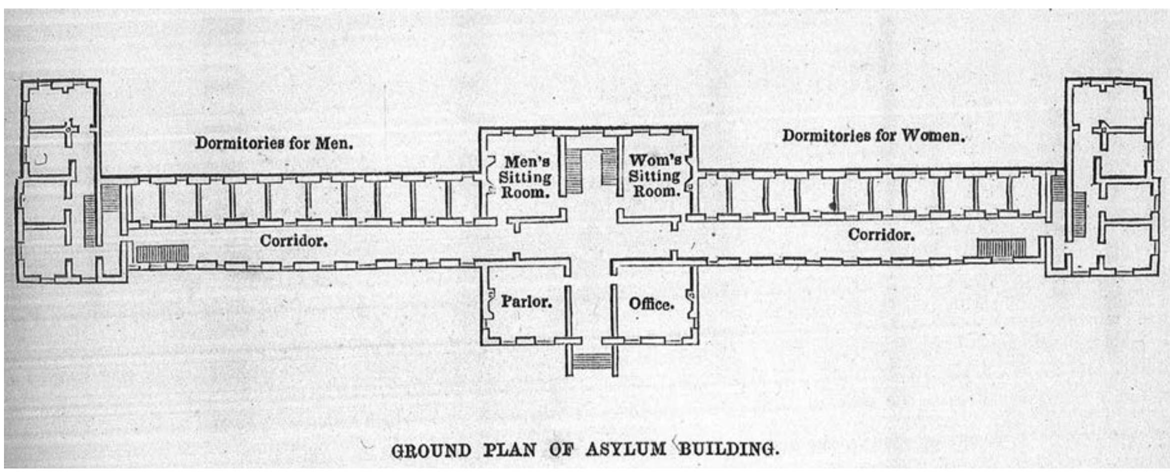


Fig A.4 **Friends Asylum, Frankford, plan 1825**
Image reproduced from Yanni 2007, 33

The First American 'Insane' Institutions

Almshouses, poorhouses and some hospitals housing the mentally ill had been in place in American cities such as Philadelphia as early as 1750's, yet it was not until 1773 that a purpose-built hospital was first built in Williamsburg, Virginia. Despite employing the layout of a central structure and symmetrical flanking wards of double-loaded corridors with single rooms, this facility was very small in size and failed to emphatically impact future developments. Between 1811 and 1822 there was a short-lived spurt in the founding of private mental hospitals in the Northeast — McLean Asylum in Boston, the Friend's Asylum in Philadelphia, and the Hartford Retreat in Connecticut — all of which catered exclusively to wealthy, affluent families. Their layout and planning reflected inspirations from the York Retreat in England. Amongst these, the Friend's Asylum (Fig. A.4) in particular, with its central house-like building, division of patients based on sex and single-loaded corridors, was successful in establishing an early typology for 'insane asylums' in America. It is no wonder that its development coincided with the popularity of 'moral treatment' in the country.

Early European examples of 'insane asylums' undeniably exercised influence over their American counterparts - yet historians appear divided over whether the motives behind the Asylum movement were the same in both continents. Some believe that the rise of the insane asylum in America was also a product of enlightenment notions and benevolent attitudes in society, much like Europe[7]; yet, other historians like Rothman in his 1971 book '*The Discovery of the Asylum: Social Order and Disorder in the New Republic*' contend that the 'insane asylum' can be conceived as exceptionally American. The Jacksonian era with its rapidly changing social, political, economic, demographic and religious influences led to a shared desire for social stability and cohesion, and resulted in mass 'incarceration' of deviant populations in both prisons and asylums. The felt need for order lay in an American society deeply apprehensive about the prospect of disorder. Professionals and laymen alike attributed insanity to the course of civilization. Mental disorder, announced Edward Jarvis, a leading Medical Superintendent, was "*a part of the price we pay for civilization. The causes of the one increase with developments and results of the other*" (Rothman 1971, 110). Thus, the 'insane asylum', which on the one hand symbolized the progressiveness of a civilized nation, also announced the corruption caused by industrialization, urbanization and the quest for profit. Accordingly, most early asylums were built in the vicinity of large urban centers. Interestingly, the term 'asylum' which was widely used throughout the nineteenth century, suggested a 'refuge' -- possibly from the pressures of civilization.

7 See Porter 2002, and Yanni 2007.

George W. Dowdall in his book *'The Eclipse of the State Mental Hospital'* contends, in addition, that the emergence of asylums in particular cities was directly and more significantly related to the number of medical practitioners and their level of professional organization. In about 1844, psychiatrists in the United States created a professional organization (the precursor to the *American Psychiatric Association* called the *Association of Medical Superintendents of American Institutions for the Insane* (AMSAII). It reflected the fusion of institutional therapy with psychiatric theory, and proved a crucial step forward in the movement to build asylums. At the same time, philanthropists such as Dorothea Dix (Fig. A.5) – an important nineteenth century reformer – provided indispensable leadership. She travelled extensively throughout the United States and served as a catalyst for successful appeals to the State legislatures for creation of 'insane asylums'. The confluence of these many streams – small, yet successful early asylum examples, a national body like AMSAII, and Dorothea Dix's leadership – led to an unparalleled wave of asylum building in the United States in the mid-nineteenth century.

Rising popularity of the theory of 'moral treatment' and the emphasis it placed on the designed environment of the asylum, led to the intervention of medical practitioners in laying out the parameters of how these environments would actually be designed. The hospital wards would enclose a new world for the mentally ill, designed in the reverse image of the chaotic one they had left.[8] It was amidst such

8 In the words of historian Robert Castel, the asylum presented the need (and the opportunity) "to construct from nothing a new social laboratory in which the whole of human existence could be programmed." (Rothman 1971, xxvii)

Fig A.5 **Dorothea Dix**
Image courtesy www.wikipedia.com

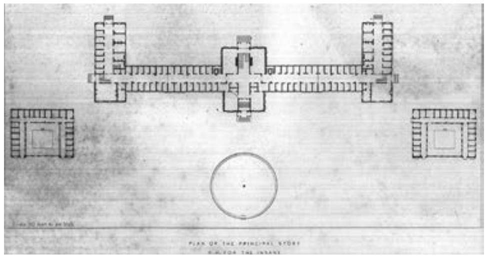


Fig A.6 **Pennsylvania Hospital for the Insane, plan, 1841**
Image reproduced from Yanni 2007, 40

developments that Thomas Story Kirkbride, Superintendent of the Pennsylvania Hospital for the Insane put forward the "*Report on the Construction of Hospitals for the Insane*" at the annual AMSAII meeting in 1851. It was published in a detailed format in 1854 and again in 1880. The Report included numerous propositions that spelled out in detail the site, location, design, grounds, ventilation, lighting and heating systems for an ideal hospital. The Kirkbride Plan, or the 'linear plan' as it came to be called later, will be discussed in detail in the following section. For the discussion here, in trying to place the Plan within the evolution of 'insane asylums' in the nineteenth century, we will briefly outline its key elements and analyze its impact and how it paved the way for future models.

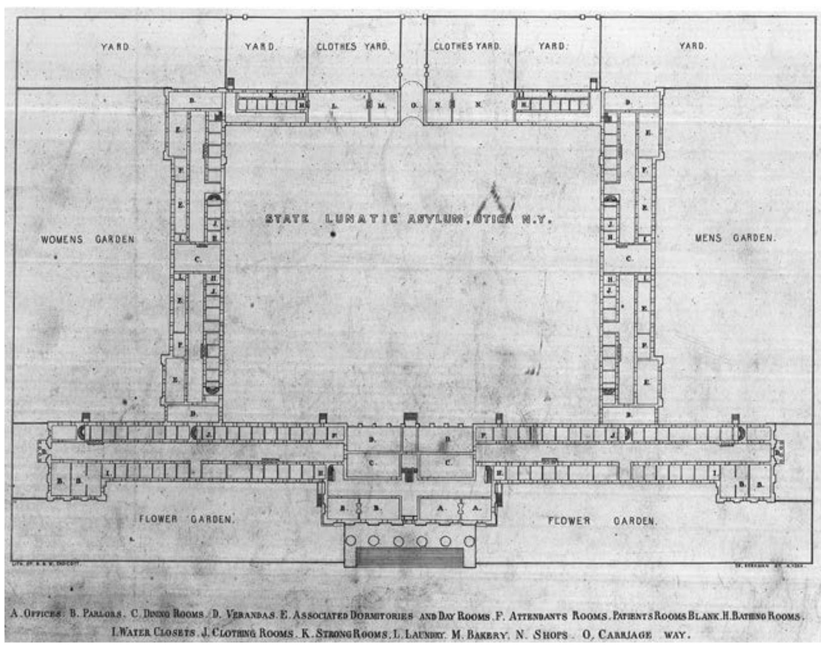


Fig A.7 **NY State Lunatic Asylum, Utica, plan 1844**
Image reproduced from Yanni 2007, 44

The Kirkbride Plan was a type of congregate plan (all under one roof), made up of short, but connected buildings, arrayed in a shallow 'V' profile with a central administrative structure. The Pennsylvania Hospital for the Insane (Fig. A.6) supervised by Kirkbride himself is often regarded as the first 'Kirkbride Plan' hospital; however, this assumption is incorrect as the building was already constructed by the time Kirkbride formalized his principles and he was thus only able to make later modifications. It was a U-shaped building with perpendicular wards comprising of double-loaded corridors and two detached buildings for most disturbed patients. Instead, Kirkbride preferred all patient wards to be physically connected for ease of administration. The New York State Lunatic Asylum in Utica (Fig. A.7), constructed in 1844, was another subsequent early iteration which comprised of a closed U-shaped or quadrangular plan, with three sides containing wards, and one side made up of service buildings. Kirkbride improved upon this design in his contemporaneous manual by calling for shorter wards, greater separation of patients, and an unfettered view of the landscape (Yanni 2007). This led to his signature V-shaped plan with staggered wards that were arranged perpendicularly to each other. An overriding concern that guided early asylum design was ample ventilation - reflecting the widely held 'miasma theory' of contagion - the medical assumption that noxious exhalations from humans polluted the air and caused disease. (Yanni 2007, 33).

The New Jersey State Lunatic Asylum (Fig. A.8) of 1847 was probably the first shallow V-plan asylum in the United States that featured staggered wards. When it was expanded in 1850, additional wards were simply connected to the outside of the linear plan. The asylum was widely praised for its scenic location and unobstructed views of pastoral scenery. The Alabama Insane Hospital of 1852 is regarded as another important linear plan hospital and was illustrated in Kirkbride's book. Both these asylums had linear wards with double-loaded corridors lined with single rooms. Only in the case of the outermost wards for disturbed patients, single loaded corridors were used, to allow ease of surveillance and prevent patients' rooms from opening onto one another.

Since it was felt that the asylum Superintendent should personally be able to attend to all patients, the AMSAII had determined in 1854 that 250 should be the maximum capacity of an 'insane asylum'. Rising admissions, however, led to the decision by AMSAII in 1866 to increase this limit to 600 patients. This hike in patient population can be linked to the aftermath of the Civil War, with an overall increase in mental illness and depression generally in American society.

The Hudson River State Hospital at Poughkeepsie (Fig. A.9) constructed in 1867 was amongst the first institutions to be based on the new increased stipulation of 600 patients. The plan for this building (A.10) advanced Kirkbride's ideas by increasing the setbacks between each receding ward. This led to the perpendicular return wings being almost of equal length to those parallel to the facade, thus ensuring greater light and ventilation, and better segregation between wards. Another large Kirkbride Plan hospital from this time was the New Jersey State Hospital for the Insane at Morristown, also known as Greystone, begun in 1872. While the plan for this building carried forth the development evident at Poughkeepsie, with regards to a more pronounced staggering of wards, it also created a C-shaped plan for the outermost wards meant for disturbed patients (Fig. A.11). This allowed

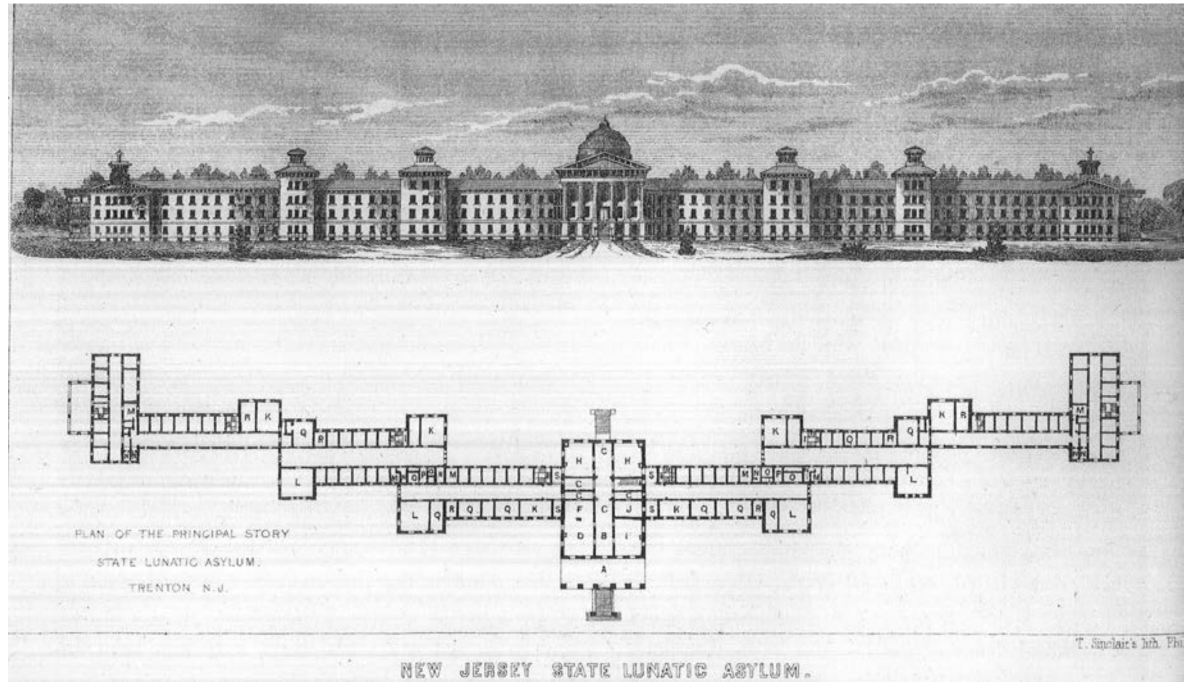


Fig A.8 **New Jersey State Lunatic Asylum, 1850**
Image reproduced from Yanni 2007, 56

Fig A.9 **Hudson River State Hospital, Poughkeepsie, built 1867**
Image courtesy www.kirkbridebuildings.com

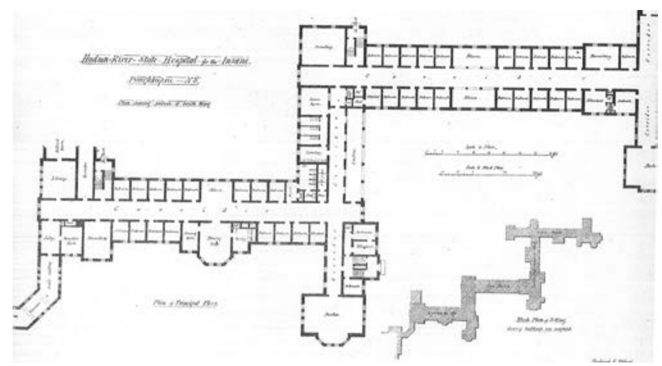


Fig A.10 **Hudson River State Hospital, Poughkeepsie, partial plan**
Image reproduced from Yanni 2007, 115

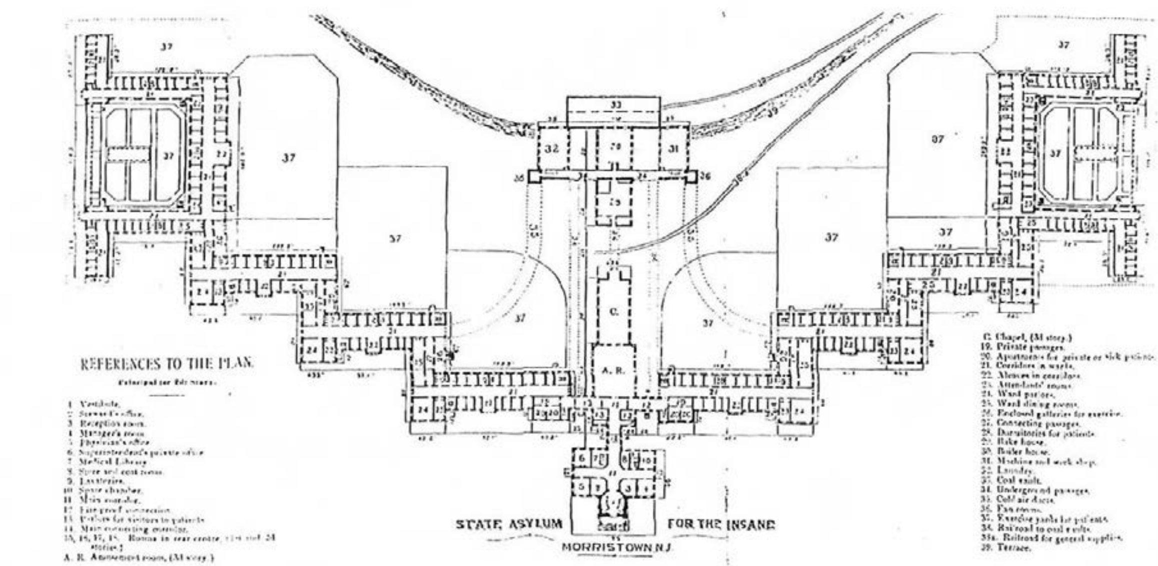


Fig A.11 **Greystone, the New Jersey State Hospital for the Insane at Morristown, plan**
Image reproduced from Yanni 2007, 120

Note the C-shaped plan of the outermost wards with 3-side enclosed courtyard

the creation of a side-facing, somewhat enclosed courtyard for patient-use, which could be used independently without interfering with the functioning of the main site grounds.

At about the same time in 1872, at the center of the debate about the growing extent of state asylums, construction began on the Buffalo State Insane Asylum. It is interesting to note how this institution very clearly reflects the evolution of nineteenth century asylums right up to this time. In its plan (Fig. A.12), we see the refinement of the Poughkeepsie scheme - the extended return wings of the earlier plan are completely re-interpreted here as curved connecting corridors, thus ensuring even better segregation and clarity between wards. And in its treatment of the outermost wings, we see inspirations from the Greystone Plan. To these were added some remarkable innovations, such as the incorporation of a rear wing (T-shape) and the use of single-loaded corridors throughout each ward building. The Buffalo State Insane Asylum has received more scholarly attention than other nineteenth century asylums owing to its famous architect, H.H. Richardson, but as we have seen here, the institution stands tall in the history of psychiatry too, as it represents the acme of both social ideology and architectural form.

In retrospect, the nineteenth century stands out as a period in history when path-breaking progress was made in formulating a social and administrative response to housing and treating the mentally ill. A massive system was launched in this century , not only in terms of theory and public policy, but also one that was realized in 'bricks and mortar' and amply reflected in the almost 150 asylums that were built during this century.[9] A subsequent section of this report titled ' Early

9 For statistical information on number and openings state asylums in the US, see Dowdall (1996).

Twentieth Century Evolution of State Insane Asylums' will focus on how things changed with the turn of the century. Yet it remains sufficiently clear that the nineteenth century will forever be accredited with the 'birth' of the Asylum and will be widely recognized as an era when architecture for mental health received unparalleled attention.

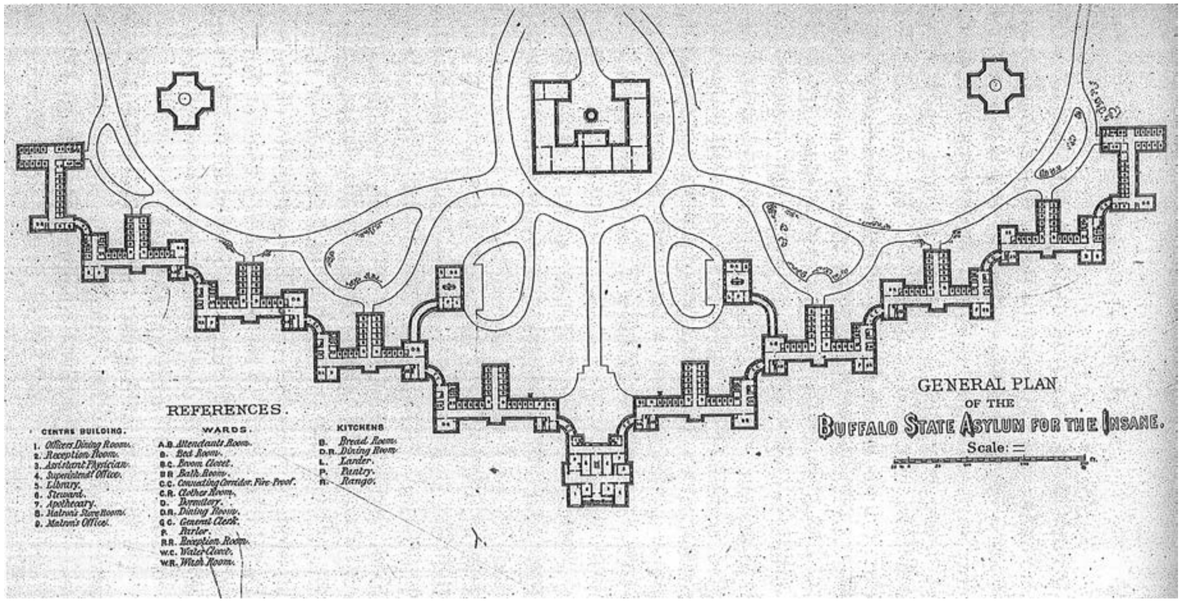


Fig A.12 **Buffalo State Hospital for the Insane, plan, 1872**
Image reproduced from Yanni 2007, 136

Fig. A.13-14. **Some other 19th century Kirkbride asylums**

Fig A.13 (right) **Athens Lunatic Asylum, completed 1874**
Image courtesy www.forgottenoh.com/Ridges/ridges.html

Fig A.14 (far right-lower) **Danvers State Hospital, completed 1878**
Image courtesy http://www.danversstateinsaneasylum.com/home.html

II. THE KIRKBRIDE PLAN

Fig A.15 **Thomas Story Kirkbride**
Image courtesy www.wikipedia.com

Not only is the Richardson-Olmsted Complex an important example of a nineteenth century 'insane asylum' in the United States, it is additionally based upon a specific typology known as the 'Kirkbride Plan' after its founder Dr. Thomas Kirkbride. The Kirkbride Plan is remarkable for being the first scientific architectural response to treatment of the mentally ill. Although it was reportedly used as a template at almost 70 hospitals by 1890, the Buffalo State Insane Asylum stands out as an important example of this type owing to the rigor with which it not only adhered to, but also improved upon the Plan stipulations. This section will lay out the basic parameters of what the 'Kirkbride Plan' entailed and assist in analyzing the Buffalo State Insane Asylum as a representative example.

Dr. Thomas Story Kirkbride (1809-1883) was arguably the single most important nineteenth-century psychiatrist when it came to matters of asylum design and layout (Fig. A.15). Born into a Quaker family in Morrisville, Pennsylvania, he began his medical career at the Friend's Asylum and went on to become the Superintendent at the newly established Pennsylvania Hospital for the Insane in 1840 (Bond 1947). In 1844, Kirkbride was a founding member of the *Association of Medical Superintendents of American Institutions for the Insane* (AMSAII) serving first as Secretary, then later as President from 1862 to 1870. Kirkbride promoted a standardized method of asylum construction and mental health treatment, popularly known as the 'Kirkbride Plan' and outlined in his influential work, *"On the Construction, Organization, and General Arrangements of Hospitals for the Insane with Some Remarks on Insanity and Its Treatment"* published in 1854, and again in 1880 (Figs. A.16 and A.17). In 1853, a second set of propositions, *"On the Organization of Hospitals for the Insane,"* was accepted and this defined the duties of the various officers and employees responsible for asylum administration.

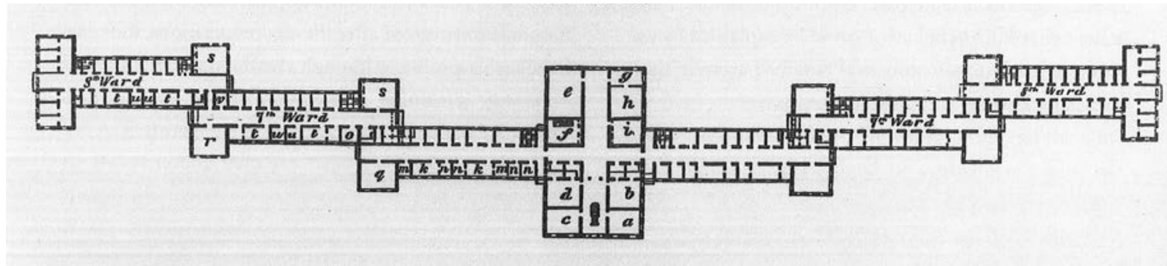
His proposed model of construction, popularly known as the 'Kirkbride Plan' is also referred to as the 'congregate plan' or 'linear plan'. It was extremely detailed in its scope and laid out a number of stipulations ranging from site selection, to building layout, room sizes, and window details, amongst other features for appropriate asylum construction. For a large part of the nineteenth century, it became the foremost manual for building new institutions for the mentally ill. Amidst the number of facilities that were based on this plan, the Buffalo State Insane Asylum was arguably *"the first and only one in which the* [proper architectural] *principle was fully carried out."* (State Provision for the Insane 1872, 6). We will now proceed with a brief summary of Kirkbride's stipulations along with a discussion of how they were reflected in the Buffalo Asylum.

One of the first stipulations of the Kirkbride Plan with regards to asylum construction, was about site location. *"The asylum site ...should always be located in the country, not within less than two miles of a town of considerable size...[and] within reasonable proximity to a railroad"* (Kirkbride 1880, 37). He emphasized that while relative seclusion from the city was important in ensuring quiet, pastoral surroundings, ease of access to the city was also important for catering to patients and securing supplies. An optimum balance between the two was thus aimed at. The Buffalo State Insane Asylum was located north of the city core of Buffalo, very close to the railroad. Although it was in an area that was expected to be well within city boundaries in a few years time, the requirement for a bucolic setting was satisfied since the site abutted a huge citywide park system.

Another Kirkbride stipulation was that the property had to be relatively large (at least 100 acres) to allow the patients sufficient privacy, a diversity of landscape experiences and the opportunity for healthy outdoor work. The plan also called for thoughtful landscape design of the grounds surrounding the buildings. 'Pleasure grounds' for patients of both sexes with a variety of interesting trees and shrubs, flowering plants, summer-houses, etc., were strongly advised. The Cultural Landscape Report for the Richardson-Olmsted Complex addresses in detail how these propositions regarding site and landscape were met at the Buffalo State Insane Asylum.

With regards to architectural form, the Kirkbride Plan addressed, amongst other aspects, the height, plan layout, exterior and interior materials that should be used. To ensure that the architect did not override these rules in the final design, Kirkbride proposed that all architectural plans be submitted to, reviewed and approved by some physician or physicians, who had had charge of a similar organization. Indicating that the plan should favor adherence over innovation, Kirkbride stated that *"instead of attempting something entirely new, the object should rather be to profit by the experience of the past."* (Kirkbride 1880, 46). Preferring austerity over decoration in building design, he declared that *"all extravagance in the way of ornamentation should be avoided"* (Kirkbride 1880, 47). The Buffalo State Insane Asylum adhered well to these guidelines in having Dr. John P. Gray of the Utica Asylum being constantly involved in the design of the institution along with chief architect, H. H. Richardson. Also, the building elevations were designed by Richardson in a rather 'austere' style with minimal decorative detailing.

Integral to the Kirkbride Plan was the need to classify patients by type and degree of affliction. The architectural form which best incorporated these ideas was determined to compose of a central building with wings on each side arranged *en*



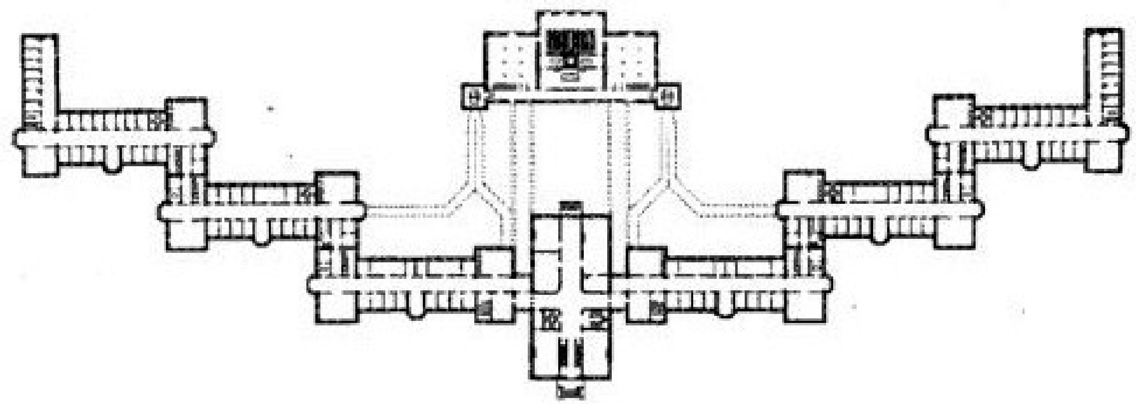


Fig A.16 (top) **Typical floor plan of a 'Linear Plan' Hospital, as illustrated in the first edition of Kirkbride's book, 1854**
Image courtesy www..books.google.com

Fig A.17 (above) **Typical floor plan of an 'Improved Linear Plan' Hospital, as illustrated in the second edition of Kirkbride's book, 1880**
Image courtesy www,books.google.com

echelon[1] or in a staggered form. The center building was to be the most prominent structure housing administrative offices, a chapel and residences for the officers. The wings were to house patients of both sexes and be so arranged as to have at least eight distinct classes of patients on each side - each class occupying a separate ward (i.e. separate floor). The degree of patient illness increased with distance from the center - the quietest patients were housed adjacent to the Administration Building, while the most disturbed occupied the outermost wards. Also each successive building were to recede in height with the central building being the tallest.

The layout for the Buffalo State Insane Asylum, while essentially based on this format, improved upon it in certain ways that make the Asylum distinct and unique from its predecessors. Each ward building at Buffalo was set back from its neighbor by an *entire* building width, thus ensuring unfettered views, light and ventilation. Moreover, each ward building was connected to its neighbor by means of quarter-circle curved corridors that appear concave when viewed from the south of the building - these not only ensured better segregation but their unusual shape also discouraged use as surplus patient space during overcrowding. This was very desirable at a time when most asylums were beginning to realize that overcrowding was the biggest impediment to their smooth functioning. This arrangement also dissuaded asylum attendants *"from going readily from ward to ward, increasing their efficiency"* (AR 1872, 16).

1 The term 'echeleon' is derived from the french word 'echelle' meaning ladder. The name was later adopted by the birdwatching community to describe the familiar V-shaped formations of flights of geese and migratory birds, thus explaining the popular refernce to the Kirkbride plan as a 'V-shaped formation of geese'.

Despite the majority of old and feeble patients among the mentally ill, the Kirkbride Plan called for multi-story buildings always with a basement. The higher stories were deemed desirable due to *"being more airy, having greater privacy, and more extended views of the neighboring country"* (Kirkbride 1880, 56). The basement was crucial for housing mechanical and heating systems and also under the Administration Building, the kitchen for the whole institution. This location for the kitchen was deemed desirable with regards to ease of supervision and supply of materials. Dumbwaiters were planned to transport the food up from the kitchens directly to the dining rooms. A railroad was to be laid down through all the basements for efficient distribution of food and supplies to all wards. At the Buffalo State Insane Asylum, most of the above suggestions were met, except that kitchens were planned as separate out-buildings, one each for the male and female wards. They were placed to the rear of the complex and connected to the main building by a covered corridor at basement level. This system afforded even better ventilation and fireproofing to the buildings.

Apart from the kitchen, Kirkbride called for other utility buildings like the boilers for generating steam, the laundry and bakery, to be housed in detached structures at least 100' from the ward cluster. An additional railroad (connected to the basement system) was used to convey clothing etc., to and from the laundry. Out-buildings for tending to farmlands, usually attached to every asylum, were also proposed to be laid out in a separate cluster, some distance away from the patients' grounds. At a minimum, these were to include a barn, carriage stable, piggery, ice house, and mechanics shops. The Buffalo State Insane Asylum closely followed this pattern. Its abundant grounds enabled construction of various outbuildings and their careful placement. The boilers, bakery and laundry were placed in a cluster 150' to the rear, while the farm buildings were located further still at a distance of almost 300', from the Administration Building.

In terms of materials for exterior facade, the Kirkbride Plan called for the use of stone or brick. In the case of stone, an inner lining of brick with an air cavity in between, was proposed for all external walls to provide insulation and allow drying of structural members. At Buffalo State Insane Asylum though, the air cavity between wythes was added only in the case of brick wards, not in stone - where the external walls are composite (solid, with no cavity).

Interestingly, the Kirkbride Plan did address the issue of porches or verandas that were to be later added to the south facades of the Buffalo State Insane Asylum. It was felt that such metal porches "*could not be used with safety by the patients, unless made so as almost to resemble extensive cages.*" Instead, the issue of ventilation was tackled by "*good thick walls, with airspace in between them*" for forced passage of outside air in the interior space (Kirkbride 1880, 71). Therefore, the brick corridor walls were to be wide enough (18" thick) to allow incorporation of hollow passages or flues for heat and fresh air to be circulated from the basement up to each ward floor (see Fig. A.18). At Buffalo, all corridor walls have two types of shafts - for hot air and fresh air, spaced such that there is a dedicated one for each room catering to all stories (Fig.A.19).

The use of tin or slate was recommended for all building roofs. It was suggested that roofs have a steep pitch and the cornice "*should project boldly over the walls for their protection and to give a free passage for the water falling on the building*" (Kirkbride 1880, 64). This important stipulation was duly acknowledged by the architect H.H. Richardson in his design for the Buffalo asylum - unfortunately it was changed by the building contractor to internal downspouts in the built design, leading to eventual leaking, saturation and deterioration of the masonry.

In terms of interior planning, the Kirkbride Plan went into great detail to describe the various functions that should form part of each ward --"*...[E]ach ward should have in it a parlor, or possibly an alcove as a substitute, a dining room with a dumb waiter connected with it, and a speaking tube or telephone leading to the kitchen or some other central part of the basement story, a corridor, single lodging rooms for patients, an associated dormitory for not less than four beds, communicating with an attendant's chamber, one or two rooms of sufficient size for a patient with a special attendant, a clothes room, a bath room, a wash and sink room, and two or more water closets*" (Kirkbride 1880, 55). He also specified the sizes of particular spaces - for example, the

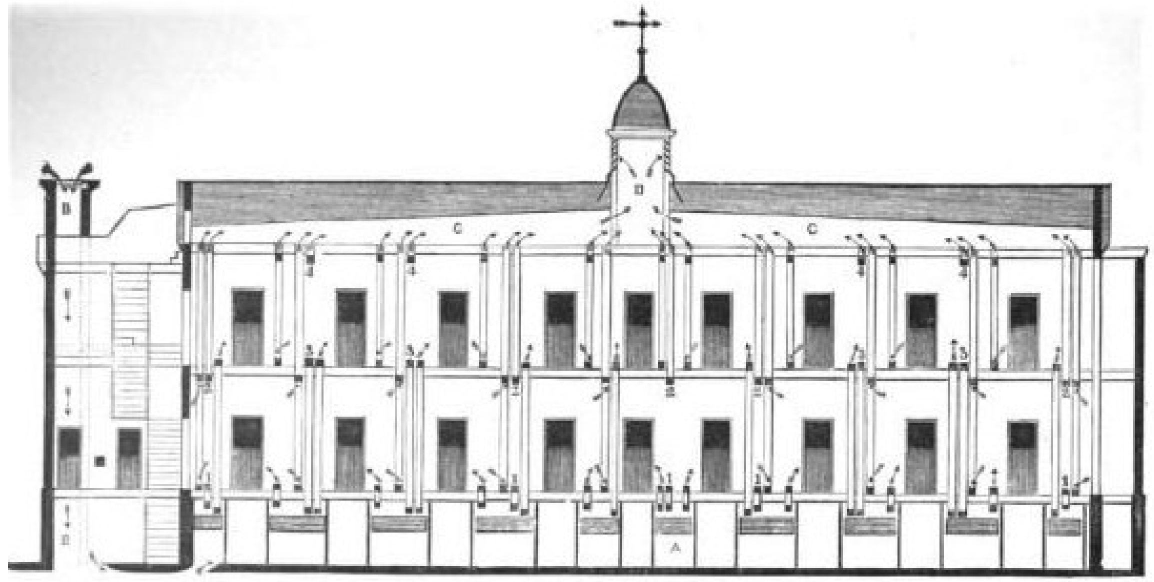


Fig A.18 **Longitudinal section of a patient ward, as illustrated in the second edition of Kirkbride's book**
Image courtesy www. books.google.com
Note the passage of forced air circulation through building

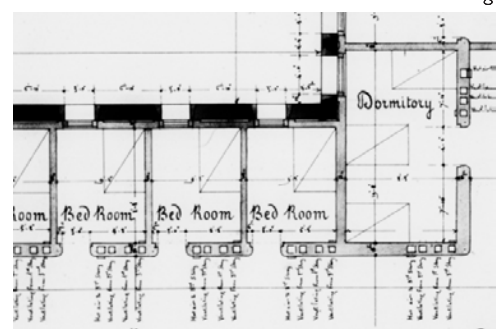


Fig A.19 **Detail of a typical floor plan, Buffalo State Insane Asylum, showing shafts in the internal corridor wall for forced air circulation**
Image courtesy Houghton Library- Harvard University, H.H. Richardson Drawing Archives, Catalogue BLA A4

ward corridors were to be at least 12' wide. Optimum size for the patient rooms was determined to be 11' deep by 9' wide to allow placement of a single bed and dissuade increase in capacity. In every long corridor, there was to be an alcove, preferably in the middle, 10 to 14' wide and terminating in a projecting bay window. A quick comparison of these requirements with Buffalo State Insane Asylum clearly indicates that not only were they meticulously followed, but rather exceeded in most cases.

An important aspect of the interior layout as described in the Kirkbride Plan was the use of double-loaded corridors with patient rooms on either side -- single loaded corridors were advised only in the case of wards for most disturbed patients. Although their benefits in terms of increased light and ventilation were well-known, single-loaded corridors were not prescribed since they were more expensive and made the building cluster excessively long. However, at the Buffalo State Insane Asylum, single-loaded corridors were incorporated in all the ward buildings. This gave rise to the spacious light-filled 'day-rooms' that are a distinctive feature of this Asylum.

The Kirkbride Plan greatly emphasized the quality of indoor sound, light and air . To allow adequate light and ventilation, it laid out minimum sizes of window openings and stipulated that habitable spaces should have room heights ranging from 12 to 16 feet. The floors of all patients' rooms, without any exception, were to be made of well-seasoned wood, and unless arched below, be counter-ceiled to prevent the transmission of sound. Also seemingly minute details such as door and window hardware, grilles, guards etc., were also addressed. The Buffalo State Insane Asylum generally adhered to these guidelines as evidenced in its lofty ceilings, wooden floor and door/window details.

Foremost importance was placed on fireproofing the buildings. Yet, instead of making the entire structure fireproof, it was felt more economical to have certain critical parts made positively fireproof. These included the passages from the kitchens, bakery, and boiler rooms as well as connections between different ward buildings themselves. Kirkbride proposed that these building connectors "*should be arched, their side walls should run up from the cellar to the roof, and they should have stone floors, and iron doors on one side, that can be closed whenever desired*" (Kirkbride 1880, 64). Similarly, for purposes of fireproofing, staircases were proposed to be of iron or stone and were to be so arranged as not to be exposed in any ward. The use of wood for staircase construction was recommended only in the Administration building. It is remarkable how closely the Buffalo State Insane Asylum adhered to Kirkbride's guidelines in these matters - all the curved connectors between wards could be closed off with iron doors in the event of fire, and staircases throughout, except in the central building, were made of stone, metal and brick.

The Kirkbride Plan is notable for the amount of detail and depth with which it addresses various facets of asylum construction and organization. Here, Kirkbride seamlessly applied his knowledge and experience within the medical field to define spatial and architectural parameters. The plan attempted to create an environment for treating the mentally ill, where every feature, right down to the smallest detail, was tailor-made to the perceived comfort and convenience of the patients. It is no wonder then, that for a large part of the nineteenth century, this model became the most widely used template for asylum design, and while a number of great architects designed these Kirkbride hospitals, they never strayed too far from the basic typology.

III. EARLY TWENTIETH CENTURY EVOLUTION OF STATE INSANE ASYLUMS

By the close of the nineteenth century, most state 'insane asylums' had made a shift to state 'hospitals', reflecting a shift in treatment philosophy and also in their built form. The dominant architectural typology during this time, for state psychiatric hospitals, was the 'cottage plan' – that relied on smaller 'domestic-type' buildings as opposed to large 'institutional' structures. While a few new hospitals were based entirely on this plan, in most cases, existing Kirkbride plan asylums were altered to reflect changing preferences. This led to a hybrid form - as exemplified at the Buffalo State Hospital where development for almost the entire first quarter of the twentieth century continued to display influence of the cottage trend. Its impact can be gauged from alterations to the 'Kirkbride' ward buildings, such as the addition of porches, verandas etc. - features more commonly associated with cottages; and the construction of specialized out-buildings for different patients and functions (as opposed to all under one roof), such as tuberculosis pavilions, chapel, library, staff residences, and others.

The Kirkbride Plan had dominated asylum design in the United States from 1840 to about 1880. - but even when it held sway, doctors carried on conversations about other models. Some doctors claimed that large, monolithic hospitals had not lived up to expectations, and as an alternative, they suggested that cottages be arranged as in a village (Yanni 2007, 14). Kirkbride's plan has been called the 'congregate' system for attempting to house all patients under one roof. In contrast, the 'segregate' system, also called the cottage plan, pavilion plan or colony system broke monolithic hospitals into smaller units and thus, it was claimed, *"created a freer and more sociable environment"* (Yanni 2007, 79).

"The tendency of modern methods is toward the segregation rather than the aggregation of the insane. The large, massive structure where hundreds are herded together for safe-keeping is slowly but surely being supplanted by the villa or cottage where the unfortunate can find a home" (Ostrander 1900, 443).

At the time of these early debates between Kirkbride plan proponents and cottage promoters, both groups adhered to a general principle, namely, that an improved physical environment could enhance people's lives, and this belief was reflected in both architectural types.

Origins of the 'Cottage Plan'

Use of cottages and smaller buildings for housing the mentally ill had been in place for a long time much before the nineteenth century. However, the deliberate design and construction of cottage-plan asylums was a distinct development that can be viewed as a parallel, at times opposing and ultimately an evolving solution to the Kirkbride scheme. Historians have traced the origins of this idea in the United States, to early visits by American physicians to European towns, where examples of the cottage-plan were often found as a result of cultural preferences or economies of space and resources.

Fig A.20 **View of Gheel, Belgium**
Image reproduced from Yanni 2007,86

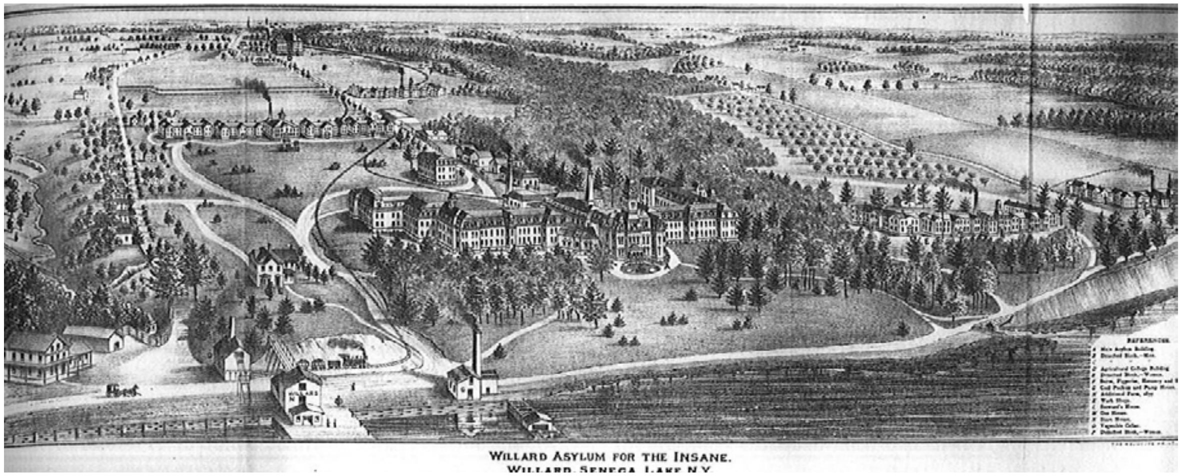


Fig A.21 **Willard Asylum for the Insane, Ovid, NY, bird's eye view**
Image reproduced from Yanni 2007,83

Note main asylum building (built 1866-1869 and designed by the Buffalo firm of Wilcox & Porter) in center with detached blocks surrounding it.

Beginning as early as the 1850's, American doctors had begun looking at examples abroad --the most striking prototype was the "boarding-out" system at the town of Gheel in Belgium (Fig. A.20). Gheel was a rather quiet, picturesque town mired with legends of saints who had healing powers. The Belgian government attempted to formalize its system in the 1850's by placing professionally evaluated patients with village families, who were paid by the government to provide food and lodging. It was believed that participation in a stable family life would encourage patients to lead normal, functional lives. This system arguably afforded greater freedom and relative privacy to the mentally ill, than the gigantic 'congregate' asylums of America. Yet, the Gheel prototype was never replicated in its entirety in the U.S. largely because of the belief of American doctors that it was not suitable for all types of patients and was very vulnerable to abuse. Others simply attacked the romanticism surrounding cottage-life:

"There is something attractive and romantic about cottages and cottage life. We associate with them domestic love, roses, woodbine, and luxuriant ivy running over thatched roofs; ...but the reality is apt to be very rugged prose" (Hospital and Cottage System, 1870, 84).

Foreshadowing the preference for cottages, Kirkbride had dismissively remarked as early as 1851, that "*although Cottages may be desirable for a limited number...it is also quite certain, that such an arrangement is not important, nor would it be likely to prove useful for the great majority of patients."* (Kirkbride 1851, 377). The cottage plan was considered uneconomical by many in the medical community. They feared that such construction of multiple buildings would compromise incorporation of modern conveniences such as baths, fireproofing equipment etc., that could be more easily incorporated in a larger building program (Hospital and Cottage System, 1870, 87).

Nonetheless, there were a number of reasons that were pushing for the adoption of the cottage-plan. One of the primary ones was the problem of overcrowding. The cottage plan offered a solution because any institution could easily add 20-60 person wood-frame houses to an existing hospital campus without massive alterations or investment.

However, the most important impetus behind the transition from 'congregate' to segregate' plans seems to have been the acknowledgement that the mentally ill fell under a variety of different types of illnesses, and there was a pressing need to segregate them more effectively than the linear plan could afford (which tried to place everyone under 'one roof'). Historical accounts from the *American Journal of Psychiatry*,[1] lay out quite clearly, the following classes of patients with specialized spatial needs that had emerged in state hospitals:

1 It was launched as the American Journal of Insanity in1844 - the title was changed to the American Journal of Psychiatry in 1821.

Chronic / Incurable Patients: The nineteenth century asylum was plagued with increasing numbers of elderly incurable patients. With passing time, hospital administrations started pressing for the need to segregate such 'chronic' patients in separate facilities. Their removal helped maintain a 'therapeutic' environment at the hospitals, and also alleviated overcrowding.[2]

Acute/ Curable patients -Reception Hospitals: There was a widespread notion in the medical community that patients had maximum chance of recovery if treated within the first year of the onset of their mental illness. Thus segregating the acute in a separate facility was deemed favorable and this also allowed use of more specialized 'medical' means as opposed to moral treatment, which was all that the nineteenth century asylum would allow. Alternatively known as 'psychopathic' or 'reception' hospitals, these buildings were often replete with then modern equipment, for hydro and electric therapy, laboratories, instruction schools, etc. (Fig. A.22).

Convalescent Patients: This group comprised of patients who were no longer undergoing rigorous treatment but were recuperating after a period of illness. There was a need to segregate them from the acute and the chronic patients to maximize chances of recovery. Cottage-type buildings presented a perfect solution for housing these patients. Their 'home-like' environment was supposed to prepare the patient for his return to family life outside the institution.

Patients with Contagious diseases—Tuberculosis: After the discovery of the tuberculosis (TB) bacteria by Robert Koch in 1882, and widespread recognition of the fact that the disease was contagious, there were massive public campaigns to isolate TB patients in specially designed sanatoria. State psychiatric hospitals were plagued by widespread incidence of the disease owing to overcrowding. This acted as another impetus for a shift towards the cottage-plan. Wood-frame cottages with large porches to facilitate the 'open-air' treatment of the disease were thus constructed at many existing hospitals (Fig. A.23).

To summarize, increased segregation between different types of patients led to the need for separate buildings for each class – in effect, aiding this architectural shift from congregate asylums to cottage-plan hospitals. Preference for the cottage plan was also helped by the desire to create a 'home-like' atmosphere and move away from the rigid institutional imagery of the linear plan.

Fig A.22 **Reception Hospital for Acute & Infirmary cases, Buffalo State Hospital, built 1895-1897**
Image courtesy Buffalo Psychiatric Center

2 However, some people were opposed to this segregation—as it implied an embarrassing public admission that the moral and medical treatments of the preceding century were not very effective.

Fig A.23 **Cottage for Contagious Diseases, Buffalo State Hospital, c. 1912**
Image courtesy Buffalo Psychiatric Center

Development of the Physical Form

Led by a variety of factors discussed above, American physicians came up with an adapted or 'hybrid' solution – one that attempted to embrace the virtues of the cottage plan, yet did not stray too far from the established typology of the Kirkbride scheme. In 1867, Pliny Earle, Superintendent of the State Hospital for the Insane at Northampton, Massachusetts, while writing about the 'Psychopathic Hospital of the Future' and contrasting the Kirkbride plan with the cottage system such as at Gheel, said "*Thus, while at the one extreme, we have a congregation, or large family, on the other we have a colony of the insane*" (Earle 1867, 121). However, without choosing any one approach over the other, he instead settled for a middle path- an approach that was to define the future of many linear-plan Kirkbride asylums. He elucidated this solution by stating - "*A mean is better than either extreme - a plan has been devised for the practical union of the two principles, in a central building for the sick, the excited, the demonstrative and the suicidal, and a number of small buildings, more ·or less remote, for the convalescent and the quiet*" (Earle 1867, 121). Thus, a potential answer was found for adapting the colossal congregate asylums to better suit the demands of the twentieth century.

According to an 1870 article in the *American Journal of Psychiatry* --- "*the pioneer in America in the adoption of the pavilion system was the State of New York, in the hospital at Willard.... About the same time, Illinois, at Kankakee, Pennsylvania at Norristown, Ohio at Toledo and Indiana at Richmond and Logansport, erected hospitals composed altogether of detached buildings, none containing more than two or three wards, and many of them only one*" (Rogers 1900, 5).

The Willard Asylum for the Insane (built 1866-1869) at Ovid, NY (Fig. A.24) was an early prototype of this hybrid form of congregate-segregate systems – it had smaller congregate style buildings that were spread out over the landscape, akin to cottages. An interesting aspect was the reuse of an existing collegiate building for part of the asylum – this hints at an affinity between the two types of buildings.[3] The system received greater refinement in the Illinois Eastern State hospital for the Insane at Kankakee in 1878 (Fig. A.25). It included 'purpose-built domestic residences' for chronic patients alongside a linear hospital. The placement of cottages, creation of humanly-scaled streets and shaded-

3 With regards to spatial arrangement, some historians have interestingly pointed out the similarity between designs of academic and mental institutions, both of which attempted to project a civic image, housed large populations and used 'subtle surveillance' to control their residents. See Yanni (2007) and Helen Horowitz (1984).

walkways, all became the hallmarks of this typology. Although the central administration building continued to be the heart of the institution, patient and public facilities were now more spread out throughout the grounds.

An excerpt from a 1908 article in the *American Journal of Psychiatry* by the Superintendent of the Hudson River State Hospital at Poughkeepsie (Pilgrim 1908, 345), called for a ubiquitous adoption of the cottage-plan by all state asylums, and proposed the following groups of buildings as a guide for this expansion:

"The cottage system should be adopted and the buildings should be divided into the following groups:

First. *A central or administration building, with offices, etc.*
Second. *A residence for the superintendent, a· staff house and a nurses' home.*
Third. *An amusement hall and chapel.*
Fourth. *Utility buildings such as bakery, laundry, shops and boiler house.*
Fifth. *Buildings for the use of patients as follows:*

1. A reception building to accommodate about 6%
2. A hospital for sick and surgical cases with operating room for about 2%
3. An infirmary for feeble and bed cases for about 18%
4. A building for tubercular cases for about 4%
5. A building for epileptics for about 4%
6. Buildings for the disturbed, restless and noisy for about 20%
7. Buildings for workers, laundry, shops, farm, grounds, etc., for about 22%
8. Buildings for the chronic quiet and clean for about 22%
9. A building, situated some distance from the others, for convalescents for about 2%"

In terms of architectural planning and design, cottages took on as many forms as the residential architecture of the time, ranging from Arts and Crafts to Romanesque and Victorian amongst others. In the context of the evolution of state insane asylums, the cottage plan has to be understood not just as the construction of cottages for housing patients, but also a range of other buildings, such as the chapel, amusement hall, library, staff residences, etc. that were strewn across the asylum grounds, in stark contrast to the previous model where all the above functions were housed under 'one roof' (Fig. B.54). The construction of all these ancillary buildings ranged from masonry to wood depending upon the function. Although the style and materials varied from asylum to asylum, a constant factor was the conscious attempt to differentiate rather than visually connect these structures with the existing congregate-style building in the background. Features such as covered porticoes, verandahs and pitched roofs appeared commonly in these ancillary buildings.

By the middle of the twentieth century, the cottage plan too lost its appeal. In fact, the whole enterprise of curative asylum treatment fell in disfavor among psychiatrists and they turned towards drugs and medicines (rather than architecture) to treat the mentally ill.

However, in the architectural and use history of the Richardson-Olmsted Complex, the cottage-plan played a very important role for more than half a century. Its impact can be seen, not only in a number of ancillary site structures, but also in the design and subsequent alterations to the Kirkbride wards themselves. Architectural historian Carla Yanni contends

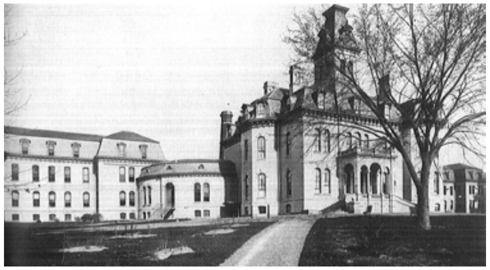


Fig A.24 **Willard Asylum for the Insane, Ovid, NY, 1869, main building**
Image reproduced from Yanni 2007, 81

Fig A.25 **Willet, Illinois Eastern State Hospital for the Insane, Cottage No. 10, South**
Image reproduced from Yanni 2007, 93

Fig A.26 **Palmer Cottage for women, Michigan State Hospital for the Insane, Kalamazoo, Michigan, c.1892**
Image reproduced from Yanni 2007, 99

Fig A.27 **Chapel and Amusement Hall - Andrews Hall, built 1904-1905**
Image courtesy Buffalo & Erie County Public Library

that even the main ward buildings, while being largely based on the linear Kirkbride plan, also *"nodded towards the cottage plan"* (2007, 127). This can be seen in the curved connectors and the division of each ward block with three forward projections, each topped with a *"domestic-looking gable"*, all of which broke the linearity and *"tempered the visual monotony of a large building"* (2007,138).

An even clearer picture of the impact of the cottage-plan on the Richardson-Olmsted Complex, can be gauged from early-twentieth century alterations to the ward buildings, such as the addition of porches and verandas - features more commonly associated with cottages. Moreover, the use pattern of the site buildings clearly reflects endorsement of the cottage typology. Beginning at the turn of the twentieth century, a number of functions such as staff residences, chapel, library etc. began to move out of the congregate, linear building into smaller, on-site structures (Fig. A.27). This trend continued throughout the first half of the twentieth century. It was also reflected in the construction of separate facilities for different classes of patients, such as -- the Reception Hospital for Acute and Infirmary cases, popularly known as the 'Elmwood Hospital' (Fig. A.22) was completed in the northeast portion of the site in 1897. Three separate cottages for patients with tuberculosis and other contagious diseases were built from 1909-1913 at the site of the Buffalo State Hospital (Fig. A.23). Additionally, an off-site cottage for convalescent patients was established at Wilson, NY, 40 miles north of Buffalo, from 1908-1913.

While addressing historical contexts associated with the Richardson-Olmsted Complex, it is imperative to acknowledge the fact that the early twentieth century presented changing architectural and social trends that shaped the evolution of this institution. This era, and specifically the cottage-plan typology, in conjunction with the nineteenth century context and Kirkbride Plan discussed before, provide a set of related historical contexts for interpreting the buildings and architecture of the Richardson-Olmsted Complex.

IV. THE CLIENT: REPRESENTATIVES OF THE STATE OF NEW YORK

It has been established in previous sections that most institutions for the mentally ill founded during the nineteenth century, were located in growing urban centers and were often backed by groups of influential local politicians and physicians. Both of these factors were key elements in the birth of the Buffalo State Asylum in 1871. In this section, the focus will be on the key people who played a crucial role in the initiation of this project. The following account, is by no means, an attempt to construct an administrative history of the Buffalo State Asylum; rather, it highlights the early period during which plans to construct the facility in Buffalo were initiated, and the requisite administrative bodies that were put in place.

With the opening of the Erie Canal in 1825, Buffalo had entered a period of rapid economic and population growth virtually unrivalled by other American cities. The population at the time was about 2,400. The Erie Canal brought a surge in population and commerce which led Buffalo to be incorporated as a city in 1832 with a population of about 10,000. During the 1840's, Buffalo continued its growth as a port city reaching almost 94,210 by 1865 (www.buffalonet.org).

As the community grew, so did the number of medical practitioners. Beginning in 1845 with the founding of *Buffalo Medical Journal*, Buffalo physicians gained greater recognition as an organized group. In his introduction to the first issue, Austin Flint, Sr., noted that the location of Buffalo made it ideally suited to the collection and diffusion of information, and to the exchange of views and opinions among members of the profession. The following year also saw the founding of the Medical Department at the University of Buffalo.

Dr. James P. White (1811-1874) was an important figure in the Buffalo medical community (Fig. A.29). One of the founding faculty of the University, he served as the Medical

Fig A.28 **1853 Aerial rendering of the City of Buffalo**
Image courtesy W.H. Coverdale collection of Canadiana

Fig A.29. **Dr. James Platt White**
Image courtesy University of Buffalo

Fig.A.30 **Dr. John P. Gray**
Image courtesy National Library of Medicine

School's first professor of Obstetrics. He was instrumental in founding some of Buffalo's earliest hospitals as well as the Young Men's Association, the Academy of Fine Arts, and the Buffalo Historical Society. White was known as a direct and progressive instructor. In January, 1850 he became the first medical educator in the United States to use a live birth in the classroom - an incident that earned him much notoriety at the time.

White's progressive outlook began an initiative in 1864 when he and another prominent Buffalonian, Mr. Ambrose Yaw sent a letter to the State Legislature in Albany expressing concern over inadequate facilities for the mentally ill in Western New York. The only, and very inadequate, institutional care was provided by the Erie County Almshouse, unless the patients were considered so seriously ill that they were sent to the only existing state facility at Utica, established in 1843. Dowdall (1996) states that the Buffalo medical elite were optimistic about moral treatment as a way for the future and their hopes were lifted by the success of the Providence Lunatic Asylum founded in Albany, NY in 1860. White served as a physician at this facility and this may have led him to send petitions advocating the construction of a western New York Insane Asylum to leading practitioners in the region. He urged them to obtain signatures of influential citizens in their communities and then forward these petitions to their representatives in the Legislature.

While Dr. White was the moving force behind the construction of the Buffalo State Asylum at the local level, his counterpart at the state level was the famous physician, **Dr. John P. Gray (1825-1886)** (Fig. A.30). Dr. Gray was a formidable leader in forensic American psychiatry and was the editor of *The American Journal of Insanity* for 32 years where he had a ready avenue to express his views. Born in Halfmoon, Pennsylvania, Gray received his medical training at The University of Pennsylvania in 1848 with a speciality in mental diseases. His most prominent appointment was as the Superintendent of the State Lunatic Asylum in Utica, a position that he held from 1854 to his death. Gray was a strong believer that mental illness was due to physical causes that could be found in the brain, as opposed to the long-standing belief that mental illness was solely due to 'moral' causes. In 1870, Gray added a pathologist to his staff in Utica, the first American asylum to do so. In an excerpt from the Buffalo Medical Journal (Buffalo State Asylum 1870, 423), he states:

"It is evident that while psychological medicine must still be a speciality from the necessity of most cases of insanity requiring to be cared for and treated in hospitals it can no longer be severed from general medicine. It is inseparable from medical science."

Both Dr. White and Dr. Gray joined forces to lead the efforts in initiating the creation of an Asylum in Western New York and especially in Buffalo. In 1865 a Bill was introduced in the Legislature of the State of New York by Asher P. Nichols, the State Senator from Buffalo district (NRHP 1973). It was acted favorably upon, providing for the establishment of two asylums to be located, respectively in the eastern and western portions of the State. This was followed by the establishment in 1867 of the Hudson River Hospital for the Insane, located in Poughkeepsie.[1] In March 1869, the New York legislature passed an act authorizing Governor John T. Hoffman to appoint five commissioners to select a suitable site in the 8th Judicial District for the asylum. The five commissioners were

1 The State legislature also authorized the construction of two other facilities around this time -- the Willard Facility at Utica (1869), and the Middletown, New York Asylum (1874) besides the Buffalo Asylum (1880).

Dr. Gray (Chair), Dr. White, Dr. Milan Baker of Warsaw, Dr. Thomas D. Strong of Westfield, and Dr. William B. Gould of Lockport. (Andrews 1882, 364).

There was a spirited competition among the communities of Lockport, Batavia, Warsaw, Westfield, Mayville, and Buffalo, to be chosen as the location of the new asylum. Each community offered various incentives. For example, Buffalo offered 203 acres of land in North Buffalo directly south of the Scajaquada Creek (Fig. A.31), and guaranteed a free "*perpetual supply of pure Niagara water.*"[2] The incentives Buffalo offered, combined with the fact that it was a major transportation center and had western New York's largest population (over 100,000 by 1870) made it the most attractive choice. However, another very important factor in the choice of Buffalo appears to be the fact that it was home to the University Medical College and both Dr. Gray and Dr. White saw in this, the opportunity of clinical teaching of insanity which would enrich the curriculum of medical education.

"In the location of the new State Asylum in the 8th judicial district of New York the past year the Commissioners of location having this in view and being all medical men gave unanimous preference to Buffalo over other localities presented. The established medical college in that city being in proximity to the ground presented for the asylum, the advantages of clinical instruction can be at once realized" (Gray 1870).

Consequently, the Buffalo State Hospital Board of Managers came into existence in 1869. Like other asylums in operation at the time, the administration of the Buffalo State Asylum was placed under a local Board of Managers, selected by the

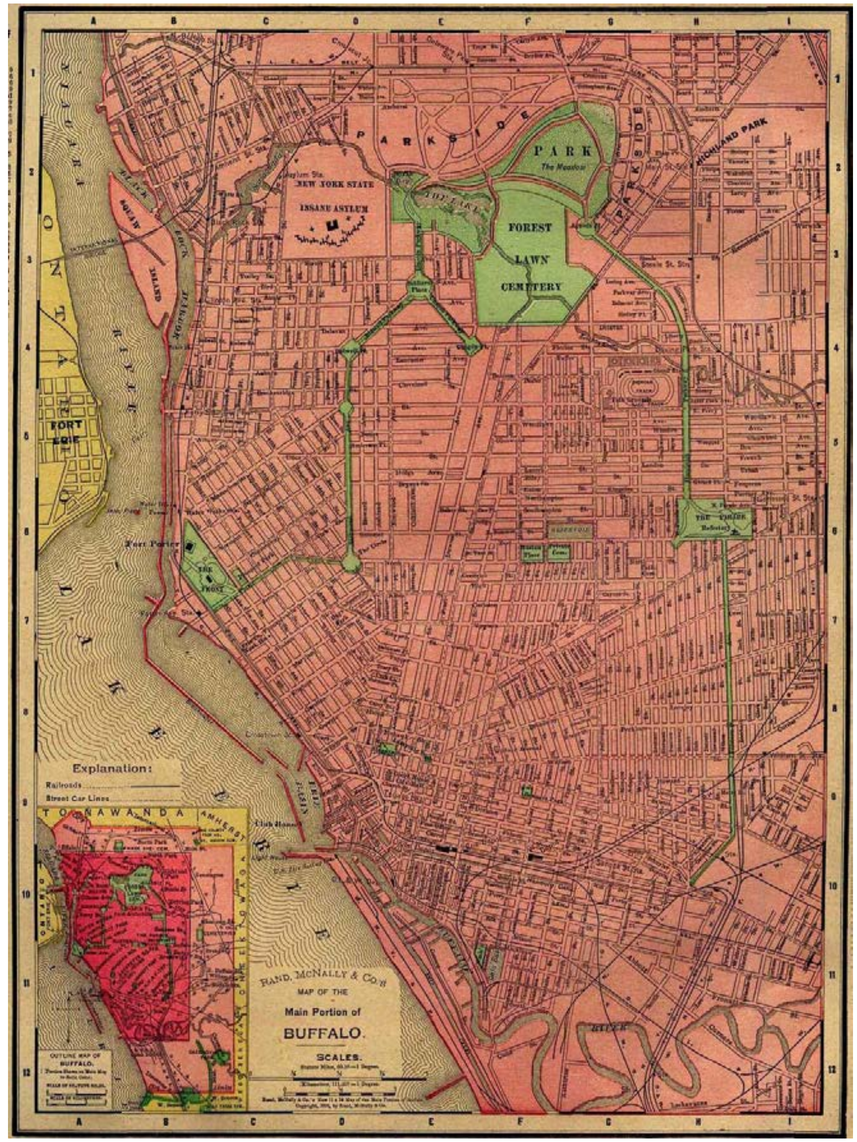


Fig A.31 **Map of Buffalo, NY 1896**
Image courtesy Rand Mc Nally

Note Buffalo State Asylum site in upper-left quadrant of map.

2 This free water supply by the city ended in 1968 when rising water costs made it necessary for the City to begin charging the State.

Governor from Buffalo's business and medical elites. The first officers of the Board were Dr. John P. Gray, Dr. James P. White, Asher P. Nichols, Dr. William B. Gould, Lorenzo Morris of Fredonia, Augustus Frank of Warsaw, Albert P. Laning, Dennis Bowen, George R. Potter and Joseph Warren (publisher of the *Buffalo Courier)* from Buffalo. Dr. White was appointed President, Edward R. Bacon, Secretary; and Henry Martin, Treasurer.[3] Four standing committees- Plans, Grounds, Executive and Auditing were also appointed.

The influence of Buffalo's medical and business class was very crucial in the location of the asylum in Buffalo, and the donation of land and free supply of water. The asylum was viewed as an important part of the overall social development of the city of Buffalo. It featured with several other civic ventures of major proportions, such as the new city park, a normal school, and the new city and county hall (Dowdall 1996).

The state gave White, Gray and their fellow commissioners a free hand in the setting, design and execution of the building. Gray's eminence as superintendent of the state's most important asylum led to the decision to adopt the propositions of the Association of Medical Superintendents of American Institutions for the Insane (AMSAII) as the "*proper basis upon which the different sites should be considered and the final determination made*" (Buffalo Asylum By-Laws 1871). These propositions essentially adhered to Kirkbride's theories of asylum design.

3 In 1871, Dennis Bowen resigned as member of the Board and was replaced by William G. Fargo. Also William F. Rogers was appointed as Secretary in place of Edward R. Bacon.

The Committee on Plans comprised of Dr. Gray, Dr. White and Dennis Bowen.[4] Dr. Gray, as head of this committee has largely been accredited with devising the layout plans for all the ward buildings, that were then incorporated in the architect's final drawings. This is corroborated by various entries in the Annual Reports and newspaper accounts from the time - *"The ground plan of the asylum was originally designed by Dr. Gray, superintendent of the State Lunatic Asylum at Utica, [and] was adopted by the Board of Managers"* (AR 1875,10).

The plan was largely based upon the Kirkbride typology that Gray was very familiar with. This comprised of a central administration building with ward buildings for male and female patients on either side arranged *en echelon*. While Gray essentially adopted this plan, he improved upon it in certain ways that make the plan of the Buffalo State Asylum distinct and unique from its predecessors (Fig.B.21). As discussed before on p.27 and p.28, the major changes incorporated in the Buffalo State Asylum over the typical Kirkbride plan, were the use of curved connectors and single-loaded corridors in all ward buildings.

A plan has been nearly matured and completed which is thought to have better arrangement for ventilation and classification of patients than any ever yet adopted. In view of the practical wisdom and large experience of the committee (and) the chairman Dr. Gray in constructing buildings for that purpose ..one may confidently expect that this institution will possess advantages nowhere equalled [and] that it will be a model for imitation in the erection of Insane Asylums the world over" (Miner 1870, 421).

4 The Committee on grounds comprised of Joseph Warren, AP Landing and George R Yaw.

In terms of site layout, two iterations of what appear to be Dr. Gray's plans are reproduced here - in the first (Fig. A.32) kitchen and service buildings are located in a connected linear building to the rear of the administration building. In a later version, that is closer to what was ultimately built (Fig. A.33), the utility buildings appear as free-standing structures to the rear, and kitchens on either side have been added, connected to wards by means of enclosed curved passages. Two greenhouses are also placed symmetrically in the V-shaped cup of the wards.

In terms of interior planning and layout, the administration building comprised of a cross-shaped corridor dividing the first floor into four quadrants, with a free-standing stair centered on the arm stretching from the entrance.[5] The plan contained the officers' dining room, reception, general office, and medical office across the front; matron's room, matron's store, steward office, "apoteca," and library[6] in the next tier of spaces, and then a corridor leading to the wards. The officers' dining room on the left and the medical office on the right extend into polygonal salients opened by three windows flanking the five-bay entrance porch reached by a stairway confined to the central bay. The library also extends into such a salient on the right flank. However, as we shall see, this plan would undergo reasonable alterations in the hands of the architect, H.H. Richardson. The interior layouts of all the ward buildings, on the other hand, were quite firmly established by Dr. Gray, and did not undergo any major changes.

5 The stair has been reconfigured. According to Coolidge (1992, 99) the second floor contained the director's quarters, the third housed quarters for other members of the staff, and the attic a large assembly room that could serve as a chapel. See fig. 3.7. in his article.

6 In Richardson's original drawing collection at Houghton Library, Harvard University, drawing BLA E1 shows the plan and interior elevation of a later stage in the design of the library. The polygonal end has been flattened. Inscribed on the reverse is "Dr Grays Library."

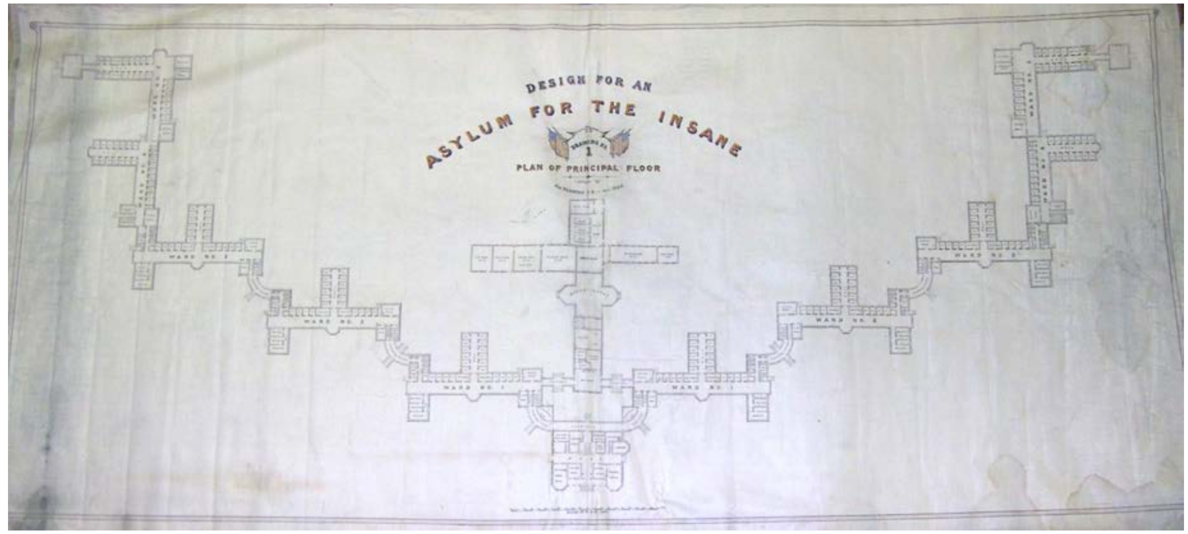
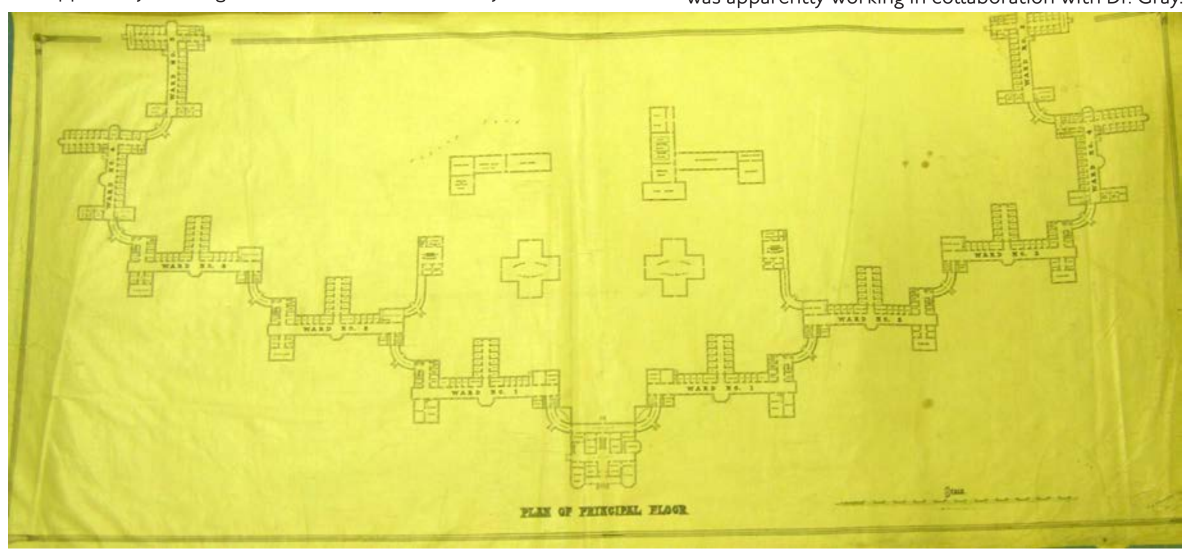


Fig A.32 (above) **Principal Floor Plan of the Buffalo State Asylum for the Insane, October 1869**
Image courtesy Buffalo Psychiatric Center

Note: This plan was drawn by John A. Fleming, C.E., who was apparently working in collaboration with Dr. Gray.

Fig A.33 (below) **Principal Floor Plan of the Buffalo State Asylum for the Insane, December 1869**
Image courtesy Buffalo Psychiatric Center

Note: This plan was drawn by John A. Fleming, C.E., who was apparently working in collaboration with Dr. Gray.



Thus, it is very clear from the documentation presented here, that the State appointed committees and Board of Managers, comprising of local and state physicians and other influential members of the Buffalo community, not only played a major role in providing the administrative impetus behind this project, but also provided primary design input. The initial design concepts laid out by Dr. Gray and his team were retained either in entirety or changed only slightly in the final scheme.

V. THE ARCHITECT: HENRY HOBSON RICHARDSON

Primary Author: James O' Gorman

The Buffalo State Asylum for the Insane holds an important historical place in this country for many reasons. In the annals of medicine, its layout, based on the Kirkbride plan, refines and crystallizes the late stage of one phase of nineteenth-century thinking about the treatment of mental illness, and, in the career of one of America's most well-known architects, it stands among the early works in which Henry Hobson Richardson (Fig. A.34) began to evolve his highly influential signature style, the Richardsonian Romanesque. Arguably the first American architect to achieve international fame, Richardson left an enduring imprint on American architecture despite his short-lived career.

At the Buffalo State Insane Asylum, the combination of social mission and architectural significance make this monumental cluster of austere buildings probably one of the most important surviving examples of nineteenth-century asylum design and one of the most important examples of nineteenth-century public architecture in the country.

Richardson (1838-1886) had been born and raised in Louisiana and educated at Harvard. He studied architecture at the Ecole-des-Beaux-arts in Paris, and worked for Theodore Labrouste on the Hospice des Incurables at Ivry.[1] He returned to the United States after the Civil War as one of the most highly trained architects in the country. First settled in New York, he moved in 1874 to Brookline, a suburb of Boston (O'Gorman 1997). He was in time to become a prominent architect with major buildings in many places in the eastern United States, and the subject of the first monograph on an American architect (Van Renesselaer, 1888), but in 1870 when he received the Buffalo State Insane Asylum commission, he was largely unknown outside a small circle of friends and clients. Excluding projects that still remained on paper, including a plan for the Worcester General Hospital of 1869, he had seen or was watching erected from his drawings two small Gothic churches, two small commercial buildings, five houses (one his own) and one school.[2] This was not a substantial set, and not all of these were even finished by the time of his earliest contacts with the commission for Buffalo.

Fig A.34 **Henry Hobson Richardson**
Image courtesy www.britannica.com

The choice of the architect for the asylum was in the hands of the commission appointed by the Governor and headed by Dr. Gray. As has been established earlier, the plan was perhaps already designed by 1869, under Dr. Gray's leadership. The architect to be appointed was going to primarily incorporate this plan into his drawings and design the exterior elevations. This does not mean however, that Richardson had absolutely no role to play in the design development of the plans, in fact as we shall see later in this section, he tried out various iterations of different schemes before finalizing the ones

1 For more information on Richardson, his biography, works etc. refer to Mariana Griswold Van Renesselaer, *Henry Hobson Richardson and his Works*, Boston: Houghton, Mifflin and Company, 1888; James O'Gorman, *H.H. Richardson: Architectural Forms for an American Society*, Chicago: The University of Chicago Press, 1987.; and Jeffery Karl Oschner, *H.H. Richardson: Complete Architectural Works*, Cambridge: MIT Press, 1982.

2 For a list of executed works, in addition to Hitchcock 1936 and Ochsner, 1991 see Coolidge 1992

Fig A.35 **Dorsheimer House**
Image courtesy Chuck LaChiusa

that were finally built. It seems that during this time he was working closely with the Asylum Board.

We must first investigate how Richardson, an out of town, and rather unknown architect at the time, got involved with this project in the first place. Historians have linked his involvement to his familiarity with both Frederick Law Olmsted (1822-1903), the acclaimed landscape designer, and William E. Dorsheimer (1832-1888), an influential member of the Buffalo community and later Lt. Governor of New York. Beginning in 1868, Olmsted and his partner Calvert Vaux had collaborated with Dorsheimer on the subject of planning a public park for the expanding city of Buffalo.[3]

With Olmsted came Henry Hobson Richardson, Olmsted's good friend and neighbor on Staten Island. In the same month that the site was selected for the Buffalo asylum, in May 1870, the New York State Legislature appointed a Staten Island Improvement Commission charged with developing that area into an ideal residential community. That Commission included Olmsted, as chairman, and Richardson, who lived on the island, as a member. Olmsted wrote the final report of the Commission published the following year.[4] In a letter written four months later Olmsted called the architect *"a gentleman trained in the most thorough French technical school, familiar with European road and sanitary engineering, and of highly cultivated taste with a strongly practical direction."* The landscape architect may have been stretching the architect's civil engineering qualifications a bit[5] and "practical" would not be an adjective later much heard in reference to Richardson's work, but, accurate or not, a similar boost from such a respected quarter would help to explain why an untried thirty-two year old architect in practice in 1870 for a scant three years, captured such a big prize as the Buffalo asylum. In 1868, perhaps on the recommendation of Olmsted, Richardson designed a house for Dorsheimer (Fig. A.35) in Buffalo (Kowsky 1980). The Dorsheimer commission proved to be a notable event in Richardson's professional life, for the friendship that the two men formed led to the acquisition of a number of future projects for Richardson.[6] Dorsheimer once famously said of the architect, *"No one used architectural forms with so much originality, no one with so much grace and tenderness, no one with such strength."* (Kowsky 2000).

There had been, in addition, an 1869 project for a house in Buffalo for Asher P. Nichols, another member of the Board of Managers of the Buffalo State Insane Asylum. However, it is difficult to escape the idea that Richardson's Parisian training and a recommendation from Olmsted were major factors in his selection. The commissioners' decision to hire Richardson seems to have been made very informally, without a competition. His name suddenly appears in records together with that of A. J. Warner, a respected Rochester architect who served as supervising architect.[7] The wording of the "Minutes Book" makes Richardson and Warner seem like

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3 Letter, William Dorsheimer to Frederick Law Olmsted, 12 August, 1868, as cited in The Papers of Frederick Law Olmsted Volume VI, The Years of Olmsted, Vaux & Co., 1865-1874, David Schuyler and Jane Turner Censer, eds. Baltimore: John Hopkins University Press, 1992:391.

4 Its section on the area's reputation for malaria may have been one of Richardson's contributions, for there are rough notes in Richardson's hand on its causes in the collection of his original drawings at the Houghton Library at Harvard University, Cambridge

5 Richardson left engineering up to his builder, O. W. Norcross, or his assistants, Rutan and Clark

6 In 1877, when Dorsheimer was lieutenant-governor of New York, he succeeded in having Richardson, together with Olmsted and Leopold Eidlitz, named to complete the capitol at Albany (See article by Francis Kowsky at http://www.buffaloah.com/a/del/434/index.html)

7 A more detailed portion on Warner can be found in the next section ' Contributions of Local and State Architects'

partners in the design of the (early) elevations of the asylum, and a later historian has speculated that *"Richardson's use of rough stone, great scale, simple detail, bold silhouette, and solid mass shows some influence from Warner's familiarity with the early Romanesque revival"* (Marouka 1972). Warner was five years Richardson's senior but he lacked Richardson's French architectural training. His presence at the conception of the asylum must be noted, but as we shall see, the final complex is closer in detail to Richardson's contemporary work than to that of Warner.

Documentation for Richardson's participation in the design of the complex begins with a letter from his wife to her mother dated 12 December 1869: "*Hal ... expects to go to Buffalo. Did you know that he met with Dr. Grey [sic] of Utica about the Insane Asylum...?*"[8] Although Richardson is usually named as the architect for the main group of buildings, it was officially the work of the firm of Gambrill and Richardson. Charles Dexter Gambrill (1831-1880), Richardson's partner at the time of the Buffalo commission, was educated at Harvard. He apprenticed with George Snell in Boston, then joined George B. Post in New York. Works from that association ranged from churches in a Victorian Gothic style to Eastlakian cottages.[9] The partnership with Richardson lasted from 1867 to 1878, and thus covered the firm's entire involvement with the Buffalo asylum. Architectural historian H.R. Hitchcock (1936)characterized the arrangement (without documentation) as *"a practical means of sharing office space and building up a joint office force. ... [It] involved no ... merging of artistic personalities,"* and Gambrill has never been cited as an influence on Richardson's work. Although Richardson's senior by seven years, he lacked the younger man's Parisian educational experience. During the partnership he produced separate domestic designs in the fashionable Queen Anne style, and seems largely to have concerned himself with the affairs of the American Institute of Architects (Withey 1956).

Richardson's New York office staff , however, was presumably involved in the production of the original architectural drawings now housed at the Houghton Library at Harvard University. We know from the autograph sketchbook in the same collection[10] that in 1869 the office included Charles Hercules Rutan (1851-1914) and Theodore Minot Clark (1845-1909), both of whom long worked for Richardson, and they were soon joined by Charles Follen McKim (1847-1909), who has been credited with the 1872 winning drawings for the competition for Trinity Church in Boston, and went on to a major career in architecture. Stanford White also worked for Richardson from 1870-1878, spanning almost the entire time of design and construction of the asylum. The drawings for the asylum at Houghton were clearly produced by several different hands, although one cannot put specific names to specific drawings.

Design Development: Analysis of Richardson's Original Drawings for Buffalo State Asylum for the Insane

In the following text, design development of the Buffalo State Insane Asylum is traced through an analysis of Richardson's original drawings, now housed at the Houghton Library at Harvard University. This will help to give an insight into

8 The original is in the Richardson Papers at the Archives of American Art.

9 Original drawings from the office of Gambrill and Post are in the New-York Historical Society.

10 The sketchbook is described, transcribed, and discussed in James F. O'Gorman, Henry Hobson Richardson and his Office: Selected Drawings, Cambridge MA: Harvard College Library, 1974, 211-216, esp. 211.

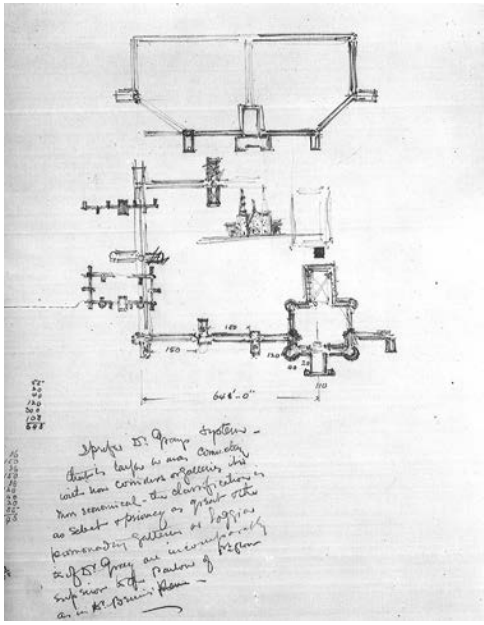


Fig.A.36 **Sketch from H.H. Richardson folio**
Image reproduced from Yanni 2007, 131
Original sketch at Houghton Library- Harvard University, H.H. Richardson Drawing Archives

how the design progressed after Richardson's appointment, beyond the early plans that Dr. Gray and the Committee on Plans had presumably designed.

In the autograph sketchbook at Houghton, where the pages are as a rule ordered chronologically, there are two drawings (pages 16r and 17r) wedged between studies for the Brattle Square Church (1869) and the Hampden County Courthouse (1871). On the first of these (Fig. A.36) is written in Richardson's hand "*I prefer Dr Grays system—that is large wards connecting with iron corridors or galleries, it is more economical—the classification [of the patients] is as select & privacy as great & the promenading galleries or loggias of Dr. Gray [for exercise] are incomparably superior to the [small] parlors of 1st floor in Dr Bemis' plan.*" (The final word is crossed out in the original.) Historian Carla Yanni (2007, 89) has described this in detail, pointing out that Dr. Merrick Bemis had proposed a decentralized arrangement of smaller units in contrast to the large linear plan favored by Dr. Kirkbride; yet Richardson clearly seems to agree with Dr. Gray's preference for the Kirkbride plan for Buffalo. The second sheet also has a "thumbnail" elevation and small perspective of alternate ward designs (or a ward and the administration building) which could be preliminaries to what was eventually developed at Buffalo. There are a number of preliminary drawings for the layout of the hospital in the collection at Houghton. The earliest of these (Fig. A.37) shows a version of the Kirkbride-Gray linear plan with the extreme outer wards turned back toward the central axis.

In terms of early elevation studies, there is the (now lost) south elevation of the Administration Building published by Hitchcock (Fig. A.38). This elevation has often been linked to the plan discussed above, however, there are a few discrepancies. For example, it shows only one window in each of the flanking towers and they appear to be half-circular protrusions. The entrance stair stretches across the width of the porch and instead of a central doorway there appear to be two entries divided by an axial trumeau. The drawing shows the administration building as a gawky Gothic cathedral-like concoction that quickly vanished - this design could be more of Warner's hand than Richardson's.

The next stage in the design of the layout, that we know about, is preserved only in a photograph (Fig. A.39). This, according to Hitchcock, was the plan approved on 25 August 1870. The outer wards have been moved into their final positions. The polygonal projections of the administration building have disappeared, although the plan is in general the same as before. There is now, however, clearly visible the piers of a port cochere before the central entry and straddling a circular approach drive. It disappears in later site plans. The connecting passages remain convex when seen from the front. A later plan at Houghton[11] corresponds to this lost sheet, but the sinuous asymmetrical drive of the final layout replaces the circular one of the earlier plan.[12]

Floor plans of the Administration Building also underwent changes from their earlier iteration devised by Dr. Gray. In its final version, the building contained offices of the physicians, steward and matron and reception rooms for visitors, on the first floor. The second and third floors housed the residences for the superintendent, physicians, steward and matron. The last or fourth floor was given over mostly to a large hall that served as the chapel or assembly room, with a few smaller

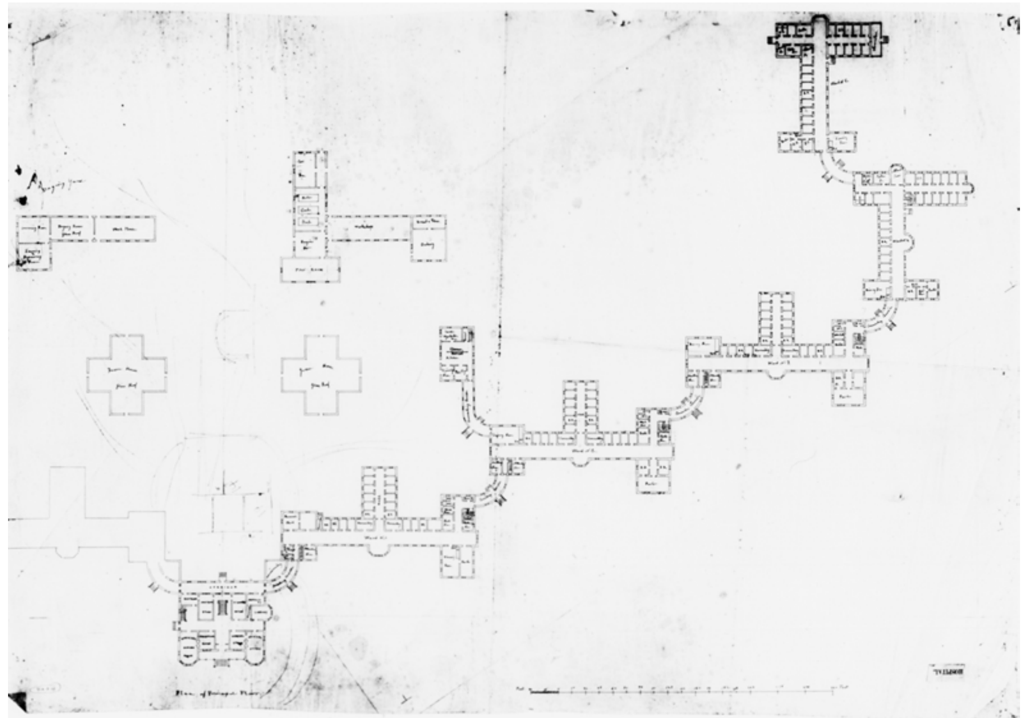
11 See Houghton Drawing No. BLA F1.

12 There is also a "water plan" that corresponds to this phase: BLA F4.

rooms that served as the residential quarters of the night watchers (AR 1872, 13).

There are a number of individual floor plans for each ward in the drawing archives of Richardson and seem the work of a variety of draftsmen. The drawings of the plans of the wards, with the exception of the outermost ones, are identical (Fig. A.40). Their general character was set in the earliest scheme. Each ward (i.e. each floor of a building) was planned on the same general basis, of a long, high (seventeen plus feet), broad (fifteen feet) well-lit hall on the south side. This hall served as a promenade, recreation room and general public room for all the patients on each floor. All the rooms including bedrooms and other areas such as the dining room, attendants' room, parlor, etc., opened onto this main hall. The two staircases on each floor were strategically placed close to staff rooms to enable surveillance of patients (AR 1872, 14). Each ward could accommodate an average of thirty patients and three attendants (four for the more disturbed), and besides the sleeping rooms, contained dining, sitting, bath, and wash rooms, a broom-room and closets, and were entirely independent of each other (AR 1881, 22). In each ward, from the center, at right angles to the main hall, was an extension containing another hall of ten feet in width, with five rooms on either side. In all, there were sixteen single rooms on a ward, the remaining twelve patients being accommodated in three associate dormitories containing four to six beds each.

Provisions were made such that food cooked safely in the detached kitchens was brought into the cellar via a tramway and lifted into the dining rooms by a dumb waiter. One assumes this was in order to keep cooking fires and other hazardous features from the wards themselves. A large portion of the cellar was given over to a plenum, with fresh



air brought in by fan and distributed by shafts to the wards. At each shaft was a steam radiator to warm the draught (AR 1872, 14).

Carla Yanni describes the structure of the wards as brick partitions with iron floor beams and brick arches (2007, 135). This is true only of the connecting corridors, which were noted as *"one of the distinguishing features of the building,"* serving as communication between wards and facilitating the isolation and separation of the patients more completely than possible in an ordinary linear plan (AR 1881, 21). The floor structure of the wards was designed to be "counter-ceiled", consisting of two overlapping layers of wooden joists, the upper supporting the floor above, the lower upholding the

Fig.A.37 **Plan, Buffalo State Asylum**
Image courtesy Houghton Library- Harvard University, H.H. Richardson Drawing Archives, Catalogue BLA A28

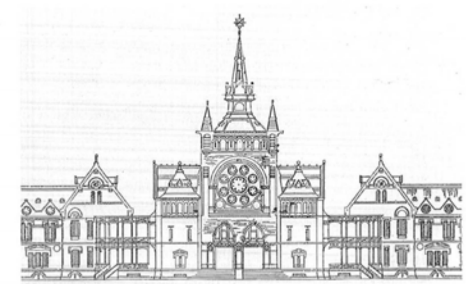


Fig.A.38 **Preliminary Elevation drawing for Buffalo State Asylum, c. 1870**
Image reproduced from Hitchcock 1936, Fig.20

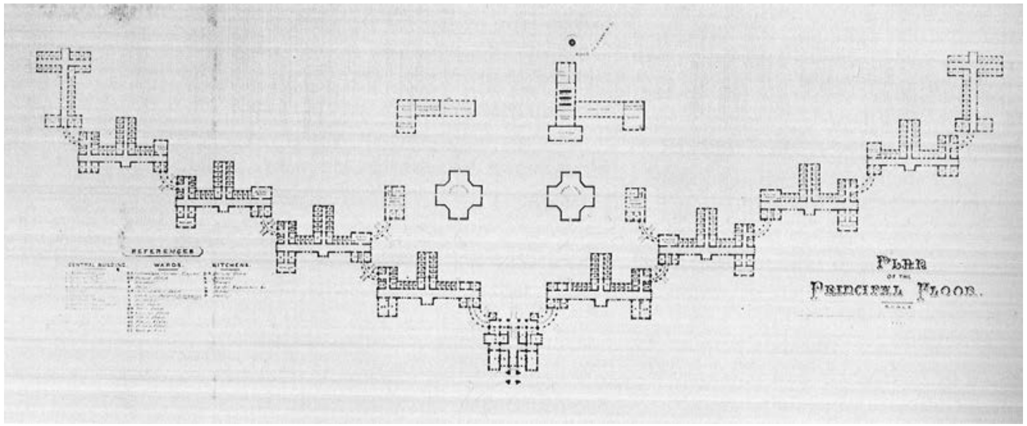


Fig.A.39 **Plan, Buffalo State Asylum c. 1870**
Image reproduced from Oschner 1982, 80
Original sketch at Houghton Library- Harvard University, H.H. Richardson Drawing Archives Photo Album, 75M-7(51)

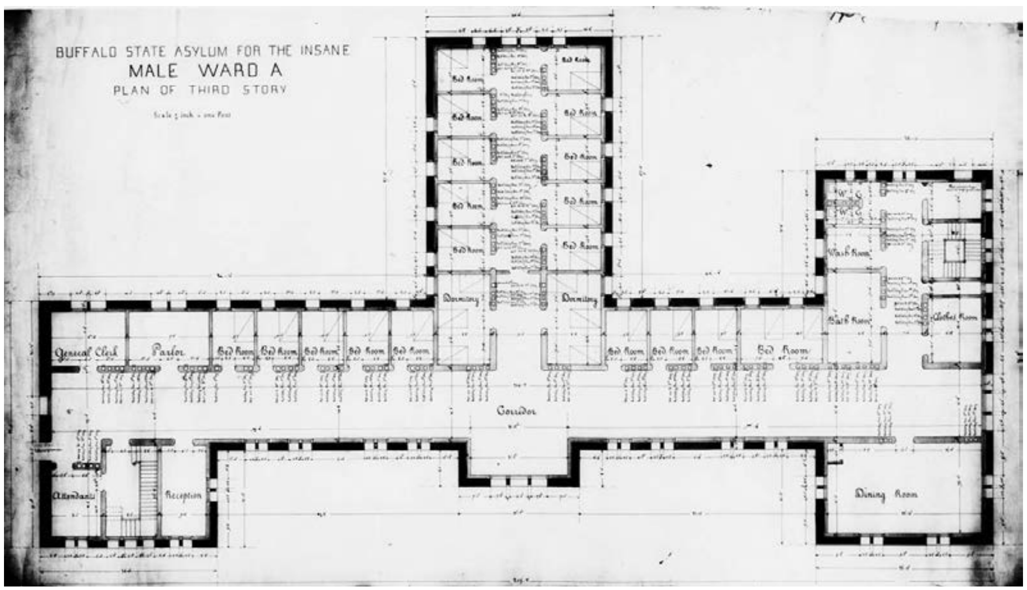


Fig A.40 **Floorplan of Male Ward Building A-Third Floor**
Image courtesy Houghton Library- Harvard University, H.H. Richardson Drawing Archives
Note the original function designations of different spaces. This layout, though different from the outermost wards, served more or less as a typical arrangement.

ceiling below. Maple flooring was generally used throughout the asylum with felt paper above the sub-floor in the wards "*for the purpose of deafening*" (AR 1880,7).[13] This form of sound insulation between floors is the system in place now, and it is the system detailed in drawings at Houghton (Fig. A.41).

A third stage in the site development is the Olmsted & Vaux Company site plan drawn on linen (Fig. A.42). This is close to the definitive layout of the complex. The asymmetrical approach road leads to the central administrative pavilion with flat salients flanking the central entrance. The curved connecting corridors between wards are now concave as seen from the front. Paths leading under the connectors coming from the administration building indicate that the present depressed arched passages made possible by Olmsted's placement of the building on uneven ground are now accounted for. Thus this sheet was drafted on or about 7 July 1871. What is not final, as Yanni points out, is the provision for a confined airing court in front of each of the wards (except the outer one reserved for the most disturbed patients) - these courts never materialized. The plan also has penciled changes to the auxiliary buildings to the rear of the wards, changes that become set with the plan published in 1872 in the Journal of Insanity (Fig. A.43).

Setting aside the lost early Gothic elevation we have already noted, there are at Houghton at least three drawings of the exterior of the complex — leaving aside the many drafts of elevations of the individual wards[14] — that represent the major contribution of the Gambrill and Richardson office. The reddish brown Medina sandstone, quarried from Hulburton

13 The fourth floor of the Administration Buildings was Norway pine.

14 One of which, BLA B3 (Male Ward A; that is, the ward next to the administration building on the right, among the earliest parts of the complex erected), is dated 23September 1871.

in Orleans County, New York, and laid up in rusticated random ashlar, was an important component of Richardson's powerful scheme for the building's elevations. With regard to facade treatment, from the very beginning the Board of Managers had conceived that "external embellishment" was not their desired goal. It was reported that "*hoping to produce effect by proportions, outline and color, the Managers did not deem it wise to expend large sums in ornamental detail*" (AR 1872, 20). The Board's requirement and Richardson's artistic inclination towards medieval architecture, fused to produce the 'austere, monumental' vocabulary for the asylum elevations, that went on to define Richardson's signature style.

In the photo album at Houghton is a scratchy office perspective of the administration building and parts of the adjacent wards (Fig. A.44).[15] While Yanni calls this the "final design" of 1872, that cannot be. It must pre-date the summer of 1871. Although the massing of the hip-roofed block is near its final form, there are important differences too. Not only are the towers, twins in the final building, not identical in this view, but the arched depressed passage beneath the connector between the administration building and an adjacent ward, made possible by Olmsted's placement of the complex on the site as he noted in July 1871, is not shown.[16] Next, a front elevation including the administration building and adjacent wards is preserved at Houghton (Fig. A.45). This is still a preliminary stage in the development of the elevations. It is in fact the state from which the lost perspective was made. The towers echo those in the perspective, other details are repeated, and the drawing,

15 Also see Yanni 2007, Fig. 4.28.

16 There are other minor discrepancies between this drawing and the building as erectred: the pattern of the roof slates, the presence of tondi in the spandrels of entrance arcade, the treatment of the dormer window above the main entrance, and so on.

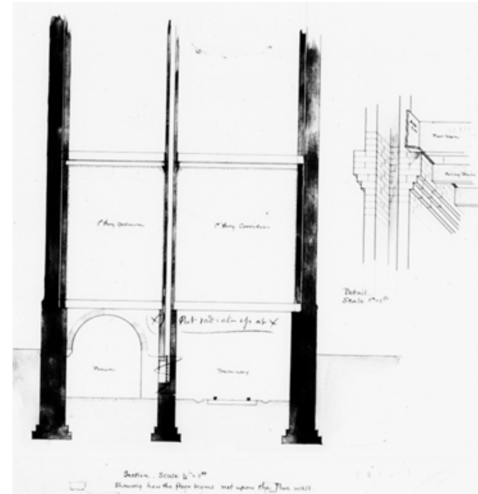


Fig.A.41 **Section showing support of floor beams, Buffalo State Asylum**
Image courtesy Houghton Library- Harvard University, H.H. Richardson Drawing Archives, BLA C3 and C4.

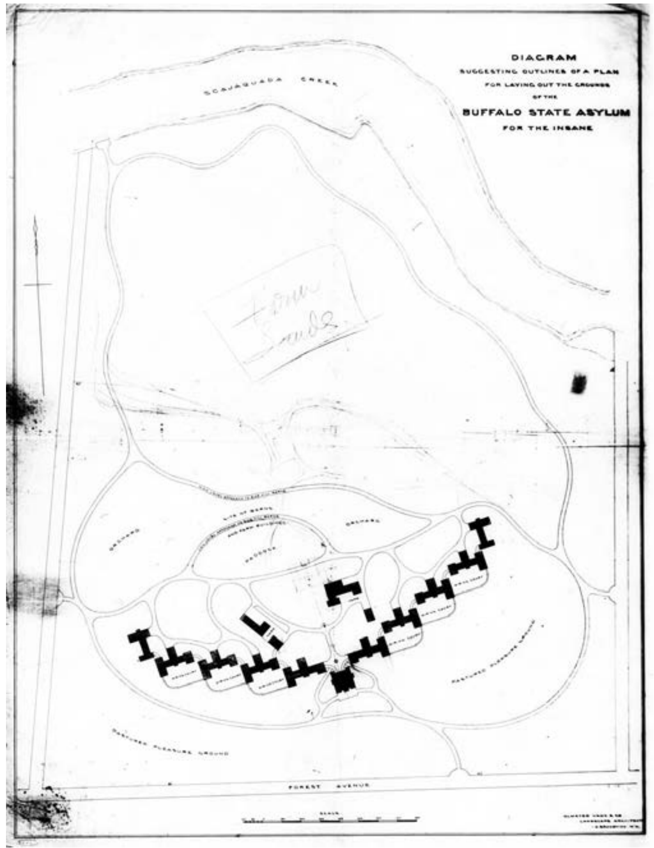


Fig A.42 **Proposed Plan for Buffalo State Asylum, c. 1871**
Image courtesy Houghton Library- Harvard University, H.H. Richardson Drawing Archives, BLA F3 & F2

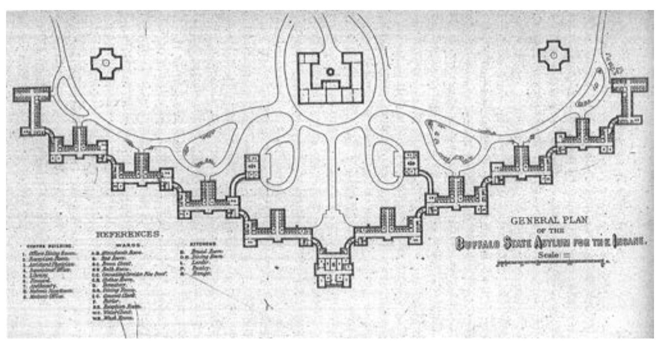


Fig A.43 **Buffalo State Asylum, plan, 1872**
Image reproduced from Yanni 2007, 136

Fig.A.44 **Perspective View of Administration Building, Buffalo State Asylum, c.1871**
Image courtesy Houghton Library- Harvard University, H.H. Richardson Drawing Archives

in its original state, also fails to show the depressed passages. However, a penciled addition at the bottom of the connector on the left of the administration building is a rough draft of one of those nine foot high arched subways. The drawing nonetheless shows Richardson's elevations, the style of which "*from its plainness and simplicity is especially adapted for this purpose*" (Coolidge 1992, 97).

The definitive design is shown in all its monumental impressiveness in a lost (alas!) perspective of the complex as seen from Forest Avenue. Now reduced to a small black and white photograph in the album at Houghton, it must have been a large, eye catching vision of the asylum to be (Fig. A.46). The Medina sandstone complex stretches out to all of its 2,200 foot length. The 180-foot twin towers rise above the central administration building to mark the location of the state's new socio-medical enterprise. Their purpose was clearly topographical, since it seems they contained nothing, contributed nothing to the primary program of the place. Dr. White himself called them ornamental (Kowsky 1992, 52). Such towered central buildings had been a standard of asylum design since mid-century, but those single towers had often housed water tanks. The wards stretch out laterally connected by the curved corridors, men's to the right and women's to the left, in descending height from three and a half stories to one and a half. These receding and tapering files of pointed gables, as Coolidge mentions and Yanni rightly emphasizes, domesticate the massive size of the blocks and enrich the visual experience. This treatment of the front or public face of the complex, however, contrasts with the grim walls of the north or rear side of the wards. Curved corridors, a towered central block, and tapering gables were all to be found here and there in earlier asylums, but they are now combined and handled with freshness. For an architect in 1871 with three years professional experience and a small handful of lesser buildings to his credit, Richardson managed to create an extraordinarily powerful ensemble atop the modified Kirkbride-Gray plan.

Literary evidence of the construction of (and later alternations to) the asylum is found in the many annual reports of the Board of Managers. Of particular interest is that of 1876 which contains a statement signed by Richardson (AR 1875, 11-16). He mentions his last visit to the work in July of 1875 (during a trip that took the architect, Olmsted, and

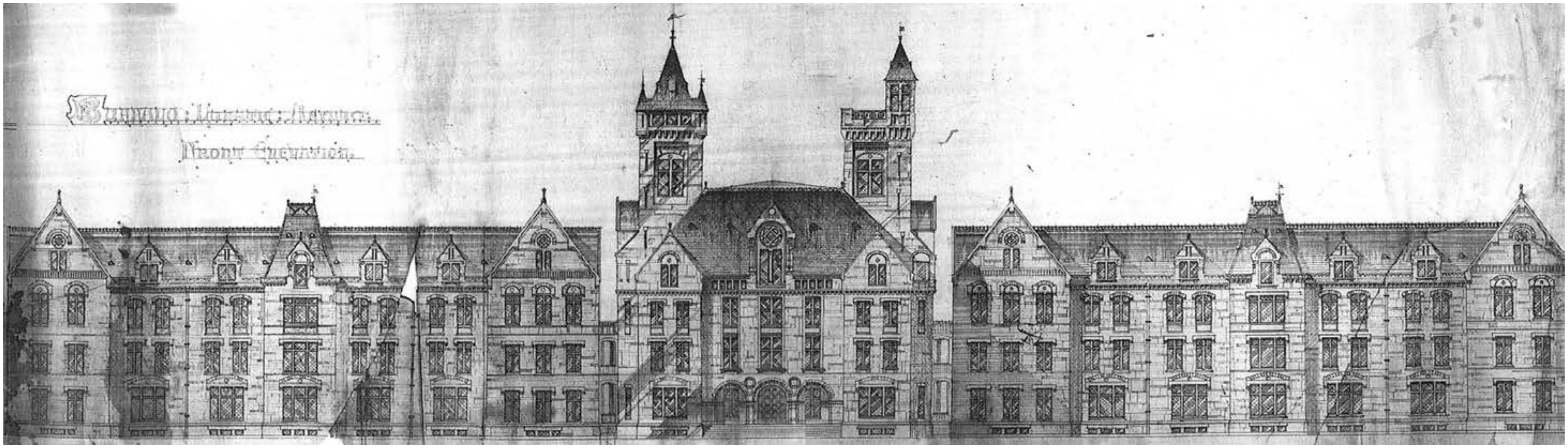


Fig A.45 **Preliminary Elevation Drawing, Buffalo State Asylum**
Image reproduced from Yanni 2007, 133

Note : This is a redraft, original is at
Houghton Library- Harvard University, H.H. Richardson Drawing Archives- it is torn in two pieces- BLA B1 and BLA B2

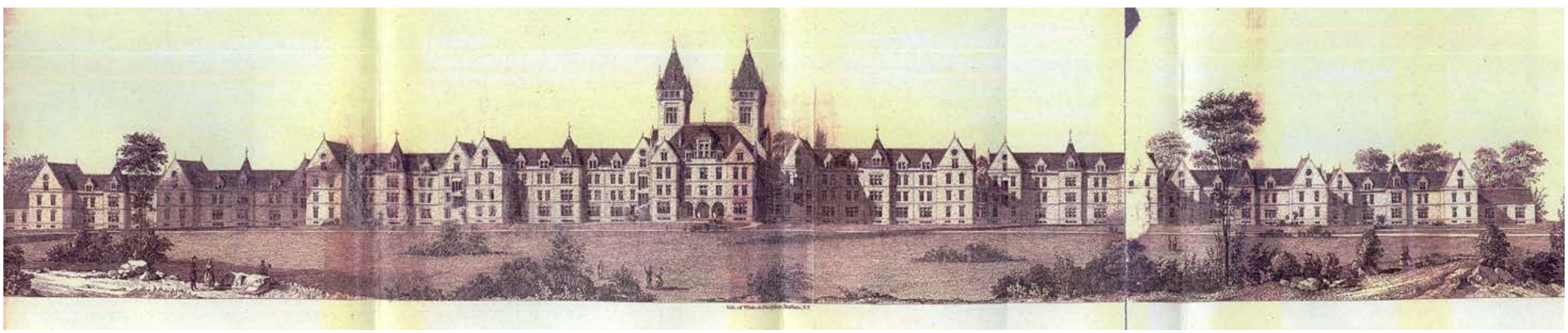


Fig A.46 **Rendering of the South Elevation of the Buffalo State Asylum, as reproduced in the Annual Report 1874**
Image courtesy Buffalo and Erie County Public Library

Fig A.47 **Hampden County Courthouse**
Image reproduced from Oschner 1982, 90

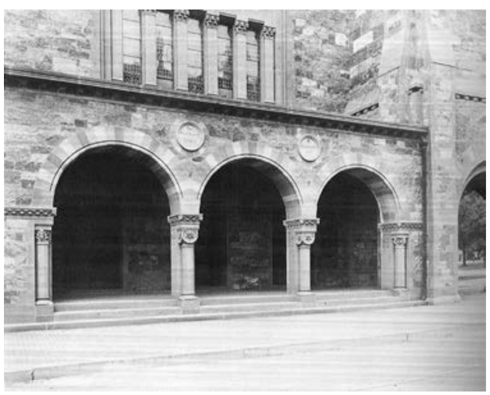


Fig A.48 **Brattle Square Church, Entry detail**
Image reproduced from Oschner 1982, 76

their wives through New York, Canada, and New Hampshire {O'Gorman 1997, 135}) and reports the "*good and intelligent progress*" that had been made despite tardy delivery of stone and stonecutters' strikes. But he also regrets that he found "*very serious and damaging alterations*" had been allowed in the construction of Wards A and B. The "sky lines" had not been changed in outline but the proportions, dimensions, and treatment had been. Stone copings called for in the drawings had been changed to wood, which would soon decay and endanger the masonry of the gables. The treatment of gutters and conductors had not followed the drawings. Instead of delivering water to the outside, the builder had used embedded internal downspouts. He laments the "*curtailing of the details of mouldings*" and "*the decorative bands of slate in the roof [that] have been totally changed.*" The slate roofer's report included there, also mentions more serious problems - the overlap of the slate was not "*sufficient to protect the building from water during a moderate rain.*" We might be tempted to attribute these alterations to the intervention of the supervising architect, A. J. Warner, but his own report in the same document laments these and other problems that must have stemmed from the builder.

The Buffalo State Asylum design in context of other Richardson buildings

The years 1869-1871 form an early plateau in the development of Richardson's work. The awkward brick Worcester High School was among the last of his spotty beginnings. From that building only the relieving arches carried over to the Buffalo asylum (and the Hampden County Courthouse {Fig. A.47}). In his completed buildings like the Brattle Square Church (Fig. A.48) (1869-73), the asylum, and the courthouse (1871-74), and in a few unbuilt schemes such as that for the Brookline Town Hall (1870) and the project for the more monumental Connecticut State Capitol (1871), we begin to see the development of Romanesque forms that were to culminate in his eponymous style at Trinity Church (Fig. A.49) on Copley Square in Boston (1872-77). One other building should be mentioned here, the North Congregational Church in Springfield (Fig. A.50), conceived in 1868 but redesigned and erected from 1871 to 1872. None of the contemporary works, however, were huge public buildings built on a prescribed plan with public funds for a population of shut-aways, and it is only in details that we can compare any of them to the asylum. Its pattern of rock-faced exterior ashlar masonry walls, later to be one trademark of the Richardsonian Romanesque, first appear in an 1868 project for a Civil War monument for Worcester, and in the exterior walls at Brattle Square Church, where however, the workmanship is rather crude. Here the size of the stones shifts as the wall rises, as was to reappear at the Marshall Field Wholesale Warehouse in Chicago (1885-1887). With the courthouse, built by Norcross Brothers, the Springfield Church, and the asylum appeared that characteristic Richardsonian "quiet and massive treatment of wall surfaces."

Each of these contemporary works has, like the asylum, an arcaded entry loggia and Romanesque half-round arches. The voussoirs at Brattle Square alternate in color and therefore, although half-round rather than pointed, follow the system of constructional polychrome characteristic of the Victorian Gothic; those at the courthouse and the asylum are monochromatic, as would become standard in the architect's later work. At Brattle Square the arches rest on columns set against piers, as at the asylum; at the courthouse they rest on piers. Carved ornament at Brattle Square tends toward the geometric; at the asylum it is naturalistic. Beyond the arcade the loggia is vaulted at Buffalo as it is at the courthouse; at the Brattle Square church a wooden roof covers the entry porch. Some of the same geometric patterns Richardson used in the gable ends at Buffalo appear also at the Springfield Church. Transoms and mullions set into window openings are common to the asylum, the Brookline project, the capitol project, and the courthouse. All of which adds up to Richardson's varying detail from one custom job to the next within an overall stylistically uniform development during this period.

Understandably, what is not repeated from the asylum in any other contemporary work are the stark rear exterior walls of ashlar sandstone reduced to a pattern of trabeated windows that cut the surface into an austere rectangular pattern of piers and spandrels. They are nonetheless extraordinary as work of the 1870s, the high point of the energized Victorian Gothic. The Proceedings published at the time of the laying of the cornerstone assert that, "*Hoping to produce effect by proportions, outline and color, the Managers did not deem it wise to expend large sums in ornamental detail*"(AR 1872, 20). According to the *Journal of Insanity* the wards were to be "*substantial and durable, without ornamentation or attempt at exterior effect, beyond what their extent and massiveness will produce*."(Coolidge 1992, 97). These statements sound remarkably like Richardson's approach to design. As he wrote in his description of Trinity Church, a work conceived about the time of the laying of the cornerstone in Buffalo, "*the distinguishing characteristics of a style are independent of details; especially in this case in the Romanesque, which in its treatment of masses, affords an inexhaustible source of study.*" The scarcity of any decorative details here is one of the early indications of what Richardson said was characteristic of his work, that ornament in architecture should arise not from added carving but from the rise and fall of the lithic geometrical masses themselves. And it is here, at the Buffalo State Insane Asylum, that Richardson took the most important early step of his seminal career.

Fig A.49 **Trinity Church, Boston**
Image reproduced from Oschner 1982, 119

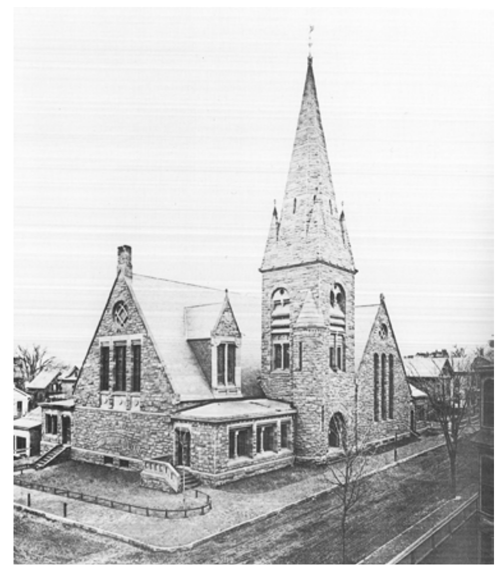


Fig A.50 **North Congregation Church, Springfield**
Image reproduced from Oschner 1982, 104

VI. CONTRIBUTIONS OF LOCAL AND STATE ARCHITECTS

Primary Author: Martin Wachadlo

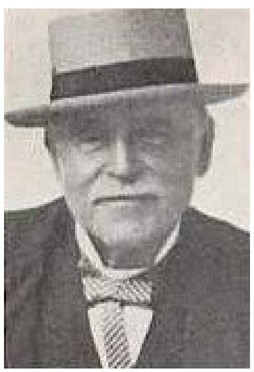


Fig.A.51 **Andrew Jackson Warner**
Image courtesy www.libraryweb.org

Although now known as the Richardson-Olmsted Complex, many other local and state architects made significant contributions to the appearance of this facility. In addition to Gambrill & Richardson, Andrew J. Warner of Rochester is credited with having a hand in the original design, and four building superintendents also contributed to the final appearance of the complex before it opened in 1880. By this time, only the five wings east of the Administration Building had been built, while the west wings were yet to be constructed. When construction resumed on these wards in the mid-1880s[1], architectural services were obtained not from Richardson or his successors, but initially from local, and subsequently from state architects. Leading local architects W. W. Carlin and Green & Wicks completed the wards in the early 1890s, making adjustments to the then-twenty year old designs, and adding ancillary buildings. In 1895, construction work on all state facilities was placed in the hands of the State Architect, whose office carried out all work at the complex for the next half-century, with few exceptions. In spite of the varied hands involved in the work, most of these additions nevertheless were designed with sensitivity to the original design, and the continued use of red brick (and, often, hipped roofs) contributed to the cohesiveness of the complex. The additions made after World War II, however, were usually aesthetically and materially incompatible with the earlier work.

1 For a chronological account of construction history, refer to Chapter III: Section B. Chronology of Development and Use.

H. H. Richardson had probably secured the asylum commission through both Olmsted and the Buffalo connections that both men had made in the late 1860s. However, they were not the only ones with local connections. Architect **Andrew Jackson Warner** (1833-1910) of Rochester, NY (Fig. A.51) was favored by several of the original asylum board members, who may have insisted on his inclusion in the project.[2] Consequently, the plans were said to be from the combined study of both Richardson and Warner; the latter was then appointed supervising architect, a position that normally went to an architect who was resident in the locality of construction.[3] Warner was a nephew of prominent New Haven architect Henry Austin, and followed Henry's brother Merwin to Rochester in 1847. After training in Merwin's office, Warner opened his own in the late 1850s, and within twenty years was Rochester's most prominent architect (Brayer 1984). By the time of his involvement with the asylum, Warner had completed in Rochester the Italianate St. Mary's Hospital and the Second Empire Powers Building, and would soon design the City Hall and Free Academy in the High Victorian Gothic style. In Buffalo, Warner's connections also brought him the City and County Hall commission without any competition

2 Newspaper clipping from scrapbooks at the Buffalo Psychiatric Center. Buffalo Courier (Jan. 28, 1874), states that both men submitted elevations favored by the board, and requested both men work together to produce combined elevations. Articles published in the Buffalo Commercial during the same period assert that Warner was only included at the behest of some of the board members.

3 A logical appointment for this position would have been local architect Cyrus K. Porter (1828-1910), whose firm had just completed the Willard Asylum for the Insane (1866-69), a state institution at Ovid, N.Y.

from local architects. This building, built in 1872-76, was executed in granite in a style *"neither quite Romanesque nor quite Gothic"* (Brayer 1984). Warner continued as supervising architect of the asylum until early 1877.

The peculiarity of Warner's position as supervising architect is also evident in the employment of local superintendents who oversaw actual construction. This position was at first held by Samuel H. Field, who was coincidentally also the superintendent of Warner's City and County Hall. Then in 1874, the state legislature removed responsibility for construction from the board and the architects and vested that authority solely in the new position of superintending builder (AR 1877, 7). Local builder **Joseph Churchyard** (d 1887), a board member since 1872, was appointed to that position. Construction then progressed rapidly, but it was discovered that Churchyard used cheaper materials and substandard workmanship, and had made significant alterations to the plans, problems that were detailed in Richardson's own report to the board (AR 1875, 11). Churchyard was removed, and all windows and roofing installed under his tenure had to be removed, remade, and reinstalled, which set back progress considerably. Following Churchyard's removal in 1875, contractor John Walls was named superintending builder. Warner continued as supervising architect until 1877, when **Peter G. Emslie** (1814-1887) assumed that position. Trained as an engineer in his native Scotland, Emslie had served as chief engineer on several major railroads before his work at the asylum. When Walls was removed for political reasons in 1878, Emslie also became superintendent, so those two roles were finally combined into one. (Walls was responsible for the plasterwork in the original buildings.) In addition to completing the buildings begun in the early 1870s, Emslie also oversaw the construction of the Laundry (LB1), Ice House (IH), Cow Barn (CB) and Carriage Stable (CS) [See Fig. A.52-54. For an illustrated site map see Fig. A.56]. It is not known if these buildings were part of the original designs of Gambrill & Richardson; if not, then they were likely designed by Emlsie.

The first local architect employed by the Board of Managers was **William W. Carlin** (1850-1894), a local practitioner of national reputation. Carlin was born in Stockton, N.Y., and trained in the office of Hiram Smith in Jamestown, N.Y., south of Buffalo (Illustrated Express 1894, 16). He

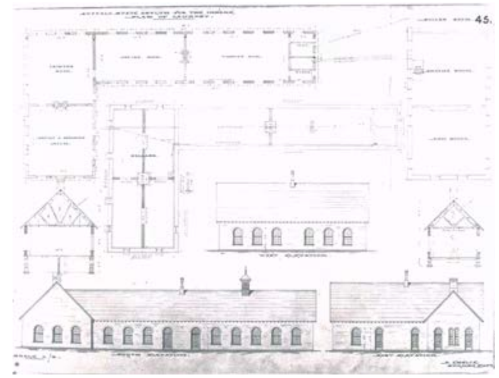


Fig A.52 **Laundry Building, drawn 1880**
Image courtesy Buffalo Psychiatric Center
From collection of Drawings by Peter Emslie - Supervising Architect (1877-1880) & Building Superintendent (1878-1880)

Fig A.53 (left) **Site Plan, Buffalo State Insane Asylum, c.1887**
Image courtesy Buffalo Psychiatric Center

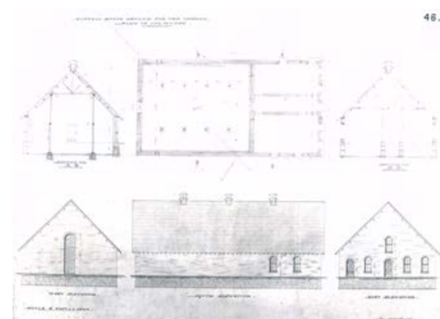


Fig A.54 **Ice House, drawn 1880**
Image courtesy Buffalo Psychiatric Center
From collection of Drawings by Peter Emslie - Supervising Architect (1877-1880) & Building Superintendent (1878-1880)

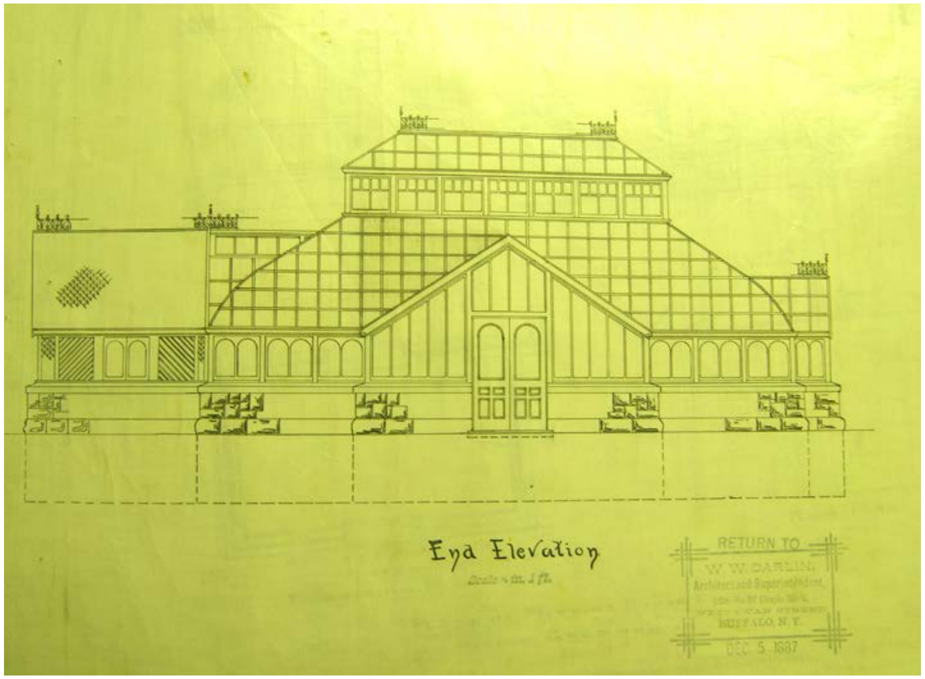


Fig A.55 **Green House (GH 1), drawn 1887**
Image courtesy Buffalo Psychiatric Center

Note drawing stamped by W.W. Carlin, Building Superintendent

then practiced in his native Chautauqua County, where he designed the Athenaeum Hotel (1880-82) at the famous Chautauqua Institution. Carlin relocated to Buffalo about 1884 and designed the Richardsonian Romanesque Barnes & Hengerer Building (1888-89), 268 Main Street, as well as numerous Queen Anne style residences, such as the home of John D. Larkin (1885), 125 Hodge Street (demolished in 1994). Very active in professional organizations, Carlin served as the last president of the Western Association of Architects and oversaw its consolidation with the American Institute of Architects (AIA), of which he subsequently became vice president. In the early 1890s Carlin formed a partnership with C. Powell Karr and John H. Coxhead, but his career was cut short by his premature death at age 43.

W. W. Carlin's earliest work at the asylum was the Second Barn (SD1) and several outbuildings, including the Hen House (HN), built in 1885-86 (Building Items Buffalo 1886, 23 and Synopsis of Building news 1886, 118)). It is also likely that he designed the Hog House (HG). These farm buildings featured board-and-batten exteriors, and it is possible that some of them were moved and/or provided materials for the Wagon Shed (WAG) of 1928, which also features a board-and-batten exterior. Carlin's Greenhouse (GH1) of 1888 (Fig. B.43) is partially extant.[4] He also likely designed several smaller buildings and additions, such as the brick Employee Building (WD) of 1886-87 and the three Summer Houses (SH1, 2, 3), built in 1889. [The Office (OF) building has a roofline very similar to that of the summer houses, and may be a reuse of one of those pavilions.] By 1887 Carlin prepared the plans and specifications for Ward F, located immediately west of the Administration Building (AB) (See Fig. A.56), the first step in completing the original Gambrill & Richardson design (Synopsis of Building news 1890, 27). The new ward was constructed in 1889-91. The exterior appearance was similar to Ward A, but with changes in fenestration to match a modified interior program and more "Richardsonian" exterior details, such as rock-faced corbels (the corbels on the original buildings are smooth). The gables also feature stone coping, which had been eliminated on the original ward buildings, much to Richardson's chagrin.

After the completion of Ward F, the board of managers turned to **Green & Wicks**, the preeminent Buffalo architectural firm of the period, to continue the building program. Both partners were natives of central New York State: Edward B. Green

4 The Buffalo Psychiatric Center retains a complete set of ink on linen drawings for this building.

(1855-1950) [Fig. A.57] was born in Utica, while William S. Wicks (1854-1919)[Fig. A.58] hailed from Trenton (now Barneveld). Green received his degree in architecture from Cornell University in 1878 and then practiced in Ithaca with William H. Miller. Wicks also studied architecture at Cornell, but completed his degree at the Massachusetts Institute of Technology (MIT) in 1877; he then worked for the prominent Boston architectural firm of Peabody & Stearns.

Green and Wicks formed their partnership in Auburn, N.Y., in 1881 or 1882, and moved to Buffalo in 1884-85 (Mintzer 1984). They built their reputation on a series of Queen Anne, Shingle and Richardsonian Romanesque residences, and also worked in the Richardsonian manner in the Buffalo Crematory (1885-86) on West Delevan Avenue and the First Presbyterian Church (1889-91, 1896-97) at Symphony Circle, which dominates the south end of Richmond Avenue as the State Hospital dominates the north end. By the time they began work at the asylum, the classically inspired American Renaissance had become Green & Wicks' favored form of expression, manifested in such diverse buildings as the Market Arcade (1892), 617 Main Street, the George Forman House (1892), 824 Delaware Avenue, and the Buffalo Savings Bank (1898-99) at Main and Genesee Streets.

For the asylum, they continued, for the most part, within the style and materials of the earlier buildings. By the early twentieth century, Green & Wicks had acquired a national reputation with such notable buildings as the Albright Art Gallery, located across Elmwood Avenue from the asylum's farmland; the Toledo (Ohio) Museum of Art; the New York State Fair buildings at Syracuse; and the State College of Agriculture at Cornell University. After Green & Wicks dissolved in 1917, Green, in partnership with his sons, produced the Genesee Building in Buffalo, the Dayton (Ohio) Art Institute and many of the buildings of the University of Buffalo.

At the asylum, Green & Wicks designed the Nurses' Home (NH1); a Steward's Cottage (location unknown, perhaps EC); Paint Shop (PS); and additions to the Laundry Building (LB1) and Cow Stable (CB), all built in 1893 (Building Items Buffalo 1893, xvi-xvii). The State Care Act, passed that same

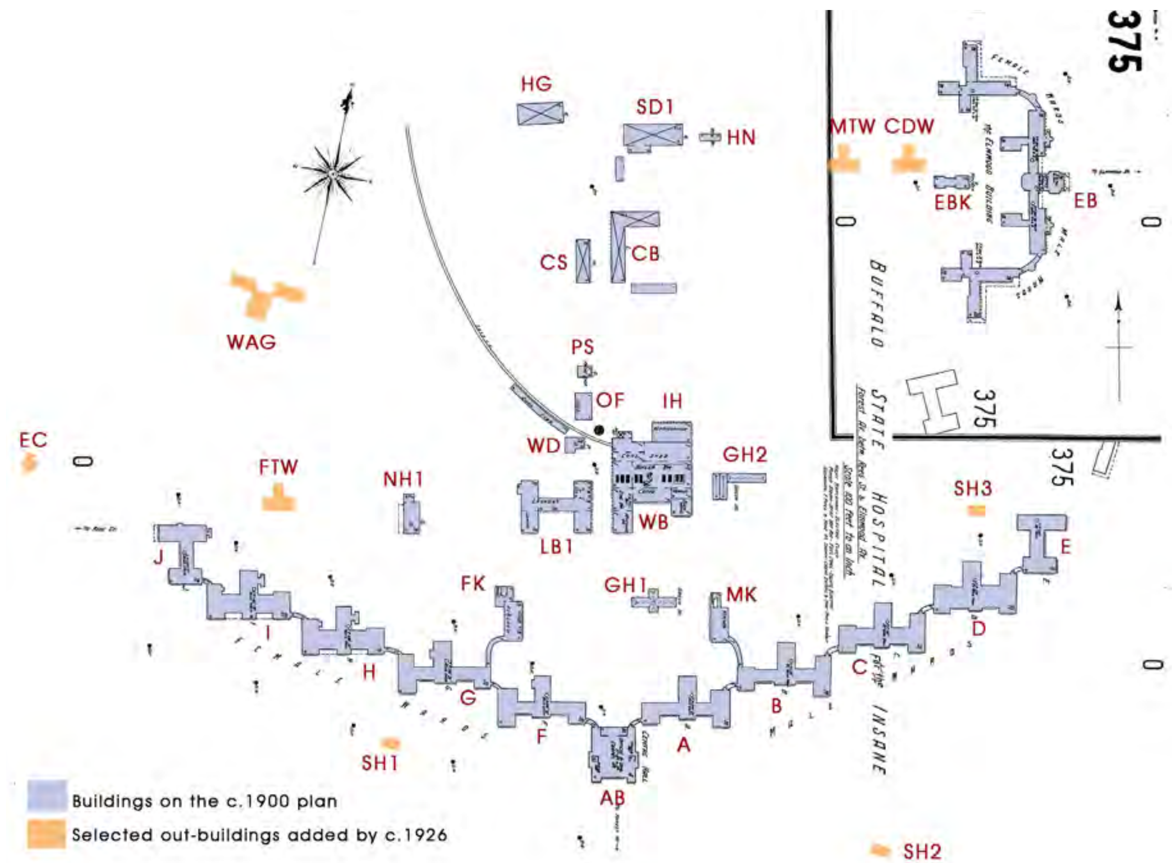


Fig A.56 **Site plan of the Buffalo State Asylum for the Insane**
Image from Sanborn Fire Insurance map c. 1880-1900, Vol. 4, Sheet 375; enhanced by GCA to indicate buildings and their HSR names

Fig A.57 **Edward B. Green, Sr.**
Image courtesy http://www.buffaloah.com

Fig A.58 **William Sydney Wicks**
Image courtesy http://www.buffaloah.com

year, evidently provided the final impetus needed for the state legislature to provide the funding to complete the complex; eighty patients of the County Asylum were transferred here at that time (AR 1893, 8). Green & Wicks prepared the plans for the stone Ward G, built in 1893-95 (with the detailing of adjacent Ward F simplified), and the brick Female Kitchen (FK), built behind in 1893-94 (Green & Wicks Account Book, 130-132). In 1894-95, brick Wards H, I and J were constructed (mirroring the now-lost brick Wards C, D and E), thus completing the original design (Green & Wicks Account Book, 102-105). Green & Wicks eliminated the courses of tarred black bricks used in Richardson's eastern brick wards and made other modifications to the earlier design. In 1895, they added a new Coal Shed, built between the Workshop and Boiler Building (WB) and the Ice House (IH), which allowed coal to be unloaded from the railroad cars out of the weather (Green & Wicks Account Book, 134and AR 1895, 14).

Green & Wicks prepared plans for a reception building facing Elmwood Avenue in 1895, but a change in program coincided with a new law placing all construction projects funded by the state in the hands of State Architect. This position dated to 1883, when Governor Grover Cleveland appointed **Isaac G. Perry** (1822-1904) to supervise the completion of the state capitol, designed in part by H. H. Richardson (Todd 2006, 215). "*Perry was a self-trained architect who achieved regional renown in New York, New Jersey and Pennsylvania during the second half of the nineteenth century for the design of large-scale public buildings*" beginning with the State Inebriate Asylum at Binghamton in 1857 (Green & Wicks Account Book, 149). As State Architect, Perry was responsible for building twenty-seven armories across upstate New York, including the Connecticut Street Armory (1896-99) in Buffalo. Perry's redesigned reception building, known as the Elmwood Building (EB), included two infirmary wards and a kitchen (EBK), and was built in 1895-97. The Workshop and Boiler Building (WB) and the Laundry (LB1) were also enlarged under Perry's tenure. Local architect Frederick W. Brown was the superintendent for Perry's work at the asylum; Brown had practiced in Albany before moving to Buffalo around 1893, and moved to Nashville six years later.

Perry retired in 1899, and was succeeded as State Architect by **George L. Heins** (1860-1907). A native of Philadelphia, Heins received his degree in architecture from MIT in 1882 and four years later formed a partnership in New York with another MIT alumnus, C. Grant LaFarge, son of the noted artist John LaFarge. Heins & LaFarge rose to fame with their winning design for the Cathedral of St. John the Divine in New York, and thereafter became noted for their ecclesiastical designs. The firm also designed the original stations of the New York subway and the buildings of the Bronx Zoo. The partnership of Heins & LaFarge continued throughout the former's tenure as State Architect. Heins's major contributions to the Buffalo State Hosptial were the Superintendent's Residence (SPR), Staff Residence (R1), Male Attendants' Home (MAH), and Chapel & Amusement Hall (CH), all built in 1904-05. All were of red brick construction, and three were capped by hip roofs. Heins also was responsible for minor work, such as the 1900 addition to the Laundry (LB1).

New York architect **Franklin B. Ware** (1874-1945) became State Architect after the death of Heins in 1907. After receiving his degree in architecture from Columbia University in 1894, Ware worked in partnership with his father, James E. Ware. Under Ware's tenure the Steward's Residence (SR) and Female Tuberculosis Ward (FTW) were erected, but these may have been designed earlier by Heins. However, plans for the

Contagious Disease Ward (CDW) were drawn probably by the hospital facilities staff in 1911, "*as the State Architect was unable to spare the time necessary*" because of the burning of the capitol at Albany (AR 1911, 6). Ware was removed from office in 1912 amid accusations of corruption. He was replaced by the politically connected Herman Hoefer, who was himself removed from office a year later.

Brooklyn native **Lewis F. Pilcher** (1871-1941) was State Architect from 1913 to 1923. Like Ware, Pilcher also received his degree in architecture from Columbia University, graduating in 1895. His firm of Pilcher & Tachau designed the Haviland Building in New York and several buildings at Vassar College. Pilcher's contribution to the hospital grounds was limited to the construction of the Male Tuberculosis Ward (MTW) and minor alterations and additions. Design work for the Male Dining Hall (MDH) of 1923-24 began under Pilcher's tenure, but the building was constructed under his successor, **Sullivan W. Jones** (1878-1955). Jones was born in Rockland County and graduated from MIT in 1900. His most notable work was the Alfred E. Smith State Office Building in Albany; he also assisted with the design of Buffalo City Hall. The Male Dining Hall (MDH), built behind Ward B, was a notable design departure from previous additions; though constructed of red brick, the design featured spare classical detailing and a flat roof.

In 1928, **William E. Haugaard** (1889-1948) became State Architect, a position he would hold until 1944. He received his architectural education at the Pratt Institute in his native Brooklyn, MIT, and the Ecole des Beaux Arts in Paris; he then worked on various projects on the Panama Canal. Among the notable works executed under his tenure were the Attica State Prison and the Sixty-fifth Regiment Armory in Buffalo. The beginning of Haugaard's tenure as State Architect coincided with the transfer of the northern half of the State Hospital grounds to the city for the new campus of the State Normal School (now Buffalo State College), for which he designed the original five buildings. Haugaard oversaw the movement of some of the hospital buildings off the new campus, such as the Male Tuberculosis Ward (MTW) and what became the Pre-Industrial Shop (PI). He also likely oversaw the movement and/or the deconstruction of the frame farm buildings for use in the Wagon Shed (WAG) in 1928. It was originally intended that the substantial Elmwood Building (EB) and Kitchen (EBK) would be moved south onto the hospital's property, but when this proved too expensive, they was demolished and a new Romanesque style Reception Building (RB) and Kitchen (KN) was built. These buildings were designed by **Crow, Lewis & Wick**, a New York firm noted for the design of hospitals, in association with the State Architect. Haugaard also designed the Female Dining Hall (FDH) behind Ward G, which shared the classical detailing and flat roof of Male Dining Hall (MDH) with the addition of odd, rough stone quoins at the corners of the top story, and a second Nurses' Home (NH2) facing Forest Avenue, which featured the hipped roof of most of the earlier buildings.

Additional needed construction at the hospital was delayed by the Great Depression and World War II. At the close of the war, the prominent New York architectural firm of **York & Sawyer** was commissioned to build the large, cross-shaped Medical & Surgical Building (MS) and Power Plant (PP) for the hospital. These were followed by a new Bakery & Storehouse (BK) and Laundry Building (LB2), designed by New York architect **Andrew J. Thomas**, and, like the Power Plant, located north of Rockwell Road. These buildings, all designed in the International style, were built under the tenure of State

Architect **Cornelius J. White** (d 1962) and his successor, **Carl W. Larson** (d 1974). Larson was the designer of the Reception & Intensive Treatment Building (ITB), now known as the Strozzi Building. After a hiatus of over seventy years, local architects were again given an opportunity to shape the hospital site in the late 1960s, when **Milstein, Wittek, Davis & Hamilton** designed the Rehabilitation Building (RB), which unfortunately brought about the demolition of Wards C, D and E. Since then, Buffalo architects have designed many of the new buildings on the grounds.

The contribution of the many architects who added to the complex after the original work of Richardson and his associates are a major part of the history of the complex. The wards constructed under W. W. Carlin and Green & Wicks completed the original vision for the facility and constitute an essential element to the overall design. The subtle changes effected by these architects to the earlier design reflects a desire to both be faithful to the original concept while also responding to the architectural tastes of the period. The State Architects who followed continued this dichotomy, utilizing, for the most part, complementary materials and massing. These traditions were abandoned after World War II, as architects responded to changing needs with buildings that were at odds, in style, materials and placement, with the original vision of the institution.

B. CHRONOLOGY OF DEVELOPMENT AND USE

This chapter focuses on the chronological physical development of the Buffalo State Asylum for the Insane from 1872 until 2008. It attempts to chart out a detailed account of construction, subsequent additions, alterations and demolitions that have taken place at the site. Also acknowledging that most physical developments were born out of larger socio-economic changes, an attempt has been made to relate the physical development with transformations that were taking place elsewhere – from trends in the field of mental health to changing social norms and increased awareness about historic preservation, to name a few.

The following historical narrative divides the 1871 to 2008 timeline into separate thematic periods whose events significantly affected the physical evolution and appearance of the site and buildings. These periods are as follows:

- 1872-1899: Construction Phase
- 1900-1945: Expansion Phase
- 1946-1974: Post WWII Development and Deinstitutionalization
- 1975-2008: Partial Vacancy and Interest in Historic Preservation

Each time period is described with the help of a textual narrative, historic photographs, period plans and a tabular chronology of events and physical development.

I. 1871–1899: CONSTRUCTION PHASE

Fig B.1 **View of Administration Building**
Image courtesy Buffalo Psychiatric Center

Fig B.2 **View of Administration Building with Male Wards A & B**
Image courtesy Buffalo Psychiatric Center

In the earlier sections we have traced the design development for the site layout and buildings of the Buffalo State Asylum for the Insane. After almost two years of pre-construction design and planning, ground was finally broken for the Administration Building in June 1871 and the first stone was laid in August of that year. At this time, the location of the site proved highly beneficial in abutting the Scajaquada Creek, thus providing not only a picturesque backdrop for the asylum grounds, but also enabling the transport of heavy construction materials to the site delivered to a small dock at the northwest corner of the property (Coolidge 1992, 91). Upon discovering that large portions of the site, especially in the south, were underlaid with a strata of rock at relatively close depth, it was suggested by the architect that the foundation trenches should be excavated down to the rock. This suggestion was carried out, and the Administration Building rests on solid rock[1] (AR 1871, 20-22).

"*Had it not been for the weather, the ceremony on September 18, 1872 would have been the grandest in Buffalo's history*" (Dowdall 1996, 4). This date marked the laying of the cornerstone of the Buffalo State Asylum, amidst a resplendent congregation of political dignitaries, Buffalo's medical, business and civic elites and a military band. The cornerstone was set in place by the Grand Mason with a copper box containing a history of the Asylum, United States' coins, the New York "civil list" for 1872, the latest annual reports of the other asylums of the state, and "*copies of the latest issue of the several daily and weekly newspapers published in the city*" (Cornerstone Proceedings 1872). By this time, walls of the Administration Building (AB) and Male Wards A and B were laid to the water table (Fig. B.2).

The subsequent construction, however, was slowed by the under-funding of the project by the state government. The Board of Managers reported that the Administration Building and Wards A and B could be ready to receive patients in the summer of 1874 with the necessary appropriation (AR 1872, 8); yet only less than half of the requested funding was approved, and construction halted at the end of 1873, not to resume until the following summer. In 1874, the state legislature removed responsibility for construction from the board and the architects and vested that authority solely in the new position of Superintending Builder (AR 1877, 7-8). Local builder Joseph Churchyard, who had been on the board since 1872, was appointed to that position. Construction then progressed rapidly, but it was discovered that Churchyard used cheaper materials and substandard workmanship, and had made significant alterations to the plans, problems that were detailed in Richardson's own report to the board (AR 1875: 11-14). Churchyard was removed, and all windows and roofing installed under his tenure had to be removed, remade, and reinstalled, which set back progress considerably. Nonetheless, by 1877, the exteriors of the central

1 The top of the rock lies from 16 to 24 feet below the surface of the ground at the building (AR 1871, 22)

Administration Building (AB) and Male Wards A and B were almost complete (Fig.B.4).

Fig B.3 **View of Administration Building**
Image courtesy Buffalo Psychiatric Center

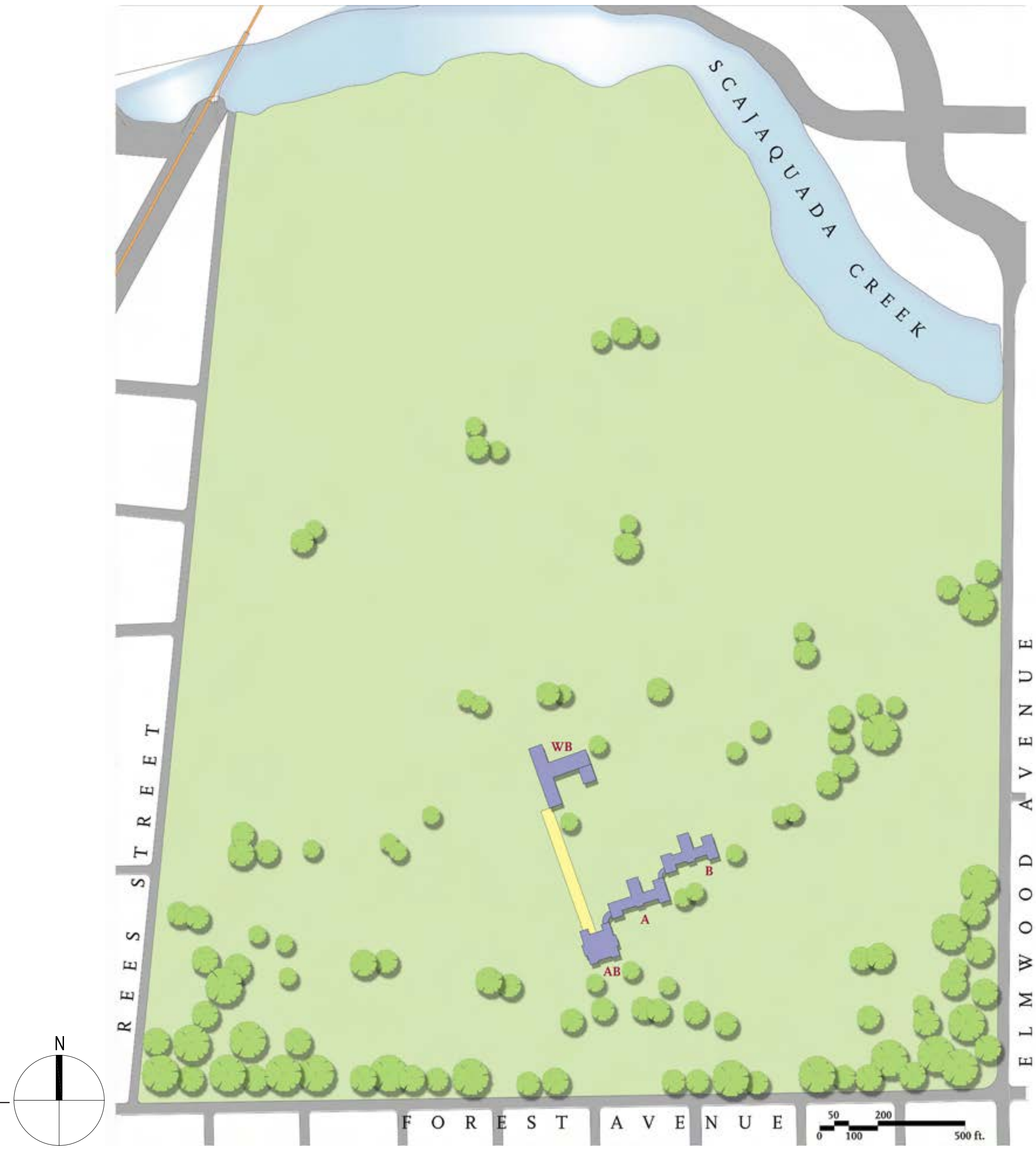
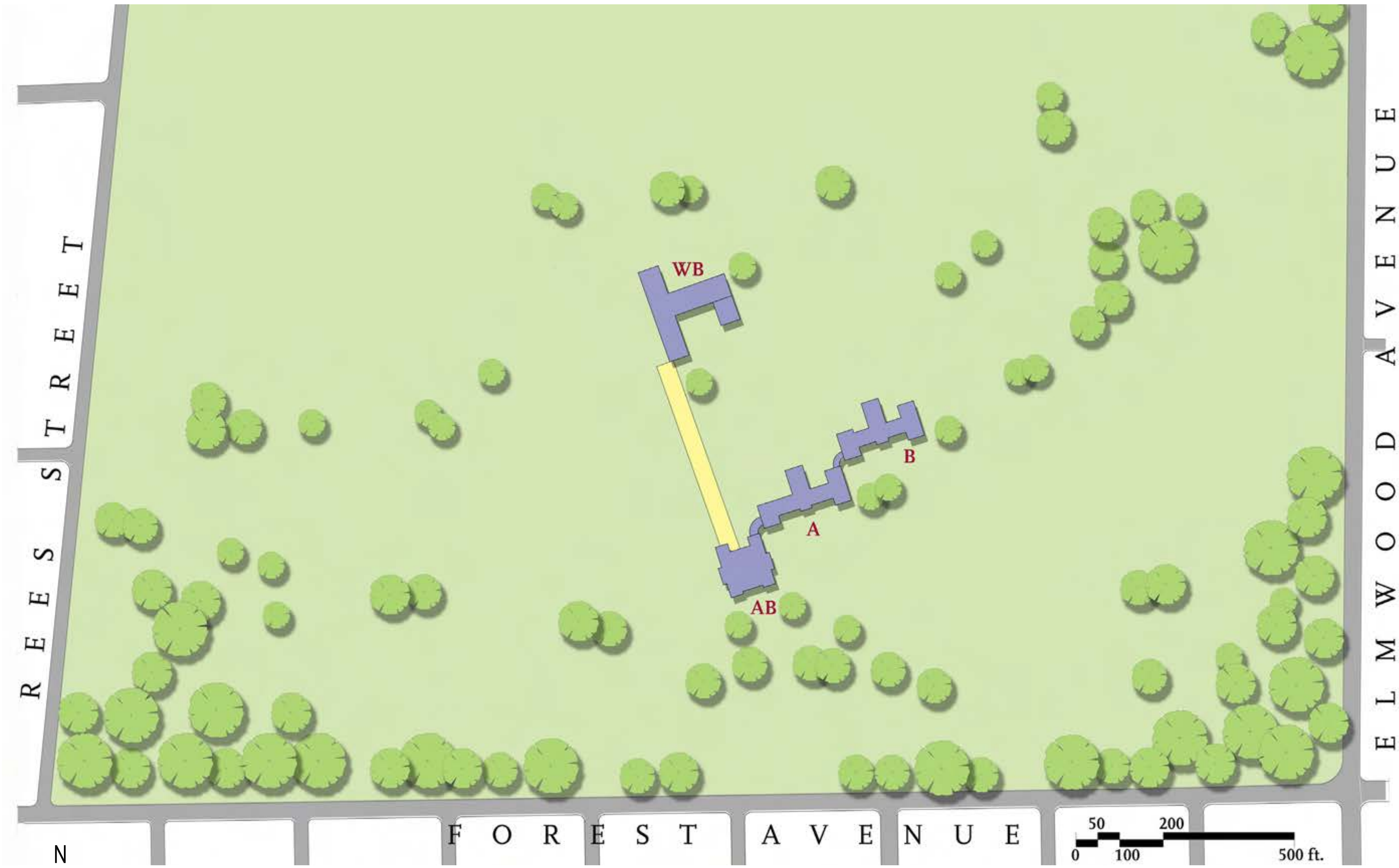


Fig. B.4 . **Site Plan c.1876**
Image Courtesy GCA



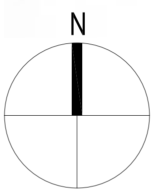


Fig. B.4.a **Site Plan Detail c. 1876**

Image Courtesy GCA

1872-1876 KEY TO BUILDINGS

HSR Name	Year(s) Built	Original Use	Architect	Subsequent Uses	Current Use	Alternate Building #	Area
A	1871-80	Male Ward	Gambrill & Richardson	Administrative offices	Vacant	10	51080
AB	1871-80	Administration Building	Gambrill & Richardson		Vacant	45	63241
B	1871-80	Male Ward	Gambrill & Richardson		Vacant	9	49446
WB	1872-76	Workshop & Boiler	Gambrill & Richardson	Blacksmith & Plumbing Shop, Coal Shed etc.	Plant Operations / Power Plant	22	34090

* The areas of buildings are represented in gross sq. ft. and include the area of basements.
NOTE : **Bold -** Refers to EXTANT buildings; *Italics* - Refers to DEMOLISHED/MISSING buildings.

As described earlier in the section 'The Architect: H.H. Richardson', the plan finalized by Richardson comprised of ten independent wards joined by curved corridors to each other and to the central administration building.

Five wards on the east of the administration building were for male patients; five wards on the west were for female patients. The most severely afflicted or 'excitable' patients were housed in wards farthest from the main building, while the most orderly, or well-behaved patients were in buildings adjacent to the central one. All the ward buildings were connected by enclosed fireproof corridors on all floors. The ward buildings were designated by letters of the alphabet A, B, C, D and E, going outwards from the administration building (which bore the designation AB) on the east, and by F, G, H, I and J, going outwards from the Administration Building on the west. The various patient wards, which were the different stories of the buildings, were designated by numerals added to the letters, as A1, A2, A3, B1, B2, and so on. Each of the two buildings on either side of the administration building were to be three stories tall; the next two on either side were to be two stories

Fig B.5 **Male Ward B and brick connector to Ward C**
Image courtesy Buffalo Psychiatric Center

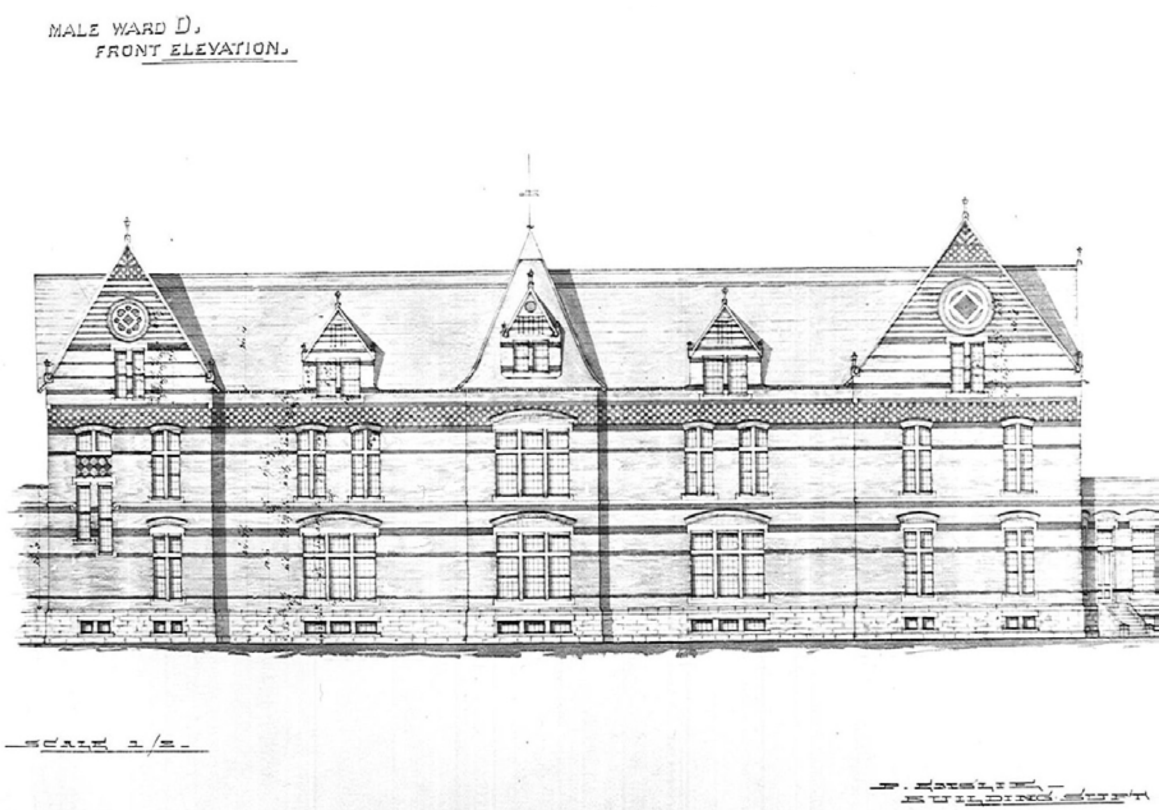


Fig B.6 **Male Ward D Front (South) Elevation**
Image courtesy Buffalo Psychiatric Center
From collection of Drawings by Peter Emslie
- Supervising Architect (1877-1880) & Building Superintendent (1878-1880)

Note the patterns created on the facade by tarred brick

Fig B.7 **View of Male Ward D from grounds**
Image courtesy Buffalo Psychiatric Center

Note tarred brick patterns on building facade

high; and the last buildings on each end were to be single story.

The nation was then mired in its worst economic depression of that time, and the board of managers, (its responsibilities restored), decided to build the three outermost wards (C, D and E) of brick to save money, for which Richardson drew revised plans [see Fig. B.6-7] (AR 1876, 6-7).[2] By 1879, a year before the public opening of the Asylum, all the male ward buildings (A, B, C, D and E) were almost complete (AR 1879, 8). The other on-site structures that had also been built by this time included the Men's Kitchen building (MK), the Workshop and Boiler Building (WB), Laundry (LB1), Cow-Barn (CB), Carriage Stable (CS) and Ice House (IH). The construction (and probably design too) of the last four was supervised by architect Peter J. Emslie.

The Men's Kitchen (MK) building (Fig. B.9) was placed at a little distance to the rear of the ward cluster, connected by a covered passage with the basement of Ward B and through it to the other ward basements. This was used to transfer food, which was then placed on the tramways and carried to elevators, running from the basements to the dining rooms of the different floors (AR1883, 29). Attached to the Kitchen was the Bakery and store-rooms.

The engine and boiler house, and workshops for plumbing and carpentry, constituted one large building located about 400 feet to the rear of the central building (Fig. B.8), supplied with steam power from the same boilers which also supplied

2 Refer to Drawing Nos. BLA B2, BLA B14 and BLA B18 in H.H. Richardson Drawing Archives, Houghton Library Harvard University on Buffalo State Hospital for brick ward elevations. The drawings note the conversion from stone to brick.

Fig B.8 **Workshop and Boiler Building**
Image courtesy Buffalo Psychiatric Center

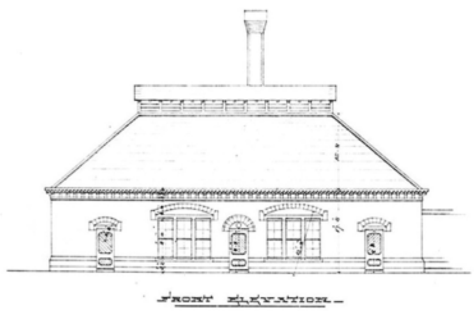


Fig B.9 **Rendering of Male Kitchen building**
Image courtesy Collection of Drawings by Peter Emslie - Building Superintendent, Buffalo State Insane Asylum from 1878-1888

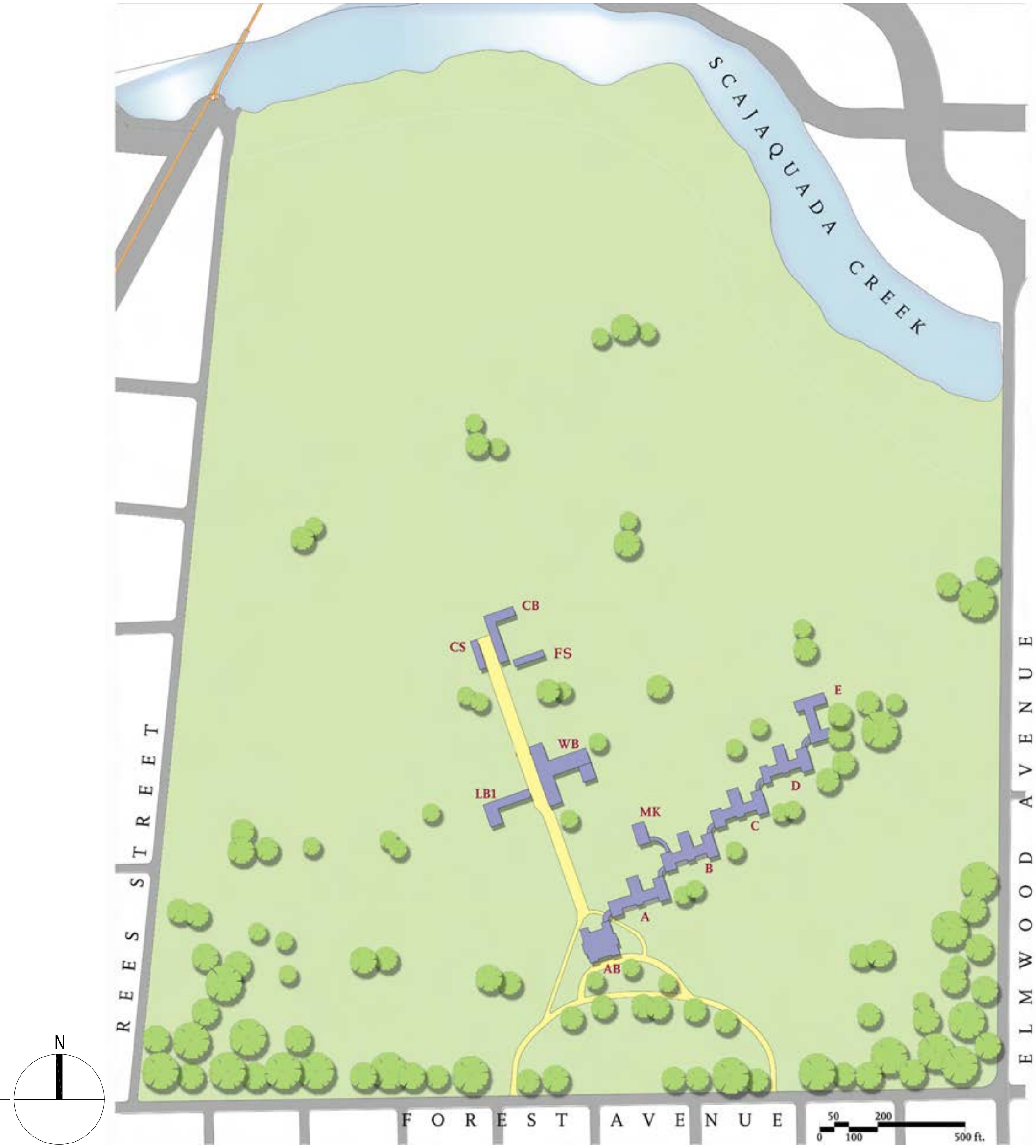


Fig. B.10 **Site Plan c.1880**
Image Courtesy GCA

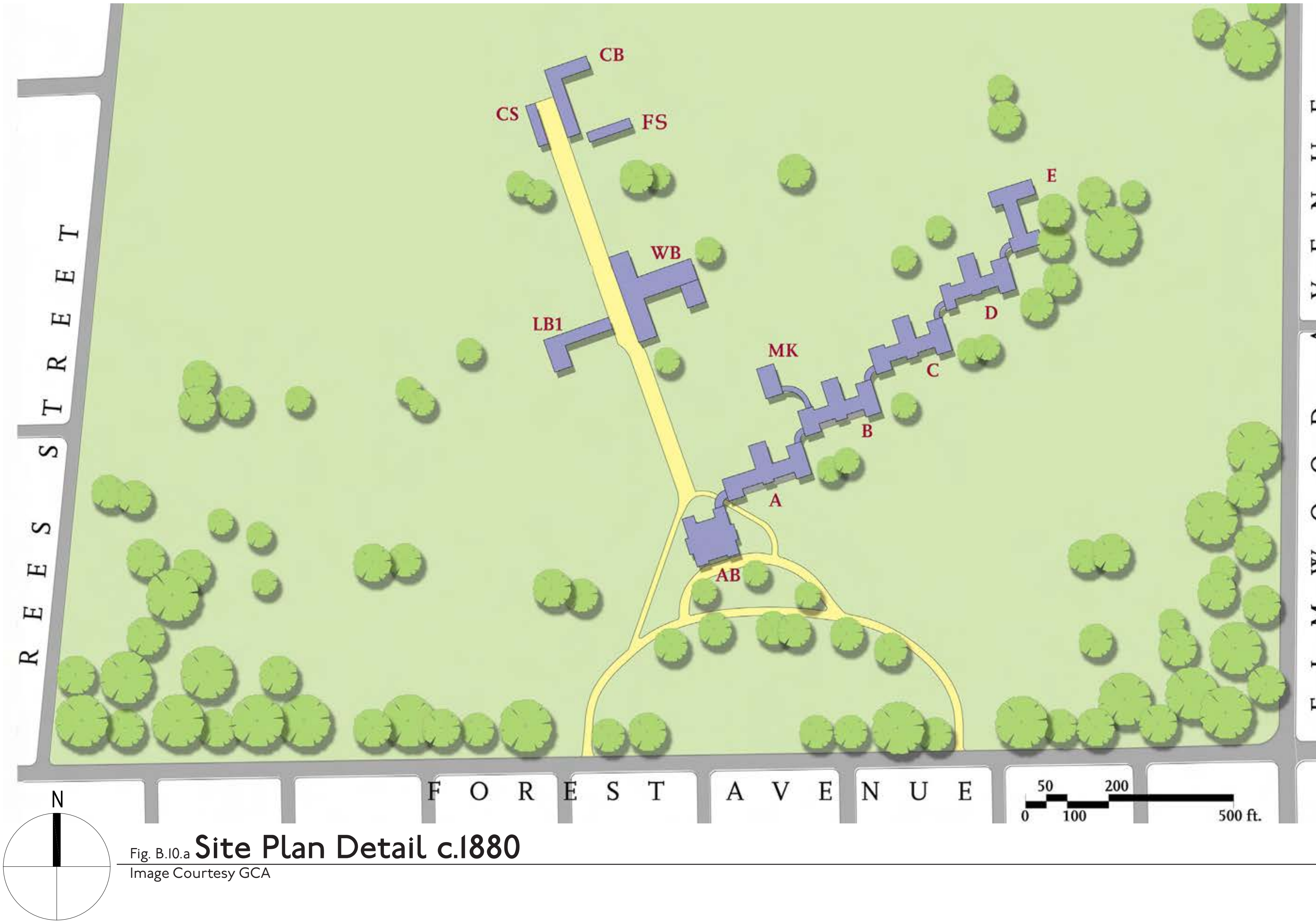


Fig. B.10.a **Site Plan Detail c.1880**
Image Courtesy GCA

1877-1880 KEY TO BUILDINGS

HSR Name	Year Built	Original Use	Architect	Subsequent Uses	Current Use	Alternate Building #	Area*
A	**1871-80**	**Male Ward**	**Gambrill & Richardson**	**Administrative offices**	**Vacant**	**10**	**51,080**
AB	**1871-80**	**Administration Building**	**Gambrill & Richardson**		**Vacant**	**45**	**63,241**
B	**1871-80**	**Male Ward**	**Gambrill & Richardson**		**Vacant**	**9**	**49,446**
C	*1873-80*	*Male Ward*	*Gambrill & Richardson*		*Demolished 1968*	*8*	
CB	*1879-80*	*Cow Barn*	*[H.H. Richardson]*	*Industrial bldg & Storehouse*	*Demolished c. 1965*	*6*	
CS	*1879-80*	*Carriage Stable*	*[H.H. Richardson]*	*Auto Garage & Paint Shop*	*Demolished c. 1965*	*5*	
D	*1873-80*	*Male Ward*	*Gambrill & Richardson*		*Demolished 1968*	*7*	
E	*1873-80*	*Male Ward*	*Gambrill & Richardson*		*Demolished 1968*	*6*	
FS	*1879-80*	*Shed*	*[H.H. Richardson]*		*Demolished (date unknown)*		
LB1	*1879-80*	*Laundry*	*[H.H. Richardson]*		*Demolished 1977*	*25, 21*	
MK	**1872-80**	**Male Kitchen**	**Gambrill & Richardson**		**Vacant**	**12, 29**	**8,120**
WB	**1872-76**	**Workshop & Boiler**	**Gambrill & Richardson**	**Blacksmith & Plumbing Shop, Coal Shed etc.**	**Plant Operations / Power Plant**	**22**	**34,090**

* The areas of buildings are represented in gross sq. ft. and include the area of basements.
NOTE : **Bold -** Refers to EXTANT buildings; *Italics* - Refers to DEMOLISHED/MISSING buildings.
[ ] is used to indicate attribution to architect(s) where absolute historical evidence is not available.

heat to the whole institution.[3] West of this building was the Laundry (LB1), an L-shaped brick building measuring 121'-8" by 28'-4" with slate roofing (Fig. B.11). It comprised of a washing room, drying room, ironing room and sewing room, with cellars underneath, and an outside stone stairway entering the same (AR 1879, 9).

In another cluster of buildings slightly northwest of the Workshop and Laundry were three buildings — the Cow Barn (CB), Carriage Stable (CS) and Ice House (IH). The Cow Barn building (also known as the Stables) was L-shaped, and comprised of a stable to accommodate eight horses, and stalls for 20 cows, two feed-rooms, a farm implement room, box-stalls, harness room, wagon house and wagon shed, hay lofts

3 The Annual Report for1883 (p.31) reports that there were 3 large boilers, each 28' long and 8' in diameter.

Fig B.11 **Laundry Building (LB1)**
Image courtesy Buffalo Psychiatric Center

Fig B.12 **Carriage Stable (CS)**
Image courtesy Buffalo Psychiatric Center

Fig B.12a **View from Forest Avenue, c. 1880**
Image courtesy Francis Kowsky

overhead and cellars underneath, connected with an outside stone stairway. The cows provided milk that was used by the asylum. The Carriage Stable was placed at a distance of 50 feet from the Cow Barn, and accommodated six horses, contained a carriage house, harness room and tool room, with hay lofts overhead and cellars underneath, reached by an outside stone stairway (fig. B.12). The Ice House was a rectangular building provided with meat and refrigerating rooms, and a large ice-box. (AR 1879, 9)

Modest care was taken with details, exterior and interior materials and finishes. As described earlier, Richardson's main idea with the exterior elevations was to produce effect by the sheer massing of volumes and textures of materials, rather than the use of ornament. This led to the use of rock-faced random ashlar masonry for all the facades of the stone buildings. The rough surface of the sandstone contrasted subtly with the more dressed version used around openings. The overall effect was made more dramatic by using a reddish iron-oxide mortar for pointing the stone joints.[4] The brick buildings sought similar means to produce visual effect by resorting to minimal ornamentation. Richardson achieved this by using horizontal bands of tarred brick on the brick buildings to identify cornices, and other surface details. Another distinct feature of the buildings was the use of iron cresting and finials atop the roof and dormers.

On the interior (Fig. B.13-14), the use of ornamentation, again was fairly restrained - there were elaborate plaster consoles at ceiling level in the Administration Building, and smaller ones elsewhere. Although the buildings were centrally heated,

4 The use of a similar mortar and application style has been seen by GCA in other contemporary and later works by Richardson, for e.g., at the Sever Hall in Harvard University.

fireplaces were also provided. The Administration Building reportedly had two chimneys to service interior fireplaces (HABS 1965, 4). These were subsequently removed.- the main chimney, 110 feet high, was reportedly relocated to the center court of the Boiler and Workshop (BW) building . At crucial points, there was enrichment, as in the tile panels in the entry portal and the floor of the connectors between the Administration Building and Ward A –that is, at a point where it would be observed by visitors (Coolidge 1992, 101).

Throughout this early phase of construction, doors in the Administration Building were made of black walnut and oak, while those in the wards were made of pine (AR 1878, 8). At the same time, hundreds of wooden bureaus and wardrobes were also constructed. All the carpentry work was accomplished by competent workmen, piece by piece. American Encaustic Tile was used on the kitchen floor of the Administration Building, and also on the floors of the water closets, bathrooms, kitchen and corridors in the wards (AR 1879, 7).

A number of precautions had been taken to counter fire in the construction and maintenance of the asylum buildings in addition to the iron doors leading to the connectors, previously discussed. These included stone staircases with brick arched ceilings, fire hydrants that were placed around the buildings, and stand-pipes with hose attachments that were installed in each ward.

Public Opening of the Buffalo State Asylum

The enduring achievements in architecture, landscape and urban design that led to the birth of the Buffalo State Asylum are only a part of the institution's complex history. The subsequent century-long occupation of the buildings and stories of human use went on to stamp these stone and

Fig B.13 **Interior view of a 'day-room' or hallway in a ward**
Image courtesy Buffalo Psychiatric Center

Note the stenciled paint patterns on walls and the wood floor

Fig B.14 **Interior view of a 'day-room' or hallway in a ward**
Image courtesy Buffalo Psychiatric Center

Note the plaster bracket detail at the ceiling on the right

Fig B.15 **Main Entry to the Administration Building through the arched loggia**
Image courtesy Buffalo Psychiatric Center

brick edifices with deeper meaning and defined an enduring identity for the Asylum.

After having been under construction since 1871, the Buffalo State Asylum formally opened its doors to patients on November 15, 1880. Although the ward buildings erected by this time were intended for the use of male patients only, it was decided to admit patients of both sexes. Buildings A and B, each of three stories, were occupied by the women, and buildings C and D, each of two stories, and E, of one story, by men. The men's wards were reached through the basements of the women wards or from the outside.

Dr. Gray selected his protégé Dr. Judson Boardman Andrews as the first Superintendent of the Asylum. Andrews accepted his mentor's view that insanity should be treated not only with moral treatment, but also with medical treatment.[5] During the first year of its operation there were admitted 219 patients—122 men and 97 women (AR 1880, 12). Almost 20 percent of these patients were transferred from the State Asylum at Utica, while the rest were drawn from the immediate areas. Reflecting the prevalent thinking, it was felt that the regularity of life and the favorable hygienic conditions under which patients were placed would result in benefit to their general health and promote self-control (AR 1880, 12). The prevailing law made it obligatory upon public officials to send cases which came under their jurisdiction within ten days to some asylum for treatment. This would have ensured early care and treatment to all the mentally ill of the public class, "*before such changes occur in the brain as place(d) the*

5 The University of Buffalo later appointed Andrews its first Professor in Insanity, and announced that students would be trained at the new Infirmary Hospital (1893) at the Buffalo State Asylum.

subject beyond the reach of medical skill, and the curative measures adopted for their recovery" (AR1880, 13). However, this system was not very effective in practice, with the result that the majority of the population of asylums was that of elderly and chronic patients with poor likelihood of recovery. This made moral treatment increasingly impractical – leading to its gradual demise over the years and endorsement of a largely medical model in later years.

The ward buildings constructed to date provided for 300 patients. Ten wards provided for 28 patients each, and one for 20 patients. At the opening of the asylum, only one ward was fitted up for each sex. Additional wards were then opened up as patients increased. The first year of operation ratified the fact that the asylum's plan provided clear advantages over other linear plan asylums in providing greater segregation, larger rooms, better circulation, light and ventilation. The distinctive feature of rooms only on one side of the corridor made them light and cheerful, allowing light to permeate not just the corridor, but also the individual rooms and dormitories.

The Asylum was open to visitors from 2-5 p.m. except on Saturdays, Sundays, and holidays. No visitors were permitted to enter the wards or grounds in the rear of the building. In effect, the entire portion of the site south of the ward buildings (primarily around the Administration Building) was all that was in the realm of public access. The entire portion north of the ward buildings was meant entirely for internal asylum use.

With regard to administrative organization, the highest administrative body was the ten-member Board of Managers, who oversaw the asylum management, made frequent visits, and audited the accounts. The Superintendent was next in hierarchy, with all the immediate responsibility of the asylum. He was assisted by the assistant physicians, who engaged in the medical care of patients; the steward, who carried out the purchase of all necessary supplies, hired and discharged attendants, and oversaw the operation of the farm; and the matron, who supervised the women attendants and domestic affairs including clothing and bedding. An apothecary was also employed and was responsible for filling all prescriptions ordered by the physicians.

Supervisors, attendants and night-watchers were involved in direct care of the patients. There was one supervisor each for the men's and women's departments. There were three to four attendants on each ward[6] responsible for the bathing, clothing, food and other day-to-day care of the patients. The night-watchers made regular rounds of the wards all night and reported to the medical office.

The Chapel on the fourth floor of the Administration Building (Fig. B.16) was dedicated in 1882 and was arranged with a pulpit and chancel for the choir. A movable screen was put up through its center, dividing it into two spaces, one of which could be used for the erection of a stage for performances. On Sunday afternoons religious services were regularly held by the Chaplain, while during the week entertainment programs were typically provided by the attendants, other employees and friends from the city. They consisted of "*songs, recitations, character acting, jugglery, feats, pantomimes, shadow pictures, short comedies and dialogues*" (AR 1881, 29). A school for younger patients (10-15 years of age) was also operated inside the asylum from time to time (AR 1882, 38).

6 Classified as Attendant-in-Charge, First Attendant and Second Attendant.

Fig B.16 **View of Chapel on fourth floor of Administration Building**
Image reproduced from Coolidge 1992, 100

Almost immediately after the formal opening, the Asylum found itself the subject of allegations and controversies regarding the abuse of patients. Other asylums at this time were also targeted. Public scandal began with allegations that people who were not mentally ill were railroaded into asylums against their will, and also that patients were subjected to abuse, violence and even murder.[7]

7 During 1887, the Buffalo State Asylum was involved in the murder inquest of a Charles W. Brown, who apparently died from unnecessary restraint. 3 asylum attendants were accused but later acquitted.

An idea of a typical day in the asylum during the early 1880's can be gauged from the Superintendent's account in the Annual Report for 1882 (36). The entry titled "A Day Upon the Wards" describes in detail the activities that various occupants of the asylum, including patients, physicians, attendants, etc., indulged in during a typical 24-hour day. The reason for this detailed account can also be attributed to the administration's desire to ameliorate the somewhat negative image that had been formed in the outside world regarding life in the Buffalo asylum.

Even before the formal introduction of 'occupational therapy' in the asylum system, patients at the Buffalo State Asylum were continually engaged in useful work, due to its perceived benefits in curing insanity. The men were mostly employed in the farm and on the grounds, while the women patients helped in the laundry and in the sewing rooms on the wards (Fig. B-17-18). Patients also assisted the kitchen staff in their work and distribution of food.[8] Superintendent Andrews, however, made it clear in several of his annual reports (AR 1881, 24) that patient work was to be viewed entirely as therapeutic: "*Employment in an asylum is strictly a medical question and should be directed by the physician and prescribed as medicine and diet are.*" The Asylum was under constant fire around this time, for allegations of overworking patients. Many historians have gone to the extent of claiming that asylums at this time were already exploiting patient labor to maintain themselves, and had become something like 'urban

8 A detailed description of the supposed daily diet per week provided in the asylum is included in the Annual Report 1883 p. 30. The documented description by Superintendent J.B. Andrews, indicates serving of meat almost every day of the week, at times even twice a day. However, it has to be acknowledged while reading this account that it was written to ameliorate the somewhat negative image the asylum had acquired due to some prevailing controversies regarding abuse of patients & reported dismal living conditions inside the asylum.

plantations' (Grimes 1934; Deutsch 1948). Maybe because of this reason, the annual reports of the Buffalo State Asylum for this decade present an apparent paradox—while patient work is described in great detail, its value is routinely minimized. Nonetheless, the work performed by the patients did in fact help the financially overburdened asylum to sustain itself and provide expensive care at no cost.

Being more or less the only institution of its type in Buffalo, the asylum regularly encountered problems in securing a stable workforce of reliable attendants. Moreover, wage-rates in the asylum were much below those in manufacturing or railroads, further reducing its appeal for prospective employees. In 1882, the training of female nurses for the mentally ill was begun at McLean Asylum near Boston and soon Buffalo caught on to the idea. The asylum's need to create a new workforce and the transiency of its attendants, combined with patients requiring considerable nursing, all played a role in making the institution of an in-house training school in 1884.[9] The creation of the training school was approved and much commended by the State Board of Charities (AR 1885, 26) which viewed its establishment as *"the beginning of a new era in the selection and proper qualification of attendants for the insane."* The first graduating assembly was conducted on April 20, 1886. For much of its history, the institution operated a training school for nurses and aides, the first to be opened in a public mental hospital in the United States.

By 1883, the constructed wards of the Asylum had reached their designed capacity and it was reported by the Superintendent (AR 1882, 43) that any further admissions would lead to placing beds in the corridors which was highly

Fig B.17 **View of the Laundry**
Image courtesy Buffalo Psychiatric Center

Note women patients assisting the staff.

Fig B.18 **Women patients assisting in Asylum housekeeping**
Image courtesy Buffalo Psychiatric Center

9 Detailed instructions for nurses in caring for the insane can be found in 'How to Care for the Insane, a Manual for Nurses', 1893.

Fig B.19 **View of Female Wards to the west of the Administration Building**
Image courtesy Buffalo & Erie County Historical Society

Fig B.20 **Female Kitchen**
Image courtesy Buffalo Psychiatric Center

objectionable and would lead to inefficient management. Consequently, there was growing pressure on the Legislature to approve funds for completion of the women's wing on the west side (Fig. B.19). Funds were subsequently granted and construction began in 1889 on Female Ward F - it was completed in 1891. Ward G was built from 1893-95 and Wards H, I and J were built in 1893-94. These outermost three wards were built in brick to conform to corresponding buildings on the easterly wing. They were originally intended for 250 patients, but changes were made in the plans of the two upper wards such that an increased number of patients could be accommodated. Although the exterior appearance of all the Female Wards was based on the original elevations designed by Richardson, architect W. W. Carlin who prepared construction plans and specifications for these wards, made minor changes to the fenestration to match interior program. He also introduced some details such as diamond pattern relief over windows and stone copings, which are not present on the male wards. On the interior, the addition of features such as tin ceilings (instead of plaster) was probably a combination of reasonable cost and better fire resistance. The construction of the women's wing was accompanied by the construction of a second kitchen (Female Kitchen FK) in 1896. In terms of location and function, although this building was meant to be a counterpart of the Men's Kitchen, it was built in brick due to economy, and was designed by the local architecture firm of Green and Wicks.

By the 1890's there were two major developments that were taking place in the treatment of the mentally ill. First, there was a rising preference among medical practitioners in treating 'insanity' as a physical disease that could be cured by advances in medicine, surgery and therapy. While moral treatment had not totally lost ground, its influence had markedly decreased.

This can be seen clearly in this quote from the Annual Report of 1893 (25): "*The last few years have witnessed great activity in surgical work among the insane. The operations upon the brain for the relief of injury... mark a new era in surgery....*" Second, there was a mounting preference in asylums nationwide for the cottage-plan system over Kirkbride's linear plan. This was manifested in building a larger number of outbuildings, pavilions, cottages, etc., reflecting a greater faith in the individualization of treatment and the liberty granted to patients.

The most direct influence of the first major development in mental health, described above, can be seen in the name change of the 'Buffalo State Asylum for the Insane' to 'Buffalo State Hospital' in 1890. More substantially, it was also witnessed in the construction of a new hospital for acute and recent cases in 1897, replete with laboratories and full hydrotherapeutic and electrical apparatus and operating rooms (Fig. B.28) that doubled as audience chambers for effective instruction of medical students from the University of Buffalo.

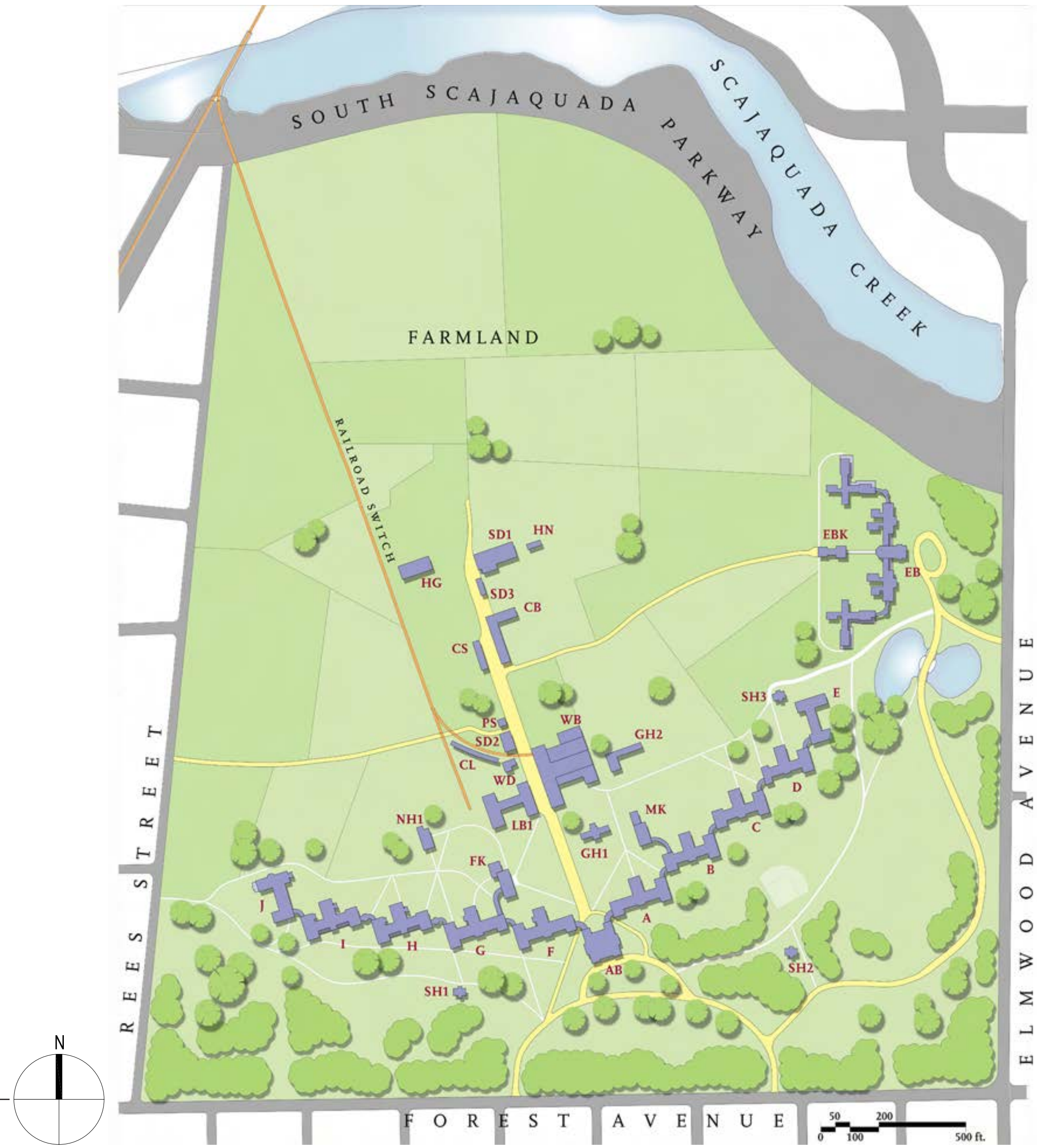


Fig. B.21 **Site Plan c.1899**

Image Courtesy GCA

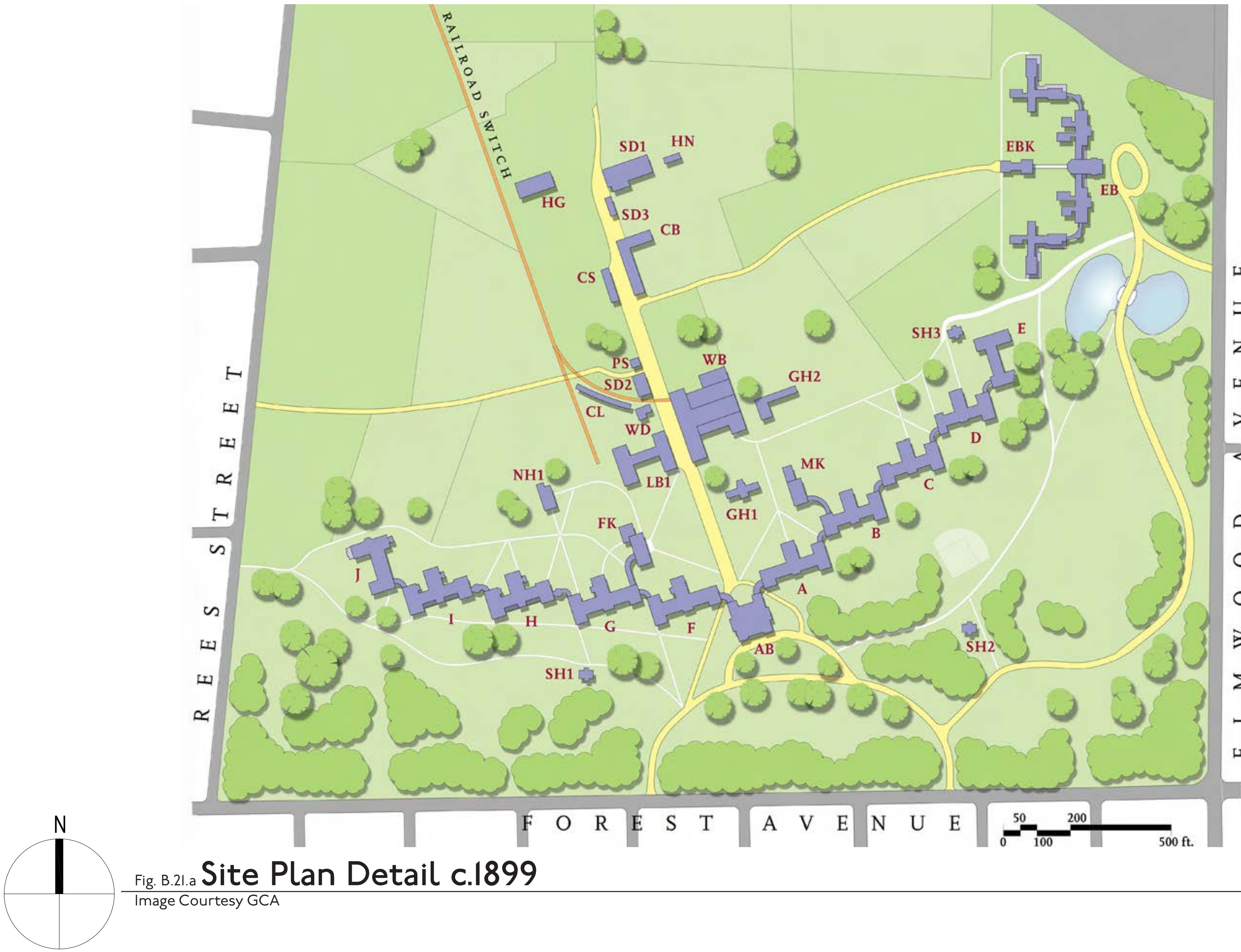


Fig. B.21.a Site Plan Detail c.1899
Image Courtesy GCA

1881-1899 KEY TO BUILDINGS

HSR Name	Year Built	Original Use	Architect	Subsequent Uses	Current Use	Alternate Building #	Area*
A	**1871-80**	**Male Ward**	**Gambrill & Richardson**	**Administrative offices**	**Vacant**	**10**	**51,080**
AB	**1871-80**	**Administration Building**	**Gambrill & Richardson**		**Vacant**	**45**	**63,241**
B	**1871-80**	**Male Ward**	**Gambrill & Richardson**		**Vacant**	**9**	**49,446**
C	*1873-80*	*Male Ward*	*Gambrill & Richardson*		*Demolished 1968*	*8*	
CB	*1879-80*	*Cow Barn*	*[H.H. Richardson]*	*Industrial bldg & Storehouse*	*Demolished c. 1965*	*6*	
CL1	*c. 1880-1899*	*Coal Shed*	*(unknown)*		*Removed (date unknown)*		
CS	*1879-80*	*Carriage Stable*	*[H.H. Richardson]*	*Auto Garage & Paint Shop*	*Demolished c. 1965*	*5*	
D	*1873-80*	*Male Ward*	*Gambrill & Richardson*		*Demolished 1968*	*7*	
E	*1873-80*	*Male Ward*	*Gambrill & Richardson*		*Demolished 1968*	*6*	
EB	*1895-97*	*Elmwood Building/ Reception Hospital for Acute & Infirmary Cases*	*Isaac Perry*		*Demolished 1928*		
EBK	*1895-97*	*Kitchen for EB*	*Isaac Perry*		*Demolished 1928*		
F	**1889-91**	**Female Ward**	**W.W. Carlin**		**Vacant**	**44**	**53,430**
FK	**1893-94**	**Female Kitchen**	**Green & Wicks**	**Later added Community Store**	**Vacant**	**43, 27**	**12,538**
G	**1893-95**	**Female Ward**	**Green & Wicks**		**Vacant**	**42**	**53,182**
GH1	**1888**	**Greenhouse**	**W.W. Carlin**		**Partially extant**	**11, 28**	**0**
GH2	*1892*	*Greenhouse*	*(unknown)*		*Removed (date unknown)*		
H	**1894-95**	**Female Ward**	**Green & Wicks**		**Vacant**	**40**	**37,731**
HG	*1886-87*	*Hog House*	*[W.W. Carlin]*		*Removed (date unknown)*	*1*	
HN	*1885-86*	*Hen House*	*W.W. Carlin*		*Removed (date unknown)*	*3*	
I	**1894-95**	**Female Ward**	**Green & Wicks**		**Vacant**	**39**	**37,731**
J	**1894-95**	**Female Ward**	**Green & Wicks**		**Vacant**	**38**	**19,200**
LB1	*1879-80*	*Laundry*	*[H.H. Richardson]*		*Demolished 1977*	*25, 21*	
	1893	*Laundry Additions*	*Green & Wicks*		*Demolished 1977*		
	1897	*Laundry Additions*	*Isaac Perry*		*Demolished 1977*		
MK	**1972-80**	**Male Kitchen**	**Gambrill & Richardson**	**Grounds Dept.**	**Vacant**	**12, 29**	**8,120**
NH1	*1893*	*Nurses Home*	*Green & Wicks*	*Attendants Home*	*Burned 2005*	*26, 14*	*22,100*
PS	*1893*	*Paint Shop*	*Green & Wicks*	*Mortuary*	*Demolished 1977*	*18*	
SD1	*1885-86*	*Shed*	*W.W. Carlin*		*Demolished 1930*	*2*	
SD2	*c. 1880-1899*	*Shed*	*(unknown)*	*Paint Shop*	*Removed (date unknown)*	*19*	
SD3	*1885-86*	*Shed*	*W.W. Carlin*		*Removed c. 1930*		
SH1	*1889*	*Summer House / Pavilion*	*[W.W. Carlin]*		*Removed (date unknown)*	*33*	
SH2	*1889*	*Summer House / Pavilion*	*[W.W. Carlin]*		*Removed (date unknown)*	*34*	
SH3	*1889*	*Summer House / Pavilion*	*[W.W. Carlin]*		*Removed (date unknown)*	*25*	
WB	**1872-76**	**Workshop & Boiler**	**Gambrill & Richardson**		**Plant Operations / Power Plant**	**22**	**34,090**
	1886-87	**Blacksmith & Plumbing Shop Additions**	**[W.W. Carlin]**				
	1895	**Coal Shed Addition**	**Green & Wicks**				
WD	*1886-87*	*Dormitory*	*[W.W. Carlin]*		*Demolished 1977*	*20,23*	

* The areas of buildings are represented in gross sq. ft. and include the area of basements.
NOTE : **Bold -** Refers to EXTANT buildings; *Italics* - Refers to DEMOLISHED/MISSING buildings.
[ ] is used to indicate attribution to architect(s) where absolute historical evidence is not available.

Fig B.22 **View of Elmwood Building across the pond in the northwest portion of site**
Image courtesy Buffalo Psychiatric Center

Fig B.23 **View of Nurses Home (NH1)**
Image courtesy Buffalo Psychiatric Center

Fig B.24 **View of Greenhouse (GH1)**
Image courtesy Buffalo Psychiatric Center

This 100-bed facility was called the "Reception Hospital for Acute and Infirmary Cases," also known as the Elmwood Building owing to its location northeast of the main building, fronting Elmwood Avenue. The designs for this building had been partially completed by architects Green and Wicks who were employed by the Board of Managers, but a new law passed by the Legislature put all new construction under supervision of the State Architect, Isaac G. Perry, necessitating the entire redrawing of the plans. The stone gates on Elmwood Avenue which were about 900 feet from Forest Avenue were moved opposite the new hospital and a roadway from Elmwood Avenue was partially constructed to it (AR 1896, 6). A low bit of land between the Infirmary Hospital and the main buildings, which naturally contained water, was converted into an ornamental pond (Fig. B.22). This not only added to the landscape but afforded a sort of barrier between visitors to the infirmary and recreation grounds for the men patients. A narrow neck of land inbetween the pond, with elm trees was used for constructing a vehicular and pedestrian bridge. During this time, street car tracks were also laid beside the fence on Elmwood Avenue.

The impact of the second major development in mental health treatment during the 1890's — the rising preference of cottage-plan layouts — resulted in the initiation of a number of new outbuildings at the Buffalo State Hospital. The Nurses' Home was constructed in 1893 to provide on-site accommodation (Fig. B.23). It was a two-story building with a capacity of 30 attendants. The building also housed a training school for nurses, one for patients, a parlor and a library for staff use. Other outbuildings constructed before the end of the century included three summer houses or pavilions (Fig. B.27) for patient use in 1889, and two greenhouses built in 1888 and 1892 respectively (B.24).

The Asylum's farm (Fig. B.25-26) had never been a big success since the beginning of its operation, and by the end of the century its condition had only worsened. The clayey soil on site was regularly blamed for poor production of vegetables. The farm was mostly utilized for raising grain and grass, and for pasturage. The typical produce included oats, hay, potatoes, and beets (AR 1882, 32). With time, it became increasingly difficult to sustain a working farm on the asylum premises. Encroachments by the city on hospital property and increasing number of residences on site led to problems of drainage from cow barns and piggery necessitating the purchase of alternate farms out in the country (AR 1896, 12). With the appearance of tuberculosis in herds of cows in 1899 it was proposed to reduce farming considerably and use most of the farmland as recreation grounds by the patients.

Therefore by the turn of the century the Buffalo State Asylum had indeed come a long way. In the 30 years since its inception, and 20 years of its operation, the facility had not only been rechristened to Buffalo State Hospital, it had continually experienced various transformations that are reflective of larger patterns in the evolution of mental health treatment in the United States. Consequently, the buildings that made up this facility were not just mute backdrops to this change but active participants. More importantly, a century later their surviving vestiges now stand as invaluable testimony to this evolution.

Fig B.25 **Farming at Buffalo State Insane Asylum**
Image courtesy Buffalo Psychiatric Center

Fig B.26 **Farming at Buffalo State Insane Asylum**
Image courtesy Buffalo Psychiatric Center

Fig B.27 **Summerhouse in the asylum grounds**
Image courtesy Buffalo Psychiatric Center

Tabular Chronology of Developement and Use (1872-1899)

Date		Event	Description	Source
1797		Asylum development in NY	The New York Hospital, located in NY City first received mentally ill patients.	AR 1911, 12
1821		Asylum development in NY	Bloomingdale Asylum, insane department of the NY Hospital was completed	AR 1911, 12
1843		Asylum development in NY	New York State Asylum at Utica was established	
1864		Administrative initiation of Buffalo Insane Asylum	Two prominent Buffalonians, Dr, James P. White & Mr. Ambrose Yaw, sent a letter to the State Legislature in Albany expressing concern for adequate facilities for the insane in Western New York.	HABS
1865		Legislative Bill	A Bill was passed by the Legislature of the State of New York to establish two asylums in the eastern and western portions of the State.	
1867		Asylum development in NY	Hudson River State Hospital for the Insane, Poughkeepsie, NY was built	
1868		Olmsted in Buffalo	Olmsted began work on his city-wide park system for Buffalo	Kowsky 1987
1869		Richardson in Buffalo	William Dorsheimer house completed, designed by H.H. Richardson	NRHP nomination
1869	13-Mar	Site selection	NY legislature passed an act authorizing the Governor to appoint five commissioners to select a suitable site in the 8th Judicial District for the asylum. [1]	NY State Senate Documents 1870
1869		Board of Managers	The Board of Managers of the Buffalo State Insane Asylum was formed by then Governor John T. Hoffman	
1869		Asylum development in NY	Willard Mental facility at Utica completed	NRHP nomination
1870	23-Apr	Site finalization	State Legislature approved Buffalo as the site for state asylum in western New York	NRHP nomination
1870	May	Architect selection	H.H. Richardson chosen as Architect for the project	NRHP nomination
1870	25-Aug	Plan approval	The Board adopted a sketch of the ground plan devised by Dr. Gray, who was on the committee of plans and specifications.	
1871	18-Jan	Site survey	H.H. Richardson & F.L. Olmsted surveyed the 203 acres in north Buffalo	Kowsky 1992
1871	3-Mar	Building designs accepted	Board accepted the designs of Gambrill & Richardson	HABS

[1] The commissioners were Dr. John P. Gray of Utica, Dr. James P. White of Buffalo, Dr. Milan Baker of Warsaw, Dr. Thomas D. Strong of Westfield, and Dr. William B. Gould of Lockport. *(Andrews 1882, 364)*

Date		Event	Description	Source
1871	15-May	Site survey	Topographical maps and surveys were completed.	AR 1871, 19
1871	25-May	Landscape designs accepted	Olmsted's landscaping plans were approved	NRHP nomination
1871	13-Jun	Ground broken	Excavation at the site commenced	NRHP nomination
1871		Grounds work	A picket fence 7' high & 1 3/4 mile in length was constructed on east, north and west to enclose the construction grounds	AR 1871
1871	21-Aug	Administration building	First stone was laid in the trenches of the foundation of the central building.	AR 1871
1872	18-Sep	Cornerstone was laid	The building cornerstone was laid in a grand ceremony. Pamphlet printed for the event contains a lithograph of a drawing of the structure as completed.	NRHP nomination
1874		Asylum development in NY	Middletown Asylum, NY completed	NRHP nomination
c.1875-1880		Workshop & Boiler (WB) building	Construction of Workshop and Boiler building (WB) was done. Also known as the Workshop and Bakery Building	
1875		Richardson's dissatisfaction with some construction	Report of Architect HHR to Board of Managers	AR 1875, 11
1876		Men's' Wards C, D & E	Shortage of funds caused three outer wards on east to be built in brick	NRHP nomination
1878		Grounds work	About 5 acres of land between main approach road and Forest Avenue was thoroughly sub-soiled, graded and surfaced from 4-6 inches deep.	AR 1878, 9
1879	14-Apr	Grounds work	Work was resumed on the grounds. That entire portion which had been graded, fertilized and seeded during the previous season was prepared for planting with trees and shrubbery.	AR 1879, 10
1879		Vehicular Circulation	A thoroughly permanent traffic driveway was built, commencing on Forest ave, 384 ' west of the west side of the admin bldg and running thence to the workshop, engine room, bakery and kitchen, and extending northerly to the barn.	AR 1879, 10
1879		Pedestrian Circulation	A sidewalk 466' long was constructed from Admin bldg to workshop. 925' of walks were also constructed from main entrance to the buildings.	AR 1879, 11
1880		Male wards completed	Administration Bldg.(AB), Male wards A B, C, D and E, and Men's' Kitchen(MK) completed.	NRHP nomination
1880		Laundry (LB), Cow-Barn (CB) and Carriage Stables (CS) completed	A cluster of outbuildings located north of the wards was completed	
1880	Jan	Project cost	Total cost of project had reached $1,285,785.56	NRHP nomination
1880		Permanent fence request	The Building Superintendent Peter Emslie requested for funds in the Annual Report for building a permanent iron fence at the site boundary.	

Date		Event	Description	Source
1880		First Superintendent	Dr Judson B. Andrews started as the first Superintendent of the Institution. He was the founder and later President of the New York State Medical Association and an editor of the Journal of Insanity	
1880	15-Nov	Public Opening	Formal opening of the Buffalo State asylum was convened	
1880	18-Nov	First patient was admitted	Although only male wings were as yet complete, the Board decided to admit patients of both sexes.	AR 1880, 21
1881	17-Sep	Chapel dedication	The Chapel on 4th floor of Admin bldg was dedicated.[2] Earlier that year in March, Rev. Dr. Albert Chester of Buffalo was appointed Chaplain of the asylum.	AR 1881, 28
1884		Attendant's training school	Training school for attendants/ nurses was established	AR 1915, 44
1886		Renovation of basements	Basements experienced extensive water-logging. Repair was done by digging a trench, about 6' from the walls of the buildings, with drain pipes carried around the whole perimeter and emptied into a ravine in the rear, leading to Scajaquada Creek. Basement floors were then re-laid in English Portland Cement upon a well-grouted base of 4".	AR 1886, 6
1888		Number of patients	Patient population reported as 630, approximately 400 residing at any given time.	
1888		Introduction of electricity	Gas lighting was changed to electric lighting	HABS
1888		Window alterations	Windows in each of the dining rooms of Male D wards were built up, as there was an excess of glass surface for lighting, which also made the rooms difficult to heat in extreme cold weather.	AR 1888, 6
1888		Window alterations	Mullions of windows at the rear end of the extensions of B wards (bldg 9) were removed, & set with larger sashes of plate glass. This increased amount of light, making the extensions brighter and cheerful, and strength of glass rendered it unnecessary to protect the windows from being broken, even in the disturbed wards.	AR 1888, 6
1888		Window alterations	Windows of the chapel & its approaches were protected by wire screens placed upon the outside, to prevent patients from further suicidal attempts by jumping from this height.	AR 1888, 6
1888		Furnishings	Several of the halls (corridors) in the extensions were carpeted, thus making them more comfortable and pleasant for the sick & feeble patients.	AR 1888, 6
1888		Furnishings	Outside of the sash & wooden cornices of the ward buildings were painted, and walls of the convalescent ward on the men's division were tastefully decorated. This work was done by the regular painter of the asylum, assisted by the labor of patients.	AR 1888, 6

[2] Until this time, an unoccupied ward was being used for all assemblages of patients.

Date		Event	Description	Source
1888		Introduction of lead joints	Cement joints in waste pipes from the closets of main building were replaced with lead	AR 1888, 7
1888		Ventilators in Chapel	Two large ventilators were placed in the chapel ceiling, so that the air of the room could be rapidly changed. This was a much-needed improvement as the room was used for large congregations and was 'entirely unprovided with ventilation'.	
1888		Construction of new Coal Shed	A coal shed was constructed along the railroad switch near the Workshop & boiler (WB) building	AR 1888, 7
1888	Jan	Greenhouse (GH1) built	Construction of Greenhouse (bldg #11) was completed.	AR 1888, 6
1889	11-Jul	Construction of Women's wards	Ground broken for building Women's' Ward Bldg F (#44)	AR 1889, 6
1889		Summer Houses (SH1, SH2 & SH3)	Construction of 3 pavilions or summer houses for the use & protection of patients while on grounds during warm or rainy weather was completed.	AR 1889, 6
1889		Vehicular circulation	Building of roadway from Rees St. to lumber shed & horse barns. This was necessitated by the construction of women's ward buildings on west thus cutting of access from front to back that was formerly used in this part of the site.	AR 1889, 7
1890		Name Change	Name changed from 'New York State Insane Asylum' to 'Buffalo State Hospital'	Dowdall 1996, xiv
1892		Number of patients	Patient population reported as 935, approximately 600 residing at any given time.	AR 1892, 7
1892		Chapel renovation	The Chapel was repainted and decorated and the position of the pulpit so changed as to add to the comfort of the audience, by removing them from the direct glare of light from the stained glass windows.	AR 1892, 11
1892		Green house (GH2) constructed	An additional greenhouse, designed specifically for roses and carnations was put up	AR 1892, 7
1892		Building Use	One of the corridors connecting the Female Ward Bldg. # F with the Admin Bldg was furnished with desks and utilized for patients' schools during morning hours and in the afternoon for attendants' training school.	AR 1892, 11
1893		Female Ward G	Contruction on Female Ward G was started- it lasted till 1895	
1893		Nurses' Home (NH) built	Building of Nurses' Home was completed. A 2-story brick building with dormer windows in the roof, which adds a third story. Capacity 30 attendants	AR 1893, 8
1893		Electric Light Plant	A contract for installing an electric-light plant was made with the Western Electric Company.	AR 1893, 8
1894		Second superintendent	Dr Arthur W. Hurd succeeded Dr. Andrews as Superintendent after he passed away in August	
1895	Mar	Women's ward G	Construction of Women's Ward Bldg G was completed	AR 1895, 7

Date		Event	Description	Source
1894	Mar	Women's Kitchen (WK)	Kitchen building (#43) on women's side completed. It also contained a Bakery, and a small diet kitchen, used for sick patients and instruction of nurses.	AR 1894, 8
1895		Women's wards H, I, J	Women's wards H, I, J (# 40, #39, #38) completed	AR 1912, 17
1895		Boundary iron fence	A new iron fence was erected from the administration building, in both easterly and westerly direction, to the corresponding gateways on Forest avenue	AR 1895, 14
1896		Laundry addition	The laundry building was enlarged by a wing at the easterly end.	AR 1896, .9
1896		Verandah Addition	A verandah was added to the east end of Female Ward Building # J. This work was done by hospital mechanics.	AR 1896, .9
1897		Reception Hospital for Acute & Infirmary Cases, also called Elmwood Building (EB) was built	This building had full hydrotherapeutic & electrical apparatus, operating rooms, labs etc. It fronted Elmwood Avenue. It is also referred to as the The Elmwood Building - A reception Hospital for Acute & Infirmary cases.	AR 1912 , 18
c.1899			Aftercare was introduced at the Buffalo State Hospital	

Fig B.28 **Treatment Room in Elmwood Building**
Image courtesy Buffalo Psychiatric Center

II. 1900–1945: EXPANSION PHASE

The transformation of the Buffalo State Asylum of the nineteenth century into the Buffalo State Hospital of the twentieth century involved several changes, including expansion in size and a shift in emphasis on medicalization of the culture of treatment (Dowdall 1996, 92). This trend was reflected in a number of physical developments on site as well as noticeable changes in organizational set-up. While the number of patients continued to rise throughout this period, the physical expansion was somewhat limited by the eventual truncation of almost half the site in 1927, to make way for a new college campus.

The most significant impact on the institution at the turn of the century was its ever-increasing size and severe overcrowding (Fig. B.29), resulting in outward expansion and bifurcation of functions to give rise to new structures on site. As mentioned before, this led to the erstwhile linear plan asylum increasingly giving way to a cottage type plan. Between 1900 and 1950, the overall admission rates at state mental hospitals in the United States approximately doubled (Center for Mental Health Services 1994b). The total number of patients under care at Buffalo State Hospital was reported to be almost 2000 by 1902 (AR 1902, 5), reflecting almost a three-fold increase from the previous decade and the original designed capacity. As expected, corresponding increases in space and staff struggled to keep pace with this tremendous increase in patient population. At the beginning of the twentieth century, the hospital board was continually requesting funds to accomplish construction of a number of ancillary buildings on site, while also making minor alterations to existing ones.

Fig B.29 **Overcrowding at Buffalo State Hospital**
Image courtesy Buffalo Psychiatric Center

It was persistently noted that the chapel on the fourth floor of the Administration Building was very small, poorly located, barring old and feeble patients from accessing it, and not ventilated properly (AR 1895, 14). Consequently, it was proposed to build another chapel on the grounds, doubling as an amusement hall and combined with a gymnasium.

Fig B.30 **Chapel and Amusement Hall (CH)**
Image courtesy Buffalo Psychiatric Center

Fig B.31 **Male Attendants Home (MAH)**
Image courtesy Buffalo Psychiatric Center

Fig B.32 **Superintendent's Residence (SPR)**
Image courtesy Buffalo Psychiatric Center

The construction of the new Reception Hospital (Elmwood Building) also made it imperative to have a new centrally located chapel that was easily accessible from most buildings on site.

In addition, this relocation of the Chapel would allow the utilization of the vacated space for patients' wards – something highly desired in a hospital plagued by overcrowding. It was subsequently proposed that staff residences on the second and third floors of the Administration Building should also be relocated at this time to new cottages on site and this space too, be utilized for patients' wards. It was felt that this would perhaps be the best way to create additional patient space at the least cost.[1] Finally in 1905, the Chapel and Amusement Hall (CH) was built northeast of the Administration Building (Fig. B.30), slightly east of the Workshop and Boilers. Also known as Andrews Hall (after J.B. Andrews, the first Superintendent), this one-story rectangular brick building contained a hall with a stage at the north end. Unfixed seating was intentionally opted for, to allow its use as a recreation hall and gymnasium. A small balcony projected into the hall on the south side. With its stone foundation, brick walls, arched windows and gable roof, this building effectively tied in with the other buildings on site. The Male Attendant's Home (MAH) was built directly east of this building (Fig. B.31). It was a three-story rectangular brick building with a central corridor and rooms on either side. A porch on the south façade of the building marked its entrance.

The location of this building, and the Nurses Home (1893) at a roughly corresponding location on the west side, set the tone for location of other ancillary buildings on site. Over time, the outdoor space created by the (V-shaped) main buildings on the south extending up to these ancillary buildings on the north became the central hub of activity exclusively for the use of patients and hospital employees. Paved and unpaved cinder paths crisscrossed this landscape to connect various outbuildings to each other and to the main ward buildings.[2]

The other important buildings constructed in 1905 included the Superintendent's Residence (SPR) [Fig. B.32] and another Staff Residence (R1) in the south east corner of the site. Their location is reflective of the strategic desire on the part of the hospital administration to maintain a distinct identity from the patients' wards and quarters that were clustered to the north. Although it was mentioned in an earlier Annual Report (1895, 14) that the architectural style employed for the residences would conform to the other hospital buildings on-site, to maintain continuity, this suggestion was later ignored as evident in the final built design of the two residences, that with their polychromatic brick facades and residential vocabulary, mark a clear transition from the hospital wards in the background.

The turn of the century also witnessed a demand for specialized outbuildings, the need for which was born out of new developments in the field of mental health. For example, the discovery of tuberculosis and its contagiousness in the latter half of the 19th century led to demands for isolated pavilions for infected patients. The Annual Report of 1901 notes that to ensure a *"fair degree of isolation …in a crowded hospital …a small hospital to accommodate about fifteen of each sex be established upon the grounds"* (17). Consequently, the Female Tuberculosis Ward (FTW) was built in 1909 (Fig.

1 Around 1907, the upper floors of the Administration building were converted into dormitories for women patients (AR 1907, 5).

2 By the first decade of the 19th century, the women's side of the grounds did not have paved cement walks but only cinder paths.

B.33). As mandated by the administration, the building was a wood-frame structure so constructed, that if its "*destruction, by fire or otherwise seemed necessary, on account of infection, the loss would be inconsiderable*" (AR 1901, 18). Situated north of the main women's wards, the building was "*sufficiently close for easy access of food*" and had ample porches for the fresh-air treatment of the disease. A similar ward building for

Fig B.33 **Female Tuberculosis Ward (FTW)**
Image courtesy Buffalo Psychiatric Center

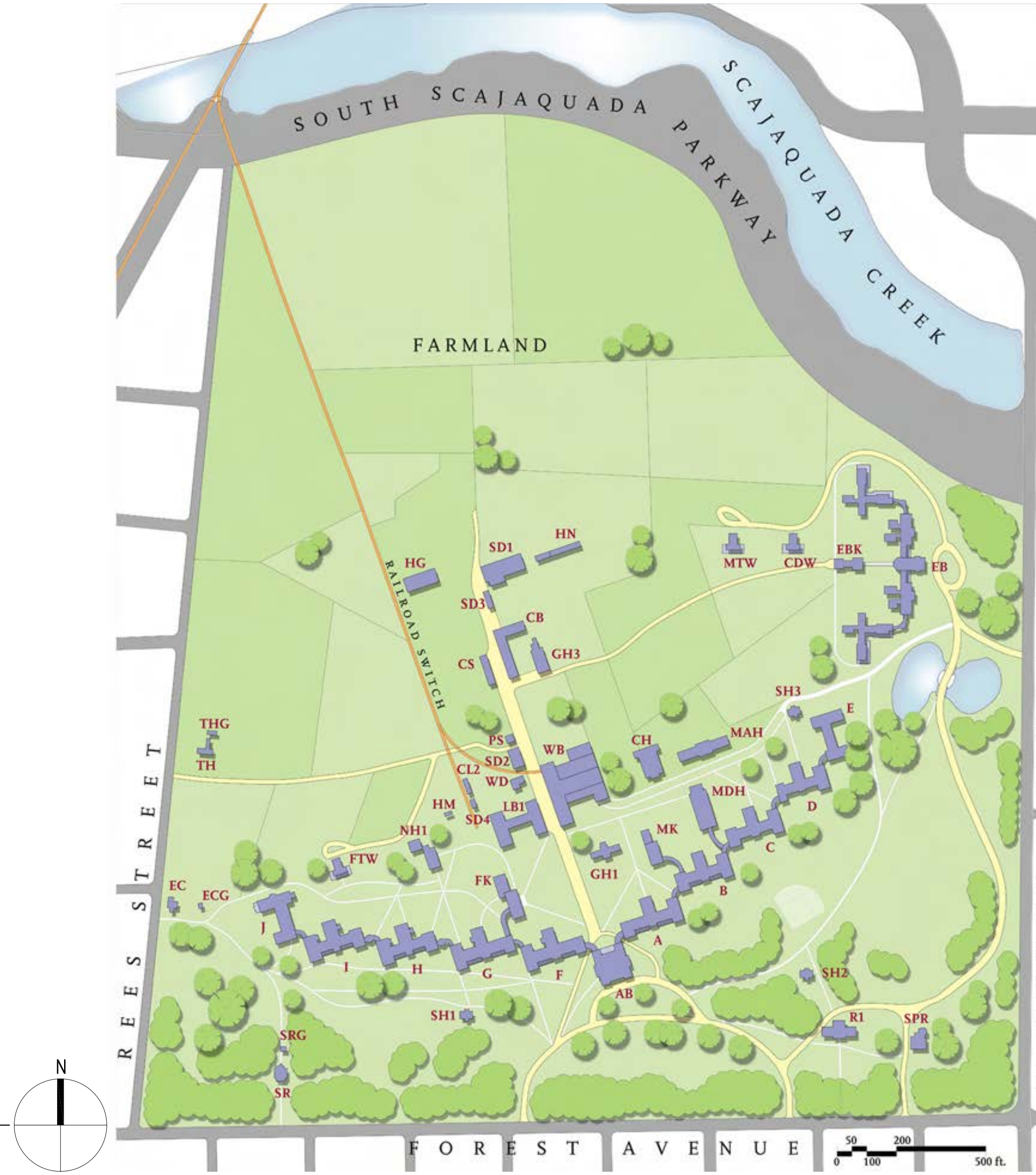


Fig. B.34 Site Plan c.1926
Image Courtesy GCA

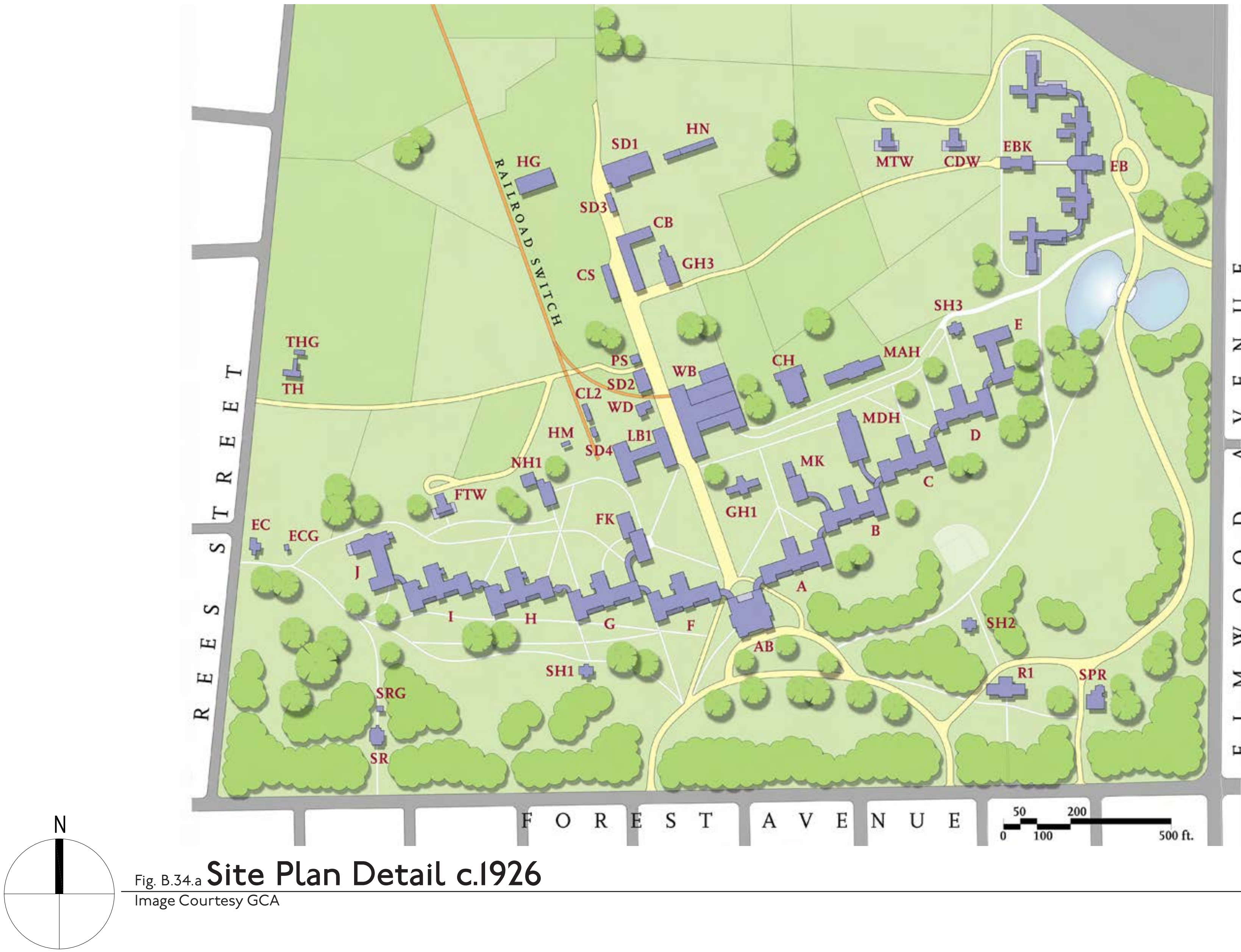


Fig. B.34.a **Site Plan Detail c.1926**

Image Courtesy GCA

1900-1926 KEY TO BUILDINGS

HSR Name	Year Built	Original Use	Architect	Subsequent Uses	Current Use	Alternate Building #	Area*
A	1871-80	Male Ward	Gambrill & Richardson	Administrative offices	Vacant	10	51,080
AB	1871-80	Administration Building	Gambrill & Richardson		Vacant	45	63,241
B	1871-80	Male Ward	Gambrill & Richardson		Vacant	9	49,446
C	1873-80	Male Ward	Gambrill & Richardson		Demolished 1968	8	
CB	1879-80	Cow Barn	[H.H. Richardson]	Industrial bldg & Storehouse	Demolished c. 1965	6	
CDW	1911-12	Contagious Diseases Ward	(unknown)		Moved, then demolished (date unknown)		
CH	1904-05	Chapel & Amusement Hall	George L. Heins		Collapsed 1996	17, 23	15,908
CL2	c. 1916-1924	Coal Shed	(unknown)		Removed (date unknown)		16
CS	1879-80	Carriage Stable	[H.H. Richardson]	Auto Garage & Paint Shop	Demolished c. 1965	5	
D	1873-80	Male Ward	Gambrill & Richardson		Demolished 1968	7	
E	1873-80	Male Ward	Gambrill & Richardson		Demolished 1968	6	
EB	1895-97	Elmwood Building/ Reception Hospital for Acute & Infirmary Cases	Isaac Perry		Demolished 1928		
EBK	1895-97	Kitchen for EB	Isaac Perry		Demolished 1928		
EC	c. 1900	Engineer's Cottage	(unknown)		Removed (date unknown)	11	
ECG	c. 1910	Auto Garage	(unknown)		Removed (date unknown)	12	
F	1889-91	Female Ward	W.W. Carlin		Vacant	44	53,430
FK	1893-95	Female Kitchen	Green & Wicks	Later added Community Store	Vacant	43, 27	12,538
FTW	1909	Female Tuberculosis Ward	Franklin B. Ware	Library & Sewing Room	Vacant	27, 13	3,548
G	1893-95	Female Ward	Green & Wicks		Vacant	42	53,182
GH1	1888	Greenhouse	W.W. Carlin		Partially extant	11, 28	0
GH3	c. 1916	Greenhouse	(unknown)		Removed (date unknown)	7	
H	1894-95	Female Ward	Green & Wicks		Vacant	40	37,731
HG	1886-87	Hog House	[W.W. Carlin]		Removed (date unknown)	1	
HM	c. 1916-1924	The Hermitage	(unknown)		Removed (date unknown)	15	
HN	1885-86	Hen House	W.W. Carlin		Removed (date unknown)	3	
I	1894-95	Female Ward	Green & Wicks		Vacant	39	37,731
J	1894-95	Female Ward	Green & Wicks		Vacant	38	19,200
LB1	1879-80	Laundry	[H.H. Richardson]		Demolished 1977	21	
MAH	1904-05	Male Attendants Home	George L. Heins	Nurses Training School	Vacant	24	23,772
MDH	1923-24	Male Dining Hall & Kitchen	Sullivan W. Jones		Vacant	13	34,950
MK	1872-80	Male Kitchen	Gambrill & Richardson		Vacant	12, 29	8,120
MTW	1913	Male Tuberculosis Ward	Lewis F. Pilcher	Men's O.T. Ward	Moved, then demolished	8	
NH1	1893	Nurses Home	Green & Wicks	Attendants Home	Burned 2005	26, 14	22,100
PS	1893	Paint Shop	Green & Wicks	Mortuary	Demolished 1977	18	
R1	1904-05	Staff Residence	George L. Heins		Burned c. 1973	2, 35	

HSR Name	Year Built	Original Use	Architect	Subsequent Uses	Current Use	Alternate Building #	Area*
SD1	*1885-86*	*Shed*	*W.W. Carlin*		*Demolished 1930*	*2*	
SD2	*c. 1880-1899*	*Shed*	*(unknown)*	*Paint Shop*	*Removed (date unknown)*	*19*	
SD3	*1885-86*	*Shed*	*W.W. Carlin*		*Removed c. 1930*		
SD4	*c. 1916-1924*	*Shed*	*(unknown)*		*Removed (date unknown)*	*17*	
SH1	*1889*	*Summer House / Pavilion*	*[W.W. Carlin]*		*Removed (date unknown*	*33*	
SH2	*1889*	*Summer House / Pavilion*	*[W.W. Carlin]*		*Removed (date unknown)*	*34*	
SH3	*1889*	*Summer House / Pavilion*	*[W.W. Carlin]*		*Removed (date unknown)*	*25*	
SPR	**1904-05**	**Superintendent's Residence**	**George L. Heins**		**Management Services**	**1, 36**	**10,320**
SR	**1909-10**	**Steward's Residence**	**Franklin B. Ware**		**Emergency Hostel**	**35, 31**	**4,589**
SRG	*1910*	*Auto Garage*	*(unknown)*		*Removed (date unknown)*		*595*
TH	*c. 1879*	*Tenant House*	*(unknown)*		*Removed (date unknown)*	*10*	
THG	*c. 1910*	*Auto Garage*	*(unknown)*		*Removed (date unknown)*		
WB	**1872-76**	**Workshop & Boiler**	**Gambrill & Richardson**		**Plant Operations / Power Plant**	**22**	**34,090**
	1886-87	**Blacksmith & Plumbing Shop Additions**	**[W.W. Carlin]**				
	1895	**Coal Shed Addition**	**Green & Wicks**				
WD	*1886-87*	*Dormitory*	*[W.W. Carlin]*		*Demolished 1977*	*20,23*	

* The areas of buildings are represented in gross sq. ft. and include the area of basements.
NOTE : **Bold -** Refers to EXTANT buildings; *Italics* - Refers to DEMOLISHED/MISSING buildings.
[ ] is used to indicate attribution to architect(s) where absolute historical evidence is not available.

Fig B.35 **Male Tuberculosis Ward (MTW)**
Image courtesy Buffalo Psychiatric Center

patients with other contagious diseases was built in 1913, and the Male Tuberculosis Pavilion was constructed in 1916 (Fig. B.35). Both of these cottages were sited west of the Elmwood Building (the Reception Hospital for Acute and Infirmary Cases).

Overcrowding continued to plague the hospital throughout this period — beds occupied corridors and corners not intended for them. This overcrowding was not only uncomfortable but also dangerous. One accident noted was the suicide of a young woman who outran her nurse up one of the attic stairways, jumped into the elevator shaft, to the top of the elevator below, and fractured her skull (AR 1902, 5). Overcrowding of patients also led to increased demand for administrative space. Just before the turn of the century, an addition was made on the rear of the Administration Building to increase office space. A proposal for doing so first appears in 1896 - it was proposed that four rooms be built in the rear (Fig. B.37), in a "*manner which would not detract in any way from the architectural appearance*" of the building, while giving much relief to the crowded administrative quarters (AR 1896, 10). It is not clear when these rooms were put in, or whether the addition was done in two phases; however, historical accounts indicate that by 1918 the two story addition was in place. The tower roofs of the administration building were also most probably changed in 1918 from clay tile to copper sheeting. Historical accounts indicate that the copper was re-installed in 1945 (Waite 1975, 1).

Ever since the early 1900's the hospital administration had continually begun stating the need for porches[3] on the men's wards for use in inclement weather, that were meant to be a

3 Porches are referred to as 'verandas' in the Annual Reports from this time.

Fig B.36 **Hallway in Male Ward**
Image courtesy Buffalo Psychiatric Center

Note placement of beds in corridor due to overcrowding

Fig B.38 **Verandas on south facade of Male Ward**
Image courtesy Buffalo Psychiatric Center

Fig B.37 **c.1918 rear addition to Administration Building**
Image courtesy Buffalo Psychiatric Center

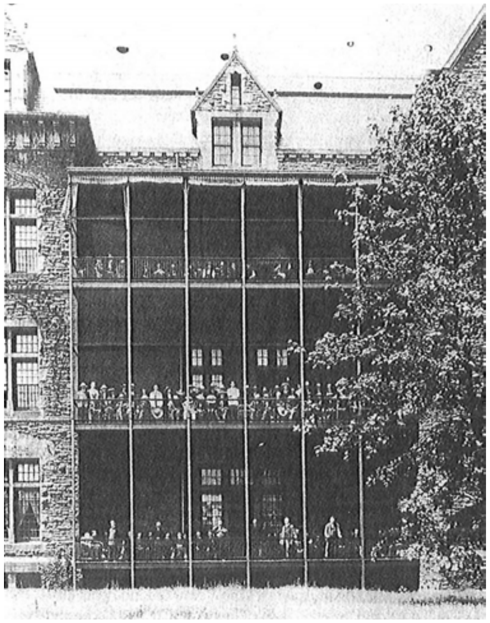


Fig B.39 **Verandas on south facade of Male Ward**
Image courtesy Buffalo Psychiatric Center

Fig B.40 **Womens' Occupational Therapy Ward** in the erstwhile Chapel on fourth floor of Administration Building
Image courtesy Buffalo Psychiatric Center

Fig B.41 **Mens' Occupational Therapy Ward**
Image courtesy Buffalo Psychiatric Center

Fig B.42 **Interior view of Dining Hall**
Image courtesy Buffalo Psychiatric Center

duplication of those already present on the women's side (AR 1907, 7). Often mistaken with the existing metal porches on the building (that have chain-link grilles), these earlier porches (Fig. B.38-39), although put up in roughly the same location on each ward floor as the current ones, were more elegant in their design, with sloped roofs, slender metal columns and waist-height railings. They were shaded by cloth awnings and drapes, imparting them a much more domestic feel, than the caged-in porches which later replaced them during the 1940-50's (Fig. B.47). The shift towards the more enclosed version of porches was probably a function of staff shortages and concerns about patient safety and security (Dowdall 1992).

Aftercare of patients which had been introduced shortly before 1900 was expanded in 1908 to include a two-week stay in a 15-bed farm cottage for male convalescent patients in Wilson, NY, 40 miles from Buffalo on the shores of Lake Ontario. Though not originally meant for winter use, it was later used all year round due to overcrowding (AR 1910, 3). The use of this cottage continued through 1912.

Occupational therapy (O.T.) which had always been a part of the treatment methodology at Buffalo State Hospital received new impetus in 1921 when a professional director was appointed and a corps of assistants was trained, coinciding with the supply of two instructors by the federal government to work with veterans. Consequently, space was demarcated in the form of three rooms in the main ward buildings for occupational therapy classes (AR 1921, 21). From relatively simple tasks in the past century, O.T. extended its reach over time, to include training patients in handicrafts, weaving, painting, ceramics and bookbinding amongst other things. There were two O.T. centers for men – a large pre-industrial shop and a cottage in the northern part of the site. Both of these were established after the truncation of the site in 1927. The women's O.T. center was subsequently located on the fourth floor hall of the Administration Building (Fig. B.40).

The capacity of the hospital had reached 1,700 patients by 1921, including 680 men and 1,020 women (AR 1921, 20). Beds were too close together in the dormitories, most 'single' rooms had double beds and the corridors and main halls were also used for sleeping. Dining rooms being too small to accommodate the large number of patients, tables were set up in the main halls, decreasing even more the day space for patients. Thus it was suggested to build two three-story dining rooms (one for each sex) connected by corridors to the three floors of the main building – an arrangement which allowed conversion of present dining rooms into dormitories for an additional 300 patients. As a result, a three-story dining hall for male patients was put up in 1923, and a similar one for the women was constructed in 1930 (Fig. B.42).

By far, the biggest impact on the hospital during this time was the truncation of the site in 1927, when the city of Buffalo made an appeal to the state for return of half the hospital property. This resulted in loss of almost 100 acres of land that formed the entire north half of the site and mandated the relocation of all hospital buildings that were on this portion (Fig. B.43). The most significant of these was the Elmwood Building Hospital that had been built in 1897. It was demolished and not relocated on the new site. Other smaller cottages were relocated though—for example, the male tuberculosis pavilion was relocated at the north edge of

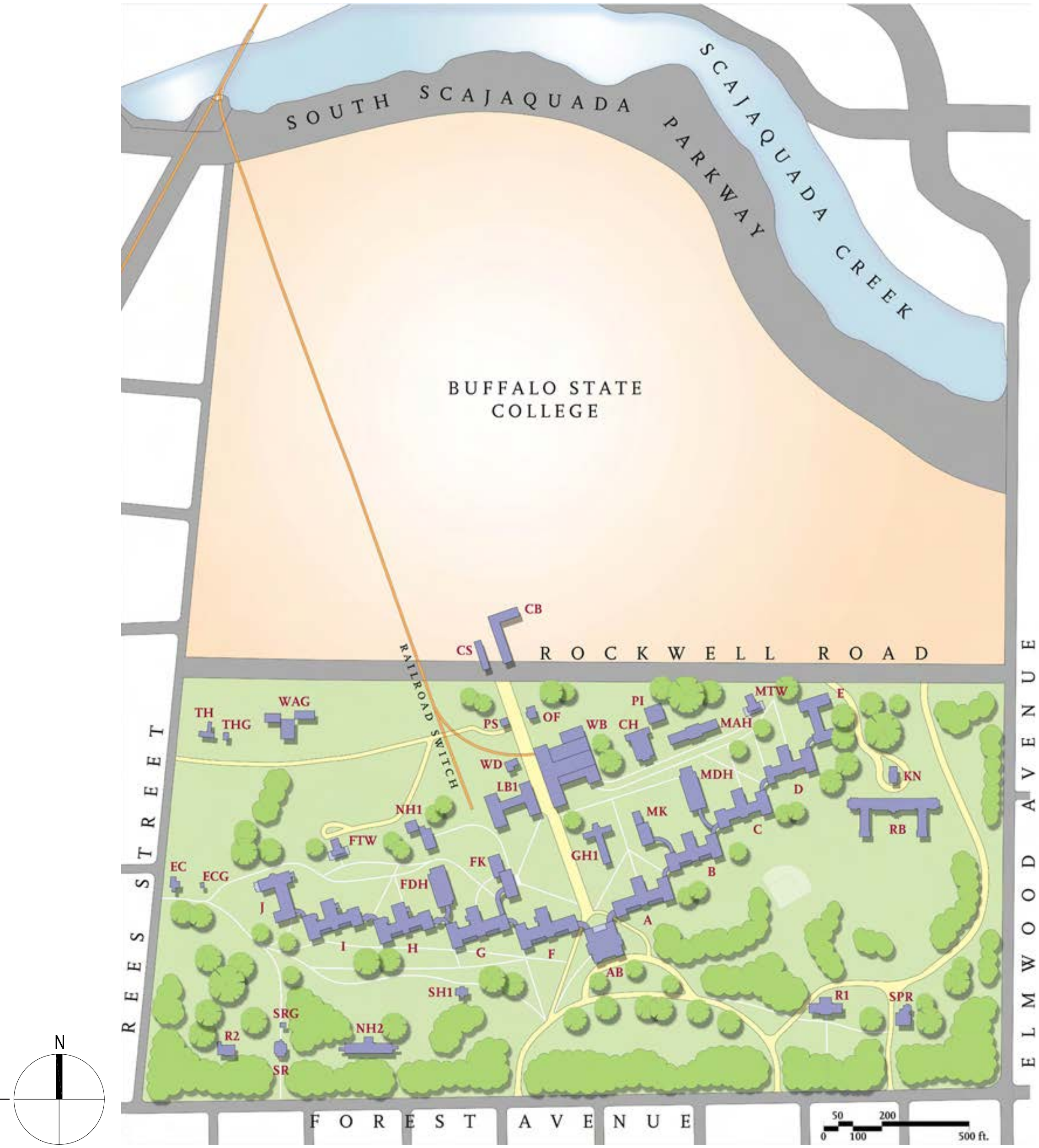


Fig. B.43 **Site Plan c.1945**

Image Courtesy GCA

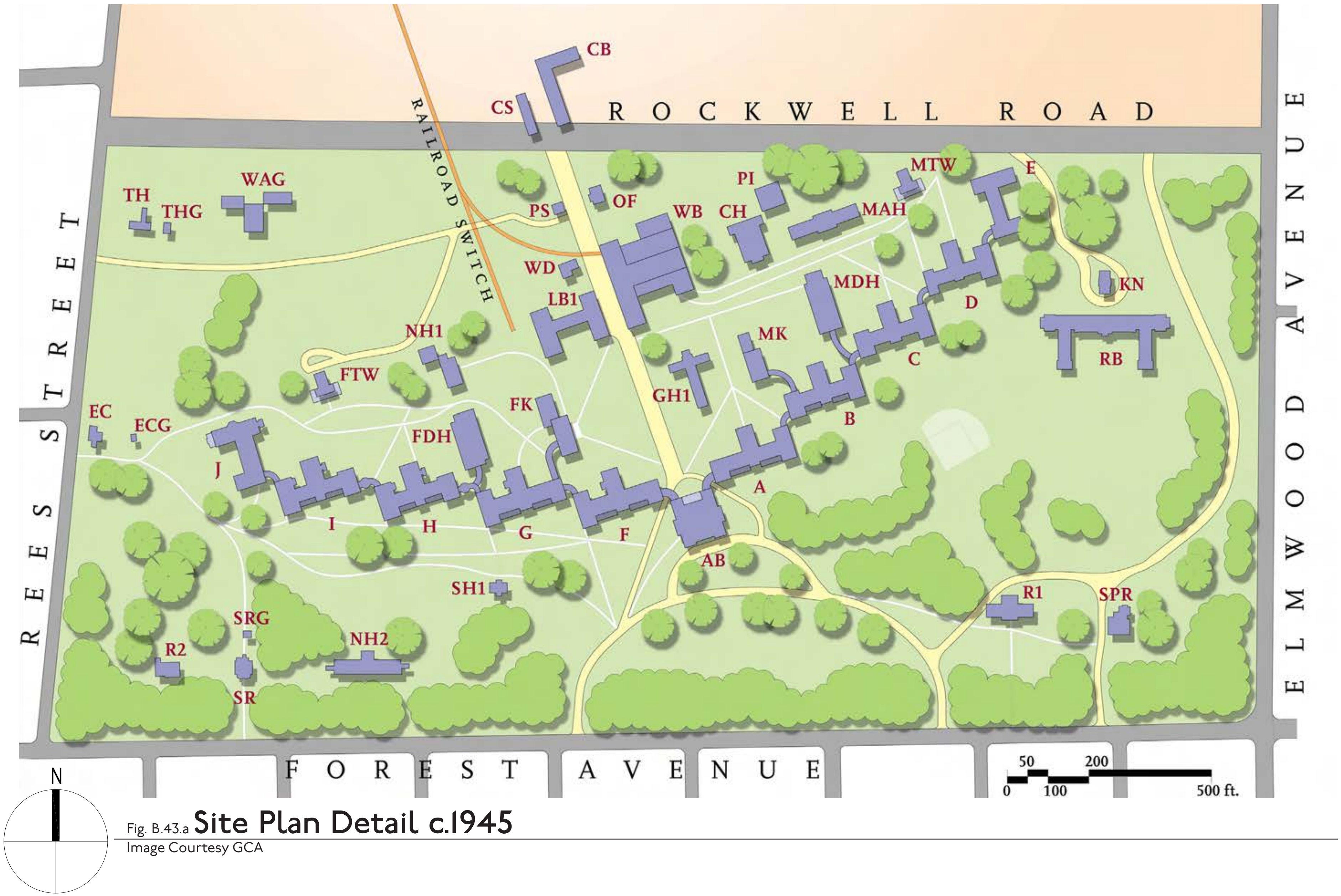


Fig. B.43.a **Site Plan Detail c.1945**
Image Courtesy GCA

1927-1945 KEY TO BUILDINGS

HSR Name	Year Built	Original Use	Architect	Subsequent Uses	Current Use	Alternate Building #	Area*
A	1871-80	Male Ward	Gambrill & Richardson	Administrative offices	Vacant	10	51,080
AB	1871-80	Administration Building	Gambrill & Richardson		Vacant	45	63,241
B	1871-80	Male Ward	Gambrill & Richardson		Vacant	9	49,446
C	*1873-80*	*Male Ward*	*Gambrill & Richardson*		*Demolished 1968*	*8*	
CB	*1879-80*	*Cow Barn*	*[H.H. Richardson]*	*Industrial bldg & Storehouse*	*Demolished c. 1965*	*6*	
CH	*1904-05*	*Chapel & Amusement Hall*	*George L. Heins*		*Collapsed 1996*	*23*	*15,908*
CS	*1879-80*	*Carriage Stable*	*[H.H. Richardson]*	*Auto Garage & Paint Shop*	*Demolished c. 1965*	*5*	
D	*1873-80*	*Male Ward*	*Gambrill & Richardson*		*Demolished 1968*	*7*	
E	*1873-80*	*Male Ward*	*Gambrill & Richardson*		*Demolished 1968*	*6*	
EC	*c. 1900*	*Engineer's Cottage*	*(unknown)*		*Removed (date unknown)*	*11*	
ECG	*c. 1910*	*Auto Garage*	*(unknown)*		*Removed (date unknown)*	*12*	
F	1889-91	Female Ward	W.W. Carlin		Vacant	44	53,430
FDH	1928-30	Female Dining Hall & Kitchen	William E. Haugaard		Vacant	41	33,362
FK	1893-94	Female Kitchen	Green & Wicks	Later added Community Store	Vacant	43, 27	12,538
FTW	1909	Female Tuberculosis Ward	Franklin B. Ware	Library & Sewing Room	Vacant	27, 13	3,548
G	1893-95	Female Ward	Green & Wicks		Vacant	42	53,182
GH1	1888	Greenhouse	W.W. Carlin		Partially extant	11, 28	0
H	1894-95	Female Ward	Green & Wicks		Vacant	40	37,731
I	1894-95	Female Ward	Green & Wicks		Vacant	39	37,731
J	1894-95	Female Ward	Green & Wicks		Vacant	38	19,200
KN	1930	Kitchen	Crow, Lewis & Wick		Storage	5	3,199
LB1	*1879-80*	*Laundry*	*[H.H. Richardson]*		*Demolished 1977*	*25, 21*	
MAH	1904-05	Male Attendants Home	George L. Heins	Nurses Training School	Vacant	15, 24	23,772
MDH	1923-24	Male Dining Hall & Kitchen	Sullivan W. Jones		Vacant	13	34,950
MK	1872-80	Male Kitchen	Gambrill & Richardson		Vacant	12, 29	8,120
MTW	*1913*	*Male Tuberculosis Ward*	*Lewis F. Pilcher*	*Men's O.T. Ward*	*Moved, then demolished*	*8*	
NH1	*1893*	*Nurses Home*	*Green & Wicks*	*Attendants Home*	*Burned 2005*	*26, 14*	*22,100*
NH2	1929-30	Nurses Home	William E. Haugaard		Treatment Center	37	23,151
OF	c. 1925	Office	(unknown)	Mortuary?, Work Ctrl Center	Utilities	20	2,090
PI	*c. 1927-1945*	*Pre-Industrial Shop*	*(unknown)*		*Removed (date unknown)*		
PS	*1893*	*Paint Shop*	*Green & Wicks*	*Mortuary*	*Demolished 1977*	*18*	
R1	*1904-05*	*Staff Residence*	*George L. Heins*		*Burned c. 1973*	*35*	
R2	1937	Staff Residence	(unknown)		Penthouse Social Club / Outpatient Drop-In Ctr.	34	4,811
RB	1920-30	Reception Building	Crow, Lewis & Wick		Residence	4	59,768
SH1	*1889*	*Summer House / Pavilion*	*[W.W. Carlin]*		*Removed (date unknown)*	*33*	
SPR	1904-05	Superintendent's Residence	George L. Heins		Management Services	1, 36	10,320

HSR Name	Year Built	Original Use	Architect	Subsequent Uses	Current Use	Alternate Building #	Area*
SR	**1909-10**	**Steward's Residence**	**Franklin B. Ware**		**Emergency Hostel**	**35, 31**	**4,589**
SRG	*1910*	*Auto Garage*	*(unknown)*		*Removed (date unknown)*	*3*	*595*
TH	*c. 1879*	*Tenant House*	*(unknown)*		*Removed (date unknown)*	*10*	
THG	*c. 1910*	*Auto Garage*	*(unknown)*		*Removed (date unknown)*		
WAG	**c. 1930**	**Wagon Shed**	**(unknown)**		**Storage SUNY**	**30, 29**	**6,556**
WB	**1872-76**	**Workshop & Boiler**	**Gambrill & Richardson**		**Plant Operations / Power Plant**	**22**	**34,090**
	1886-87	**Blacksmith & Plumbing Shop Additions**	**[W.W. Carlin]**				
	1895	**Coal Shed Addition**	**Green & Wicks**				
WD	*1886-87*	*Dormitory*	*[W.W. Carlin]*		*Demolished 1977*	*20,23*	

* The areas of buildings are represented in gross sq. ft. and include the area of basements.
NOTE : **Bold** - Refers to EXTANT buildings; *Italics* - Refers to DEMOLISHED/MISSING buildings.

Fig B.44 **Nurses Home (NH2)**
Image courtesy Buffalo Psychiatric Center

Note: It was built in 1929 and overlooked Forest Avenue.

the new site, and converted to the male occupational therapy ward. As a replacement for the Elmwood Hospital, a new Reception Hospital was constructed in the northeast portion of the site in 1930, with its independent kitchen building (Fig. B.45-46).

Despite the curtailment of the site by almost 50 percent, overcrowding continued incessantly at the hospital. By 1933 the capacity of the hospital had reached about 2,500 patients, almost four times above its designed capacity (AR 1933, 23). This may be attributed in part to the Great Depression that prevailed in the United States during that time. To alleviate unemployment and aid physical development, the hospital (similar to other government institutions) did receive funds from the Emergency Relief Act (ERA) in 1934, and Works Progress Administration (WPA) appropriations in 1939. Most of these funds, however, were not spent on constructing new structures, but rather renovating the exterior and interior of the ward buildings and improving the grounds. The WPA program at Buffalo State Hospital was terminated in 1941 due to the war boom that absorbed all the workmen. In fact, the war boom led on to severe shortages in staff and personnel at the hospital in the following years.

Despite the numerous physical developments reported in the Annual Reports from 1900-1945, social historians have concluded that little change took place in the overall pattern of organizational life at the Buffalo State Hospital (Dowdall 1992). Through much of the twentieth century, the Buffalo State Hospital changed, but in ways that did not alter its fundamental identity. As the institution grew, the individual care provided by its superintendent and small staff, gave way to increasingly custodial care by a large bureaucracy. The word 'snakepit' to describe state mental hospitals came into widespread use in American culture just after the end of World War II[4], and the Buffalo State Hospital with its teeming patient population likely projected the image of an institution that needed drastic developments in both physical and organizational fabric to keep up with changing times.

Fig B.45 **Reception Building (RB)**
Image courtesy Buffalo Psychiatric Center

Note: this building was built in 1930 to serve as a reception hospital in replacement of the Elmwood Building

Fig B.46 **Kitchen (KN) for Reception Building**
Image courtesy Buffalo Psychiatric Center

Fig B.47 **Patients seated in the ward verandas**
Image courtesy Buffalo Psychiatric Center

Note: The 'caged-in' wire-mesh porches seen here were a renovation of earlier ones with balconies and awnings

4 Author Mary Jane Ward published a popular novel by the same name in 1946 that was later made into a successful movie 1947.

Tabular Chronology of Developement and Use (1900-1945)

Date		Event	Description	Source
1900		Number of patients	Number of patients rose to 1,812 from 465 in 1890	
1900		Staircase reconfiguration	Second and third floor central staircase was reversed and the first to second floor staircase was moved from center of the lobby to the left side to permit more light into the hall.	
1901		Pan-American Exposition Buffalo	Owing to proximity with the site of the Pan-American Exposition held in Buffalo in 1901, the Buffalo State Hospital received a large number of visitors—a number of patients too, attended the Fair.	AR 1901, 19
1901		Patient Library	The Hospital also maintained a Library for patients with over 1,000 books	AR 1901, 22
1902	1-Apr	Board of Mangers dissolved	By legislative enactment, the Board of Managers which had been in existence for 20 years ceased to exist	AR 1902, 3
1905		Chapel and Amusement Hall (CH)	Constructed west of the Workshop building, north of the male wards	AR 1912, 18
1905		Male Attendants Home (MAH)	Home for 100 male employees completed	AR 1912, 18
1905		Superintendent's Residence (SPR)	A residence for Superintendent and one for staff was completed in the southeast corner of the site	AR 1912 , 18
1908		Wilson Cottage	A camp for convalescent patients was established on the shores of Lake Ontario in Wilson, NY	AR 1912, 18
1908-1918		Metal porches added	Porches similar to the ones already present on women's wards were added to the south facades of the men's ward buildings	AR 1910, 4 & 6
1909		Female Tuberculosis Ward (FTW)	A pavilion for tuberculosis women patients was completed	AR 1912, 18
1910		Steward's Residence (SR)	Constructed in the southwest corner of the site with independent auto-garage	AR 1910, 4
1911-12		Contagious Diseases Ward (CDW)	Constructed west of Elmwood building	AR 1912, 18
1912		Fire-protection measures	Renovation of all buildings in the interest of fire prevention. For example, doors were constructed to the outside from the basements of all connectors, a fire escape staircase was added to the rear of the Administration building, and all exits throughout the institution were altered to open outwards.	AR 1912, 8
1913		Male Tuberculosis Ward (MTW)	Constructed in a similar fashion to the women's one, located west of the Elmwood building	
1913		School for patients	A school for the patients was established, with the first classes attended by 20 women with dementia praecox	Buffalo State Hospital, Dept. of Mental Hygiene

Date	Event	Description	Source
1914	Occupational therapy	Industrial training and education had been in place at the hospital for some time now and in 1914 about 1000 patients were enrolled in the program. Articles they made were exhibited at the State Fair & the Panama Pacific Exposition in 1915	Buffalo State Hospital, Dept. of Mental Hygiene
1915	Site boundary redefinition	8' wide strip of land along Rees Street on the west boundary of site was ceded to the city for road widening.	AR 1915, 15
1918	Rear addition- Administration Building (AB)	The Administration bldg was expanded to the rear with augmentation offices on the first floor.	AR 1896, 10 and Campagna 1992
1918	Towers' roof	The towers' roof on the administration building was changed from clay tile to copper.	Campagna 1992, 302
1921	Occupational therapy	Occupational therapy received new impetus- a professional director was appointed, a corps of assistants trained and 2 instructors were supplied by the federal govt. to work with veterans.	Buffalo State Hospital, Dept. of Mental Hygiene
1921	Number of patients	Capacity of hospital reported as 1700, 680 men and 1020 women.	AR 1921, 21
1922	Site circulation	Both archways, by which passage was afforded to the rear of the main building, were supplied with cement roadways, replacing the rough cobblestones, which caused vehicles to lurch.	AR 1922, 24
1923-24	Male Dining Hall (MDH)	New 3-story male dining hall built	
1924	Fire protection	Completion of outside fire line about the women wards, and funds in sight to provide automatic sprinklers in attics and basements	AR 1924, 5
1927	Truncation of the site	The entire north half of the site was sold by the State to the city of Buffalo for construction of State Normal School (now Buffalo State College) campus reducing the site from 203 to a little less than 100 acres.	AR 1927, 6
1929	Second Nurses Home (NH2)	New Nurses home on Forest Avenue to augment the old one was completed	AR 1929, 8
1929	Relocation of buildings	Pavilions for male tuberculosis ward (MTW) and contagious diseases ward (CDW) were relocated from Buffalo State College land to the site	AR 1929, 7
1930	Reception Building (RB)	New reception hospital to replace the Elmwood Building was constructed in the northeast portion of the site, with an independent kitchen building.	
1930	Female Dining Hall (FDH)	New 3-story female dining hall built	
1928	Wagon Shed (WS)	Wagon shed constructed in northwest portion of the site	
1933	Number of patients	Total patient population residing in hospital was 2486- 1079 men and 1407 women	AR 1933, 22
1933	Site development	A large parking lot was created in front of the main building	AR 1933, 23

Date	Event	Description	Source
1933	Site development	Construction of Rockwell Road between Buffalo State College and the Buffalo State Hospital was started	AR 1933, 23
1934	Number of patients	Total patient population residing in hospital was 2452- 1062 men and 1390 women	AR 1934, 24
1934	Site circulation	Passageways were widened and walks were constructed through the archways of the executive building	AR 1934, 24
1934	Site circulation	Entrances to the hospital grounds were widened to 20' and roads and walks were changed at these entrances	AR 1934, 24
1934	ERA funds	Renovation of wards in the main building was done with workmen furnished by the local welfare organization and reimbursed through the ERA (Emergency Relief Act)	AR 1934, 24
1935	Site development	Curbs were constructed on the road extending around the west end of the main building.	AR 1935, 27
1937	Female Kitchen (FK) addition	The female kitchen and community store (FK) was enlarged, remodeled and equipped with new and modern furnishings.	AR 1937, 24
1937	Green house (GH1) renovation	Greenhouse (GH1) at the rear of the Administration building was renovated	AR 1937, 24
1937	Administration Building (AB)	Towers of the administration building were repaired and roofs retiled through a special fund appropriation.	AR 1937, 24
1937	Site development	6" curbs were constructed along the roads leading from the Administration building to the entrances on Forest Avenue	AR 1937, 24
1937	Staff Residence (R2)	New staff residence constructed west of the Steward's residence	
1938	Roof drainage	In some of the attics of main building (admin + all wards) new conduits were erected to carry water from the roof and gutters to drains.	AR 1938, 28
1938	Fire escapes	Verandas and fire escapes were constructed for upper wards in the administration building	AR 1938, 29
1939	Female Kitchen (FK)	Rooms above the community store and bakery were remodeled to provide an anatomical laboratory for the nurses' training school and a recreation room for women patients.	AR 1939, 30
1939	Site development	Two new asphalt tennis courts were constructed for the use of patients and employees and three others were resurfaced.	AR 1939, 30
1939	Greenhouse (GH1)	An 80' addition was made to the greenhouse and new flower beds constructed adjoining it.	AR 1939, 30

Date		Event	Description	Source
1939		WPA work	Appropriation were made for work under WPA (Works Progress Administration) - repointing stonework of main buildings, interior renovation in the main Richardson buildings[1], & construction of storm water drains, water lines and sewer laterals.	AR 1939, 30
1940		Interior renovation	New linoleum flooring was laid throughout the Administration building.	AR 1940, 28
1941	31-Dec	WPA termination	The WPA project of repairs and improvements was terminated when 98% complete, and exterior painting 85% complete. The reason was lack of workmen, as the industry had absorbed them.	AR 1942, 33
1943		Hospital Survey	Hospital was formally inspected in 1943 by Samuel Hamilton, M.D., an experienced psychiatrist, who was among the very few people to attempt a complete survey of state hospitals in the country.	Dowdall 1996, 133
1945		Copper on tower roofs	Copper on tower roofs was re-installed.	Waite 1975, 1

[1] This involved redecoration of 17 wards, construction of windows, setting out of window guards, additional heating, roof and gutter repairs, lighting of roads and grounds, and replacement of old locks with modern ones.

III. 1946–1974: POST WWII AND DEINSTITUTIONALIZATION

Fig B.48 **Outdoor Carnival**
Image courtesy Buffalo Psychiatric Center

Fig B.49 **Outdoor activities in the asylum ground**
Image courtesy Buffalo Psychiatric Center

Fig B.50 **New laundry Building (LB2)**
Image courtesy Buffalo Psychiatric Center

Fig B.51 **Construction of Strozzi Building- Medical & Surgical Building in the background on right**
Image courtesy Buffalo Psychiatric Center

Post World War II, state hospitals for the mentally ill began to receive significant increases in support, and this era usually referred to as "Deinstitutionalization" saw a combination of a reduced residential population combined with a very dramatic increase in funding to unprecedented levels. State policies favored community services over hospital-based care, and while overall funding first expanded during the 1960's and 1970's, it again contracted sharply during the 1980's (Dowdall 1996). Mental health practices turned towards drug therapies and more active treatment, using a variety of behavioral techniques, with increasing emphasis on avoiding prolonged hospitalization. In short, beginning with the 1950's and culminating in 1974, the Buffalo State Hospital began its transformation from a State Hospital to a State Psychiatric Center.

The post war boom was reflected foremost in appropriations for new hospital buildings — namely, the Medical and Surgical Building (1950), Power Plant (1950), Bakery and Storehouse (1956) and Laundry (1956) [Fig. B.50]. Barring the first structure, the last three were constructed on a portion of land, north of Rockwell Road that was earlier ceded to the city. The Medical and Surgical Building was a four to five-story structure built in the modern style, southeast of the male wards buildings. The construction of this structure in the open "pleasure ground" designed by Olmsted continued the gradual usurping of the open space on site, that had begun almost two decades ago with the construction of the Reception Building at a site just north of this location. The associated parking lots and circulation pathways associated with these new buildings completely redefined the historic landscape and paved the way for future developments in this area. Fully equipped with modern surgical rooms and equipment, these buildings allowed prevalent therapies (including a few lobotomies) to be performed effectively; however, newer approaches such as psychology were also being expanded modestly (AR 1955, 19-20).

Construction of the new hospital also led to demands for proportionate increase in on-site staff housing. This was met by the construction in 1953 of five new staff residences in the southwest corner of the site, along Forest Avenue, adjacent to the existing steward's residence and Nurses Home. All of these were two-story wood frame buildings with plank siding, hipped-roofs and attached auto-garages (Fig. B.52).

Fig B.52 **Staff Housing (R3) constructed in 1953**
Image courtesy Buffalo Psychiatric Center

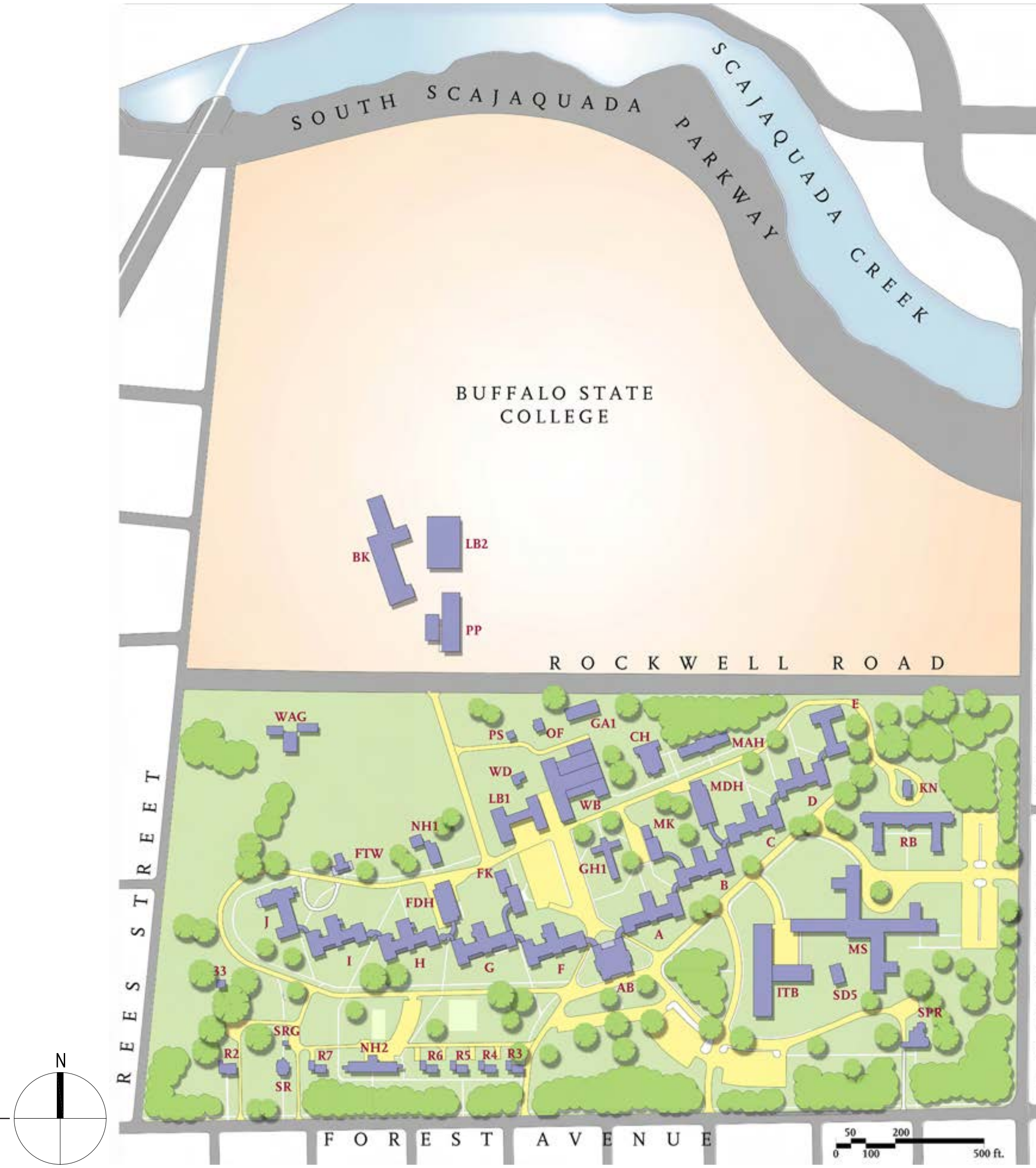


Fig. B.53 **Site Plan c.1968**
Image Courtesy GCA

Fig. B.53.a **Site Plan Detail c.1968**
Image Courtesy GCA

1946-1968 KEY TO BUILDINGS

HSR Name	Year Built	Original Use	Architect	Subsequent Uses	Current Use	Alternate Building #	Area*
A	1871-80	Male Ward	Gambrill & Richardson	Administrative offices	Vacant	10	51,080
AB	1871-80	Administration Building	Gambrill & Richardson		Vacant	45	63,241
B	1871-80	Male Ward	Gambrill & Richardson		Vacant	9	49,446
BK	1955-58	Bakery & Storehouse	Andrew J. Thomas		Storehouse	54	
C	*1873-80*	*Male Ward*	*Gambrill & Richardson*		*Demolished 1968*	*8*	
CH	*1904-05*	*Chapel & Amusement Hall*	*George L. Heins*		*Collapsed 1996*	*17, 23*	*15,908*
D	*1873-80*	*Male Ward*	*Gambrill & Richardson*		*Demolished 1968*	*7*	
E	*1873-80*	*Male Ward*	*Gambrill & Richardson*		*Demolished 1968*	*6*	
F	1889-91	Female Ward	W.W. Carlin		Vacant	44	53,430
FDH	1928-30	Female Dining Hall & Kitchen	William E. Haugaard		Vacant	41	33,362
FK	1893-94	Female Kitchen	Green & Wicks	Later added Community Store	Vacant	43, 27	12,538
FTW	1909	Female Tuberculosis Ward	Franklin B. Ware	Library & Sewing Room	Vacant	27, 13	3,548
G	1893-95	Female Ward	Green & Wicks		Vacant	42	53,182
GA1	1968	Garage	(unknown)		Utilities	19	1,873
GA2	*1937*	*Garage*	*(unknown)*		*Removed (date unknown)*	*33*	
GH1	1888	Greenhouse	W.W. Carlin		Partially extant	11, 28	0
H	1894-95	Female Ward	Green & Wicks		Vacant	40	37,731
I	1894-95	Female Ward	Green & Wicks		Vacant	39	37,731
ITB	1962-65	Reception & Intensive Treatment Building	Carl W. Larson	Added to & renamed Strozzi Bldg	Strozzi Bldg / Inpatient	62	284,780
J	1894-95	Female Ward	Green & Wicks		Vacant	38	19,200
KN	1930	Kitchen	Crow, Lewis & Wick		Storage	5	3,199
LB1	*1879-80*	*Laundry*	*[H.H. Richardson]*		*Demolished 1977*	*25, 21*	
LB2	1955-58	Laundry	Andrew J. Thomas		Laundry	55	
MAH	1904-05	Male Attendants Home	George L. Heins	Nurses Training School	Vacant	15, 24	23,772
MDH	192324	Male Dining Hall & Kitchen	Sullivan W. Jones		Vacant	13	34,950
MK	1872-80	Male Kitchen	Gambrill & Richardson		Vacant	12, 29	8,120
MS	*1949-52*	*Medical & Surgical Building*	*York & Sawyer*		*Demolished c. 1998*	*52*	
NH1	*1893*	*Nurses Home*	*Green & Wicks*	*Attendants Home*	*Burned 2005*	*26, 14*	*22,100*
NH2	1929-30	Nurses Home	William E. Haugaard		Strutzman Addiction	37	23,151
OF	c. 1925	Office		Mortuary?, Work Ctrl Center	Utilities	20	2,090
PP	1949-51	Power Plant	York & Sawyer		Power Plant	53	
PS	*1893*	*Paint Shop*	*Green & Wicks*	*Mortuary*	*Demolished 1977*	*18*	
R2	1937	Staff Residence			Penthouse Social Club /	34	4,811
R3	*1953*	*Staff Residence*			*Removed (date unknown)*	*56*	
R4	*1953*	*Staff Residence*			*Removed (date unknown)*	*57*	

HSR Name	Year Built	Original Use	Architect	Subsequent Uses	Current Use	Alternate Building #	Area*
R5	*1953*	*Staff Residence*	*(unknown)*	*Program Building*	*Removed (date unknown)*	*58*	
R6	*1953*	*Staff Residence*	*(unknown)*	*Program Building*	*Removed (date unknown)*	*59*	
R7	*1953*	*Staff Residence*	*(unknown)*	*OGS?*	*Removed (date unknown)*	*60*	
RB	**1929-30**	**Reception Building**	**Crow, Lewis & Wick**		**Cudmore - RCCA / Supervised**	**4**	**59,768**
SD5	*c. 1950-1968*	*Shed*	*(unknown)*		*Removed (date unknown)*		
SPR	**1904-05**	**Superintendent's Residence**	**George L. Heins**		**Management Services**	**1, 36**	**10,320**
SR	**1909-10**	**Steward's Residence**	**Franklin B. Ware**		**Emergency Hostel**	**35, 31**	**4,589**
SRG	*1910*	*Auto Garage*	*(unknown)*		*Removed (date unknown)*	*32*	*595*
WAG	**c. 1930**	**Wagon Shed**	**(unknown)**		**Storage SUNY**	**30, 29**	**6,556**
WB	**1872-76**	**Workshop & Boiler**	**Gambrill & Richardson**		**Plant Operations / Power Plant**	**22**	**34,090**
	1886-87	**Blacksmith & Plumbing Shop Additions**	**[W.W. Carlin]**				
	1895	**Coal Shed Addition**	**Green & Wicks**				
WD	*1886-87*	*Dormatory*	*[W.W. Carlin]*		*Demolished 1977*	*20,23*	

* The areas of buildings are represented in gross sq. ft. and include the area of basements.
NOTE : **Bold -** Refers to EXTANT buildings; *Italics* - Refers to DEMOLISHED/MISSING buildings.
[ ] is used to indicate attribution to architect(s) where absolute historical evidence is not available.

By the end of the 1950's, the resident patient population at Buffalo State Hospital had been on a steady decline for roughly the past decade. As stated earlier, the State Mental Hospital as an entity across the United States had only changed very modestly in the twentieth century up until the 1960's. When change came, however, it took four significant forms – a dramatic decline in the number of residents in state mental hospitals, the closing of several dozen hospitals, additions of hundreds of community mental health centers and public outpatient facilities (Dowdall 1996, 27). The Buffalo State Hospital was no exception. The number of patients with ground privileges increased to almost 800, a two-fold rise over the past years (AR 1960, 9). An out-patient clinic was also established at the hospital for convalescent patients (AR 1959, 8).

During the late 1960's, major changes took place in both the hospital's physical plant and the character of care. There was an all around demand for modernization of the hospital facilities. Reflecting changes that were happening elsewhere in the field of mental health, the hospital administration pressed for the construction of new buildings and remodeling of the old Richardson design. Accordingly, on October 21, 1965, Governor Rockefeller dedicated the new 544-bed Reception and Intensive Treatment Building (named the Strozzi building, after a former Board member). This eight-story building, designed completely in the modern style (Fig. B.54-55), was located southwest of the Medical and Surgical Building and almost eliminated overcrowding in the hospital, down to only 3.4 percent (AR 1966, 8). The remodeling of the old ward buildings was never initiated.

The Buffalo State Hospital, like other large state institutions, had been using numbers as names for its many buildings

Fig B.54 **View from grounds of Strozzi Building on right and Administration Building on left**
Image courtesy Buffalo Psychiatric Center

Fig B.55 **Strozzi Building or the Intensive Treatment Building (ITB)**
Image courtesy Buffalo Psychiatric Center

Fig B.56 **View of assembly hall in Administration Building after vacancy**
Image courtesy Shaun O'Boyle

ever since its inception. The present numbering system in use was most probably established during this time.

Beginning around this time, interest seemed to be slowly rising in the historic value of the H.H. Richardson designed buildings of the hospital. Consequently, in cooperation with the Preservation Committee of the Buffalo-Western New York Chapter of the American Institute of Architects, the Historic American Buildings Survey (HABS) undertook documentation of the Richardson-designed buildings.[1] Nonetheless, without any formal historic status and preservation mandates, piece-meal renovations and alterations continued to be made to the historic complex. During the late 1960's slate roofing on all the ward buildings (except Female Ward I) was replaced with asphalt shingles.

The most dramatic physical change, however, completely ignorant of the rising interest in the historic value of the complex, occurred in 1968 with the proposal and ultimate demolition of Male Wards C, D and E — the three outermost brick buildings of the original Richardson design. Apparently done to make way for a new rehabilitation building more consistent with contemporary trends in community psychiatry, this decision forever altered the historic configuration laid out almost a century before. The new one-story Rehabilitation Center (RH) was completed in 1970.

The end of the 1960's witnessed a shift away from inpatient modes of treatment and introduction of family-care, in which patients (often older and more stable) were placed in private homes, but with mental health services provided by the institution. The hospital seemed well on its way towards becoming a modern psychiatric center. However, this transition was stymied by fund shortages and by 1972 the economic problems of the institution had become paramount. Budget cuts and staff shortages disrupted the daily operation and even though the new Rehabilitation Center was completed, it could not actually be opened (AR 1972, 6). A Supreme Court decision was made during this time that ended unpaid patient labor, with an immediate impact, most directly on the Grounds Department of the hospital that had relied on patient labor in the past.

Decreasing patient population and the inability of the hospital administration to maintain the massive, out-dated historic ward buildings on a day-to-day basis led to the decision to gradually move all patients to the newer buildings. Accordingly, the last patients moved out of the Richardson buildings in 1974. The administrative offices however, continued to operate out of the historic Administration Building well into the 1990's. Not coincidentally, the very same year, the institution named the "Buffalo State Hospital" since 1890, changed its name to the "Buffalo Psychiatric Center." This change reflected the many new functions that the institution now performed, beyond the traditional ones of custody and care.

1 An 8-page narrative and set of 8 photographs were compiled as part of this documentation.

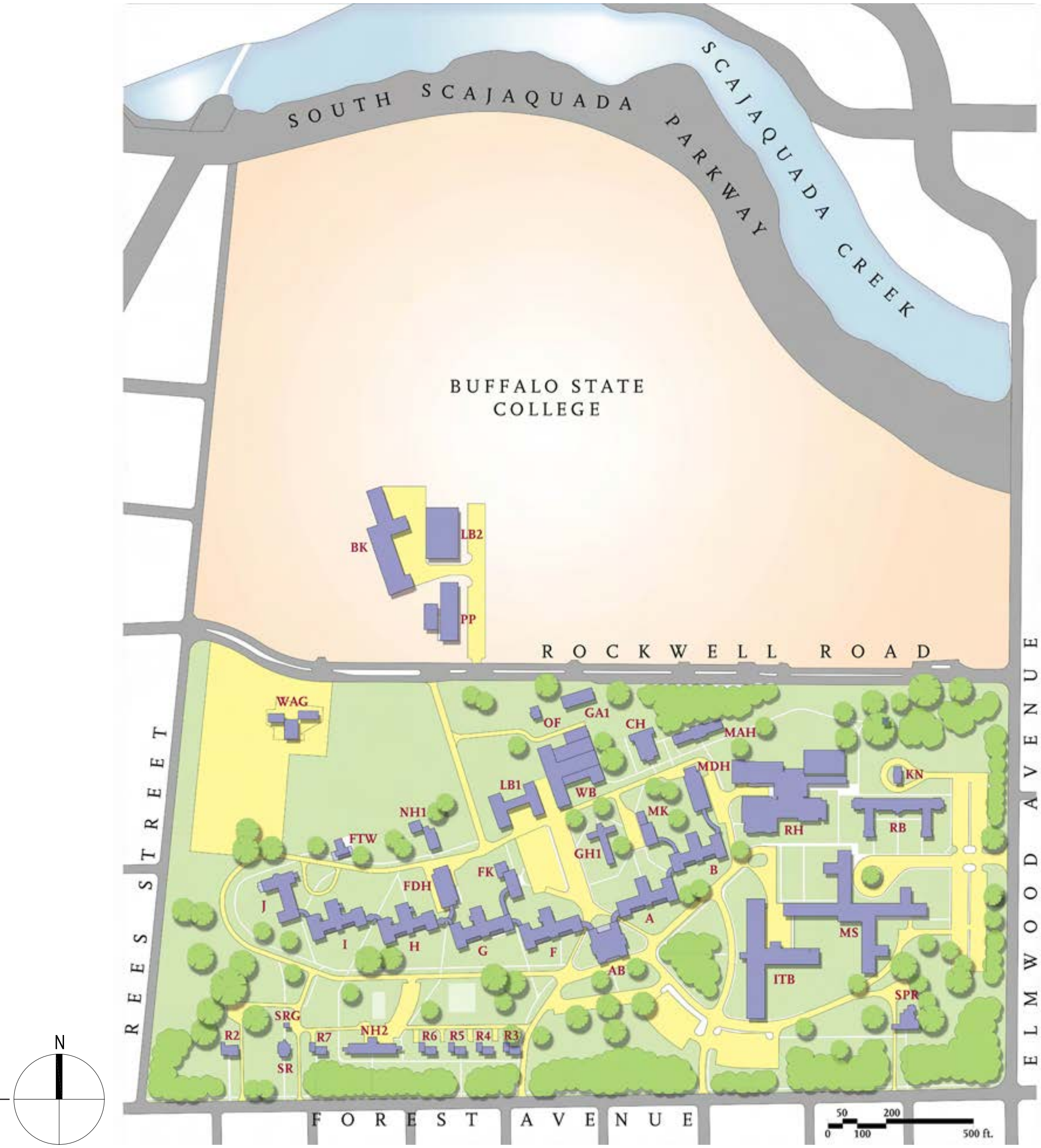


Fig. B.57 **Site Plan c.1974**

Image Courtesy GCA

Fig. B.57.a **Site Plan Detail c.1974**
Image Courtesy GCA

1969-1974 KEY TO BUILDINGS

HSR Name	Year Built	Original Use	Architect	Subsequent Uses	Current Use	Alternate Building #	Area*
A	1871-80	Male Ward	Gambrill & Richardson	Administrative offices	Vacant	10	51,080
AB	1871-80	Administration Building	Gambrill & Richardson		Vacant	45	63,241
B	1871-80	Male Ward	Gambrill & Richardson		Vacant	9	49,446
BK	1955-58	Bakery & Storehouse	Andrew J. Thomas		Storehouse	54	
CH	*1904-05*	*Chapel & Amusement Hall*	*George L. Heins*		*Collapsed 1996*	*17, 23*	*15,908*
F	1889-91	Female Ward	W.W. Carlin		Vacant	44	53,430
FDH	1928-30	Female Dining Hall & Kitchen	William E. Haugaard		Vacant	41	33,362
FK	1893-94	Female Kitchen	Green & Wicks	Later added Community Store	Vacant	43, 27	12,538
FTW	1909	Female Tuberculosis Ward	Franklin B. Ware	Library & Sewing Room	Vacant	27, 13	3,548
G	1893-95	Female Ward	Green & Wicks		Vacant	42	53,182
GA1	1968	Garage			Plant	19	1,873
GH1	1888	Greenhouse	W.W. Carlin		Partially extant	11, 28	0
H	1894-95	Female Ward	Green & Wicks		Vacant	40	37,731
I	1894-95	Female Ward	Green & Wicks		Vacant	39	37,731
ITB	1962-65	Reception & Intensive Treatment Building	Carl W. Larson	Added to & renamed Strozzi Bldg	Strozzi Bldg / Inpatient	62	284,780
J	1894-95	Female Ward	Green & Wicks		Vacant	38	19,200
KN	1930	Kitchen	Crow, Lewis & Wick		Storage	5	3,199
LB1	*1879-80*	*Laundry*	*[H.H. Richardson]*		*Demolished 1977*	*25, 21*	
LB2	1955-58	Laundry	Andrew J. Thomas		Laundry	55	
MAH	1904-05	Male Attendants Home	George L. Heins	Nurses Training School	Vacant	15, 24	23,772
MDH	1923-24	Male Dining Hall & Kitchen	Sullivan W. Jones		Vacant	13	34,950
MK	1872-80	Male Kitchen	Gambrill & Richardson		Vacant	12, 29	8,120
MS	*1949-52*	*Medical & Surgical Building*	*York & Sawyer*		*Demoished c. 1998*	*52*	
NH1	*1893*	*Nurses Home*	*Green & Wicks*	*Attendants Home*	*Burned 2005*	*26, 14*	*22,100*
NH2	1929-30	Nurses Home	William E. Haugaard		Strutzman Addiction	37	23,151
OF	c. 1925	Office	(unknown)	Mortuary?, Work Ctrl Center	Utilities	20	2,090
PP	1949-51	Power Plant	York & Sawyer		Power Plant	53	
R2	1937	Staff Residence	(unknown)		Penthouse Social Club /	34	4,811
R3	*1953*	*Staff Residence*	*(unknown)*		*Removed (date unknown)*	*56*	
R4	*1953*	*Staff Residence*	*(unknown)*		*Removed (date unknown)*	*57*	
R5	*1953*	*Staff Residence*	*(unknown)*	*Program Building*	*Removed (date unknown)*	*58*	
R6	*1953*	*Staff Residence*	*(unknown)*	*Program Building*	*Removed (date unknown)*		*59*
R7	*1953*	*Staff Residence*	*(unknown)*	*OGS?*	*Removed (date unknown)*		*60*
RB	1929-30	Reception Building	Crow, Lewis & Wick		Cudmore - RCCA / Supervised	4	59,768
RH	1969-70	Rehabilitation Building	Milstein, Wittek, Davis & Hamilton		Butler Rehab Center	51	76,284

HSR Name	Year Built	Original Use	Architect	Subsequent Uses	Current Use	Alternate Building #	Area*
SPR	1904-05	Superintendent's Residence	George L. Heins		Management Services	1, 36	10,320
SR	1909-10	Steward's Residence	Franklin B. Ware		Emergency Hostel	31	4,589
SRG	*1910*	*Auto Garage*	*(unknown)*		*Removed (date unknown)*	*30, 32*	*595*
WAG	c. 1930	Wagon Shed	(unknown)		Storage SUNY	30, 29	6,556
WB	1872-76	Workshop & Boiler	Gambrill & Richardson		Plant Operations / Power Plant	22	34,090
	1886-87	Blacksmith & Plumbing Shop Additions	[W.W. Carlin]				
	1895	Coal Shed Addition	Green & Wicks				

* The areas of buildings are represented in gross sq. ft. and include the area of basements.
NOTE : **Bold** - Refers to EXTANT buildings; *Italics* - Refers to DEMOLISHED/MISSING buildings.
[ ] is used to indicate attribution to architect(s) where absolute historical evidence is not available.

Tabular Chronology of Developement and Use (1946-1974)

Date	Event	Description	Source
1946	Trends in mental health	The prevalent medical therapies included electric shock therapy,insulin shock therapy, Malaria therapy, hydrotherapy, physiotherapy. Occupational therapy was also still prevalent.	AR 1946, 14
1946	The Patients' Library	The Patients' Library also continued under the supervision of the Occupational Therapy Dept. At the time, the Library had 2693 books & 49 periodicals.	AR 1946, 16
1950	Number of patients	Total patient population residing in hospital was 2766-1094 men and 1672 women.	AR 1950, 9
1950	Medical & Surgical Building (MS)	Constructed in the erstwhile 'pleasure ground' in the southeast portion of the site	AR 1950, 8
	New Power Plant (PP)	Constructed north of Rockwell Road	AR 1950, 8
1951	Number of Patients	833 new patients were admitted, the maximum intake in history of the hospital	
1952	Rehabilitation	The former Male Attendants Home (MAH) was remodeled into the Nurses' Training School	
1953	Staff Residences	Five new staff residences were constructed in the southwest portion of the site along Forest Avenue.	
1956	Bakery & Storehouse (BK) and Laundry building (LB2)	Constructed adjacent to the new power plan	
1962	Workshop Bldg; building roofs	WB original roof replaced by flat roof; Asphalt shingles installed on other building roofs	
1963	Reception & Intensive Treatment building (Strozzi Building)	Constructed southwest of the Medical & surgical building	
1964	Addition to M&S building	A 50-bed unit for children opened on the second floor of the M&S building.	Dowdall 1996
1964-65	Historic American Building Survey (HABS)	HABS documentation undertaken	HABS
late 1960's - early 1970's	Roofing changed	Slate roofing on all the ward buildings (except 39) was replaced with asphalt shingles.	
1969	Demolition of Male Ward buildings	The three easternmost ward buildings were demolished to make room for an adolescent rehabilitation facility, completed in 1972	NRHP nomination
1971-1974	Relocation of patients	Patients moved from Richardson Complex to newer buildings	
1972	Female wards H, I and J	Mechanical systems (electrical, heating and plumbing) of Female Wards H, I and J were renewed.	

Date		Event	Description	Source
1973	12-Jan	National Register of Historic Places (NRHP)Nomination	The historic complex of administration and ward buildings was placed on the NRHP for significance in the field of 'architecture'.	NRHP Nomination
1973		Mothballing of ward buildings	Ward Buildings A, B, F, G, H, I and J were no longer in use and mothballed	
1974		Relocation of patients complete	The last patients moved out of the Richardson buildings	
1974		Name change	The official name of the 'Buffalo State Hospital' was changed to 'Buffalo Psychiatric Center' (BPC)	Dowdall 1996, 5

IV. 1975–2008: PARTIAL VACANCY & PRESERVATION

Despite the relocation of patients from the historic wards in 1974, the buildings continued to be partially used for administrative purposes up until the early 1990's. The time period from 1975 onwards is marked by a growing interest among professionals, politicians and the general community in the preservation of this historically significant complex and in finding appropriate new uses for it.

Interest by preservation enthusiasts was bolstered by the addition of the complex to the National Register of Historic Places in 1973. After years of effort, the original Richardson buildings were in addition designated a National Historic Landmark in 1986, one of only 15 hospitals so distinguished in the United States and one of only eight buildings in Western New York to have the distinction. However, despite these recognitions, the physical conditions of the buildings were continually deteriorating in the absence of a feasible reuse plan. In 1982, a Historic Structures Report and Feasibility Study done by Foit-Albert Associates was carried out under the auspices of the Greater Buffalo Development Foundation. As a result, many of the broken windows which allowed the entrance of pigeons and inclement weather into the buildings were boarded up. Water infiltration through broken down leaders, however, continued to deteriorate significant portions. The deteriorating condition prompted a number of unrealized proposals for demolition of the ancillary buildings and female brick wards. Fortunately, none of these were ever carried out due to mounting pressure from local and national

Fig B.58 **Interior view of Female Ward F**
Image courtesy GCA

Fig B.59 **View of hallway in Female Ward F**
Image courtesy GCA

Fig B.60 **Severe water damage in Female Ward H**
Image courtesy GCA

preservation leaders and groups to maintain the sanctity of the entire historic complex.[1]

A significant step towards restoration and reuse of the complex was taken in 1989 when $3.5 million were spent in the interior and exterior rehabilitation of Male Ward A for administrative offices of the Office of Mental Health. The offices were used during the renovation of the Strozzi Building. The interior work involved restoring of finishes such as plaster walls and ceilings, plaster moldings, ceiling medallions, and refurbishment of windows and doors to make them operationally sound. Dropped ceilings were introduced in the erstwhile patient rooms at this time so that mechanical equipment could be run and most of the floors were carpeted or finished with vinyl tiles. Elevators and fire escape staircases were introduced and the building was made code compliant with the prevailing specifications. Paint schemes were reportedly developed which represented the recommended paint schemes of the period in which the buildings were originally designed. Gypsum wallboard partitions, 48 to 60 inches high were used to create open-plan office space in the wide corridors. However, after the renovation of Strozzi building was complete, the offices were again abandoned in 1994, leading to the present vacant state.

The exterior restoration carried out at this time involved removal of the wrought iron porches on the south façade, replacement of the doors to the porches with windows to match the original, removal of ivy and vegetation from the exterior, and replacement of the asphalt roof on the building.

The other historic buildings however, continued to deteriorate. Public outcry over their condition prompted the then New York State Governor to appoint a Special Task Force in 1984, called "The Richardson Complex, Buffalo Psychiatric Center Advisory Council". The Council was comprised of community preservation leaders from the Landmark Society of the Niagara Frontier and the Preservation Coalition of Erie County, and government staff and elected officials. A sub-committee of the Advisory Council was formed in January 1986 to explore the possibility of using a design competition to generate a reuse for the complex. To draw local, state and national attention, a lecture series titled "Historically Significant Institutional Buildings and Grounds: The Buffalo Psychiatric Center" was held in 1987 to generate community interest in the place. In 1988 a three-day international symposium, "The Adaptive Reuse of Historically Significant Institutional Buildings and Grounds," was held. This led to the book *Changing Places: Remaking Institutional Buildings* that included a number of essays by academics and professionals about the history and potential reuse of this complex, with comparable case studies from other parts of the country.

Meanwhile, acts of vandalism and security concerns continued to rise within the historic buildings and in 1989, most of the windows were boarded up to prevent unauthorized access. On the other hand, the Buffalo Psychiatric Center continued operation in the new buildings on the eastern portion of the site. The Strozzi building constructed in 1963 received a major $6 million addition in 2000. Other ancillary buildings were also partially used by the Center for housing community services, administrative offices and maintenance and storage functions. In 1995, the Psychiatric Center transferred its ownership of the tract of land north of Rockwell Road to Buffalo State College and entered in an unwritten agreement

1 A report by John G. Waite, Senior Historical architect with the Division of Historic Preservation inspected the buildings in 1975 and reiterated the immense cultural significance of the buildings and emphasized that the entire complex be maintained and not just two or three buildings.

with them to allow use of land in the northwest portion of the site for college parking and sports fields. The northeast corner of the site, at the intersection of Elmwood Avenue and Rockwell Road was also of particular interest to Buffalo State College, and it eventually gained ownership of this parcel from the Buffalo Psychiatric Center in the 1990's. The Burchfield Penney Art Center is currently under construction on this site.

Beginning in 1996, options were explored through a number of studies and reports to relocate and consolidate the city-wide Olmsted Schools in four buildings within the historic complex. However, this proposal was never fully developed. Realizing the need for comprehensive community-led planning to determine the future of this site led to the creation in 2006 of the Richardson Center Corporation (RCC), a non-profit organization, comprising of a Board of members appointed by the Governor. Since then, the RCC has assumed responsibility for exploring the feasibility of a comprehensive rehabilitation of the historic complex. The RCC has been using the name 'Richardson-Olmsted Complex' to refer to this site. The Urban Land Institute was invited as part of this initiative in May 2007 to present a brief report on the potential reuse options for the complex. Consequently, the Historic Structures and Landscape Report was commissioned in 2007 and the Master Plan in 2008.

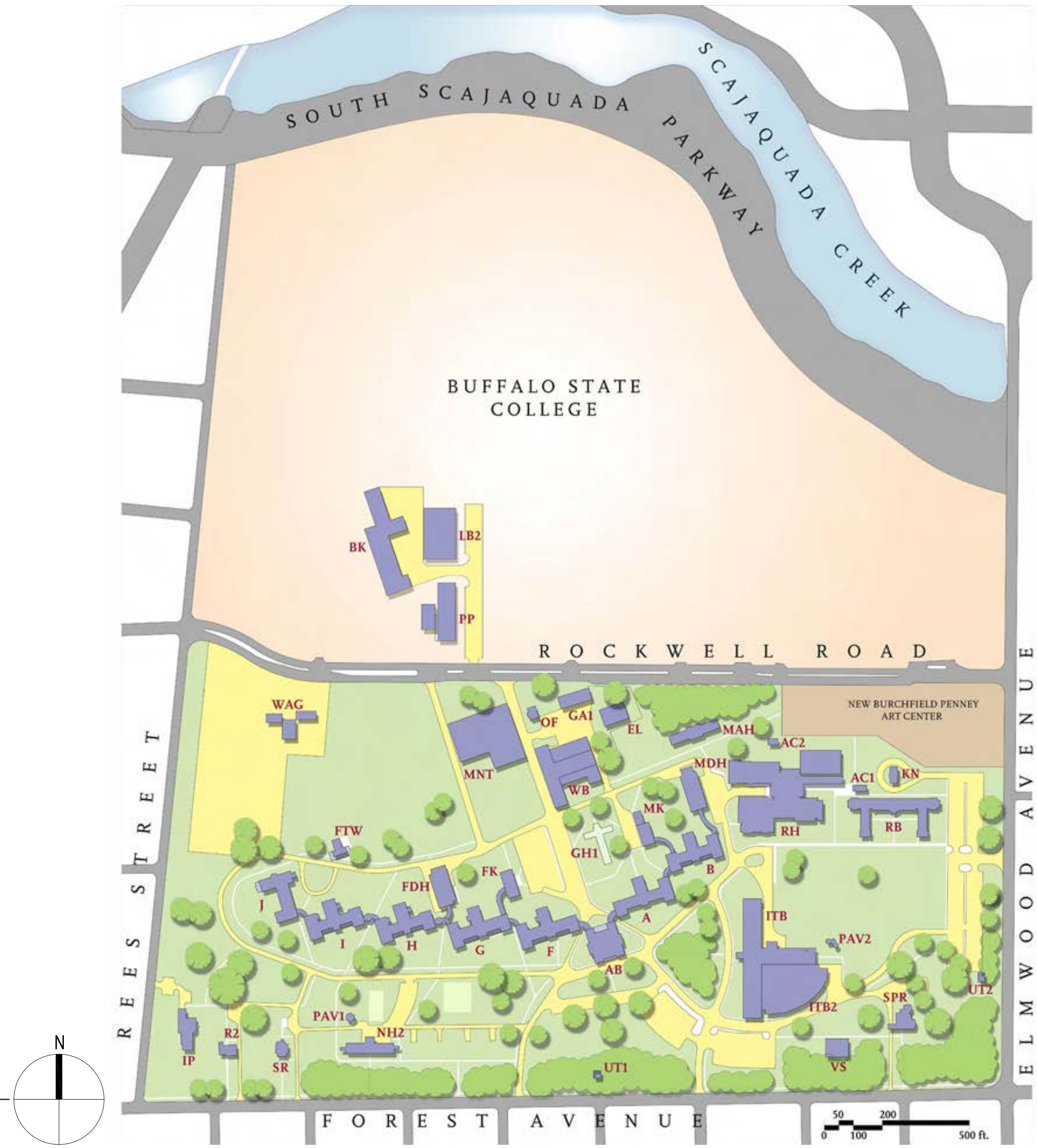
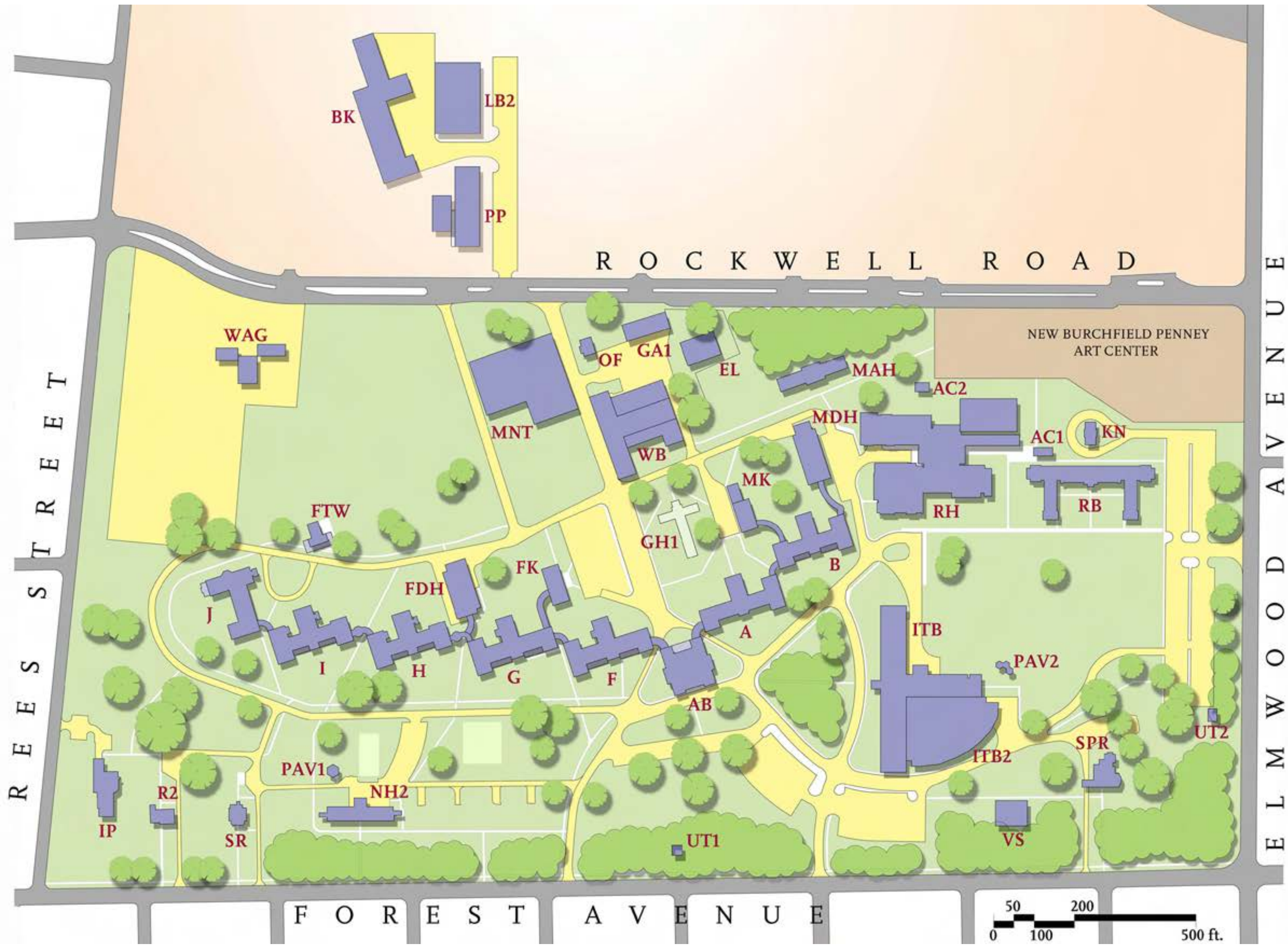


Fig. B.61 **Site Plan c.2008**

Image Courtesy GCA



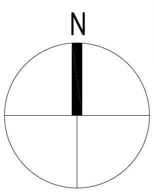


Fig. B.6l.a **Site Plan Detail c.2008**

Image Courtesy GCA

1975-2008 KEY TO BUILDINGS

HSR Name	Year(s) Built	Original Use	Architect	Subsequent Uses	Current Use	Alternate Building #	Area*
A	1871-80	Male Ward	Gambrill & Richardson	Administrative offices	Vacant	10	51,080
AB	1871-80	Administration Building	Gambrill & Richardson		Vacant	45	63,241
AC1	c. 1986	Air Conditioning	(unknown)		Utilities	65	
AC2	c. 1991	Air Conditioning	(unknown)		Utilities	66	
B	1871-80	Male Ward	Gambrill & Richardson		Vacant	9	49,446
BK	1955-58	Bakery & Storehouse	Andrew J. Thomas		Storehouse	54	
EL	c. 1990	Electrical	(unknown)		Utilities	48	1,120
F	1889-91	Female Ward	W.W. Carlin		Vacant	44	53,430
FDH	1928-30	Female Dining Hall & Kitchen	Willima E. Haugaard		Vacant	41	33, 362
FK	1893-94	Female Kitchen	Green & Wicks	Later added Community Store	Vacant	43, 27	12,538
FTW	1909	Female Tuberculosis Ward	Franklin B. Ware	Library & Sewing Room	Vacant	27, 13	3,548
G	1893-95	Female Ward	Green & Wicks		Vacant	42	53,182
GA1	1968	Garage	(unknown)		Utilities	19	1,873
GH1	1888	Greenhouse	W.W. Carlin		Partially extant	11, 28	
H	1894-95	Female Ward	Green & Wicks		Vacant	40	37,731
I	1894-95	Female Ward	Green & Wicks		Vacant	39	37,731
IP	1987-88	Inpatient	Urbahn Associates	Community Residence	Olmsted Residence /	50	13,172
ITB	1962-65	Reception & Intensive Treatment Building	Carl W. Larson	Added to & renamed Strozzi Bldg	Strozzi Bldg / Inpatient	62	284,780
ITB2	1999-2000	Strozzi Addition	Mach Architecture + Engineering		Strozzi Addition	62A	
J	1894-95	Female Ward	Green & Wicks		Vacant	38	19,200
KN	1930	Kitchen	Crow, Lewis & Wick		Storage	5	3,199
LB2	1955-58	Laundry	Andrew J. Thomas		Laundry	55	
MAH	1904-05	Male Attendants Home	George L. Heins	Nurses Training School	Vacant	15, 24	23,772
MDH	1923-24	Male Dining Hall & Kitchen	Sullivan W. Jones		Vacant	13	34,950
MK	1872-80	Male Kitchen	Gambrill & Richardson		Vacant	12, 29	8,120
MNT	1978	Maintenance Office SUNY	(unknown)		Maintenance Office SUNY		
NH2	1929-30	Nurses Home	William E. Haugaard		Strutzman Addiction	37	23,151
OF	c. 1925	Office	(unknown)	Mortuary?, Work Ctrl Center	Utilities	20	2,090
PAV1	c. 2000	Pavilion	(unknown)		Pavilion	73	
PP	1949-51	Power Plant	York & Sawyer		Power Plant	53	
R2	1937	Staff Residence	(unknown)		Penthouse Social Club /	34	4,811
RB	1929-30	Reception Building	Crow, Lewis & Wick		Cudmore - RCCA / Supervised	4	59,768
RH	1969-70	Rehabilitation Building	Milstein, Wittek, Davis & Hamilton		Butler Rehab Center	51	76,284
SPR	1904-05	Superintendent's Residence	George L. Heins		Management Services	1, 36	10,320
SR	1909-10	Steward's Residence	Franklin B. Ware		Emergency Hostel	35, 31	4,589

HSR Name	Year Built	Original Use		Subsequent Uses	Current Use	Alternate Building #	Area*
UT1	1991	Valve House	Foit-Albert Associates	Forest Ave. RPZ	Utilities	46	608
UT2	1991	Valve House	Foit-Albert Associates		Utilities	47	611
VS	2002-03	Vocational Services	Architectural Resources		Vocational Services	79	9,925
WAG	c. 1930	Wagon Shed	(unknown)		Storage SUNY	30, 29	6,556
WB	1872-76	Workshop & Boiler	Gambrill & Richardson		Plant Operations / Power Plant	22	34,090
	1886-87	Blacksmith & Plumbing Shop Additions	[W.W. Carlin]				
	1895	Coal Shed Addition	Green & Wicks				

* The areas of buildings are represented in gross sq. ft. and include the area of basements.
NOTE : **Bold -** Refers to EXTANT buildings; *Italics* - Refers to DEMOLISHED/MISSING buildings.
[ ] is used to indicate attribution to architect(s) where absolute historical evidence is not available.

On a parallel track, stabilization of the historic buildings has been underway since 2004, when $7 million were set aside by the state as stabilization funds to be spent on emergency repairs and security. Most of this work continues to the present day with efforts aimed at structural shoring of falling brick, installation of a more extensive security and fire alarm system, and assessment and repair of roof leaks in the buildings.

The 136-year old site of the current Buffalo Psychiatric Center has indeed come a long way; however, the future of this facility remains undecided at the present time. As master planning studies are underway, it is difficult to ascertain the final form that this complex will take in the near and long-term future. What remains clear though is the immense significance that this evolving cultural landscape occupies in the social, cultural and historic context at a local and national level. It is a site significant not only for its association with architecture and landscape masters but also for its reflection of the evolution of mental health in the United States. It is a site imbued with overlapping histories of use and adaptation that implores us to leave an imprint of sensitivity and innovation, not neglect, for times to come.

Fig B.62 **Interior view of Female Ward H**
Image courtesy GCA

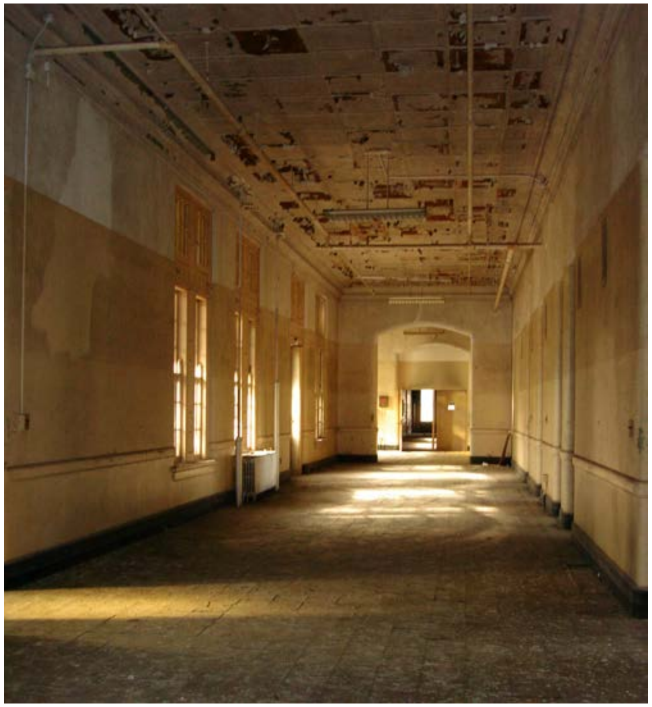


Fig B.63 **Interior view of Female Ward G**
Image courtesy GCA

Fig B.64 **Severe ceiling damage in Female Ward F**
Image courtesy GCA

Tabular Chronology of Developement and Use (1975-2008)

Date		Event	Description	Source
1975	29-May	Preliminary Survey	Preliminary exterior and interior survey of the Richardson buildings by John Waite, Senior Preservation Architect, Division of Historic Preservation. Recommended keeping ALL the Richardson buildings intact	
1976	May	International Heritage Center Study	International Heritage Center, Inc., a private, non-profit organization requested technical assistance from the New York State Council on the Arts in order to investigate alternate uses for the buildings	
1977	18-Nov	Society of Architectural Historians	The Society of Architectural Historians had been conducting architectural tours for the past couple of years on site; suggested initiation of preservation efforts.	Jason Aronoff, letter, 1977
1978	12-Jan	Local Landmark Designation	The application for Landmark designation of the structure was approved by the Buffalo Landmark and Preservation Board	Shelgren, letter, 1978
1982		First HSR & Feasibility Study	Historic Structures Report and Re-Use Feasibility Study, commissioned by the Richardson Task Force Greater Buffalo Development Foundation Funded by New York State Parks & Recreation, City of Buffalo Community Development	
1984		Use as movie set	The interiors of Male Ward A were partially remodeled for use as a movie set for the 1984 movie 'The Natural'.	
1986	31-July	Proposal for demolition of certain ancillary buildings	Proposal to demolish buildings 11 (Greenhouse GH1), 17 (Chapel & Amusement hall CH), 26 (Nurses Home NH1) & 43 (Female Kitchen FK) prepared for Facilities Development Corporation (FDC)	Buffalo Psychiatric Center
1986		Rehabilitation proposal	Study for FDC to analyze the feasibility of converting either building 26 (Nurses Home NH1) or Female Ward building J into a 24-bed community residence facility.	University of Buffalo
1987		Male Ward A Rehabilitation	FDC (Facilities Development Corporation) hired a private architectural firm to rehabilitate Male Ward A as offices for Office of Mental Health. $2.2 million were allocated for the rehabilitation based on a feasibility study performed several years earlier.	Campagna 1992, 304
1988		New patient residence	24 bed outpatient residence (Olmsted Residence) constructed in the southwest corner of site.	
1986		National Landmark Designation	Designated as National Historic Landmark	
1988		Symposium	Titled 'Adaptive Reuse of Historically Significant Institutional Buildings and Grounds' was held at School of Architecture and Environmental Design –University of Buffalo	
1989		Stabilization Study	Study on stabilization of Male Ward B done for FDC	
1989		Renovation of Male Ward A	$3.5 million spent in interior renovation of Male Ward A building to create office space for Office Of Mental health –involved addition of staircases and elevators, insertion of interior partitions and false ceilings amongst other works. Exterior renovation involved removal of all metal porches, restoration of	

Date		Event	Description	Source
			openings, removal of vegetation and installation of asphalt roof.	
1989		Connector roof	EPDM roof was installed at the connector between Administration Building and Male ward building 'A'	
1989		Boarding up windows	Most basement and first floor windows were covered with painted plywood for security	
1992		Male Ward A	Aluminum storm windows were added on the second and third floors	
1992		Reuse proposal	Proposal made to create 'Richardson Technology Center for Pharmaceutical Sciences' for Millard Fillmore Health System and SUNY at Buffalo	
1992		Site survey	A comprehensive site survey was performed for OMH	
1993		Administration Building roof	Asphalt roof installed	
1994	19- Aug	National Landmark Symposium	H. H. Richardson Buildings National Landmark Symposium held at Buffalo State College	
1994		Complete vacancy	BPC completely moved out, including all office/ administrative areas.	
1994		Preservation Study	Decommissioning and Preservation Study Capital Plan prepared for FDC. Intent was to forestall deterioration of all vacant buildings.	
1994		Security fence	Chain-link fence was installed around the historic buildings to restrict access	
1995		Ownership transfer	Office of Mental Health transferred ownership of three Psychiatric Center buildings north of Rockwell Road (the power plant (PP), Bakery & storehouse (BK) and laundry (LB)) to the Buffalo State College.	
1995		Reuse Study	Study titled 'Highest and Best Use Analysis of Buffalo Psychiatric Center' prepared for State Urban Development Corporation. Included area study and market analysis to find best use for this site	
1996		Male Ward A	Copper built in gutters in Male Ward A were lined with EPDM	
1996		Olmsted School	'Olmsted School Site Selection Study' done for Buffalo Board of Education, City of Buffalo. Explored feasibility of consolidating Olmsted Schools at the Richardson Complex site.	
1997		Reuse Plan	'H. H. Richardson Psychiatric Center Re-Use Development Plan' prepared for City of Buffalo Planning Department	
1998		Master Plan	'Buffalo Psychiatric Center Statewide Campus Planning' done for the Dormitory Authority of the State of New York (DASNY)	
1998		Private Reuse Options	'Private Development for H.H. Richardson Complex' Study done for Empire State Development/WNY Region	

Date	Event	Description	Source
1998	Reuse Plan	'H. H. Richardson Complex Buffalo Psychiatric Center Strategic Reuse Plan' prepared for Department of Community Development, Buffalo	
1998	Reuse Study	Recommendations for Adaptive Re-Use of the complex framed by Design Studio at SUNY	
1999	Reuse Proposal	'Buffalo Psychiatric Center H. H. Richardson Buildings – Health, Educational and Cultural Campus' proposal prepared for a collaboration involved agencies including City of Buffalo, Buffalo State College , Buffalo Public Schools & Buffalo Psychiatric Center	
2000	Strozzi building addition	Addition made to the Strozzi Building on the southeast	
2000	Circulation & Parking Study	Circulation & Parking Study Proposal prepared for Greater Buffalo Regional Transportation Council	
2000	Olmsted School	The Olmsted School Consolidation Phase I –Reconstruction of Buildings 9, 10, 12 & 13 prepared for Buffalo Board of Education, City of Buffalo. Included HAZMAT surveys.	
2002	Stabilization	H.H. Richardson Buildings Stabilization Study prepared for DASNY	
2004 - 2005	Stabilization	$5 million of the $7 million in stabilization funds set aside by the State was spent on repairs and security	
2005	Window stabilization	The plywood on windows was replaced partially by Polycarbonate sheets	
2005	Nurses Home	The Nurses Home (NH1) was damaged in a fire and subsequently razed. It was designed by architect E.B. Green.	
2006	Funds allocation	$100 million in funds was dedicated by then NYS Governor George Pataki to rehabilitate the Richardson Complex.	
2006	New Burchfield Penney Art Center	Ground broken for new Museum building in the northeast corner of the Buffalo Psychiatric Center site.	
2006	RCC formed	The Richardson Center Corporation (RCC) was formed and its board appointed by then NYS Governor George Pataki.	
2007	ULI Report	ULI Advisory Services Panel Report advising the RCC board on feasible reuse options	
2008	Stabilization	Stabilization efforts underway to prevent further deterioration and vandalism. Work will include structural shoring of falling brick, installation of a more extensive security and fire alarm system, and assessment and repair of roof leaks in the tower building.	
2008	Historic Structures and Cultural Landscape Report	Historic Structures and Cultural Landscape Report is prepared by Goody Clancy Associates & their consultants for the RCC.	

C. EVALUATION OF SIGNIFICANCE

The site of the Buffalo Psychiatric Center, earlier known as the Buffalo State Hospital or the Buffalo State Asylum for the Insane is significant in the present context for a variety of reasons. Not only do the site and its structures serve as an example of a nineteenth-century mental health institution in the United States, they also exemplify principles of the then dominant typology, namely the Kirkbride Plan. Moreover, the site and buildings are a collection of works by a number of significant architects and designers- most importantly H.H. Richardson, regarded as one of the most prominent American architects of the 19^{th} century, and Frederick Law Olmsted, often referred to as the father of landscape architecture in the United States. Other important people such as Dr. John Gray and local Buffalo architect E.B. Green, to name a few, have made significant contributions to the development of this site. It is because of these noteworthy reasons and the remarkable fact that developments at this site over the past 136 years represent a continuum of broader trends and patterns in national history, that we now need to expressly address its significance and how it can be carried forth in the future.

This chapter begins by providing a summary of existing documentation of the significance of this site as described in the National Register of Historic Places (NRHP) and National Landmark (NL) designations. It is followed by a formulation of statement(s) of significance of the Richardson-Olmsted Complex site based on historical research presented in the earlier part of the document. This is achieved by a three-step analysis – the first addresses broad historical contexts that the site embodies and draws its significance from; the second involves formulation of a set of HSR recommendations that includes framing of a period of significance, while the third, engages in a more detailed identification of character defining physical features on site that are representative of its significance. Since the identification of character-defining features is tied with their condition, integrity and treatment, the information is presented in Part C of Chapter V under the heading 'Treatment Recommendations by Character-Defining Features'.

National Register of Historic Places Listing and National Landmark Designation

The National Register of Historic Places is the Nation's official list of cultural resources worthy of preservation. Authorized under the National Historic Preservation Act of 1966, the National Register (NR) is part of a national program to coordinate and support public and private efforts to identify, evaluate, and protect our historic and archeological resources. The National Register is administered by the National Park Service, which is part of the U.S. Department of the Interior. In addition, the National Park Service has developed criteria for the recognition of nationally significant properties, which are designated National Historic Landmarks.[1]

The Buffalo Psychiatric Center was listed on the National Register in 1973 and designated a National Historic Landmark (NHL) in 1986. The NHL designation subsumed and significantly expanded the boundaries documenting the intact portion of the campus. It defined the period of significance as extending from 1870-1896. Buildings and structures within the NHL boundaries that were built before 1896 and which retain integrity are by definition contributing elements of the NHL designation. Because all properties designated as NHLs are automatically listed on the National Register, it would have been redundant to make a distinction between listing in the NHL vs. listing in the NR. At the time of nomination, the boundary indicated in blue on Fig. D.1 was designated as the extent of the historic property. A recent evaluation, completed in April 2008 by the State Historic Preservation Office (SHPO) of New York has re-visited this nomination to clearly determine which buildings within this boundary were determined to be contributing/ non-contributing. Their recommendations on the listing status of buildings and structures at the Buffalo Psychiatric Center campus are presented in following five categories (see Fig. C.1 on foll. page) :

1 The National Historic Landmark criteria are found in the Code of Federal Regulations, Title 36, Part 65.

INSIDE THE NATIONAL HISTORIC LANDMARK (NHL) BOUNDARY

1. Contributing to NHL (1896 or earlier)

AB- Administration BuildingA- Male Ward
B- Male Ward
F- Female Ward
FK- Female Kitchen
G- Female Ward
GH1- Green House (Demolished- Foundation walls remain)
H-Female Ward
I-Female Ward
J-Female Ward
MK- Male Kitchen
WAG- Pre 1896 Barn/Wagon Shed
-1895 Iron Fencing along Forest Ave.

2. Not contributing to the NHL, but National Register (NR) eligible (After 1896)

MDH- Male Dining Room
MAH- Male Attendants Home
OF- Office/Mortuary
FTW-Female Tuberculosis Ward
R2- Staff Residence
SR- Steward's Residence
NH2- Nurses Home
FDH- Female Dining Hall

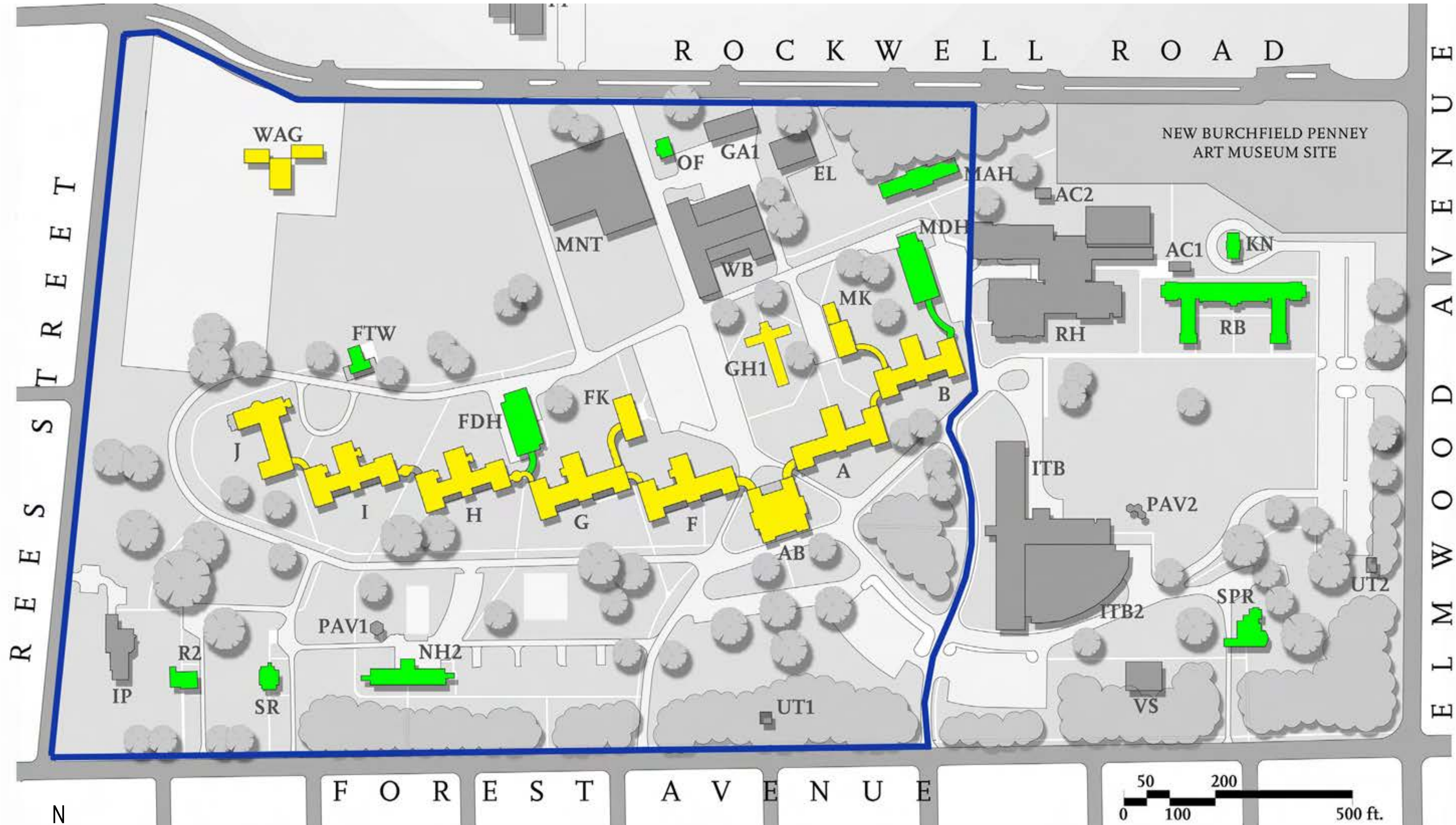


Fig. C.1 NHL/NR Status of Richardson-Olmsted Complex
Image Courtesy GCA

NHL Boundary
NHL Contributing
NR Eligible (>50 years old)

3. Noncontributing Buildings to the NHL and Not NR eligible

GA1- Garage
WB- Workshop & Boiler- Determined Not Eligible due to tremendous loss of integrity
UT1- Valve House
EL- Electrical Building
IP- Inpatient
PAV1- Pavilion
MNT- Maintenance Office SUNY

OUTSIDE OF THE NATIONAL HISTORIC LANDMARK BOUNDARY (NHL)

4. Eligible for the National Register (NR)

SPR- Superintendent's Residence
RB- Reception Building
KN- Reception Kitchen
-1895 Iron Fencing along Forest Ave. & Elmwood Ave.

5. Not Eligible for the NR

UT2- Valve House
RH- Rehabilitation Building
ITB- Intensive Treatment Building (Strozzi)
ITB2- Strozzi Addition
AC1-Air Conditioning
AC2- Air Conditioning
PAV2- Pavilion
VS- Vocational Services
Burchfield Penney Art Center

In addition, the SHPO called attention to following issues - Wagon Shed (WAG) has been determined a contributing resource because it contains a board and batten barn which appears to date from c. 1870-1896, however, it is likely to have been moved and placed on a concrete foundation ca. 1928. It is not known if the wings are old or were built here in 1928 to offer additional space. Also, the fence and gateposts along Forest and Elmwood avenues were erected in 1895, but only those portions west of the main access drive from Forest Avenue are currently contributing to the NHL.

Framing a Statement of Significance - HSR Recommendations

Based on the historical research presented in the previous section and the review of existing historical designations presented above, the HSR makes the following recommendations regarding the evaluation of significance for this property:

1. It is recommended that not only should the property be categorized as significant for its 'architecture' but also for its equally important designed landscape. For purposes of designation on the National Register, a property is classified either as a district, site, building, structure, or object . 'The Buffalo State Asylum for the Insane' was classified under 'building(s)' at the time of its designation in 1973. Although the statement of significance on the NRHP nomination includes the importance of the designed landscape by Frederick Law Olmsted, it still classifies the property as a collection of 'buildings'. The Richardson-Olmsted Complex is

significant not exclusively for either its buildings or its landscape but rather due to an interaction of both. The history of the institution clearly proves not only the collaboration of two great masters in its initial design, but more importantly its inherent conceptual foundation that linked architecture and landscape together in a grander scheme of treatment of mental illness. Recognizing this important link, the HSR recommended early in its research phase, the preparation of a separate companion 'Cultural Landscape Report' that focuses on the historic designed landscape features of the site.

2. The NRHP designation methodology has undergone major changes since 1973 when this property was first designated, most significant being a more expanded criteria for evaluation of significance developed in 1982. Therefore, it is imperative that in the present time, existing NRHP and NL nominations and the statements of significance contained therein be re-visited to incorporate additional aspects that are now understood as potentially significant.

   The prevailing criteria for evaluation of significance for properties on the NRHP are discussed below. Those properties are considered to be significant:

   A. That are associated with events that have made a significant contribution to the broad patterns of our history; or

   B. That are associated with the lives of significant persons in or past; or

   C. That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

   D. That have yielded or may be likely to yield, information important in history or prehistory.

   It can be argued that the buildings and architecture of the Richardson-Olmsted complex site are significant under **Criterion A**, for their association with the development of mental health in the US, under **Criterion B** for their association with nationally important personalities such as H.H. Richardson, Frederick Law Olmsted, and Dr. John P. Gray and to a lesser extent, the various architects and physicians identified before, that have local and regional significance. The complex is also significant under **Criterion C**, for the intrinsic architectural features that are representative of the distinctive 'Kirkbride Plan', its evolution into the 'cottage plan' typology and elements of the Romanesque Revival style.

3. Based on an analysis of historical contexts discussed above, the period of significance for the 'Main Building' cluster comprising of the Administration Building, Male and Female Wards and their respective Kitchens is determined to span from **1870-1969**.

   The period of significance is defined as that period of time in which the property achieved significance. The period may be as short as one year, as in the case of an architecturally-significant property built in a given year. A property can also have achieved significance during several distinct periods of time, as in the case of an archaeological site. The reasons for choosing beginning and ending dates of the period of significance are important since they reflect the contexts/ events the property draws its significance from.

In this case, the start date of the period 1870 reflects the finalization of this site for establishing the Buffalo State Asylum by the New York State Legislature. The end date of 1969 reflects the demolition of three outermost male ward buildings on the west side, thus disturbing the original Kirkbride 'linear' plan layout of the hospital which comprised of equal number of wings on both sides for the two sexes. Not only did this demolition disturb the original form, but more importantly it signified an imminent demise of the whole era of institutional care for the mentally ill. While the buildings continued to house patients up until 1974, the demolition of these wings indicated that they had clearly outlived their use. The construction of the main core of buildings at the Buffalo State Asylum was part of an architectural mission to cure the mentally ill. Their demolition signified the end of this remarkable amalgamation of architecture and social policy. This period of significance also satisfies all the historical contexts that have been determined as significant for this site. However, it applies only to the main-core of buildings and not to the landscape or other site structures which surround the main buildings.

4. The HSR also recommends that all historic site structures, both inside and outside the present NHL boundary, that are more than 50 years old, and thus are National Register eligible, should be evaluated for inclusion within the NR/NHL boundary. This will allow sensitive redevelopment of buildings such as the Superintendents Home (1905), the Nurses Home (1930) and Reception Building (1930), among others. All of these structures played an integral role in the developmental history of the complex and should be evaluated for preservation treatment options.

Character Defining Features

Character defining features are attributes or features of the site and buildings that may be individually or collectively important in defining the various historic contexts and thus the overall significance of the complex. Thus, their identification, retention, protection, and repair should be given prime consideration in every preservation project. Caution should be exercised in developing plans that would radically change character-defining features or that would obscure, damage or destroy them in any way. As the first step in insuring this, the HSR document employs a multi-scale approach in identifying character-defining features throughout the complex:

Site-level: Identifying from afar the site's overall architectural visual aspects such as profile, cluster layout, rythm etc. to understand its distinctive features.

Building-level (Exterior): Identifying features of individual buildings from the exterior such as layout, massing, details, craftsmanship and surface finishes.

Building-level (Interior): Identifying the interior visual aspects of buildings – spaces, features and finishes – by going into and through the building.

To make the information on character-defining features more useful, the HSR has combined their identification with their existing condition, integrity (how well the present condition is able to convey historical character) and treatment recommendations, and presented the information in the form of matrices included in Part C of Chapter V under the heading 'Treatment Recommendations by Character-Defining Features'.

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EXISTING CONDITIONS OVERVIEW

There are three main previous reports that deal with the existing conditions of the building and help piece together the chronology of repairs and stabilization to the buildings since they were vacated in 1973: 1. *Historic Structures Report and Re-use Feasibility Study* by Foit-Albert & Associates was completed in 1982; 2. *Decommissioning and Preservation Study* prepared by the Facilities Development Corporation in 1994; and 3. H. H. Richardson Stabilization Study by Architectural Resources was completed in 2002.

The current condition of the buildings ranges from good to poor. There have been repair and stabilization campaigns in the past that have taken care of the egregious problems and have stabilized the stone buildings to a fairly good extent. The brick buildings have not received the same level of stabilization and continue to deteriorate at an accelerated rate.

In general, the exterior masonry walls are in poor condition where the internal downspouts are broken. The deterioration associated with the downspouts is typically very localized and does not necessarily compromise the entire wall structure. The damage is more dramatic on the brick buildings where the outer wythe of bricks is peeling away from the inner wythes. Repair of these locations may be possible. Assessment of the bond between the wythes of brick is recommended to understand if the debonding is contained to the areas of water infiltration.

Most of the stone buildings have been repointed with buff colored mortar with a raised bead profile that is oversized compared to original. The mortar appears to be harder than it should be and may be causing spalling of the surrounding stone edges. Mortar should be softer than the surrounding masonry, compressing when the masonry units expand and contract. When mortar is harder than the surrounding stone, it doesn't compress when the masonry units expand, but spalls the edges of the stone. The repointing mortar is failing at varying rates on the building. The north elevations are in worse condition, in general.

Some remnants of original stone pointing reveal a subtle raised bead, two color mortar pattern that would be more in keeping with Richardson's aesthetic and treatment of the material.

Most of the elevations have been repointed at least once, with some areas of multiple repair phases evident. The areas of multiple repairs are typically at gables, eaves and locations of ongoing water infiltration that are showing signs of continued deterioration. There is evidence of exterior wall rebuilding and repointing at the brick buildings. These areas are typically failing again due to continued water infiltration.

The brick buildings have been repointed as needed to perform maintenance and repairs. There does not appear to have been a major repointing campaign as there was on the stone buildings. The colors of repointing mortar are not consistent around the building. There are areas of original red mortar visible in some locations.

The atmospheric soiling is quite extensive on the buildings, creating a much darker and imposing appearance than the original red sandstone or brick surfaces. Spalling of the surface of the stone occurs to varying degrees on the different elevations. The dirt coating bonds to the surface of the stone and forms a crust. This crust is brittle, expands and contracts at a different rate than the underlying stone, and can trap moisture below the surface. Ultimately, when moisture is trapped below the surface, it can lift the brittle crust, and a thin surface of the stone. When this happens, the underlying stone is exposed. There is algae growth on the buildings, typically on the north elevations, close to the ground.

The roofs are mostly asphalt, and have been replaced within last 20 years. Some roofs have the original copper flashing and gutters in place. Other roofs have had the flashings and gutters removed and the new roof extended to the eave. At various times in the past, roofs have had holes in them, allowing water into the core of the building.

Most of the building gutters were drained through cast iron downspouts that entered the building at the attic level and were buried vertically in the exterior wall. This kept the downspouts from the exterior of the building but made it impossible to inspect them for leaks. Internal downspouts eventually corrode and break, funneling the water from the gutters to both the stone and brick masonry wall. Due to these broken downspouts, active water infiltration has occurred throughout the buildings, in most cases for many years or decades.

Female Ward I is the only building that retains the original slate roof and copper gutters and flashing. The roof is in poor condition with many missing slate tiles and holes in the roof deck. Female Ward I is also the only building with ventilation cupolas remaining from the original passive ventilation system. These copper clad wooden louvers are in poor condition.

Most of the original wood windows are covered with either the original iron bars, sheet plastic or plywood. All of these coverings make it difficult to assess the condition of the underlying wood window sash and trim.

Where the iron porches remain on the buildings they are in poor condition with rusting structural steel, wire mesh and deteriorating concrete. They are visual obstructions to the building. Where they have been removed, there is a visible scar from their installation. Stone was honed at beam and angle iron locations to create a flat surface for the roof and floor installations. Chisel marks are still visible. Some locations still have the steel angle iron ends poking out of wall and miscellaneous fasteners attached and rusting.

Due to the stabilization and repair campaigns that have happened over the years, some of the damage that is visible on the interior of the buildings no longer correlates with the exterior deterioration. There are many buildings where the exterior has been stabilized and the evidence of past water infiltration is still evident on the interior.

Most of the damage to the interior of the buildings is due to interior water infiltration and saturation of the walls. The buildings have not been heated or ventilated for an extended period of time, causing high interior humidity levels and condensation on walls and ceilings. This moisture has caused accelerated deterioration of the interior plaster and paint surfaces, rusting of the tin ceilings, and deterioration of the wood elements.

ADMINISTRATION BUILDING (BUILDING 45)

General Description

The Administration Building, with two towers, steeply pitched roofs and positioned in the center of the site, is the iconic structure on the site. (Fig. AB.1) The building is constructed with masonry load bearing walls, stone faced with multi-wythe masonry backup, and timber framed roof structure. It is a four story building with a basement and an attic. The towers are 180 feet tall and were constructed purely for ornament. (Fig. AB.1)

The stone is Medina sandstone and is laid up in a random ashlar pattern. Most of the trim stones (window arches, belt courses, etc.) are a honed surface, and the ashlar blocks are rock faced. The roofs over the main building were originally covered in slate shingles, with decorative iron cresting along the ridge. They are currently covered in asphalt shingle with copper flashings and gutters.

(Fig. AB.2) The steep tower roofs were originally clad in diamond shaped clay tiles, and are currently clad in copper.

Overall, the exterior of the building is in fair condition, with some deterioration and damage. A description of the building elements (roof, masonry, windows, etc.) follows, with a description of the material, the existing condition of the element, and the treatment recommendations for each. The conditions are described below and shown on the building elevations (Sheets AB 2.1-2.4).

Fig. AB.1 **Southwest elevation with towers**
Image courtesy GCA


Fig. AB.2
Image courtesy GCA


Fig. AB.3
Image courtesy GCA


Fig. AB.4 **Tower elevation**
Image courtesy GCA


Fig. AB.5 **Main entrance arches**
Image courtesy GCA

Purpose and Scope

The purpose of the Administration Building Existing Conditions and Treatment Recommendations is to present the Richardson Center Corporation board with more detailed information on the current physical condition of the Administration Building and the recommended treatment approach(es) than is typically provided in an Historic Structures Report, or that is being provided for the other buildings on the site. This comprehensive review of the building will provide the information necessary for the board to plan for the restoration of the building as part of their overall reuse plan for the complex.

Exterior Existing Conditions

The interesting exterior decorative details that are unique to the Administration Building are noted below.


Fig. AB.6 **Brick vaulting at main entrance**
Image courtesy GCA

- Twin towers with steeply pitched pyramidal roofs and turreted corners (Fig. AB.4);
- Arches and grand entry on the south elevation (Fig. AB.5);
- Shallow arches at window openings;
- Stone finials at dormer gables;
- Cornice and modillions change from concave to convex at returns;
- Brick barrel and groin vaulting at front entrance (Fig. AB.6);
- Decorative tile mosaic in arch openings at front entrance (Fig. AB.7);
- Red Medina stone is contrasted with yellow sandstone

Fig. AB.7 **Tile mosaic at main entrance**
Image courtesy GCA

Fig. AB.8 **Cornice brackets**
Image courtesy GCA

Fig. AB.9 **Column and balustrade at south dormers**

Fig. AB.10 **Historic photo showing original clay tile on towner and slate roof on main building**
Image courtesy GCA

in some areas on this building to create decorative patterns.

- Freestanding column and balustrade connecting the three central dormers on the south elevation. (Fig. AB.9)

- Carved, decorative stone scuppers at gable ends. The Administration Building is the only building that originally had external downspouts.

- Two different cornice bracket types, both unique to the Administration Building. (Fig. AB.8)

Roof

Material

Originally, the main building roof was covered with black or grey slate shingles (Fig. AB.10); copper flashing, gutters and downspouts; and decorative iron cresting at the ridge (Fig AB.2). In the 1960's or 70's, the slate was removed and the roofs covered with a 3 tab asphalt shingle. According to the 2002 Architectural Resources report, a new asphalt roof was installed in 1993.

Much of the original copper flashing and gutters were retained in place. This is the only building on the complex designed to have external downspouts. The downspout locations and configurations are evident from early photographs. The gutters have been coated multiple times with various bituminous and sheet membrane materials to seal leaks. (Fig. AB.11)

The flat roof between the towers is currently covered with sheet roofing membrane. The original flat roofing material was most likely sheet metal (either copper or tin). (Fig. AB.12)

The tower pyramidal roofs were originally covered with diamond shaped clay tile. (Fig. AB.3) From historic

Fig. AB.11 **Stone scupper, downspout and copper gutter coated with plastic membrane**
Image courtesy GCA

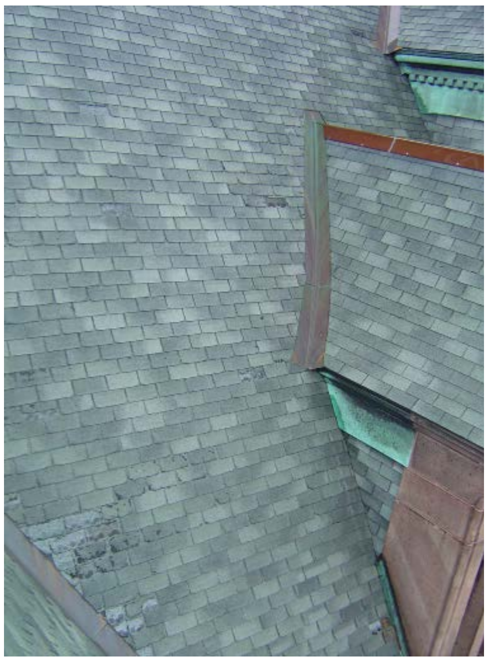


Fig. AB.14 **Asphalt roof - deteriorating condition**
Image courtesy GCA

Fig. AB.12 **Connector roof between towers**
Image courtesy GCA

photographs, it appears that the turret roofs were originally clad in copper. Iron cresting topped the ridge of the tower roofs. Currently, the pyramidal roofs and the turrets are clad in copper. The clay tile was removed and copper roofing installed on the pyramidal roof in 1918. It appears that the main sloped areas of the roof were replaced with copper again in 1945. (Fig. AB.13) A similar diamond shaped clay tile was originally installed on Trinity Church in the City of Boston. It started to fail within ten years of its installation and poor quality material was cited for its failure. It is possible that the tile used on the Buffalo towers was supplied by the same manufacturer and also failed.

Existing Condition

The existing asphalt roof is in fair to poor condition. Although there are no obvious signs of water infiltration directly related to the roof, the asphalt is deteriorating. (Fig. AB.14)

Fig. AB.13 **Copper tower roof**
Image courtesy GCA

The gutters have been lined with sheet membrane and do not appear to have any current leaks or cracks. The copper step flashing and valley flashing is in poor condition with streaking associated with imminent failure. (Fig. AB.11)

The sheet roofing membrane flat roof is in poor condition and was recently repaired by the Richardson Center Corporation. These repairs appear to have stopped the leaking to the interior of the building.

The copper cladding on the pyramidal and turret roofs is approximately 100 years old and is experiencing predictable deterioration patterns. Sheet copper is typically serviceable for 50-75 years, more when installed on such a steeply pitched roof. The copper on the roofs is nearing the end of the range. It does not appear to be leaking at this time and is still providing a solid weathertight barrier.

Masonry

Stone

Material:

The stone is Medina sandstone, quarried in nearby Medina, NY in the mid to late 1800's. Sandstone is a sedimentary rock formed by the consolidation of sand held together by natural cement, such as silica. Medina sandstone is uncharacteristically hard for sandstone and was used for curbstones in Buffalo until recently, and for many of the churches along Delaware and Richmond Streets. The walls are composed of rock faced, random ashlar blocks for the field of the wall, with a honed surface used on the stone trim at the window arches and belt courses.

Existing Condition:

In general, due to its relative hardness, the stone blocks are in good condition. The following conditions occur around the building, and are shown on the elevations:

Changes to the Building:

- A one story addition was added to the north elevation of the building in the early 1900's. The addition is brick painted brown, presumably in an attempt to have it blend in with the surrounding stone. (Fig. AB.15) There is physical evidence of a porch or enclosure from the first floor addition roof to the third floor. The porch or enclosure was removed. There is no date recorded regarding any of these changes. The alterations made to the elevation for the enclosure are:

Fig. AB.15 **North elevation first story addition**
Image courtesy GCA

- The stone cornice above the third floor windows was encased in a plywood and stucco structure when the porch was constructed, or when it was removed. It appears to have encased the cornice stone modillions at this location, but they were only visible at the ends of the enclosure where the plywood was peeled away. The plywood and stucco enclosure is in poor condition and is deteriorating rapidly. (Figs. AB.16, 17 and 18) There are multiple birds' nests in the openings of the enclosure, and possibly bats living in the enclosure as well. (Fig. AB.19)

- The window openings on the second and third floors were modified to door openings. The infill around the openings is brick and visually inconsistent with the remainder of the elevation. (Fig. AB.20)

Fig. AB.16 **North elevation plywood and stucco cornice**
Image courtesy GCA

Fig. AB.17 **North elevation plywood and stucco cornice**
Image courtesy GCA

Fig. AB.18 **North elevation plywood and stucco cornice**
Image courtesy GCA

Fig. AB.19 **Bird or bat droppings below plywood/ stucco cornice**
Image courtesy GCA

Fig. AB.20 **Window opening modified to door opening**
Image courtesy GCA

Fig. AB.21 **Stone infill at beam locations**
Image courtesy GCA

- There are several patches at the porch roof and third floor slab location where structural steel was once embedded in the stone wall. Some of the patching was done with Medina sandstone, some patching was done with brick and mortar. (Fig. AB.21)

Stone Displacement:

- Dormer Gables: The stones are shifting out of plane due to water infiltration under the stones and heaving during freeze/thaw conditions. (Fig. AB.22) Some of the gables have iron cramps that are helping to hold the stones in place. Other gables do not have cramps, or the cramps are rusting and no longer performing their intended function. (Fig. AB.23)

Fig. AB.22 **Lifted and displaced gable stones**
Image courtesy GCA

- Building Corners: There are locations around the building where the corner stones are shifting out of plane. This occurs in locations where water runoff has caused the mortar to wash out of the joints, and subsequent freeze/thaw action has continued to move the stones outward. (Figs. AB.24 and AB.25)

Spalling and Holes:

- Surface Spalling: Spalling of the surface of the stone occurs to varying degrees on the different elevations. The dirt coating bonds to the surface of the stone and forms a crust. This crust is brittle, expands and contracts at a different rate than the underlying stone, and can trap moisture below the surface.

Fig. AB.23 **Iron cramps at dormer gable rake stones**
Image courtesy GCA

Ultimately, when moisture is trapped below the surface, it can lift the brittle crust, and a thin surface of the stone. When this happens, the underlying stone is exposed. The surface of the stone contains minor surface spalling (15%) on the south and east elevations with slightly more spalling (25%) on the north and west elevations. (Fig. AB.26)

- Unit Spalling: There are many locations where pieces of the stone have spalled off. These areas are usually associated with embedded metal elements that have rusted, expanded and pushed the surrounding stone to the point of cracking and spalling.

Fig. AB.24 **Shifted (and repaired) cornice stones**
Image courtesy GCA

- Holes: There are multiple locations where metal fasteners were drilled into the stone to hold miscellaneous elements, including electrical conduit, window grills, etc. The fasteners are still in place in some locations, with open holes in others. The extant fasteners continue to rust, expand, and cause cracking of the surrounding stone.

- Fasteners from the iron bars remain in place in most of the window openings. The pins are embedded in the stone and are beginning to rust in most instances. In some locations, the rust has expanded to the point of spalling the large pieces stone from the face.

Fig. AB.25 **Shifted (and repaired) cornice stones**
Image courtesy GCA

Fig. AB.26 **Stone surface and unit spalling**
Image courtesy GCA

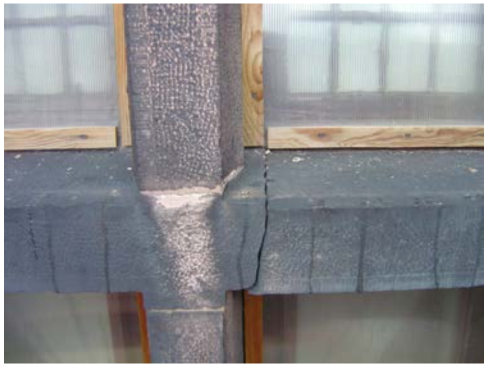


Fig. AB.27 **Crack through stone with displacement**

Fig. AB.28 **Step crack through mortar joints**
Image courtesy GCA

Soiling:

- The atmospheric soiling is quite extensive on the buildings, creating a much darker and imposing appearance than the original red sandstone or brick surfaces. Atmospheric soiling on the Administration Building ranges from approximately 25% on the south and east elevations to 75% on the north and west.

- There is little to no algal growth on the Administration Building.

Cracks:

- Stone Cracks: There are many locations on all elevations where there are cracks through sill, header and quoin stones. Many of these cracks are part of a continuous step crack in through the mortar joints. (Fig. AB.27)

- Step Cracks: Some of the step cracks run continuously for one to three stories. The cause of the cracks appears to be moisture or water infiltration in the wall, causing bulging of the backup stone and separation of the stone at the joints. This does not indicate a structural problem with the building, only a maintenance issue. (Fig. AB.28)

Mortar:

- Original Mortar: Remnants of original stone pointing are visible on the north elevation where a porch was removed, and in recesses at the window jamb returns. (Fig. AB.29 and Fig. AB.30) The original mortar utilized two colors – a brown base that matched the surrounding stone, with a subtle raised bead or mortar struck down the center of the joint in a bright red color. This color pallet, and the smaller size of the raised bead would be more in keeping with Richardson's aesthetic and treatment of the material.

- Repointing Mortar: (Fig AB.31) The majority of the Administration Building has been repointed with buff colored mortar with a raised bead profile that is oversized compared to original. The mortar appears to be harder than it should be for a sandstone joint and may be causing spalling of the surrounding stone edges. Mortar should be softer than the surrounding masonry, compressing when the masonry units expand and contract. When mortar is harder than the surrounding stone, it doesn't compress when the masonry units expand, but spalls the edges of the stone. The repointing mortar is failing quite extensively on the building, with varying degrees of failure around the building.

  There is evidence of multiple repointing campaigns on the building. These appear to have occurred over the last 20-30 years. There are various shades of red to buff, and different sized raised bead pointing profiles. All of the raised bead profiles on the repointing mortar are larger than the original profile, and are not in keeping with the original visual intent for the mortar joints. The mortar joints are currently in fair to poor condition, depending on the location on the building. Due to ongoing water infiltration and saturation, the mortar continues to

Fig. AB.29 **Original mortar exposed where north elevation enclosure removed**
Image courtesy GCA

Fig. AB.30 **Original mortar at window jambs**
Image courtesy GCA

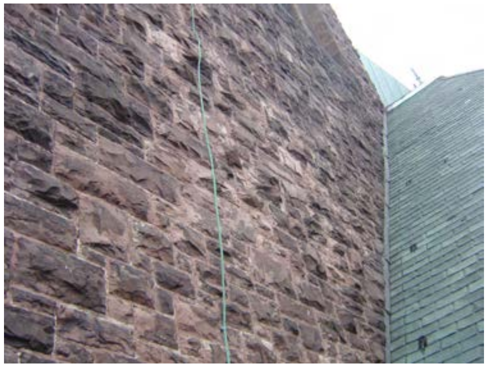


Fig. AB.31 **Typical mortar joint condition**
Image courtesy GCA

deteriorate with only approximately 50-75% of the building requiring repointing at this time.

Most of the elevations have been repointed at least once, with some areas of multiple repair phases evident. The areas of multiple repairs are typically at gables, eaves and locations of ongoing water infiltration that are showing signs of continued deterioration. There is evidence of exterior wall rebuilding and repointing at the brick buildings. These areas are typically failing again due to continued water infiltration.

Brick Elevator Shaft (west elevation)

The brick elevator shaft on the west elevation of the building is in poor condition. It is experiencing vertical cracking the entire height of the shaft. Areas of brick, at the corners, are loose and displaced. Water infiltration and freeze thaw action are accelerating the deterioration of the shaft. There are loose elements that should be removed in upcoming stabilization work on the buildings. (Figs. AB.32-34)

Windows

The original wood windows remain in place in most locations. The basement windows are covered with plywood. The remainder of the windows, including the tower windows, are covered with plastic sheet material. Due to the covering, it is not possible to determine the condition of the window sash and trim. From the interior of the building, the windows appear to be in fair condition.

Interior Existing Conditions

The features that are unique to the interior of the Administra-

Fig. AB.32 **Brick elevator shaft on west elevation**
Image courtesy GCA

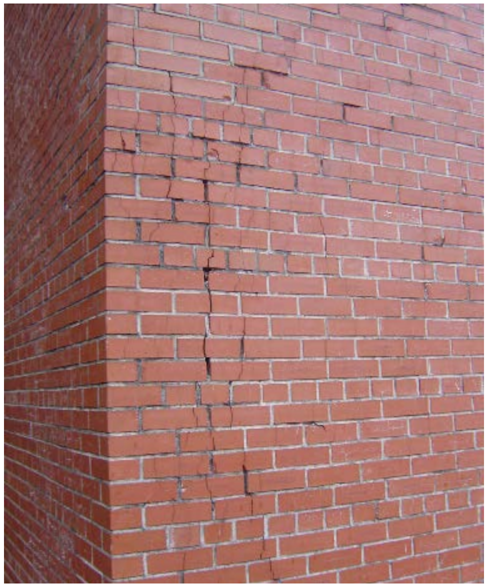


Fig. AB.33 **Brick elevator shaft on west elevation**
Image courtesy GCA

Fig. AB.34 **Brick elevator shaft on west elevation**
Image courtesy GCA

Fig. AB.35 **Decorative plaster brackets and moldings**
Image courtesy GCA

tion Building include:

- Most highly decorative plaster elements, many intact. (Fig. AB.35)
- Decorative woodwork intact – stairs (Fig. AB.36), door and window surrounds, shutters (Fig. AB.37), trim (Fig. AB.38). Most of the woodwork is a stained, clear coat and is in good condition.
- Decorative hardware (Fig. AB.39) and remains in isolated locations at the door hinges and window locks (Fig. AB.40).
- Decorative stone fireplaces on the first floor remain intact (Fig. AB.41). The fireplaces in this building are decorative stone, unlike the sandstone or brick fireplaces in the Wards.

Fig. AB.36 **Decorative central stairs**
Image courtesy GCA

- Large fourth floor space, originally a chapel and later for gathering space (Fig. AB.42)

Most of the damage to the interior of the buildings is due to interior water infiltration and saturation of the walls. The buildings have not been heated or ventilated for an extended period of time, causing high interior humidity levels and condensation on walls and ceilings. This moisture has caused accelerated deterioration of the interior plaster and paint surfaces, and deterioration of the wood elements.

The interior of the building is in fair condition. The interior damage is focused around previous roof leaks and moisture damage. The damage at water infiltration locations includes: deteriorated and failed plaster, collapsed plaster and lath at the ceilings and loss of out layer of plaster and paint. There are no areas of structural collapse of the floors or roof areas.

Where the walls and ceilings have not collapsed from water

Fig. AB.37 **Shutters at first floor windows**
Image courtesy GCA

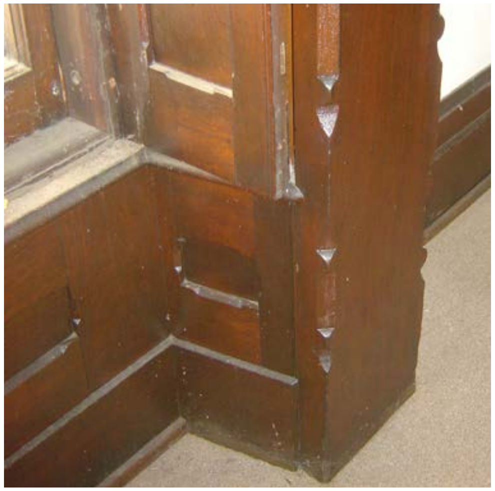


Fig. AB.38 **Decorative woodwork**
Image courtesy GCA

Fig. AB.39 **Decorative hinge**
Image courtesy GCA

Fig. AB.40 **Decorative window lock**
Image courtesy GCA

damage, there is significant surface finish damage due to high moisture levels and a lack of ventilation. Paint is generally peeling, the surface coat of wall plaster is cracked, and plaster ceilings are cracked or collapsed.

The interior walls show signs of water infiltration and appear to be in sound condition. (Fig. AB.43)

Structural Description

Building 45 is a four-story, stone-faced brick masonry building with a full basement. The typical floor framing within the building consists of 3x12 wood joists spaced at 16 inches on center. The roof framing consists of timber trusses supporting wood purlins and rafters. We were not able to access the roof framing to take measurements. Two masonry towers rise an additional two stories above the main roof level. The access platforms in the access towers are wood framed.

In general, the structure of this building is in good condition. The interior and exterior bearing walls appear to be in good condition. There are a few areas of floor and ceiling finishes that are water damaged from previous leaks, which may indicate framing deterioration. These are localized areas and represent a small percentage of the overall structure. There are also several areas of plaster ceilings that were patched and an acoustical ceiling was hung below. We do not know the reason for the patching, but since the plaster was repaired, it is possible that structural deficiencies were dealt with at the time of the repair. There is widespread moisture damage to the painted finishes, but the plaster beneath appears intact, leading us to believe the structure was not affected. Our brief walkthrough of one of the towers revealed that there is deterioration, such as spalling, on the interior of some of the stone window mullions.

Fig. AB.41 **Fireplace**
Image courtesy GCA

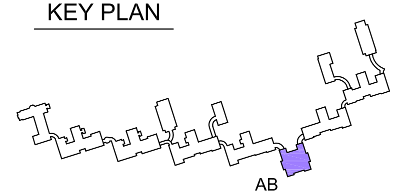
Fig. AB.42 **Fourth floor – originally used as a chapel**
Image courtesy GCA

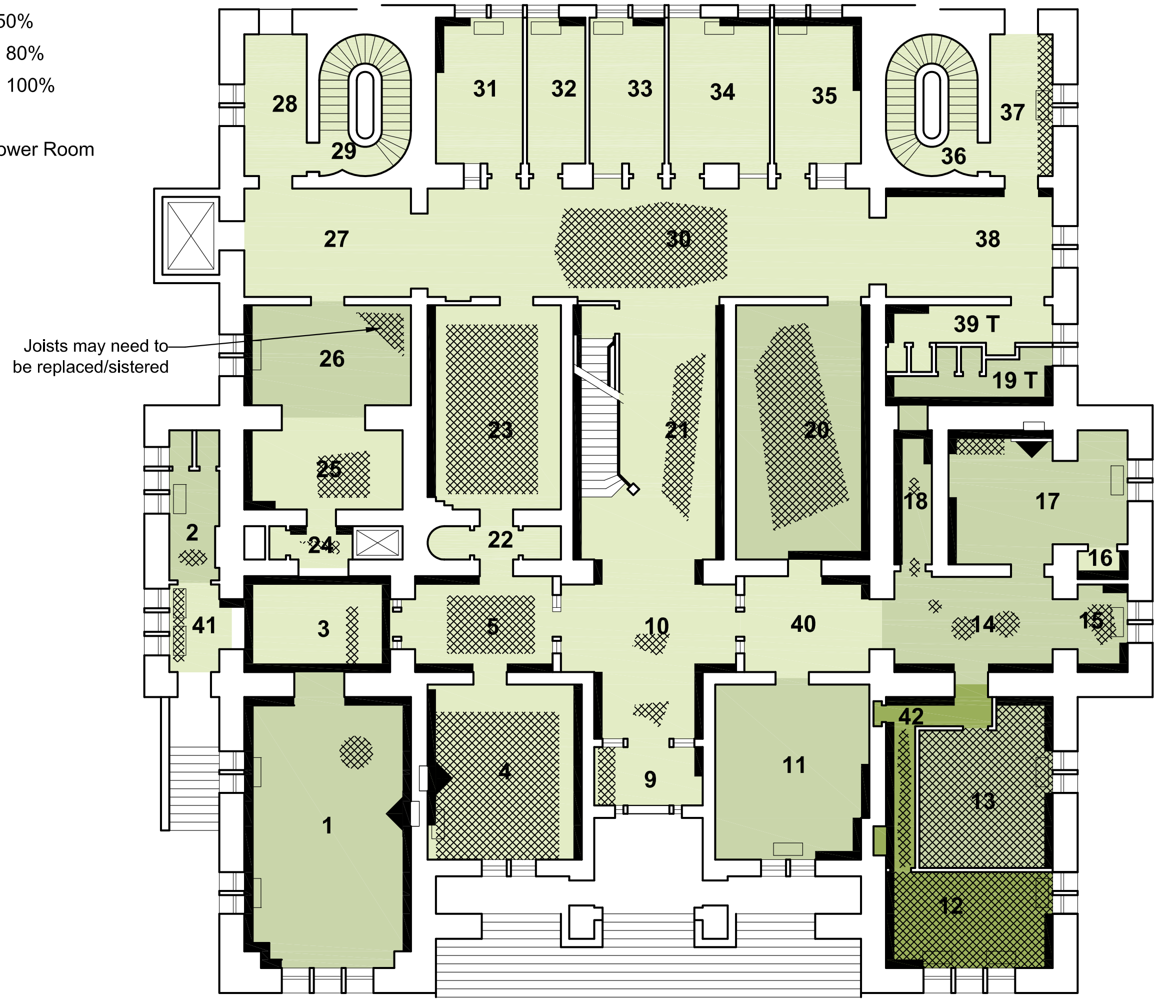
Fig. AB.43 **Typical interior tower condition**
Image courtesy GCA

KEY

- Floor - Unsound, Partially Collapsed, or Missing
- Walls - Plaster and/or Lath Damage
- Ceiling - Plaster, Lath, or Tin Damage
- Overall % Intact 0 - 50%
- Overall % Intact 51 - 80%
- Overall % Intact 81 - 100%
- O Downspout
- T Denotes Toilet or Shower Room

KEY PLAN

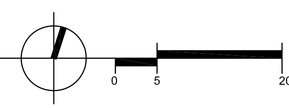




AB 1.1

First Floor Plan ADMINISTRATION BUILDING

These drawings show estimated existing conditions.



KEY

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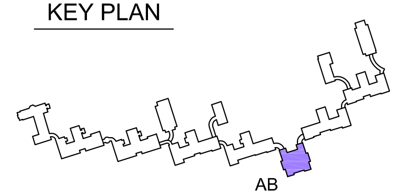
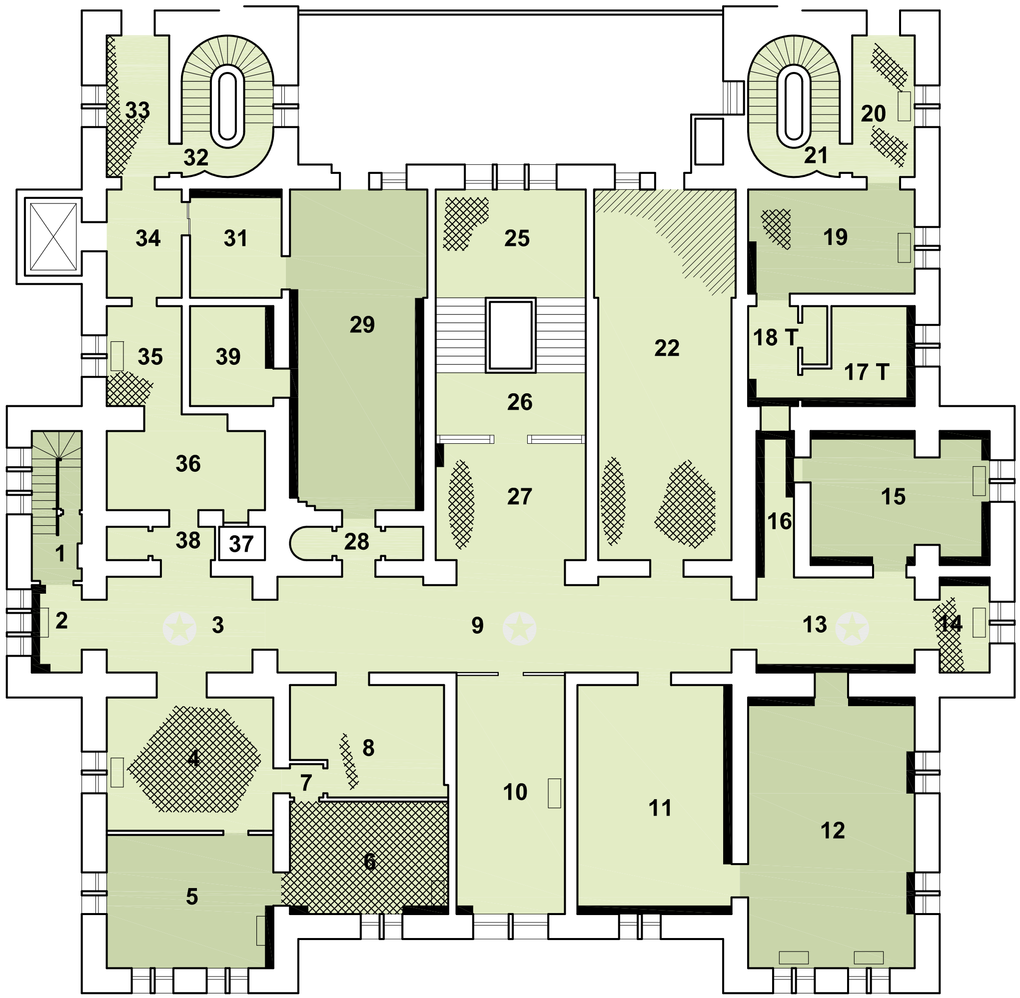
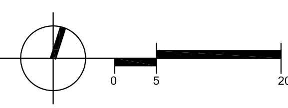
- Downspout
- T Denotes Toilet or Shower Room
- Ceiling Medallion

KEY PLAN







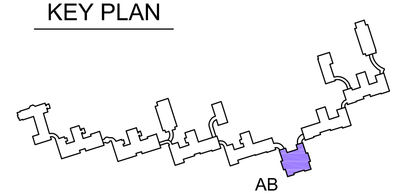
AB 1.2 **Second Floor Plan** ADMINISTRATION BUILDING

These drawings show estimated existing conditions.

KEY

- Floor - Unsound, Partially Collapsed, or Missing
- Walls - Plaster and/or Lath Damage
- Ceiling - Plaster, Lath, or Tin Damage
- Overall % Intact 0 - 50%
- Overall % Intact 51 - 80%
- Overall % Intact 81 - 100%
- Downspout
- T Denotes Toilet or Shower Room
- Ceiling Medallion

KEY PLAN



AB 1.3

Third Floor Plan ADMINISTRATION BUILDING

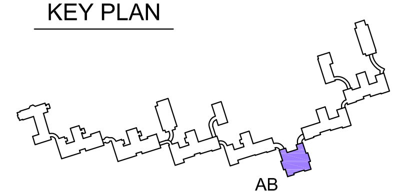
These drawings show estimated existing conditions.

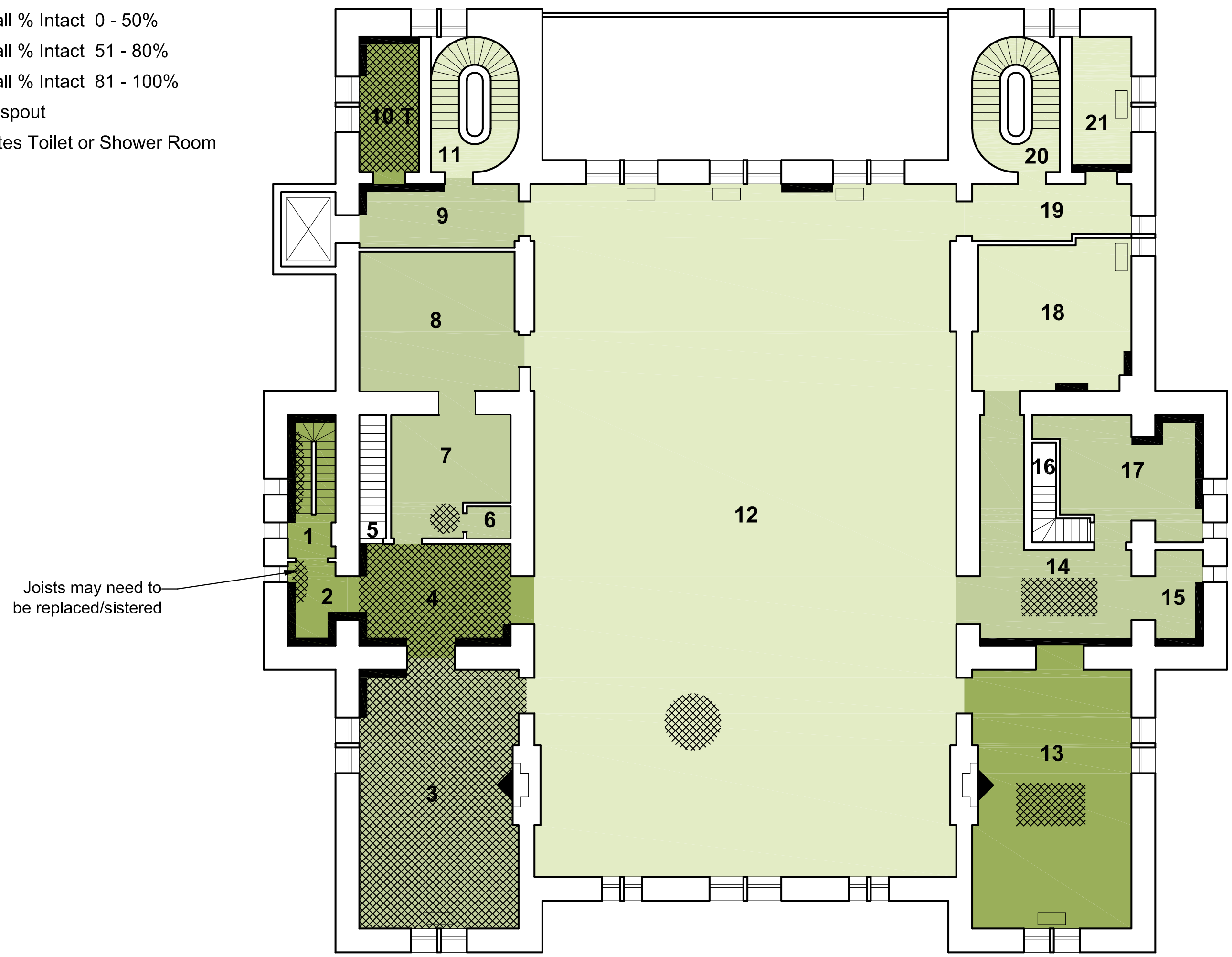
0 5 20ft

KEY

- Floor - Unsound, Partially Collapsed, or Missing
- Walls - Plaster and/or Lath Damage
- Ceiling - Plaster, Lath, or Tin Damage
- Overall % Intact 0 - 50%
- Overall % Intact 51 - 80%
- Overall % Intact 81 - 100%
- O Downspout
- T Denotes Toilet or Shower Room

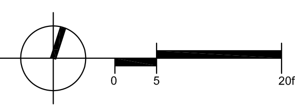
KEY PLAN





AB 1.4 **Fourth Floor Plan** ADMINISTRATION BUILDING

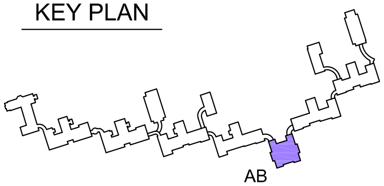
These drawings show estimated existing conditions.

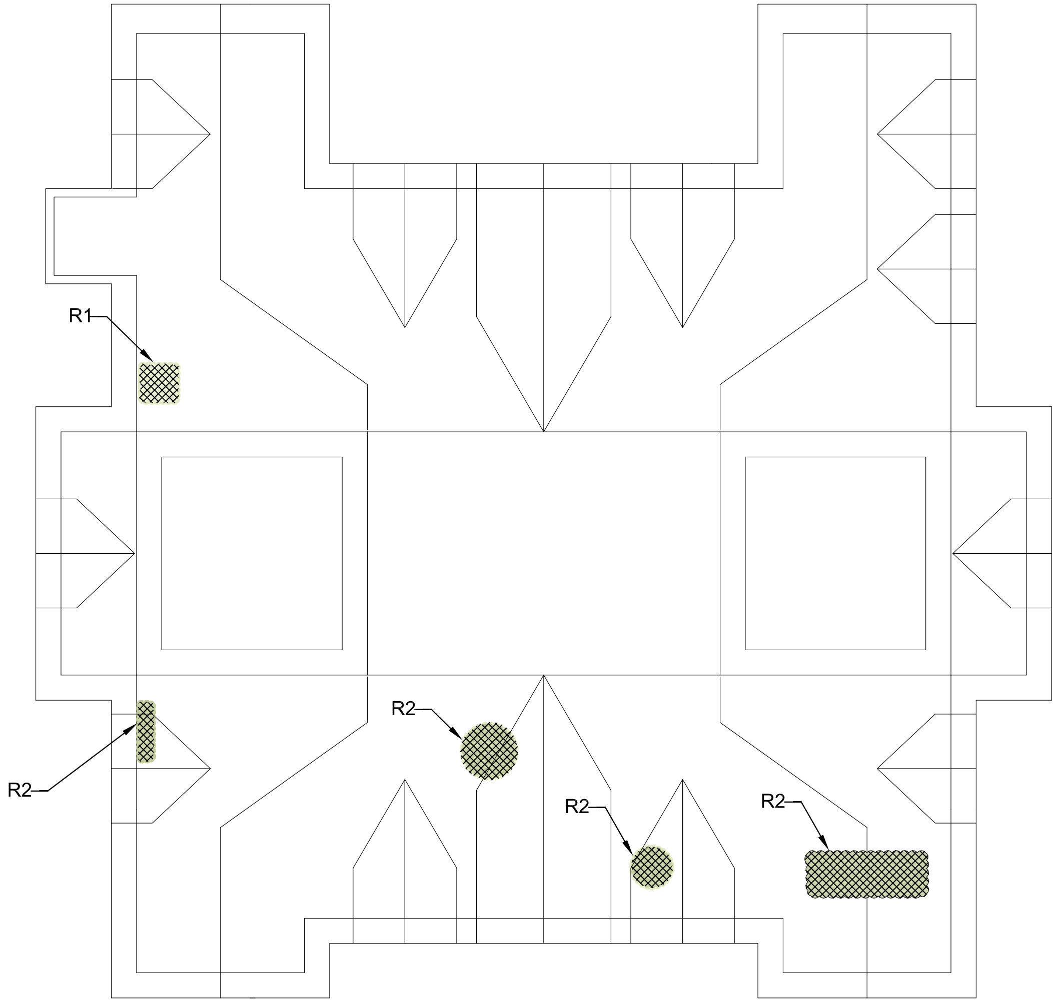


KEY

- R1 - Minor checking/cracking/water staining
- R2 - Roof framing/sheathing requires local repairs
- R3 - Roof framing/sheathing requires replacement
- Downspout

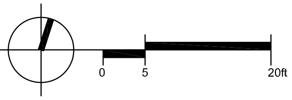
KEY PLAN

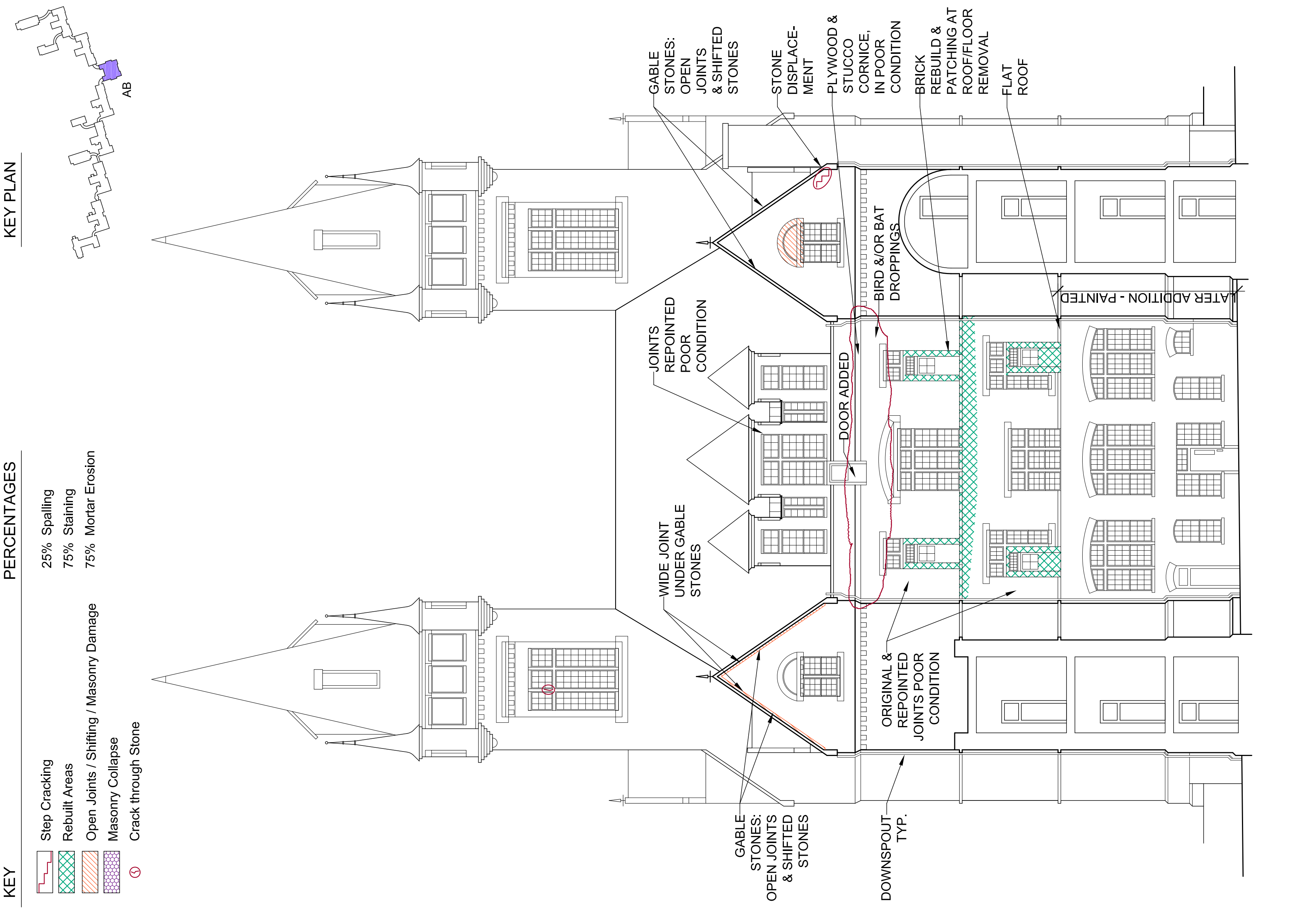




AB 1.5 **Roof Plan** ADMINISTRATION BUILDING

These drawings show estimated existing conditions.





AB 2.1 **North Elevation** ADMINISTRATION BUILDING

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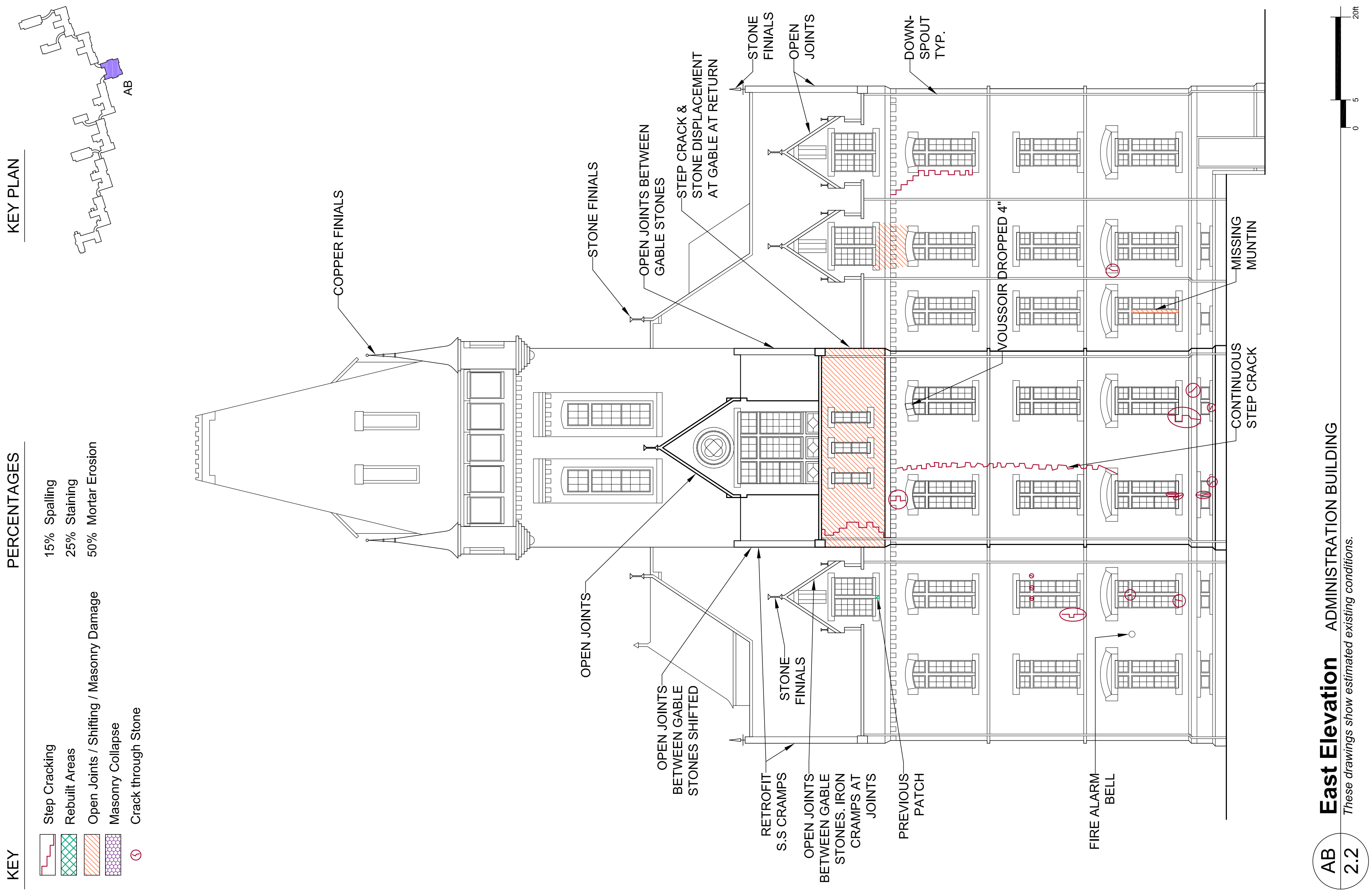

AB 2.2

East Elevation ADMINISTRATION BUILDING

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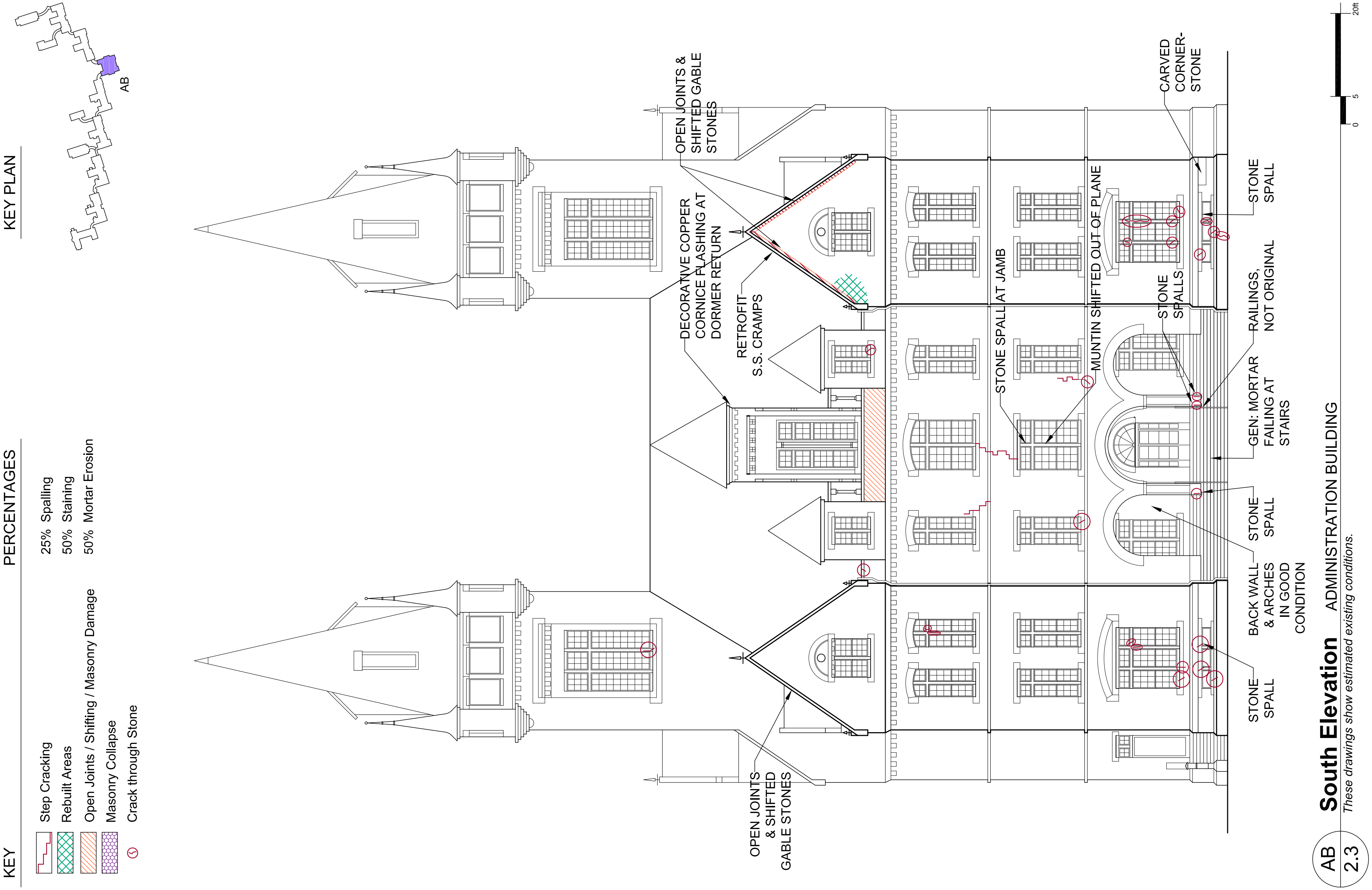

South Elevation ADMINISTRATION BUILDING

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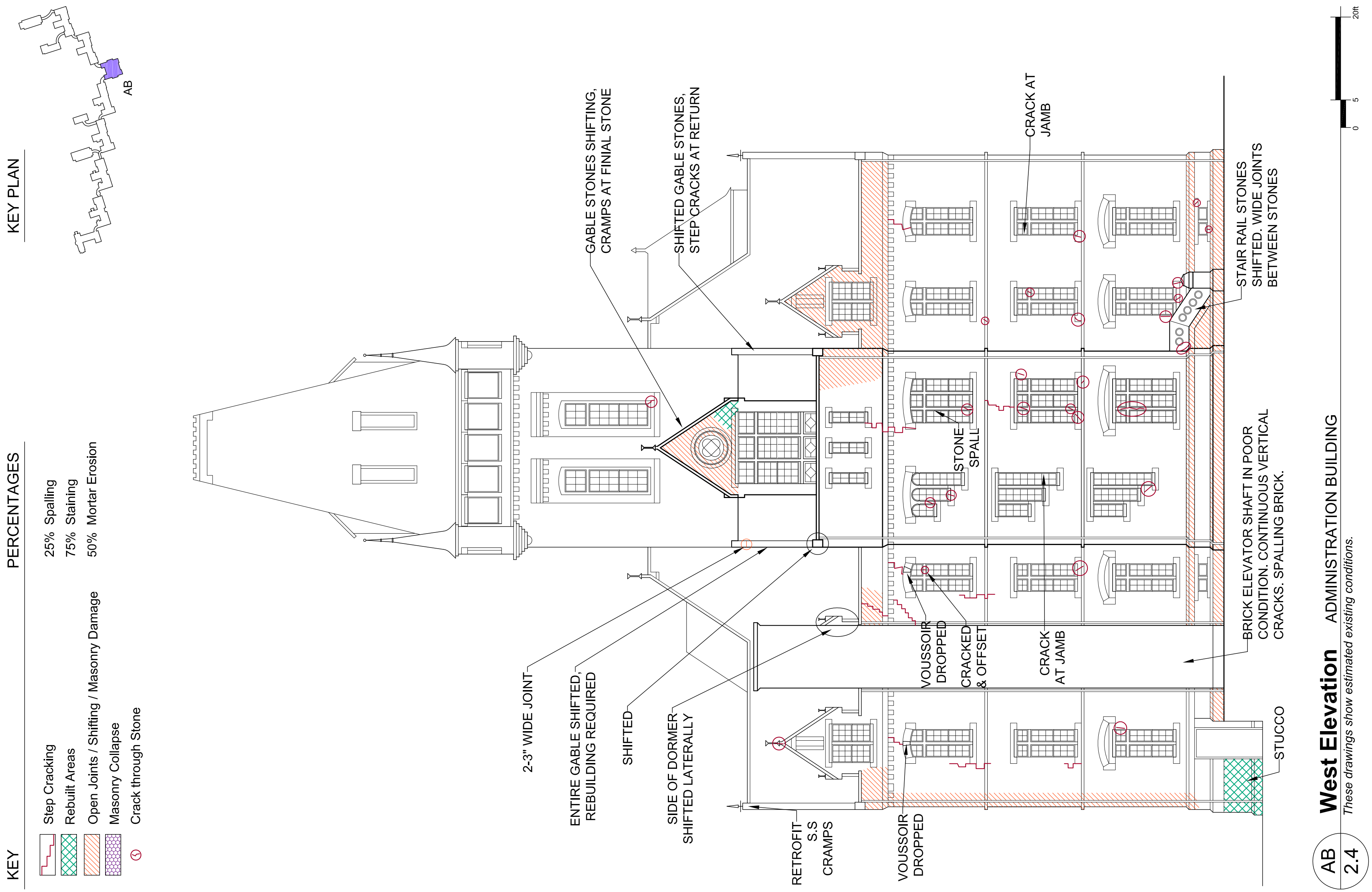

AB 2.4 **West Elevation** ADMINISTRATION BUILDING

These drawings show estimated existing conditions.

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MALE WARD A (BUILDING 10)

General Description

Male Ward A is a stone building with a basement, three floors and an attic. (Fig. A.1) The roof is asphalt shingle with copper flashings and gutters. Overall, the exterior of the building is in good condition, with some minor deterioration and damage described below and shown on the building elevations (Sheets A 2.1-2.4). The interior was renovated circa 1989 to 1992 for Buffalo Psychiatric Center office swing space during the renovation of the Strozzi Building. Particular conditions are shown on the floor plans (Sheets A 1.1-1.5). Exterior alterations were made to the building during the 1990 renovation. The interesting decorative details that are unique to this building are noted below.

Decorative carvings and unique stonework details on Building 9 include:

- Red Medina stone is contrasted with yellow sandstone in some areas on this building to create decorative patterns. This is used at the dormer and gable peaks, and in a spandrel panel over a set of triple windows. (Fig. A.1)
- The cornice modillions are carved brackets and are unique to this building and Male Ward B. (Fig. A.2)
- Carved scrolled ends where the beltcourse meets the window opening. (Fig. A.2)
- The gable is capped with wood, with wood trim on the face.

Fig. A.1 **South elevation overview showing decorative features - contrasting yellow and red sandstone in gable and carved scrolled beltcourse ends**
Image courtesy GCA

Fig. A.2 **South elevation showing decorative features – cornice modillions and brackets, and windows in dormer gable peaks**
Image courtesy GCA

Fig. A.3 **South elevation showing wall where porches were removed**
Image courtesy GCA

Fig. A.4 **South elevation porch removal revealing original pointing mortar** Image courtesy GCA

- There are windows located in the dormer gable peaks (Fig. A.2)
- The porches on the south elevation were removed in the 1990's and the openings were reconfigured to remove the door openings. (Fig. A.3)
- Large areas of original pointing mortar was exposed by removal of porches. (Fig. A.4)

Fig. A.5 **Vertical cracking at stone window muntin**
Image courtesy GCA

Exterior Existing Conditions

Stone

In general, the stone is in good condition. The surface of the stone contains moderate spalling (20-50%), atmospheric soiling (25-75%) and no significant algae growth on the building.

The mortar joints are mostly intact, with evidence of several repointing campaigns. In addition to the buff colored repointing, there are large areas of exposed original red and brown mortar scheme. (Fig. A.4) Due to some ongoing water infiltration and saturation, the mortar continues to deteriorate with approximately 15-35% of the building requiring repointing at this time.

Fig. A.6 **Previous fire escape location and alterations**
Image courtesy GCA

Defects and deterioration of the stone occur in the following locations:

- Fasteners from the iron bars remain in place in most of the window openings. The pins are embedded in the stone and are beginning to rust in most instances. In some locations, the rust has expanded to the point of spalling the large pieces stone from the face.

- Vertical cracking at the thin stone window muntins due to embedded and rusting iron pins. (Fig. A.5)

- Alterations to central north bay for previous fire escape have left exposed brick and inappropriate materials exposed. Window locations expanded to door openings at each floor, bad repairs and infill materials. (Fig. A.6)

Fig. A.7 **Step cracking on north elevation**
Image courtesy GCA

- Step cracking occurs on the south and east elevations. The cracking occurs mostly between the window locations. The stones have not shifted out of plane, but further water infiltration could cause displacement. (Fig. A.7)

Porches

- The iron porches were removed during the 1990's renovation. The door openings were infilled to reinstate the window configuration. The locations where the structural steel was embedded in the wall to support the porch were infilled with matching Medina sandstone. The locations where the sandstone was honed back to produce a flat area for the steel beams remains as

Fig. A. 8 **South elevation – iron porch removal, original mortar and patching**
Image courtesy GCA

Fig. A. 9 **Roof with ashphalt covered gable**
Image courtesy GCA

Fig. A.10 **Restored window in corridor**
Image courtesy GCA

Fig. A.11 **Cubicles built on second floor**
Image courtesy GCA

Fig. A.12 **Restored plaster molding and bracket**
Image courtesy GCA

a reminder of the porches and the alterations to the buildings. The most interesting result of the porch removal is the exposure of the original mortar. In the areas where the mortar was revealed, it is possible to see large expanses of the building as it was intended, with the red and brown mortars. (Fig. A.8)

Roof

- The roof is covered in asphalt 3 tab shingles. It is in good condition with no open holes or missing shingles. The main portion of roof was installed in 1990. The asphalt shingles cover the gable rake. (Fig. A.9)

- The gutters are built into the stone parapet wall. The original copper gutter lining and flashing remain on the roof. The gutter was lined with EPDM in 1996, according to the Architectural Resources report. The internal downspouts were replaced with galvanized piping during the renovation of the building for office use. There are areas where the downspouts and the roof have started leaking.

Fig. A.13 **Restored door with retrofit hardware**
Image courtesy GCA

Wood Trim/Paint Color

- The gable rake has a wood trim on the face. It appears to be in good condition, with of red trim paint in some locations.

Windows

- The basement windows are covered with plywood. The remainder of the windows are covered with plastic sheet material. Due to the covering, it is not possible to determine the condition of the window sash and trim.

The windows were restored during the 1990's renovation and appear to be in good condition. (Fig. A.10)

Interior Existing Conditions

The interior of the building is in good to fair condition. The interior was renovated in the 1990's. The walls, ceilings and trim were repaired and painted, carpet installed and low walled cubicles were built in the central corridor of the building. (Fig. A.11) The original materials in the building – plaster and wood moldings (Fig. A.12), wood windows and wood doors – were restored and left in place. (Fig. A.13) The impact of the renovation of the interior was minimal, opting for reuse of existing elements and infill around the original floor plan. Some alterations were made to the side corridors to install a code compliant egress stair. In these locations, the original door openings were left in place and infilled with sheetrock. (Fig. A.14)

The damage to the building since the renovation is at isolated areas where the internal downspouts have failed again, (Fig. A.15) and moisture related deterioration of the paint and plaster (Fig. A.16).

The extant features that are unique to Male Ward A are mostly related to the renovations in the 1990's. The building is a good example of how the buildings could be reused, and the level to which the existing finishes and elements can be rehabilitated.

Structural Description

Male Ward A is a three-story, stone-faced, brick masonry building with a full basement. The floor framing at each level consists of 3x12 wood joists spaced at approximately 16 in. on center. The ceiling framing throughout the building consists of 2x12 wood joists spaced at approximately 16 in. on center. The roof framing consists of field constructed "scissor" type trusses made up of 2x12 wood framing and spaced at approximately 32 in. on center.

In general, the structure of this building is in good condition. The interior and exterior bearing wall elements appear to be in good condition. There are several areas of floor framing that appear to require possible repairs. The roof framing has recently been repaired, although there may be more repairs required at the eave.

Fig. A.14 **Side corridor at egress stair**
Image courtesy GCA

Fig. A.15 **Plaster damage at roof or downspout leak**
Image courtesy GCA

Fig. A.16 **Moisture damage to walls**
Image courtesy GCA

KEY

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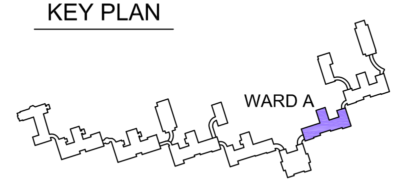
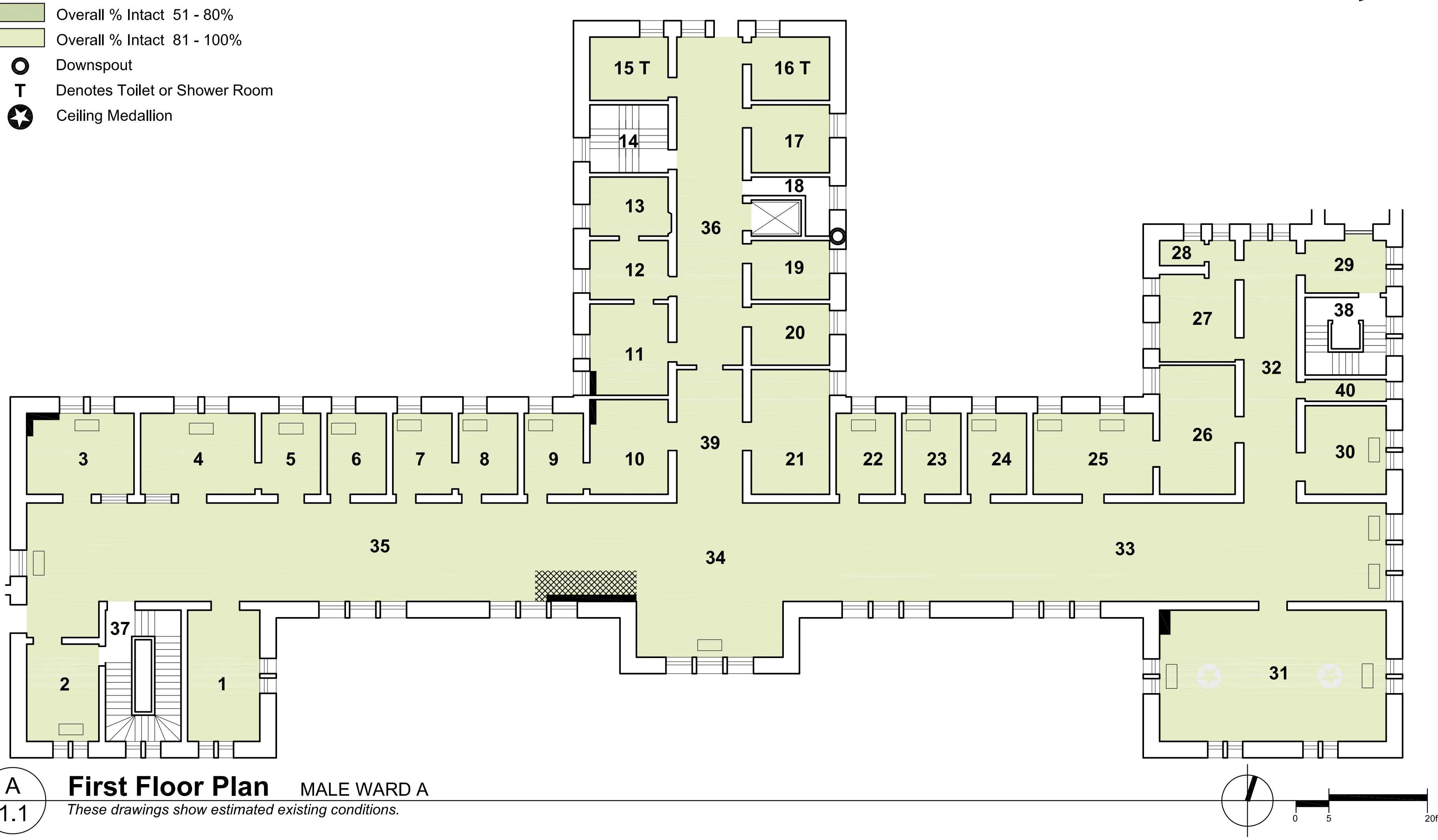
- Overall % Intact 51 - 80%
- Overall % Intact 81 - 100%
- Downspout
- T Denotes Toilet or Shower Room
- Ceiling Medallion

KEY PLAN





A 1.1 **First Floor Plan** MALE WARD A

These drawings show estimated existing conditions.

KEY

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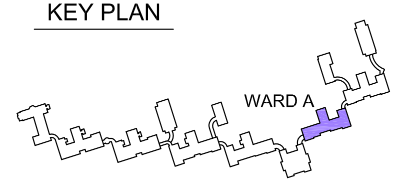
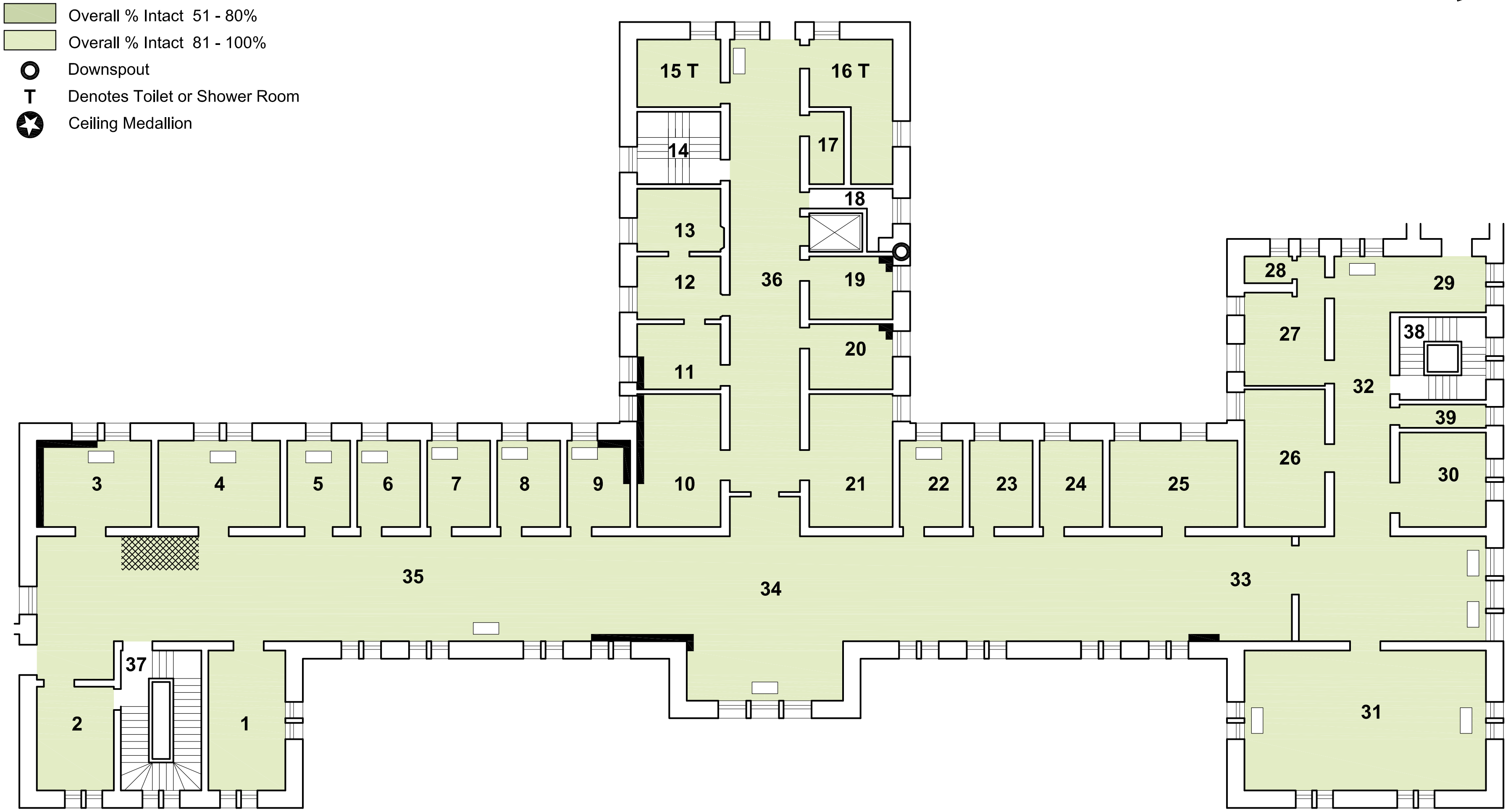
- Overall % Intact 51 - 80%
- Overall % Intact 81 - 100%
- Downspout
- T Denotes Toilet or Shower Room
- Ceiling Medallion

KEY PLAN





A 1.2 **Second Floor Plan** MALE WARD A

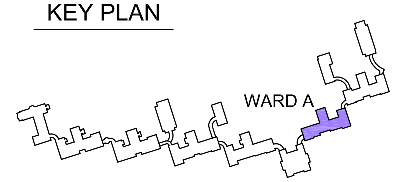
These drawings show estimated existing conditions.

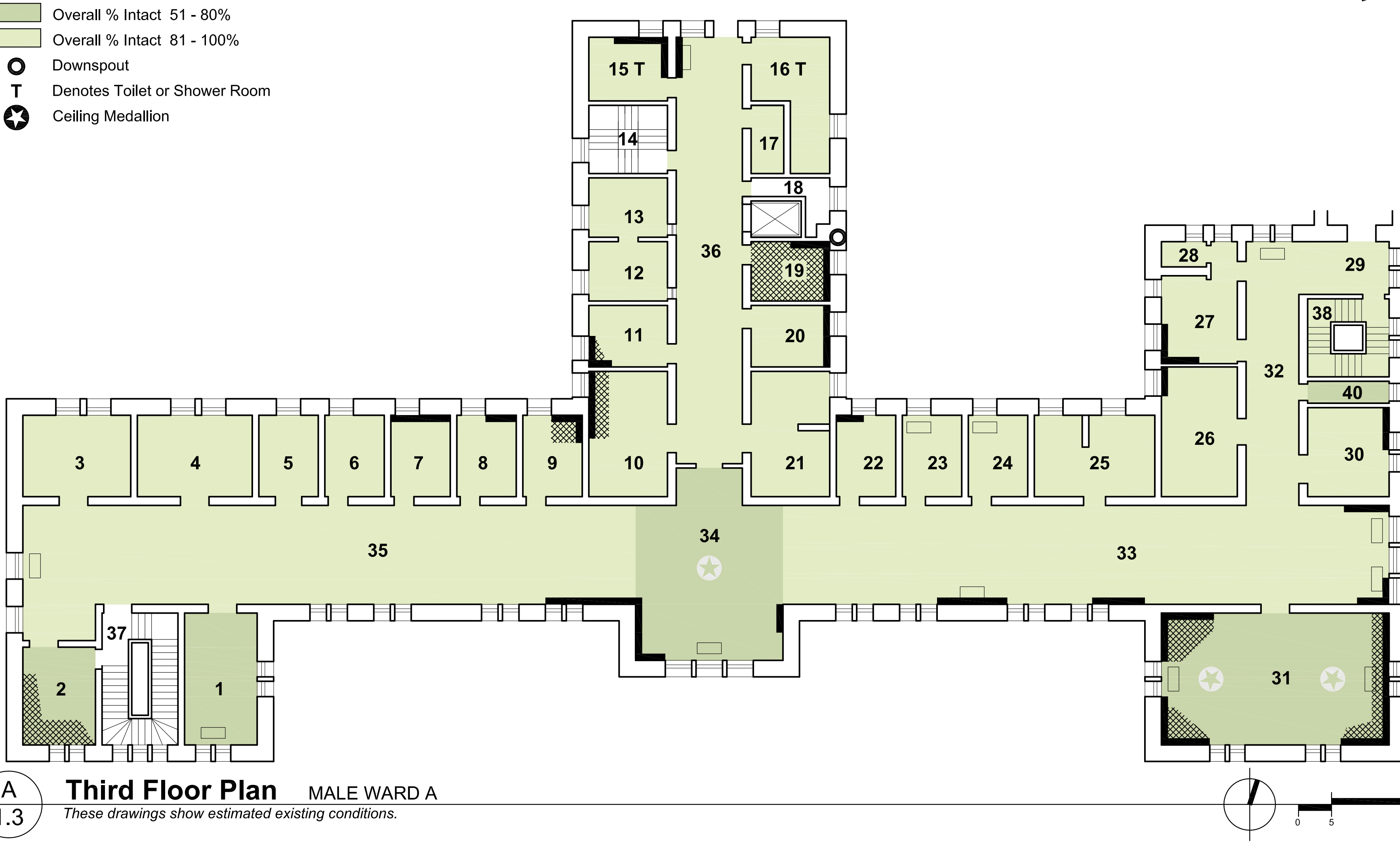
0 5 20ft

KEY

- Floor - Unsound, Partially Collapsed, or Missing
- Walls - Plaster and/or Lath Damage
- Ceiling - Plaster, Lath, or Tin Damage
- Overall % Intact 0 - 50%
- Overall % Intact 51 - 80%
- Overall % Intact 81 - 100%
- Downspout
- T Denotes Toilet or Shower Room
- Ceiling Medallion

KEY PLAN





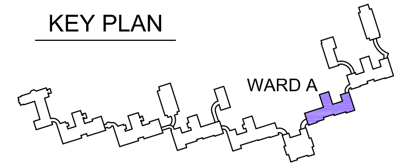
A 1.3 **Third Floor Plan** MALE WARD A

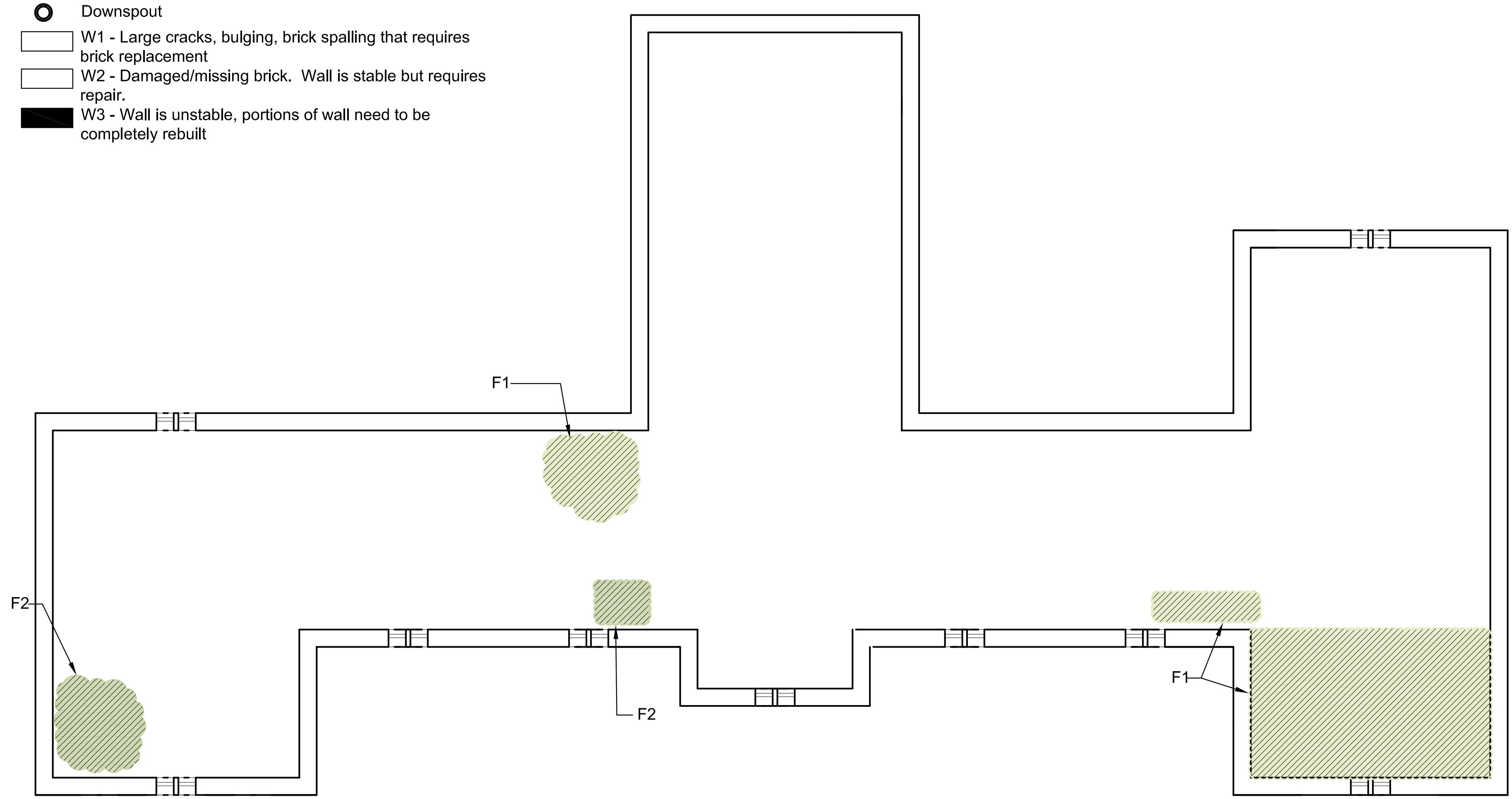
These drawings show estimated existing conditions.

KEY

- F1 - Minor damages
- F2 - Medium level of damages (Joists may need to be replaced/sistered)
- F3 - Extensive deterioration (Floor framing likely requires replacement)
- Downspout
- W1 - Large cracks, bulging, brick spalling that requires brick replacement
- W2 - Damaged/missing brick. Wall is stable but requires repair.
- W3 - Wall is unstable, portions of wall need to be completely rebuilt

KEY PLAN





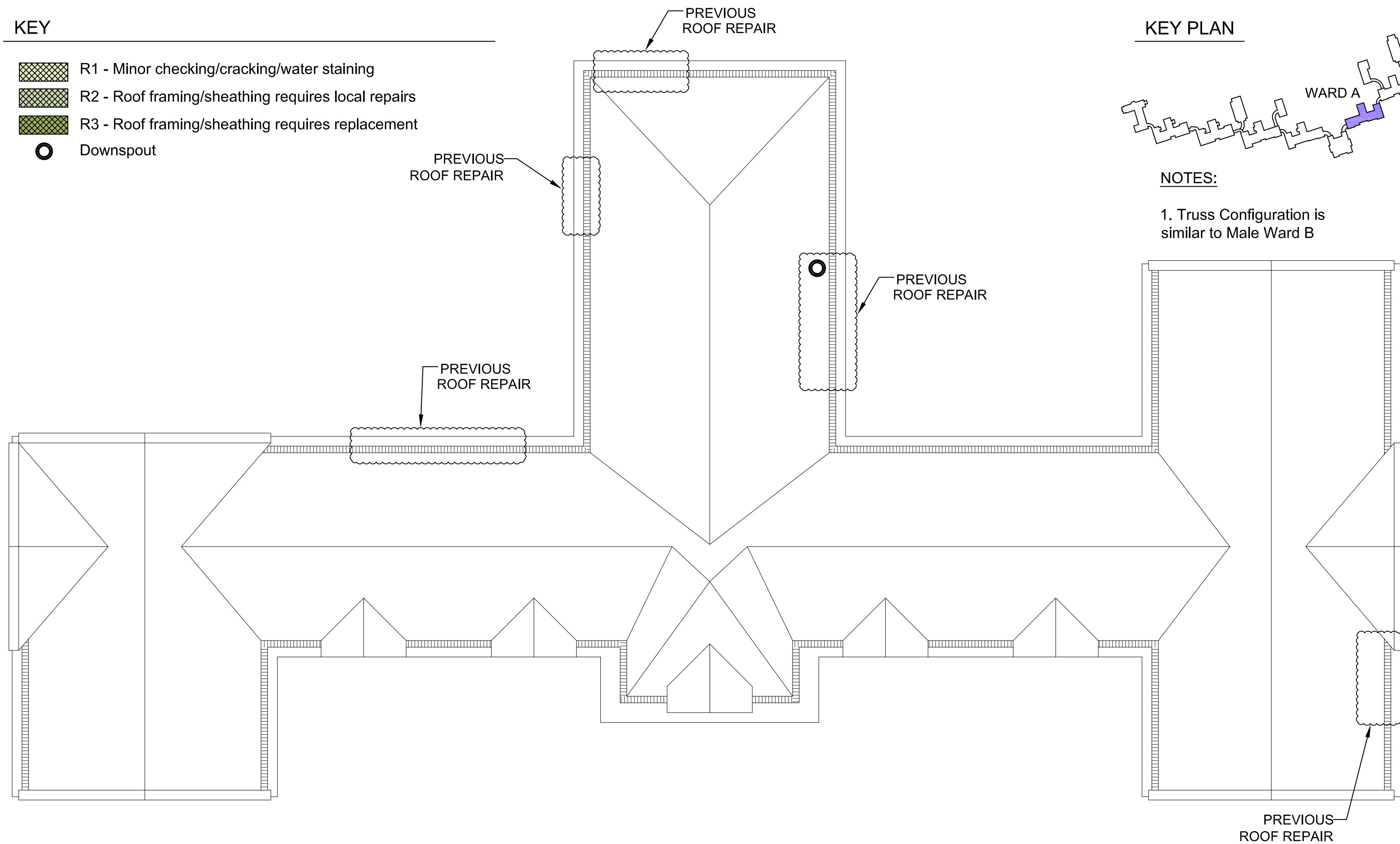
A
1.4

Attic Plan MALE WARD A

These drawings show estimated existing conditions.

KEY

- R1 - Minor checking/cracking/water staining
- R2 - Roof framing/sheathing requires local repairs
- R3 - Roof framing/sheathing requires replacement
- Downspout



KEY PLAN

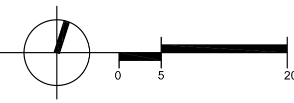
WARD A

NOTES:

1. Truss Configuration is similar to Male Ward B

A 1.5 **Roof Plan** MALE WARD A

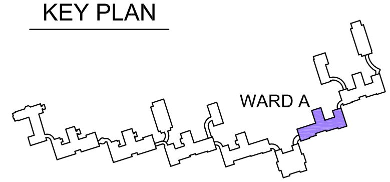
These drawings show estimated existing conditions.



KEY	
	Step Cracking
	Rebuilt Areas
	Open Joints / Shifting / Masonry Damage
	Masonry Collapse
	Crack through Stone

PERCENTAGES	
26%	Spalling
69%	Staining
15%	Mortar Erosion

KEY PLAN



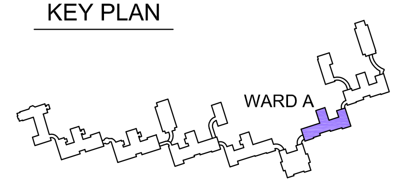
A 2.1 **North Elevation** MALE WARD A

These drawings show estimated existing conditions.

0 5 20ft

KEY	PERCENTAGES
Step Cracking	40% Spalling
Rebuilt Areas	25% Staining
Open Joints / Shifting / Masonry Damage	25% Mortar Erosion
Masonry Collapse	
Crack through Stone	

KEY PLAN



A 2.2 **East Elevation** MALE WARD A

These drawings show estimated existing conditions.

0 5 20ft

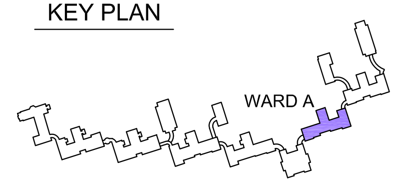
KEY

- Step Cracking
- Rebuilt Areas
- Open Joints / Shifting / Masonry Damage
- Masonry Collapse
- Crack through Stone

PERCENTAGES

21% Spalling
46% Staining
35% Mortar Erosion

KEY PLAN

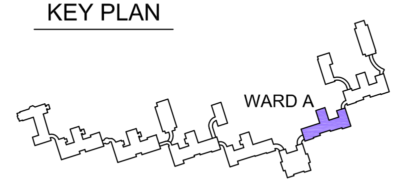


A 2.3 **South Elevation** MALE WARD A

These drawings show estimated existing conditions.

KEY	PERCENTAGES
Step Cracking	50% Spalling
Rebuilt Areas	60% Staining
Open Joints / Shifting / Masonry Damage	25% Mortar Erosion
Masonry Collapse	
Crack through Stone	

KEY PLAN



A 2.4 **West Elevation** MALE WARD A

These drawings show estimated existing conditions.

0 5 20ft

MALE WARD B (BUILDING 9)

General Description

Male Ward B is a stone building with a basement, three floors and an attic. The roof is asphalt shingle with copper flashings and gutters. Overall, the exterior of the building is in good condition, with some minor deterioration and damage described below and shown on the building elevations (Sheets B 2.1-2.4). The interior is in worse condition than the exterior would suggest, due to the deteriorated interior downspouts, and prior roof leaks, with conditions shown on the floor plans (Sheets B 1.1-1.3). The interesting decorative details that are unique to this building are noted below. (Fig. B.1)

Decorative carvings and unique stonework details on Building 9 include:

- Red Medina stone is contrasted with yellow sandstone in some areas on this building to create decorative patterns. This is used at the dormer and gable peaks, and in a spandrel panel over a set of triple windows. (Fig. B.2 & B.5)
- The cornice modillions are carved brackets and are unique to this building and Male Ward A. (Fig. B.3)
- Carved scrolled ends where the beltcourse meets the window opening. (Fig. B.4)
- The gable is capped with wood, with wood trim on the face. (Fig. B.5)

Fig. B.1 **South elevation of Male Ward B**
Image courtesy GCA

Fig. B.2 **Red Medina stone is contrasted with yellow sandstone to create decorative patterns**
Image courtesy GCA

Fig. B.3 **Carved bracket cornice modillions**
Image courtesy GCA

Fig. B.4 **Carved scrolled ends where the beltcourse meets the window opening**
Image courtesy GCA

Fig. B.5 **Wood capped gable end**
Image courtesy GCA

Exterior Existing Conditions

Stone

In general, the stone is in good condition. The surface of the stone contains minor spalling (15%) on the south and east elevations with more extensive spalling (40-60%) on the north and west elevations, atmospheric soiling (30% - 50%) and no significant algae growth on the building.

The mortar joints are mostly intact, with evidence of several repointing campaigns. In addition to the buff colored repointing evident on the Female wings, there is red mortar. (Fig 6) Due to some ongoing water infiltration and saturation, the mortar continues to deteriorate with only approximately 5-15% of the building requiring repointing at this time.

Defects and deterioration of the stone occur in the following locations:

- Fasteners from the iron bars remain in place in most of the window openings. The pins are embedded in the stone and are beginning to rust in most instances. In some locations, the rust has expanded to the point of spalling the large pieces stone from the face. (Fig. B.7)
- Alterations to central north bay for previous fire escape have left exposed brick and inappropriate materials exposed. Window locations expanded to door openings at each floor, bad repairs and infill materials. (Fig. B.8)
- Step cracking occurs on the south and east elevations. The cracking occurs mostly between the window locations. The stones have not shifted out of plane, but further water infiltration could cause displacement. (Fig. B.9)

Fig. B.6 **Example of red mortar used in some repointing campaigns**
Image courtesy GCA

Porches

- The iron porches remain on the east and west ends of the south elevation (Fig. B.10). Both are in poor condition with spalling concrete and rusting steel structure, grating and mesh. The first floor of the east porch is constructed of brick, added in the 1950' or 60's.

Roof

- The roof is covered in asphalt 3 tab shingles. It is in good condition with no open holes or missing shingles. The main portion of roof was installed after 2002. The asphalt shingles cover the gable rake. (Fig. B.11)

- The gutters are built into the stone parapet wall. The original copper gutter lining and flashing remain on the roof. It is likely that the gutter was lined with EPDM during one of the stabilization campaigns.

Fig. B.7 **Spalled stone due to embedded rusting iron fasteners**
Image courtesy GCA

Wood Trim/Paint Color

- The gable rake has a wood trim on the face. There is evidence of red trim paint in some locations. (Fig. B.5)

Windows

- The basement windows are covered with plywood. The remainder of the windows are covered with plastic sheet material. Due to the covering, it is not possible to determine the condition of the window sash and trim.

Interior Existing Conditions

The interior of the building is in fair to poor condition. The interior damage is focused around previous roof leaks and broken internal downspouts. The damage at water infiltration locations includes: deteriorated and failed plaster, exposing the brick walls, collapsed ceilings and floors and deteriorated

Fig. B.8 **Alterations to central north bay for previous fire escape**
Image courtesy GCA

Fig. B.9 **Step cracking on the east elevation**
Image courtesy GCA

Fig. B.10 **Iron porches on the east and west ends of the south elevation**
Image courtesy GCA

Fig. B.11 **Asphalt shingles cover the gable rake**
Image courtesy GCA

Fig. B.12 **Peeling paint at door and window trim**
Image courtesy GCA

wood window sash and trim. There is significant failure and structural instability of approximately 50% floor structure on the third floor, and 25% on the first and second floors.

Where the walls and ceilings have not collapsed from water damage, there is significant surface finish damage due to high moisture levels and a lack of ventilation. Paint is generally peeling (Fig. B12), the surface coat of plaster is cracked (Fig. B13), tin ceilings are rusted, and plaster ceilings are cracked.

The extant features that are unique to Male Ward B include: the beauty parlor located in the first floor brick addition of the porch, and decorative plaster brackets with saw-tooth motif in the central hall.

Fig. B.13 **Plaster damage at walls and ceiling**
Image courtesy GCA

Structural Description

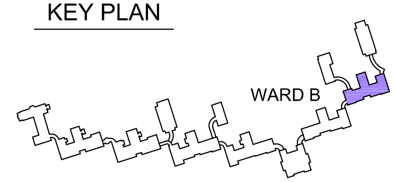
Building 9 is a three-story, stone-faced, brick masonry building with a full basement. The floor framing at each level consists of 3x12 wood joists spaced at approximately 16 in. on center. The ceiling framing throughout the building consists of 2x12 wood joists spaced at approximately 16 in. on center. The roof framing consists of field constructed “scissor” type trusses made up of 2x12 wood framing and spaced at approximately 32 in. on center.

In general, the structure of this building is in fair condition. The interior and exterior bearing wall elements appear to be in good condition. There are several areas of floor framing that appear to require replacement. The roof framing has recently been repaired, although there may be more repairs required at the eave.

KEY

- Floor - Unsound, Partially Collapsed, or Missing
- Walls - Plaster and/or Lath Damage
- Ceiling - Plaster, Lath, or Tin Damage
- Overall % Intact 0 - 50%
- Overall % Intact 51 - 80%
- Overall % Intact 81 - 100%
- Downspout
- T Denotes Toilet or Shower Room

KEY PLAN



B 1.1 **First Floor Plan** MALE WARD B

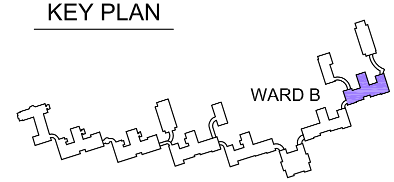
These drawings show estimated existing conditions.

0 5 20ft

KEY

- Floor - Unsound, Partially Collapsed, or Missing
- Walls - Plaster and/or Lath Damage
- Ceiling - Plaster, Lath, or Tin Damage
- Overall % Intact 0 - 50%
- Overall % Intact 51 - 80%
- Overall % Intact 81 - 100%
- O Downspout
- T Denotes Toilet or Shower Room

KEY PLAN



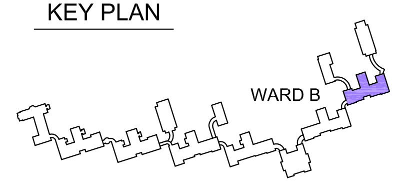
B 1.2 **Second Floor Plan** MALE WARD B

These drawings show estimated existing conditions.

KEY

- Floor - Unsound, Partially Collapsed, or Missing
- Walls - Plaster and/or Lath Damage
- Ceiling - Plaster, Lath, or Tin Damage
- Overall % Intact 0 - 50%
- Overall % Intact 51 - 80%
- Overall % Intact 81 - 100%
- Downspout
- T Denotes Toilet or Shower Room
- Ceiling Medallion

KEY PLAN



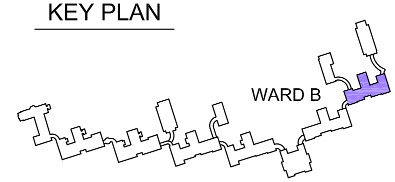
B 1.3 **Third Floor Plan** MALE WARD B

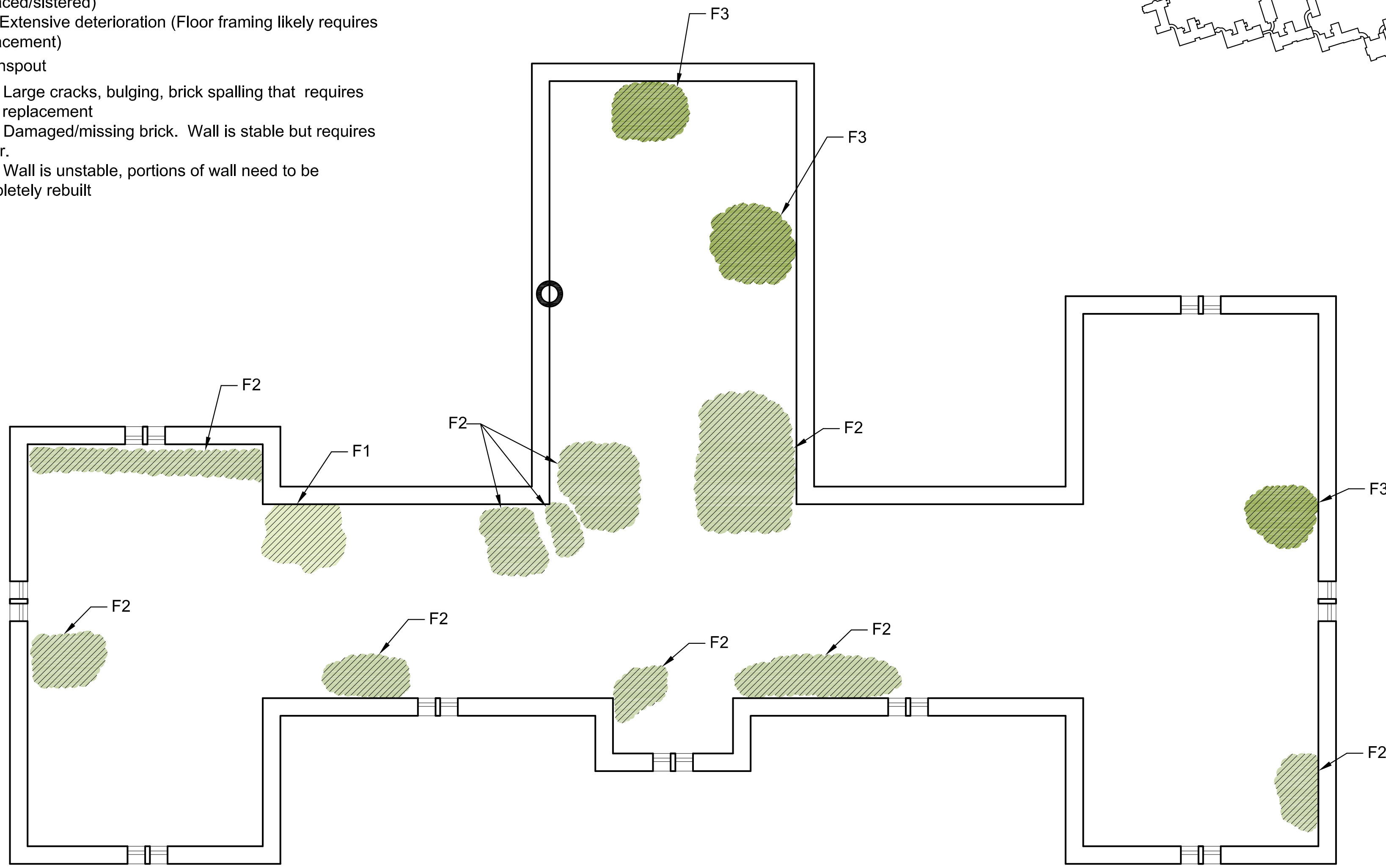
These drawings show estimated existing conditions.

KEY

- F1 - Minor damages
- F2 - Medium level of damages (Joists may need to be replaced/sistered)
- F3 - Extensive deterioration (Floor framing likely requires replacement)
- Downspout
- W1 - Large cracks, bulging, brick spalling that requires brick replacement
- W2 - Damaged/missing brick. Wall is stable but requires repair.
- W3 - Wall is unstable, portions of wall need to be completely rebuilt

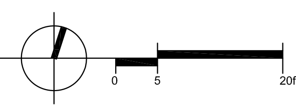
KEY PLAN





B 1.4 **Attic Plan** MALE WARD B

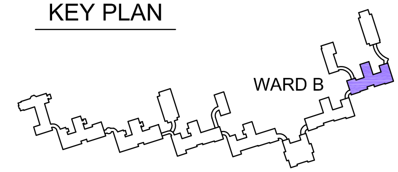
These drawings show estimated existing conditions.



KEY

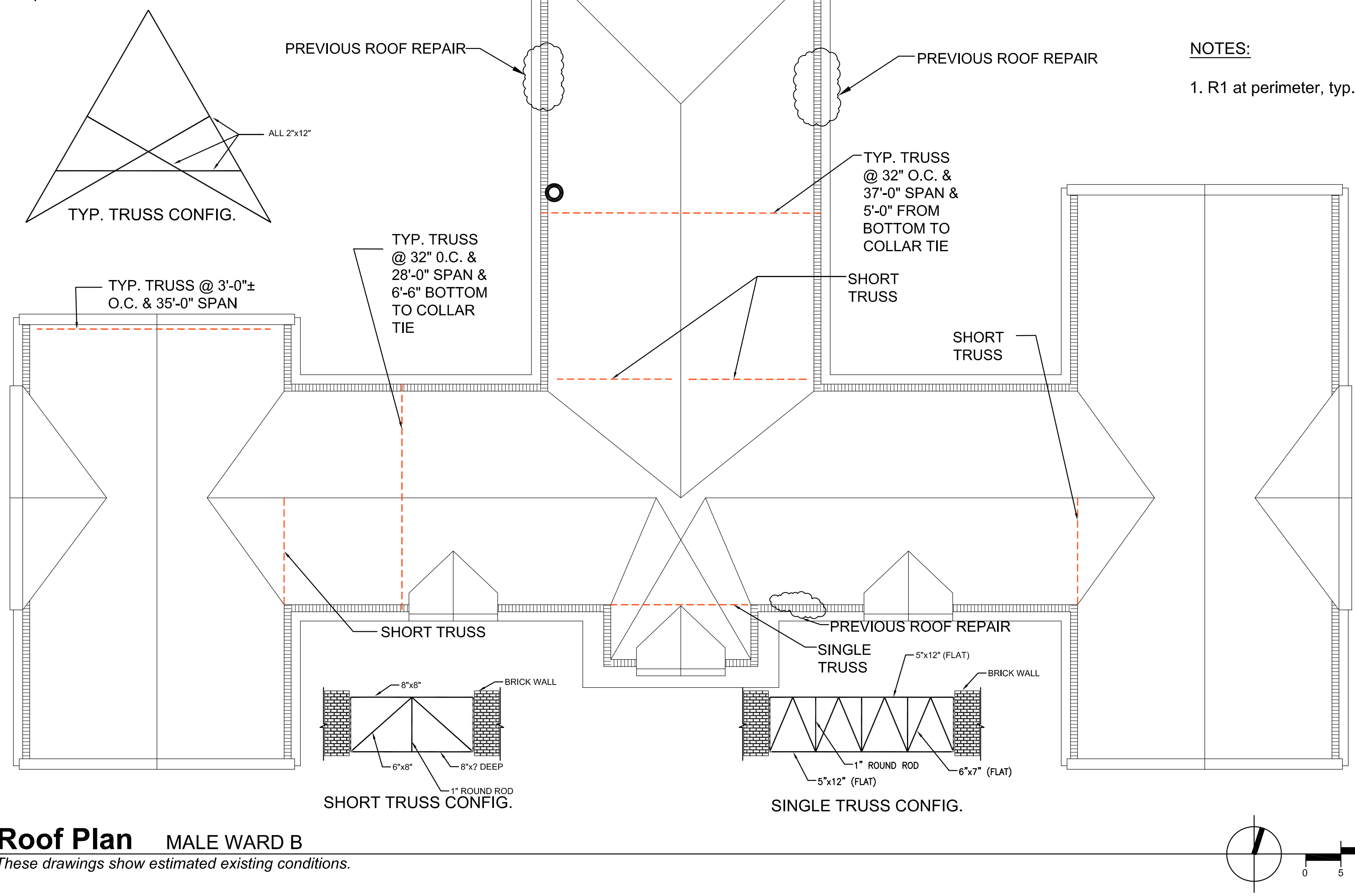
- R1 - Minor checking/cracking/water staining
- R2 - Roof framing/sheathing requires local repairs
- R3 - Roof framing/sheathing requires replacement
- Downspout

KEY PLAN



NOTES:

1. R1 at perimeter, typ.

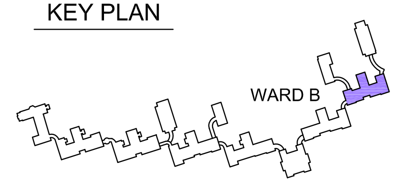


B 1.5 **Roof Plan** MALE WARD B

These drawings show estimated existing conditions.

KEY	PERCENTAGES
Step Cracking	36% Spalling
Rebuilt Areas	32% Staining
Open Joints / Shifting / Masonry Damage	5% Mortar Erosion
Masonry Collapse	
Crack through Stone	

KEY PLAN



B 2.1 **North Elevation** MALE WARD B

These drawings show estimated existing conditions.

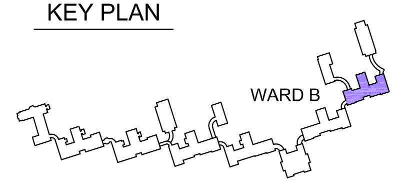
KEY

- Step Cracking
- Rebuilt Areas
- Open Joints / Shifting / Masonry Damage
- Masonry Collapse
- Crack through Stone

PERCENTAGES

15% Spalling
50% Staining
5% Mortar Erosion

KEY PLAN



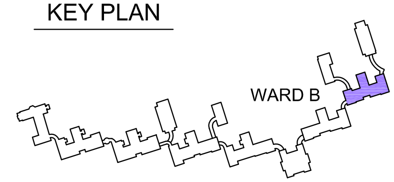
B
2.2

East Elevation MALE WARD B

These drawings show estimated existing conditions.

KEY	PERCENTAGES
Step Cracking	13% Spalling
Rebuilt Areas	56% Staining
Open Joints / Shifting / Masonry Damage	16% Mortar Erosion
Masonry Collapse	
Crack through Stone	

KEY PLAN



B 2.3 **South Elevation** MALE WARD B

These drawings show estimated existing conditions.

0 5 20ft

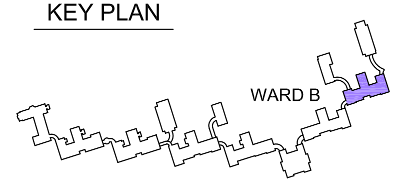
KEY

- Step Cracking
- Rebuilt Areas
- Open Joints / Shifting / Masonry Damage
- Masonry Collapse
- Crack through Stone

PERCENTAGES

60% Spalling
30% Staining
5% Mortar Erosion

KEY PLAN



B
2.4

West Elevation MALE WARD B

These drawings show estimated existing conditions.

0 5 20ft

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FEMALE WARD F (BUILDING 44)

General Description

Female Ward F is a stone building with a basement, three floors and an attic. The roof is asphalt shingle with copper flashings and gutters. Overall, the exterior of the building is in good condition, with the specific areas of deterioration noted below. The interior is in worse condition than the exterior would suggest, due to the deteriorated interior downspouts, and prior roof leaks. There are some interesting decorative details that are unique to this building. (Fig. F.1)

In general, the building is in good condition, with some minor deterioration and damage described below and shown on the building elevations (Sheets F 2.1-2.4) and floor plans (Sheets F 1.1-1.3).

Decorative carvings and unique stonework details on Building 44 include:

- At the frieze level the stones are laid up in a stack bond. This detail appears to be unique to this building. There is no obvious instability or cracking between the head joints of the stack bond courses. (Fig. F.3)
- The gable cap stones contain decorative scroll carvings where the gable meets the building corner. (Fig. F.5)
- The dormer gable ends contain decorative scroll carvings, and blind niches in the dormer peak. (Fig. F.4)

Fig. F.1 **South elevation of Female Ward F**
Image courtesy GCA

Fig. F.2 **Low relieving arches with diamond pattern carvings and gable peak carving**
Image courtesy GCA

Fig. F.3 **Frieze stones in stack bond**
Image courtesy GCA

Fig. F.4 **Decorative scroll carvings and blind niches at dormer, and rough hewn stone cornice modillions**
Image courtesy GCA

- The cornice modillions are rough hewn stone and are unique to this building. (Fig. F.4)
- The low relieving arches over the flat windows at south elevation windows contain diamond pattern carvings. (Fig. F.2)
- The gable peaks contain carved quatrefoil-in-circle carvings. (Fig. F.2)

Exterior Existing Conditions

Stone

In general, the stone is in good condition. The surface of the stone contains minor spalling (15-30%), atmospheric soiling (20% on south elevation to 90% on west elevation) and algae growth confined to the lower floors of the north elevation. (Fig. F.9)

Fig. F.5 **Gable cap stone decorative scroll**
Image courtesy GCA

The mortar joints are fairly intact, due to previous repointing campaigns. Due to ongoing water infiltration and saturation, the mortar continues to deteriorate and approximately 25% of the building requires repointing at this time.

Defects and deterioration of the stone occur in the following locations:

- The joints between the gable stones are exposed (there is no flashing over the gable stones), allowing water to infiltrate into the core of the gable wall. Some of the gable stones are lifting due to freeze/thaw action. The saturation of the masonry from the cap stones is also causing accelerated deterioration of the mortar joints in the stone wall directly below the gable. (Fig. F.5 & F.8)

There is poor original roof detail where two valleys meet at the northeast corner of the main building. This location was identified as a problem in the 2002 report and was repaired


Fig. F.6 **South elevation – east porch**
Image courtesy GCA

subsequently. The area has begun to fail again since its last repair. It appears that there is no outlet for pooled water to drain from this corner. The water saturates the corner, and freeze/thaw action quickly causes the masonry to heave out of plane. (Fig. F.8 & F.10)

Alterations to central north bay for previous fire escape have left exposed brick and inappropriate materials exposed. Window locations expanded to door openings at each floor, bad repairs and infill materials. (Fig. F.11)

Step cracking occurs on the south elevation on the east and west gable ends. The cracking occurs between the window locations and could be due to the unrestrained nature of the gable ends. The stones have not shifted out of plane, but further water infiltration could cause displacement.

Porches

The iron porch remains on the east end (Fig. F.1) of the south


Fig. F.7 **South elevation – stone conditions at removed west porch**
Image courtesy GCA

elevation. It is in poor condition with rusting steel structure, grating and mesh. The iron porch on the west elevation was removed some time after 2002. The 2002 report refers to the west porch as wood, and the east porch as concrete. This indicates that the two porches were of different construction, and likely constructed at different times.

The removal of the "wood" porch on the west end has left the following conditions: (Fig. F.7 & F.12)

- The rock faced building stone located at the porch roof and floor connections was honed flatter, leaving chisel marks and distinct flat planes.
- The stone that was covered by the porch is cleaner than the exposed stone.
- One window opening on each floor was enlarged to create a door opening for access to the porch. These openings are no longer relevant with the porch removed.


Fig. F.8 **Northeast corner showing saturation of masonry below gable and at corner (dark stone)**
Image courtesy GCA


Fig. F.9 **Elevation showing algae (green), soiling (black), and spalled areas (light red)**
Image courtesy GCA

Fig. F.10 **Northeast corner – detail of masonry deterioration**
Image courtesy GCA

Fig. F.11 **North elevation fire escape alterations**
Image courtesy GCA

Fig. F.12 **South elevation – area at removed west porch**
Image courtesy GCA

- The steel beams that supported the roof and floor structure were cut off approximately 4" from the face of the building, leaving exposed and rusting steel elements in the stone. The rusting and subsequent expansion of the steel will crack the surrounding stone.

- There are holes in horizontal bands where fasteners have been removed.

Roof (Fig. F.13)

- The roof is covered in asphalt 3 tab shingles. It is in good condition with no open holes or missing shingles. The main portion of roof was installed after 2002. The north wing roof was installed between 1994 and 2002 and is also in good condition.

- There are integral stone gutters on the building. The original copper gutter lining and flashing remain on the roof. It is likely that the gutter was lined with EPDM during one of the stabilization campaigns.

Fig. F.13 **West elevation showing asphalt roof and copper gutter**
Image courtesy GCA

- On the south elevation, downspouts project horizontally out of gutter approximately 2' from the face of the gutter and dump water on the ground. This was probably a retrofit to divert the water from broken internal downspouts.

Windows

- The basement windows are covered with plywood. The remainder of the windows are covered with plastic sheet material. Due to the covering, it is not possible to determine the condition of the window sash and trim.

Interior Existing Conditions

The interior of the building is in fair condition. The interior

Fig. F.14 **Rusted, falling tin ceilings**
Image courtesy GCA

damage is focused around previous roof leaks and broken internal downspouts. The damage at water infiltration locations includes: deteriorated and failed plaster, exposing the brick walls, collapsed ceilings and floors and deteriorated wood window sash and trim.

Where the walls and ceilings have not collapsed from water damage, there is significant surface finish damage due to high moisture levels and a lack of ventilation. Paint is generally peeling, the surface coat of plaster is cracked, tin ceilings are rusted (Fig. F.14), and plaster ceilings are cracked.

The extant features that are unique to Female Ward F include: 2 decorative stone and brick fireplaces (painted blue and white on second floor) (Fig. F.15); decorative plaster moldings in central hall, cast iron columns in room 23.

Fig. F.15 **Decorative stone and brick fireplace**
Image courtesy GCA

Structural Description

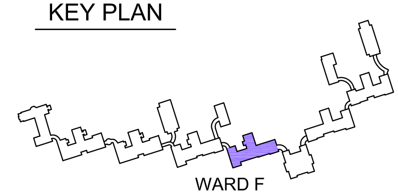
Female Ward F is a three-story, stone-faced, brick masonry building with a full basement. The floor framing at each level consists of 3x12 wood joists spaced at approximately 16 in. on center. The ceiling framing throughout the building consists of 2x12 wood joists spaced at approximately 16 in. on center. The roof framing consists of timber trusses supporting 6x8 wood purlins and roughly 2x6 rafters spaced at 16 in. on center.

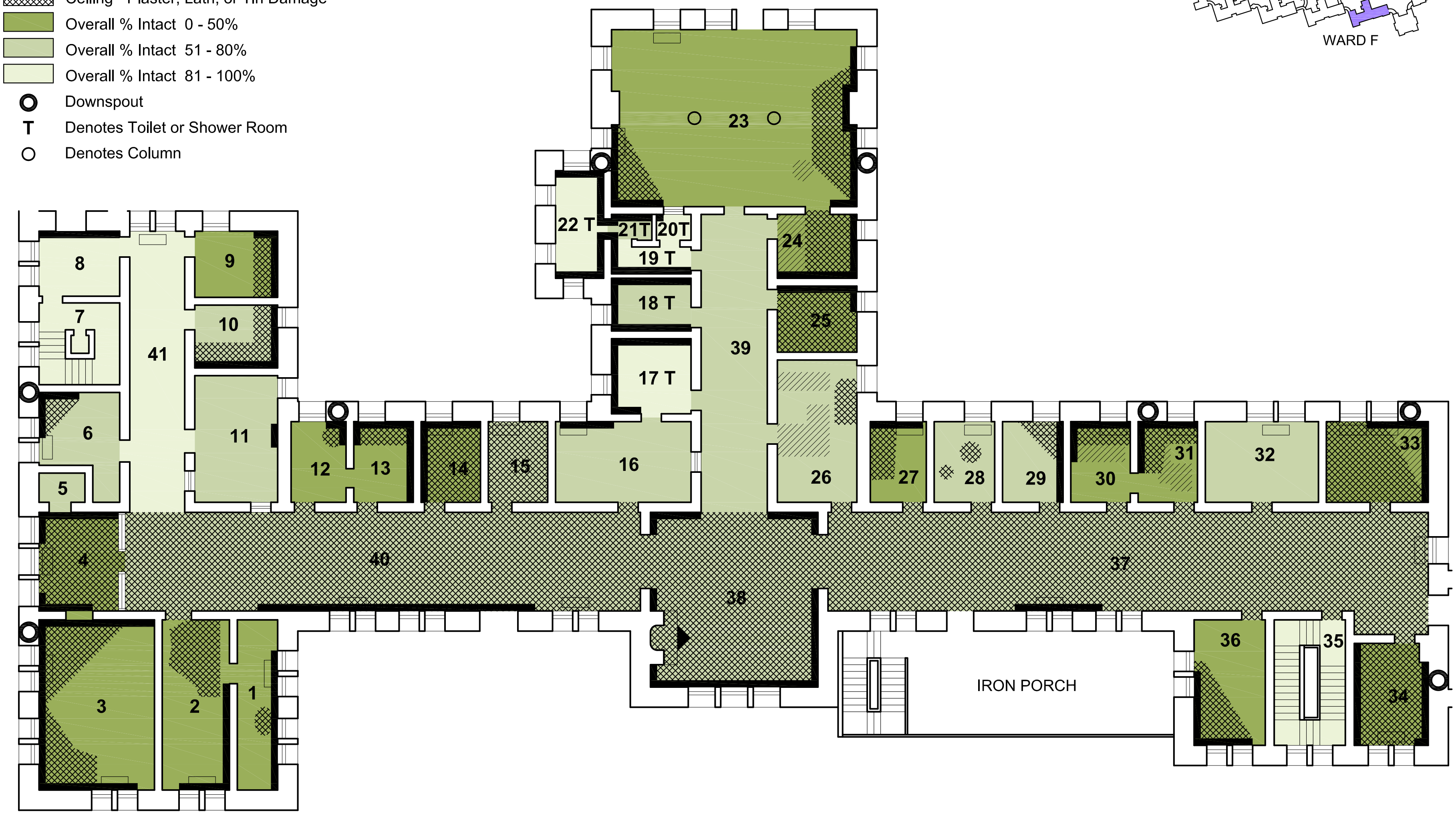
In general, the structure of this building is in fair condition. The interior and exterior bearing wall elements appear to be in good condition. There are several areas of floor framing that appear to require replacement. The concrete floor framing of the exterior balconies requires repairs. The roof framing appears to be in good condition. Some minor repairs have been made to the roof framing, including reinforcement of the purlin connections to the brick gable walls.

KEY

- Floor - Unsound, Partially Collapsed, or Missing
- Walls - Plaster and/or Lath Damage
- Ceiling - Plaster, Lath, or Tin Damage
- Overall % Intact 0 - 50%
- Overall % Intact 51 - 80%
- Overall % Intact 81 - 100%
- Downspout
- T Denotes Toilet or Shower Room
- Denotes Column

KEY PLAN





F 1.1 **First Floor Plan** FEMALE WARD F

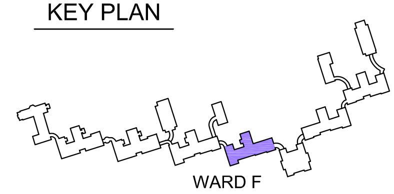
These drawings show estimated existing conditions.

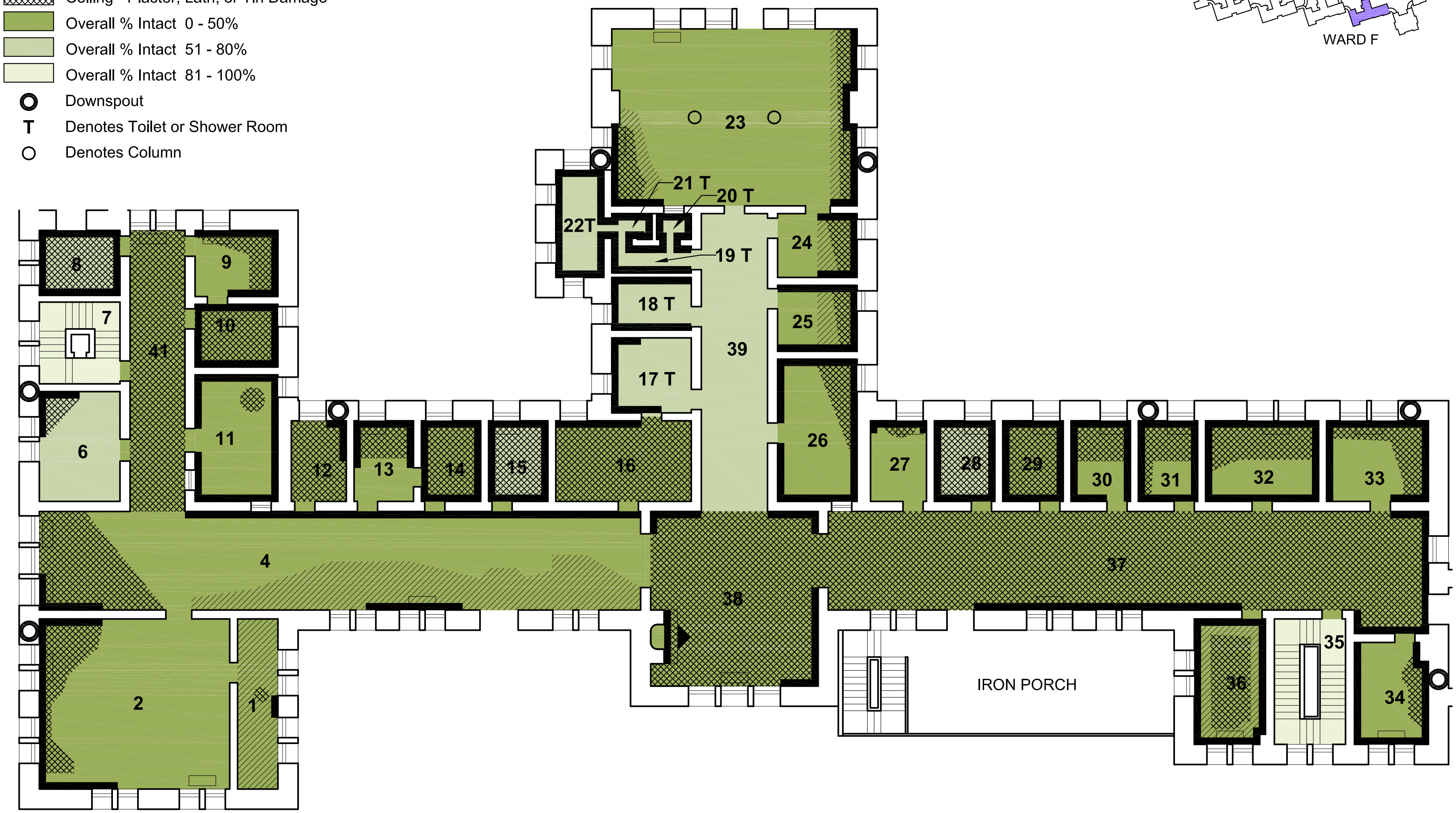
0 5 20ft

KEY

- Floor - Unsound, Partially Collapsed, or Missing
- Walls - Plaster and/or Lath Damage
- Ceiling - Plaster, Lath, or Tin Damage
- Overall % Intact 0 - 50%
- Overall % Intact 51 - 80%
- Overall % Intact 81 - 100%
- Downspout
- T Denotes Toilet or Shower Room
- Denotes Column

KEY PLAN

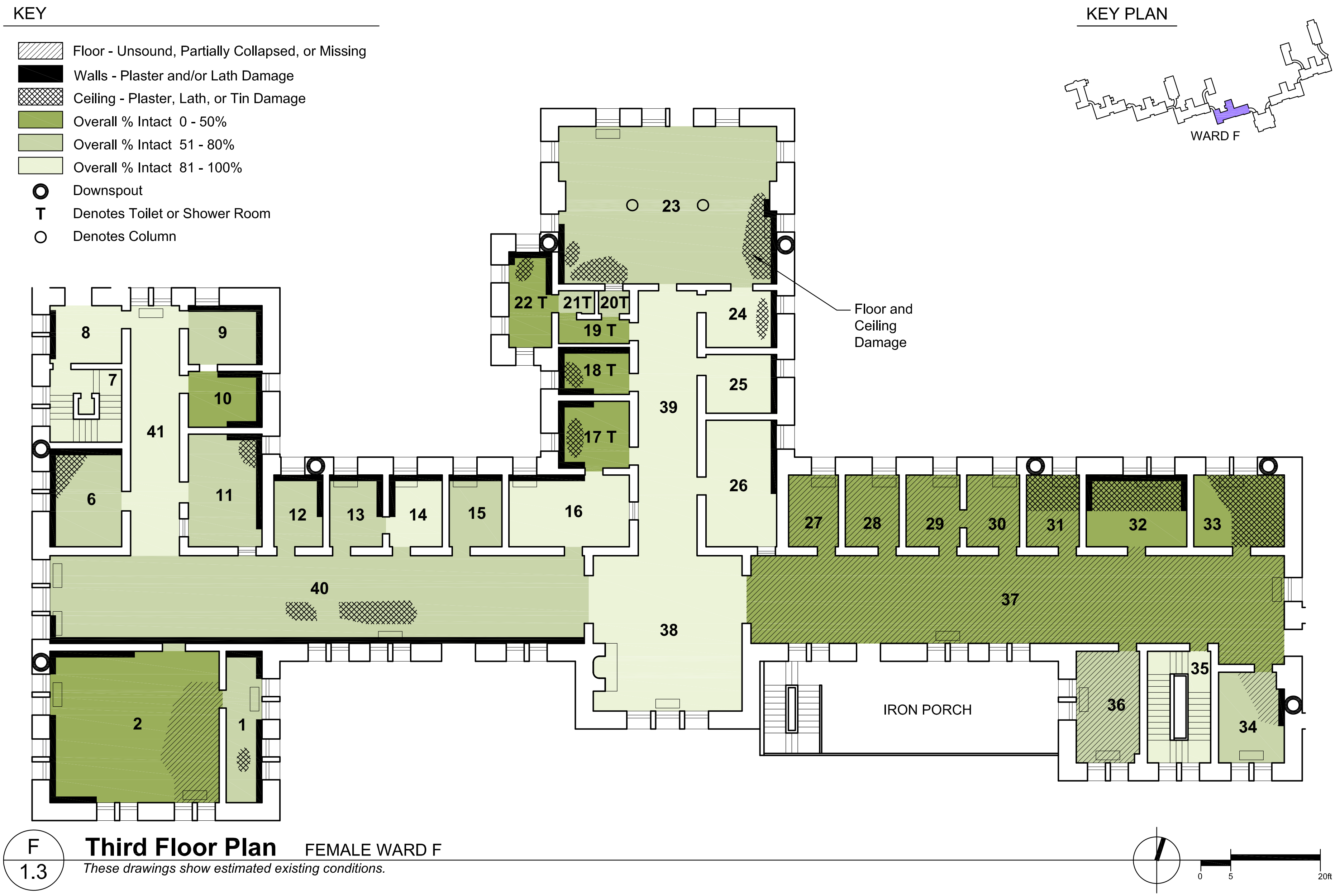




F 1.2 **Second Floor Plan** FEMALE WARD F

These drawings show estimated existing conditions.

0 5 20ft



F 1.3

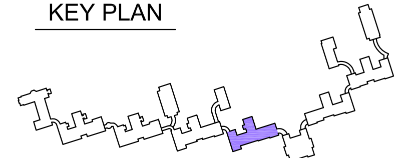
Third Floor Plan FEMALE WARD F

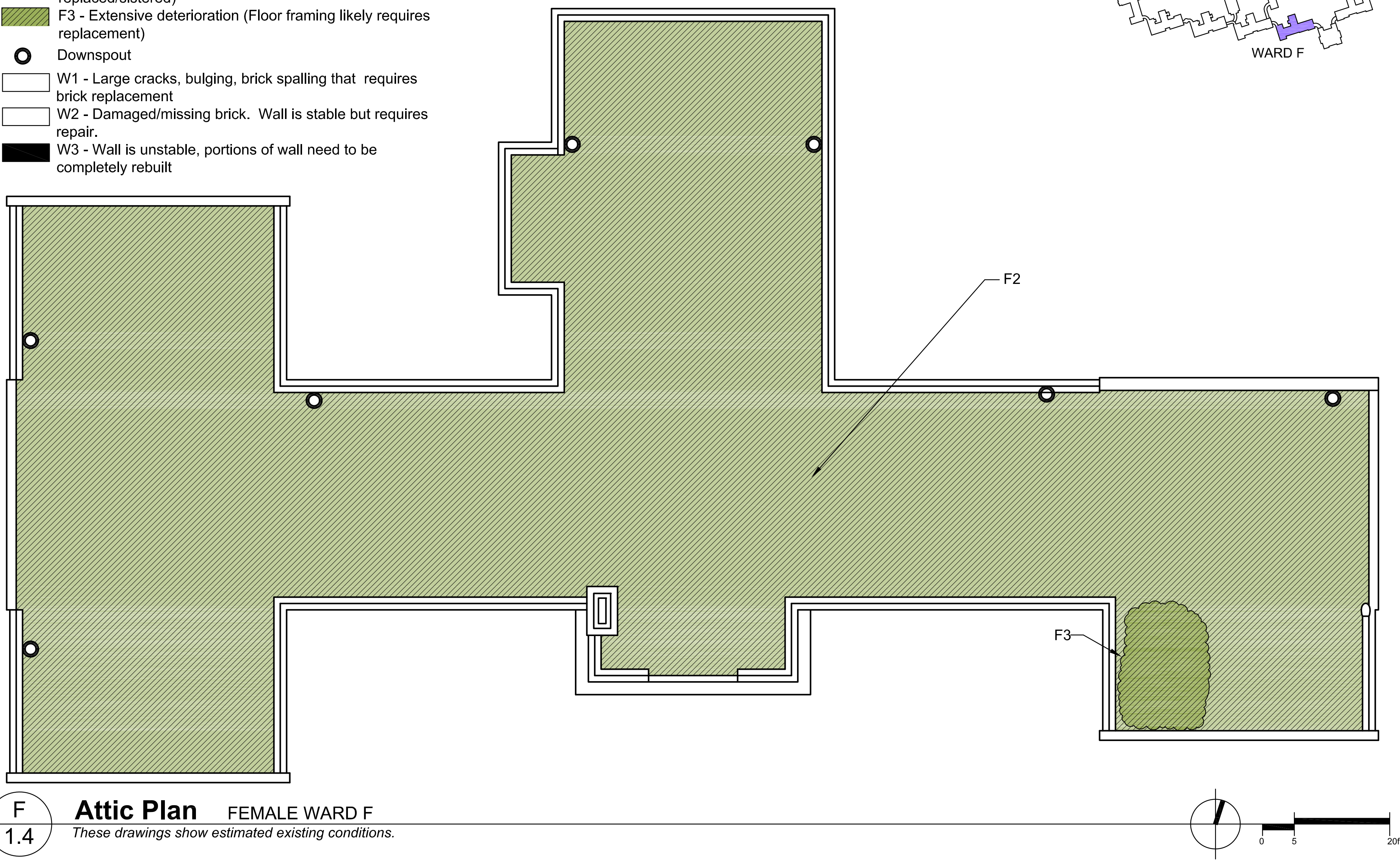
These drawings show estimated existing conditions.

KEY

- F1 - Minor damages
- F2 - Medium level of damages (Joists may need to be replaced/sistered)
- F3 - Extensive deterioration (Floor framing likely requires replacement)
- Downspout
- W1 - Large cracks, bulging, brick spalling that requires brick replacement
- W2 - Damaged/missing brick. Wall is stable but requires repair.
- W3 - Wall is unstable, portions of wall need to be completely rebuilt

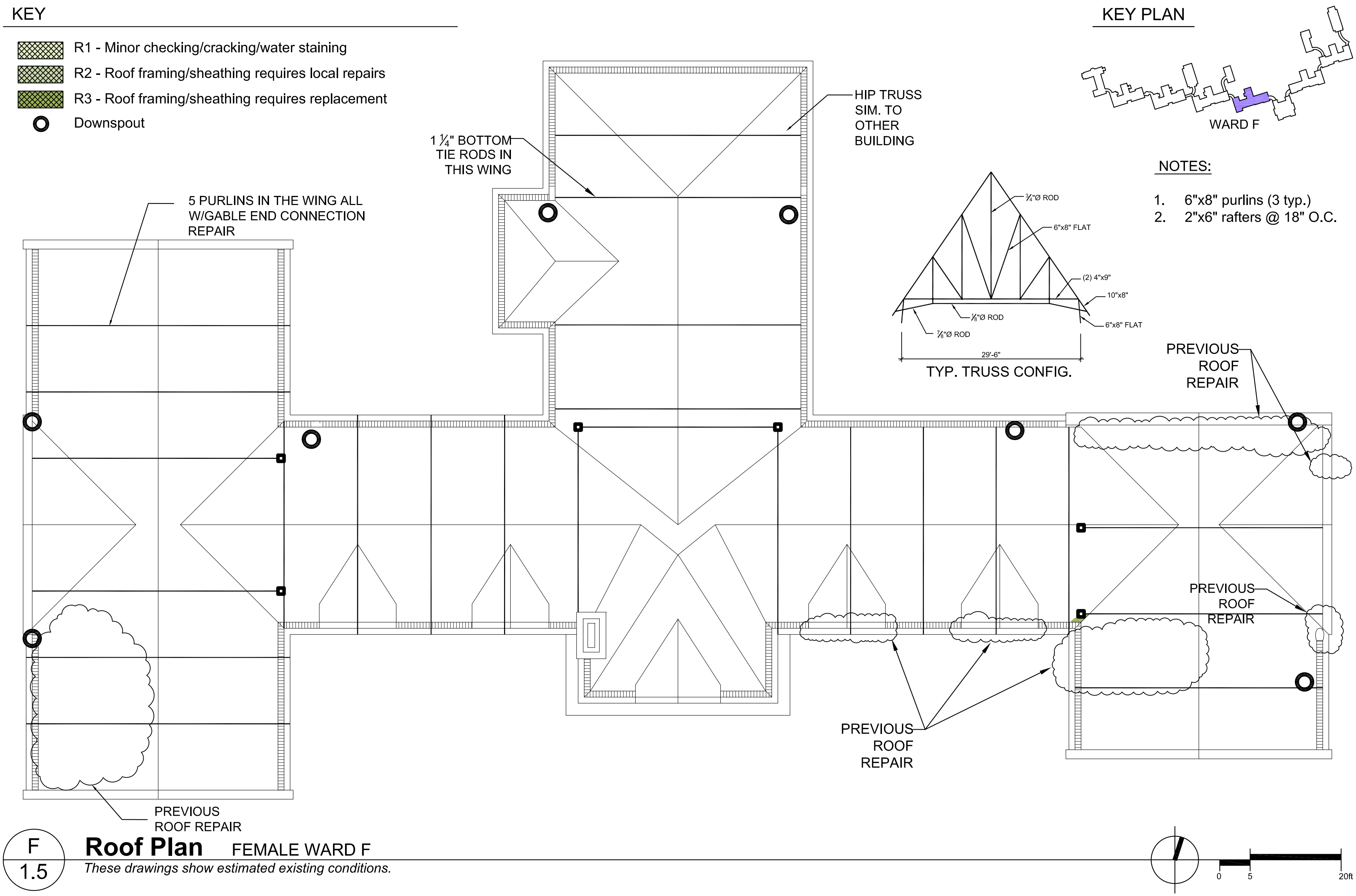
KEY PLAN





F 1.4 **Attic Plan** FEMALE WARD F

These drawings show estimated existing conditions.



F 1.5 **Roof Plan** FEMALE WARD F

These drawings show estimated existing conditions.

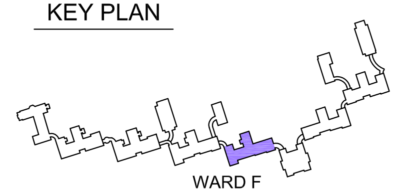
KEY

- Step Cracking
- Rebuilt Areas
- Open Joints / Shifting / Masonry Damage
- Masonry Collapse
- Crack through Stone

PERCENTAGES

29% Spalling
25% Staining
19% Mortar Erosion

KEY PLAN



F
2.1

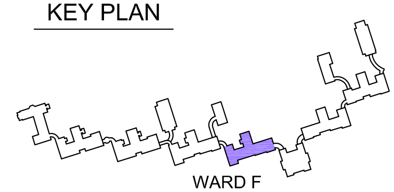
North Elevation FEMALE WARD F

These drawings show estimated existing conditions.

0 5 20ft

KEY	PERCENTAGES
Step Cracking	30% Spalling
Rebuilt Areas	20% Staining
Open Joints / Shifting / Masonry Damage	25% Mortar Erosion
Masonry Collapse	
Crack through Stone	

KEY PLAN



F 2.2 **East Elevation** FEMALE WARD F

These drawings show estimated existing conditions.

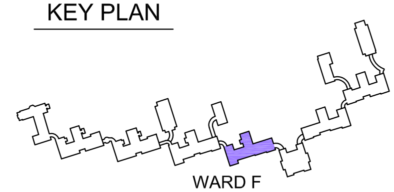
KEY

- Step Cracking
- Rebuilt Areas
- Open Joints / Shifting / Masonry Damage
- Masonry Collapse
- Crack through Stone

PERCENTAGES

15% Spalling
21% Staining
18% Mortar Erosion

KEY PLAN



F 2.3 **South Elevation** FEMALE WARD F

These drawings show estimated existing conditions.

0 5 20ft

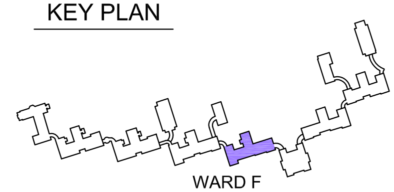
KEY

- Step Cracking
- Rebuilt Areas
- Open Joints / Shifting / Masonry Damage
- Masonry Collapse
- Crack through Stone

PERCENTAGES

35% Spalling
90% Staining
25% Mortar Erosion

KEY PLAN



F 2.4

West Elevation FEMALE WARD F

These drawings show estimated existing conditions.

0 5 20ft

FEMALE WARD G (BUILDING 42)

General Description

Female Ward G is a stone building with a basement, three floors and an attic. The roof is asphalt shingle with copper flashings and gutters. Overall, the exterior of the building is in good condition, with the specific areas of deterioration noted below. The interior is in worse condition than the exterior would suggest, due to the deteriorated interior downspouts, and prior roof leaks. There are some interesting decorative details that are unique to this building.

In general, the building is in good condition, with some minor deterioration and damage described below and shown on the building elevations (Sheets G2.1-2.4) and floor plans (Sheets G1.1-1.5).

Decorative carvings and unique stonework details on Female Ward G include:

- Overall, the detailing on Female Ward G is simpler than that on Female Ward F. This is in keeping with the stepping down in scale and ornament as the buildings step back from the Administration Building.
- The gable cap stones contain decorative scroll carvings where the gable meets the building corner. (Similar to Female Ward F)
- The dormer gable ends contain decorative scroll carvings. (Similar to Female Ward F)

Fig. G.1 **West Elevation showing typical features**
Image courtesy GCA

Fig. G.2 **North Elevation showing cornice and bracket detail**
Image courtesy GCA

Fig. G.3 **Elevation showing window arch detail**
Image courtesy GCA

Fig. G.4 **Gable decorative feature**
Image courtesy GCA

- The cornice modillions are rough hewn stone, concave in form and are unique to this building. (Fig. G.2)

- The low relieving arches over the flat windows at south elevation windows contain diamond pattern carvings. (Fig. G.3)

- The gable peaks contain circular niches with a flat sandstone center. (Fig. G.4)

Exterior Existing Conditions

Stone

In general, the stone is in good condition. The surface of the stone contains moderate spalling (25-50%), atmospheric soiling (40-50%) and algae growth confined to the lower floors of the north elevation. (Fig. G.5)

Fig. G.5 **North Elevation showing algal growth**
Image courtesy GCA

The mortar joints are moderately intact, due to previous repointing campaigns. Due to ongoing water infiltration and saturation, the mortar continues to deteriorate and approximately 25-50% of the building requires repointing at this time.

Defects and deterioration of the stone occur in the following locations:

- The joints between the gable stones are exposed (there is no flashing over the gable stones), allowing water to infiltrate into the core of the gable wall. Some of the gable stones are lifting due to freeze/thaw action. The saturation of the masonry from the cap stones is also causing accelerated deterioration of the mortar joints in the stone wall directly below the gable.

- Alterations to central north bay for previous fire escape have left exposed brick and inappropriate materials exposed. Window locations expanded to door openings at each floor, bad repairs and infill materials. (Fig. G.6)

Fig. G.6 **North Elevation showing fire escape alterations**
Image courtesy GCA

- Step cracking occurs on the south elevation on the east and west gable ends. The cracking occurs between the window locations and could be due to the unrestrained nature of the gable ends. The stones have not shifted out of plane, but further water infiltration could cause displacement.

Porches

Two iron porch remain on the south elevation. (Fig. G.7) They are in poor condition with rusting steel structure, grating and mesh.

Roof (Fig. G.1)

The roof is covered in asphalt 3 tab shingles. It is in good condition with no open holes or missing shingles. The main portion of roof was installed after 2002. The north wing roof was installed between 1994 and 2002 and is also in good condition.

Fig. G.7 **South Elevation showing porch**
Image courtesy GCA

There are integral stone gutters on the building. The original copper gutter lining and downspout system was roofed over in the 1970's, eliminating the internal downspouts and much of the associated water damage experienced on buildings where the gutters remained in use. The modification changes the appearance of the roof edge, but is reversible during a future rehabilitation campaign.

Windows

The basement windows are covered with plywood. The remainder of the windows are covered with plastic sheet material. Due to the covering, it is not possible to determine the condition of the window sash and trim.

Interior Existing Conditions

The interior of the building is in fair condition. The interior damage is focused around previous roof leaks, broken internal downspouts. (Fig. G.8) and water saturation and

Fig. G.8 **Internal downspout and associated plaster and wall damage**
Image courtesy GCA

Fig. G.9 **Basement water infiltration through wall**
Image courtesy GCA

Fig. G.10 **Typical interior condition at ongoing water infiltration locations**
Image courtesy GCA

Fig. G.11 **Typical interior condition due to high moisture content**
Image courtesy GCA

Fig. G.12 **Fire damage to Room 10**
Image courtesy GCA

infiltration at the basement walls. (Fig. G.9) The damage at water infiltration locations includes: deteriorated and failed plaster, exposing the brick walls, collapsed ceilings and floors and deteriorated wood window sash and trim. (Fig. G.10)

Where the walls and ceilings have not collapsed from water damage, there is significant surface finish damage due to high moisture levels and a lack of ventilation. Paint is generally peeling, the surface coat of plaster is cracked, tin ceilings are rusted, and plaster ceilings are cracked. (Fig. G.11)

There are charred first floor joists and some localized fire damage in Room 10. The fire was fairly contained, although the floor joists will require replacement. (Fig. G.12)

The extant features that are unique to Female Ward G include: 3 decorative stone and brick fireplaces (Fig. G.13); decorative plaster moldings in central hall, some extant utilitarian cabinets with bead board elements. (Fig. G.14)

Fig. G.13 **Fireplace in common room**
Image courtesy GCA

Structural Description

Female Ward G is a three-story, stone-faced, brick masonry building with a full basement. The floor framing at each level consists of 3x12 wood joists spaced at approximately 16 in. on center. The ceiling framing throughout the building consists of 2x12 wood joists spaced at approximately 16 in. on center. The roof framing consists of timber trusses supporting 6x8 wood purlins and roughly 2x6 rafters spaced at 16 in. on center.

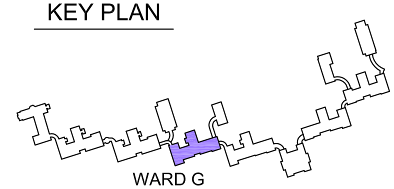
In general, the structure of this building is in fair condition. The interior and exterior bearing wall elements appear to be in good condition. There are several areas of floor framing that appear to require replacement. The concrete floor framing of the exterior balconies requires repairs. The roof framing appears to be in good condition. Some minor repairs have been made to the roof framing, including reinforcement of the purlin connections to the brick gable walls.

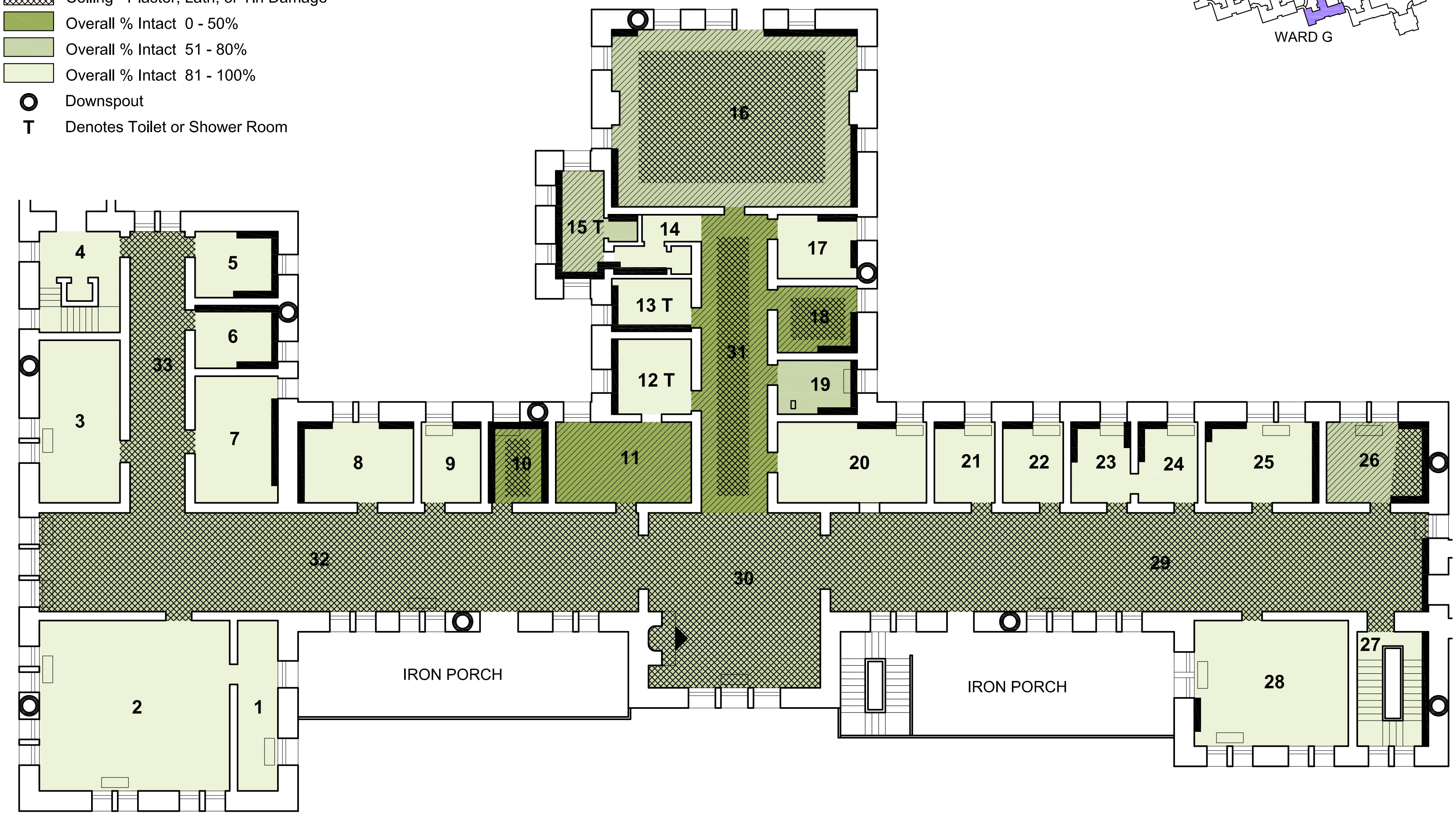
Fig. G.14 **Typical utilitarian cabinets**
Image courtesy GCA

KEY

- Floor - Unsound, Partially Collapsed, or Missing
- Walls - Plaster and/or Lath Damage
- Ceiling - Plaster, Lath, or Tin Damage
- Overall % Intact 0 - 50%
- Overall % Intact 51 - 80%
- Overall % Intact 81 - 100%
- Downspout
- T Denotes Toilet or Shower Room

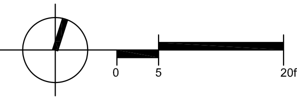
KEY PLAN





G 1.1 **First Floor Plan** FEMALE WARD G

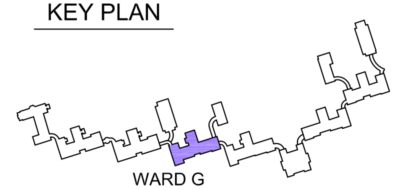
These drawings show estimated existing conditions.

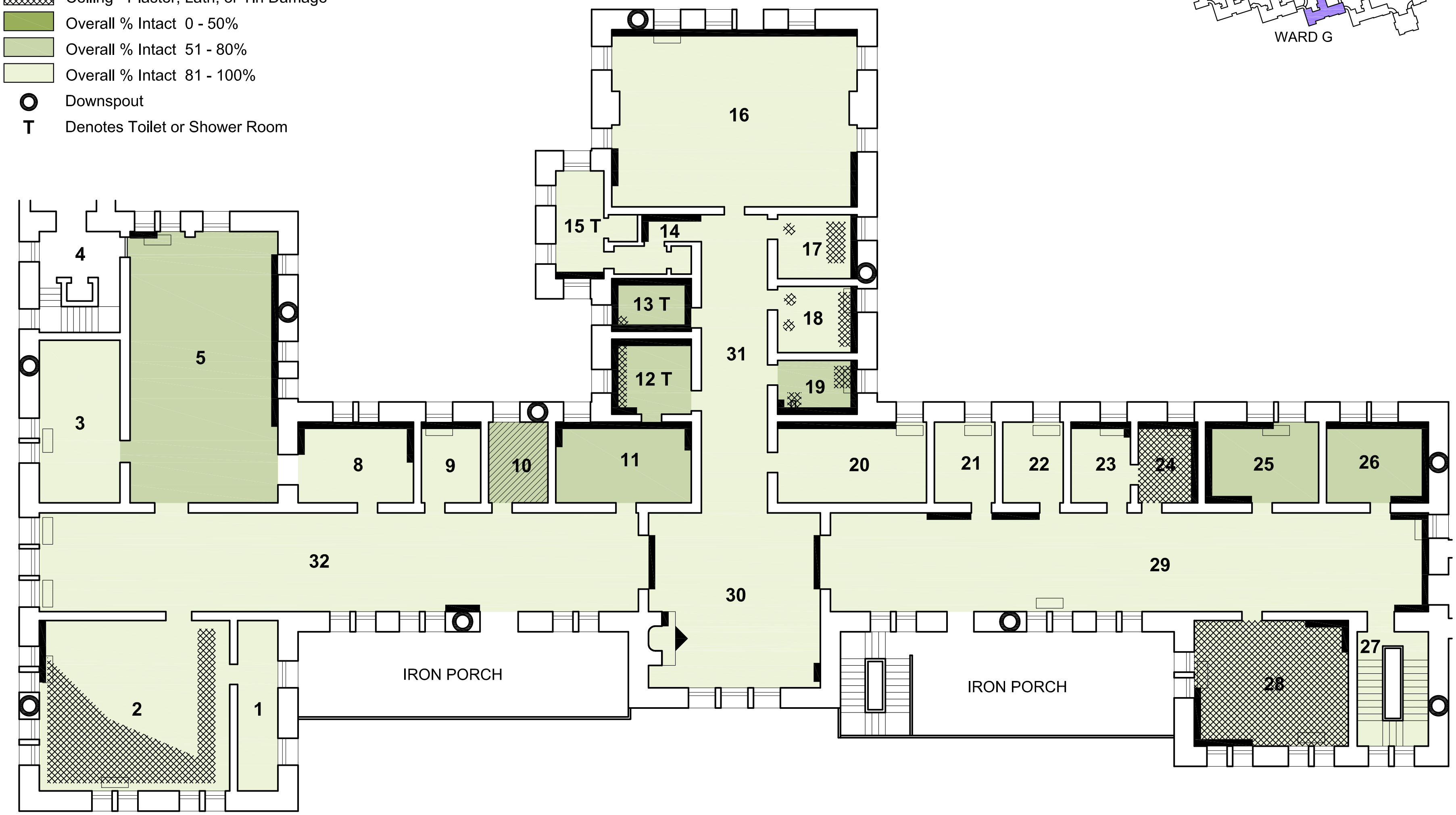


KEY

- Floor - Unsound, Partially Collapsed, or Missing
- Walls - Plaster and/or Lath Damage
- Ceiling - Plaster, Lath, or Tin Damage
- Overall % Intact 0 - 50%
- Overall % Intact 51 - 80%
- Overall % Intact 81 - 100%
- Downspout
- T Denotes Toilet or Shower Room

KEY PLAN





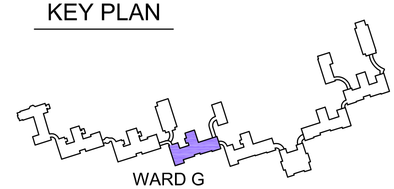
G 1.2 **Second Floor Plan** FEMALE WARD G

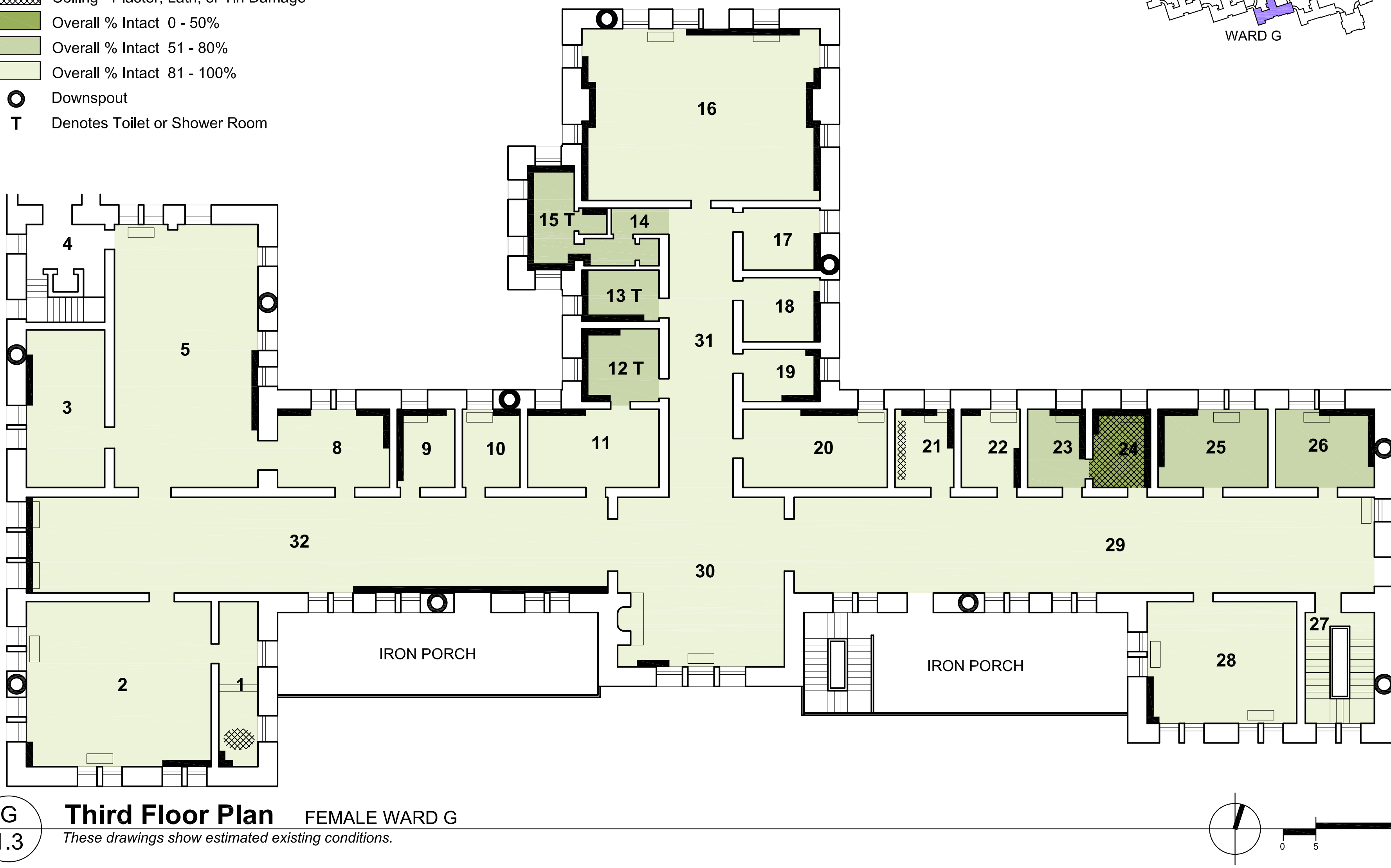
These drawings show estimated existing conditions.

KEY

- Floor - Unsound, Partially Collapsed, or Missing
- Walls - Plaster and/or Lath Damage
- Ceiling - Plaster, Lath, or Tin Damage
- Overall % Intact 0 - 50%
- Overall % Intact 51 - 80%
- Overall % Intact 81 - 100%
- Downspout
- T Denotes Toilet or Shower Room

KEY PLAN





G 1.3

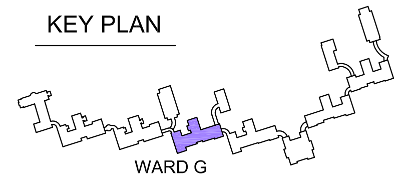
Third Floor Plan FEMALE WARD G

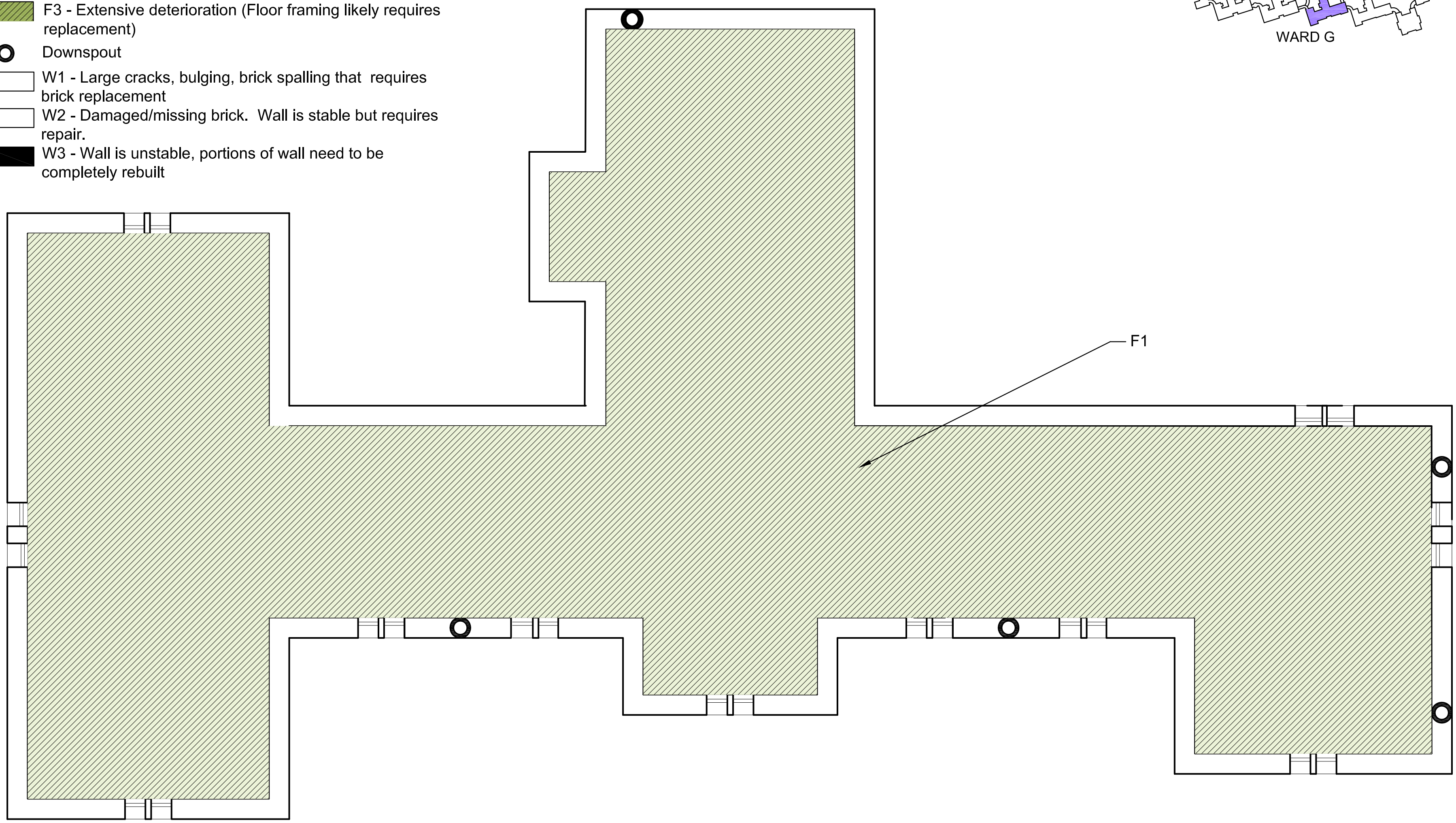
These drawings show estimated existing conditions.

KEY

- F1 - Minor damages
- F2 - Medium level of damages (Joists may need to be replaced/sistered)
- F3 - Extensive deterioration (Floor framing likely requires replacement)
- Downspout
- W1 - Large cracks, bulging, brick spalling that requires brick replacement
- W2 - Damaged/missing brick. Wall is stable but requires repair.
- W3 - Wall is unstable, portions of wall need to be completely rebuilt

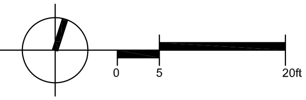
KEY PLAN





G 1.4 **Attic Plan** FEMALE WARD G

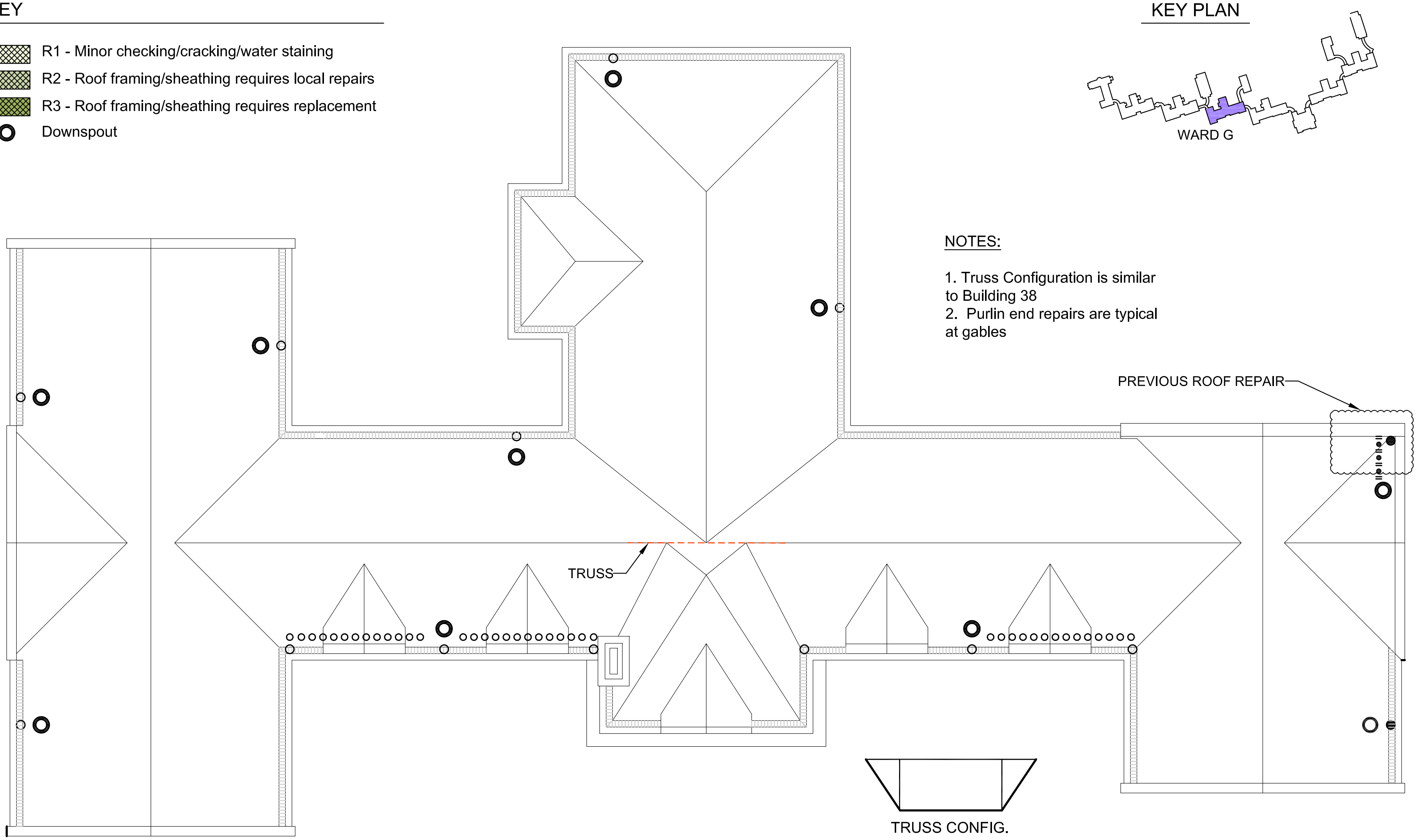
These drawings show estimated existing conditions.



KEY

- R1 - Minor checking/cracking/water staining
- R2 - Roof framing/sheathing requires local repairs
- R3 - Roof framing/sheathing requires replacement
- Downspout

KEY PLAN



NOTES:

1. Truss Configuration is similar to Building 38
2. Purlin end repairs are typical at gables

TRUSS CONFIG.

G 1.5 **Roof Plan** FEMALE WARD G

These drawings show estimated existing conditions.

0 5 20ft

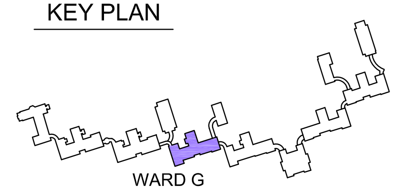
KEY

- Step Cracking
- Rebuilt Areas
- Open Joints / Shifting / Masonry Damage
- Masonry Collapse
- Crack through Stone

PERCENTAGES

25% Spalling
40% Staining
20% Mortar Erosion
10% Algae

KEY PLAN

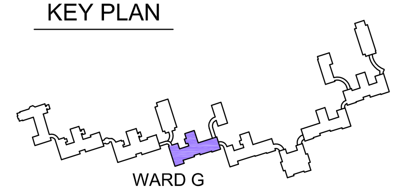


G 2.1 **North Elevation** FEMALE WARD G

These drawings show estimated existing conditions.

KEY	PERCENTAGES
Step Cracking	10% Spalling
Rebuilt Areas	50% Staining
Open Joints / Shifting / Masonry Damage	25% Mortar Erosion
Masonry Collapse	
Crack through Stone	

KEY PLAN



G 2.2

East Elevation FEMALE WARD G

These drawings show estimated existing conditions.

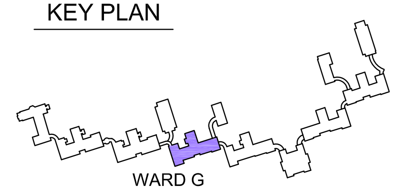
KEY

- Step Cracking
- Rebuilt Areas
- Open Joints / Shifting / Masonry Damage
- Masonry Collapse
- Crack through Stone

PERCENTAGES

25% Spalling
50% Staining
25% Mortar Erosion

KEY PLAN

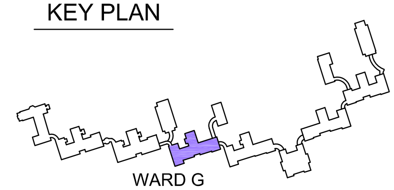


G 2.3 **South Elevation** FEMALE WARD G

These drawings show estimated existing conditions.

KEY	PERCENTAGES
Step Cracking	50% Spalling
Rebuilt Areas	50% Staining
Open Joints / Shifting / Masonry Damage	50% Mortar Erosion
Masonry Collapse	
Crack through Stone	

KEY PLAN



G 2.4 **West Elevation** FEMALE WARD G

These drawings show estimated existing conditions.

FEMALE WARD H (BUILDING 40)

General Description

Female Ward H is a brick building with stone foundation, gable cap stones, beltcourses, sills and window mullions. (Fig. H.1) The building consists of a basement, two floors and an attic. The roof is asphalt shingle with copper flashings. Overall, the exterior of the building is in sound condition. Specific areas of damage are described below and shown on the building elevations (Sheets H 2.1-2.4). The interior is in better condition than the exterior would suggest, with conditions shown on the floor plans (Sheets H 1.1-1.2).

Decorative brickwork, stone carving details and items unique to the building include:

- The gable cap stones contain decorative scroll carvings. (Fig. H.3)
- The wooden rafter tails are patterned. (Fig. H.3)
- Carving into the brick by patients is visible on porch. (Fig. H.4)

Fig. H.1 **South elevation of Female Ward H**
Image courtesy GCA

Exterior Existing Conditions

Stone

In general, the stone trim elements are in good condition.

Image courtesy GCA

Fig. H.3 **Gable cap stone decorative scroll carving and wooden rafter tail detail**
Image courtesy GCA

Fig. H.4 **Carving in brick by patients on porch**
Image courtesy GCA

The surface of the stone contains minor spalling, soiling and some algae growth at the foundation walls on the north elevation.

Brick

The brick is in good condition, with isolated areas of deterioration that can be categorized as poor. The surface contains spalling of 5% on the east, 10% on the south and west, and 20% on the north; fairly extensive atmospheric soiling (50-75%); and limited algae growth on the north elevation. There is extensive ivy growth on the north elevation, covering 100% of some of the walls. (Fig. H.5 & H.6)

Approximately 50% of the mortar joints are eroded to the point that requires repointing. There is evidence of several repointing campaigns. Due to ongoing water infiltration and saturation, the mortar (often in the areas of previous repair)

Fig. H.5 **Overall elevation showing soiling and spalling at brick wall**
Image courtesy GCA

continues to deteriorate, affecting the gable ends and eave areas most severely. (Fig. H.9)

Defects and deterioration of the stone occur in the following locations:

- Large areas of the brick have been rebuilt on the north elevation at the upper areas of the wall, and at the corners. These rebuilt areas are continuing to be saturated and are deteriorating again. (Fig. H.7 & H.9)
- The joints between the gable stones are exposed (there is no flashing over the gable stones), allowing water to infiltrate into the core of the gable wall. Some of the gable stones are lifting due to freeze/thaw action. The saturation of the masonry from the cap stones is also causing accelerated deterioration of the mortar joints in the brick wall directly below the gable. (Fig. H.9)

Fig. H.6 **Ivy growth on north elevation**
Image courtesy GCA

Fig. H.7 **Detail of previous repointing and ongoing deterioration of masonry**
Image courtesy GCA

Fig. H.8 **Efflorescence and spalling of brick**
Image courtesy GCA

- In areas of water saturation of the brick (below the gable, at the corners) there is efflorescence and spalling of the brick (Fig. H.8)

- Alterations to central north bay for previous fire escape have left exposed brick and inappropriate materials exposed. Window locations expanded to door openings at each floor, bad repairs and infill materials. (Fig. H.10)

- Step cracking occurs in the brick and stone in locations shown on the elevations. (Fig. H.11)

- Some original red mortar visible in porch area. (Fig. H.13)

Porches

- The iron porches remain on the east and west ends of the south elevation (Fig. H.12). Both are in fair condition with some rusting of the steel structure, grating and mesh.

Roof (Fig. H.3)

- The roof is covered in asphalt 3 tab shingles. It is in good condition with no open holes or missing shingles. The main portion of roof was installed most likely after 2002.

- The original copper valleys and some flashing remain on the roof. The gutter was shingled over to eliminate the problem of broken internal downspouts that were diverting water to the interior of the building.

- Wide, wooden overhanging eave with decorative "rafter tails" projecting out from face of building.

Fig. H.9 **Previous repointing and ongoing deterioration**
Image courtesy GCA

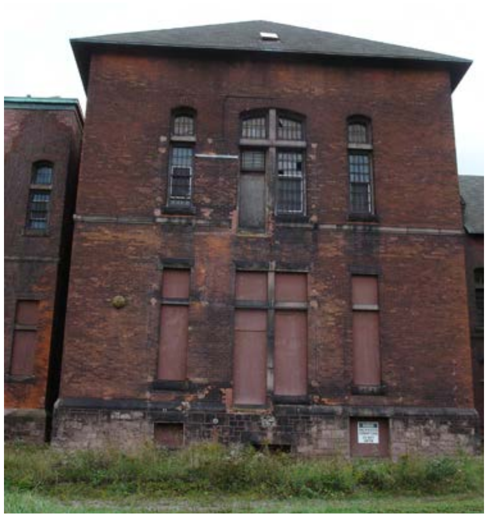


Fig. H.10 **Previous alterations for fire escape – north elevation**
Image courtesy GCA

Fig. H.11 **Step cracking at brick and stone – north elevation**
Image courtesy GCA

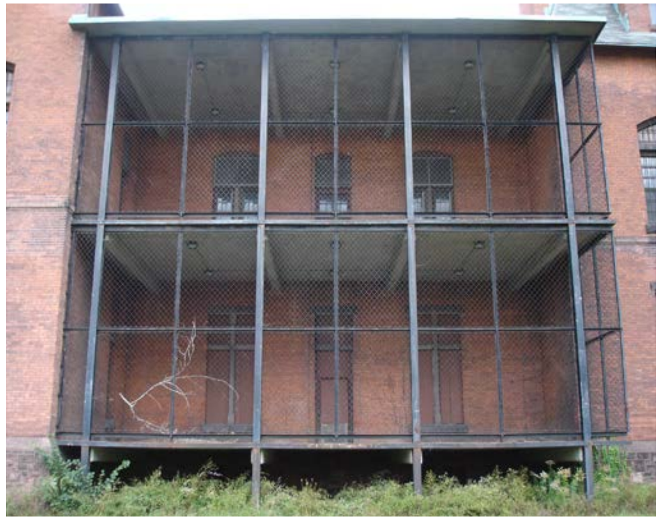


Fig. H.12 **Porch on south elevation**
Image courtesy GCA

Wood Trim/Paint Color

- There is evidence of reddish brown paint on the wooden rafter tails. (Fig. H.3)

Windows (Fig. H.9)

- The basement and first floor windows are covered with plywood.
- The second floor windows have iron bars, and no other covering. The open bars do not protect the glass from being broken, consequently there are many broken panes which provides access to animals, birds and water.
- The attic windows have no protective covering or bars. Most of the window panes are broken.

Fig. H.13 **Original red mortar evident at porch area**
Image courtesy GCA

Interior Existing Conditions

The interior of the building is in good condition, if the condition of the finishes is not taken into account in the assessment. The interior damage is limited and occurs around previous roof leaks and broken internal downspouts. There is limited failure and structural instability in two rooms on the second floor. There is surface finish damage due to high moisture levels and a lack of ventilation. (Fig. H.15) Paint is generally peeling, tin ceilings are rusted, and plaster ceilings are cracked.

The details in this building are simpler than those in the stone buildings. The cornices and wood moldings are plain and there are no decorative plaster brackets in the central hall. The fireplace details (Fig. H.14) are similar to the stone buildings, but use unfired brick instead of glazed brick. The ceilings in the central hall are tin instead of plaster.

Fig. H.14 **Fireplace detail**
Image courtesy GCA

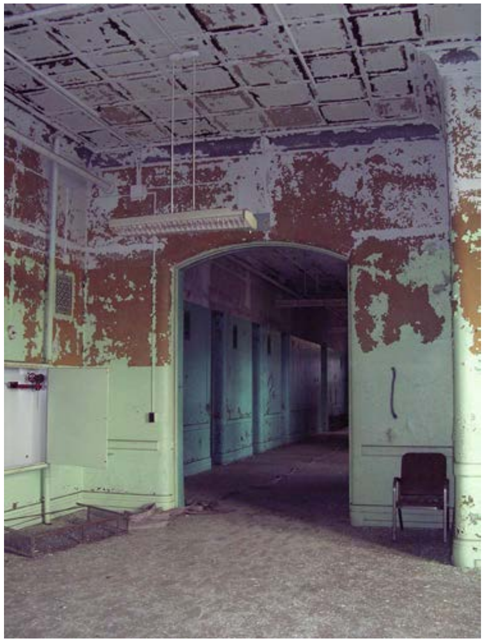


Fig. H.15 **Surface finish damage - peeling paint and rusted tin ceilings**
Image courtesy GCA

Structural Description

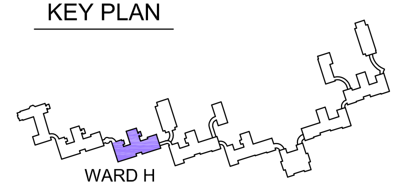
Female Ward H is a two-story brick masonry building with wood-framed floors. The floor framing at each level consists of 3x12 wood joists spaced at approximately 16 in. on center. The ceiling framing throughout the building consists of 2x12 wood joists spaced at approximately 16 in. on center. The roof framing consists of timber trusses supporting 6x8 wood purlins and roughly 2x6 rafters spaced at 16 in. on center.

In general, the structure of this building is in fair condition. The interior and exterior bearing wall elements appear to be in fair condition. There are many areas of floor framing that appear to require repair. The roof framing appears to be in good condition. Some minor repairs have been made to the roof framing, including reinforcement of the purlin connections to the brick gable walls.

KEY

- Floor - Unsound, Partially Collapsed, or Missing
- Walls - Plaster and/or Lath Damage
- Ceiling - Plaster, Lath, or Tin Damage
- Overall % Intact 0 - 50%
- Overall % Intact 51 - 80%
- Overall % Intact 81 - 100%
- Downspout
- T Denotes Toilet or Shower Room

KEY PLAN



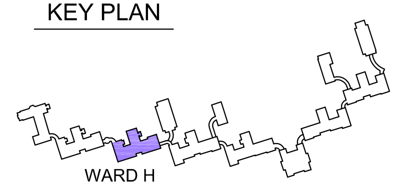
H 1.1 **First Floor Plan** FEMALE WARD H

These drawings show estimated existing conditions.

KEY

- Floor - Unsound, Partially Collapsed, or Missing
- Walls - Plaster and/or Lath Damage
- Ceiling - Plaster, Lath, or Tin Damage
- Overall % Intact 0 - 50%
- Overall % Intact 51 - 80%
- Overall % Intact 81 - 100%
- Downspout
- T Denotes Toilet or Shower Room

KEY PLAN



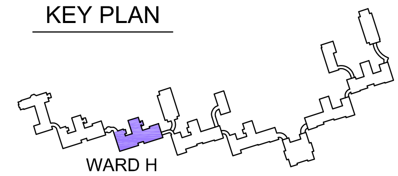
H 1.2 **Second Floor Plan** FEMALE WARD H

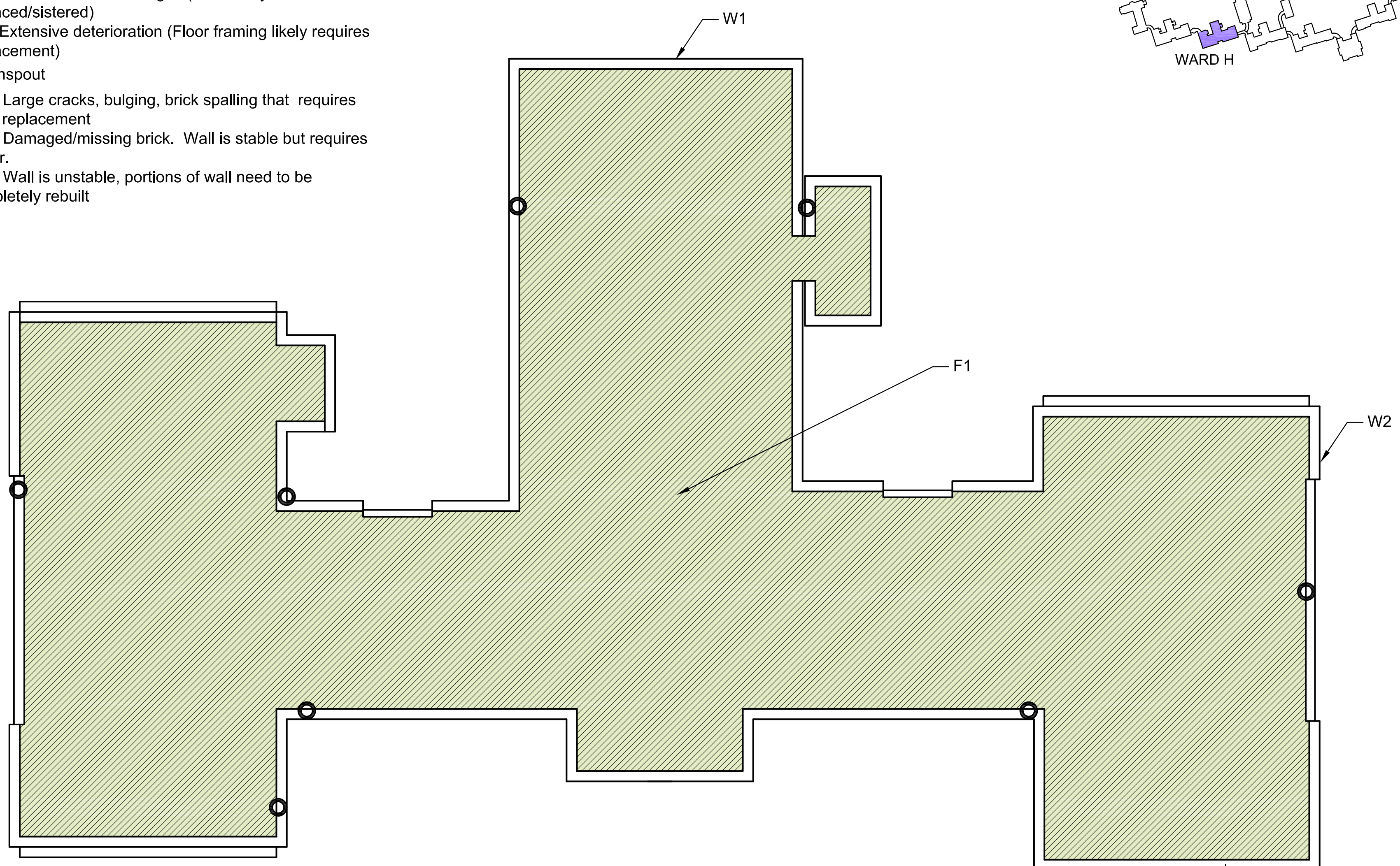
These drawings show estimated existing conditions.

KEY

- F1 - Minor damages
- F2 - Medium level of damages (Joists may need to be replaced/sistered)
- F3 - Extensive deterioration (Floor framing likely requires replacement)
- Downspout
- W1 - Large cracks, bulging, brick spalling that requires brick replacement
- W2 - Damaged/missing brick. Wall is stable but requires repair.
- W3 - Wall is unstable, portions of wall need to be completely rebuilt

KEY PLAN

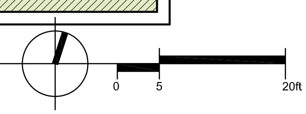




H
1.3

Attic Plan FEMALE WARD H

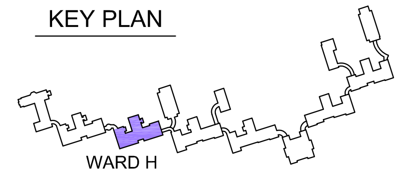
These drawings show estimated existing conditions.



KEY

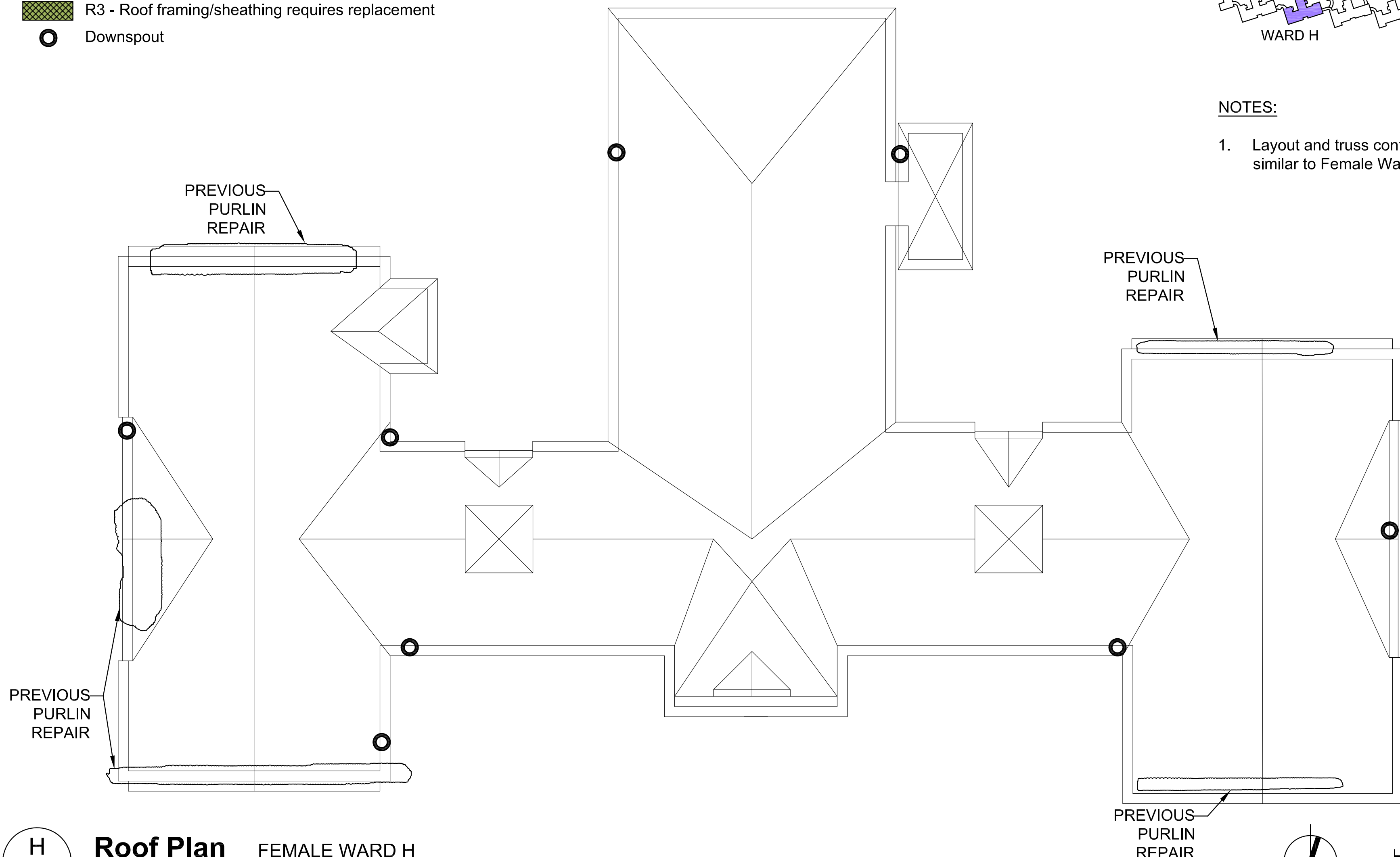
- R1 - Minor checking/cracking/water staining
- R2 - Roof framing/sheathing requires local repairs
- R3 - Roof framing/sheathing requires replacement
- Downspout

KEY PLAN



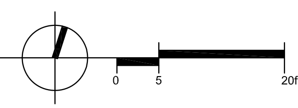
NOTES:

1. Layout and truss configuration is similar to Female Ward I



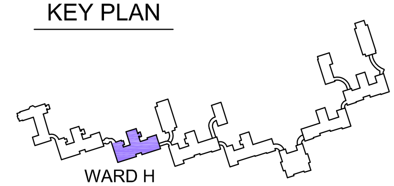
H 1.4 **Roof Plan** FEMALE WARD H

These drawings show estimated existing conditions.



KEY	PERCENTAGES
Step Cracking	18% Spalling
Rebuilt Areas	68% Staining
Open Joints / Shifting / Masonry Damage	64% Mortar Erosion
Masonry Collapse	
Crack through Stone	

KEY PLAN



H 2.1

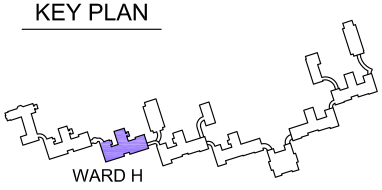
North Elevation FEMALE WARD H

These drawings show estimated existing conditions.

0 5 20ft

KEY	PERCENTAGES
Step Cracking	5% Spalling
Rebuilt Areas	50% Staining
Open Joints / Shifting / Masonry Damage	1% Mortar Erosion
Masonry Collapse	
Crack through Stone	

KEY PLAN



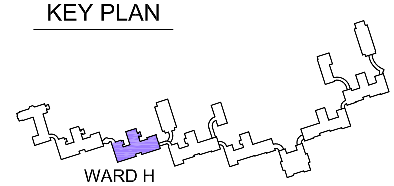
H 2.2 **East Elevation** FEMALE WARD H

These drawings show estimated existing conditions.

0 5 20ft

KEY		PERCENTAGES
	Step Cracking	12% Spalling
	Rebuilt Areas	47% Staining
	Open Joints / Shifting / Masonry Damage	63% Mortar Erosion
	Masonry Collapse	
	Crack through Stone	

KEY PLAN

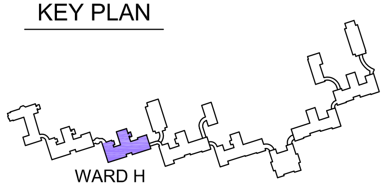


H 2.3 **South Elevation** FEMALE WARD H

These drawings show estimated existing conditions.

KEY	PERCENTAGES
Step Cracking	10% Spalling
Rebuilt Areas	75% Staining
Open Joints / Shifting / Masonry Damage	50% Mortar Erosion
Masonry Collapse	
Crack through Stone	

KEY PLAN



H 2.4 **West Elevation** FEMALE WARD H

These drawings show estimated existing conditions.

0 5 20ft

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FEMALE WARD I (BUILDING 39)

General Description

Female Ward I is a brick building with stone foundation, gable cap stones, beltcourses, sills and window mullions. (Fig. I.1) The building consists of a basement, two floors and an attic. Some portions of the building are in fair condition, with other portions in poor condition. The roof is the only slate roof with copper gutters and flashings remaining on core buildings on the site. Specific areas of damage are described below and shown on the building elevations (Sheets I 2.1-2.4). The interior is in fair condition due to continual water infiltration, with conditions shown on the floor plans (Sheets I 1.1-1.2).

Decorative brickwork, stone carving details and items unique to the building include:

- The gable cap stones contain decorative scroll carvings.
- The wooden rafter tails are patterned.
- The buildings all originally had slate roofs with copper flashings. Most of the slate has been replaced with asphalt shingles. This building and Building 43 are the only remaining buildings that still have the original slate and copper roofing materials. (Fig. I.3)
- Ventilation was an important component of the building concept. Historic photographs show cupolas and vents on the roofs to facilitate the passive ventilation system in the buildings. (Fig. I.4) The two wood and copper

Fig. I.1 **South elevation of Female Ward I**
Image courtesy GCA

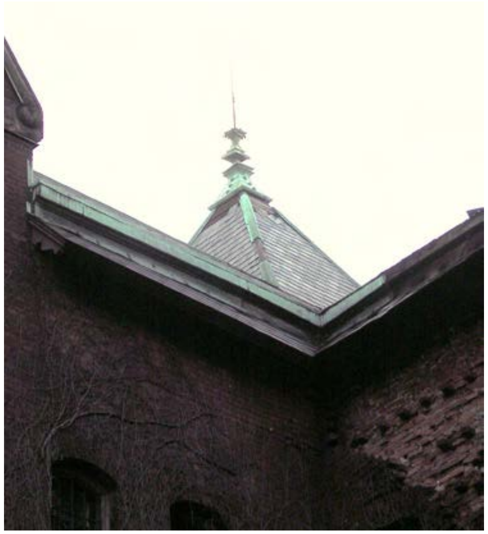


Fig. I.2 **Copper finial**
Image courtesy GCA

Fig. I.3 **Original slate roof and copper flashings**
Image courtesy GCA

Fig. I.4 **Historic photo showing original ventilation cupola**
Image courtesy Buffalo Psychiatric Center

ventilation cupolas are the only ones remaining on the complex. They are in poor condition but provide a key to understanding the construction and detailing of these important components. (Fig. I.5)

- The copper finial on the south elevation central pyramidal roof is another example of the only remaining element of its kind left on the complex. Gable finials were also common throughout the complex. (Fig. I.2)

Exterior Existing Conditions

Stone

In general, the stone trim elements are in good condition. The surface of the stone contains minor spalling, soiling and some algae growth at the foundation walls on the north elevation.

Fig. I.5 **Photo of ventilation cupolas – current condition**
Image courtesy GCA

Brick

In general, the brick on the south elevation is in fair condition. The brick on the north elevation and the east and west elevations of the north wing contain isolated areas of collapse. The brick around the areas of collapse appears, outside the areas of saturation; appear to be in sound condition. Due to the collapse, these elevations are considered in poor condition. There is evidence of previous rebuilding on the north elevation. These areas are still being saturated and are beginning to fail again.

The surface contains spalling of 5% on the west and south, 20% on the north, and 40% on the east; fairly extensive atmospheric soiling (20-50%); and limited algae growth on the north elevation. There is extensive ivy growth on the north elevation, covering 100% of some of the walls. (Fig. I.6)

Fig. I.6 **Surface conditions of brick showing spalling, efflorescence and soiling**
Image courtesy GCA

Fig. I.7 **Saturated masonry and mortar deterioration**
Image courtesy GCA

Fig. I.8 **Brick failure at north elevation**
Image courtesy GCA

Fig. I.9 **Brick failure at north elevation**
Image courtesy GCA

The mortar joint erosion ranges from 50% on the north and west elevations to 100% on the east elevation. There is evidence of several repointing campaigns. Due to ongoing water infiltration and saturation, the mortar (often in the areas of previous repair) continues to deteriorate, affecting the gable ends and eave areas most severely. (Fig. I.7)

Defects and deterioration of the stone occur in the following locations:

- Large areas of brick have failed on the north elevations of the building. In some instances the outer wythe of brick is missing, exposing the brick inner wythes. In other instances, all wythes of brick have failed, creating a hole in the masonry wall. These conditions occur at internal failed drains. (Fig. I.8 & I.9)
- Large areas of the brick have been rebuilt on the north elevation at the upper areas of the wall, and at the corners. These rebuilt areas are continuing to be saturated and are deteriorating again. (Fig. I.7)
- The joints between the gable stones are exposed (there is no flashing over the gable stones), allowing water to infiltrate into the core of the gable wall. Some of the gable stones are lifting due to freeze/thaw action. The saturation of the masonry from the cap stones is also causing accelerated deterioration of the mortar joints in the brick wall directly below the gable. (Fig. I.10)
- In areas of water saturation of the brick (below the scuppers, at the corners, etc.) there is efflorescence and spalling of the brick (Fig. I.6)

Porches

- The iron porches remain on the east and west ends of the south elevation (Fig. I.11). Both are in fair condition with

Fig. I.10 **Saturated masonry and mortar failure below gable capstone**
Image courtesy GCA

Fig. I.11 **South elevation iron porch**
Image courtesy GCA

Fig. I.12 **Surface finish damage - missing plaster exposing brick, rusted tin ceiling - at fireplace**
Image courtesy GCA

some rusting of the steel structure, grating and mesh.

Roof (Fig. I.2, I.3, I.4 & I.5)

- The original slate roof remains on this building and is failing in many locations. When surveyed, there were large holes in the roof surface that had been admitting water into the building for years. These have been recently patched up with temporary sheeting to protect the building.

- The original copper valleys, gutters and cupolas remain on the roof. It appears that the internal drains were blocked at some point, and some scuppers cut into the gutter to allow it to drain to the ground. It is apparent from the location of the major brick failure that the internal drains have been diverting water into the brick wall for an extended period of time and have been the primary reason for the brick failure.

Fig. I.13 **Rusted tin ceiling and structural damage**
Image courtesy GCA

- Wide, wooden overhanging eave with decorative "rafter tails" projecting out from face of building.

Windows

- The basement and first floor windows are covered with plywood.

- The second floor windows have iron bars, and no other covering. The open bars do not protect the glass from being broken, consequently there are many broken panes which provides access to animals, birds and water.

- The attic windows have no protective covering or bars. Most of the window panes are broken.

Interior Existing Conditions

The interior of the building is in fair condition. The interior damage is concentrated in areas of previous and current roof leaks and broken internal downspouts. There is failure and structural instability in rooms at the east and west ends of the building on the first and second floors. Extensive plaster failure has occurred, exposing the underlying brick walls. In all areas there is surface finish damage due to high moisture levels and a lack of ventilation. (Fig. I.12) Paint is generally peeling, tin ceilings are rusted (Fig. I.13), and plaster ceilings are cracked.

The details in this building are simpler than those in the stone buildings. The cornices and wood moldings are plain and there are no decorative plaster brackets in the central hall. The fireplace details are similar to the stone buildings, but use unfired brick instead of glazed brick. The ceilings in the central hall are tin instead of plaster.

Structural Description

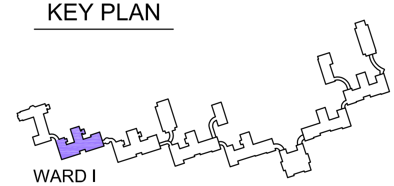
Female Ward I is a two-story brick masonry building with wood-framed floors. The floor framing at each level consists of 3x12 wood joists spaced at approximately 16 in. on center. The ceiling framing throughout the building consists of 2x12 wood joists spaced at approximately 16 in. on center. The roof framing consists of timber trusses supporting 6x8 wood purlins and roughly 2x6 rafters spaced at 16 in. on center.

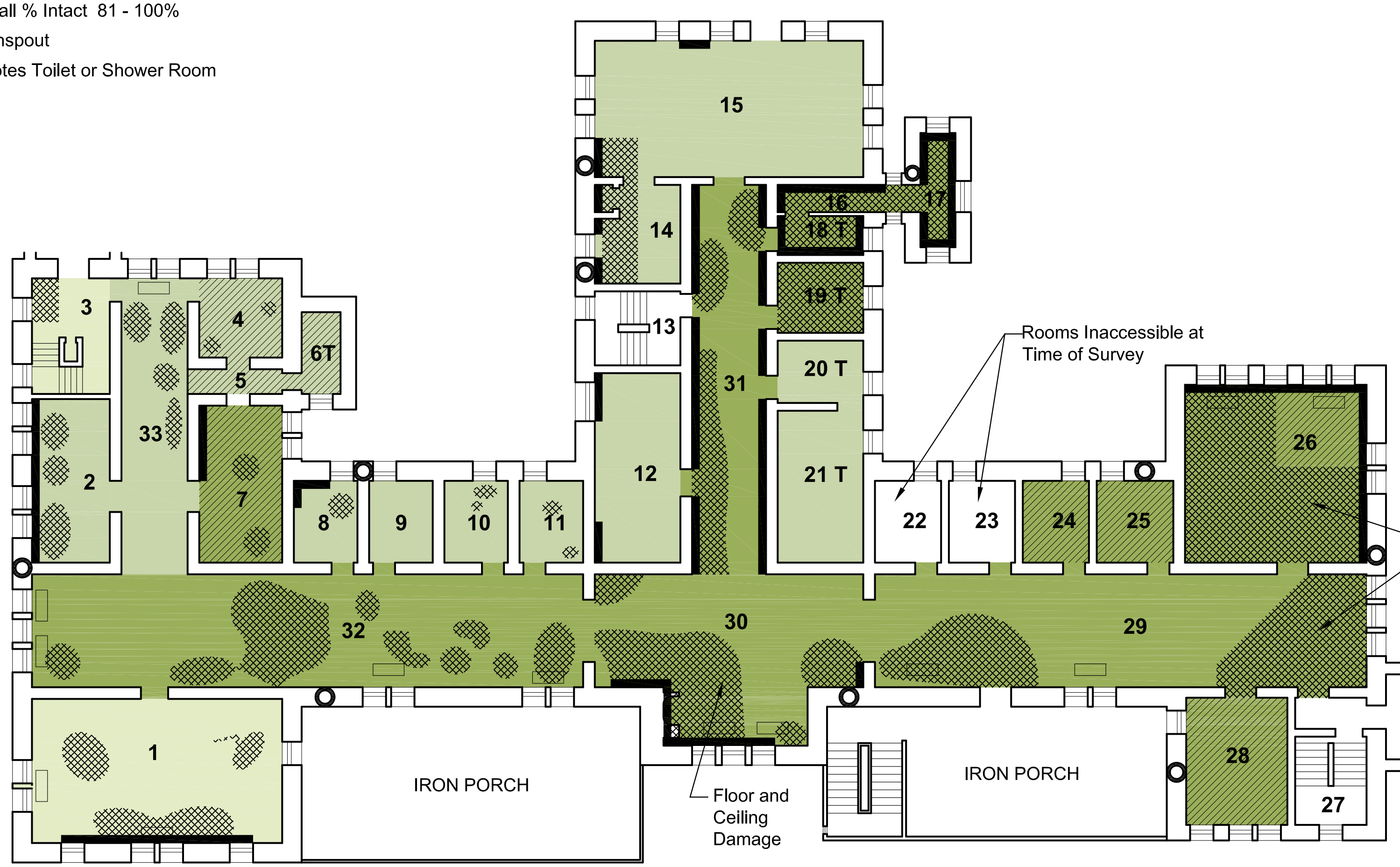
In general, the structure of this building is in poor condition. In fact, of the larger buildings in this complex, this building is in the worst condition. The interior and exterior bearing wall elements appear to be in poor condition. There are many areas of floor framing that appear to require replacement. The roof framing appears to be in fair condition.

KEY

- Floor - Unsound, Partially Collapsed, or Missing
- Walls - Plaster and/or Lath Damage
- Ceiling - Plaster, Lath, or Tin Damage
- Overall % Intact 0 - 50%
- Overall % Intact 51 - 80%
- Overall % Intact 81 - 100%
- Downspout
- T Denotes Toilet or Shower Room

KEY PLAN

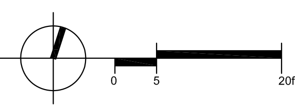




I
1.1

First Floor Plan FEMALE WARD I

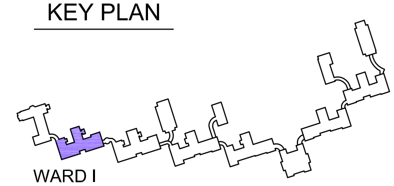
These drawings show estimated existing conditions.



KEY

- Floor - Unsound, Partially Collapsed, or Missing
- Walls - Plaster and/or Lath Damage
- Ceiling - Plaster, Lath, or Tin Damage
- Overall % Intact 0 - 50%
- Overall % Intact 51 - 80%
- Overall % Intact 81 - 100%
- Downspout
- T Denotes Toilet or Shower Room

KEY PLAN



I 1.2 **Second Floor Plan** FEMALE WARD I

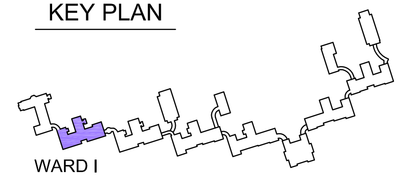
These drawings show estimated existing conditions.

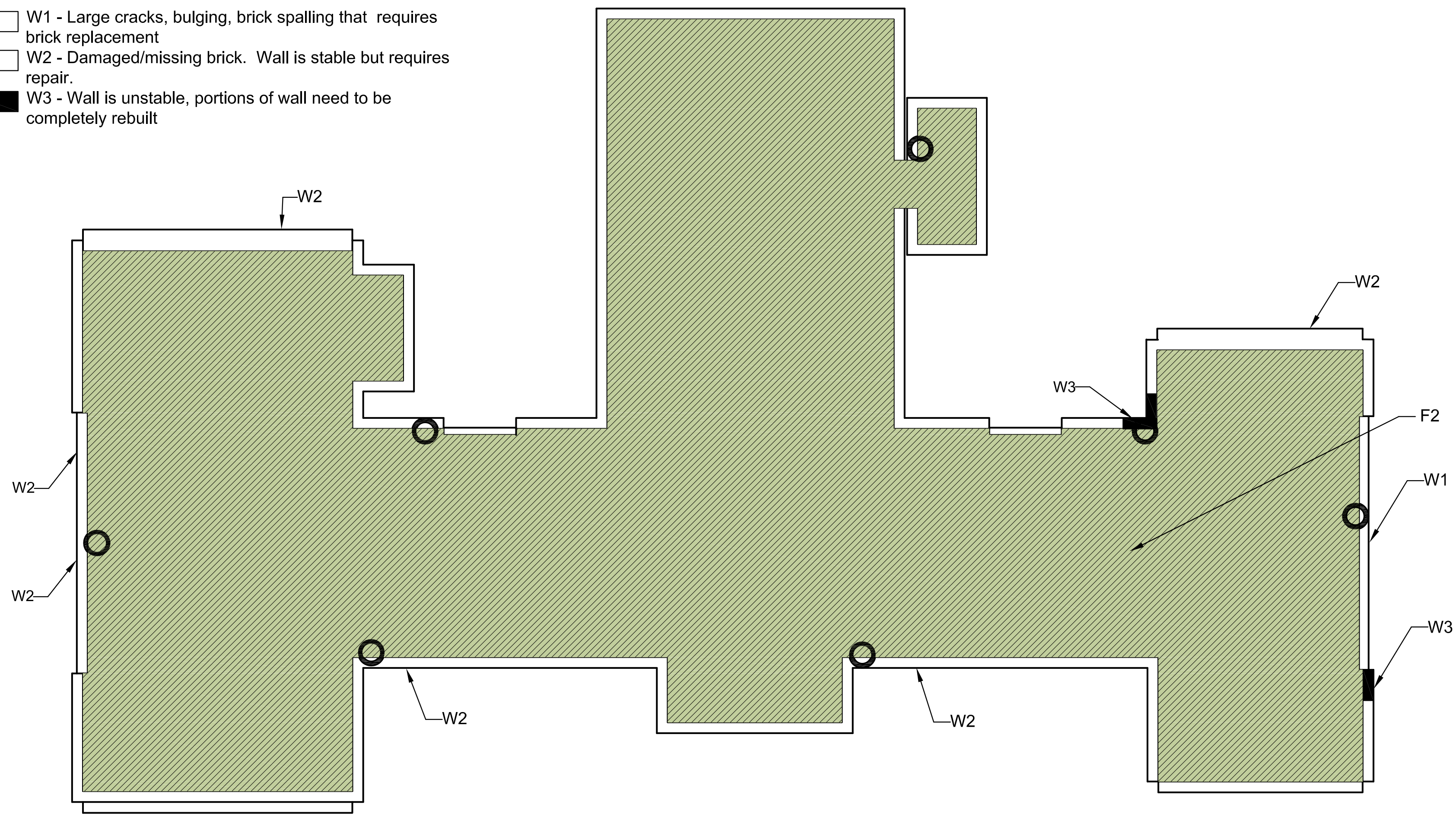
0 5 20ft

KEY

- F1 - Minor damages
- F2 - Medium level of damages (Joists may need to be replaced/sistered)
- F3 - Extensive deterioration (Floor framing likely requires replacement)
- Downspout
- W1 - Large cracks, bulging, brick spalling that requires brick replacement
- W2 - Damaged/missing brick. Wall is stable but requires repair.
- W3 - Wall is unstable, portions of wall need to be completely rebuilt

KEY PLAN



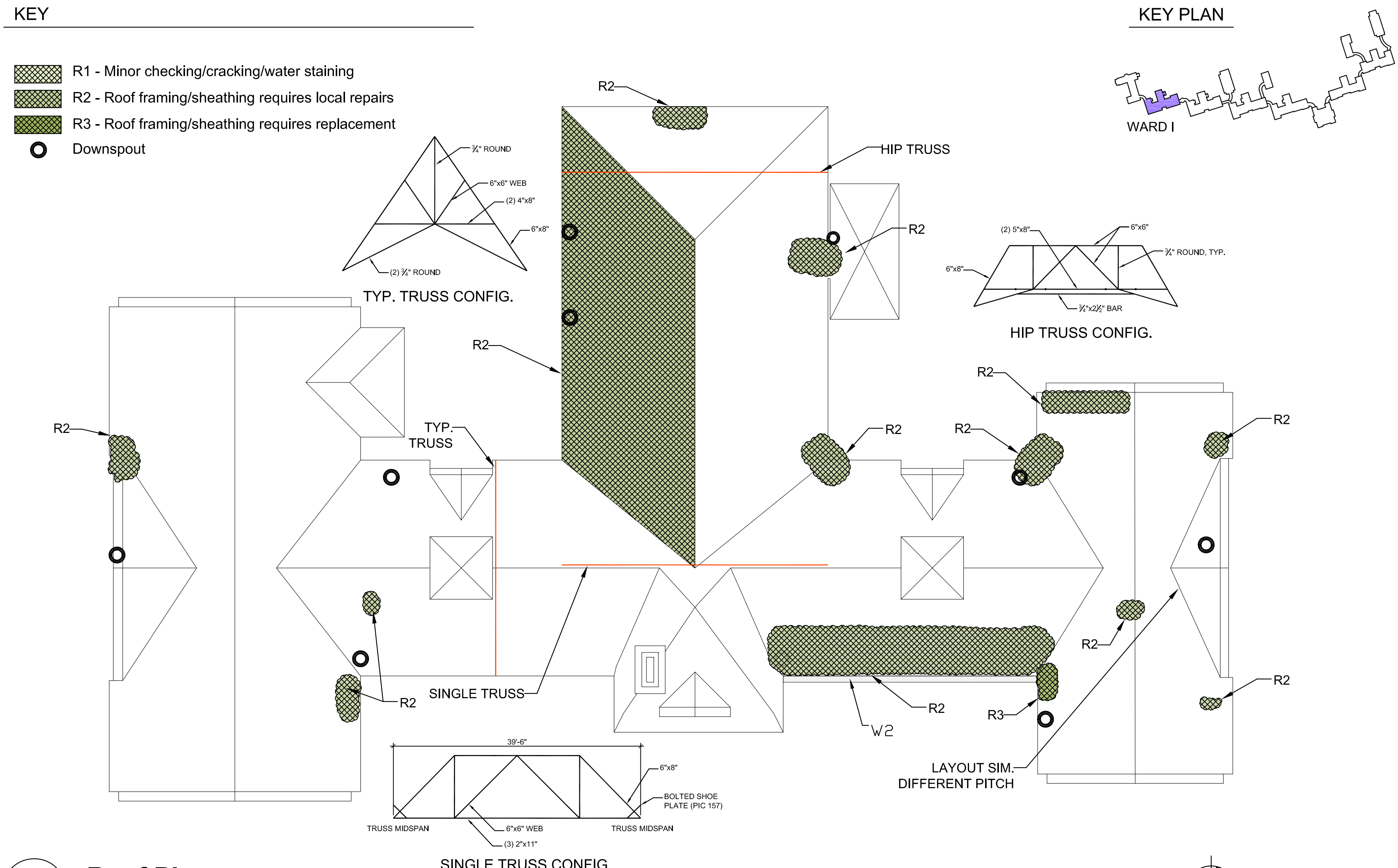


I
1.3

Attic Plan FEMALE WARD I

These drawings show estimated existing conditions.

0 5 20ft



I
1.4

Roof Plan FEMALE WARD I

These drawings show estimated existing conditions.

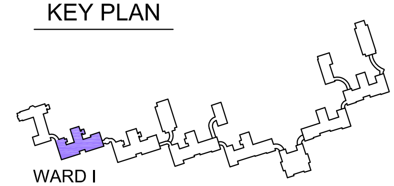
KEY

- Step Cracking
- Rebuilt Areas
- Open Joints / Shifting / Masonry Damage
- Masonry Collapse
- Crack through Stone

PERCENTAGES

- 18% Spalling
- 46% Staining
- 32% Mortar Erosion

KEY PLAN



I
2.1

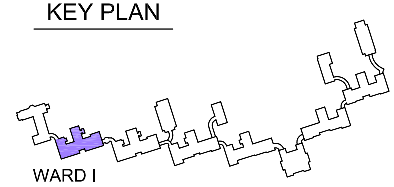
North Elevation FEMALE WARD I

These drawings show estimated existing conditions.

0 5 20ft

KEY	PERCENTAGES
Step Cracking	40% Spalling
Rebuilt Areas	50% Staining
Open Joints / Shifting / Masonry Damage	100% Mortar Erosion
Masonry Collapse	
Crack through Stone	

KEY PLAN



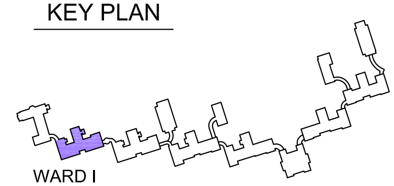
I
2.2

East Elevation FEMALE WARD I

These drawings show estimated existing conditions.

KEY		PERCENTAGES	
	Step Cracking	6%	Spalling
	Rebuilt Areas	19%	Staining
	Open Joints / Shifting / Masonry Damage	24%	Mortar Erosion
	Masonry Collapse		
	Crack through Stone		

KEY PLAN



I
2.3

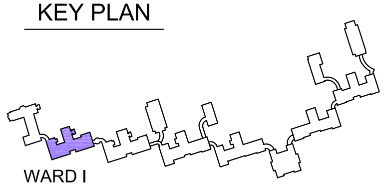
South Elevation FEMALE WARD I

These drawings show estimated existing conditions.

0 5 20ft

KEY	PERCENTAGES
Step Cracking	5% Spalling
Rebuilt Areas	10% Staining
Open Joints / Shifting / Masonry Damage	50% Mortar Erosion
Masonry Collapse	
Crack through Stone	

KEY PLAN



I
2.4

West Elevation FEMALE WARD I

These drawings show estimated existing conditions.

0 5 20ft

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FEMALE WARD J (BUILDING 38)

General Description

Female Ward J is a brick building with stone foundation, gable cap stones, beltcourses, sills and window mullions. (Fig. J.1) The building consists of a basement, one floor and an attic. The building is in fair condition, with isolated locations in poor condition. The roof is asphalt shingle with copper flashings. Overall, the exterior of the building is in sound condition. Specific areas of damage are described below and shown on the building elevations (Sheets J 2.1-2.4). The interior is in fair condition due to continual water infiltration, with conditions shown on the floor plans (Sheets J 1.1-1.3).

Decorative brickwork, stone carving details and items unique to the building include:

- The gable cap stones contain decorative scroll carvings. (Fig. J.2)
- The wooden rafter tails are patterned.

Exterior Existing Conditions

Stone

In general, the stone trim elements are in good condition. The surface of the stone contains minor spalling, soiling and some algae growth at the foundation walls on the north elevation.

Fig. J.1 **West elevation of Female Ward J**
Image courtesy GCA

Fig. J.2 **Decorative scroll carving at gable cap stone**
Image courtesy GCA

Fig. J.5 **West wall of north wing with wooden porch - area of bulging and previous stabilization efforts**

Fig. J.3 **Areas of brick collapse on north elevation**
Image courtesy GCA

Brick

In general, the brick is in fair condition. The brick on the north and east elevations contain isolated areas of collapse. (Fig. J.3) The brick surrounding the areas of collapse appears, outside the areas of saturation; appear to be in sound condition. There is evidence of previous rebuilding on the north elevation. (Fig. J.4) These areas are still being saturated and are beginning to fail again. The south wall of the north wing contains a bulge outward that has been stabilized with straps in the past. (Fig. J.5)

The surface contains spalling of between 5-25%; fairly extensive atmospheric soiling (30-80%); and limited algae growth on the north elevation. (Fig. J.6)

The mortar joint erosion ranges from 50% on the north and west elevations to 100% on the East elevation. There is evidence of several repointing campaigns. Due to ongoing

Fig. J.4 **Area of previous brick rebuilding on north elevation**
Image courtesy GCA

water infiltration and saturation, the mortar (often in the areas of previous repair) continues to deteriorate, affecting the gable ends and eave areas most severely. (Fig. J.6)

Defects and deterioration of the brick occur in the following locations:

- Isolated areas of brick have failed on the north and east elevations of the building. The outer wythe of brick is missing, exposing the brick inner wythes. (Fig. J.3)

- Areas of the brick have been rebuilt on the north elevation at the upper areas of the wall, and at the corners. These rebuilt areas are continuing to be saturated and are deteriorating again. (Fig. J.4)

- In areas of water saturation of the brick (below the gables, at the corners, etc.) there is efflorescence and spalling of the brick (Fig. J.6)

Fig. J.6 **Typical soiling, spalling and open joints at brick gables**
Image courtesy GCA

- Areas of step cracking between the windows appear to be due to water saturation and bulging of the brick from the inner wythe. (Fig. J.8)

Porches

- An iron porch remains on the east elevation. (Fig. J.7) The steel structure, grating and mesh are of a finer material and profile than the extant porches on the south elevations. This porch may be an example of the materials and scale of the earlier (1890's) porches that were built. It is in poor condition with the steel rusting and collapse of the concrete floor in some locations.

- A wooden neo-classical style porch was constructed on the west elevation, possibly as early as 1900. The porch is in poor condition with wood deterioration and partial collapse. (Fig. J.5)

Fig. J.7 **Iron porch on west elevation**
Image courtesy GCA

Roof

- The roof is covered in asphalt 3 tab shingles, possibly dating to the 1970's or 1980's. It is in poor condition with no open holes and a few areas of missing shingles. The roof was described as in poor condition in the 2002 existing conditions report. (Fig. J.9)

- The original copper valleys and some flashing remain on the roof. The gutter was shingled over to eliminate the problem of broken internal downspouts that were diverting water to the interior of the building.

- Wide, wooden overhanging eave with decorative "rafter tails" projecting out from face of building.

Windows

- The basement and first floor windows are covered with plywood. (Fig. J.10)

Fig. J.8 **East elevation showing areas of collapse and step cracking above attic window**
Image courtesy GCA

Fig. J.9 **Typical condition of asphalt shingle roof**
Image courtesy GCA

Fig. J.10 **South elevation showing plywood coverings on lower windows and broken panes on attic windows**

Fig. J.11 **Partially collapsed floor in west end**
Image courtesy GCA

Fig. J.12 **Area of water infiltration exposing framing**
Image courtesy GCA

- The attic windows have no protective covering or bars.
- Most of the window panes are broken.

Interior Existing Conditions

The interior of the building is in fair condition. The interior damage is concentrated in areas of previous and current roof leaks and broken internal downspouts. There are collapsed floors in the west end of the building. (Fig. J.11) Extensive plaster failure has occurred, exposing the underlying brick walls. (Fig. J.12) In all areas there is surface finish damage due to high moisture levels and a lack of ventilation. Paint is generally peeling, tin ceilings are rusted, and plaster ceilings are cracked. (Fig. J.13)

The details in this building are simpler than those in the stone buildings. The cornices and wood moldings are plain and

Fig. J.13 **Typical condition of surfaces due to moisture - peeling paint, mold, rusted ceilings**
Image courtesy GCA

there are no decorative plaster brackets in the central hall. The fireplace details are similar to the stone buildings, but use unfired brick instead of glazed brick. The ceilings in the central hall are tin instead of plaster. (Fig. J.14)

Structural Description

Female Ward J is a two-story brick masonry building with wood-framed floors. The floor framing at each level consists of 3x12 wood joists spaced at approximately 16 in. on center. The ceiling framing throughout the building consists of 2x12 wood joists spaced at approximately 16 in. on center. The roof framing consists of timber trusses supporting 6x8 wood purlins and roughly 2x6 rafters spaced at 16 in. on center.

In general, the structure of this building is in fair condition. The interior and exterior bearing wall elements appear to be in fair condition. There are many areas of floor framing that

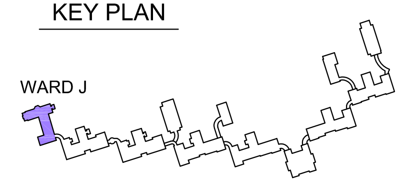
Fig. J.14 **Simpler details - brick fireplace, tin ceilings**
Image courtesy GCA

appear to require repair. The roof framing appears to be in good condition. Some minor repairs have been made to the roof framing, including reinforcement of the purlin connections to the brick gable walls.

KEY

- Floor - Unsound, Partially Collapsed, or Missing
- Walls - Plaster and/or Lath Damage
- Ceiling - Plaster, Lath, or Tin Damage
- Overall % Intact 0 - 50%
- Overall % Intact 51 - 80%
- Overall % Intact 81 - 100%
- O Downspout
- T Denotes Toilet or Shower Room

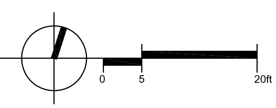
KEY PLAN



J 1.1

First Floor Plan FEMALE WARD J

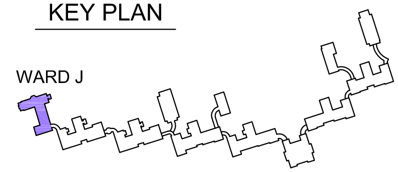
These drawings show estimated existing conditions.

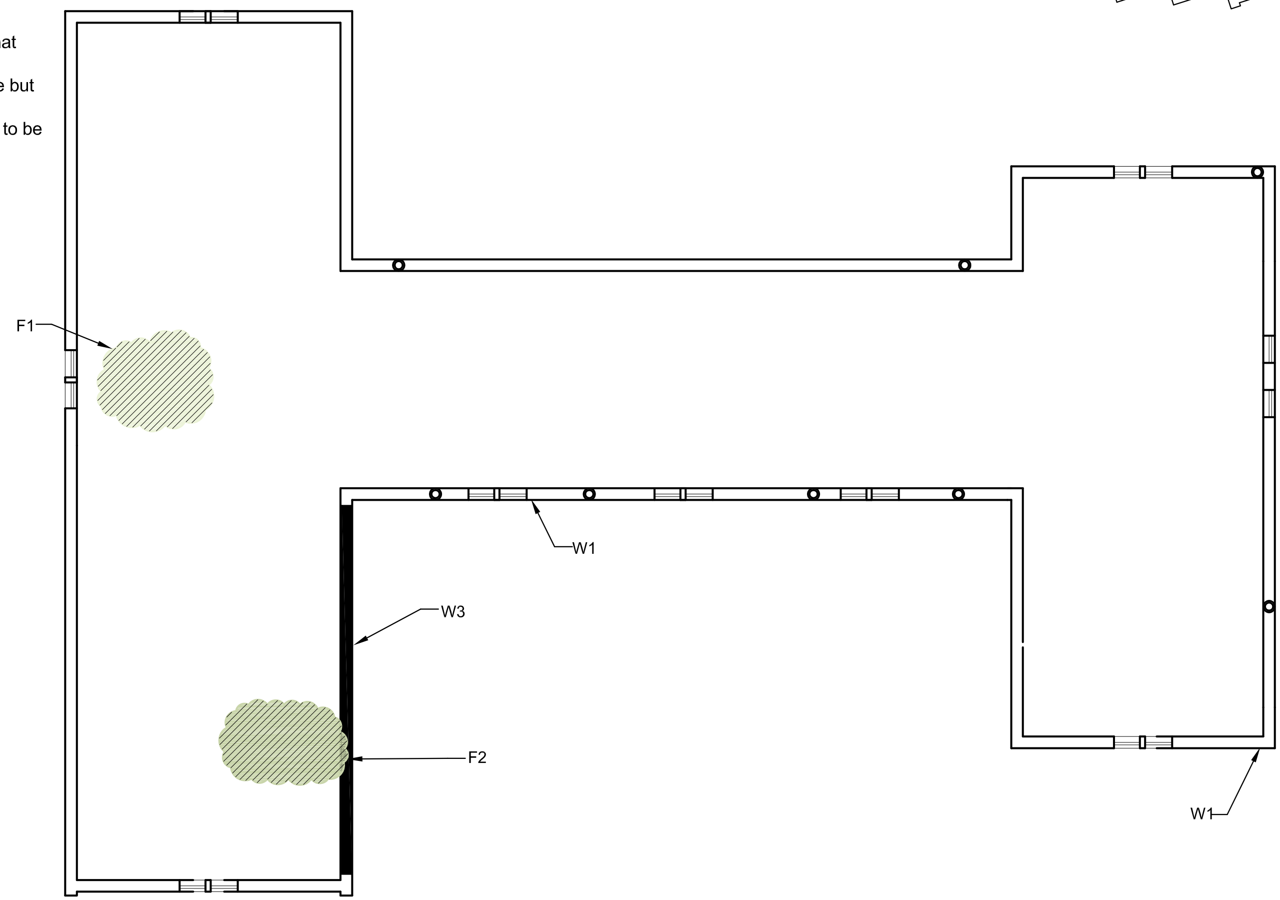


KEY

- F1 - Minor damages
- F2 - Medium level of damages (Joists may need to be replaced/sistered)
- F3 - Extensive deterioration (Floor framing likely requires replacement)
- Downspout
- W1 - Large cracks, bulging, brick spalling that requires brick replacement
- W2 - Damaged/missing brick. Wall is stable but requires repair.
- W3 - Wall is unstable, portions of wall need to be completely rebuilt

KEY PLAN

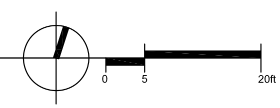




J 1.2

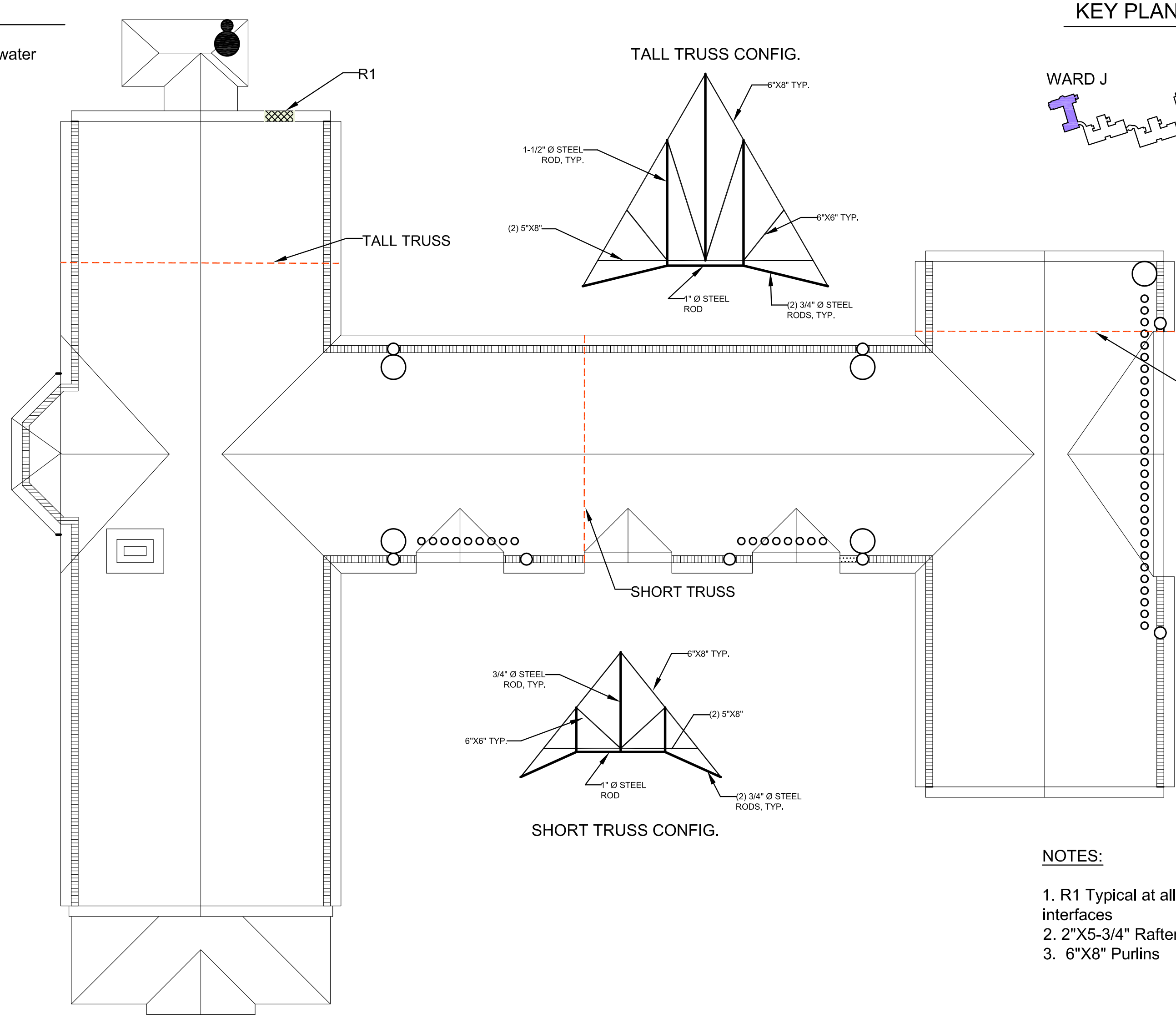
Attic Plan FEMALE WARD J

These drawings show estimated existing conditions.



KEY

- R1 - Minor checking/cracking/water staining
- R2 - Roof framing/sheathing requires local repairs
- R3 - Roof framing/sheathing requires replacement
- Downspout



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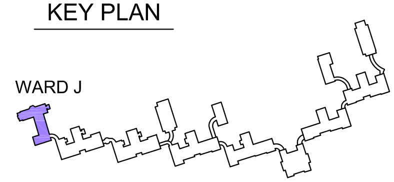
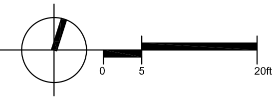


NOTES:

1. R1 Typical at all wood-masonry interfaces
2. 2"X5-3/4" Rafters @ 16" O.C.
3. 6"X8" Purlins

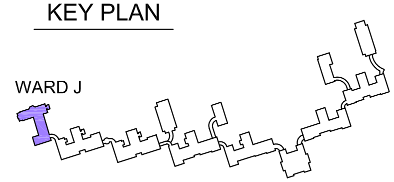
J 1.3 **Roof Plan** FEMALE WARD J

These drawings show estimated existing conditions.



KEY	PERCENTAGES
Step Cracking	25% Spalling
Rebuilt Areas	80% Staining
Open Joints / Shifting / Masonry Damage	40% Mortar Erosion
Masonry Collapse	
Crack through Stone	

KEY PLAN



J
2.1

North Elevation FEMALE WARD J

These drawings show estimated existing conditions.

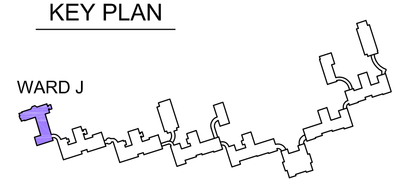
KEY

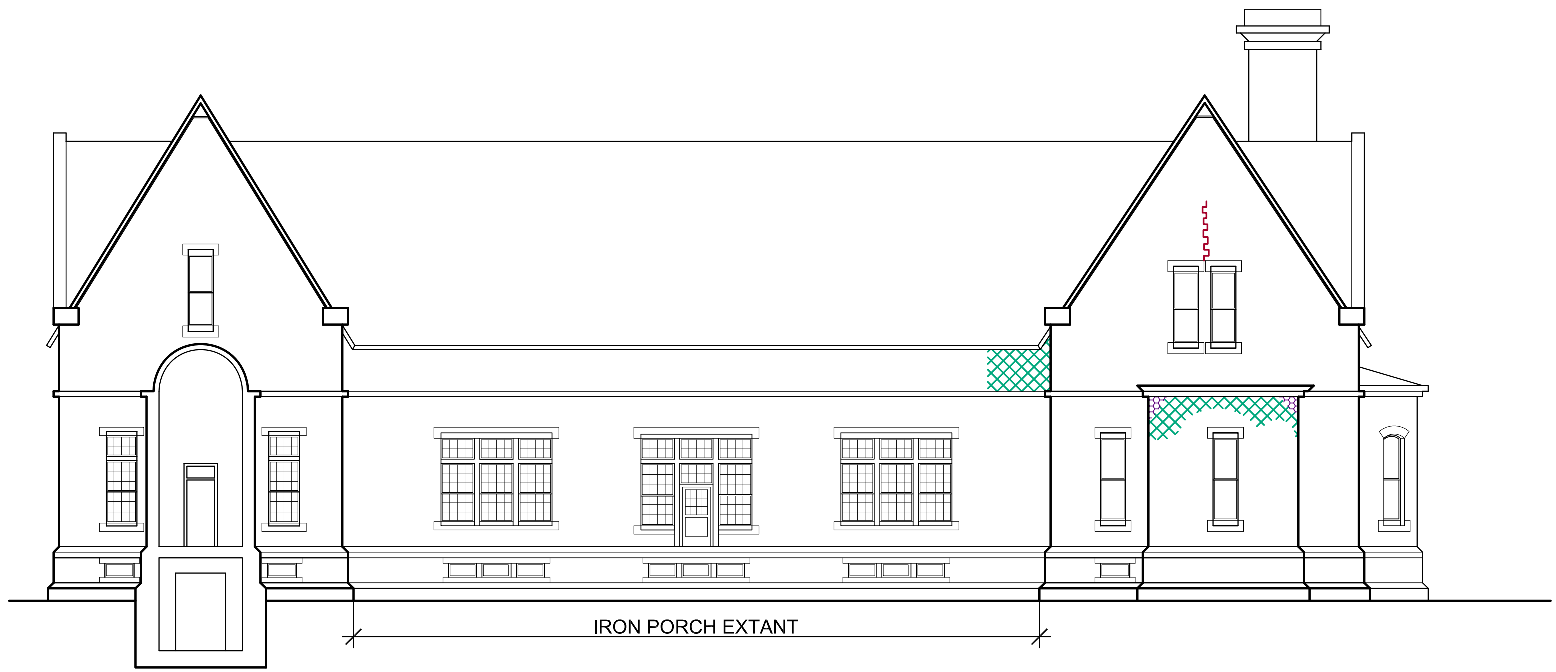
- Step Cracking
- Rebuilt Areas
- Open Joints / Shifting / Masonry Damage
- Masonry Collapse
- Crack through Stone

PERCENTAGES

- 9% Spalling
- 29% Staining
- 23% Mortar Erosion

KEY PLAN





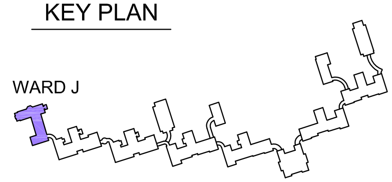
J 2.2 **East Elevation** FEMALE WARD J

These drawings show estimated existing conditions.

0 5 20ft

KEY	PERCENTAGES
Step Cracking	5% Spalling
Rebuilt Areas	65% Staining
Open Joints / Shifting / Masonry Damage	50% Mortar Erosion
Masonry Collapse	
Crack through Stone	

KEY PLAN



J
2.3

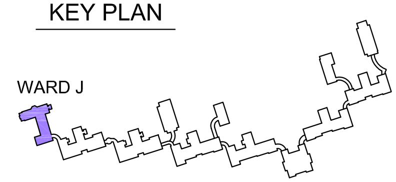
South Elevation FEMALE WARD J

These drawings show estimated existing conditions.

0 5 20ft

KEY	PERCENTAGES
Step Cracking	4% Spalling
Rebuilt Areas	49% Staining
Open Joints / Shifting / Masonry Damage	38% Mortar Erosion
Masonry Collapse	
Crack through Stone	

KEY PLAN



J 2.4 **West Elevation** FEMALE WARD J

These drawings show estimated existing conditions.

CURVED CONNECTOR BUILDINGS

There are eight curved connectors that join the eight remaining Administration and Ward buildings together as a continuous element. Stone connectors join the stone buildings, and brick connectors link the brick buildings. The general descriptions and existing conditions that are common to all of the connectors are described below. Following the typical descriptions and conditions is a description and photographs of each connector, detailing any differences from the general description. Drawings do not exist for these elements and all descriptions will be illustrated with photographs.

General Description and Typical Exterior Existing Conditions

Stone Connectors

Stone connectors are constructed of random ashlar Medina sandstone, similar to the Ward Buildings. Honed stone beltcourses and window trim is typical, with shallow arched window headers over the first and second floor windows. In general, the stone is in good condition.

The following types of defects and deterioration of the stone occur in various locations. Where severe deterioration occurs, photographs will illustrate the conditions.

- Step cracking occurs between the windows in some locations. In general, the walls remain sound with little displacement of individual stones.
- The surface of the stone contains moderate spalling, atmospheric soiling and limited algal growth on the north sides of some connectors.
- The mortar joints are mostly intact, with evidence of several repointing campaigns.

Brick Connectors

The brick connectors are constructed of Medina sandstone foundation, cornice, beltcourses, sills and window mullions, with multiwythe brick construction on the first and second floors. Construction methods and details are similar to Female Wards H, I and J. The connectors consist of a basement, and one, two or three floors (the connectors step down in height as the buildings go from one to three floors in height). On Connector H-I the third floor is contained within the domed copper roof. The condition of the brick connectors varies from fair to poor, depending on the location and the water infiltration issues.

Defects and deterioration of the brick occur in the following locations:

- Isolated areas of brick have failed on the north and south elevations of all 3 brick connectors. The outer wythe of brick is missing, exposing the brick inner wythes, in some locations. In other locations, the brick has failed for the full depth of the wall. The brick around the areas of collapse, outside the areas of saturation; appears to be in sound condition. Due to the collapse, the brick connectors are considered in poor condition.

- Areas of the brick have been rebuilt in some locations. This area is continuing to be saturated and the deterioration continues.

- In areas of water saturation of the brick there is efflorescence and spalling of the brick.

- Areas of step cracking between the windows appear to be due to water saturation and bulging of the brick from the inner wythe.

- The mortar joint erosion ranges from 50% , to 100% in areas of saturation. There is evidence of several repointing campaigns. Due to ongoing water infiltration and saturation, the mortar (often in the areas of previous repair) continues to deteriorate.

Roof

- Vaulted copper standing seam roofs are present on all connectors, except AB-A and H-I. The original roofs on the connectors were flat, similar to AB-A and H-I. The vaulted copper roofs were added early in the history of the buildings.

- Splitting at some of the copper seams indicates aging of the roof system and failure of the roof materials.

- Built in gutters with external downspouts occur on the connectors. The gutters are split and failed, allowing water infiltration and saturation of the masonry below.
- Arched dormers and windows are located in all of the vaulted copper roofs, except connector I-J.

- The copper is exhibiting deterioration of the patina and failure of the seams associated with copper that is nearing the end of a predicted 50-75 year life span.

Windows

- Brick Connectors:

    - The basement and first floor windows are covered with plywood.

    - The second floor windows of have iron bars, and no other covering. The open bars do not protect the glass from being broken, consequently there are many broken panes which provides access to animals, birds and water.

    - The third floor windows have are covered with a diamond patterned wire mesh. Most of the window panes are broken.

- Stone Connectors:

    - All of the window openings are covered with plastic sheeting.

EXISTING CONDITIONS OF INDIVIDUAL CONNECTORS

STONE CONNECTORS

Connector A-B

General

- Sandstone basement, first and second floors, third story in vaulted roof
- Door opening to first floor on north elevation. Only connector with extant iron stair to first floor door. Original wood door.

Roof

- Historic photos show flat roof at connector. Currently has domed copper roof.
- Vaulted copper with arched windows.
- Aged condition
- Masonry
- Open mortar joints in masonry – 15-20%
- Spalling 15-25%
- Staining 40-50%
- Lots of open joints in central bay b/w windows
- Open joints all along roof cornice

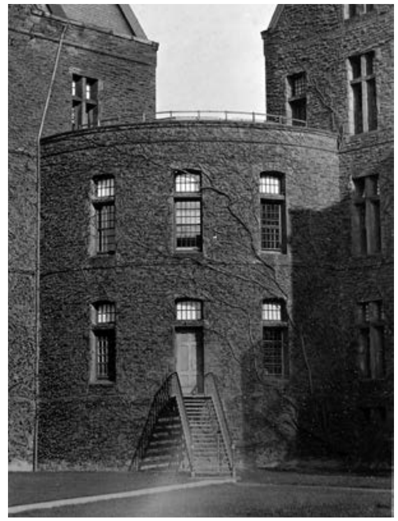


Fig. A-B.1 **Connector A-B Historic image showing flat roof**
Image courtesy GCA

Fig. A-B.2 **Connector A-B North Elevation**
Image courtesy GCA

Fig. A-B.3 **Connector A-B South Elevation**
Image courtesy GCA

Fig. AB-A.1 **Connector AB-A South Elevation**
Image courtesy GCA

Fig. AB-A.2 **Connector AB-A North Elevation**
Image courtesy GCA

Connector AB-A

General

- Sandstone basement, first and second floors, flat roof at second floor
- Arched opening through the building at the basement level

Roof

- Flat sheet membrane roof.
- Fair condition

Masonry

- Open mortar joints in masonry – 10-30%
- Spalling 10-25%
- Staining 50%
- Open joints along arched entryway

Connector AB-F

General

- Sandstone basement, first and second floors, third story in vaulted roof
- Arched opening through the building at the basement level

Roof

- Vaulted copper with arched windows.
- Aged condition

Masonry

- Open mortar joints in masonry – 10-30%
- Spalling 20-25%
- Staining 50-80%
- Algae in lower level at junction with main buildings
- Open joints along arched entryway
- Step crack at junction with admin bldg (Fig. AB-F.3)
- Previous repair of open joints along roof cornice
- Stucco surface – south elevation at elevator installation

Fig. AB-F.1 **Connector AB-F North Elevation**
Image courtesy GCA

Fig. AB-F.3 **Crack at junction with main building**
Image courtesy GCA

Fig. AB-F.2 **Connector AB-F South Elevation**
Image courtesy GCA

Fig. F-G.1 **Connector F-G North Elevation**
Image courtesy GCA

Fig. F-G.3 **North elevation door opening, step crack below**
Image courtesy GCA

Fig. F-G.2 **Connector F-G South Elevation**
Image courtesy GCA

Connector F-G

General

- Sandstone basement, first and second floors, third story in vaulted roof
- Door opening to first floor on north elevation. Stairs removed. (Fig. F-G.3)

Roof

- Vaulted copper with arched windows.
- Aged condition

Masonry

- Open mortar joints in masonry – 20-30%
- Spalling 10-15%
- Staining 50-70%
- Algal growth on north elevation basement level

BRICK CONNECTORS

Connector B-C (Partial)

General

- This is highly significant because it is the only remaining evidence of the historic tarred brick that was on the demolished Male Wards. (Fig.B-C.3)
- Sandstone basement, brick first and second floors, third story in vaulted roof
- Door opening to first floor on north and south elevations. Stairs removed.
- Original wood door (Fig.B-C.4)

Roof

- Vaulted copper with arched windows.
- Aged condition

Masonry

- Open mortar joints in masonry – 75-80%
- Spalling 70%
- Staining 90%
- Brick in poor condition – open joints, areas of missing / peeling brick
- Rebuilt edge bulging out at corner

Fig. B-C.1 **Connector B-C North Elevation**
Image courtesy GCA

Fig. B-C.2 **Connector B-C South Elevation**
Image courtesy GCA

Fig. B-C.4 **Original Wood Door**
Image courtesy GCA

Fig. B-C.3 **Tarred Brick Detail**
Image courtesy GCA

Fig.G-H.1 **Connector G-H North Elevation**
Image courtesy GCA

Fig.G-H.3 **Collapsed brick at curved bay to connector**
Image courtesy GCA

Fig.G-H.2 **Connector G-H South Elevation**
Image courtesy GCA

Connector G-H

General

- Sandstone basement, brick first and second floors, third story in vaulted roof
- Door opening to first floor on north elevation. Stairs removed.

Roof

- Vaulted copper with arched windows.
- Aged condition

Masonry

- Open mortar joints in masonry – 75-80%
- Spalling 75%
- Staining 75%
- Curved bay on north and south elevations.
- Collapsed brick – through wall at second floor north and south elevations at curved bay to connector joint. (Fig.G-H.3)

Connector H-I

General

- Sandstone basement, brick first and second floors, flat roof
- Door opening to first floor on north elevation. Stairs removed.

Roof

- Flat copper roof on second story.
- Condition unknown

Masonry

- Open mortar joints in masonry – 75-90%
- Spalling 75%
- Staining 75-100%
- Curved bay on north and south elevations.
- Significant collapse where curved bay meets main building wall. Previous repair with concrete block at second floor. Subsequent collapse since repair. (Fig.H-I.3)

Fig.H-I.1 **Connector H-I North Elevation**
Image courtesy GCA

Fig.H-I.2 **Connector H-I South Elevation**
Image courtesy GCA

Fig.H-I.3 **Detail of collapse and previous repair**
Image courtesy GCA

Fig.I-J.1 **Connector I-J North Elevation**
Image courtesy GCA

Fig.I-J.2 **Connector I-J South Elevation**
Image courtesy GCA

Connector I-J

General

- Sandstone basement, brick first floor, vaulted copper roof
- Door openings on north and south elevations. Stairs removed.

Roof

- Vaulted copper with no windows.
- Aged condition

Masonry

- Open mortar joints in masonry – 85%
- Spalling 90%
- Staining 85%
- Domed copper roof with no dormer windows
- Outer wythe of brick collapsed on north elevation

KITCHEN AND DINING HALL WING BUILDINGS

There are four wing buildings linked to the main Administration and Ward buildings by brick connectors. The wings are: Female Kitchen (FK), Female Dining Hall (FDH), Male Kitchen (MK) and Male Dining Hall (MDH). The general description, existing condition and photographs of each building follow. Drawings do not exist for these buildings and all descriptions will be illustrated with photographs.

Male Kitchen (Building 12)

The Male Kitchen is a one-story building constructed of random ashlar Medina sandstone. (Figs. MK.1 and 2) Built in 1880, it is similar in materials and detail to the Ward Buildings and is the only wing that contains the Richardsonian detailing typical of the Ward Buildings. Honed stone beltcourses and window trim is typical, with shallow arched window headers over the windows. The stone cornice brackets are similar to the Ward buildings. Original wood doors remain on the west elevation. A low stone addition is located to the north of the main kitchen building. (Fig. MK.3) It is one story and the roof no longer remains. It is built into a hill, suggesting that it may have been used for cold storage of food. (Fig. MK.4)

Masonry

In general, the stone is in good condition on the main building where the roof remains intact. The walls of the low addition are in worse condition due to the continued saturation and freeze thaw action. The surface of the stone contains moderate spalling (5-10%), atmospheric soiling (25-40%) and

Fig. MK.1 **Male Kitchen West Elevation**
Image courtesy GCA

Fig. MK.2 **Male Kitchen East Elevation**
Image courtesy GCA

Fig. MK.3 **Male Kitchen addition interior condition**
Image courtesy GCA

Fig. MK.4 **North elevation of Male Kitchen addition**
Image courtesy GCA

Fig. MK.5 **Step cracking on west elevation**
Image courtesy GCA

no significant algae growth on the building.

The mortar joints are mostly intact, with evidence of several repointing campaigns. Due to some ongoing water infiltration and saturation, the mortar continues to deteriorate with approximately 10-20% of the building requiring repointing at this time.

Step cracking occurs between the openings (window and door) and the cornice. The stones have not shifted out of plane, but further water infiltration could cause displacement. (Fig. MK.5)

Roof

The gable roof is covered in 3 tab asphalt shingles that appear to be in good condition. The original built in copper gutter remains and was lined with sheet membrane when the roof was replaced. The roof would have originally been covered in slate with copper gutters, downspouts and flashings.

Windows

The windows and doors that remain are covered with plywood and could not be reviewed.

Male Dining Hall (Building 13)

Constructed in 1923, the Male Dining Hall is a four-story transitional masonry building. (Figs. MDH.1 and 2) The exterior walls are brick bearing walls with a concrete foundation. The interior framing is steel columns supporting steel beams and open web steel joists. The first floor appears to be a slab-on-grade. The upper floors appear to be concrete slabs cast on an extruded mesh. Brick jack arches (both low arches and flat arches) form the lintels over the window and door openings, with sandstone used for the beltcourses, sills and keystones on the third floor windows.

Overall, the exterior of the building appears to be in good condition.

Masonry

The stone trim elements appear to be in good condition. The surface of the stone contains minor spalling and soiling.

In general, the brick is in good condition. There are areas of water damage under the sills where water saturation has caused mortar erosion and spalling of the brick. The surface of the brick contains moderate spalling (10-30%), atmospheric soiling (20-30%) and no significant algae growth on the building.

The mortar joints are mildly to moderately eroded. Due to some ongoing water infiltration and saturation, the mortar continues to deteriorate with approximately 20-60% of the building requiring repointing at this time.

Areas at the corners have been previously rebuilt and continue to deteriorate. (Fig. MDH.3)

Fig. MDH.1 **Male Dining Hall Southwest Elevation**
Image courtesy GCA

Fig. MDH.2 **Male Dining Hall Northeast Elevation**
Image courtesy GCA

Fig. MDH.3 **Area of corner rebuilding**
Image courtesy GCA

Fig. MDH.4 **Foundation wall crack on east elevation**
Image courtesy GCA

There are cracks in the basement concrete foundation wall. These do not appear to be a structural issue and are not a serious concern at this time. (Fig. MDH.4)

Roof

The roof is flat and was not reviewed as part of this conditions survey. The materials and conditions are unknown.

Windows

The wood windows are intact and appear to be in good condition. They are not covered with plywood or plastic sheeting and did not have wire mesh or grills installed at any time.

Female Dining Hall (Building 41)

Constructed in 1930, the Female Dining Hall is a four-story transitional masonry building, similar to the Male Dining Hall. (Figs. FDH.1 and 2) The exterior walls are brick bearing walls with a concrete foundation. The interior framing is steel columns supporting steel beams and open web steel joists. The first floor appears to be a slab-on-grade. The upper floors appear to be concrete slabs cast on an extruded mesh. Brick jack arches (both low arches and flat arches) form the lintels over the window and door openings, with sandstone used for the cornice, quoins between the cornice and third floor beltcourse, beltcourses, sills and keystones on the third floor windows. (Fig. FDH.3)

Overall, the exterior of the building appears to be in good to fair condition. In general, the structure of this building is in good condition. It appears that there may be some areas of floor framing that require reinforcing. However, the areas of structure that were exposed due to severe damage to the finishes appeared to be in good condition.

Masonry

The stone trim elements appear to be in good condition. The surface of the stone contains minor spalling and soiling.

In general, the brick is in good condition. There are areas of water damage under the sills and in the panels between the windows where water saturation has caused mortar erosion, efflorescence and spalling of the brick. (Fig. FDH.4) The surface of the brick contains moderate spalling (25%), atmospheric soiling (50-60%) and no significant algae growth on the building.

Fig. FDH.1 **Female Dining Hall West Elevation**
Image courtesy GCA

Fig. FDH.2 **Female Dining Hall East Elevation**
Image courtesy GCA

Fig. FDH.3 **Detail of brick jack arch and sandstone beltcourse, keystone, quoins and sill**
Image courtesy GCA

Fig. FDH.4 **Area of water saturation showing mortar erosion and efflorescence**
Image courtesy GCA

Fig. FDH.5 **Foundation wall crack on east elevation**
Image courtesy GCA

The mortar joints are moderately eroded. Due to some ongoing water infiltration and saturation, the mortar continues to deteriorate with approximately 75% of the building requiring repointing at this time.

There are cracks in the basement concrete foundation wall. These do not appear to be a structural issue and are not a serious concern at this time. (Fig. FDH.5)

Roof

The roof is flat and was not reviewed as part of this conditions survey. The materials and conditions are unknown.

Windows

Most of the window openings are covered with plywood. Where the plywood covering is missing, the wood windows are visible. They exposed wood windows appear to be in poor condition.

Female Kitchen (Building 43)

Built in 1895, the Female Kitchen wing is a two-story brick masonry building with an attic. (Figs. FK.1, 2 and 3) The window lintels are formed by flat jack arches. The cornice is decorative, corbelled brick. There are four brick dormers on the east and west elevations with decorative brick patterning forming the window lintels and gable configuration. (Fig. FK.4)

The original slate roof and copper gutters and flashings remain on the roof. The roof framing that we could observe through the areas where the roof was missing consists of wood rafters supported on the exterior brick bearing walls. The roof has a ridge board, and therefore we think it likely has some wood framing at the eave level that may or may not have been an accessible attic space.

The floor framing was not visible, but based on the other one-story buildings on the site, it can be assumed that there is a slab-on-grade at the ground level.

In general, the structure of this building is in poor condition. We did not enter this building as the roof is severely deteriorated and the brick gable dormers supported on the wood roof structure appeared to be on the verge of collapse. The building is currently undergoing stabilization of the roof.

Masonry

In general, the brick is in fair to poor condition due to the continual water saturation from the holes in the roof and the diversion of roof water (through failing gutters and missing downspouts) directly onto and into the core of the

Fig. FK.1 **Female Kitchen Southwest Elevation**
Image courtesy GCA

Fig. FK.2 **Female Kitchen Northeast Elevation**
Image courtesy GCA

Fig. FK.3 **Female Kitchen West Elevation showing sagging roof ridge**
Image courtesy GCA

Fig. FK.4 **Female Kitchen Dormer Detail**
Image courtesy GCA

Fig. FK.5 **Brick displacement at cornice and wall**
Image courtesy GCA

Fig. FK.6 **Typical soiling, spalling and open joints at brick gables**
Image courtesy GCA

Fig. FK.7 **Missing downspout and resulting masonry deterioration**
Image courtesy GCA

brick walls. In some locations, this deterioration is leading to isolated areas of brick displacement, step cracking through the brick joints, and bulging of the wall indicative of future brick displacement and failure. (Fig. FK.5) There is some evidence of previous repairs and blocking off of old openings, but maintenance has not occurred on the building.

The surface contains spalling of between 40-50%; fairly extensive atmospheric soiling (50-75%); and efflorescence in areas of repeated saturation. (Fig. FK.6)

The mortar joint erosion ranges from 75-90%. Due to ongoing water infiltration and saturation, the mortar continues to deteriorate, affecting the dormers and cornice areas most severely.

Roof

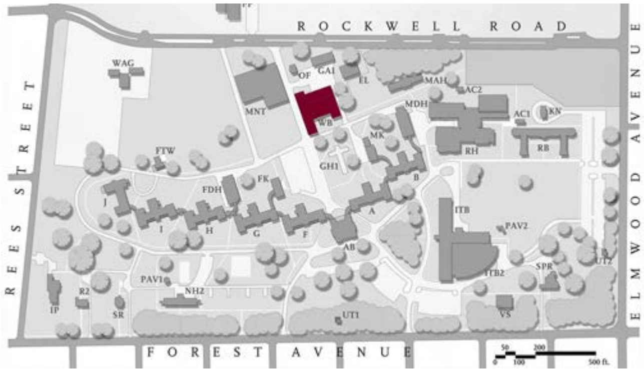
The original slate roof and copper gutters and flashings remain in place. The slate is missing in many areas where ongoing deterioration has formed holes through the wood decking. Due to the lack of maintenance, the deterioration of the roof structure is severe, with sagging of the main roof ridge and imminent collapse of the dormers. The copper gutters are in poor condition, with cracks, holes and missing sections. The downspouts are no longer in place in most locations, directing the water from the gutters to the surface of the masonry. (Fig. FK.7)

Windows

The wood windows appear to be intact in some locations. The windows are a mixture of exposed original windows and plywood covers. The windows that are exposed appear to be in fair to poor condition.

D. SITE STRUCTURES INVENTORY

This section titled 'Site Structures Inventory' will provide a brief overview of the remaining 22 structures on the site of the Buffalo Psychiatric Center, besides the Administration Building, 8 ward buildings, and the attached Kitchen and Dining Halls that have been covered earlier in greater detail. The section is organized to present a one-page description on each structure. This includes a key-map to identify the location of each building, the different building names, years of construction, architect(s), gross floor area, original and current uses, the preservation listing status. and representative photographs. The section is intended to serve as an inventory of on-site structures and is not based on an existing conditions assessment, that being outside the scope of this HSR. Wherever a comment has been made on the overall existing condition of a structure, it is based on a preliminary visual inspection from the exterior.



Key map

Workshop and Boiler

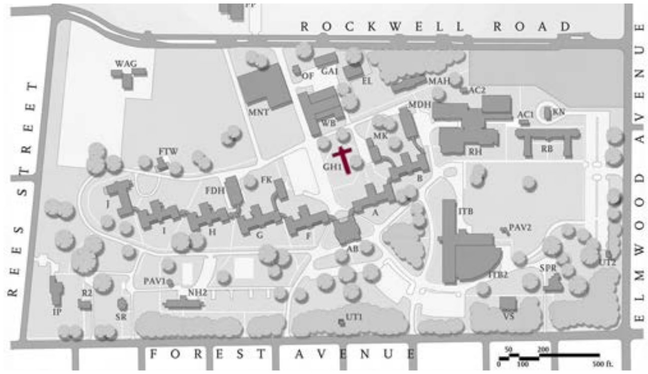
HSR Name: WB
Alternate Building #: 22
Year(s) Built:
1872-76 - Workshop & Boiler
1886-87: Blacksmith & Plumbing Shop Addition
1895: Coal Shed Addition
Architect(s):
1872-76 - H.H. Richardson
1886-87: W.W. Carlin
1895: Green & Wicks
Original Use: Workshop & Boiler
Subsequent Uses:
Bakery, Carpenter shop, Morgue,
Refrigeration plant etc.
Current Use: Plant Operations / Maintenance
Area: 34,090 sq. ft.
NR/NHL Status: Noncontributing to NHL and
Not NR eligible
Brief Description: This one story, roughly rectangular building dates from the original construction period of 1872-76. The original design comprised of a T-shaped floorplan consisting of the boiler room, workshop and bakery. It was subsequently added to at various instances to include a coal shed, refrigerator and mechanical shops. In 1962, the original pitched roof was replaced by a flat one and the building was expanded with new brick walls and new interiors, for use as a maintenance facility. A new $1 million power plant went online in 1998.. On the exterior, remnants of the original Medina sandstone wall can be seen on the south, east and west sides. Although its original date of construction is 1872-76, this building was determined non-contributing to the NHL and NR ineligible by the SHPO due to tremendous loss of historic integrity.

Fig. S.1 **Undated photo of Workshop & Boiler (WB)**
Image courtesy Buffalo Psychiatric Center

Fig. S.2 **View of Workshop & Boiler (WB) building from the northwest**
Image courtesy GCA

Greenhouse

HSR Name: GH1
Alternate Building #: 11, 28
Year(s) Built:
1888
Architect(s):
W. W. Carlin
Original Use: Greenhouse
Subsequent Uses:
None
Current Use: Vacant ***Area:*** 5187 sq. ft.
NR/NHL Status: Contributing to NHL
Brief Description: The construction of a Greenhouse as part of the Buffalo State Insane Asylum had always been part of the original Richardson-Olmsted scheme. Yet, it was not constructed until 1888, at which time, while the location of the structure was retained from the original scheme, its design was prepared by the local architect, W.W. Carlin. The constructed building comprised of a cruciform plan with a perimeter Medina sandstone wall approximately 4' in height and 16" thick. Above this was a glazed superstructure with probably cast iron or steel framing. Historic photos of the greenhouse suggest that the superstructure was renovated from its original design to a simplified roof form sometime before 1980. In the late 1980's, it was determined that the superstructure had deteriorated beyond repair and was structurally unsound. Consequently, it was torn down along with interior brick partition walls. A newer basement along the northwest junction of the transept arms was also filled in. The enclosed space within the perimeter walls was landscaped. Currently, the condition of these walls is in fair condition and does not exhibit any evident signs of structural collapse.



Key map

Fig. S.3 **The remaining perimeter walls of the Greenhouse (GH1)**
Image courtesy GCA

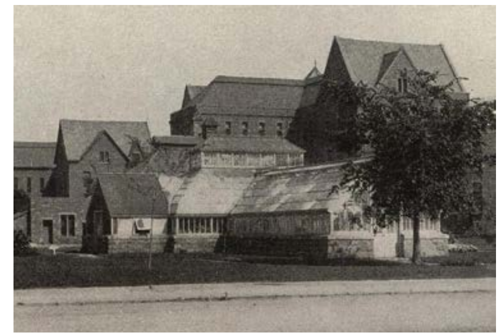
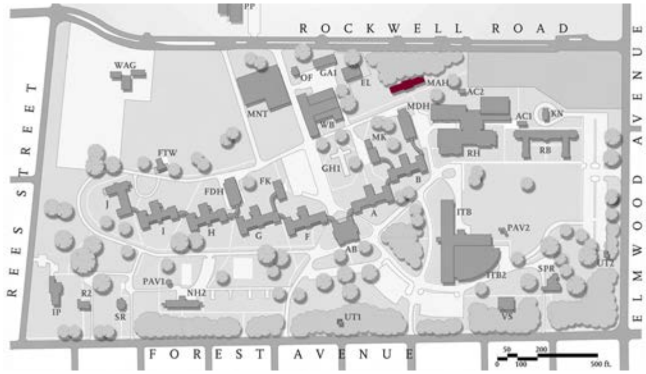


Fig. S.4 **Historic photo of the Greenhouse with superstructure design that matches original design renderings**
Image courtesy GCA

Fig. S.4a **Historic photo of the Greenhouse with simplified superstructure intact c.1960**
Image courtesy GCA

Note the difference between the shape, height form of the superstructure between the above two photos



Key map

Male Attendants Home

HSR Name: MAH

Alternate Building #: 15, 24

Year(s) Built:

1904-1905

Architect(s):

George L. Heins

Original Use: Male Attendants Home

Subsequent Uses:

Nurses Training School

Current Use: Vacant

Area: 23,772 sq. ft.

NR/NHL Status: Not contributing to the NHL, but National Register (NR) eligible

Brief Description: Originally constructed as housing for male attendants of the asylum in 1904-05, this three story (+ basement) brick building was subsequently used as the Nurses Training School. It is currently lying vacant - the wooden front porch on the south facade was recently removed owing to deterioration and structural instability. From a preliminary exterior inspection, the condition of the building seems fair. Common problems are rising damp, step cracking in brick masonry and some algae and vegetation along the stone plinth. There is a metal fire escape staircase on the east facade - possibly a later addition.

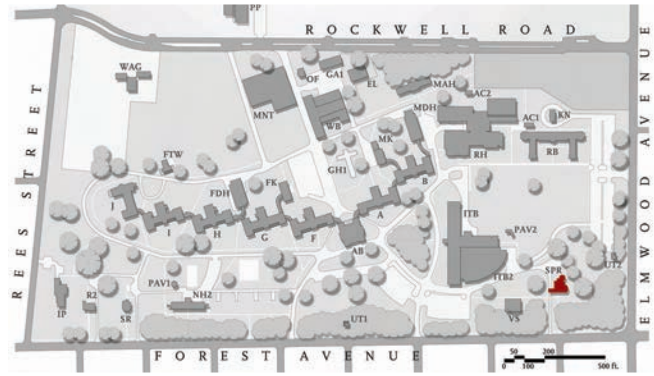
Fig. S.5 **Undated historic photo of the Male Attendants Home (MAH)**
Image courtesy Buffalo Psychiatric Center

Fig. S.6 **View from the southwest - Male Attendants Home (MAH)**
Image courtesy GCA

Superintendent's Residence

HSR Name: SPR
Alternate Building #: 1, 36
Year(s) Built:
1904-1905
Architect(s):
George L. Heins
Original Use: Superintendent's Residence
Current Use: Buffalo Federation of Neighborhood Centers
Area: 10,320 sq. ft.
NR/NHL Status: Outside of NHL boundary, but National Register (NR) eligible

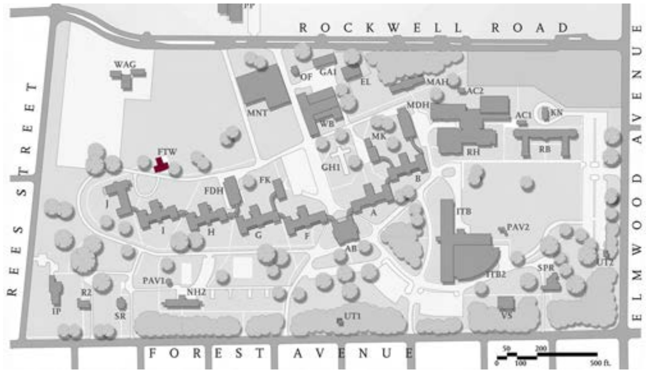
Brief Description: This 2+ story house was constructed as residence for the Superintendent of the Asylum in 1904-05. It's architectural style can be categorized as a Queen Anne - Bungalow hybrid with irregular massing, brick with stone accents, bay windows and projecting chimneys. Originally a porch at the first floor level ran all along the front (south) facade of the house. This was subsequently walled in on the southwest side to create interior space. At present, the condition of the building is fair with some areas in poorer condition - for example, the asphalted porch roof is failing where it meets the brick facade, the protruding gable corners are crumbling in certain areas and there is moderate water damage under window sills.



Key map

Fig. S.7 **View from the southwest - Superintendent's Residence (SPR)**
Image courtesy GCA

Fig. S.8 **Undated historic photo of the Superintendent's Residence (SPR)**
Image courtesy Buffalo Psychiatric Center



Key map

Fig. S.9 **1949 historic photo of the Female Tuberculosis Ward (FTW)**
Image courtesy Buffalo Psychiatric Center

Fig. S.10 **Undated historic photo of the Female Tuberculosis Ward (FTW)**
Image courtesy Buffalo Psychiatric Center

Fig. S.11 **Female Tuberculosis Ward (FTW)**
Image courtesy GCA

Female Tuberculosis Ward

HSR Name: FTW
Alternate Building #: 27, 13
Year(s) Built:
1909
Architect(s):
Franklin B. Ware
Original Use: Female Tuberculosis Ward
Subsequent Uses:
Library and Sewing Room
Current Use: Vacant
Area: 3,548 sq. ft.
NR/NHL Status: Not contributing to the NHL, but National Register (NR) eligible
Brief Description: Constructed under the tenure of the state architect Franklin B. Ware, this one-story building was designed to house female tuberculosis patients and was later used as a library and sewing room. The construction is wood frame with plank siding. The present condition of the building ranges from fair to poor - common problems include rotting wood members, damaged flashing, etc. A ramp for universal access seems to have been subsequently added on the east side of the building.

Steward's Residence

HSR Name: SR

Alternate Building #: 35, 31

Year(s) Built:

1909-1910

Architect(s):

Franklin B. Ware

Original Use: Steward's Residence

Subsequent Uses:

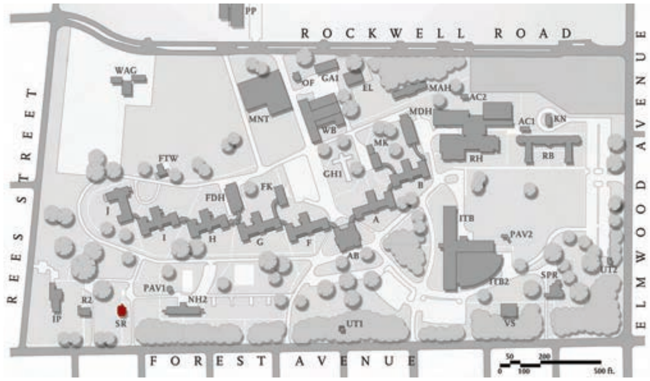
Steward's Residence

Current Use: Transitional Residence/ Emergency Hostel

Area: 4,589 sq. ft.

NR/NHL Status: Not contributing to the NHL, but National Register (NR) eligible

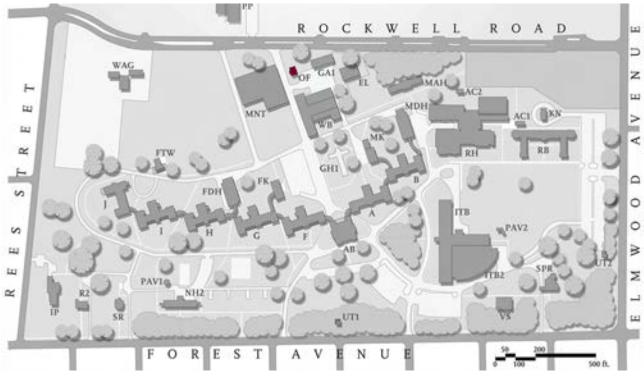
Brief Description: This two-story building was constructed to serve as the residence of the hospital steward in 1909-10. It was built in the Georgian Revival style with a columned portico, symmetrical facade, side-facing gable roof and chimneys on either end. Historic photos of the structure indicate that the railing along the front porch was a subsequent addition. The building is in good to fair condition. It is currently used as a 10-bed temporary housing by the Transitional Services Inc. on lease from the OMH.



Key map

Fig. S.12 **View of south elevation - Stewards Residence (SR)**
Image courtesy GCA

Fig. S.13 **Undated historic photo of the Steward's Residence (SR)**
Image courtesy Buffalo Psychiatric Center



Key map

Office

HSR Name: OF

Alternate Building #: 20

Year(s) Built:

c. 1925

Original Use: Office

Subsequent Uses:

Mortuary

Work Control Center

Current Use: Vacant

Area: 2,090 sq. ft.

NR/NHL Status: Not contributing to the NHL, but National Register (NR) eligible

Brief Description: This one-story rectangular wood-frame building was most probably constructed c. 1925 to serve as office space for the Buffalo State Hospital. It has plank siding and a distinctive Chinese-style roof. It is a symmetrical structure with gable end projections on each of its longer facades. It has been previously noted in the developmental history section, that this building could have been a reuse of one of the three summer house pavilions that were constructed c. 1889 due to the similarity in architectural form and proportion (See Fig. S.14 and S.14a.) At present, the building appears to be in fair condition.

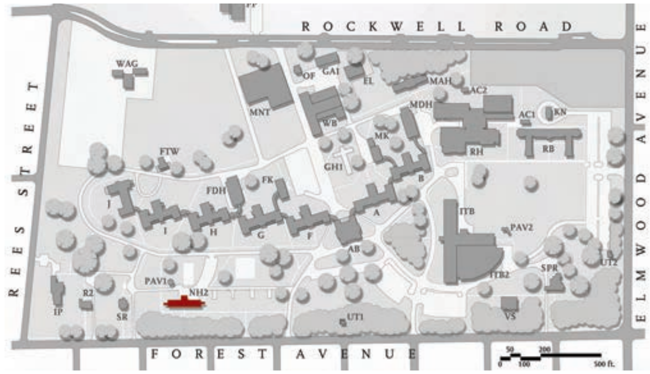
Fig. S.14 **Undated historic photo of the summer house - this structure was most probably reused as the Office building (OF)**
Image courtesy Buffalo Psychiatric Center

Fig. S.14a. **Undated historic photo of the Office Building (OF)**
Image courtesy Buffalo Psychiatric Center

Fig. S.15 **View of the Office building (OF) - currently used as utilities shed**
Image courtesy GCA

Nurses Home

HSR Name: NH2
Alternate Building #: 37
Year(s) Built:
1929-1930
Architect(s):
William E. Haugaard
Original Use: Nurses Home
Subsequent Uses:
Nurses Home
Current Use: Stutzman Addiction Treatment Center- NYS Office of Alcohol and Substance Abuse Services (OASAS)
Area: 23,151 sq. ft.
NR/NHL Status: Not contributing to the NHL, but National Register (NR) eligible
Brief Description: This three story (+ basement) building was constructed in 1929-1930 to augment the older Nurses Home constructed in 1893. It is rectangular in shape with the longer edge aligned along Forest Avenue and has a cross-hipped roof. The present condition of the building is good. A one-story glass and metal annex is attached to the east side of the building. There is a decorative terracotta frieze that runs all around at the cornice level.



Key map


Fig. S.16 **View from the southwest - Nurses Home (NH2)**
Image courtesy GCA


Fig. S.17 **View of east facade - Nurses Home (NH2)**
Image courtesy GCA

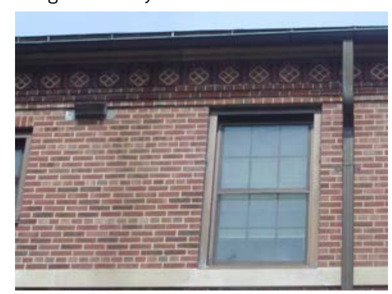


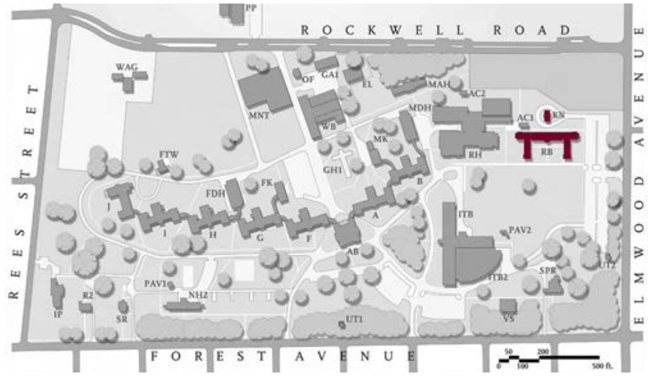
Fig. S.18 **Detail of masonry at cornice level- Nurses Home (NH2)**
Image courtesy GCA


Fig. S.19 **Undated historic photo of the Nurses Home (NH2)**
Image courtesy Buffalo Psychiatric Center

Fig. S.20 **View from south - Reception Building (RB)**
Image courtesy GCA

Fig. S.21 **Undated historic photo of the Reception Building (RB)**
Image courtesy Buffalo Psychiatric Center

Fig. S.22 **View from north- Kitchen building (KN)**
Image courtesy Buffalo Psychiatric Center



Key map

Fig. S.23 **View from the norhwest - Reception Building (RB)**
Image courtesy GCA

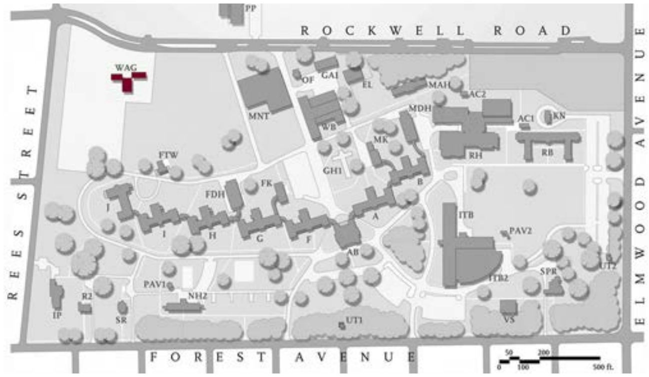
Reception Building & Kitchen

HSR Name: RB & KN
Alternate Building #: 4 & 5
Year(s) Built:
1929-1930
Architect(s):
Crow, Lewis & Wick
Original Use: Reception Building
Current Use: Cudmore Heights Residential Care Center for Adults-RCCA (RB) & Vacant (KN)
Area: 59,768 sq. ft. (RB) & 3,199 (KN)
NR/NHL Status: Outside of NHL boundary, but National Register (NR) eligible
Brief Description: The 3-story reception building was constructed in 1929-30 as a replacement for the Elmwood Hospital that was lost as a result of ceding the north half of the site to the Buffalo State College in 1927. It comprises of a symmetrical, roughly U-shaped plan with equal space for both sexes. The original bed-capacity of the site was 150 patients. The building features exposed brick masonry, gable roofs and brick corbelling at the cornice level. A $4.1 million renovation was completed in 1987. At present, the structure appears to be in good to fair condition.

The Kitchen building is a one-story rectangular building located north of the Reception Building. It is a brick structure with a cross-gable roof. Currently the building is lying vacant and its condition ranges from poor to fair with failing brick masonry at gable ends and signs of damage in the roof.

Wagon Shed

HSR Name: WAG
Alternate Building #: 30,29
Year(s) Built:
c. 1930
Original Use: Wagon Shed
Subsequent Uses:
Wagon Shed
Current Use: Vacant
Area: 6,556 sq. ft.
NR/NHL Status: Contributing to NHL
Brief Description: Although this building has a date of construction of 1930 at its present location, it was determined contributing to the NHL period of significance since it contains a board and batten barn which appears to date from c. 1870-1896, It is likely that one of the farm buildings in the northern portion of the site was moved and placed on a concrete foundation ca. 1928-30 to create this wagon shed. It is not known if the wings are old and were also moved from elsewhere or were built here in 1928-30 to offer additional space. At present the condition of the building ranges from poor to fair.



Key map

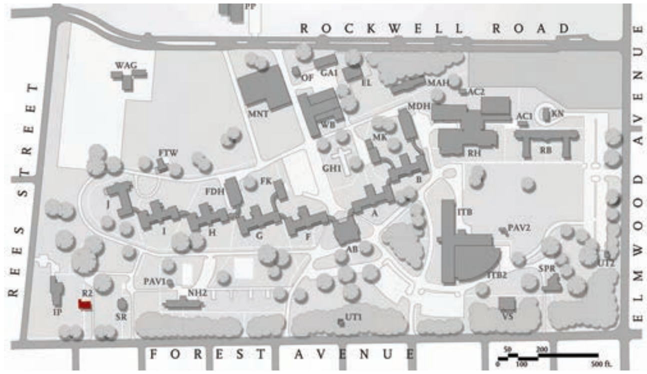

Fig. S.24 **View from southeast - Wagon shed (WAG)**
Image courtesy GCA


Fig. S.25 **Undated historic photo of the pig barn,**
Image courtesy Buffalo Psychiatric Center

Note: This shed may have been moved to form part of the wagon shed


Fig. S.26 **View from south - Wagon Shed (WAG)**
Image courtesy GCA


Fig. S.27 **Undated historic photo of the Wagon Shed (WAG)**
Image courtesy Buffalo Psychiatric Center



Key map

Staff Residence

HSR Name: R2

Alternate Building #: 34

Year(s) Built:

1937

Original Use: Staff Residence

Current Use:

Franklin Square- Penthouse Social Club

Outpatient Drop-in Center

Area: 4,811 sq. ft.

NR/NHL Status: Not contributing to the NHL, but National Register (NR) eligible

Brief Description: This 2 story (+ basement) structure intended as a staff residence was constructed in 1939 facing Forest Avenue and lying directly west of the existing Steward's Residence. The placement of this building foreshadowed the construction of an entire row of additional five residences facing Forest Avenue in the 1950's. The architectural style and construction of the residence is rather standard - its features include stone foundation, plank siding, hipped roof and a brick chimney. The building appears to be in good condition.

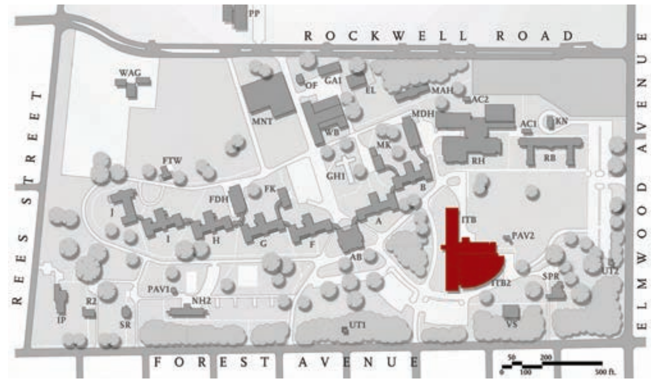
Fig. S.28 **View from north-Staff Residence (R2)**
Image courtesy GCA

Fig. S.29 **Undated historic photo of the Staff Residence (R2)**
Image courtesy Buffalo Psychiatric Center

Fig. S.30 **View from south- Staff Residence (R2)**
Image courtesy GCA

Reception & Intensive Treatment Building

HSR Name: ITB & ITB2
Alternate Building #: 62 & 62A
Year(s) Built:
1962-1965, Addition 2000
Architect(s):
Carl W. Larson
Original Use: Reception and Intensive Treatment Building
Subsequent Uses:
Added to and renamed Strozzi Building
Current Use:
Inpatient Residential Services
Area: 284,780 sq. ft.
NR/NHL Status: Not eligible for National Register (NR)
Brief Description: This 8-story 544-bed Reception and Intensive Treatment Building (named the Strozzi Building) was opened in 1965. It was named Strozzi building after a former Board member. Designed in the 'Modern' style this building originally had a T-shaped footprint. It is the primary inpatient residential facility of the BPC and houses administrative offices as well. A major $45 million renovation was completed in 1990-93 and the present condition of the building appears good. A two-story $8 million annex was constructed contiguous to the existing structure in the summer of 2000.

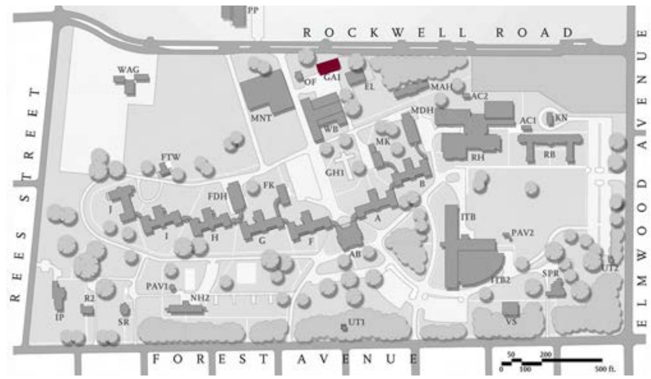


Key map


Fig. S.32 **View from east- Strozzi Addition (ITB2)**
Image courtesy GCA


Fig. S.31 **View from east- Reception and Intensive Treatment/ Strozzi Building (ITB)**
Image courtesy GCA


Fig. S.33 **View from southwest- Reception and Intensive Treatment/ Strozzi Building (ITB) c. 1964**
Image courtesy Buffalo Psychiatric Center



Key map

Garage

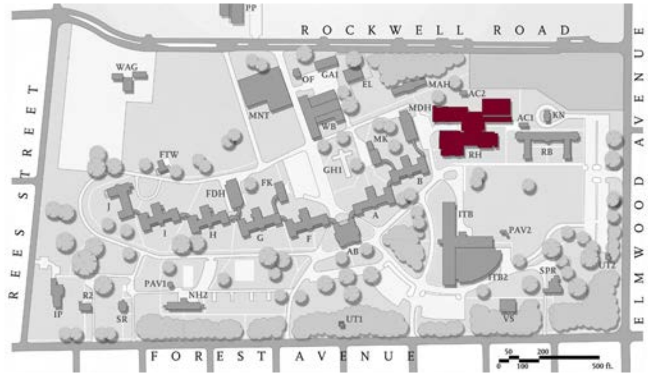
HSR Name: GA1
Alternate Building #: 19
Year(s) Built:
1968
Original Use: Pole Barn
Current Use: Garage - Grounds Transportation
Area: 1,873 sq. ft.
NR/NHL Status: Noncontributing to the NHL & Not National Register (NR) eligible

Brief Description: This one-story utilitarian shed was apparently originally constructed as a pole-barn in 1968 but was subsequently refurbished and is currently used as a Garage. It is a simple rectangular structure comprising of a south-facing facade with six bays. The structure is topped with a gabled roof with corrugated metal sheeting.

Fig. S.34 **View from south - Garage (GI)**
Image courtesy GCA

Rehabilitation Building

HSR Name: RH
Alternate Building #: 51
Year(s) Built:
1969-1970
Architect(s):
Milstein, Wittek, Davis & Hamilton
Original Use: Rehabilitation Center
Current Use: Rehabilitation Center
Area: 76,284 sq. ft.
NR/NHL Status: Not Eligible for the NR
Brief Description: Also known as the 'Gertrude Butler Rehabilitation Center', this 1 - 2 story structure was built after clearing the site of the three easternmost male ward buildings in 1969 - 1972. The building has a relatively large footprint when compared to its overall built volume. Spatially, the structure is comprised of four roughly rectangular volumes interconnected by a fifth one placed centrally, that ties them all together. The exterior brick facade has distinctive 'clinker bricks' with rough facing edges - these seem to be have been incorporated in the building as a gesture by the architect to respond to the geometric patterns created by clinker bricks in the historic ward buildings that once stood here. The space was most recently rehabilitated in 1997.

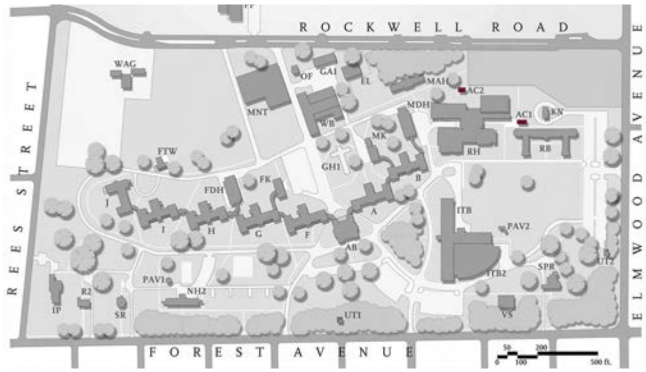


Key map

Fig. S.36 **View from south - Rehabilitation building (RH)**
Image courtesy GCA

Fig. S.35 **View from south- Rehabilitation building (RH)**
Image courtesy GCA

Fig. S.37 **View of southwest corner - Rehabilitation Building (RH)**
Image courtesy GCA



Key map

Fig. S.38 **View of AC1**
Image courtesy GCA

Air Conditioning

HSR Name: AC1 & AC2

Alternate Building(s) #: 65 & 66

Year(s) Built:

c. 1986

Architect(s): Unknown

Original Use: Air Conditioning

Subsequent Uses:

Air Conditioning

Current Use: Utilities

Area: AC1- 960 sq. ft. and AC2- 780 sq. ft.

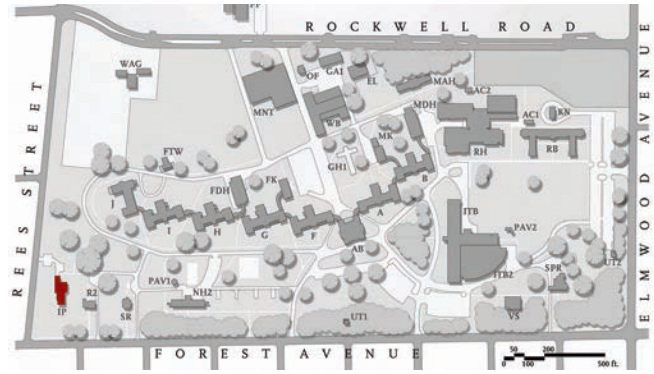
NR/NHL Status: Not Eligible for the NR

Brief Description:

These two structures for housing air-conditioning equipment are located in the north-east portion of the site adjacent to the Rehabilitation Center and the Reception building. Both structures are simple, rectangular buildings and appear to be in good condition.

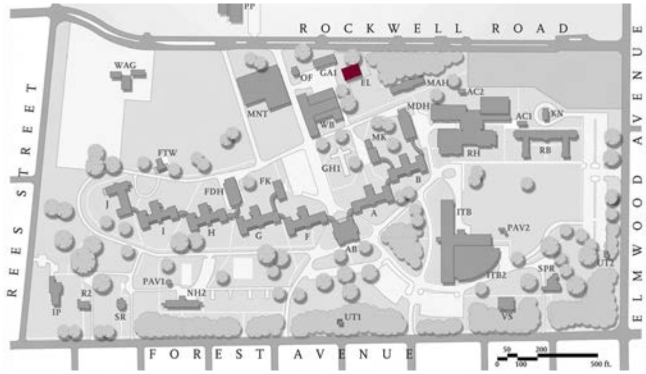
Olmsted Residence - Inpatient

HSR Name: IP
Alternate Building #: 50
Year(s) Built:
1987-1988
Architect(s):
Urbahn Associates
Original Use: Supervised Inpatient Residence
Current Use:
Supervised Inpatient Residence
Area: 13,172 sq. ft.
NR/NHL Status: Not -contributing to NHL and not NR eligible
Brief Description: This building known as the 'Olmsted Residence' was built as a 24-bed patient residence in 1998 at a cost of $1.5 million. It is located in the southwest corner of the site at the intersection of Forest Avenue and Rees Street. The building is two-story with plank siding and a cross-gabled roof. The second floor features arched windows and there is a trellised portico in the north portion of the structure. The building appears to be in good condition.



Key map

Fig. S.39 **View from northwest - Olmsted Residence (IP)**
Image courtesy GCA



Key map

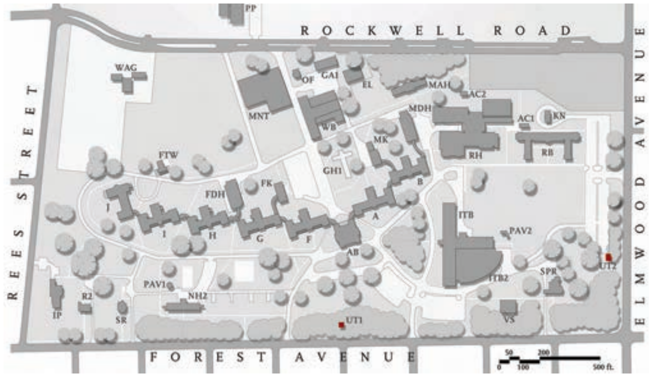
Fig. S.40 **View from west - Electrical (EL)**
Image courtesy GCA

Electrical

HSR Name: EL
Alternate Building #: 48
Year(s) Built:
c. 1990
Architect(s): Unknown
Original Use: Electrical
Subsequent Uses:
Electrical
Current Use: Utilities
Area: 1,120 sq. ft.
NR/NHL Status: Not contributing to NHL and not NR eligible
Brief Description: This is a one-story rectangular brick building with a single gable roof . It houses electrical utilities and is located in the vicinity of the Garage and Workshop buildings in the north portion of the site. The building appears to be in good condition.

Valve Houses

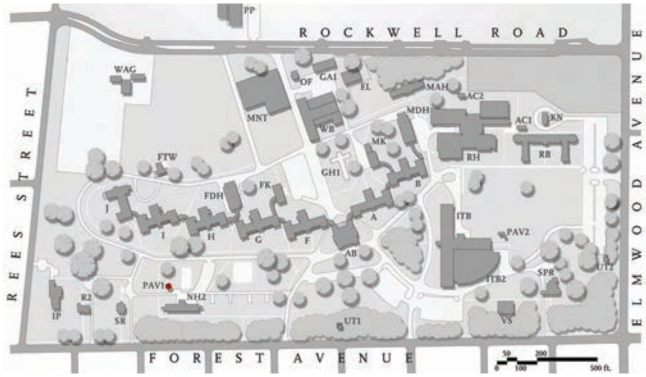
HSR Name: UT1 & UT2
Alternate Building #: 46 & #47
Year(s) Built:
1991
Architect(s):
Foit-Albert Associates
Original Use: Valve House
Subsequent Uses:
Forest Ave. RPZ
Current Use: Utilities
Area: 608 sq. ft. each
NR/NHL Status: Not contributing to NHL and not NR eligible
Brief Description: These two structures are nearly identical and both serve as utility structures. UT1 is located in the south portion of the site along Forest Avenue while UT2 is located in the east portion along Elmwood Avenue. Both structures are symmetrical, rectangular brick buildings with hipped roofs and stone plinths. The buildings appear to be in good condition.



Key map


Fig. S.41 **View from west - Valve House (UT1)**
Image courtesy GCA


Fig. S.42 **View from north - Valve House (UT2)**
Image courtesy GCA



Key map

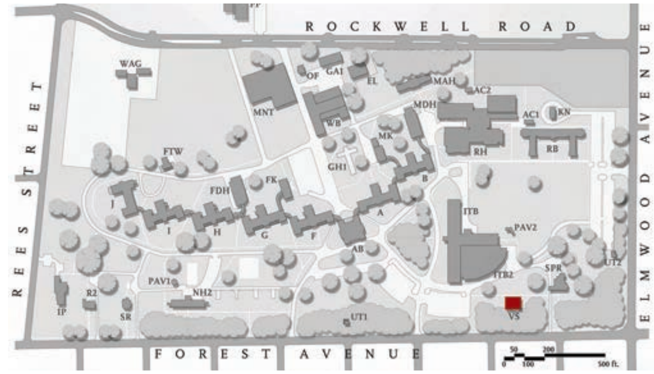
Fig. S.43 **View of pavilion (PAVI)**
Image courtesy GCA

Pavilion

HSR Name: PAV1
Alternate Building #: 73
Year(s) Built:
c. 2000
Architect(s): Unknown
Original Use: Pavilion
Subsequent Uses:
Pavilion
Current Use: Pavilion
Area: 670 sq.ft.
NR/NHL Status: Not contributing to NHL and not NR eligible
Brief Description: This hexagonal - plan pavilion comprises of a wood structure with a sloped shingled roof . The pavilion is semi-covered and does not have walls. The space shaded by the roof has movable wooden picnic tables and benches. The structure appears to be in fair condition.

Vocational Services

HSR Name: VS
Alternate Building #: 79
Year(s) Built:
2002-2003
Architect(s):
Architectural Resources
Original Use: Vocational Services
Subsequent Uses:
Vocational Services
Current Use: Vocational Services
Area: 9,925 sq. ft.
NR/NHL Status: Not contributing to NHL and not NR eligible
Brief Description: This one-story building was opened in 2003 and cost $1.7 million for construction. It houses offices for Empire enterprises and sheltered workshop space. The building is a one-story exposed brick structure with a flat roof and a glazed clerestory all round its perimeter. It appears to be in good condition at present.



Key map

Fig. S.44 **View from south - Vocational Services Building (VS)**
Image courtesy GCA

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A. HISTORIC PRESERVATION OBJECTIVES

The *Secretary of the Interior's Standards for the Treatment of Historic Properties* are the guidelines used to characterize the appropriate treatment recommendations for the Richardson Olmsted Complex. The Standards provide a philosophical framework from which decisions about the appropriate treatment of the historic resources can be made.

The Richardson Olmsted Complex site is large, and contains multiple buildings that vary widely in their current physical condition and significance. Each building must be assessed on its own merits, as well as its context on the entire site. This juxtaposition of the significance of the building within the site makes the task of treatment recommendations complicated.

The four treatment approaches, as defined by the Standards are: Preservation, Rehabilitation, Restoration, and Reconstruction. They are defined below, using the exact wording from the Standards[1]:

1. **Preservation** places a high premium on the retention of all historic fabric through conservation, maintenance and repair. It reflects a building's continuum over time, through successive occupancies, and the respectful changes and alterations that are made.

2. **Rehabilitation** is defined as the process of returning a property to a state of utility, through repair or alteration, which makes possible an efficient contemporary use while preserving those portions and features of the property which are significant to its historic, architectural, and cultural values.

3. **Restoration**, the third treatment, focuses on the retention of materials from the most significant time in a property's history, while permitting the removal of materials from other periods.

4. **Reconstruction**, the fourth treatment, establishes limited opportunities to re-create a non-surviving site, landscape, building, structure, or object in all new materials.

Once the historical significance of the resources has been established, and the current conditions have been evaluated, the following considerations are taken into account to establish the appropriate treatment approach for the individual building or elements within the site. The considerations are:

1. Relative importance in history. The local and national significance of the resource should be evaluated as part of the decision making process for treatment approach.

2. Physical Condition. The existing conditions and degree of material integrity of the building should be determined and weighed with the alterations or additions that may be required for a new use.

3. Proposed Use. A critical consideration in the determination of the appropriate treatment recommendations is the potential reuse of the buildings and site. The buildings will not be used as they were

1 http://www.nps.gov/history/hps/tps/standguide/

historically and the limitations of the existing floor plans must be taken into consideration.

4. Mandated Code Requirements. Regardless of the treatment recommendations, code requirements must be taken into consideration. These requirements can be sensitively incorporated into the historic buildings and designed with minimal impact to the historic fabric.

When all of these factors are weighed for this site and its individual buildings, a Rehabilitation Approach is the most appropriate for the Administration Building and Ward buildings. This approach acknowledges the local and national significance of the buildings and site, the current deteriorated condition of the buildings, the importance of finding a viable reuse scenario for the site, and the need to meet code requirements. This is the only option that allows for alterations and additions to the site to make the complex more viable for reuse. This approach does not exclude restoration treatment for isolated elements during restoration.

A brief overview of the Preservation, Restoration and Reconstruction Approaches are outlined below to establish the reasons that they are not being recommended for this site, followed by a more detailed description of the Rehabilitation Approach.

Preservation Approach

Preservation is defined as the act or process of applying measures necessary to sustain the existing form, integrity, and materials of an historic property. Work, including preliminary measures to protect and stabilize the property, generally focuses upon the ongoing maintenance and repair of historic materials and features rather than extensive replacement and new construction. New exterior additions are not within the scope of this treatment; however, the limited and sensitive upgrading of mechanical, electrical, and plumbing systems and other code-required work to make properties functional is appropriate within a preservation project.

According to the Standards, the Preservation approach is appropriate:

> *"When the property's distinctive materials, features, and spaces are essentially intact and thus convey the historic significance without extensive repair or replacement; when depiction at a particular period of time is not appropriate; and when a continuing or new use does not require additions or extensive alterations, Preservation may be considered as a treatment. Prior to undertaking work, a documentation plan for Preservation should be developed."* [2]

The current deteriorated condition of most of the buildings, and the alterations made to them over time, make extensive repairs necessary. Adaptive reuse of the buildings and the site relies on flexibility in the treatment of the buildings. A Preservation approach does not provide enough flexibility in the treatment of the buildings and is not recommended for this complex.

If it is decided that the buildings will be stabilized and not be reused in the short term, Preservation may be an appropriate approach for their stabilization and ongoing maintenance measures.

2 http://www.nps.gov/history/hps/tps/standguide/

Restoration Approach

Restoration is defined as the act or process of accurately depicting the form, features, and character of a property as it appeared at a particular period of time by means of the removal of features from other periods in its history and reconstruction of missing features from the restoration period. The limited and sensitive upgrading of mechanical, electrical, and plumbing systems and other code-required work to make properties functional is appropriate within a restoration project.

According to the Standards, the Restoration approach is appropriate:

> *"When the property's design, architectural, or historical significance during a particular period of time outweighs the potential loss of extant materials, features, spaces, and finishes that characterize other historical periods; when there is substantial physical and documentary evidence for the work; and when contemporary alterations and additions are not planned, Restoration may be considered as a treatment. Prior to undertaking work, a particular period of time, i.e., the restoration period, should be selected and justified, and a documentation plan for Restoration developed."* [3]

This approach assumes that the property will be used as it was historically or be given a new use which reflects the property's original use. The goal of this approach is to make the building appear as it did at one particular time in history. This is not the intent of the reuse scenarios that have been explored to date, nor would it be an appropriate treatment of the site.

In this approach, after a "restoration period" is identified, materials and features that are outside that designated time period are removed. Due to the ongoing evolution of the site and its buildings, and the significance of many of these alterations, this approach is not appropriate.

A Restoration Approach may be appropriate on the exterior of some or all of the buildings to reestablish the exterior envelope features from the 1872-1900 period and can be incorporated within the overall Rehabilitation Approach. This would include replacement of elements from the restoration period that are too deteriorated to repair. This approach would be particularly appropriate for the Administration Building. It is neither practical nor recommended for the interior of any of the buildings to be restored to any particular time period.

Reconstruction Approach

Reconstruction is defined as the act or process of depicting, by means of new construction, the form, features, and detailing of a non-surviving site, landscape, building, structure, or object for the purpose of replicating its appearance at a specific period of time and in its historic location.

According to the Standards, the Rehabilitation approach is appropriate:

> *"When a contemporary depiction is required to understand and interpret a property's historic value (including the re-creation of missing components in a historic district or site); when no other property with the same associative value has survived; and when sufficient*

3 http://www.nps.gov/history/hps/tps/standguide/

historical documentation exists to ensure an accurate reproduction, Reconstruction may be considered as a treatment. Prior to undertaking work, a documentation plan for Reconstruction should be developed."[4]

The Reconstruction Approach would allow for reinstatement of missing architectural or landscape features that can be reconstructed with minimal conjecture. This is recommended when reconstruction is essential to the public understanding of the property. On this site, the main architectural elements that have been removed are Male Wards C, D and E. It is not practical or recommended that these buildings be reconstructed. The interpretation of these missing elements can be established in other ways.

It is possible that there may be elements of the landscape recommended for reconstruction, in limited locations where this would help reestablish the importance of the landscape features to the buildings.

Rehabilitation Approach

Rehabilitation is defined as the act or process of making possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features which convey its historical, cultural, or architectural values. Rehabilitation acknowledges the need to alter or add to a historic property to meet continuing or changing uses while retaining the property's historic character.

According to the Standards, the Rehabilitation approach is appropriate:

"When repair and replacement of deteriorated features are necessary; when alterations or additions to the property are planned for a new or continued use; and when its depiction at a particular period of time is not appropriate, Rehabilitation may be considered as a treatment. Prior to undertaking work, a documentation plan for Rehabilitation should be developed."[5]

Except in isolated instances where a Preservation or Reconstruction Approach would be implemented, the Rehabilitation Approach is most appropriate for the Richardson Olmsted Complex. It provides guidelines for the appropriate treatment of the historic buildings and site, but also provides enough latitude for reuse of the complex.

As with all of the approaches, the Rehabilitation Approach begins with identification of the building's historic character and which architectural materials and features must be retained in order to preserve that character. Rehabilitation assumes that the historic character of the property will be retained and preserved, and that minimal changes will be made to the property's distinctive materials, features, spaces and spatial relationships. It discourages the removal of alterations or additions that are part of the evolution of the site, or that have acquired historic significance in their own right.

Where possible, this approach encourages preservation of materials, features, finishes and construction techniques or craftsmanship that characterize the property. It encourages repair of deteriorated material when possible, but recognizes that there is more extensive damage and deterioration to the historic fabric that will require more replacement than a

4 http://www.nps.gov/history/hps/tps/standguide/

5 http://www.nps.gov/history/hps/tps/standguide/

Preservation Approach would allow. The next level would be to repair existing materials, and finally replacement of elements deteriorated beyond repair. Replacement of elements is preferably done with historic materials and methods. In some instances, alternate replacement materials (e.g. cast stone in lieu of natural stone) are allowed. This is reviewed on an element by element basis and alternate material use should never be assumed.

A Rehabilitation Approach acknowledges the need for the site to continue to evolve and change and is the only approach that allows for alterations and additions. New additions and alterations to the exterior of the historic building are common treatments to a Rehabilitation Approach. These changes should be designed in a way that they do not destroy historic materials, features or spatial relationships that are character defining features of the site. It is also recommended that new work be differentiated from the old and be compatible with the historic materials, features, size, scale, proportion and massing. The new features should protect the integrity of the original property.

B. REQUIREMENTS FOR WORK

This section includes an overview of the laws, regulations and functional requirements that are applicable to the recommended work areas, namely, accessibility, energy efficiency and life and safety issues. Each section includes a basic set of guidelines that lay down the framework for approaching these issues during the treatment option for this property. These guidelines are based on the Secretary of the Interior's Standards for the Treatment of Historic Properties, and the Guidelines for Preserving, Rehabilitating, Restoring and Reconstructing Historic Buildings. However, because of on-going research and ever-changing materials and technology, the current version of the Standards should always be referenced before planning any work.

I. ACCESSIBILITY

It is often necessary to make modifications to a historic building so that it will be in compliance with current accessibility code requirements. Almost all of the historic buildings on the Richardson Olmsted Complex site will need some improvements to become more universally accessible. There are many times when historic buildings pose barriers including stairs at entries, door hardware, limited elevator availability, interior routes, bathrooms, kitchens, parking, signage and landscape features.

Universal accessibility is required by three specific federal laws: the Architectural Barriers Act of 1968, Section 504 of the Rehabilitation Act of 1973, and the Americans with Disabilities Act of 1990. Federal rules, regulations, and standards have been developed which provide guidance on how to accomplish access to historic areas for people with disabilities. Work must be carefully planned and undertaken so that it does not result in the loss of character-defining spaces, features, and finishes. The goal is to provide the highest level of access with the lowest level of impact. While planning a 'rehabilitation' approach of treatment to the buildings, accessibility requirements can be successfully achieved through careful project planning and early consultation to bring historic preservation expertise, as well as accessibility needs, into the planning process.

Adapting a historic building(s) to meet ADA requirements should begin with an inventory of existing architectural barriers- steps, doors, interior stairs, restrooms and the like- that prevent or limit persons with disabilities from using the building. The inventory should include a description of the architectural significance of the barrier; describing why its design, materials and finishes are important to the historic character of the building. The HSR list of character defining features should be used in this process to assess the significance, integrity and proposed recommendations for each such feature. Next, methods of eliminating barriers or providing alternative methods of compliance must be investigated. How the proposed modifications will affect the existing character of the feature should be carefully considered.

Guidelines related to Accessibility:

Site level:

- A route accessible to persons with disabilities from the public sidewalk or on-site parking to the buildings can often be achieved without significantly altering the character of the building or its site. For example, certain parking spaces can be designated for persons with disabilities and curb cuts made in appropriate locations.

- When modifications are made to historic areas, curbs or sidewalks, it is usually appropriate to use the same type of material as existing. If a new material is used, it should be compatible in scale, texture and color with the historic material and character of the building and landscape.

Building Entrances:

- Creating an accessible entrance may require modifying steps, landings, doors and thresholds or adding ramps or exterior lifts. Ideally, the ceremonial function of the original primary entry of a historic building should be retained and it should be universally accessible. However, if modifying this entrance or adding ramps or lifts at this location would significantly alter the historic character of a building, then a secondary public entrance should be considered. Rear or secondary entrances, should not generally be considered unless no other option is available – if used, their appearance should be upgraded.

- Wherever possible, include historic circulation routes when designing universal access.

- When new elements, such as exterior ramps are added, they should be compatible with the existing historic fabric of the building and associated landscape.

- Choose previously modified areas or features as the best candidates for future modifications to comply with accessibility requirements.

- Consider sloping sidewalks to eliminate the need for single or double entry steps.

- Consider reusing historic door hardware or providing new code compliant hardware that is compatible with the historic structure. Additionally, stylistically appropriate levers can be added to historic hardware to provide easier use.

- If the historic door is heavy or difficult to open, sometimes the hinges and balance can be modified to allow it to be easily opened without changing the historic character of the door. In other cases, power-assisted door openers and automatic closures can be installed without significantly altering the historic character of the door.

Building Interior:

- Creating an accessible interior may require adding stair lifts or elevators, and modifying interior doors, restrooms and amenities, or changes to fixtures. Continually refer to the list of character-defining features for the Richardson Olmsted Complex, to ascertain that any character defining features are not harmed in this process.

- Most of the buildings within the Richardson Olmsted Complex will require installation of new elevators to meet ADA requirements. The location for the new elevators should be chosen judiciously – all attempts must be made so that it fits within the historic footprint rather than stand out as a new addition. An example of both a historically incompatible and compatible elevator addition can be seen in the case of the Administration Building and Male Ward A respectively. The brick elevator shaft in the Administration buildings juts out from the west façade of the building (Fig. T.1) – its form, location, profile, color, material and texture- all detract from character defining attributes such as historic building footprint, rugged sandstone exterior, amongst others. On the other hand, the elevator addition in Male Ward A has been housed in part of an existing room, thus causing as little of an impact upon historic layout, profile, exterior façade etc. as possible.

Fig. T.1 **Incompatible elevator addition on west facade of Administration Building**
Image courtesy GCA

- Accessible restrooms should be provided on every floor of historic buildings. This can be achieved by either modifying existing restrooms or providing additional facilities in new locations. An alternative to a complete remodel of historic restrooms is to provide a single, unisex, accessible restroom on the same floor.

II. ENERGY AND ENVIRONMENTAL ISSUES

With any project that involves the reuse of existing buildings, energy efficiency and energy use must be evaluated. A whole systems view of sustainability affords a broader lens to evaluate the concepts of "sustainability". Looking only at energy efficiency, especially on a rehabilitation project, can severely limit the creativity and success of a project from an environmental sustainability perspective.

Balancing environmental sustainability and historic preservation is a dynamic tension where the benefits of one must be weighed against the overall goals of the project. There are many opportunities at the Richardson Olmsted Complex to weave the environmental sustainability measures with preservation of the buildings and the site.

Existing Buildings – Inherent Sustainability Features

Rehabilitation and reuse of historic buildings is, in itself, an act of energy conservation and environmental sustainability. The energy expended to produce and process the original building materials, and the energy expended to construct the building have already occurred and is referred to as the "embodied energy" of a building. Both the demolition of an existing building and the construction of a new building expend energy. The renovation of an existing building is a much less energy intensive than new construction, even if the existing building is not as energy efficient as a new structure.

Historic buildings were constructed with inherent sustainable and energy conservation features. The Richardson Olmsted Complex employed many features to keep the buildings cool in the summer, warm in the winter, well lit, and well ventilated all year round. Some of the features include:

- Thick masonry walls for thermal retention
- Natural ventilation through a complex system of passive vent shafts that run from the (cool) basement to roof vents, with air exchange grills on each floor to circulate air.
- Large operable windows provide natural ventilation.
- Awnings to reduce solar gain in summer.
- Daylighting of all interior spaces was accomplished by the single sided corridor, large windows, and transoms over the doors.
- Transoms located over all of the doors provided daylight as well as ventilation to the rooms when the doors were closed.
- Building offsets encourage cross ventilation and light.

Environmental Sustainability – Possibilities for Improvement

Current building codes often dictate modifications to existing buildings that may cause harm in the long term, without substantial benefit to the efficiency of the building. Insulation of existing masonry walls can cause long term problems in a massive masonry wall. The water vapor and moisture that is typical in a building, both interior and exterior, migrates through the wall, seeking the drier environment. This type of water vapor transmission is common and does not cause damage to the interior or exterior of the building. When insulation is added to the interior face of a masonry wall, a water vapor barrier is typically installed. This keeps the exterior wall colder and wetter than it was previously. This can cause accelerated damage to the exterior masonry by trapping moisture in the pores of the masonry that then freezes in cold temperatures. When water freezes in the pores, it expands and cracks the stone or brick.

Another common recommendation made during historic building rehabilitation is to replace the windows with more energy efficient windows. There are several factors to consider before replacing the windows:

- The embodied energy in the existing wood windows vs. the environmental impact of producing aluminum or PVC
- Restoring wood windows keeps the money and jobs local by providing work to local craftsmen for the restoration of the windows.
- A full life cycle cost analysis of new windows vs. restoration of existing windows.
- The historic value of the original windows. The fenestration patterns and the configuration of the individual windows is a significant character defining feature of the complex. The original muntin profile and sash pattern cannot be accurately replicated with most replacement windows.

The buildings at the Richardson Olmsted Complex have been abandoned for almost 30 years. The existing mechanical, electrical, plumbing and fire detection/suppression systems are defunct and outdated. To reuse the buildings, all new systems must be designed and installed. This situation provides a unique opportunity for the systems within the complex. New technologies and methods of providing these systems to the complex can be explored and implemented. Some of the opportunities to consider and explore for the site include:

- UV panels for electricity and hot water
- Small scale wind turbines
- Geothermal wells
- Fuel cell technology
- Awnings for shading in the summer to reduce solar gain
- Site features for water recovery and onsite water retention

Recommended Approach

1. Consider preservation and sustainability measures early in project planning.

2. Follow best practices for rehabilitation of buildings including:
   a. Retain as much original historic fabric as possible;
   b. Respect character defining features of buildings;
   c. Implement Secretary of Interiors' Standards, keeping in mind what levels of the Standards are being followed (Restoration, Rehabilitation, etc.)
3. Follow best practices to combine historic preservation and sustainability for the reuse of the project including:
   a. Restore inherent sustainable features such as: operable windows, operable transoms, natural ventilation system;
   b. Design storm water management system to reduce reliance on additional water for landscaping;
   c. Improve energy efficiency where it does not adversely impact long term performance of the building;
   d. Install energy efficient fixtures and appliances;
   e. Install water saving fixtures;
   f. Consider graywater recycling system for toilet flushing;
   g. Use non-toxic building materials;
   h. Use locally produced and manufactured materials where possible;
   i. At the time of project design, evaluate the current technologies available for heating, cooling, and electrical power generation. Implement the most appropriate technologies for the site.

C. TREATMENT RECOMMENDATIONS AND ALTERNATIVES

There are multiple ways that this Complex may be developed. The reuse plan for the Complex is unknown at this time, and the possibilities include a spectrum from stabilization and mothballing of the buildings, to complete revitalization and reuse of the site. The Treatment Recommendations implemented for the Complex will differ based upon the ultimate development approach.

The Treatment Recommendations developed for this report were based upon the historic and architectural significance of the site and on discussions with the Richardson Center Corporation and the design team during the survey work at the site. The Exterior Rehabilitation Treatment Recommendations below are based on the Rehabilitation Approach and are intended for all of the core buildings on the site. The following baseline for the treatment recommendations was established:

- Rehabilitation Approach to be applied to the exterior envelope of the main core buildings (Administration Building, Male and Female Wards, and the attached kitchen and dining hall wings)
- Make the interiors of the buildings safe for occasional inspections, tours and maintenance work to occur in the buildings

Due to the similarities in materials and failure mechanisms across the complex, the treatment recommendations will be addressed for all buildings, not individual buildings. Where there is a treatment unique to one or two building types, the location of that treatment will be identified. The exterior treatment recommendations will be broken into the following categories:

- Masonry Cleaning
- Masonry Repointing
- Brick
- Stone
- Roof
- Windows
- Doors
- Porches

Exterior Treatment Recommendations – Rehabilitation Approach

The Existing Conditions elevations and floor plans show the areas of deficiencies, deterioration and failure of materials. The following rehabilitation recommendations apply to the deficiencies shown on those elevations.

General Treatment Recommendations

- Existing materials and features should be repaired in place where possible.
- All new repair materials should match the existing material in color, texture and composition.
- Where replacement material is necessary, use material matching to the greatest extent possible. Alternative materials should be used if matching materials are not possible, and these materials should be compatible in color, texture, and all other qualities.
- Ensure that replacement material is not harder than the surrounding material and that it does not expand and contract at a different rate. This relates mainly to stone and masonry materials.
- The work undertaken on these buildings should be performed by a "Specialist" or "Specialty Contractor" who can demonstrate previous trade restoration experience on a minimum of five (5) buildings or structures that are listed on the National Register of Historic Places (either individually or as part of a district) or are designated as National Historic Landmarks.
- Each mechanic assigned to the work on these buildings must demonstrate previous successful experience in each of the operations to which he/she is assigned. Mechanics whose work does not meet the standards as established by the project mockups should not be permitted to perform that operation.

Masonry Cleaning

The exterior of the brick and stone buildings are heavily soiled. The majority of the soiling is general atmospheric soiling and is not causing accelerated deterioration of the surfaces. Other types of soiling such as efflorescence, encrustation, ivy growth and algal growth can trap moisture in the walls and hasten the deterioration of the masonry and/or mortar. The soiling has darkened the exterior of the buildings and contributes to the foreboding appearance of the buildings.

General Soiling

Condition: General atmospheric soiling of the brick and stone surfaces.

Treatment Recommendation: Cleaning of the buildings is recommended, in part to improve the appearance and perception of the buildings. The buildings should not be aggressively cleaned, but should be cleaned to remove general surface soiling. A certain level of "patina" should remain on the building.

The cleaning method and materials should be determined through a series of tests on the buildings. The testing should start with the gentlest means possible and should increase incrementally to find the right balance of cleaning the building and not damaging the masonry surface. Cleaning methods to be explored, include:

- Water cleaning – water misting and saturation can help dislodge dirt without damaging the surface. Hot water and steam could also be explored.
- Chemical Cleaners – proprietary chemical cleaners produced by companies such as ProSoCo, Deidrich and Hydrochemical are formulated for restoration of historic masonry. The correct chemical composition for the substrate (they make different cleaners for brick, sandstone, limestone, etc.) and the correct concentration should be researched and tested prior to specification and use on the building.
- Media Cleaning Methods – cleaning methods using a light abrasive (such as spherical calcium carbonate) can be very effective for masonry surfaces and do not introduce chemicals into the substrate. Methods such as Sponge Jet and *Façade Gommage* could be explored as an alternative to chemical cleaning.

Staining

Condition: There are several types of stains on the masonry surfaces that cannot be removed with the general cleaning method. Different methods and materials will be required to remove paint, tar, copper staining, and rust stains.

Treatment Recommendation: The same companies mentioned in the general cleaning section also produce chemicals to remove stains. Test samples should be done in discrete areas to ensure that there is no staining or residue left from the cleaning material.

Masonry Repointing

Condition: All of the buildings have experienced varying levels of repointing over the years. Nearly all of the joints on the stone buildings have been repointed, except for isolated areas where porches were constructed, or in the recesses of window jambs. In all instances, the repointing mortar does not match the color, texture or joint profile of the original mortar. The repointing mortar has changed the appearance of the stone buildings quite dramatically. Where repointing has occurred on the brick buildings it matches the original color and texture of the original more closely and is less obvious than the repointing done on the stone buildings.

On both the stone and brick buildings the mortar joints have continued to deteriorate and areas of the buildings require repointing. The percentages of repointing required are shown on the building elevations in the existing conditions section.

Treatment Recommendations: Where the percentage of repointing required is over 50%, it is recommended that the façade be repointed 100%. Where the percentage is under 50%, spot repointing of the open joints is an option. If spot repointing is undertaken, the question of whether to use the original mortar color and joint profile, or to match the surrounding repointing mortar is a decision that needs to be made early on. This is less of an issue on the brick buildings where the mortar (both original and repointing) is fairly consistent in color, texture and joint profile. The issue is more difficult on the stone buildings where the repointing mortar is dramatically different than the original mortar.

If the buildings are repointed 100%, the original mortar color and composition should be reinstated. In areas of facades where small areas of spot repointing are undertaken, the mortar should match the surrounding mortar color and texture.

- Materials:
  - Based on mortar analysis, the original mortar contained lime, natural cement and sand. The proportions will need to be developed in the field to determine the strength required and to achieve the correct visual match. The mortar will likely be a modified Type N mortar and the repointing mortar will likely be composed of 1 part natural cement:1 part lime:5 or 6 parts sand.
  - Mockups of the mortar should be undertaken before any work commences to determine the aggregate and pigments used. The samples should match the aggregate of the original mortar. This may require the blending of various sands.
  - There will be two mortar colors required at the stone: brown backing mortar with a red raised bead centered in the backing mortar.
  - Buff repointing mortar will be required at at the brick.
- Methods:
  - Remove mortar for repointing using hand tools, such as chisels and mallets. Small power grinders or saws with diamond blades, or handheld pneumatic hammers with thin chisels may be used to remove the mortar if it is demonstrated by each mechanic that the work can be completed without damaging the surrounding masonry.
  - The use of power saws and grinders should restricted to the cutting out of kerfs in the center of mortar joints, so as to relieve pressure on the masonry units when chisels and mallets are used to remove the remaining mortar. Power tools are not appropriate to remove mortar in entirety.
  - Mortar shall be removed from the all stone and brick joints, to a minimum of 2 ½ times the width of the joint, 3/4 inch minimum depth or to sound mortar, whichever is greater.
  - Repoint joints using the mortar mixes described above. Mortar joints shall match the historic in color, width, profile, tooling of joint, setback, texture and all other qualities.

Stone Treatment Recommendations

The stone on the buildings is very durable and has held up well over time. There are areas of isolated deterioration and damage caused mostly by water infiltration. There are locations of cracking – both through the stone and step cracking at the mortar joints. In crack locations, check for active movement to ensure that the joint will not reopen. Crack monitoring should be undertaken early in any project to determine if the crack is active or not. The defects and treatment recommendations for the stone are as follows:

Shifted Gable Stones

Condition: Open joints between the gable stones, allowing water to infiltrate into the core of the gable wall. Some of the gable stones are lifting due to freeze/thaw action. The saturation of the masonry from the cap stones is also causing accelerated deterioration of the mortar joints in the stone wall directly below the gable.

Treatment Recommendation:

- Where gable stone have shifted out of plane, remove and reset.
- Pin gable stones to masonry below using stainless steel pins, or install stainless steel cramps across stones.
- Install lead weathercap to all stone to stone joints at gable to protect mortar joint from future erosion.
- Install through wall flashing under the gable cap stone.

Façade Alterations

Condition: Alterations to central north bay for previous fire escape have left exposed brick and inappropriate materials exposed. Window locations expanded to door openings at each floor, bad repairs and infill materials.

Treatment Recommendation:

- If reuse scenario precludes installation of fire escape in same location, reinstate original window openings. If reuse scenario installs a fire escape in this location, keep door opening, and make all of the recommended changes below.
- Remove brick and other inappropriate infill materials from the surrounds.
- Rebuild area using matching sandstone blocks.
- Fabricate and install new wood windows to match existing where original windows have been removed.

Step Cracking through Mortar Joints

Condition: There are many locations, particularly between windows, where there is step cracking at the mortar joints with no displacement of the surrounding stone.

Treatment Recommendation: The open joints should be repointed using the appropriate mortar. The area should also be inspected to determine if there is a water infiltration or runoff issue that caused the open joint. If a source is found, a repair should be implemented to and eliminate the cause of defect.

Crack Through Stone

Condition: There are locations where there is a crack through a stone, but there is no displacement of the stone itself. These locations are typically caused by minor movements around the stone.

Treatment Recommendation:

- *Epoxy inject crack through stone:* At non-moving cracks in stone less than 1/8" wide, clean all debris from crack using compressed air. Inject crack in stone with epoxy to seal crack.
- *Fill crack in stone with patching material:* At non-moving cracks in stone greater than 1/8" wide, cut out crack to at least 3/8" wide by 3/8" deep. Fill resulting crack with cementitious patching material to match the surrounding stone.

Crack Through Stone with Displacement

Condition: In some locations, the stone around a crack has been displaced. In these locations there is a potential for the stone to spall off and fall from the building.

Treatment Recommendation:

- Repair the displaced stone crack with pins and epoxy.
- Remove all existing caulking or mortar from crack.
- Drill stone and insert stainless steel pins 3” into sound stone. The pin shall be kept back 1” from the surface of the stone.
- Cut the crack 1/8” to 5/8” wide. Inject around the pin with epoxy. Keep epoxy back from the surface of the stone.
- Fill crack and pin holes with cementitious patching mortar.
- Where possible, remove stone from wall and blind pin. Reinstall stone after repair.

Rusting Fasteners

Condition: Fasteners from the iron bars remain in place in many of the window openings, as well as other fasteners embedded in the masonry to hold conduit, lighting, etc. These fasteners are embedded in the stone and are beginning to rust in most instances. In some locations, the rust has expanded to the point of spalling the large pieces stone from the face.

Treatment Recommendation:

- Remove anchor, fastener, or attachment.
- Fill resulting hole with cementitious patching material if the hole is under 1” in diameter.
- Where resulting hole is greater than 1” in diameter, install core dutchman to match surrounding material.

Areas of Stone Displacement/Rebuild

Condition: Areas of stone displacement requiring rebuilding of area occur around the buildings. This condition occurs at the gable ends in several locations.

Treatment Recommendation:

- Number and photograph all elements before removal.
- Record all dimensions and masonry locations on drawings.
- Carefully remove and salvage displaced stone(s) and surrounding building elements.
- Rebuild area, including all flashing, framing and related construction, to original configuration.
- Rebuilding of areas of masonry shall include the dismantling of all surrounding structures, all incidental shoring required to perform the rebuilding work, and reassembly of the structure.
- Where necessary, provide cross-pinning through cavities to tie the front and back planes of the walls together.

- If replacement of an individual stone is required, the first choice is to replace the stone in kind. If a suitable replacement stone cannot be found, cast stone or other alternatives should be considered.

- Repair cracks in stone with epoxy and stainless steel pins if necessary.

Spalled Stone

Condition: There are locations on the buildings where stone has spalled and is missing. This is often the result of rusting pins pushing a piece of stone outward to the point where it separates from the building.

Treatment Recommendation: There are two different methods of repairing a spalled area – patching and stone dutchman repair. Patching is appropriate where the stone loss is small. In larger areas, stone dutchman repairs are the recommended method.

- *Cementitious patch at stone loss:* At stone loss no greater than 1" deep, remove all loose fragments of damaged stone. Sawcut edges of area to be patched parallel to the stone, with a slight dovetail undercut, to a depth of at least ¼". Insert pins or drill plugs into stone to hold patch into place. Patch area of loss with cementitious patching material. All pins shall be stainless steel. If the Contractor prefers to use a proprietary cementitious patching material, Jahn shall be used.

- *Stone dutchman repair at stone loss:* At stone loss greater than 1" deep, remove all loose fragments at area of spalled or broken stone. Cut edges around repair parallel and perpendicular to the stone face. Cut piece of matching stone to fit hole in existing block. Select stone to match color, texture and grain of surrounding stone. Finish face to match surrounding stone. Attach dutchman with stainless steel wire anchors or pins, using epoxy adhesive.

Brick Treatment Recommendations

The brick on the buildings, in areas where there has not been continual water saturation, has held up well over time. There are areas of isolated deterioration and damage caused mostly by water infiltration.

Given the construction of the brick masonry walls and the climate in Buffalo, it is imperative to protect the exterior brick masonry walls from the frequent saturation resulting from concentrated roof runoff, and in locations where the internal downspout has failed and is directing water to the core of the brick wall.

Although the laboratory test results indicate the brick are Grade NW per ASTM C62-05 (Grade NW [Negligible Weathering]: Brick with little resistance to cyclic freezing damage but that are acceptable for applications protected from water absorption and freezing), the brick are in good condition, especially given their age and the climate where they are located. Because of this inconsistency between the test results and the observed lack of deterioration, we observed two representative first-wythe brick using a microscope. Our observations are as follows:

- The brick are very compact and have few air voids.

- Existing air voids are typically small and isolated (not connected to each other).

- Air voids are concentrated at the center of the brick and the outermost layer of clay at the surface is nearly free of air voids

In general, the brick are in good condition, with little or no degradation. Even in the areas of distress, the brick are generally intact and exhibit little or no spalling or degradation. In crack locations, check for active movement to ensure that the joint will not reopen. Crack monitoring should be undertaken early in any project to determine if the crack is active or not. At locations of collapsed masonry, the individual brick units are in good condition, while the mortar is severely deteriorated.

The defects and treatment recommendations for the brick are as follows:

Step Cracking through Mortar Joints

Condition: There are many locations, particularly between windows, where there is step cracking at the mortar joints with no displacement of the surrounding individual brick or wall.

Treatment Recommendation: The open joints should be repointed using the appropriate mortar. The area should also be inspected to determine if there is a water infiltration or runoff issue that caused the open joint. If a source is found, a repair should be implemented to eliminate the cause of defect.

Crack Through Brick

Condition: There are locations where there is a crack through a brick. These locations are typically caused by minor movements around the brick.

Treatment Recommendation:

- Cracks smaller than 1/8" should be left alone.
- Cracks larger than 1/8" – replace the individual brick as described below under "Spalled Brick".

Spalled Brick

Condition: Although there are many brick that are experiencing spalling of the surface of the brick, they represent a relatively low percentage of the overall brick on the buildings.

Treatment Recommendation: Only brick that are spalled to a depth of 1" from the surface plane of the wall should be replaced. In such cases:

- Carefully remove the individual brick to be replaced by cutting the mortar joints around all four sides of the brick.
- Chip out the brick carefully to ensure that damage is not done to the surrounding brick.
- Insert new brick in void. New brick should match the original brick in color, texture and physical properties.

Brick Bulging and Debonding

Condition: The brick masonry is bulging and debonding in some localized areas. In the most-severe cases, the outermost wythe (in some cases the outermost two wythes) of brick have collapsed and fallen from the building. At these locations, the outer wythe(s) of brick appear to have almost peeled away from the building.

Treatment Recommendation: In areas that are already deteriorated or have experienced localized collapse, repair or rebuild the walls. It is acceptable to use the existing brick where available. Additional brick will be required. It is important to match the color, texture and physical properties of the existing brick to ensure a good visual and compositional match.

- Rebuild wall using appropriate mortar.
- Use noncorrosive (e.g., stainless steel) ties across the cavity to improve the bond of the outer and inner wythes in these areas of failure and opportunity for access.

Bulging of Wall

Condition: Outward displacement ("bulging") of the exterior brick is visible in some localized areas where the header bricks are now recessed from the outermost plane of the brick facade. In these areas, it appears that the headers have remained in place, while the outer wythe(s) has moved outward. These areas appear to be in the early stages of deterioration and displacement that will ultimately lead to the collapsed areas observed elsewhere and described above.

Treatment Recommendation:

- In areas where bulging and separation of the outer and inner wythes has begun (as evidenced by apparently recessed headers), if the outer wythe is in good condition, install remedial stainless steel ties in the mortar joints to reconnect the outer and inner wythes. These remedial stainless steel ties can be drilled into the mortar joints, with the heads recessed from the surface, and pointed over so that they will not be visible when the repair is completed.
- In areas where the bulging is severe enough that the wall is unstable, follow the procedures detailed above.

Roofs

The gable roofs are very significant features of the buildings. Their steep pitch makes them a highly visible element and contributes to their height and monumentality. On all of the roofs, except for Female Ward I, the original slate roof has been replaced with three tab asphalt. The asphalt roofs are all nearing the end of their life spans, as has the slate roof on Female Ward I. The current asphalt roofing material is visually inappropriate for the buildings. Prior to work on the roofs, materials should be tested for asbestos. Possible materials include underlayment, mastic and sealants.

Pitched Roofs

Conditon: The current asphalt, and one remaining slate, roofs are in poor condition and require replacement within the next 5-10 years.

Treatment Recommendation/Options:

- Option A – Slate: Replace the existing asphalt shingle roof, and the slate shingle roof on Female Ward I, with new slate roofing material, if possible. The color, texture and size of the slate should match the original remaining slate on Female Ward I.

- Option B – Alternate Material: If slate roofing is not possible, due to cost, replace the existing asphalt shingle roof, and the slate shingle roof on Female Ward I, with new asphalt or alternate roof material (recycled rubber, ceramic, etc.).
- Restore the existing iron cresting and reinstall on the Administration Building. If there is cresting missing, and there is not enough to cover the area that originally had cresting, fabricate new cresting to match original.
- Whatever material is chosen, the key is to match the color, texture and size of the original slate roof as closely as possible.
- The existing wood decking is dry and is no longer a solid nailable surface for new roofing. Install a 1/2 " plywood deck over the existing decking to provide a solid surface for the new shingles.

Tower Roofs

Conditon: The current copper pyramidal roofs on the Administration Tower were installed in 1918 to replace diamond shaped clay tile.

Treatment Recommendation/Options:

- Option A – Clay Tile: Replace all copper on the pyramidal roof with diamond shaped clay tile to match the original.
- Option B – Copper Cladding: Replace all copper turrets, ridges, valleys, gutters and downspouts to match existing copper roofing.
- Remove all existing copper roofing and decorative elements from the building.
- Fabricate and install the following copper elements.
    - Turret caps
    - Gutters: Install rubberized membrane underlayment, extend a minimum of 3'-0" beyond back edge of new gutter. Provide rosin paper slip sheet cover.
    - Decorative Cornice at north and south elevation dormer sides
    - Downspouts
    - Ridge cap
    - Flashing and counterflashing: Cut reglets in masonry to receive flashing. Point reglets with mortar.
- All new copper elements shall be red copper and match the existing in material, detail and profile.
- Coordinate all removal, fabrication and installation with the work of the slate roof and EPDM roof.
- Replicate the turret finials in copper to match the existing.

Flat Roof (between towers on Administration Building)

Condition: The existing flat roof materials are in poor conditions and should be replaced.

Treatment Recommendation: Install new sheet membrane material on the flat roof.

- Install New EPDM Single Ply Membrane Roof at flat roof.

- Install all necessary flashings, cover boards, insulation, and cant strips for a warranted installation. Coordinate work with sheet metal flashing.

- Test all existing flat roofing material for asbestos prior to removal and disposal.

Gutters, Downspouts and Flashings

Condition: The buildings originally had built in gutters with internal downspouts. When the asphalt shingles were installed, several of the gutters were roofed over. In these locations, the downspouts were disconnected and the rain runs off of the roof directly to the ground. Where the copper gutters and downspouts were left in place, the gutters were lined with sheet membrane and the downspouts were diverted to the exterior of the building.

Treatment Recommendations:

- The gutters and downspouts on the building should be fabricated of copper. They are visible elements on the building and it would be inappropriate to use another material.

- Where roofed over, the built in gutters should be reinstated. Where extant, the gutters should be replaced in kind. All new gutter profiles should match the historic profiles.

- Due to the poor performance of the internal downspouts, all of the downspouts should be diverted to the exterior of the building (similar to the Administration Building).

- The ridge caps and flashings should match the original profiles.

Decorative Copper Elements

Condition: Female Ward I is the only building that retains the ventilation cupolas and finials that were original to the Female Ward buildings.

Treatment Recommendation: When the roof of the Female Ward I is replaced, restoration of the cupolas and finials should be considered. When replacement of the remaining Wards is undertaken, replication of the missing finials and cupolas should be considered.

Windows

Wood Windows

Condition: The condition of the original wood windows varies. It is not possible to inspect all of the windows due to the exterior plastic sheeting and plywood covers on the windows. It may be possible to restore the wood windows, depending on the overall condition of them. If restoration is not possible, replication of the original muntin pattern, size and shape should be undertaken. Energy conservation issues will have to be evaluated when the reuse of the building is determined. Storm windows – either interior or exterior – should be evaluated as part of the decision making process for both a restoration and replication approach. The following recommendations provide a range of treatment options, depending on the reuse scenario. Prior to the start of any work, hazardous materials testing should be undertaken. Possible hazardous materials include lead paint and asbestos containing sealant and window glazing putty.

Treatment Recommendations:

Alternate No. 1: Restore existing sash and frames:

- Remove existing plywood, plastic sheeting, grills and other coverings from existing windows.
- Patch holes in surrounding wood and masonry as necessary.
- Remove existing sash from frame.
- Restore existing window sash to make window operable. Repairs to include:
    - Wood consolidation and Dutchman repairs to make sash sound
    - Provide all new sash cord and pulleys, reattach weights
    - Adjust sash to operate smoothly
    - Install weatherstripping at jamb, sill and meeting rail
- Restore existing window frame to receive restored sash.
- Provide new removable wood ½ window screens at all existing windows. Note that this is an existing building and all window openings may vary in size.

Alternate No. 2: Restore existing sash, install double glazing, restore frames:

- Remove existing plywood, plastic sheeting, grills and other coverings from existing windows.
- Patch holes in surrounding wood and masonry as necessary.
- Remove existing sash from frame.
- Remove existing glazing from sash.
    - Note that all existing caulking should be tested for asbestos. If positive, removal of existing caulking will need to be removed by a Hazardous Material Specialist.
- Rout out existing sash to receive new thermapane units.
- Provide new double glazed units in existing sash. Exterior unit to be “restoration” glass.
- Restore existing window sash and insert double glazed glazing units in modified window sash. Repairs to include:
    - Wood consolidation and Dutchman repairs to make sash sound
    - Provide all new sash cord and pulleys, reattach weights. Add weights to account for the additional weight of the double glazed units.
    - Adjust sash to operate smoothly
    - Install weatherstripping at jamb, sill and meeting rail
- Restore existing wood frame to receive restored sash.
- Provide new removable wood ½ window screens at all existing windows. Note that this is an existing building and all window openings may vary is size.

Alternate No. 3: Replace wood sash, restore existing frames:

- Remove existing plywood, plastic sheeting, grills and other coverings from existing windows.
- Patch holes in surrounding wood and masonry as necessary.
- Remove existing sash from frame. Properly dispose of existing sash.
- Provide new replacement wood windows. Replacement windows shall fit in existing masonry openings and match original size, shape and profile of existing window.
    - Provide all new sash cord and pulleys, reattach weights. Add weights to account for the additional weight of the double glazed units.
    - Adjust sash to operate smoothly
    - Install weatherstripping at jamb, sill and meeting rail
- Restore existing wood frame to receive new sash.
- Provide new removable wood ½ window screens at all existing windows. Note that this is an existing building and all window openings may vary is size.

Porches

Condition: Iron and concrete porches remain on many of the south side of the brick and stone buildings, and one on the east elevation of Female Ward J. All are in poor condition with spalling concrete and rusting steel structure, grating and mesh. Although the porches were added early in the evolution of the buildings, their removal will likely be recommended in the reuse scenarios for the buildings. The porches are architecturally inconsistent with the refined treatment of the exterior. They were constructed solely to accommodate a growing patient population, not as an enhancement to the buildings' architecture.

Treatment Recommendations Options:

- Removal: If the buildings are to be reused as residential or commercial use, the porches should be removed. If the buildings are mothballed, they could remain on the exterior. If the porches are removed, repairs similar to Male Ward A where the porches were removed in 1990 should be implemented.
- Retention: One of the proposed reuses is to have a museum of mental health in part of the building. Retaining one of the porches in the location of the museum would be a good way to retain one as a record of the history of the building while opening up the exteriors where other uses are implemented.

Hazardous Materials

In general, removal of hazardous materials, such as asbestos and lead based paint, is required for any reuse scenario for the building. All of the asbestos pipe wrap materials will have to be removed, regardless of the reuse scenario. The treatment of the lead based paint will be determined based on the level of repair, restoration or demolition of the interior plaster and wood trim.

Interior Treatment Recommendations – Stabilization

Condition: Due to the uncertainty of the reuse of the building, treatment recommendation for the interior of the buildings is limited to stabilization of existing elements to allow safe entrance for inspection and maintenance personnel. Historic materials are intact in areas of the buildings, with extensive deterioration of surfaces and loss of detail where there has been ongoing water infiltration.

Treatment Recommendations:

Floors

- The locations of structural floor collapse and instability have been shown on the floor plans. These areas will require reconstruction of the floor structure.
- The surface treatment on most of the floors is floor tile. Most of the tile has delaminated and is in poor condition. This will have to be removed and new flooring material installed.

Walls

- The plaster walls are in good to poor condition, depending on the amount of water infiltration.
- In some locations the walls are in good condition. In these locations, the walls can be patched and repainted.
- In locations where the plaster has failed due to water infiltration, new wall material must be installed. This could be a three coat plaster system to replicate the original, or new sheetrock with a plaster skim coat.

Plaster Ceilings

- The plaster ceilings are in good to poor condition, depending on the amount of water infiltration.
- In some locations the ceilings are in good condition, with minor cracking. In these locations, the ceilings can be patched and repainted.
- In locations where the plaster has failed due to water infiltration, new wall material must be installed. This could be a three coat plaster system to replicate the original, or new sheetrock – either with taped joints or a plaster skim coat.

Tin Ceilings

- The tin ceilings are uniformly rusted and cannot be restored. In some locations this is due to direct water infiltration, in other locations it is due to the high humidity levels in the building.
- If appropriate in the reuse scenario for the building, these ceilings could be replicated – either in tin or an alternate (e.g. glass fiber reinforced polyester) material.

D. TREATMENT RECOMMENDATIONS BY CHARACTER-DEFINING-FEATURES

Character defining features are attributes or features of the site and buildings that may be individually or collectively important in defining the various historic contexts and thus the overall significance of the complex. Thus, their identification, retention, protection, and repair should be given prime consideration in every restoration or rehabilitation project. Caution should be exercised in developing plans that would radically change character-defining features or that would obscure, damage or destroy them in any way. As the first step in insuring this, the HSR document employs a multi-scale approach in identifying character-defining features throughout the complex:

Site-level: Identifying from afar the site's overall visual aspects such as profile, cluster layout, massing and landscape to understand its distinctive features.

Building-level (Exterior): Identifying features of individual buildings from the exterior such as layout, massing, details, craftsmanship and surface finishes.

Building-level (Interior): Identifying the interior visual aspects of buildings – spaces, features and finishes – by going into and through the building.

The above approach has been utilized for identifying character defining features at different scales throughout the complex. Findings are presented in the tables on the following page. Each identified feature has an accompanying description, ratings for significance (contributing, potentially contributing, non-contributing to significance), existing physical condition and integrity[1] (good, fair, poor), a description of noted deficiencies and recommendations for future work. It is suggested that these matrices be consulted before planning any work on the site to ensure that character-defining features are not affected in a way that will destroy or harm the historic character of the property in any way.

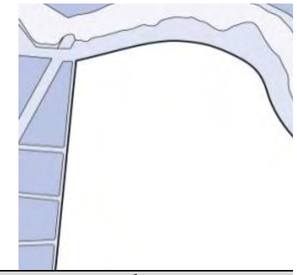
1 'Integrity' is defined by the National Register of Historic Places as the ability of a resource/ feature to convey significance. For definition see http://www.nps.gov/nr/publications/bulletins/nrb15/nrb15_8.htm


SITE-LEVEL
CHARACTER DEFINING FEATURES
S3a built / unbuilt
S3f hierarchy
S3e layout grid
S2c shape
S3b programmatic zoning
S2b size
cluster shape S3d
S2a boundaries
cluster arrangement S3c
S1b surroundings
S1c access
S1a location

CHARACTER DEFINING FEATURES:
SITE LEVEL

S1. URBAN CONTEXT

	Feature	Description	Significance	Condition	Integrity	Deficiency	Recommendation
S1a.	Location	Strategic location in historic 'North Buffalo' chosen for following reasons: • Relative seclusion from city core (downtown)-Kirkbride principle • Flattering aspects of surroundings and access (discussed below).	Contributing	Non-extant	--	The primary historical reasons for location of the Asylum on this site are now gone, albeit new aspects of location are now important for contemporary reuse reasons- proximity to Elmwood corridor, arts district, etc.	Reinforce the importance of location & context in the evolution of this site. Highlight historic reasons for location using interpretive means in new development.
S1b.	Surroundings	Two key historical features: • **Scajaquada Creek** formed north edge from 1872-1894: picturesque backdrop, water supply and transportation corridor - small dock at northwest corner.	Contributing	Non-extant	--	Construction of Scajaquada Parkway (later expressway) in 1894 severed physical connection, 1927 truncation of north half of site furthered loss of link.	Re-establishment of link is unfeasible – use interpretive means in new development to highlight historic link to the creek.
		• Connections to Olmsted's **Buffalo Park System** ---site abutted 'The Park' (the present Delaware Park) and together with Forest Lawn Cemetery (1850's) formed an impressive stretch of landscaped green space across the northern section of the city.	Contributing	Poor	Poor	Truncation of site and development along Elmwood avenue has resulted in loss of link to park system.	Investigate opportunities for re-establishing connection to larger Buffalo Park system along the east edge of site by way of green corridors, footbridges etc.
S1c.	Access	Primary vehicular approach along **Elmwood Avenue** – that connected with downtown and **Forest Avenue** that connected with the Forest Lawn Cemetery.	Contributing	Good	Good	Vehicular access along these 2 roads continues to be primary—Rees Street & Rockwell road provide secondary access.	--
		Railroad siding- Allowed transportation access for supplies, especially coal for the boilers	Contributing	Non-extant	--	Spur of the NY Central Railroad removed from site c. 1927-1945	Use interpretive means in new development to acknowledge location of railway siding.



CHARACTER DEFINING FEATURES:
SITE LEVEL

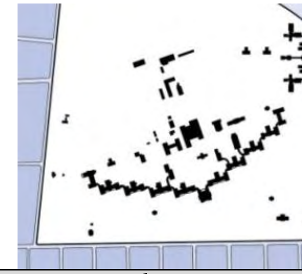
S2. Site Profile

	Feature	Description	Significance	Condition	Integrity	Deficiency	Recommendation
S2a.	Boundaries	**Forest Avenue** always formed primary entrance edge; first building along edge constructed in 1905; setback ~150'; historically residential use; 1-3 story bldgs.	Contributing	Good	Fair	Development along this edge has been largely compatible with historic setbacks, scale etc.; **Exceptions -** max. density reached in 1953 w/ 9 bldgs.(5 of which were later removed); 8-story Strozzi building(1963) and parking lot south of it; 2 utility buildings (VS & UT1) that are incompatible with historic setbacks, new inpatient bldg. (IP built 1988).	1. Maintain status as primary/ secondary entrance edge 2. Avoid overpopulation of facing structures to maintain views to 'Main Building'; 3. New bldgs, should be mindful of historic setbacks, heights, scale and massing – their style may be contemporary or reference design motifs from historic building. In either case, they should always be clearly differentiated; 4. Re-locate incompatible parking lots, avoid creation of new parking lots close to the edge; if absolutely necessary, they should be shielded from street view by historically appropriate landscape features.
		Elmwood Avenue formed secondary entrance edge with major ancillary buildings located along it, (eg. Elmwood Building (1897) and Reception Hospital (1930)); setback ~300'; historically patient use; 2-3 story bldgs.	Contributing	Good	Fair	Features **incompatible** with historic character are-parking lot located along edge (c. 1950's), Burchfield Penney Art Center (2008) and utility building (UT2 c. 1975-1992)	
		Rees Street - relatively 'dormant' edge with no major buildings or public entrances historically located along it, except for a service entry road in place from c. 1881-1945	Potentially Contributing	Good	Good	1988 patient building IP and its vehicular entry off of south end of Rees Street; parking lot located along north half of the site.	
		Rockwell Road – installation of road redefined north edge of the site in 1927; no major entrances located along it, served as separator from Buffalo State College and rear access to utility buildings.	Non-Contributing	Good	--	New Burchfield Penney Art Center has longer edge parallel to this road.	

S2b.	Size	Historically the site area of approx. **203 acres** was important as it ensured compliance with Kirkbride standards of adequate space & size	Contributing	Non-extant	--	In 1927 it was truncated to less than 100 acres thus drastically altering original intent.	Maintain the remaining overall size and shape of the site; avoid further subdivision into smaller parcels as much as possible.
S2c.	Shape	Historically, roughly rectangular site shape with longer edge along **north-south axis**, north edge arced to follow creek profile; after 1927, site almost a rectangle with longer edge along **east-west axis**.	Potentially contributing	Non-extant	Fair	The original site profile was altered in 1927, although the south half remains as it was historically, without any major changes in shape.	

CHARACTER DEFINING FEATURES:
SITE LEVEL

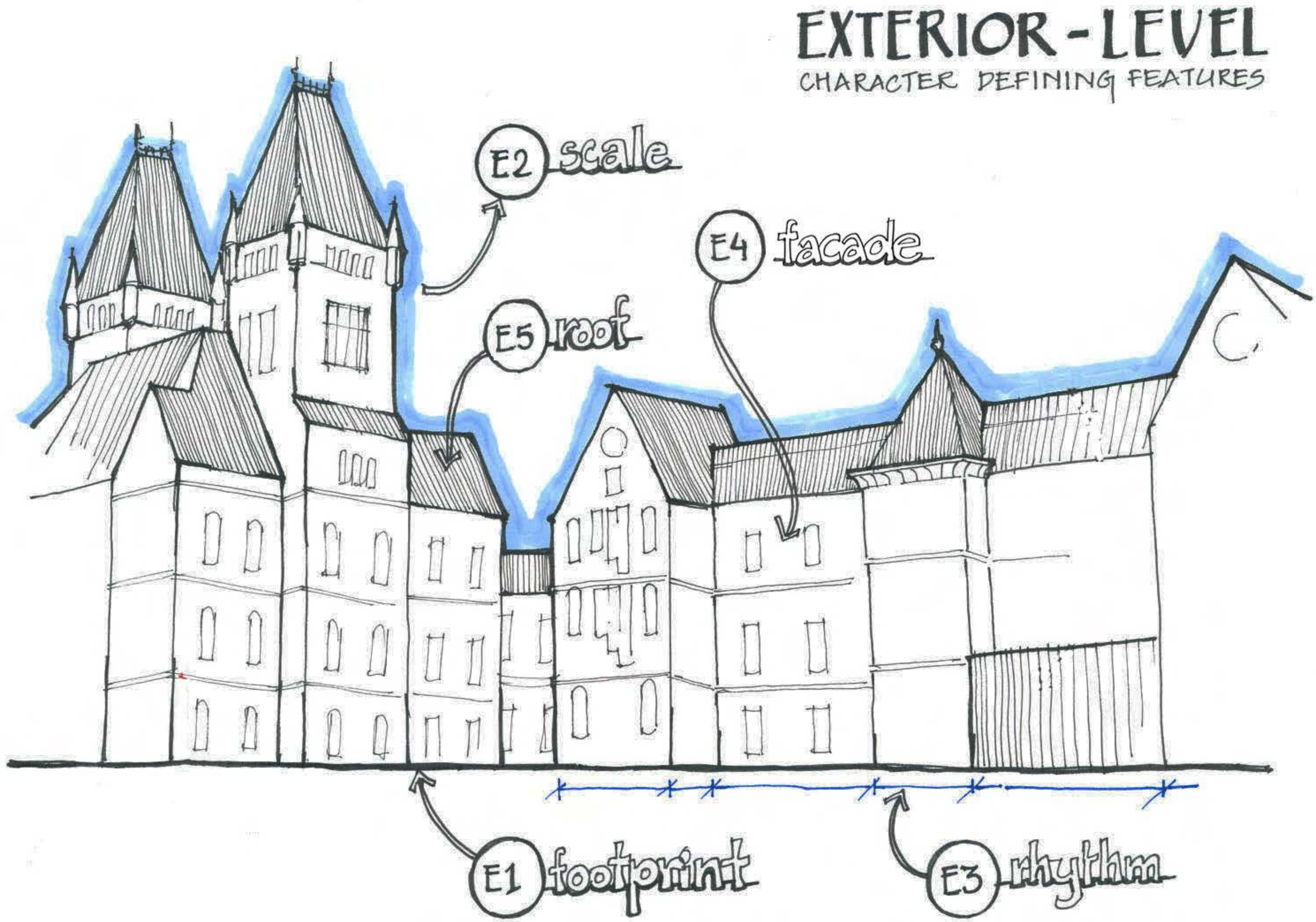
S3. Site Layout

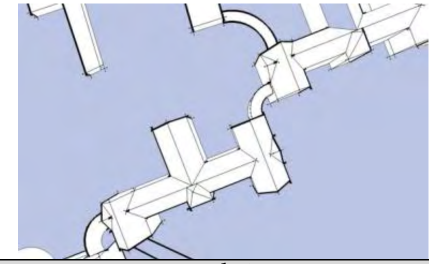


	Feature	Description	Significance	Condition	Integrity	Deficiency	Recommendation
S3a.	Built vs. Un-built	Historically, the **built mass** was concentrated in the southern half of the site (for easier road access) and the northern half was reserved for **farmlands** (access to the creek) - an important feature for ensuring therapeutic manual labor for patients; from 1900 – 1927, the open space served mainly as recreation grounds.	Contributing	Non-extant	--	With truncation of the site (1927), the built mass is now located roughly centrally on the site, with maximum massing in the north and east halves.	--
S3b.	Programmatic zoning	Over the period of significance, the site was functionally zoned in the following 3 tiers, thus reflecting strategic use patterns: • **Residential**- along Forest Avenue comprising of staff residences • **Patient care**- the 'Main Building' V-shape cluster of wards, kitchens, dining halls and other free-standing buildings such as the chapel, library, TB cottages etc. • **Utility**- the north-most edge of building development comprising of stables, barns, utility sheds etc.	Contributing	Fair	Fair	All residential buildings along Forest Ave. are now used for patient care – however this programmatic shift has not entailed major changes in form- thus not detracting from historic character. On the other hand, The Medical & Surgical building and the Strozzi building & its associated parking lots, in attempting to bring patient care closer to the south edge, encroached upon green open space, thus harming historic character. (also their scale, style & placement)	The historic use pattern on site will obviously change with new uses, yet its conscious understanding can yield important pointers for new development. For e.g. residential zoning along Forest Avenue ensured throughout these years that the structures were smaller & not overpowering the main V-shaped cluster in the background. The rear assumed the logical role of housing a greater concentration of larger utilitarian structures. This might also have important implications for retaining remaining open space in the front of the V-cluster.

	Feature	Description	Significance	Condition	Integrity	Deficiency	Recommendation
S3c.	Cluster Arrangement	**Main Building vs. out-buildings-** In terms of arrangement, the defining historic characteristic was the conscious distinction between the V-shaped, physically connected central cluster (made up of wards, kitchens and dining halls) and free-standing ancillary buildings closer to the edges.	Contributing	Good	Good	The construction of structures such as Strozzi (ITB) and Rehabilitation building (RH), though not directly attached to the historic main building, have created additional clusters that begin to rival the prominence of the historic V-shaped wards.	Overall, construction of all subsequent buildings happened in the form of free-standing structures, rather as appendages to the main cluster- this helped to maintain the historic sanctity and importance of the central group. Future development should respect this established arrangement and main sanctity of central cluster by avoiding creation of major new ones.
S3d.	Cluster Shapes	The 'Main Building' cluster (historically comprising of 15 connected bldgs) was characterized by being **linear, symmetrical** and roughly shallow **'V-shaped'** – thus typically 'Kirkbride'. The remaining buildings did not form a distinctive cluster but were usually laid in **linear formations** along established edges/ grid lines.	Contributing	Poor	Poor	The demolition of three easternmost wards of the main building cluster led to a comprise of its distinctively Kirkbride linear form. The existing cluster now forms a lop-sided shallow V.	Maintain historic integrity of the distinctive configuration of the V-shaped cluster by avoiding further demolition and incompatible addition or alteration.
S3e.	Layout Grid	The **oblique** or northwest-southeast alignment grid was employed for all major buildings on site from 1872-1897. It has been credited to Olmsted's suggestion and allowed: • Maximum sunlight exposure to buildings during winter months • Enhanced picturesqueness of the buildings due to off-center views • More effective use of existing topography- ground surface considerably lower in rear, eased construction of subways for connection between front & back.	Contributing	Fair	Fair	The oblique grid was broken with the construction of the Elmwood Building in 1897 (although structures closer to the main core continued its use for orientation till 1940's) & later with residences along Forest Avenue and buildings in the east portion of site.	The oblique layout grid is a distinctive/ unique feature of this complex. Existing buildings on this grid should not be rotated/ moved etc. Future buildings may or may not follow this grid entirely but attempts must be made to rationalize their orientation with respect to the existing buildings.

	Feature	Description	Significance	Condition	Integrity	Deficiency	Recommendation
S3f.	Hierarchy	**By Size -**The twin towers of the Admin. Bldg. rising to 180' create strong vertical emphasis in the center. The ward buildings extending outwards gradually decrease in height, thus reinforcing the center and importance of distance from it.	Contributing	Good	Fair	The destruction of outermost east wards interrupted this vertical hierarchy. The Strozzi Building (ITB) and Rehabilitation Center (RH) both rival the old Admin Bldg in terms of either/both mass and height.	The design, size and massing of future site buildings should reinforce rather than detract from the vertical emphasis of the central towers- the primacy of this building manifested in its iconic towers should be maintained. Also the decreasing heights from the center should be maintained, and not broken.
		By Shape - Defining characteristic of building cluster layout was the ***en echeleon*** or **staggered** shape where as one moved outward, every building was set back by a whole building width from its neighbor- this allowed unfettered views and ample ventilation – 'Kirkbride' principle. The Administration Building was sited to **jut out farthest**- thus establishing it supremacy & public image.	Contributing	Fair	Poor	Until the 1940's no other major building jutted out farther south than the Admin. Building. This was broken in 1950 with the Medical & Surgical bldg. (MS) which rivaled this positional supremacy of the Admin bldg. In terms of use zones, the layout still adheres to public uses south of the V-shape and utilitarian/ private ones to the rear.	While new uses and structures may necessitate reorganization of some hierarchical relations, such as primary vs, secondary facades, etc., overall, attempts must be made to respect & not conceal features such as the *en echeleon* layout & the hierarchy it imposes.
		By Placement - The layout also divided the entire site such that all area south of the 'V-shape' assumed a formal 'public' face and area north of the V was mostly for informal 'private/ internal' use.	Contributing	Good	Good		


EXTERIOR - LEVEL
CHARACTER DEFINING FEATURES
E2 scale
E4 facade
E5 roof
E1 footprint
E3 rhythm



CHARACTER DEFINING FEATURES:
BUILDING LEVEL (EXTERIOR)

E1. BUILDING FOOTPRINT

	Feature	Description	Significance	Condition	Integrity	Deficiency	Recommendation
E1a.	Footprint: Ward buildings- **T & H shapes**; Admin. building- roughly **square**	All ward buildings in the 'V' cluster have a shape that can be described as a combination of the letters 'T' and 'H'- unique from other Kirkbrides in having an additional central arm; Admin Bldg is roughly square to suit interior program & distinguish from wards.	Contributing	Fair	Fair	Addition of porches/ brick additions on principal façades beginning in 1906 slightly altered original building footprints.	1. Except for elevator shaft and brick addition on first floor of Ward B, all other additions date from the period of significance (POS) (before 1969) and should be evaluated depending on reuse program for retention. The metal chain-link porches date from c. 1945 – porches were first added at these locations in 1906-1916, but were of a simpler, more open design. Since the current porches are a later revision and significantly obscure the masonry and overall appearance of the ward buildings, the HSR recommends that they may be removed -retention of representative examples at some locations may be considered in this approach. 2. In future redevelopment, avoid any direct additions to historic buildings so as not to alter their shape; where necessary use free-standing connectors, etc. to attach to existing building.
INSTANCES	 *Rear addition (c .1918) on AB*	 *Porch/staircase on south façade (c.1945) on Wards B,F,G,H and I.*	 *Brick addition on first floor, south façade of Ward B (date unknown)*	 *Porch addition (c.1894-95) on west façade of Ward J*		 *Porch addition (c.1900) on east façade of Ward J*	 *Elevator shaft addition (c.1992) on west façade of Administration Building*

	Feature	Description	Significance	Condition	Integrity	Deficiency	Recommendation
E1b	Footprint: Connectors – **quarter-circle** profile	Connectors **quadrant** shaped – unique from other asylums (curved shape was instrumental in discouraging their use as wards)	Contributing	Poor	Good	Structural damage in brick connectors may lead to potential loss of profile	1. Rebuild collapsed and shifted areas of the brick walls using brick that matches surrounding brick in color, texture and composition. Reuse as much of the original brick as possible. 2. Avoid any direct additions to historic structure so as not to alter its shape; where necessary use free-standing connectors, etc. to attach to new building.

INSTANCES

Connector I-J

Connector H-I

Connector G-H

CHARACTER DEFINING FEATURES:
BUILDING LEVEL (EXTERIOR)

E2. BUILDING SCALE

	Feature	Description	Significance	Condition	Integrity	Deficiency	Recommendation
E2	Monumental scale	All ward buildings in the 'V' cluster correspond to a monumental rather than a human scale – important for imparting prominence and denoting institutional use.	Contributing	Good	Good	Insertions of relatively smaller 'human-scaled' additions tend to break down the 'monumental' scale of the historic structures.	Respect this attribute in all new additions; avoid direct contact with historic building such that it breaks monumental scale of historic structures.

INSTANCES

Rear addition (c.1896) to Administration Building

Brick addition on first floor, south façade of Ward B (date unknown)

Porch addition (c.1894-95) on west façade of Ward J

Porch addition (c.1900) on east façade of Ward J

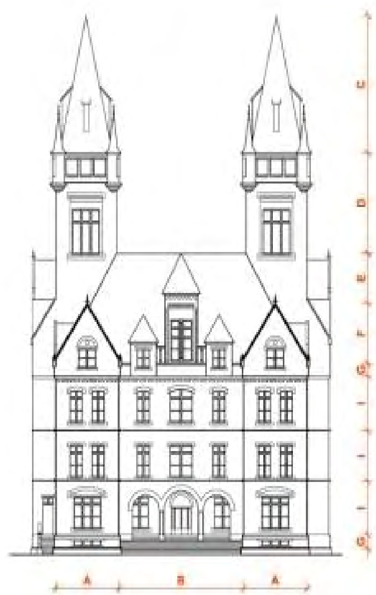
CHARACTER DEFINING FEATURES:
BUILDING LEVEL (EXTERIOR)

E3. BUILDING RHYTHM

	Feature	Description	Significance	Condition	Integrity	Deficiency	Recommendation
E3	Rhythmic, symmetrical ordering of building facades	Most ward buildings are designed with projecting bays with a rhythm **A-B-C-B-A** along its length and **F-E-D** (# of stories)**-E** along its height. Admin. Bldg. and Female Ward J are exceptions.	Contributing	Good	Good	None	1. Respect the existing rhythm in all new construction that is attached to or is in close vicinity of historic structures.

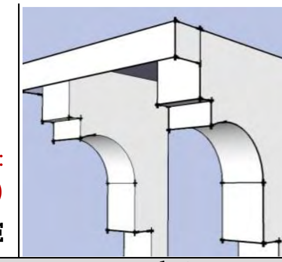
INSTANCES

Typical facade rhythm on north and south facades of wards A,B,F,G,H and I



Façade rhythm on north and south facades of Administration Building

Façade rhythm on east and west facades of Ward J



CHARACTER DEFINING FEATURES:
BUILDING LEVEL (EXTERIOR)

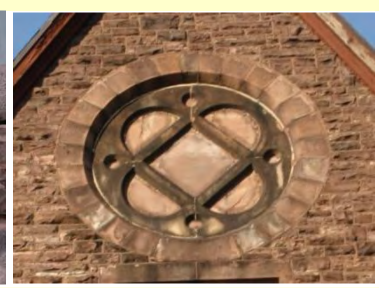
E4. Building Facade

	Feature	Description	Significance	Condition	Integrity	Deficiencies	Recommendation
E4a.	Stone	Roughly hewn, rusticated **reddish Medina sandstone** used for walls, contrasted with chiseled, finely hewn version around openings. **Yellow sandstone** used for decorative patterns	Contributing	Good	Good	Overall the condition of the stone is fairly good with the following common problems: 1. Cracks in stone pieces (usually in lintels, sills, mullions, etc.) 2. Spalling of stone- usually minor on facades except at instances where steel pins or enlargement of openings have led to breaking of larger pieces. 3. Soiling, especially under window openings has caused the buildings to look very imposing. 4. Algae, especially on lower portions of north façade, below water table. 5. Shifting/open joints, common along roof and floor levels and building corners.	1. For specific material treatment recommendations, see previous section. 2. Acknowledge that the reddish Medina sandstone & its overall rusticated appearance are integral to the historic character of buildings – therefore, attempt to restore as much of the exterior stone on central buildings as possible, where it is necessary to reconstruct areas of loss, use material that matches the original in color, texture and composition.

Instances

Typical sandstone used in Wards A, B, F and G & Male Kitchen (MK)

Chiseled, finely hewn sandstone version around openings



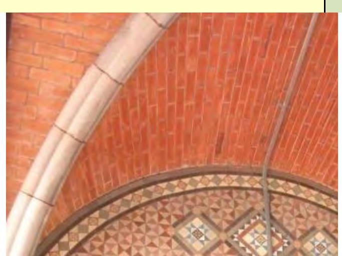
Yellow sandstone used for decorative patterns

Note minor spalling on base course

	Feature	Description	Significance	Condition	Integrity	Deficiencies	Recommendation
E4b	Brick	Hard-fired **multi-wythe** red brick used for exterior of brick buildings Use of **tarred brick** on male ward buildings to create horizontal bands and circular surface pattern (non-extant)	Contributing	Fair	Fair	The brick is in fair condition, with isolated areas of deterioration that can be categorized as poor. Common problems are: 1. Water infiltration and subsequent saturation leading to 'peeling' of wythes. 2. Step cracks- especially between openings 2. Spalling- minor 3. Soiling - extensive 4. Algae – limited growth especially on north elevations. 5. Vegetation- extensive ivy growth, up to 100% on certain facades. 6. Shifting/open joints, common along roof and floor levels and building corners. 7. Efflorescence- in areas of water saturation	1. For specific material treatment recommendations, see previous section. 2. Acknowledge that the red brick used for the outermost wards is integral to defining the historic character of the buildings – therefore, attempt to restore as much of the exterior brick as possible, where it is necessary to reconstruct areas of loss, use material that matches the original in color, texture and composition.

INSTANCES

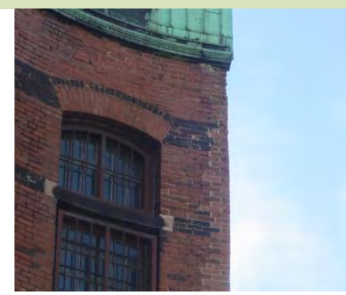
Typical brick masonry used in Wards H, I and J & Female Kitchen (FK)



Brick used on vaulted ceiling of entrance porch, Administration building.

Missing area of brick wall caused by water infiltration

'Peeling' of brick withes due to water infiltration



ConnectorB-MDH that has the only surviving tarred brick.

	Feature	Description	Significance	Condition	Integrity	Deficiencies	Recommendation
E4c.	Mortar	Stone: Originally the pointing used for all stone buildings comprised of a wider base coat of stone-color mortar and a thinner overlay pointing of bright red mortar (probably containing iron-oxide). Brick: Buff colored mortar was used for pointing brick buildings (for specific mortar testing results see Appendix D)	Contributing	Fair	Poor	1. On stone buildings, the existing mortar is in good to fair condition, although it lacks in integrity since it drastically differs from the historic mortar in having a lighter color, harder composition and raised bead tooling. 2. On brick buildings, the mortar ranges from fair to poor- there are isolated repointed areas that have a lighter mortar from the historic ones – in other areas, the mortar is badly deteriorated.	1. For specific material treatment recommendations, see previous section. 2. Acknowledge that mortar color and profile are integral to the overall historic character of buildings – since the appearance of stone pointing has changed more drastically over time than brick buildings, evaluate restoration of original pointing on these buildings in areas of large repointing.

INSTANCES

In left portion of photo is the typical mortar (applied in 1990's) that exists on Admin Bldg and wards A, B,F and G.In the right portion are remains of historic reddish mortar .

Typical mortar on brick buildings- Wards H, I and J.

	Feature	Description	Significance	Condition	Integrity	Deficiencies	Recommendation
E4d	Ceramic tile	**Decorative mosaic ceramic tiles** were inlaid on the vaulted ceiling of the entry loggia to the Administration building	Contributing	Good	Good	Minor cracking in tiles and grouting of joints; minor atmospheric soiling	Clean the tile surface with the least abrasive methods. In general, very mild detergents and low water pressure will achieve the cleaning goal.

INSTANCES

Mosaic ceramic tiles in the entry loggia to Administration Building

	Feature	Description	Significance	Condition	Integrity	Deficiencies	Recommendation
E4e.	Openings	1. **Regular, symmetrical** placement 2. **Vertically linear** proportions 3. Combination of **flat** and **segmental arch** openings on most building facades; use of **semicircular** arched openings in the entry loggia and attic level of Administration Building, vaulted connector roofs and certain brick buildings at attic level. 4. **Recessed** from exterior face- more pronounced in stone than brick buildings.	Contributing	Fair - Good	Fair	A number of window openings, especially on the north and south facades were altered to create door openings, usually employing incompatible infill.	1. Respect the existing regular and symmetrical placement of openings in all new additions. 2. Avoid alterations and maintain the shape and proportion of openings. If alterations are necessary, infill with materials that match the existing.

INSTANCES

Flat arch window opening

Flat arch window opening

Segmental arch window opening

Segmental arch window opening

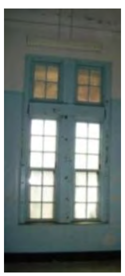
Semicircular arch window opening

Semicircular arch opening at entrance loggia to Admin Building

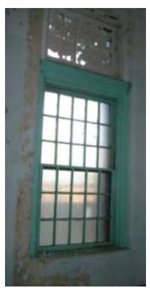
Semicircular arch window opening in connector copper roofs

	Feature	Description	Significance	Condition	Integrity	Deficiencies	Recommendation
E4f.	Windows	1. Typically, **double hung**, sash windows ranging from 2-over-2 to 15-over-15. 2. Concealed sash cord-important considering the building's use as an insane asylum. 3. Folding, **wooden louver** shutters on some windows in Admin. Bldg. 4. Tall/ vertically **linear proportions**, 5.Usually with ventilator above (both rectangular and arched) 6. Originally **unpainted varnished wood finish**, coated with paint in subsequent renovations. *** A **stained glass window** reported in 1892 in Chapel on 4th floor of Admin. Bldg. – removed subsequently*	Contributing	Varies	Fair	The condition of window sash and trim varies depending on location – in areas of severe water damage in wall, there is extensive deterioration of window elements. In general, common problems include rot, inoperability, missing hardware, paint build-up and historically inappropriate color palette for paint coating.	1. Repair of historic windows is always preferable to replacement. 2. It may be possible to restore the wood windows, depending on the overall condition of them. If restoration is not possible, replication of the original muntin pattern, size and shape should be undertaken. 3. For more detailed recommendations see previous section.

INSTANCES



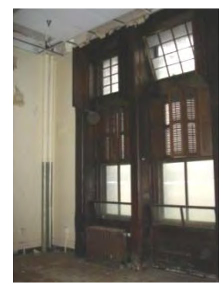
6-over-6 window double-hung sash window



15-over-15 double hung sash window

Wire-mesh screens and grilles incorporated in/around window

Historic metal grill on Female Ward H



Wooden louver shutters on windows in Admin. Bldg.

Non-historic metal louvers

E4g	Mullions and transoms	**Cross-shaped** stone mullions and transoms set into window openings, with **corner chamfer** detail	Contributing	Good-Fair	Good	1. Cracks exist in some mullions, especially at joints with the transom & wall masonry 2. Fasteners from iron bars remain in place in most window mullions. The pins are embedded in the stone and are beginning to rust, leading in some cases to spalling of large pieces of stone from the face.	1. Remove pins embedded in the mullions. 2. Restore defects in stone by using Dutchman repair, patching or replacement depending on extent of damage. 3. Retain all original details. In both restoration and replacement in kind. 4. For more specific material treatment recommendations, see previous section.

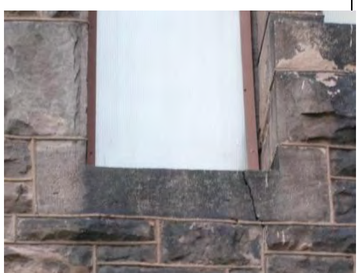
INSTANCES

Typical cross shaped stone mullions & transoms on the Administration Building and all ward buildings. Note the spalled stone.

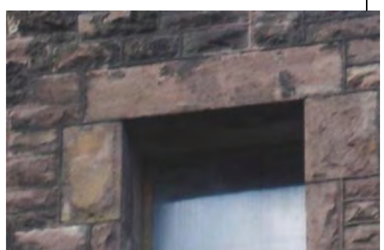
Cracking at the joints.

	Feature	Description	Significance	Condition	Integrity	Deficiencies	Recommendation
E4h	Sills and lintels	**Stone Buildings**: Use of chiseled, finely hewn sandstone for window sills and lintels; sills slope down from window edge and are flush with the exterior wall surface. **Brick buildings:** Use of roughly hewn sandstone; lintels are flush with wall surface while sills protrude out slightly, sloping away from the window edge	Contributing	Good	Good	Typical problems are: 1. Cracking in stone 2. Cracking at the junction of sill/lintel with wall masonry. 3.Delaminating/ spallling 4. Open joints within individual lintel/sill units and at the junction of sill/lintel stones with masonry wall.	1. Restore defects in stone by using Dutchman repair, patching or replacement depending on extent of damage. 2. Retain all original details in both restoration and replacement in kind. 3. For more specific material treatment recommendations, see previous section.

INSTANCES



Typical sill detail in stone buildings. Note crack in stone in this instance



Typical lintel detail in stone buildings

Typical lintel detail in brick buildings. Note the rock-face surface and open joints between lintel units.

Typical sill detail in brick buildings. Note masonry cracking in masonry at junction of sill stone.

	Feature	Description	Significance	Condition	Integrity	Deficiencies	Recommendation
E4i.	Cornices, Beltcourses, Watertables	Slightly **raised stone cornices** on wall facades indicating building floor levels, **carved scrolled ends** where the belt course meets the window opening, **sloped projecting** profile at water-table/plinth level	Contributing	Fair	Good	1. Most common problem is soiling in portions that lie underneath window openings. 2. Some cornices exhibit loose joints between separate stone units. 3. In some instances (see below) there is either cracking or minor spalling of stone, as well as missing chunks at places (especially where the original cornice had been cut/altered to create new openings).	1. Restore defects in stone by using Dutchman repair, patching or replacement depending on extent of damage. 2. Retain all original details in both restoration and replacement in kind. 3. For more specific material treatment recommendations, see previous section.

INSTANCES

Scrolled-end cornice where belt course meets window opening. Found only on wards A,B,F.

Typical cornice at floor level on all wards and Administration Building

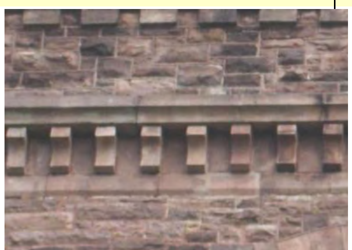
Typical cornice profile at water table in all wards and Administration Building

Instance on Ward A where original cornice was cut leading to spalling of the original stone.

	Feature	Description	Significance	Condition	Integrity	Deficiencies	Recommendation
E4j.	Brackets	Constructed in stone, present only on stone buildings, variety of shapes and finishes – **concave, convex, roughly hewn** and **smoothly chiseled**	Contributing	Good	Good	Typically in good condition and unaltered from historic form – except at south façade where some brackets were altered to accommodate porch roof.	1. Restore original profile by using Dutchman repair, patching or replacement depending on extent of damage. 2. Retain all original details in both restoration and replacement in kind. 3. For more specific material treatment recommendations, see previous section.

INSTANCES

Concave, chiseled large profile- A &B

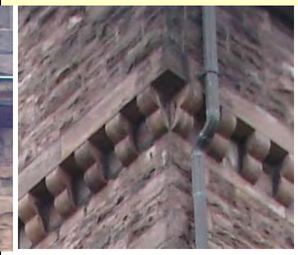


Concave chiseled small profile- Wards A and B

Concave roughly-hewn small profile (simpler) -Ward G

Convex roughly-hewn large profile- Ward F

Convex roughly-hewn small profile- Ward F



Double convex chiseled small profile- Admin Bldg

	Feature	Description	Significance	Condition	Integrity	Deficiencies	Recommendation
E4k	Medallions	Circular **bas-relief panels** comprising of **quatrefoil-in-circle** design in red and yellow sandstone, set atop gable ends and dormers. On male ward brick buildings, medallions comprised of surface masonry pattern using **tarred brick** (non-extant).	Contributing	Good	Good	Typically in good condition and unaltered from historic form – some minor spalling on surfaces.	For general cleaning of stone, see specific material treatment recommendations in previous section.

INSTANCES

Typical medallion on gable face of Wards A & B and dormers of Administration Building

Typical medallion on dormers of Wards A and B

Typical medallion (with diamond pattern) on gable end of Ward F

Typical medallion on brick wards C, D and E. (non-extant)

	Feature	Description	Significance	Condition	Integrity	Deficiencies	Recommendation
E4l	Spandrels	Bas-relief **spandrel panel** with diamond pattern over sets of triple windows on south façade of stone male ward buildings; small **diamond pattern carvings** over flat arch openings enclosed within segmental arches, on female stone wards	Contributing	Good	Good	Typically in good condition and unaltered from historic form – some minor soiling and spalling was observed in stone units.	For general cleaning and repair of stone, see specific material treatment recommendations in previous section.

INSTANCES

Typical spandrel panel on Wards A and B

Typical spandrel panel on Wards F and G and Administration Building

	Feature	Description	Significance	Condition	Integrity	Deficiency	Recommendation
E4 m	Columns	At entrance loggia - **squat** proportions with **naturalistic** carved capital, minor use of small decorative columns on attic level of Administration Building	Contributing	Good	Good	Typically in good condition and unaltered from historic form – some minor soiling and spalling was observed in stone units.	For general cleaning and repair of stone, see specific material treatment recommendations in previous section.

INSTANCES

Column at entry loggia to Administration building

Column detail

Column at roof level of Administration Building

CHARACTER DEFINING FEATURES:
BUILDING LEVEL (EXTERIOR)

E5. Building Roof

	Feature	Description	Significance	Condition	Integrity	Deficiencies	Recommendation
E5a.	Slate	Originally, **flat** slate tiles used on all building roofs-combination of **rectangular** and **fish-scale** shapes added to visual interest-currently extant only on Female Ward I and Female Kitchen.	Contributing	Poor	Fair	Slate tiles were removed from all buildings, except two. Common problems associated are delaminating of slate and missing tiles.	Replace asphalt roofs with slate roofs (this should be done only at the time when the existing asphalt roof has reached the end of its life and needs replacement). If slate is not a viable option choose a material that mimics it closely in color, texture and appearance. If restoration of slate roofs is undertaken, similar pattern treatment should be included.

Instances

Slate roof tiles on Female ward I- note rectangular and fish-scale shapes

	Feature	Description	Significance	Condition	Integrity	Deficiencies	Recommendation
E5b	Clay	Originally **diamond-shaped interlocking clay tiles** used on tower roofs –consistent with overall color and texture scheme throughout building cluster--replaced by copper in 1918	Contributing	Poor	Poor	Clay tiles were moved from the tower roofs in 1918.	If the restoration of tower roofs is planned as part of the rehabilitation/ reuse program, new clay tiles should be installed on tower that match original in color, texture, composition etc. Alternative materials may be used if they satisfy above properties.

Instances

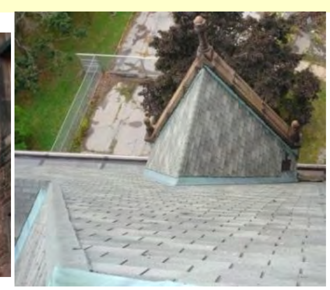
Undated photo showing clay tiles on tower roof

	Feature	Description	Significance	Condition	Integrity	Deficiencies	Recommendation
E5c	Copper	Copper on tower and connector roofs – its **distinctive green patina** has come to symbolize the complex for most part of the 20th century, used elsewhere for flashing and gutters.	Potentially contributing	Poor-Fair	Good	Copper is one of the most durable materials, however, it is beginning to show signs of age at instances throughout the buildings. Typical problems associated are corrosion and failure of jointing with the roof and building shell. Copper gutters on Female ward I show extensive deterioration.	The copper roofs are in poor condition. They should be re-installed on connector buildings. For copper used elsewhere in building, all exposed areas of copper should be replaced in kind, at other unexposed areas, alternate material options may be analyzed.

Instances

Copper roof on Administration Building

Typical copper roof on connectors B-C, A-B, AB-F, F-G,G-H, I-J



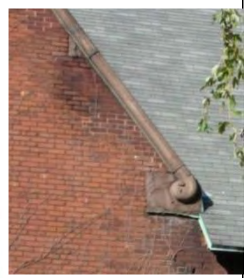
Copper flashing on roof of Administration Building

	Feature	Description	Significance	Condition	Integrity	Deficiencies	Recommendation
E5d	Coping	**Stone** roof coping used on all female ward buildings and **wood** on male ward buildings; stone copings contain **decorative scroll carvings** at ends and **blind niches** in the dormer peak.	Contributing	Fair	Good	Common problem in wood is decay of members and in stone - open joints, spalling and soiling.	1. Restore original profile 2. Retain all original details in both restoration and replacement in kind. 3. For more specific material treatment recommendations, see previous section.

INSTANCES

Wooden coping/trim on Wards A and B

Typical stone coping on wards F and G and administration building



Typical stone coping on wards H, I and J

Typical blind niche detail at dormer peak in wards H, I and J

	Feature	Description	Significance	Condition	Integrity	Deficiencies	Recommendation
E5e	Eaves	Wide, wooden **overhanging eave** with **decorative "rafter tails"**	Contributing	Poor	Fair	Decay of members due to water infiltration and rot.	1. Restore original profile 2. Retain all original details in both restoration and replacement in kind. 3. For more specific material treatment recommendations, see previous section.

INSTANCES

Typical wooden eave with rafter tail detail now extant only on wards H and I

	Feature	Description	Significance	Condition	Integrity	Deficiencies	Recommendation
E5f	Gutters	**Exposed** copper downspouts; external copper valleys and gutters	Contributing	Fair to Poor	Fair	Except for Ward I, exposed copper gutters were roofed over with asphalt shingles – most roofs retain the original gutter lining and flashing. Common problems associated with the extant gutters are dents and improper connections.	Richardson's specifications were flouted in embedding the gutters & downspouts inside the external wall, something that has led to extensive building damage. The recommended option is using external downspouts for drainage of water from roofs. Extant downspouts on Admin Bldg should be used as reference for this work.

INSTANCES

Exposed copper gutter on roof of Ward I

Exposed copper flashing and gutter on roof of Ward I

	Feature	Description	Significance	Condition	Integrity	Deficiencies	Recommendation
E5g	Cresting	Ornate **iron cresting** atop Administration building and tower roof- probably removed in 1918? – provided important detail in an otherwise stark/ un-ornamental building.	Contributing	Non-extant	Poor (non-extant)	The iron cresting was removed from the Administration Building roof, probably at the time its roofing was changed from slate to asphalt and clay tiles to copper.	If restoration of Admin Bldg roof is undertaken as part of the rehabilitation/reuse program, the cresting should be re-installed - use as many original pieces as possible- fabricate additional new ones based on existing originals.

INSTANCES

Historic photo showing cresting atop roof of Administration Building

Historic photo showing iron cresting atop tower roof of Admin Bldg.

	Feature	Description	Significance	Condition	Integrity	Deficiencies	Recommendation
E5h	Cupolas	Wood and copper **cupolas** and vents - important in facilitating historic system of **passive ventilation** in buildings.	Contributing	Poor	Varies	It is unclear from historical evidence, how many buildings actually featured these cupolas; at present however, they are absent from all except two on Ward I, where their condition is poor.	Consider use of similar historically appropriate features for passive ventilation of buildings in future reuse options.

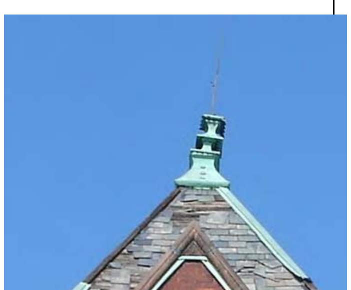
INSTANCES

Cupola on Ward I

Historic hhoto showing cupola on roof of Ward G

	Feature	Description	Significance	Condition	Integrity	Deficiencies	Recommendation
E8p	Finials	Use of both **copper & stone finial**s – emphasized skyline and provided important detail in an otherwise stark/ un-ornamental building	Contributing	Poor	Varies	Except for remaining stone finials on Admin. Bldg. and copper finials on central tower and on the south elevation central pyramidal roof of Female Ward I, all others have been removed.	Restore stone finials on Admin Bldg, reconstruct copper finials on other ward roofs if restoration option for buildings is followed

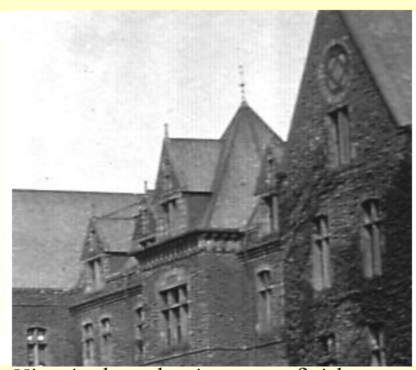
INSTANCES



Copper finial on central pyramidal roof of Ward I

Copper finial on tower of Admin. Bldg.

Stone finials on dormer peaks of Admin Bldg.

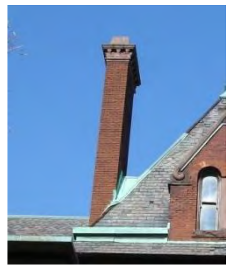


Historic photo showing copper finials on roof of Ward A

	Feature	Description	Significance	Condition	Integrity	Deficiencies	Recommendation
E8q.	Chimneys	Brick and stone chimneys - important in **defining skyline**	Contributing	Poor	Poor	It is unclear from historical evidence whether chimneys were part of all buildings-at present, they are extant on all Female Wards, namely, F, G, H, I and J. Evidence exists that two chimneys from the Administration building were removed in 19??.	Restore the extant chimneys on all female wards. For specific treatments regarding stone and brick, see previous section.

INSTANCES

Typical brick chimney on Wards H, I and J



Typical brick chimney on Wards H, I and J

Typical stone chimney on wards F and G

Historic photo showing chimneys on Administration Building

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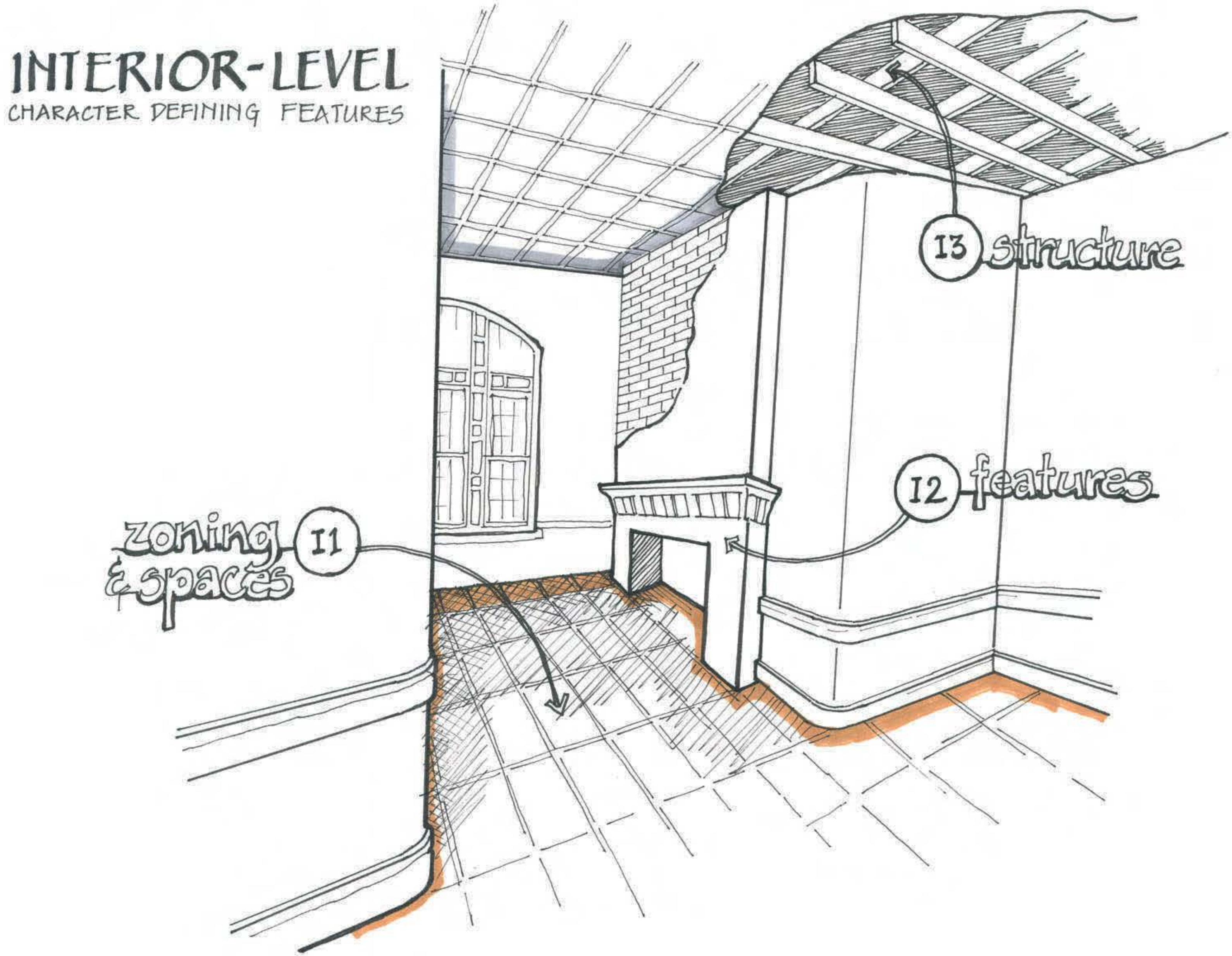
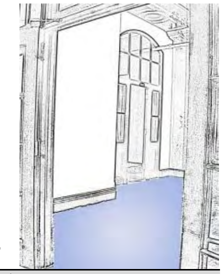
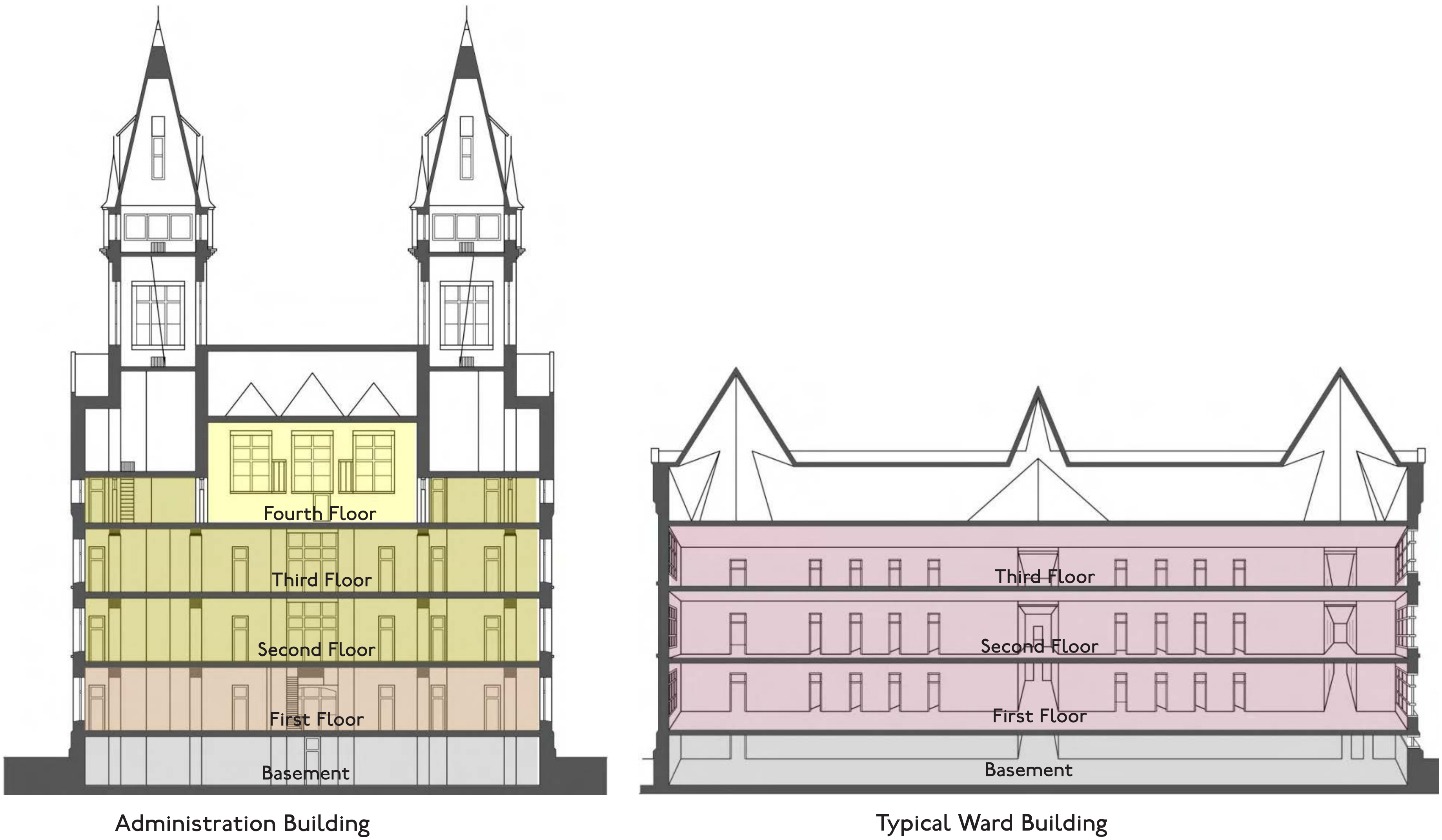

INTERIOR-LEVEL
CHARACTER DEFINING FEATURES
I3 structure
I2 features
zoning & spaces I1



CHARACTER DEFINING FEATURES:
BUILDING LEVEL (INTERIOR)

I1. Interior Zoning & Spaces

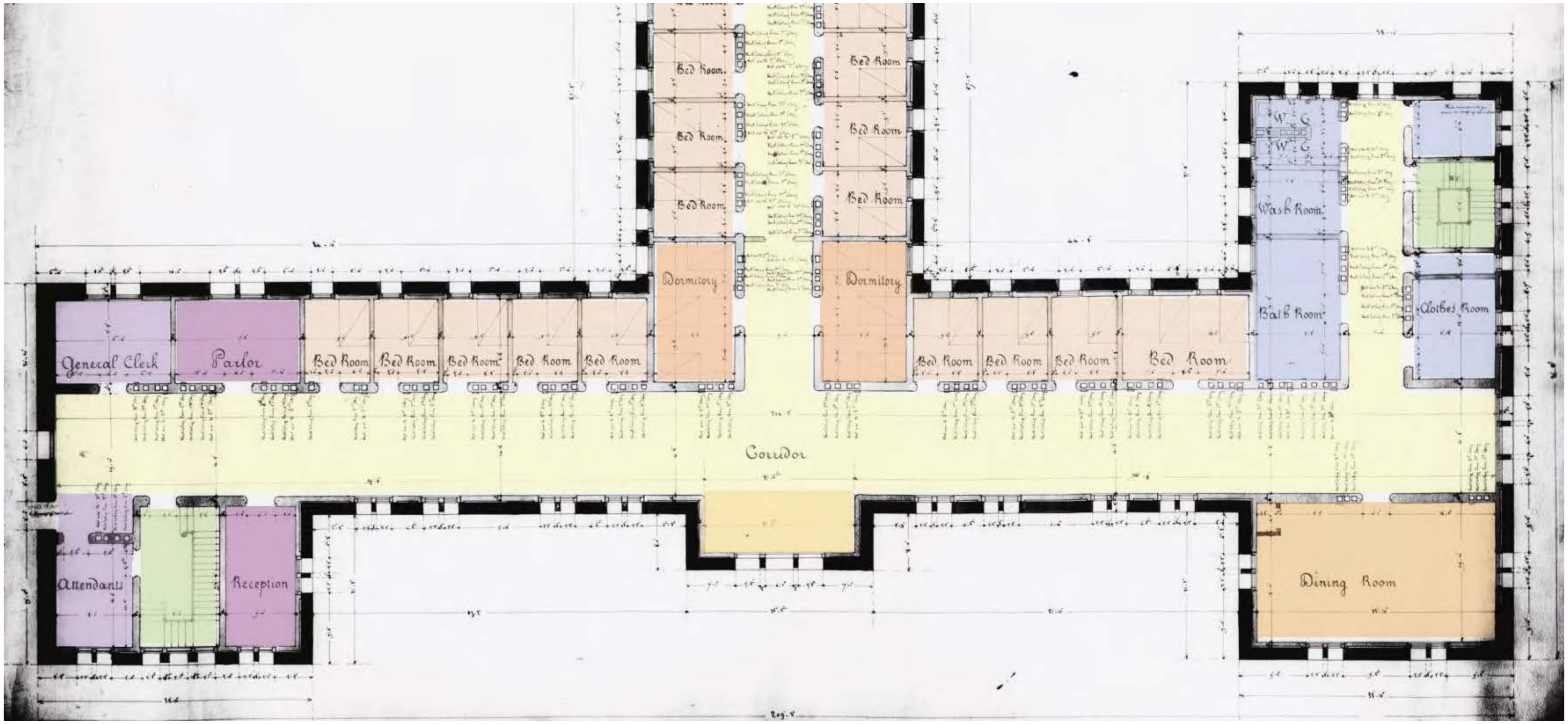
	Feature	Description	Significance	Condition	Integrity	Deficiency	Recommendation
I1a.	Vertical zoning (see foll. fig.)	Historic uses in Admin. Bldg. : 4th floor - semi-residential and chapel 2nd & 3rd floor – Staff residential 1st floor – Administrative/ public Basement- Mechanical services Historic uses in typical wards: 1st + upper floors – patient care Basement – Mechanical services	Potentially Contributing	--	--	--	As can be expected with a set of buildings that have been in use for more than a century, the functional zoning of various spaces changed tremendously over time. Discussed here are those uses that were originally housed in the spaces, or were replaced within a few years of use. The aim is to give an idea of design intent & how that helped define historic character. In the proposed Rehabilitation option, it is not recommended that any of these uses be reinstated in their entirety in the future, yet their conscious acknowledgement should guide design teams in finding appropriate new uses.
I1b.	Vertical circulation	**The Admin Bldg**. was served by a central staircase, two elliptical rear staircases, and a staircase in the west portion to access the 4th floor chapel. Circulation between different floors was historically found to be ill-designed & in-adequate for both original and subsequent functions (e.g. the chapel access was repeatedly cited in 19th century Annual Reports as inconvenient.). **The wards** were typically served by two staircases at the ends of the T-shaped plan.	Contributing	--	--	--	Retain as much of the historic vertical circulation pattern as feasible in Rehabilitation program with regards to loction of staircases and preserving their character defining details – for e.g. the fascia, balustrades etc in the central staircase of Admin Bldg. (See I2g. Staircase details).
I1c.	Vertical proportions	All habitable stories have **high** interior **ceiling heights**- lend monumentality, accentuate light and ventilation	Contributing	--	--	--	



Historical Vertical Zoning Diagram

Image Courtesy GCA
For Colors Key see Table item IIa on adjacent page

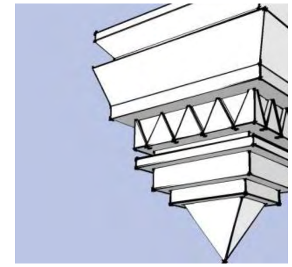
<table>
<tr><th></th><th>Feature</th><th>Description</th><th>Significance</th><th>Condition</th><th>Integrity</th><th>Deficiency</th><th>Recommendation</th></tr>
<tr><td>I1d.</td><td>Horizontal Zoning (see foll. fig.)</td><td></td><td>Potentially Contributing</td><td>--</td><td>--</td><td>--</td><td>Same recommendation as for Vertical Zoning above.</td></tr>
<tr><td></td><td></td><td>Day-rooms / Corridors</td><td colspan="5">Served as most important public space, promenade or recreation room on ward, with ample south sun and ventilation; high ceilings and generous width allowed perception as ‘hallway’ rather than corridors</td></tr>
<tr><td></td><td></td><td>Single rooms</td><td colspan="5">Originally designed such that it was not so large that 2 patients could be placed in one room and not so small as to be cramped; each room had a window</td></tr>
<tr><td></td><td></td><td>Dormitories</td><td colspan="5">Originally, at least two dormitories on each floor- typically for 3-5 patients each- strategically located at internal corners of ‘T’ profile to avoid putting a window-less single room</td></tr>
<tr><td></td><td></td><td>Dining rooms</td><td colspan="5">Located along south wall – fancier than other ward spaces - usually decorated with plaster ceiling medallions</td></tr>
<tr><td></td><td></td><td>Public recess/bay</td><td colspan="5">The central part of the ‘day-room’ on each floor enlarged to create a bay with a fireplace serving as a public recess space</td></tr>
<tr><td></td><td></td><td>Public parlors</td><td colspan="5">Each ward floor had a parlor, at times doubling as Music Room, later also used as salons (and for giving therapeutic facial massages)</td></tr>
<tr><td></td><td></td><td>Staff rooms</td><td colspan="5">Attendants room on each ward floor – strategically sited adjacent to staircase for security reasons</td></tr>
<tr><td></td><td></td><td>Toilets</td><td colspan="5">Historically, grouped in one core located in the side arm, later additional toilets created in the central arm on the wards; those in administration building retain historic wooden stall partitions</td></tr>
<tr><td></td><td></td><td>Utility spaces</td><td colspan="5">Dumbwaiters connected basements to dining rooms for transport of food; broom closets, clothes washing and drying rooms on each ward floor</td></tr>
<tr><td></td><td></td><td rowspan="2">Stair wells</td><td colspan="5">Central staircase in Administration building, ornamental wood balusters, railing and fascia – position of staircase altered from original</td></tr>
<tr><td></td><td></td><td colspan="5">Two staircases in each 3-story ward buildings, one in each 2 and 1-story building- importance of fireproofing – use of iron doors, brick arches, stone treads and metal risers</td></tr>
<tr><td></td><td></td><td>Assembly hall/ chapel</td><td colspan="5">Largest space in the ‘main building’ block- historically used as chapel, later as assembly hall, and occupational therapy ward</td></tr>
</table>



Historical Horizontal Zoning Diagram - Typical Ward Floor

Image Courtesy H.H. Richardson Drawing Archives, Houghton Library, Harvard University,; augmented by GCA
For Colors Key see Table item IId on adjacent page

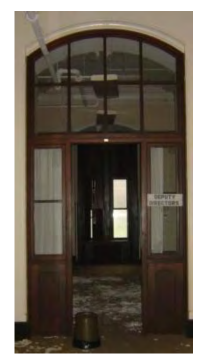
CHARACTER DEFINING FEATURES:
BUILDING LEVEL (INTERIOR)



I2. Interior Details

	Feature	Description	Significance	Condition	Integrity	Deficiency	Recommendation
I2a.	Doors	1. Shutters- Usually solid with inclusion of small window grill in wards for disturbed patients 2. **chamfered-edge** panel detail; 3. originally **unpainted varnished wood finish**, painted in modern renovations 4. **Dutch-doors** similar in design to other doors, strategically located in vending areas such as at the entrance to clothes room, medicine room, etc. 5. Glass/ wood **transoms** included in most interior doorways- important for increased light (& ventilation) in patient rooms.	Contributing	Varies	Fair	Overall, door shutter and frames are in fair condition in most buildings. Common problems include missing parts and/or missing hardware, paint build-up and historically inappropriate color palette for paint coating.	1. Repair of historic doors is always preferable to replacement. 2. When replacement is necessary (more than 50% of component parts need replacement), match new door with all characteristics - color, finish, configuration, glass-to-frame ratio, frame depth, width, and details of historic door. 3. Do not cover door or transom opening with incompatible vents, fans or air-conditioning units. 4. Special door types like dutch doors, etc. help define historic character of the space - although they may be removed at certain locations depending upon rehabilitation program, yet, some representative examples should be preserved in place.

Instances

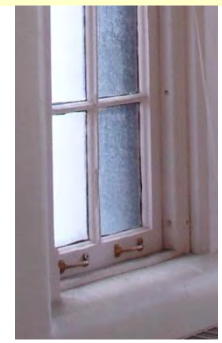
					
Typical 6-panel door with viewing window	*Typical chamfer detail in panel doors*	*Typical stall door in wet areas*	*Dutch door*	*Stall door in Admin Bldg,. Note original un-painted finish*	*Glass-panel door in Admin bldg.*

	Feature	Description	Significance	Condition	Integrity	Deficiency	Recommendation
I2b.	Door/window hardware	Historic **engraved brass/wrought iron hinges**, and door/ window **locksets** remain at some places	Potentially Contributing	Fair	Fair	While door hinges may date from the original period of construction, elements like locksets, handles etc seem to have been replaced over the years. Overall, door/window hardware is either worn out or missing in a number of places.	1. Preserve decorative examples of door hardware 2. Replacement-in-kind is the best maintenance solution for most instances. New hardware should match the historic in characteristics such as material, color, finish, configuration, etc.

INSTANCES

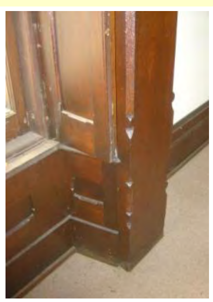




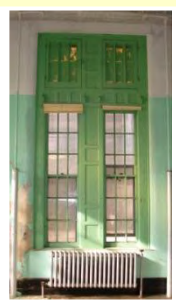



	Feature	Description	Significance	Condition	Integrity	Deficiency	Recommendation
I2c.	Casework	Wide wood casing around doors/ windows - chamfered-edge detail; originally **unpainted varnished wood finish**, painted in modern renovations.	Contributing	Fair	Good	In areas of water infiltration, the casing may be rotted, though it is overall in good to fair condition.	The casing is important in defining historic character in the buildings and should be restored or replaced-in-kind as appropriate.

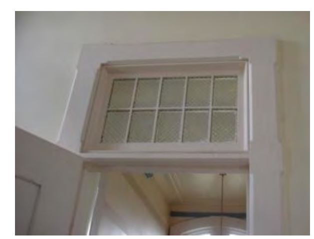
INSTANCES


Un-painted wood casings in Admin Bldg.




Typical painted wood casing in Male & Female wards



Renovated wood casing in Male Ward A

	Feature	Description	Significance	Condition	Integrity	Deficiency	Recommendation
I2d.	Moldings	Rounded edge, wood/rubber base and chair rail moldings; plaster moldings at ceiling – these help to unify the interior spaces, and break down the scale.	Potentially Contributing	Fair	Good	In areas of water damage, and at some other locations too, the moldings are either missing or damaged.	Restoration or replacement-in-kind is recommended, though latitude may be exercised in certain areas where the rehabilitation program mandates otherwise. Some representative examples should be preserved in place in any approach.

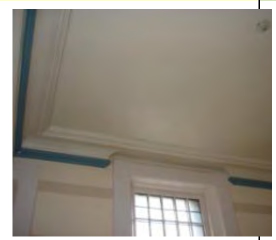
INSTANCES


View of internal corridor showing base & chair rail moldings


Renovated base-molding in Male Ward A


Typical historic base-molding in Male & Female wards


Historic wooden base-molding in Admin Bldg.


Renovated plaster ceiling moldings in Male Ward A


Damaged base-molding in Male Ward B

	Feature	Description	Significance	Condition	Integrity	Deficiency	Recommendation
I2e.	Fireplaces	Historic **stone and exposed brick fireplaces** with minimal naturalistic ornament were built in public recess on each floor of Female wards; stone fireplaces in Admin Building – important feature in historic intent of providing a 'home-like' feel to the interiors.	Contributing	Fair	Good	Common problems are minor physical damage (spalling, soiling), graffiti in certain areas and paint schemes that are inappropriate with historic character.	Restore all fireplaces to match historic appearance in size, proportion, material, finish and color. Remove non-historic paint and graffiti using gentlest methods possible. Avoid sandblasting to minimize damage to existing material.

INSTANCES


Fireplace in Female Ward F


Detail of fireplace frieze – Female Ward G


Fireplace in Admin Bldg



Exposed brick fireplaces in Female Wards G & H resp.- note grafitti

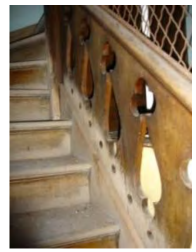

Fireplace in Feamle Ward F- painted over

	Feature	Description	Significance	Condition	Integrity	Deficiency	Recommendation
I2f.	Staircase details	Central staircase in Administration building - **ornamental wood balusters, railing and fascia,** two rear side stairs – wooden steps and ornamental side board. Ward stairs feature metal steps with latticed risers.	Admin Bldg—Contributing Ward Bldgs—Potentially Contributing	Fair	Good	Although the staircase was removed from its original location, the details themselves are in fair condition, with some deterioration , rot and wear & tear, especially in the rear side stairs of Admin bldg.	Staircase details in Admin. Bldg. should be preserved/ restored depending on condition. Replace-ment in kind is recommended for parts that are less than 50% intact. Ward stair details (treads/risers/railings etc) may be partially replaced if the rehabilitation so demands. However, representative examples must be preserved in place at certain locations.

INSTANCES

Central staircase at first floor level in Admin Bldtg.

View of central staircase in Admin Bldg



Rear side stair in Admin bldg

Typical staircase in Male & Female ward buildings

	Feature	Description	Significance	Condition	Integrity	Deficiency	Recommendation
I2g.	Medallions	Circular ornamental **plaster medallions** in dining room ceilings of male wards, also located in some other important public places in Admin Bldg.	Potentially Contributing	Fair	Fair	Physical damage due to water infiltration.	Restore or reconstruct to match extant historic examples in material, composition, color, design and profile. Do not conceal as a result of new interior additions, finishes etc.

INSTANCES

Renovated ceiling medallion in Male Ward A

Damaged ceiling medallion in Male Ward B

	Feature	Description	Significance	Condition	Integrity	Deficiency	Recommendation
I2h.	Brackets	Plaster coated **brick brackets** with **saw-tooth motif** (typically Richardsonian pattern) located at ceiling level at corridor intersections in Admin Bldg. and Male Wards	Contributing	Good	Good	Plaster and finishes are damaged at areas of water infiltration	Restore appearance to match historic examples in material, composition, color, design and profile. Reconstruct profile if needed. Do not conceal as a result of new interior additions, finishes etc.

INSTANCES

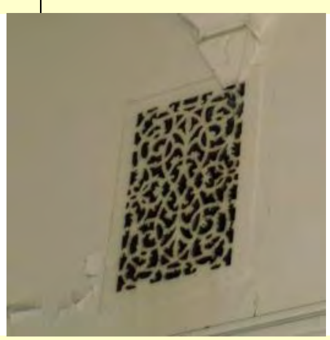
Brackets in Male Ward B

Detail of bracket showing saw-tooth motif

Renovated brackets in Male Ward A

	Feature	Description	Significance	Condition	Integrity	Deficiency	Recommendation
I2i.	Ventilation grilles	**Metal grilles** featuring various patterns installed on corridor walls, slightly above floor level and/or above lintel level, to conceal passive ventilation channels- also play an aesthetic role.	Potentially Contributing	Fair	Good	Common problems include whole missing units and broken parts.	It is recommended that these grilles be retained where intact and re-installed where missing or broken. They may be removed at instances, depending upon the rehabilitation program but representative examples should be retained in any approach.

INSTANCES



Typical grill above lintel level

Installed and detached/broken metal grills in Admin Bldg.

	Feature	Description	Significance	Condition	Integrity	Deficiency	Recommendation
I2j.	Cabinets	Wooden cabinets and bureaus with **saw-tooth motif** (typically Richardsonian pattern) were originally used throughout the asylum	Potentially contributing	Poor	Fair	Very few surviving examples remain of the original wooden cabinets supposedly used in all wards – problems include rot, detached parts, etc.	The extant examples should be retained and may be restored, although they may be relocated to other locations, and used for display or otherwise depending upon rehabilitation program.

INSTANCES

Sawtooth motif detail of cabinet

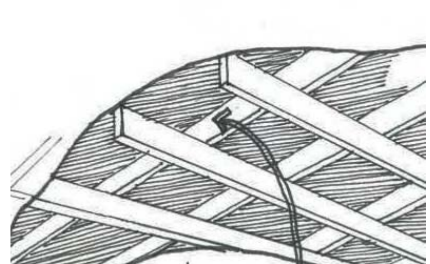
	Feature	Description	Significance	Condition	Integrity	Deficiency	Recommendation
I2k.	Treatment equipment	Very little of the historic equipment used for treatment of illness survives- a couple of treatment machinery (probably 15-40 years old)was found in Female Ward J	Potentially contributing	Fair	Fair	--	This equipment may be preserved for use as interpretive media, depending on the rehabilitation program for the complex.

INSTANCES

Treatment equipment lying in Female ward J

CHARACTER DEFINING FEATURES:
BUILDING LEVEL (INTERIOR)

I3. Structure



	Feature	Description	Significance	Condition	Integrity	Deficiency	Recommendation
I3a	Timber Trusses	Two main types: Wards A & B- field constructed scissor trusses; 2 x 12 framing Wards F to J – timber trusses supporting 6 x 8 wood purlins with 2 x 6 rafters	Contributing	Varies	Good	In areas of water infiltration, there is some wood deterioration.	Repair in kind. If attic is used as habitable space, make attempts to keep the trusses exposed as they are – do not cover with false ceiling panels, etc.

INSTANCES

Timber Truss typical in Male Wards A & B

Timber Truss typical in Female Wards F to J

	Feature	Description	Significance	Condition	Integrity	Deficiency	Recommendation
I3b.	Counter-ceiled floor/ceiling structure	The floor structure of the wards was designed to be "counter-ceiled", consisting of two overlapping layers of wooden joists, the upper supporting the floor above, the lower upholding the ceiling below, with insulation in between for purposes of 'deafening' – this system was defined in the Kirkbride Plan.	Contributing	Good to Fair	Good	In areas of water infiltration, there is some wood deterioration.	Repair in kind wherever possible. When extent of damage necessitates reconstruction, base reconstruction of original system on extant examples in adjacent areas.

INSTANCES

Exposed ceiling / floor system in an exposed area of damage

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APPENDIX B : GLOSSARY

American Institute of Architects U.S. professional association whose principal members are registered architects; involved in various preservation activities and is a signatory to the Historic American Building Survey; headquartered in Washington, D.C.

Ashlar A wall constructed of quarried stone building blocks that have been squared and finished with a smooth surface; a single stone is referred to as a block of ashlar.

Bay A regularly repeated spatial unit of a building or wall as defined by columns, piers or other vertical elements; also a structural projection, most often with windows, expressed on the elevation of a building.

Bead A small, linear molding with a round cross section that ranges from quarter round to three-quarter round; may be continuous or a series of beadlike bumps.

Beadboard A tongue-and-groove board decorated with bead patterns at one edge and the middle; often used in the 19c for wainscoting and porch ceilings.

Bearing wall A wall with relatively small openings that transfers loads from above down to the foundation along its entire length.

Belt A horizontal band course on a brick or stone wall; it may be of a different kind of brick or stone.

Belt course A projecting, horizontal molding separating parts of a wall surface, especially in masonry construction.

Blind A part of a building that has no windows.

Bond The connection between masonry units or the unit and the mortar bed.

Bracket A projection from a vertical surface providing support under cornices, balconies, window frames, etc.

Capstone The top stone of a pier or corbelled vault.

Casework High-quality shelving and display cases, often used to mean cabinetwork.

Character-defining feature Essential to the perception or understanding of the building; contributes to the special quality of a building or a site, without which the uniqueness is lost.

Common bond A brick masonry bonding pattern where every seventh course consists of headers, with all other courses consisting of stretchers.

Console A think, ornamental bracket with parallel, plane sides, especially when in the form of reverse scrolls; typically carved with elaborate decoration and sculpture. Also, a projecting carved ornament on the keystone of an arch that supports a decorative cornice, bust, figure, or vase.

Contributing feature Adds to the historic association or historic architectural qualities for which an historic district is significant because the resource was present during the period of significance, relates to the documented significant contexts, and possesses integrity.

Coping A water-resistant covering of the top of a wall; typically overhangs the sides of the wall to provide a drip for rain; common materials include stone, terra-cotta, and metal.

Cornice The exterior moldings of a structure at the top of a wall, such as at the meeting of the roof and wall.

Counter-ceiled Having a second ceiling installed above a main ceiling for sound and/or fire insulation.

Course In masonry, a layer of bricks or stones running horizontally in a wall.

Cramp Iron or steel U shaped strap to hold two adjacent stones firmly together across a joint, as on the top face of coping or gable stones.

Cresting Decoration in the form of a series of ornate, pointed shapes located at the top of a parapet or roof ridge.

Cupola A small structure projecting above a roof that provides ventilation or is used as a lookout.

Deterioration The loss of the original condition of a building or structure over time due to natural elements or human activity.

Dormer A small structure containing a vertical window (or windows) that projects from a sloping roof.

Double-hung window A window with two sashes that slide past each other vertically; it can be opened by sliding the bottom portion up or the top portion down, and either both sashes are hung with cord, pulley and counterweight on each side, or the bottom sash has cords and counterweights on each side; typically the lower sash is inside the upper sash.

Eastlakian Style An architectural style characterized by rich, geometric ornamentation and heavy brackets, especially scrollwork in the form of stylized plants; named after Charles Lock Eastlake, a 19c English furniture designer and architect.

Eave The projection of a roof beyond the wall below.

Ecole des Beaux-Arts The "School of Fine Arts" founded in 1648 in Paris to teach painting and sculpture; courses in architecture (begun in 1819) emphasize study of classical Greek and Roman buildings, axial symmetry, and composition; students are grouped in ateliers supervised by a master.

Efflorescence Water-soluble salts leached out of masonry or concrete by capillary action and deposited on a surface by evaporation; typically white; usually crystalline sulfates of sodium, potassium, magnesium, calcium, and iron.

Elevation A drawing of a face of a building, with all of the features shown as if in a single vertical plane.

EPDM Abbreviation for 'ethylene propylene diene monomer', used for membranes for roofing and waterproofing.

Façade The entire exterior elevation of a building, particularly the front.

Finial A pointed ornament, always symmetrical, typically used at the peak of a roof.

Flashing Flexible material formed to prevent water from entering a building or structure at joints or intersections, such as where a roof intersects a wall or chimney.

Frieze The flat, middle portion of an entablature; or any long, narrow horizontal band on a building.

Gable The vertical triangular portion of the end of a building having a double-sloping roof, usually with the base of the triangle sitting at the level of the eaves, and the apex at the ridge of the roof. The term sometimes refers to the entire end wall.

Gothic Style Known by the Romantic movement's proponents of Christian medieval architecture as the "only proper style"; common style for churches, colleges, and rural houses; typical elements include symmetrical facades, gable dormers, steeply pitched roofs with cross gables, scrollwork bargeboards, and hood molds over square-headed or pointed-arched windows.

Header A brick oriented with the smaller end exposed on the face of the wall and the smallest dimension vertical; typically used to bond two wythes of the wall together.

High Victorian Gothic Style A late 19c form of the Gothic Revival style, which freely mixed French and Italian Gothic styles with the various English Gothic styles; influenced by the writings of the English medievalist John Ruskin (1819-1900), who advocated emulating Venetian Gothic buildings in the Stones of Venice (1851-53); characterized by complex, polychrome masonry exteriors, often with bays, towers, and turrets; typically with contrasting colors and/or textures of brick or stone, especially as horizontal bands and arch voussoirs in alternating colors; used most commonly for churches and public buildings.

Hipped roof A roof that slopes inward from all exterior walls; forms a pyramid roof above a square plan; has a ridge shorter than the length of the building above a rectangular plan.

Honed The very smooth surface texture of soft stone blocks, produced by rubbing.

Joist One of a series of closely spaced, parallel beams that support a floor or ceiling.

Lath A base material with small openings (such as wood strips) to support plaster.

Lintel A structural beam spanning over an opening in a wall, such as a door or window, that carries the weight of the structure above.

Loggia An open-sided, roofed space contained within the interior or exterior of a building.

Medallion A bas-relief decorative panel set on a surface, especially when round or oval, and on an entablature.

Modillion One of a series of scroll-shaped ornamental brackets placed horizontally below a cornice.

Molding Linear decorative trim in various geometric profiles generally used in cornices and around window and door openings. It provides a contoured transition from one surface to another.

Mullion A vertical element between two window or door frames; typically not a structural support for the building.

Muntin The small molding or bar that separates the individual panes of a multipaned window sash.

Non-contributing feature Does not add to the historic associations or historic architectural qualities for which an historic district is significant because the resource was not present during the period of significance, does not relate to the documented significant contexts, and does not possess integrity.

Parapet A wall that extends above the roofline.

Pier A square or rectangular masonry or wood post projecting less than a story above the ground that carries the weight of a structure down to the foundation.

Plenum The space between the finished ceiling and the floor structure above.

Port cochere A covered area over a driveway at a building entrance; also known as a carriage porch. Also a doorway through which vehicles pass and that leads to a covered area for discharging passengers.

Purlin A horizontal beam in a roof structure that supports the common rafters or subperlins; typically spans between principal rafters or parallel roof trusses.

Quatrefoil-in-circle An architectural motif composed of four intersecting circles in a radial pattern.

Queen Anne Style An architectural style prevalent in late 19c Britain and North America that featured a romantic reinterpretation of the earlier Queen Anne style (prevalent in early 18c England during the reign of Queen Anne); interiors have large doorways connecting public spaces and often feature a living hall; typical elements include robust, busy, asymmetrical exteriors, often with contrasting materials and/or textures between levels; gabled, hipped or mansard roofs, dormers, scrollwork brackets, and trim, porches, bay and oriel windows, turrets, and exuberant carving.

Rafters The sloping wooden roof-frame members that extend from the ridge to the eaves and establish the pitch of the roof.

Rafter tail The portion of a rafter that projects beyond the exterior wall to support the eaves.

Rake The slope or pitch especially of a cornice or roof.

Replace-in-kind Substitute similar or same materials and workmanship.

Repointing (Pointing) Repairing existing masonry joints by removing defective mortar and installing new mortar.

Rhythm The spacing of repetitive façade elements, such as projecting bays, windows, doors, belt courses and the like.

Richardsonian Romanesque Style Masonry buildings in the architectural style of Henry Hobson Richardson (1838-86) that are largely based on the Romanesque style of southeast France; typical elements include asymmetrical massing, round towers with conical roofs, massive walls with deep arched openings, hipped roofs with eyebrow dormers, pitch face rusticated stonework, and large double hung windows with a single pane in each sash.

Rock-faced The rough finish on the exposed surface of stone, such as in masonry built stonework.

Romanesque Style An architectural style based on the early medieval church buildings of various parts of Europe,distinguished by massive walls, steeply pitched slate roofs and round arches. The overall textures were similar to the Gothic style.

Salient angle An angle formed by the outside of a fortified wall that forms a projecting point. Also known as projecting angle.

Sash The part of a window frame that holds the glazing, especially when movable; however, may be fixed or moveable. If moveable, it may slide, as in a double-hung window; or it may pivot, as in a casement window.

Sash chain A thin chain sash line that that attaches a hung window sash to a sash weight.

Sash cord A small-diameter rope sash line that attaches a hung window sash to a sash weight; usually braided cotton.

Saw-tooth Any serrated pattern with triangular notches similar to the teeth of a saw.

Scissor truss A roof truss composed of two interlocking triangles with a common apex at the ridge.

Scupper An opening that allows water to drain through a wall from a roof, terrace, or built-in gutter.

Sill The projecting horizontal base of a window or door.

Spalling Chips or flakes removed from the surface of masonry units or concrete after installation.

Spandrels The roughly triangular-shaped space between two adjoining arches below a line connecting their crowns.

Stack bond A masonry wall bond formed with the joints aligned both vertically and horizontally in a rectangular grid pattern.

Transom A window above a door.

Trumeau A pillar or pier between two adjacent openings.

Valley The line, or angle, formed where two downward sloping roof surfaces meet at the bottom; may be horizontal or inclined.

Veranda An open-sided, raised sitting area with thin columns that support its roof; typically extends along an entire side wall.

Voussoir One of the individual masonry units of an arch or vault, usually wedge-shaped with the abutting faces aligned with a radius of the center; typically uniform in size.

Watertable A projecting ledge, molding, or string course along the bottom side of a building, designed to throw off rainwater; it usually divides the foundation of a building from the first floor.

Wythe A single layer of wall thickness of masonry material; typically the depth of a brick stretcher; generally used to indicate the number of brick thicknesses of a solid wall.

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APPENDIX C: FLOOR CAPACITIES ASSESSMENT

22 May 2008

Ms. Lisa Howe
Goody Clancy Associates
420 Boylston Street
Boston, MA 02116

Project 070771.09 – Additional Structural Analysis, Richardson Olmsted Center Complex, Buffalo, NY

Dear Ms. Howe:

Per your request, we performed an analysis of floor capacities for the buildings at the above-named complex. Our analysis is based on our observations during our walkthrough surveys and our interior wall probes. This letter summarizes the results of our floor capacity analysis and provides a discussion of our findings.

1. SUMMARY FINDINGS

Rachel E. Shanley and Jeff D. Langlois of Simpson Gumpertz & Heger Inc. visited the above-named site on 1 through 4 of April 2008. We conducted a visual survey of the above-named complex, and made exploratory openings in representative buildings of the typical construction types (stone and brick masonry). Our observations at these openings are described in a separate letter. During the visit, we also obtained several wood samples from various buildings.

1.1 Wood sample results

We took eleven wood samples from various locations throughout the buildings. The following table summarizes the sample locations.

Sample #	Building	Member Type	Species
1	B	2 in.x11-1/2 in. third-floor joist	Eastern White Pine
2	A	2 in.x11-1/2 in. attic floor joist	Eastern White Pine
3	A	2-1/2 in. x 12 in. truss rafter	Eastern White Pine
4	A	7 in. x 12 in. transfer truss top chord	Eastern White Pine
5	A	7-1/2 in. x 8 in. transfer truss top chord	American Chestnut
6	H	2 in. x 6 in. rafter	Red Pine / Scotch Pine
7	H	4 in. x 8 in. truss bottom chord	Red Pine / Scotch Pine
8	H	6 in. x 8 in. roof purlin	Red Pine / Scotch Pine
9	H	6-1/4 in. x 8 in. top chord of roof truss	Red Pine / Scotch Pine
10	H	3 in. x 10 in. second-floor joist	Red Pine / Scotch Pine
11	H	3 in. x 10 in. second-floor joist	Red Pine / Scotch Pine

The following are the results of our analysis of the four wood samples that we took from floor framing members:

Sample #	Species	Grade	Allowable Bending Stress, F'b (psi)	Allowable Shear Stress, F'v (psi)	Modulus of Elasticity, E' (10^6 psi)
1	Eastern White Pine	No. 1	890	135	1.1
2	Eastern White Pine	No. 1	890	135	1.1
10	Red Pine	No. 1	890	135	1.2
11	Red Pine	No. 1	890	135	1.2

1.2 Analysis assumptions

Based on the results of our wood sample testing and our observations throughout the complex, we used the following assumptions when determining the calculated allowable live load for the floors:

- Allowable bending stress for floor joists is 890 psi.
- Floor members in Buildings AB, A, B, F and G are assumed to be 2 in. x 11.5 in. (2x12).
- Floor members in Buildings H, I, and J are assumed to be 2.75 in. x 9.75 in. (3x10).
- A dead load of 15 psf is applied uniformly to the floors.
- All floor members are assumed to have no deterioration. We have not cross-referenced the floor capacities with our observations of distress in the finishes as reported in our condition survey.
- Floor framing direction is assumed to match the framing direction found at other similarly configured locations within the same building. Typically, this relationship is based on the same location in plan at another floor.

1.3 Floor Capacity Results

The attached building floor plans show the calculated live load capacities for different floor areas in each building. The calculated live load capacities have been broken down into ranges that are based on typical code required live loads for new construction. The actual code-required live loads for the buildings will need to be determined based on the applicable code at the time of construction and the proposed uses. The following are the live load ranges that we have used in our presentation and the typical uses associated with them. Please note, as stated above, the calculated live load capacities shown in these plans do not reflect the possible reductions in strength to due deterioration.

- 100 psf or greater: lobbies, dining rooms and restaurants, ballrooms, dance halls, residential corridors
- 80 to 100 psf: office corridors

- 50 to 80 psf: office use
- 40 to 50 psf: residential use

2. DISSCUSSION AND CONCLUSIONS

In general, the calculated floor capacities are adequate for either residential or office use. As shown in the attached figures, there are locations throughout the complex that may require strengthening to achieve the live load capacities required by specific uses within those use types, specifically for corridors. Several areas in the buildings have calculated live load capacities less than 80 psf and would need to be reinforced if they were to be defined as corridors in a proposed renovation scheme, for either office or residential use.

As stated previously, the calculated live load capacities do not take into account possible deterioration of the existing framing, and have not been coordinated with the results of our condition survey. Since our condition survey is based on conditions of finishes, or brief visual inspections of exposed members where possible, it would be very difficult to quantify capacities based on those observations. The conditions of the existing framing must be studied in detail once a renovation design has been proposed in order to determine the specific strengthening requirements for that design.

We recommend that areas that do not have a calculated live load capacity of at least 40 psf be studied in further detail, as this lack of live load capacity appears to be anomalous within the complex and may be the result of inaccurate framing configuration assumptions for those areas.

Sincerely yours,

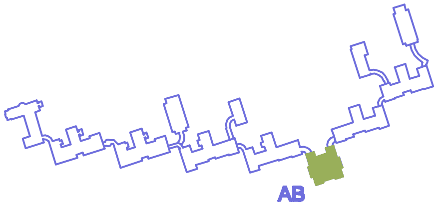
James C. Parker
Senior Principal
O:\DATEFILE\2008\Parker\JCP29-L.eac.doc

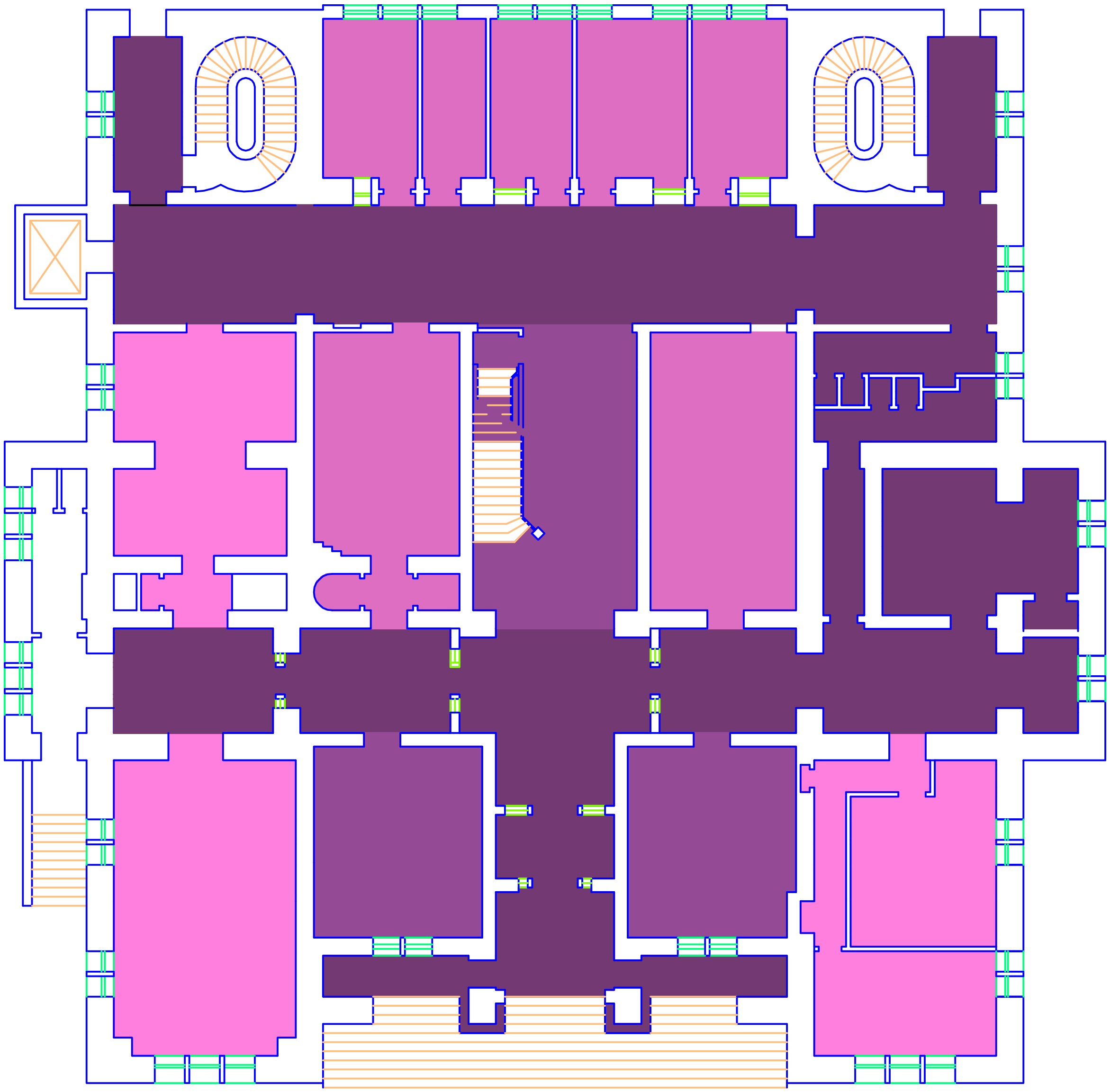
Erik W. Farrington
Senior Project Manager

Encls.

KEY-CALCULATED LIVE LOAD CAPACITY (PSF)

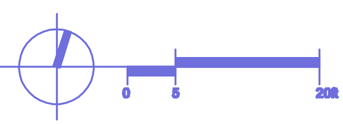
- LL >= 100
- 80 < LL < 100
- 50 < LL < 80
- 40 < LL < 50
- LL < 40





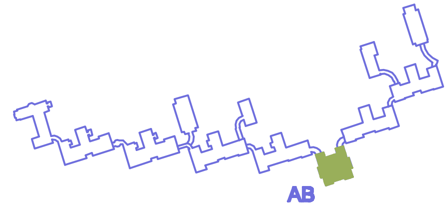
AB 1.1 **First Floor Plan** ADMINISTRATION BUILDING

the RICHARDSON CENTER COMPLEX

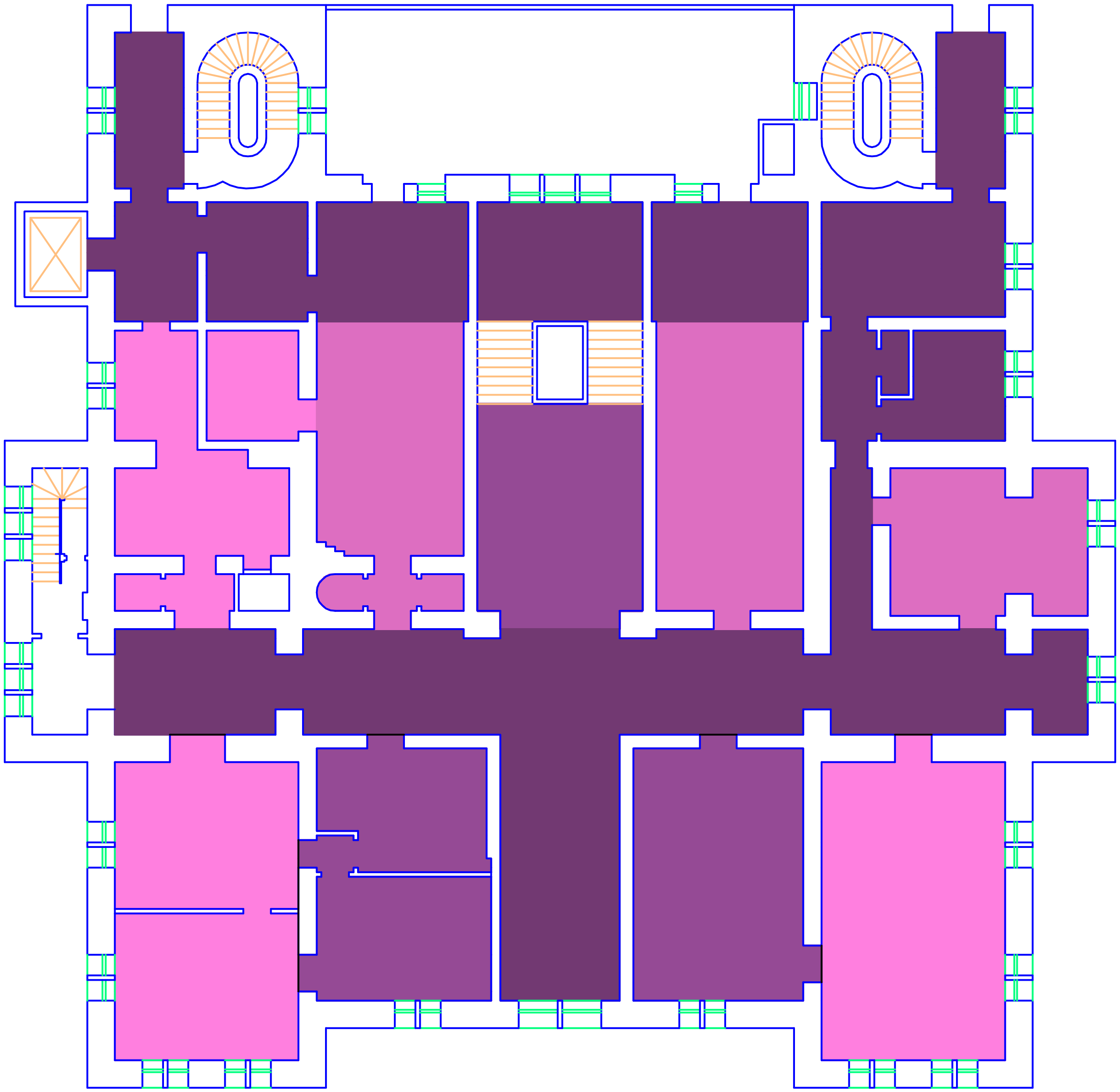


KEY-CALCULATED LIVE LOAD CAPACITY (PSF)

- LL >= 100
- 80 < LL < 100
- 50 < LL < 80
- 40 < LL < 50
- LL < 40



KEY PLAN



AB 1.2

Second Floor Plan

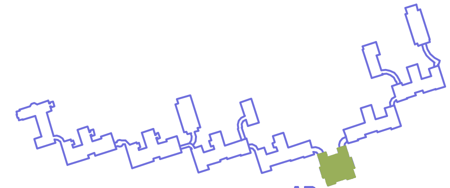
ADMINISTRATION BUILDING

the RICHARDSON CENTER COMPLEX

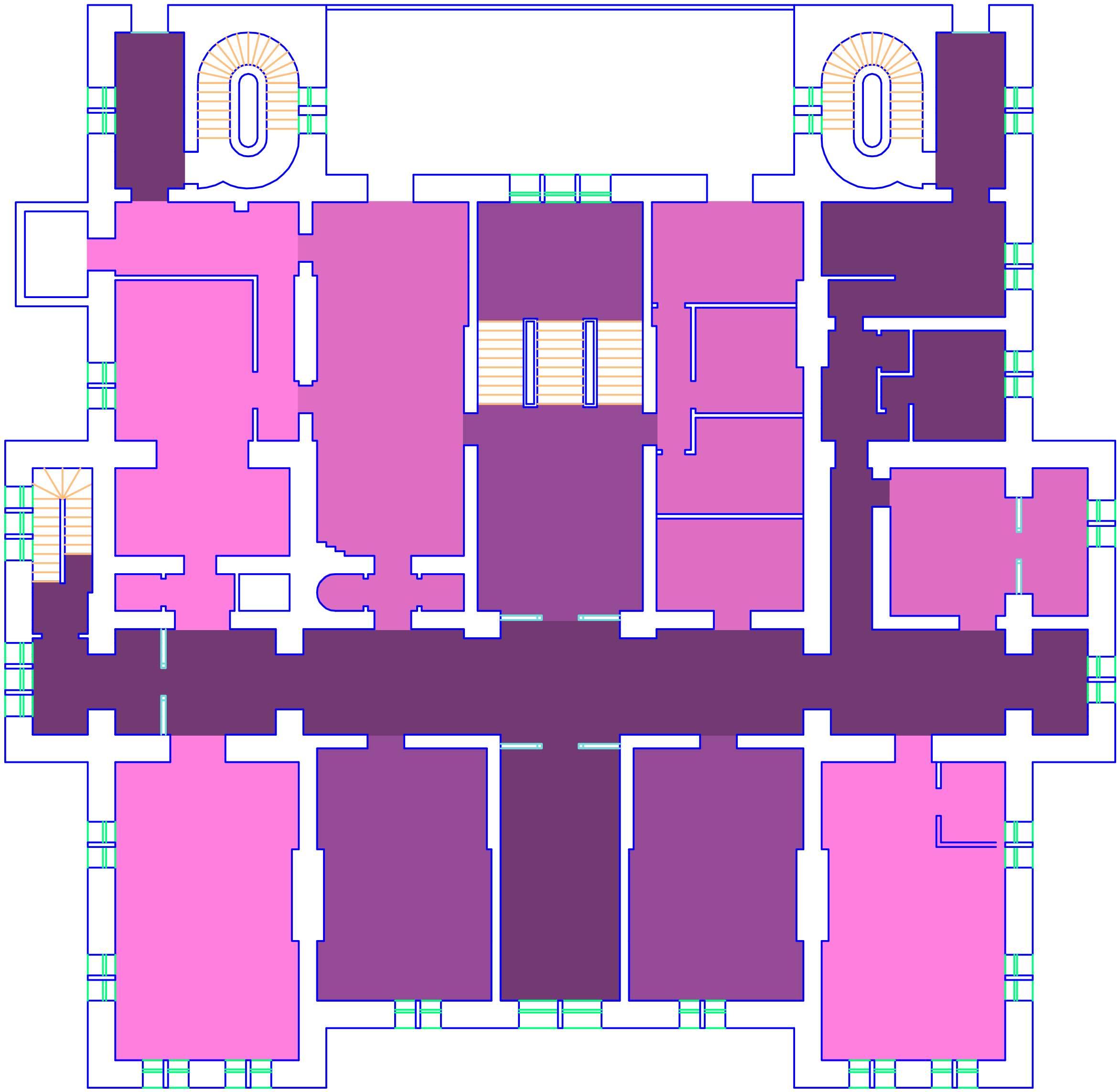
0 5 20ft

KEY-CALCULATED LIVE LOAD CAPACITY (PSF)

- LL >= 100
- 80 < LL < 100
- 50 < LL < 80
- 40 < LL < 50
- LL < 40



KEY PLAN

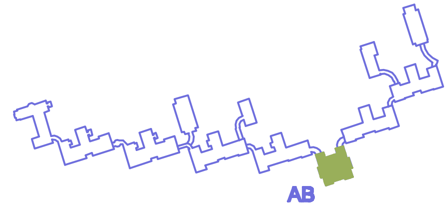


AB 1.3 **Third Floor Plan** ADMINISTRATION BUILDING

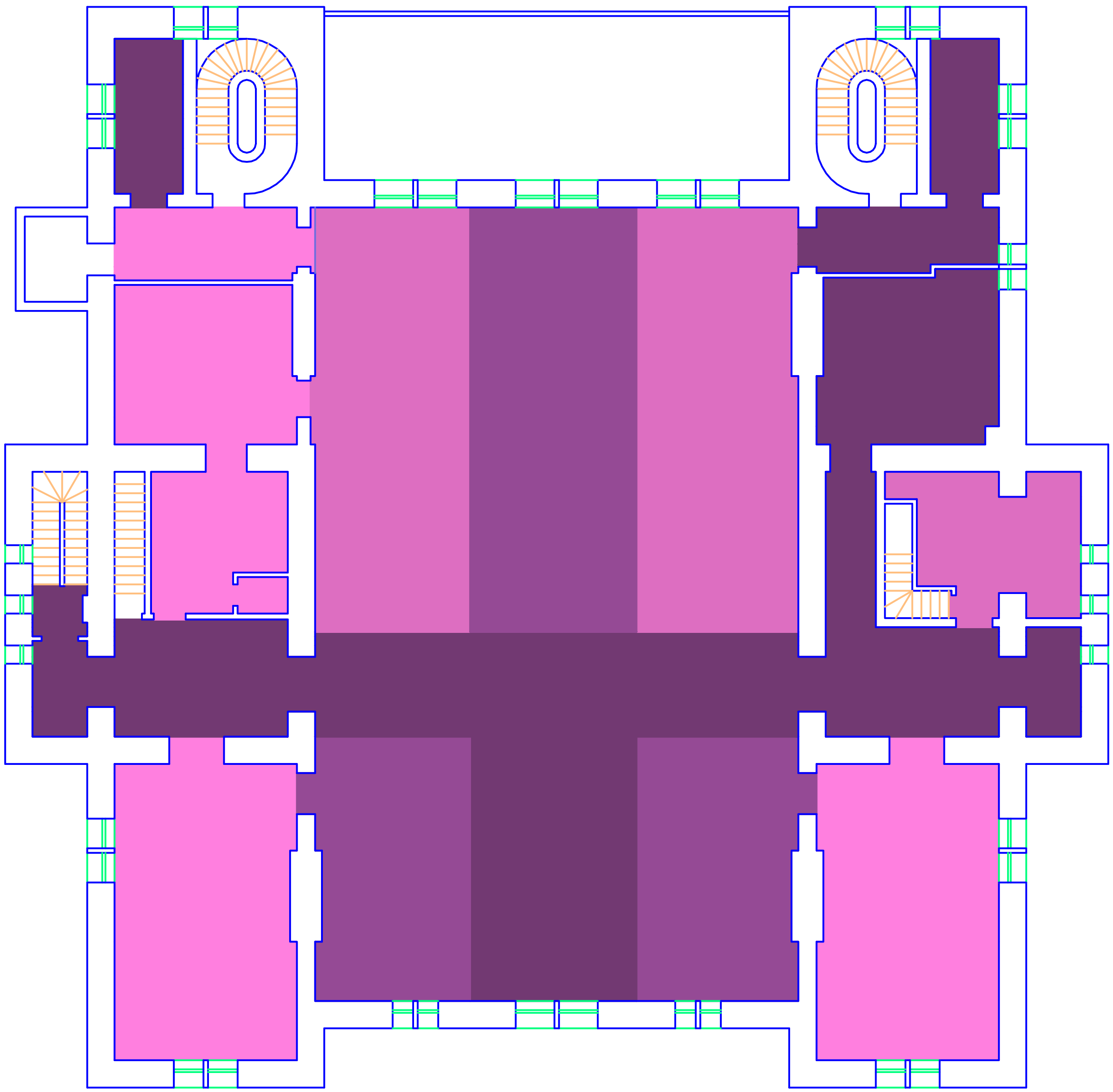
the RICHARDSON CENTER COMPLEX

KEY-CALCULATED LIVE LOAD CAPACITY (PSF)

- LL >= 100
- 80 < LL < 100
- 50 < LL < 80
- 40 < LL < 50
- LL < 40



KEY PLAN



AB 1.4

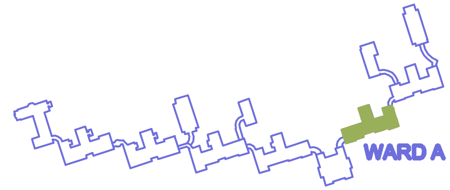
Fourth Floor Plan ADMINISTRATION BUILDING

the RICHARDSON CENTER COMPLEX

0 5 20ft

KEY-CALCULATED LIVE LOAD CAPACITY (PSF)

- LL >= 100
- 80 < LL < 100
- 50 < LL < 80
- 40 < LL < 50
- LL < 40



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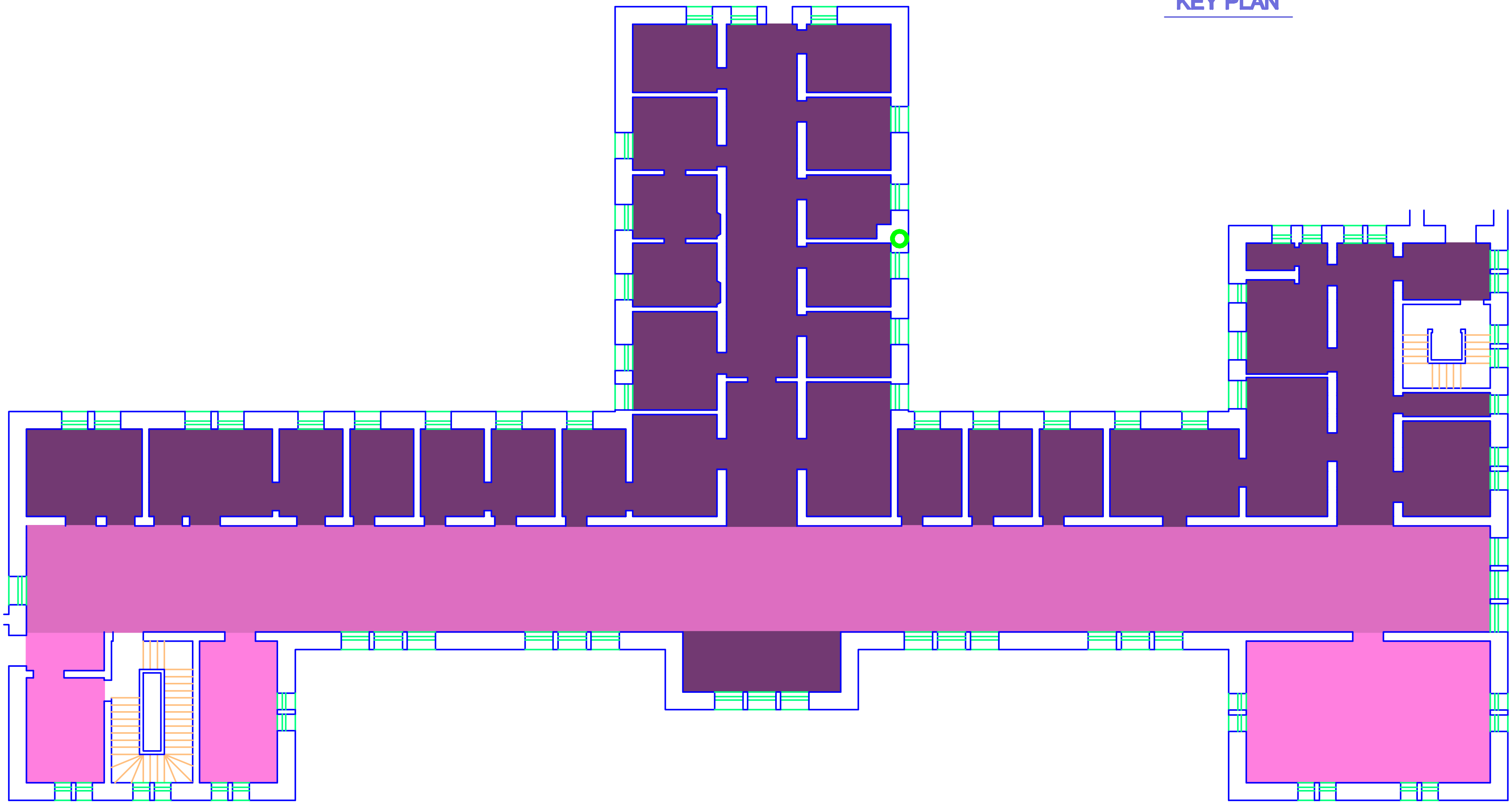


A
1.1

First Floor Plan

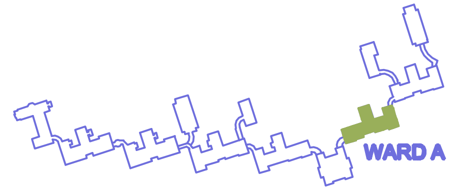
MALE WARD A

the RICHARDSON CENTER COMPLEX

0 5 20ft

KEY-CALCULATED LIVE LOAD CAPACITY (PSF)

- LL >= 100
- 80 < LL < 100
- 50 < LL < 80
- 40 < LL < 50
- LL < 40



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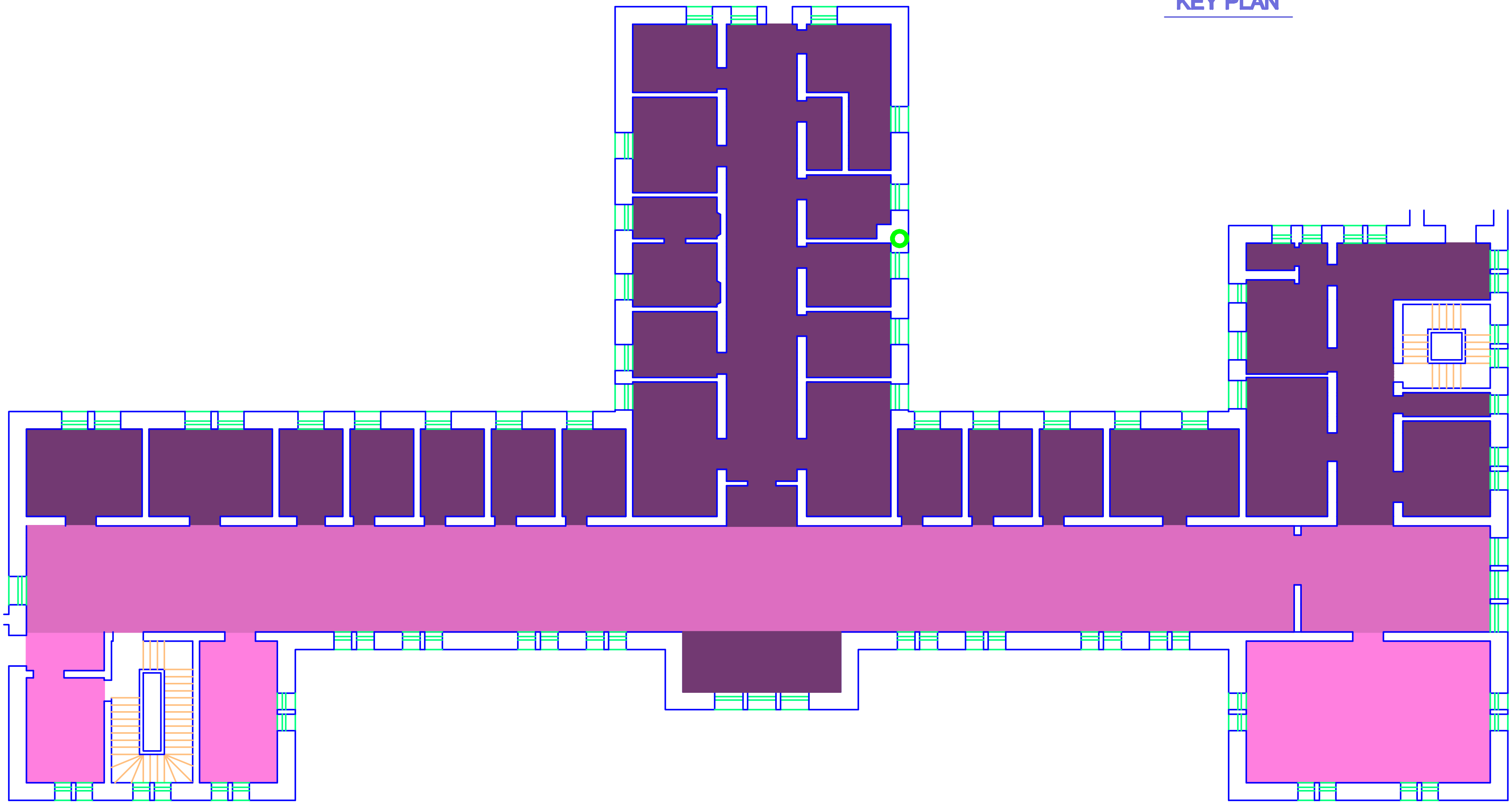
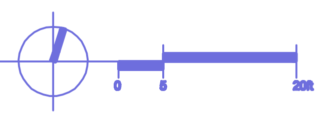




A
1.2

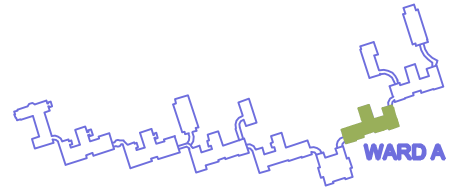
Second Floor Plan

MALE WARD A

the RICHARDSON CENTER COMPLEX

KEY-CALCULATED LIVE LOAD CAPACITY (PSF)

- LL >= 100
- 80 < LL < 100
- 50 < LL < 80
- 40 < LL < 50
- LL < 40



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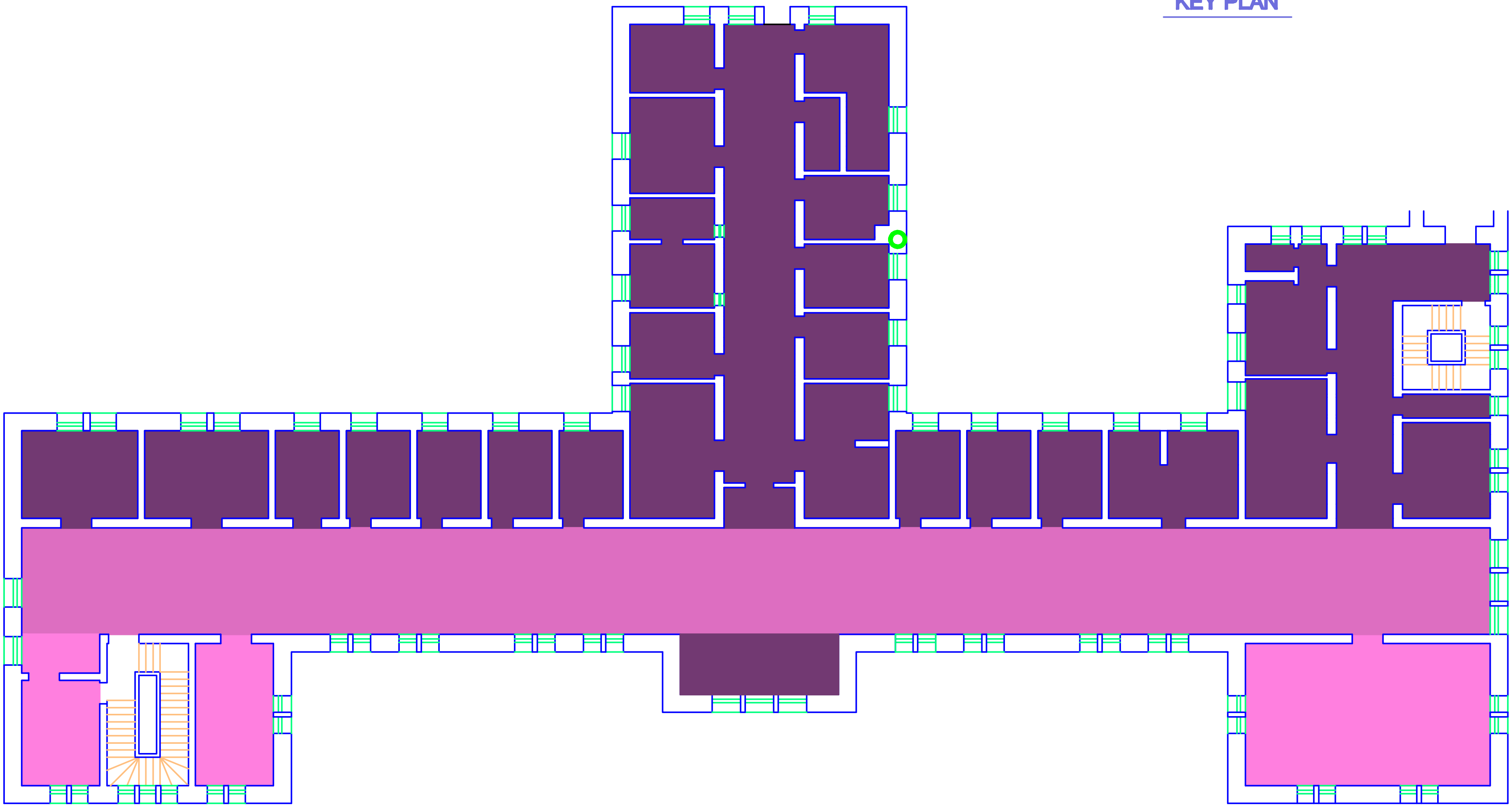


A
1.3

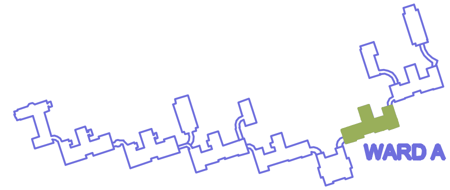
Third Floor Plan MALE WARD A

the RICHARDSON CENTER COMPLEX

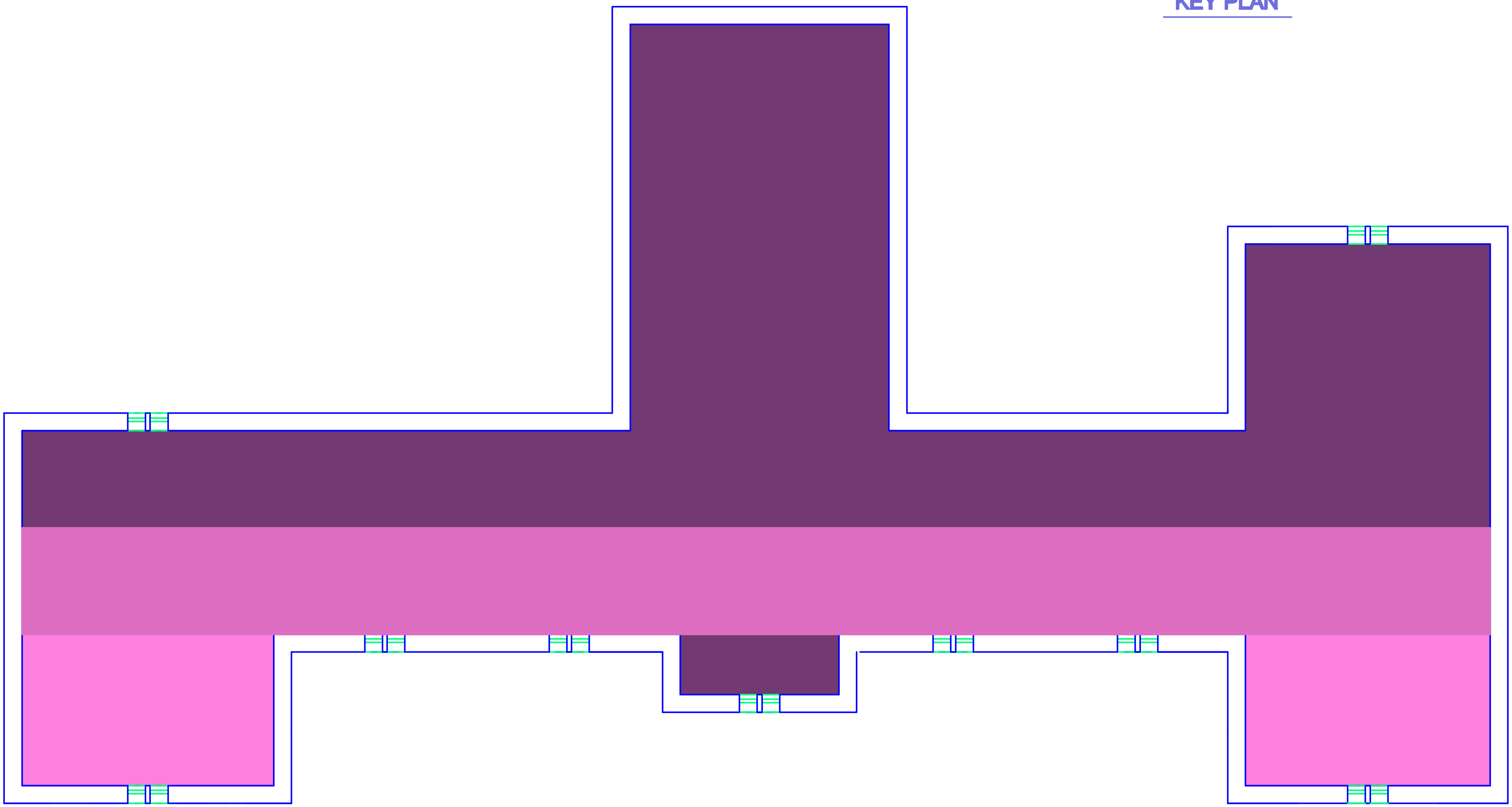
0 5 20ft

KEY-CALCULATED LIVE LOAD CAPACITY (PSF)

- LL >= 100
- 80 < LL < 100
- 50 < LL < 80
- 40 < LL < 50
- LL < 40



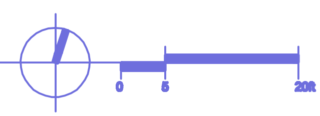
KEY PLAN



A
1.4

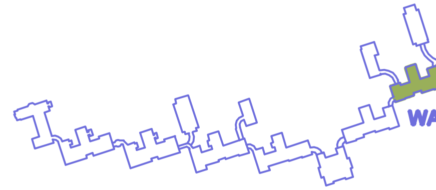
Attic Plan MALE WARD A

the RICHARDSON CENTER COMPLEX



KEY-CALCULATED LIVE LOAD CAPACITY (PSF)

- LL >= 100
- 80 < LL < 100
- 50 < LL < 80
- 40 < LL < 50
- LL < 40



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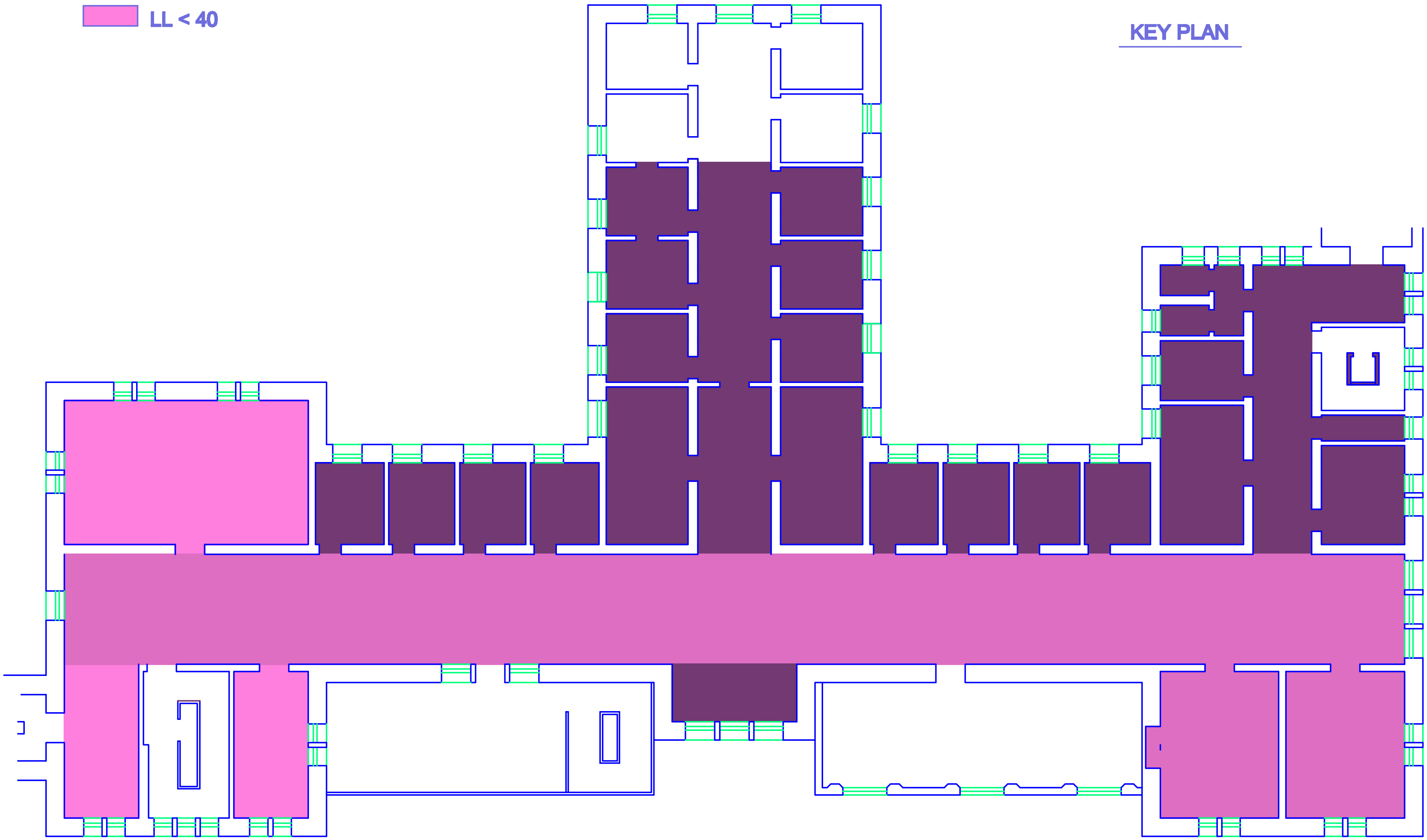
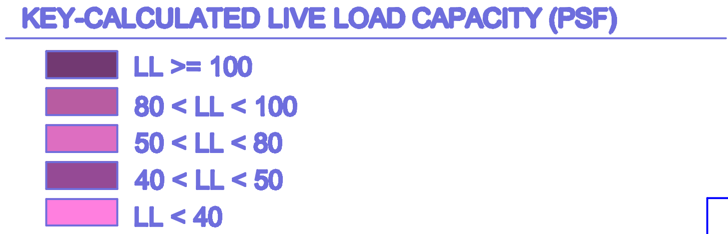


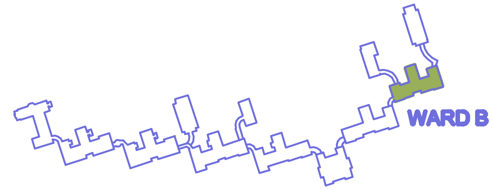
B
1.1

First Floor Plan

MALE WARD B

the RICHARDSON CENTER COMPLEX





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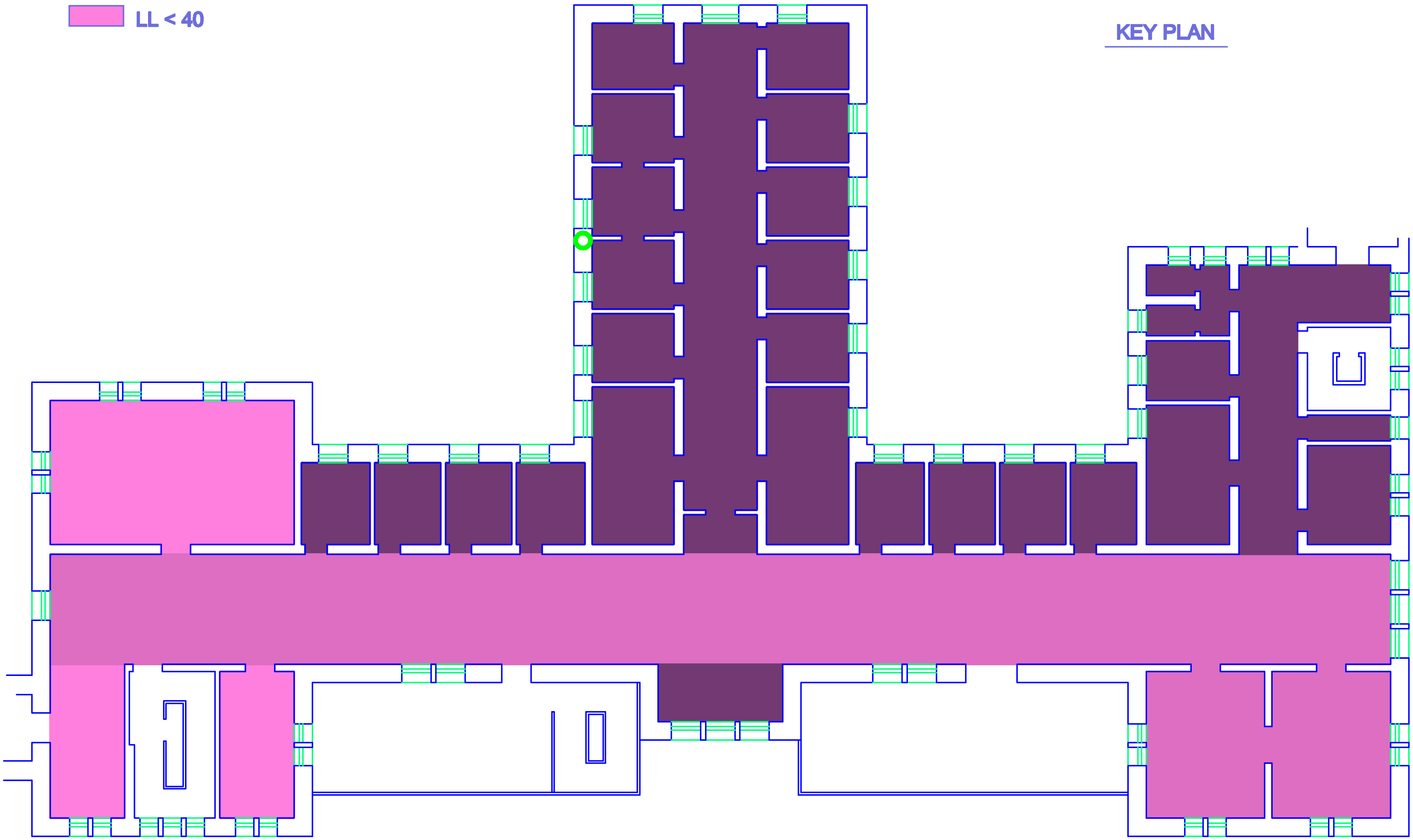
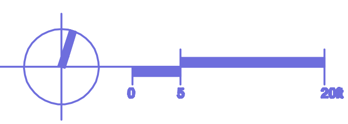


B 1.2

Second Floor Plan

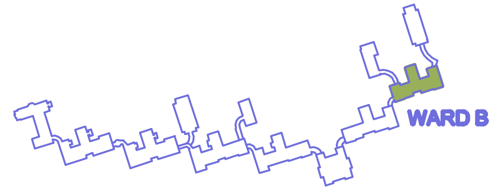
MALE WARD B

the RICHARDSON CENTER COMPLEX

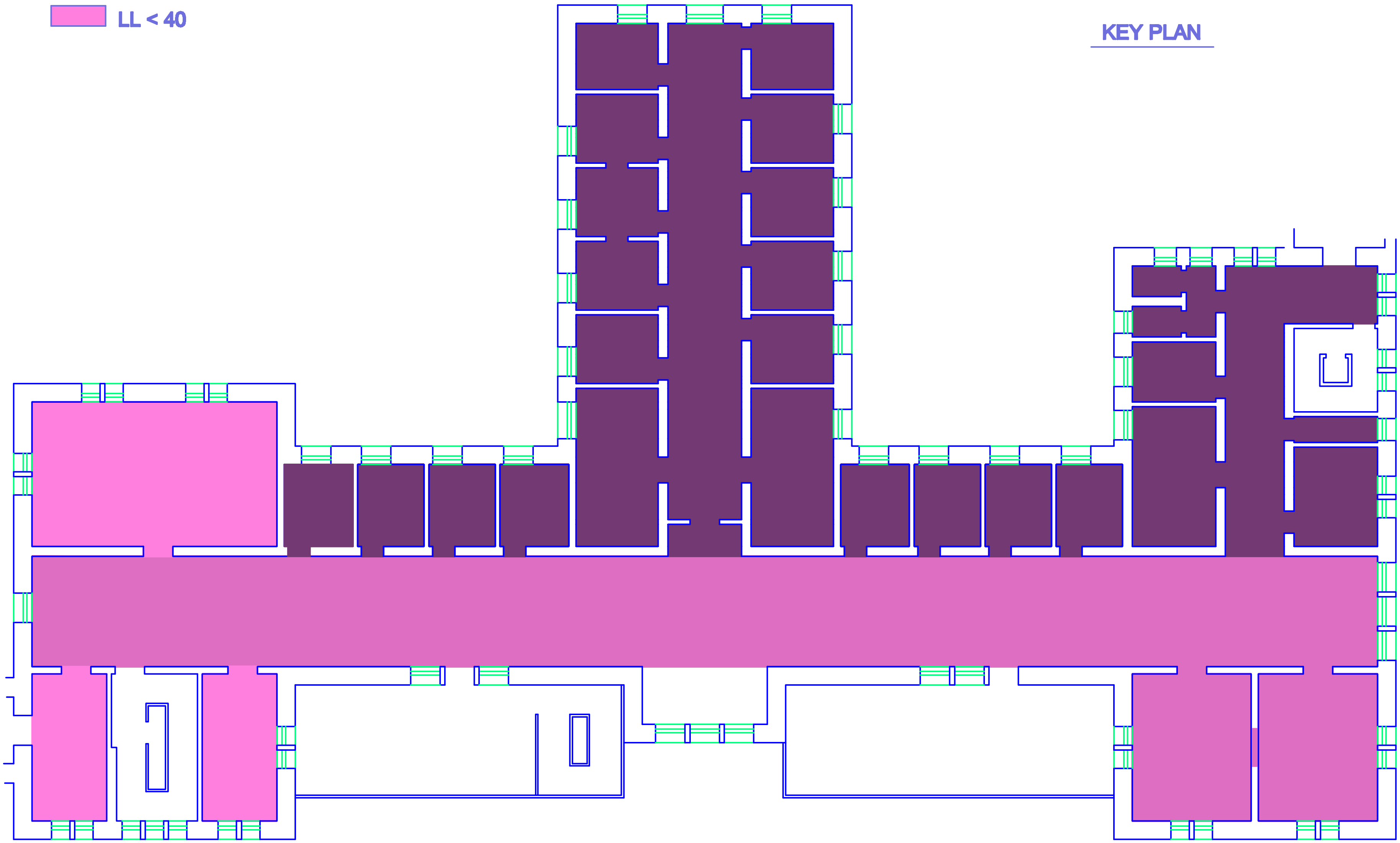


KEY-CALCULATED LIVE LOAD CAPACITY (PSF)

- LL >= 100
- 80 < LL < 100
- 50 < LL < 80
- 40 < LL < 50
- LL < 40



KEY PLAN

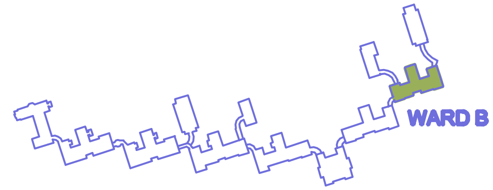


B 1.3 **Third Floor Plan** MALE WARD B

the RICHARDSON CENTER COMPLEX

KEY-CALCULATED LIVE LOAD CAPACITY (PSF)

- LL >= 100
- 80 < LL < 100
- 50 < LL < 80
- 40 < LL < 50
- LL < 40



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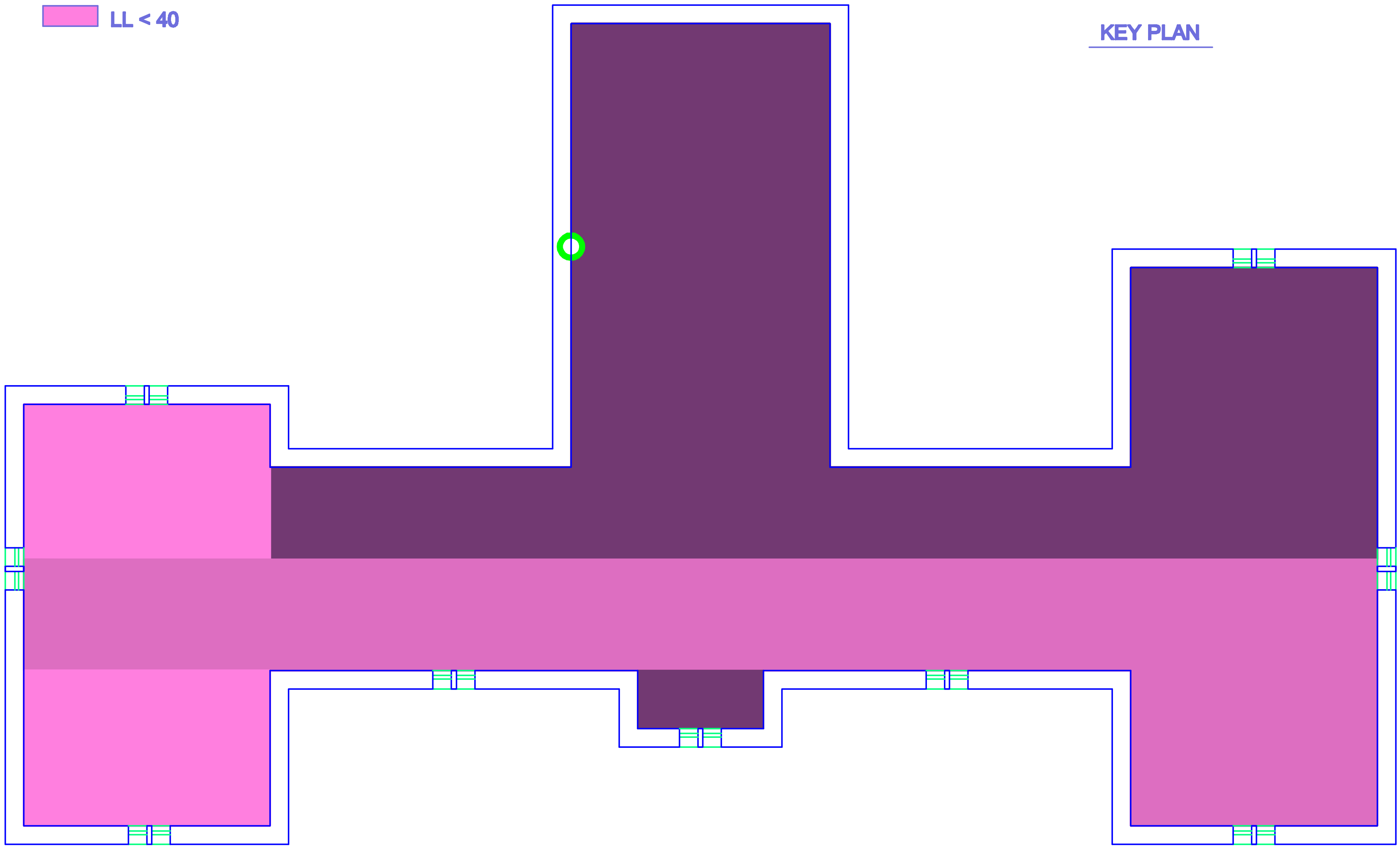
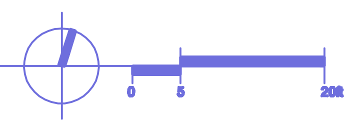




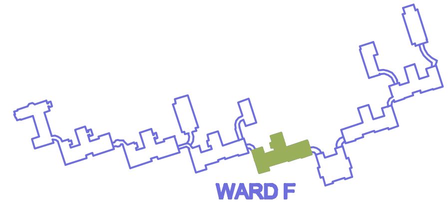
B 1.4

Attic Plan MALE WARD B

the RICHARDSON CENTER COMPLEX

KEY-CALCULATED LIVE LOAD CAPACITY (PSF)

- LL >= 100
- 80 < LL < 100
- 50 < LL < 80
- 40 < LL < 50
- LL < 40



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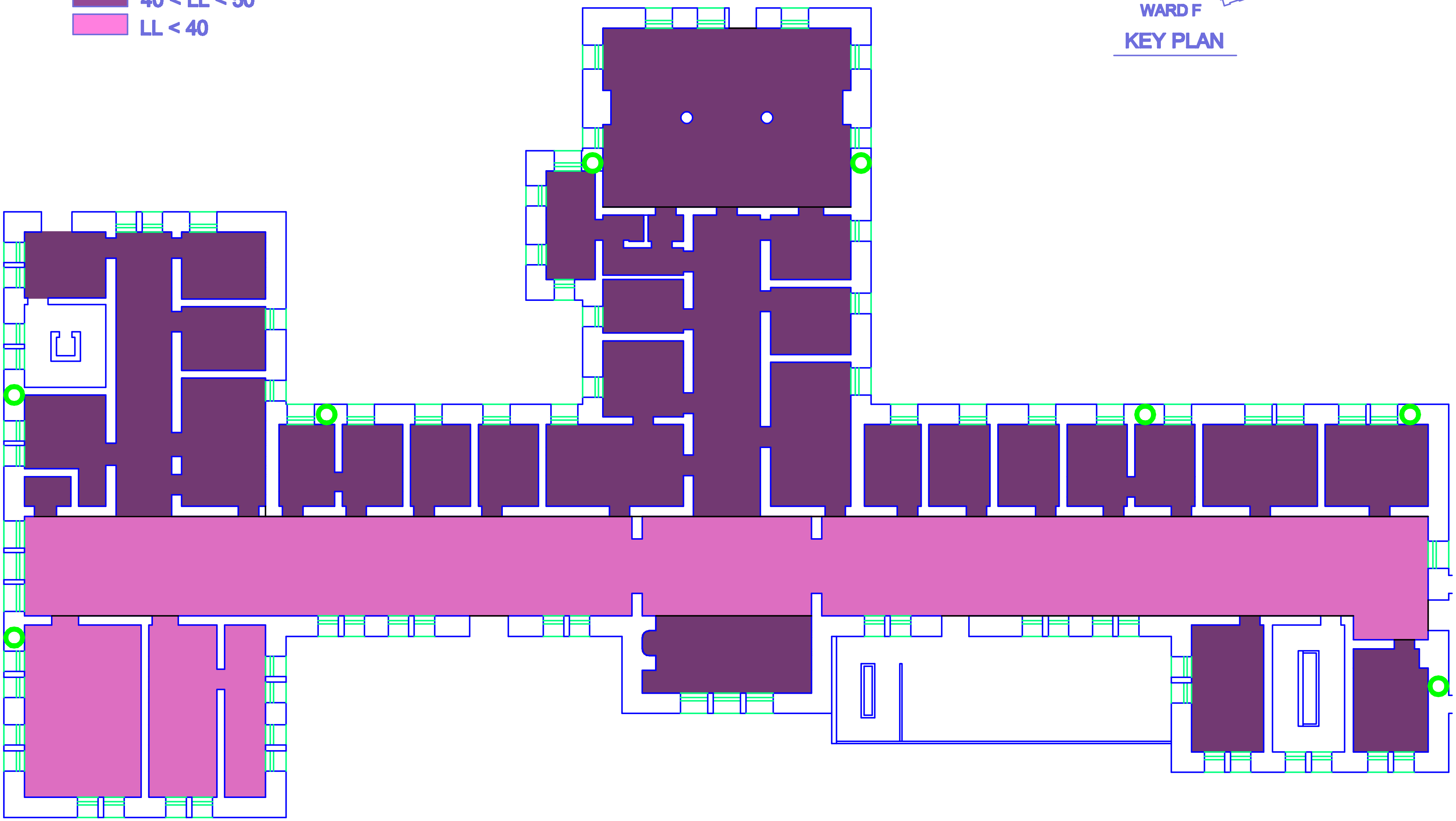
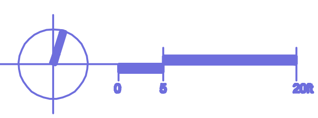




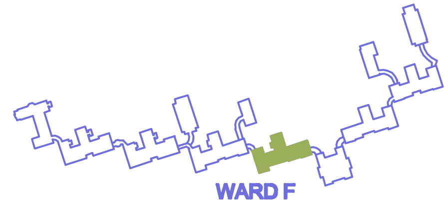
F
1.1

First Floor Plan FEMALE WARD F

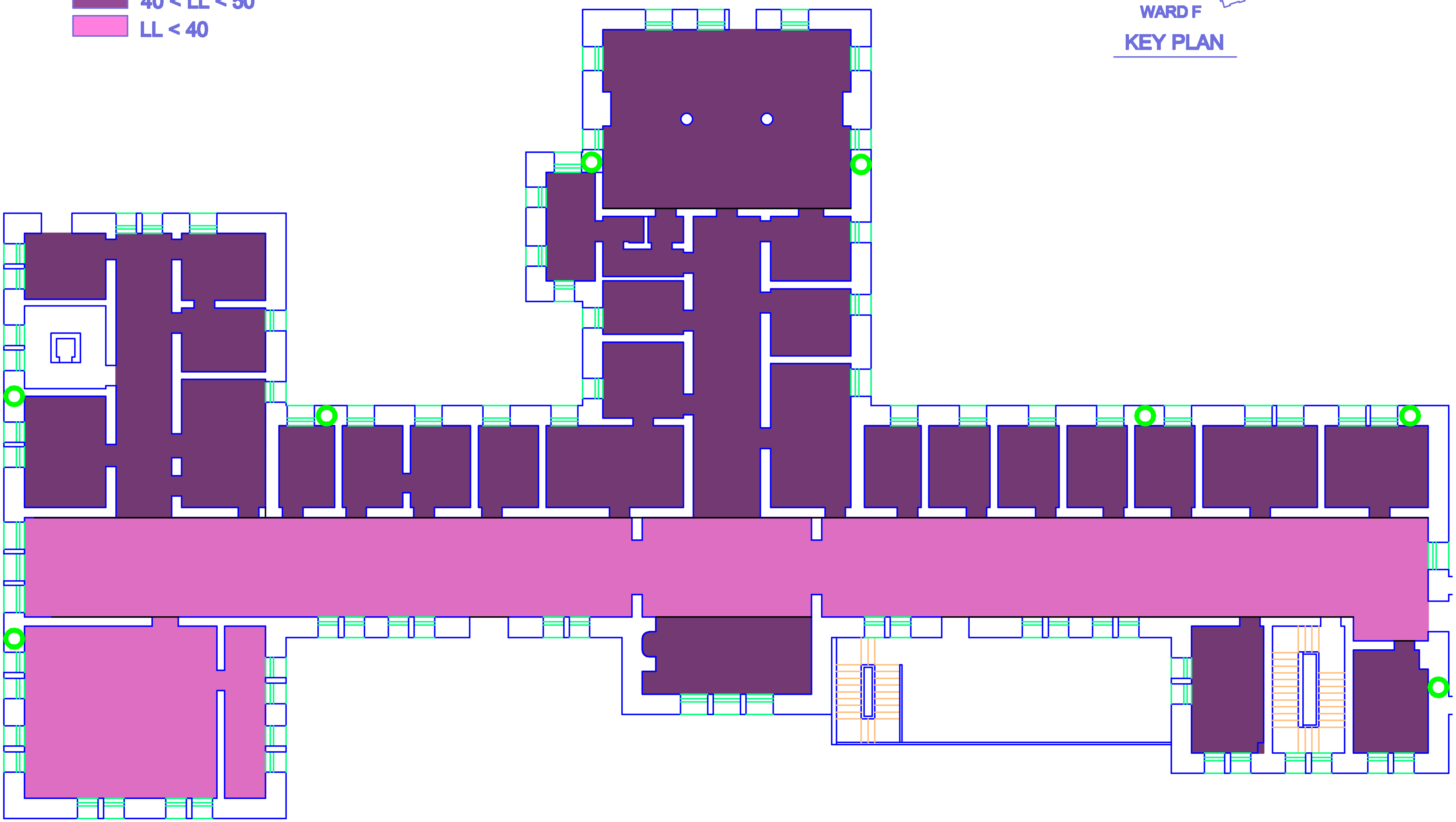
the RICHARDSON CENTER COMPLEX

KEY-CALCULATED LIVE LOAD CAPACITY (PSF)

- LL >= 100
- 80 < LL < 100
- 50 < LL < 80
- 40 < LL < 50
- LL < 40



KEY PLAN

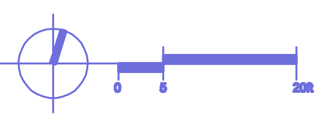


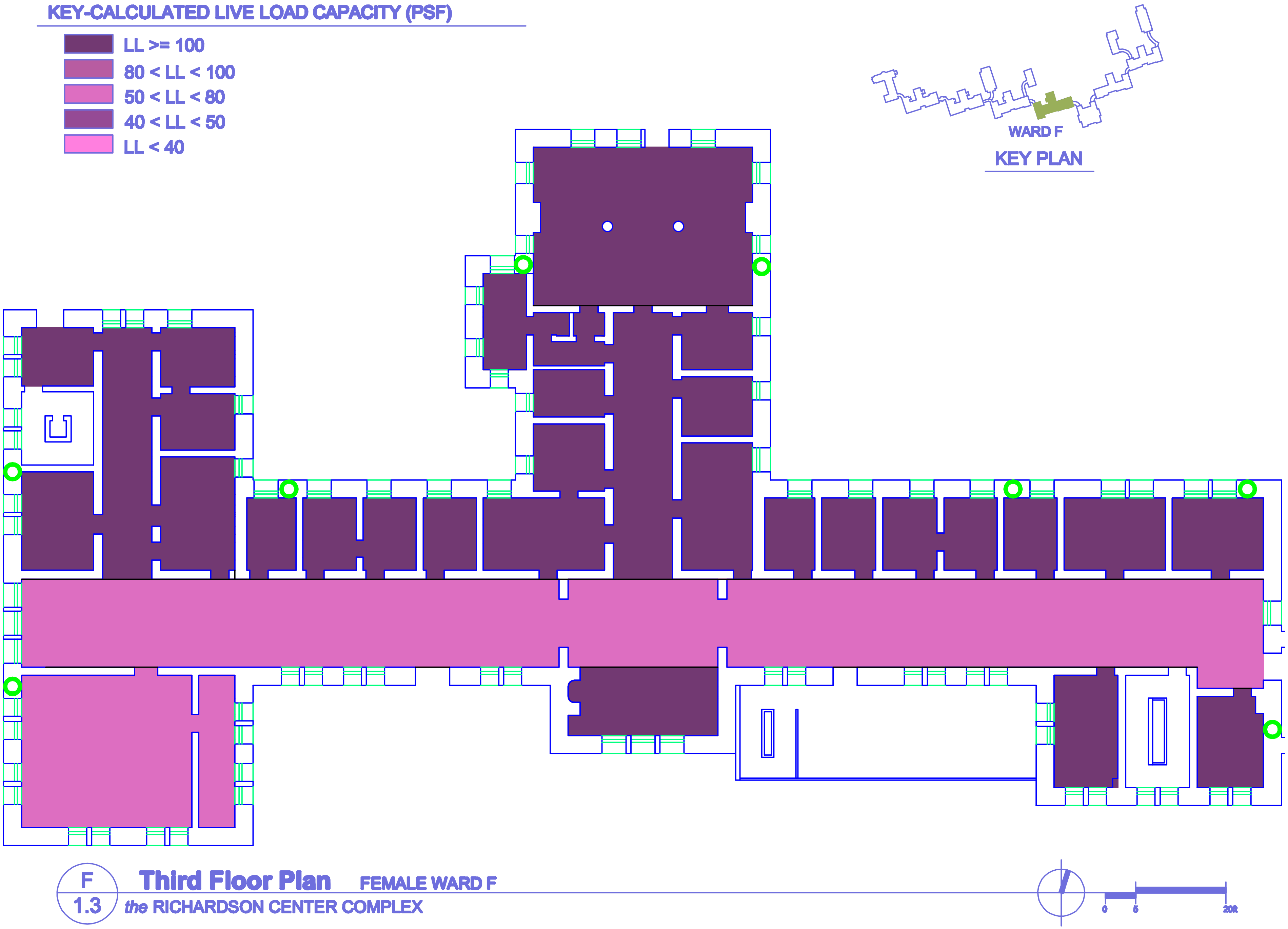
F
1.2

Second Floor Plan

FEMALE WARD F

the RICHARDSON CENTER COMPLEX





F
1.3

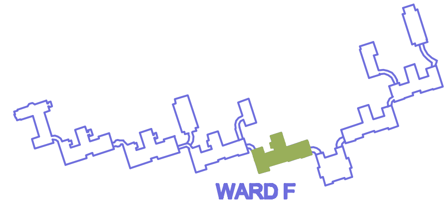
Third Floor Plan

FEMALE WARD F

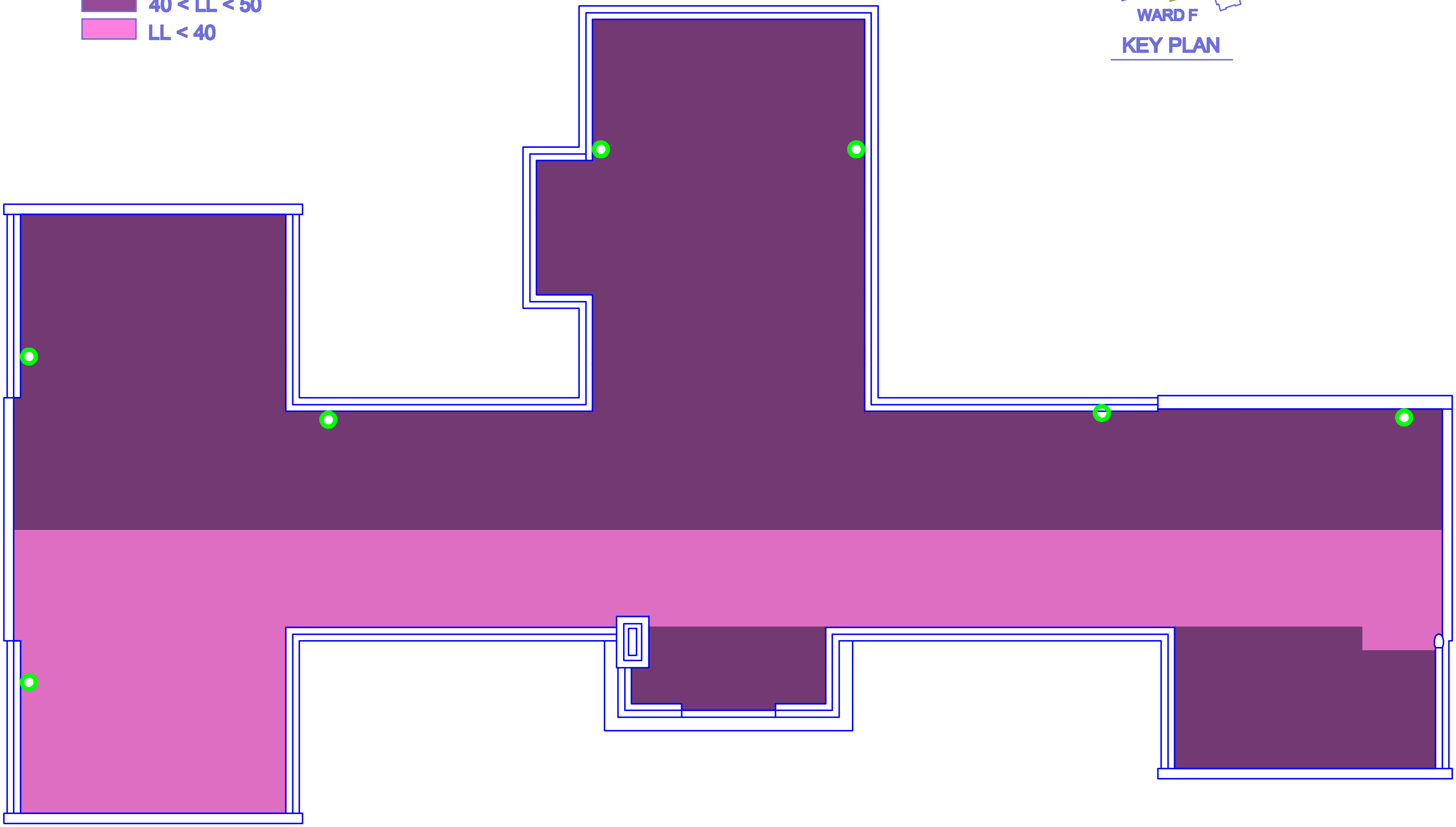
the RICHARDSON CENTER COMPLEX

KEY-CALCULATED LIVE LOAD CAPACITY (PSF)

- LL >= 100
- 80 < LL < 100
- 50 < LL < 80
- 40 < LL < 50
- LL < 40



KEY PLAN

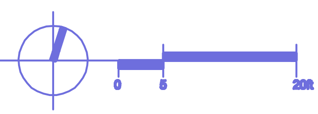


F 1.4

Attic Plan

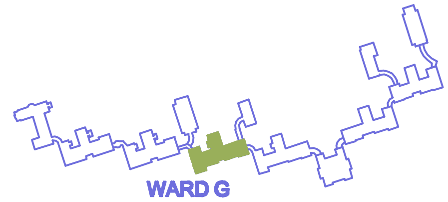
FEMALE WARD F

the RICHARDSON CENTER COMPLEX

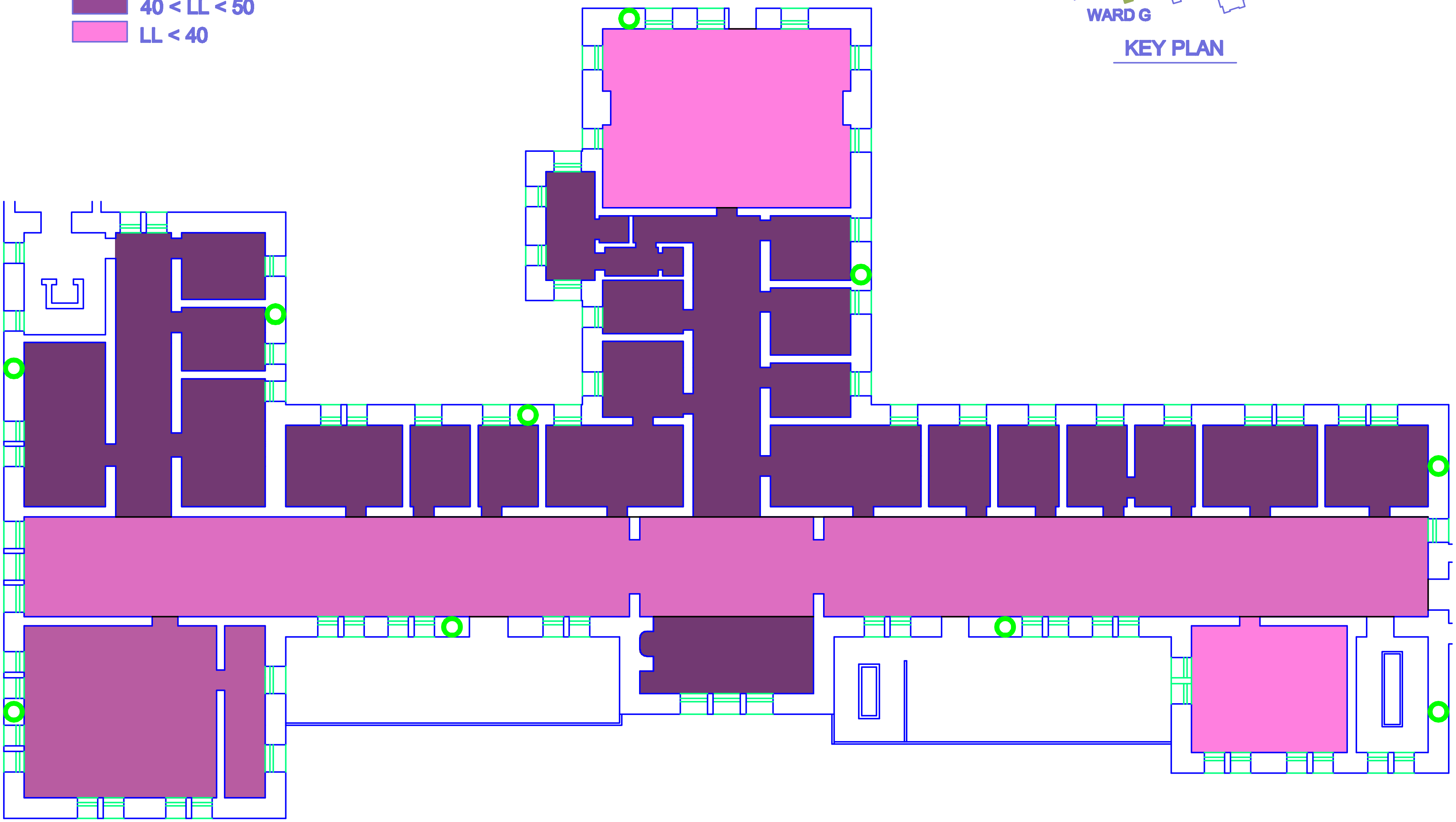


KEY-CALCULATED LIVE LOAD CAPACITY (PSF)

- LL >= 100
- 80 < LL < 100
- 50 < LL < 80
- 40 < LL < 50
- LL < 40

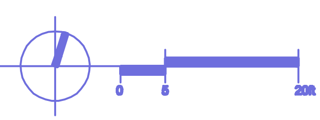


KEY PLAN



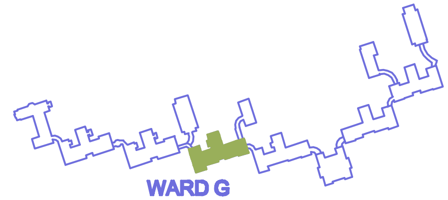
G 1.1 **First Floor Plan** FEMALE WARD G

the RICHARDSON CENTER COMPLEX

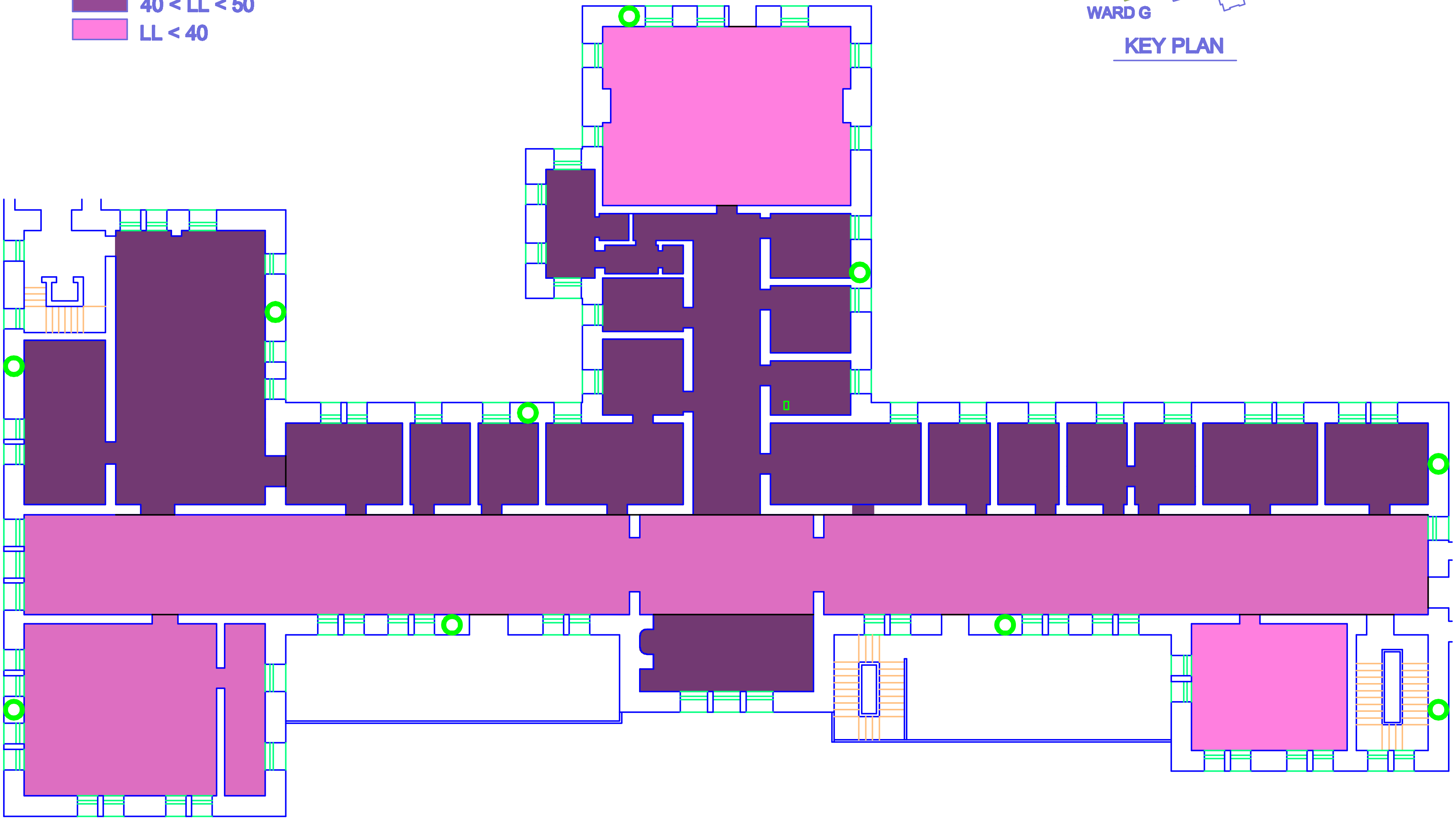


KEY-CALCULATED LIVE LOAD CAPACITY (PSF)

- LL >= 100
- 80 < LL < 100
- 50 < LL < 80
- 40 < LL < 50
- LL < 40



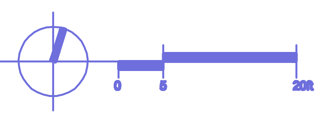
KEY PLAN



G 1.2

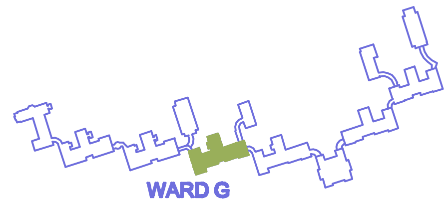
Second Floor Plan FEMALE WARD G

the RICHARDSON CENTER COMPLEX

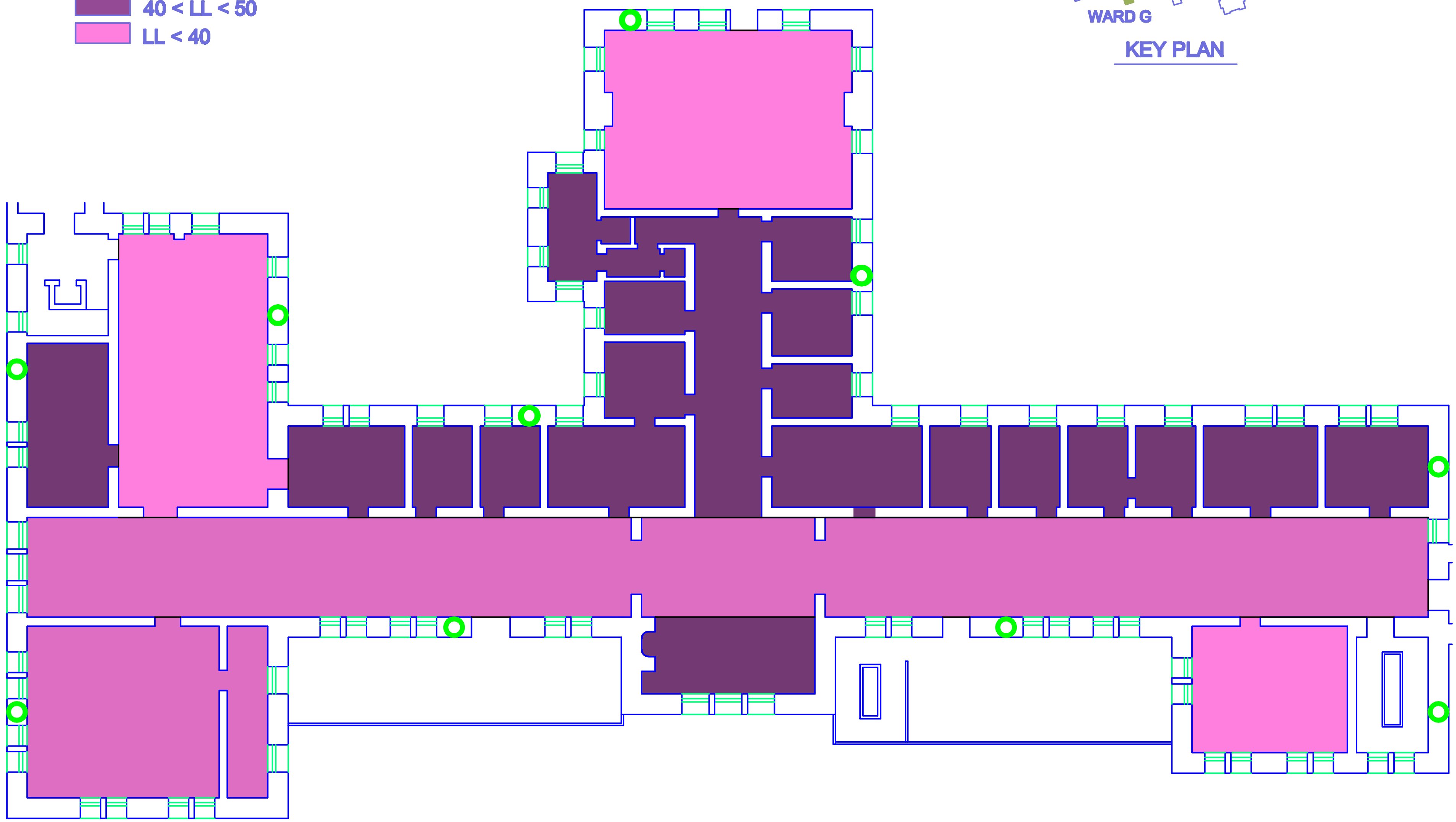


KEY-CALCULATED LIVE LOAD CAPACITY (PSF)

- LL >= 100
- 80 < LL < 100
- 50 < LL < 80
- 40 < LL < 50
- LL < 40

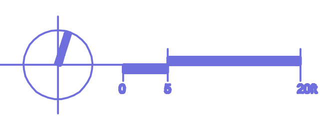


KEY PLAN



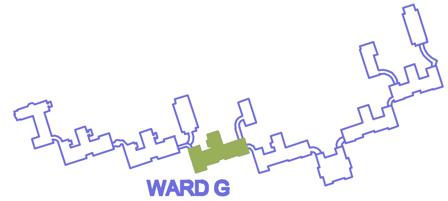
G 1.3 **Third Floor Plan** FEMALE WARD G

the RICHARDSON CENTER COMPLEX

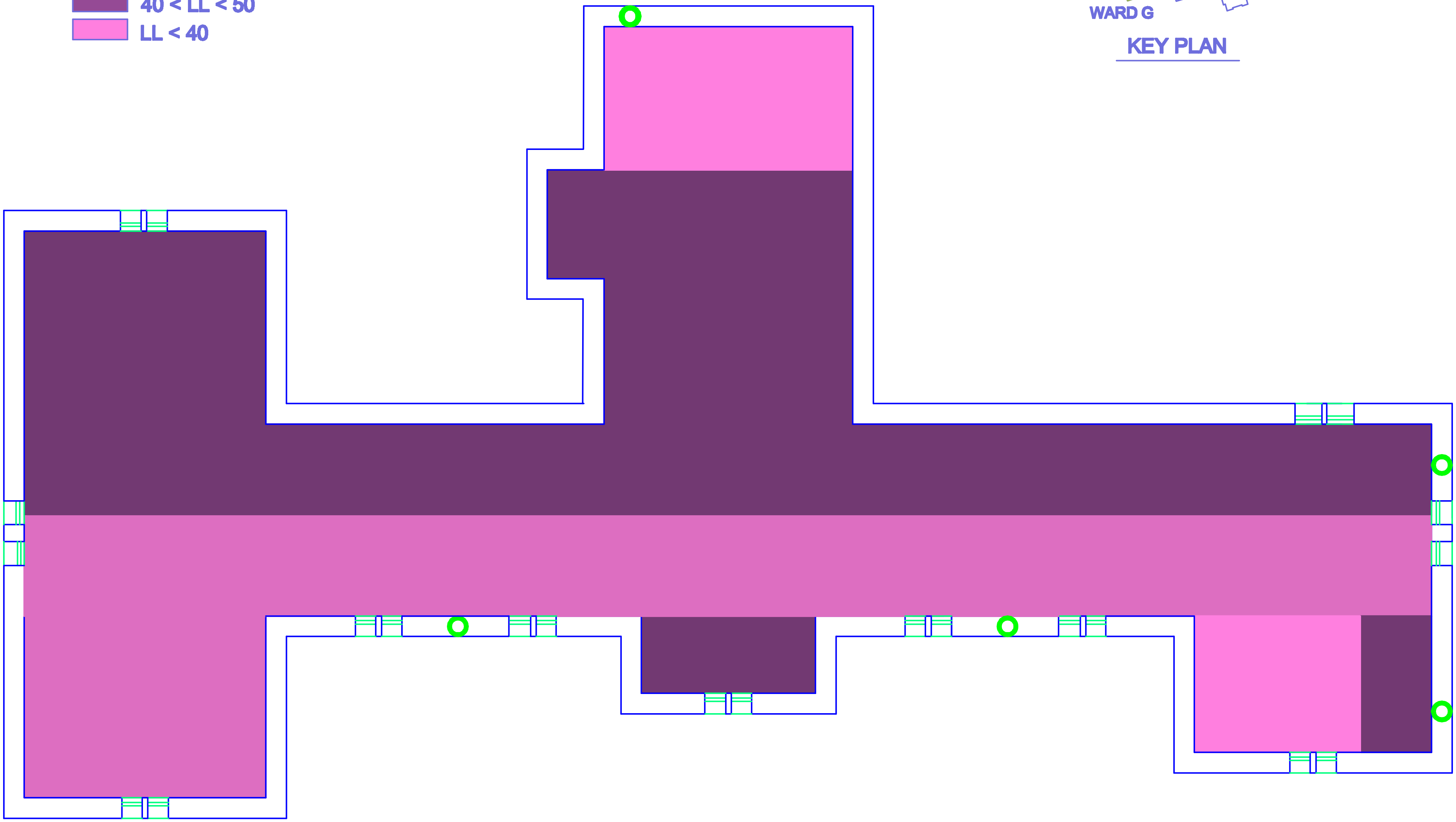


KEY-CALCULATED LIVE LOAD CAPACITY (PSF)

- LL >= 100
- 80 < LL < 100
- 50 < LL < 80
- 40 < LL < 50
- LL < 40



KEY PLAN

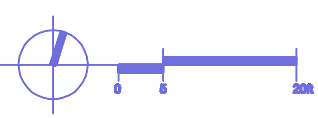


G
1.4

Attic Plan

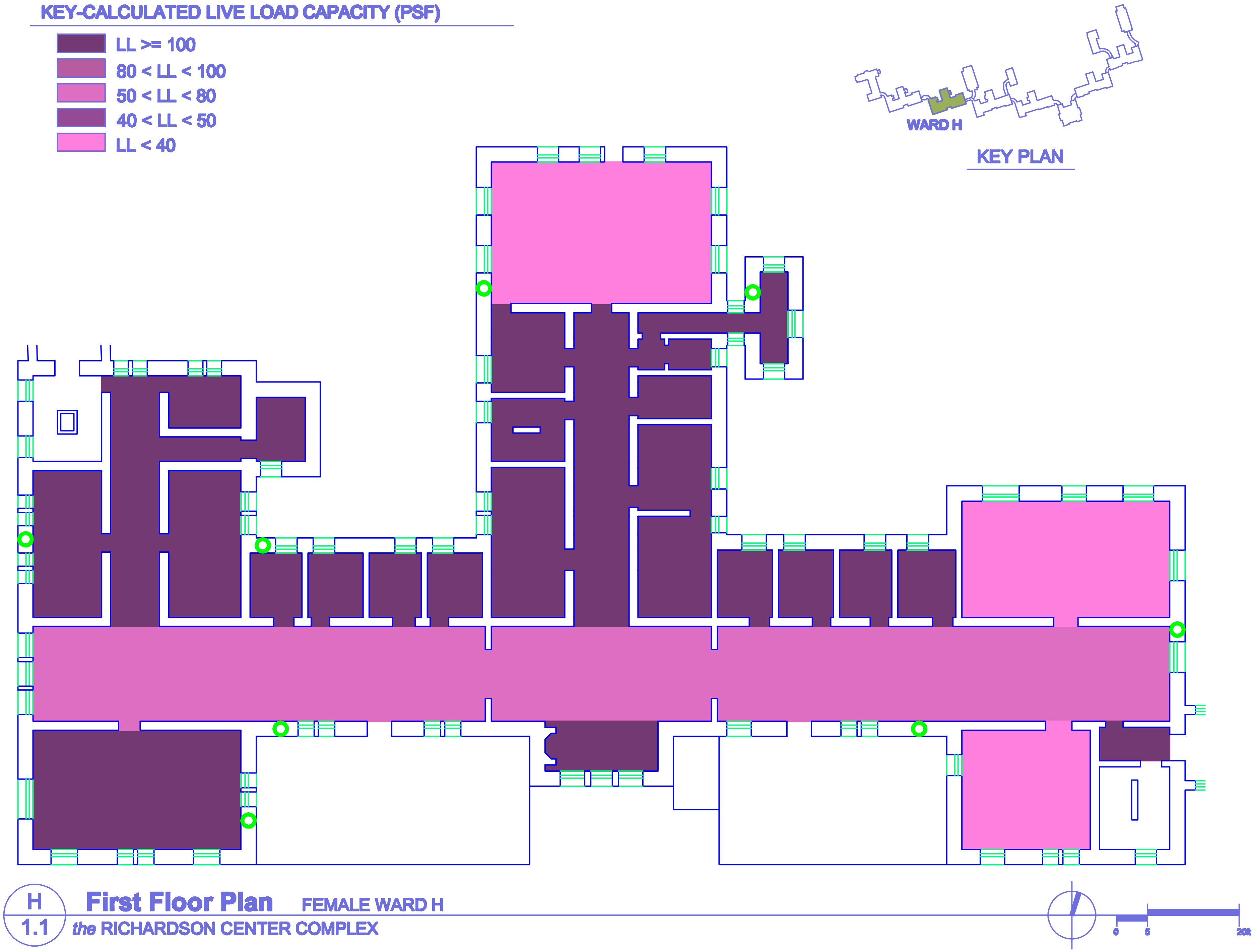
FEMALE WARD G

the RICHARDSON CENTER COMPLEX



KEY-CALCULATED LIVE LOAD CAPACITY (PSF)

- LL >= 100
- 80 < LL < 100
- 50 < LL < 80
- 40 < LL < 50
- LL < 40



H 1.1 **First Floor Plan** FEMALE WARD H

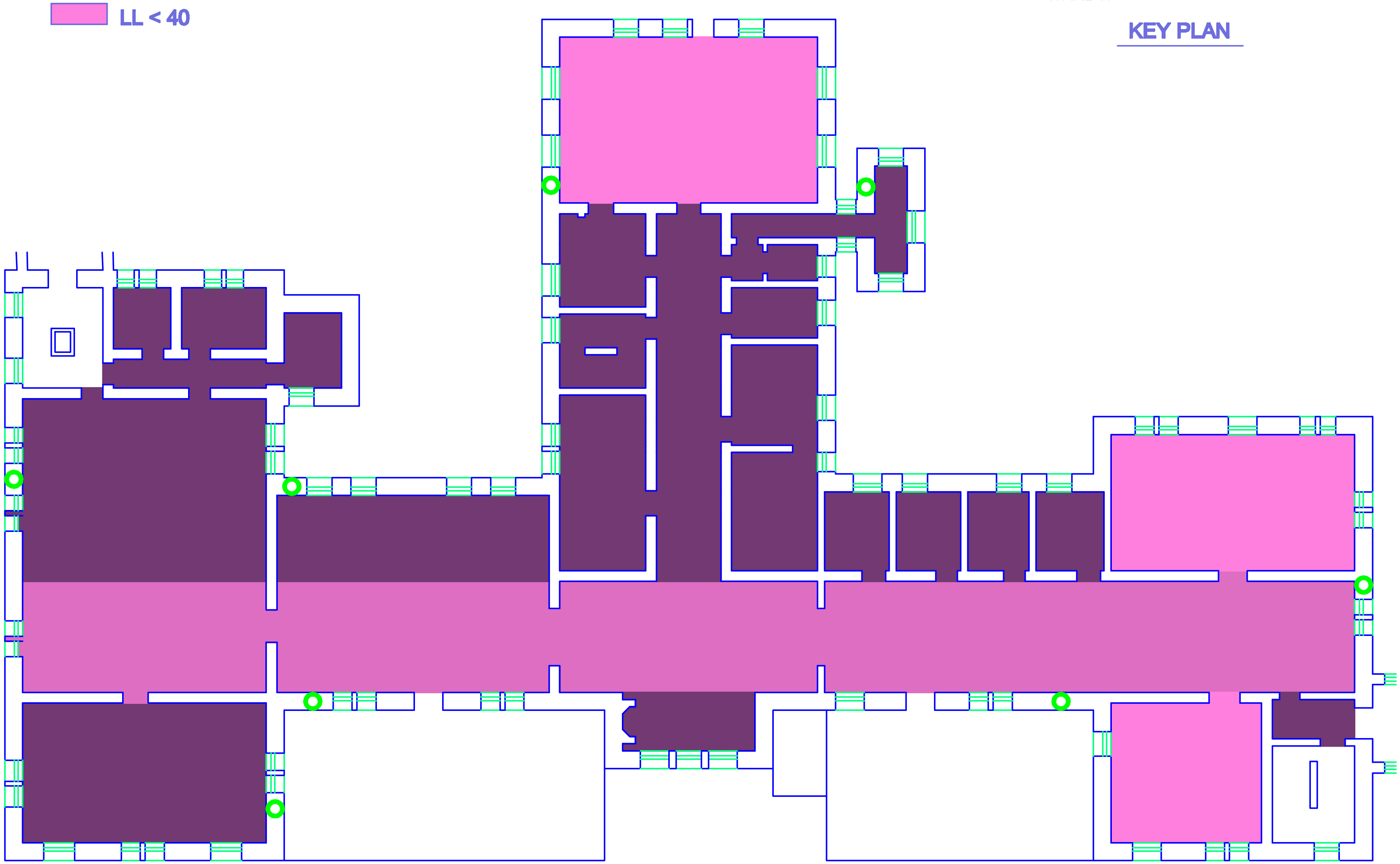
the RICHARDSON CENTER COMPLEX

KEY-CALCULATED LIVE LOAD CAPACITY (PSF)

- LL >= 100
- 80 < LL < 100
- 50 < LL < 80
- 40 < LL < 50
- LL < 40

WARD H

KEY PLAN



H 1.2

Second Floor Plan

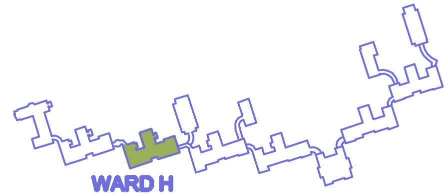
FEMALE WARD H

the RICHARDSON CENTER COMPLEX

0 5 20ft

KEY-CALCULATED LIVE LOAD CAPACITY (PSF)

- LL >= 100
- 80 < LL < 100
- 50 < LL < 80
- 40 < LL < 50
- LL < 40



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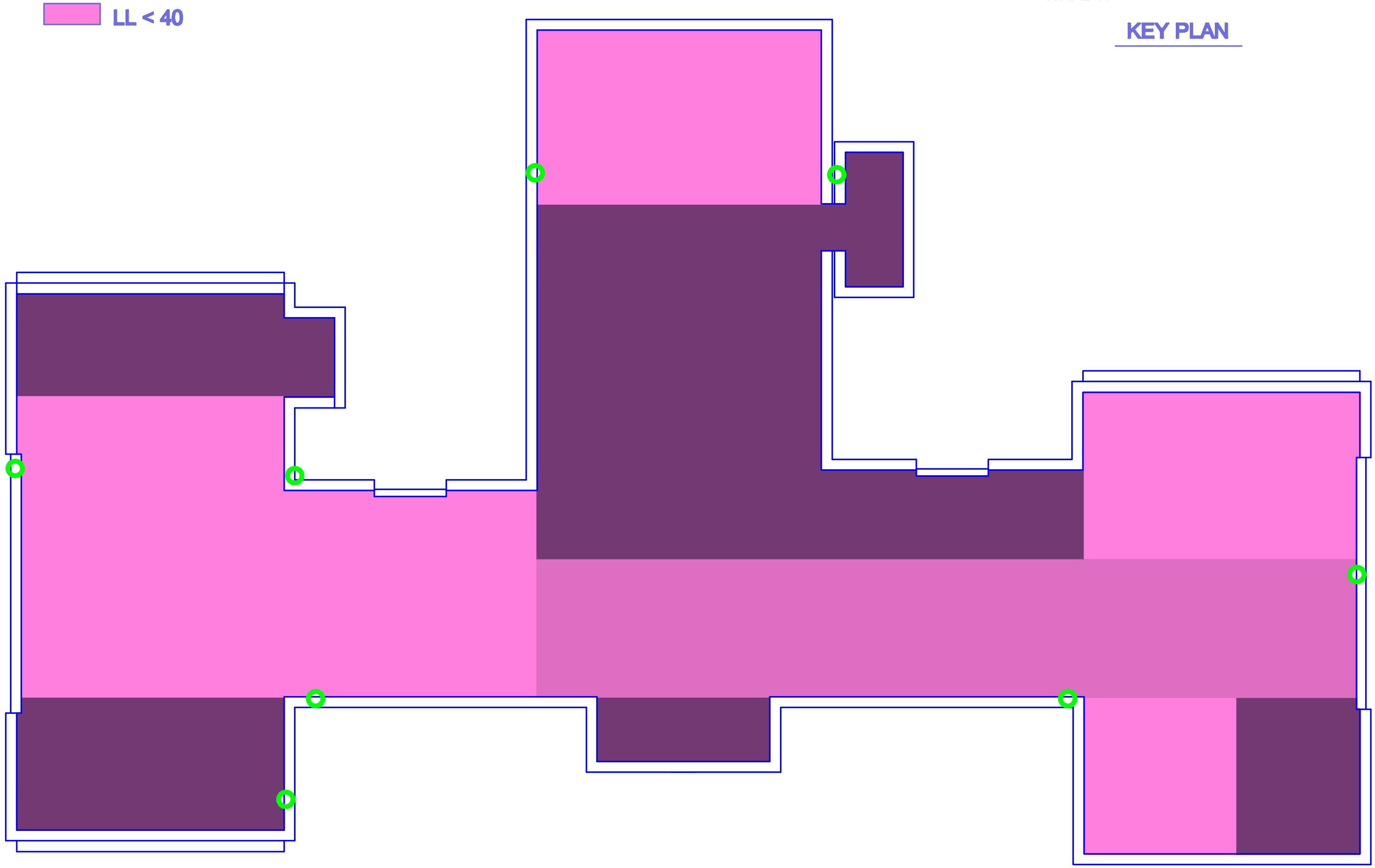


H
1.3

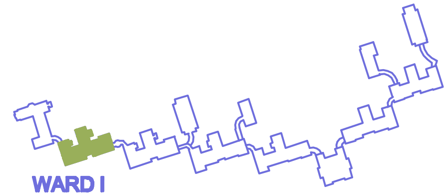
Attic Plan FEMALE WARD H

the RICHARDSON CENTER COMPLEX

0 5 20ft

KEY-CALCULATED LIVE LOAD CAPACITY (PSF)

- LL >= 100
- 80 < LL < 100
- 50 < LL < 80
- 40 < LL < 50
- LL < 40



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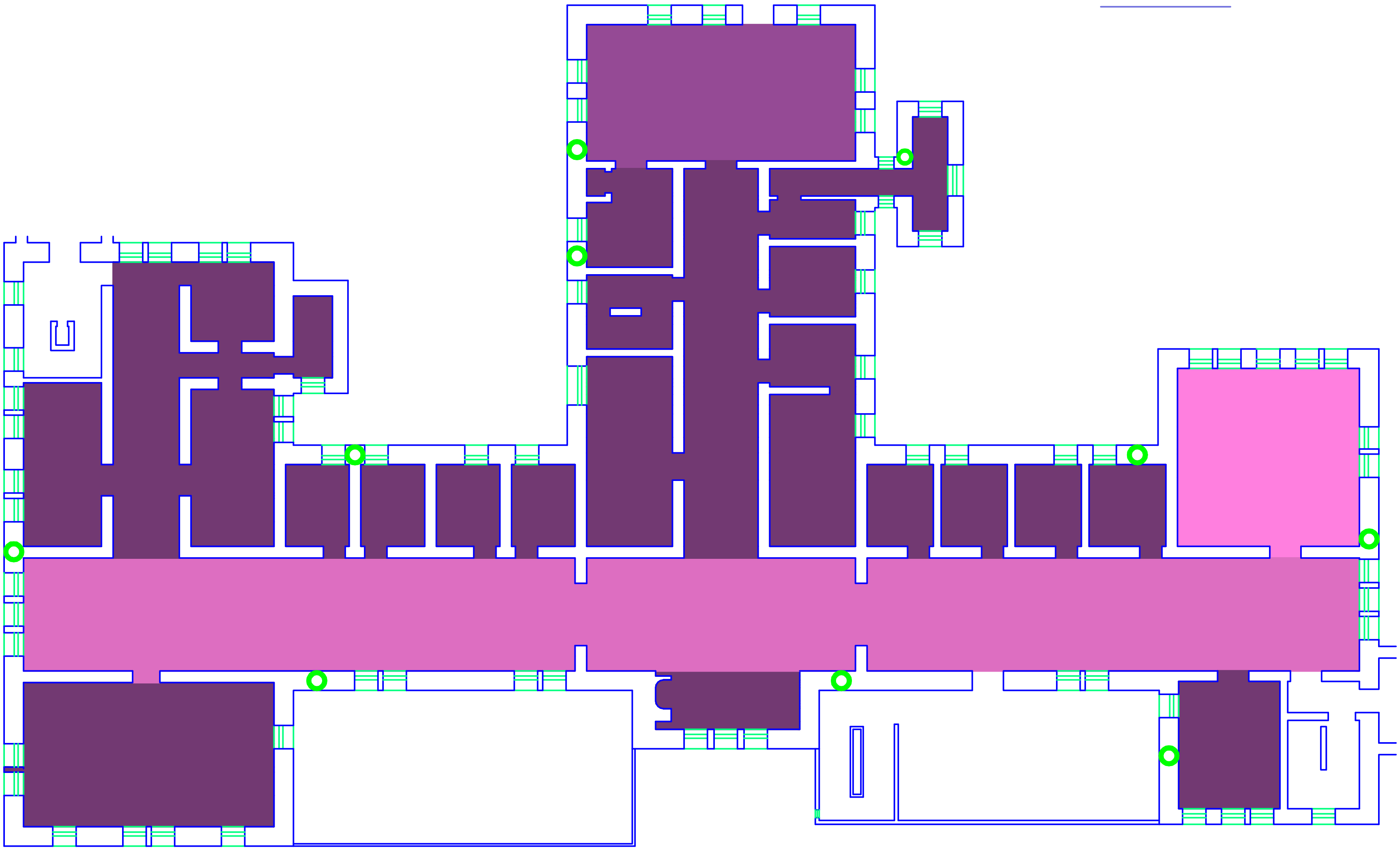
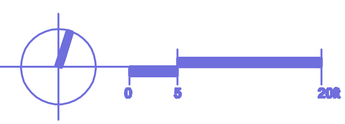


First Floor Plan FEMALE WARD I

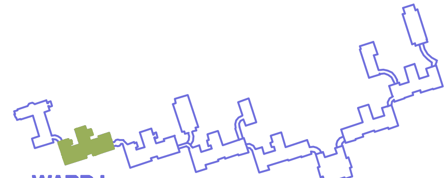
I / 1.1

the RICHARDSON CENTER COMPLEX

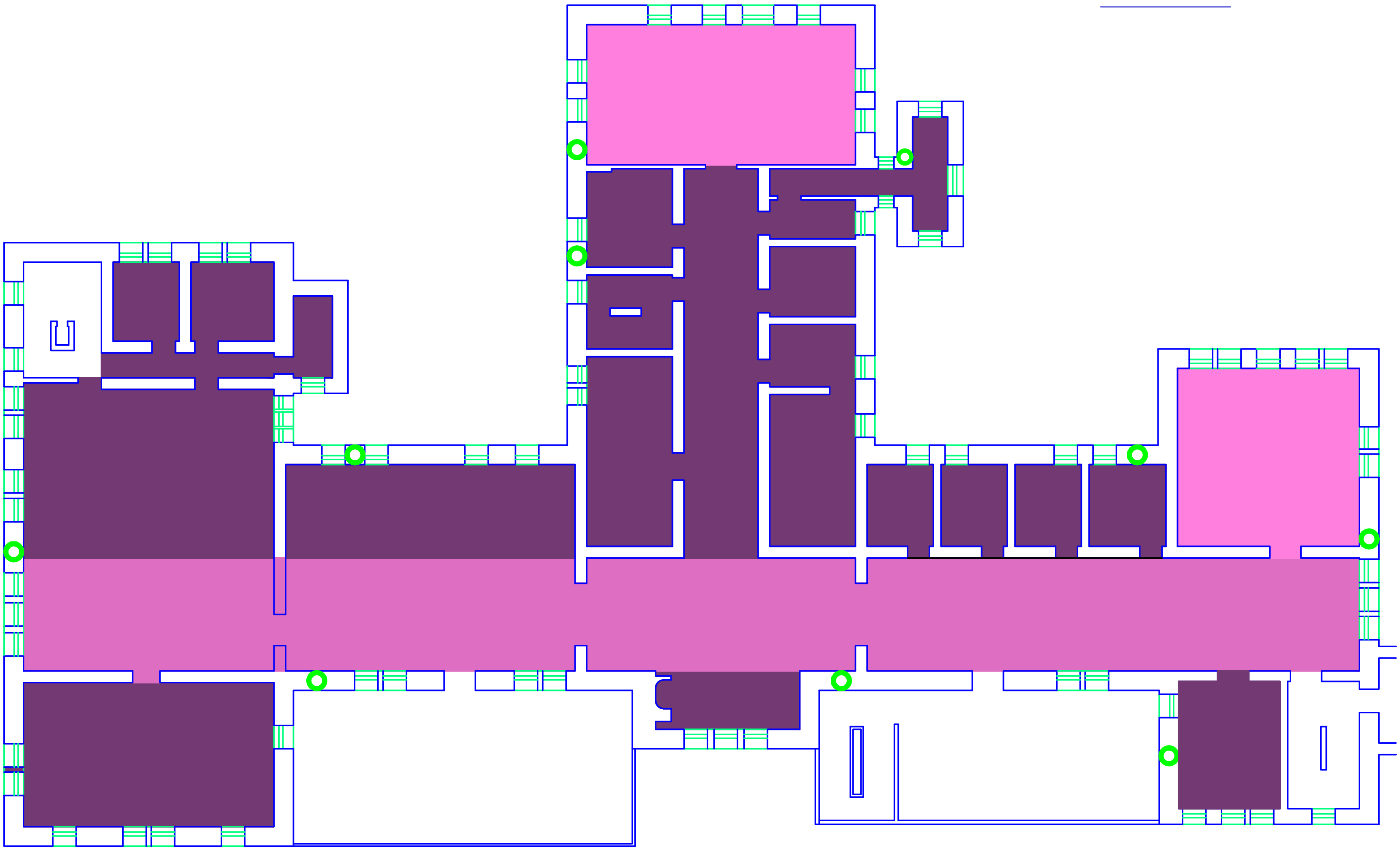


KEY-CALCULATED LIVE LOAD CAPACITY (PSF)

- LL >= 100
- 80 < LL < 100
- 50 < LL < 80
- 40 < LL < 50
- LL < 40



KEY PLAN



I
1.2

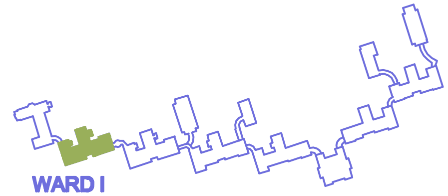
Second Floor Plan

FEMALE WARD I

the RICHARDSON CENTER COMPLEX

KEY-CALCULATED LIVE LOAD CAPACITY (PSF)

- LL >= 100
- 80 < LL < 100
- 50 < LL < 80
- 40 < LL < 50
- LL < 40



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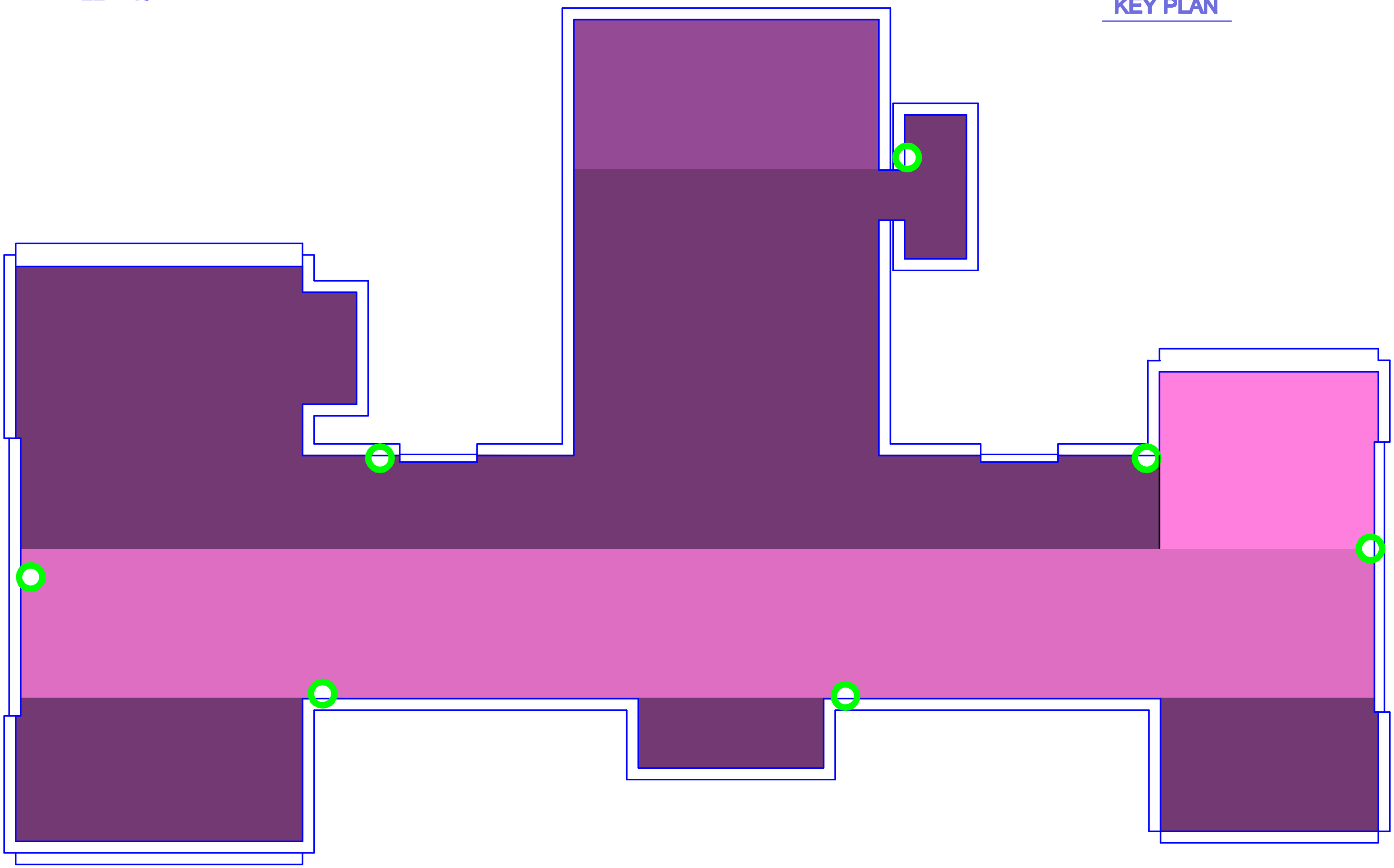

I
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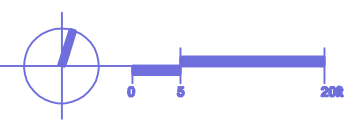
Attic Plan

FEMALE WARD I

the RICHARDSON CENTER COMPLEX



KEY-CALCULATED LIVE LOAD CAPACITY (PSF)

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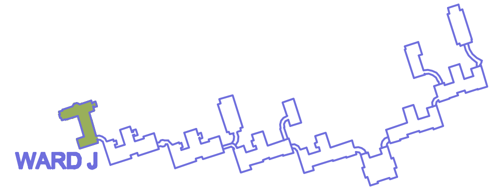
- 80 < LL < 100
- 50 < LL < 80
- 40 < LL < 50
- LL < 40



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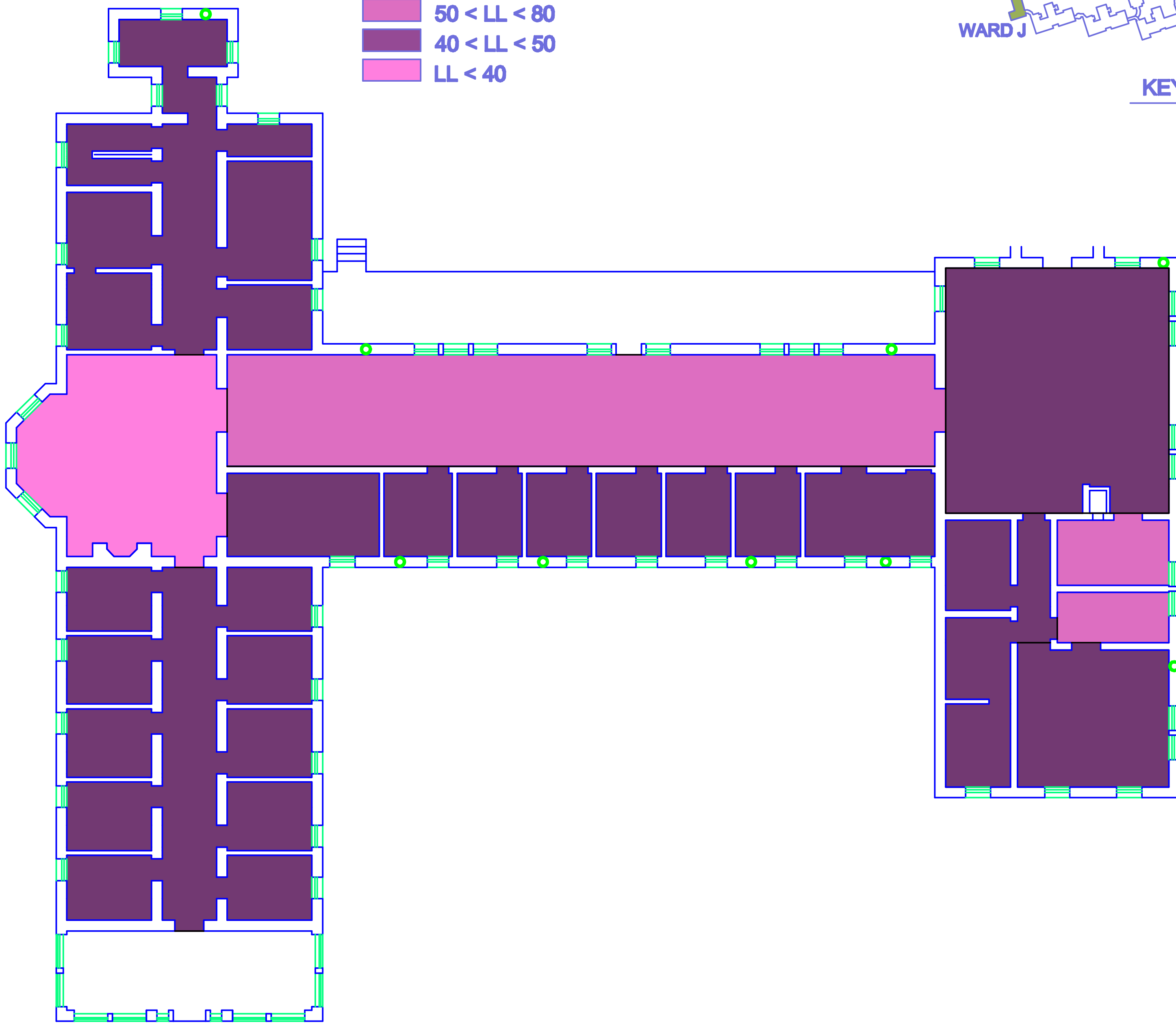

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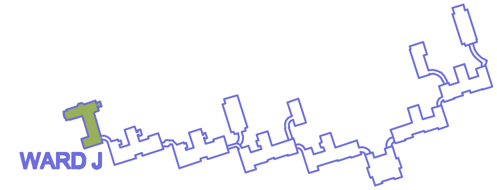
First Floor Plan FEMALE WARD J

the RICHARDSON CENTER COMPLEX

0 5 20ft

KEY-CALCULATED LIVE LOAD CAPACITY (PSF)

- LL >= 100
- 80 < LL < 100
- 50 < LL < 80
- 40 < LL < 50
- LL < 40



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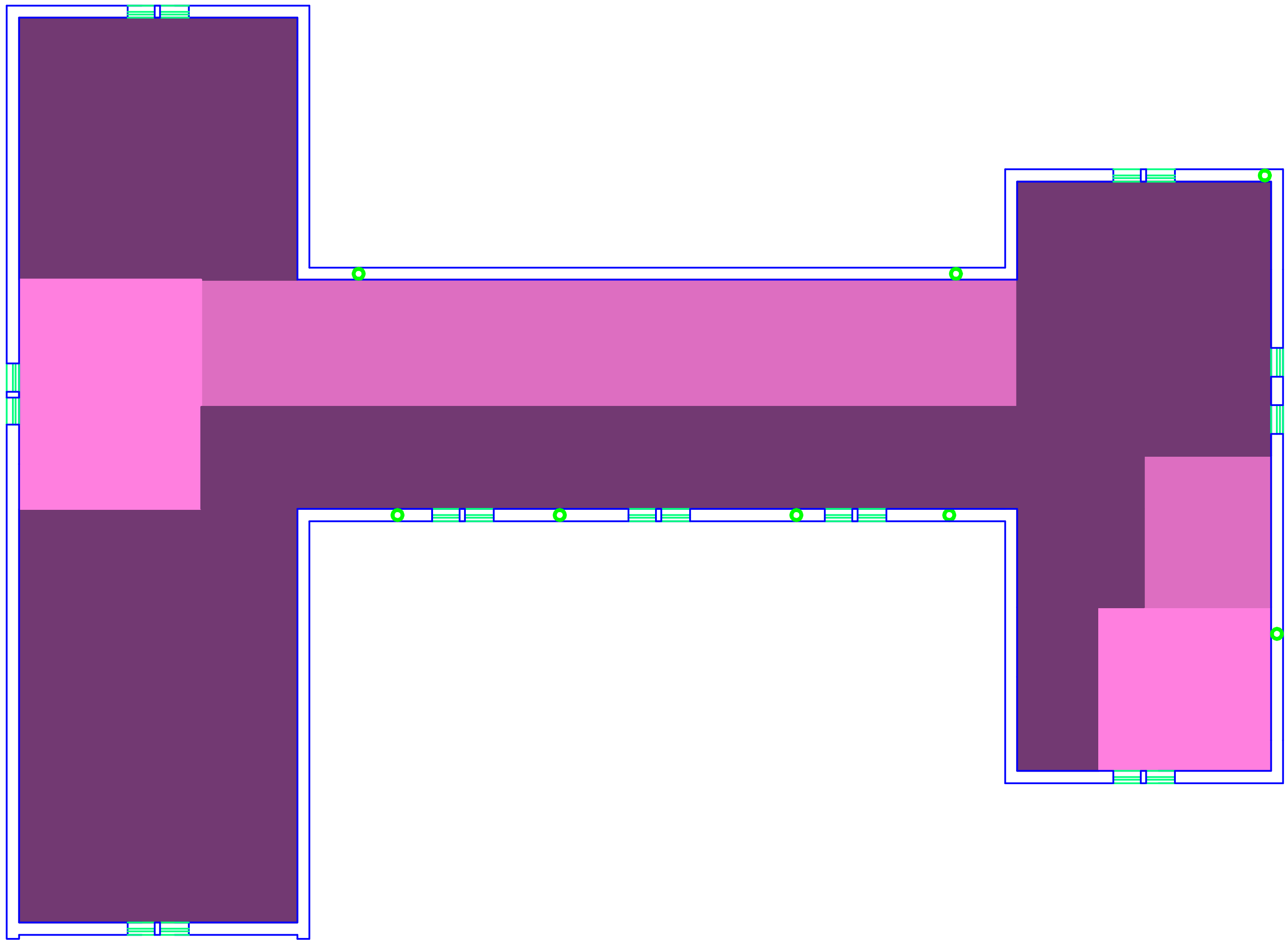

J
1.2

Attic Plan

FEMALE WARD J

the RICHARDSON CENTER COMPLEX

APPENDIX D: EXPLORATORY PROBES SUMMARY

Additional Investigative Work – Historic Structures Report

Richardson-Olmsted Complex
Buffalo, NY
20 May 2008

SGH Project 070771.08

SIMPSON GUMPERTZ & HEGER
Engineering of Structures and Building Enclosures

PREPARED FOR:

Goody Clancy
420 Boylston Street
Boston, MA 02116

PREPARED BY:

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20 May 2008

SIMPSON GUMPERTZ & HEGER

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Jean Carroon, FAIA, LEED
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Project 070771.08 – Additional Investigative Work, Historic Structures Report, Richardson-Olmsted Complex, Buffalo, NY

Dear Ms. Carroon:

In accordance with our joint proposal to the Richardson Corporation for additional services dated 10 December 2007, we conducted additional investigative work to make interior and exterior openings in the masonry walls of the complex, removed masonry samples for testing, and conducted testing of the masonry samples in our laboratory. This letter summarizes our findings and recommendations.

1. SUMMARY FINDINGS

Matthew Bronski and Erik Farrington of Simpson Gumpertz & Heger Inc. (SGH) visited the above-named site on 28 September 2008 and performed an overall general visual survey of the buildings. Michael Lynch of SGH visited the site on 1 through 4 April 2008 and, with contractor assistance, reviewed up-close areas of deterioration and made exterior exploratory openings in representative buildings of the typical construction types (stone and brick masonry). Erik Farrington, Jeff Langlois, and Rachel Shanley of SGH visited the site on 2 and 3 April 2008 and, with contractor assistance, made interior openings in the exterior walls to review the connection and bearing of the interior framing members on the exterior walls.

Throughout this letter, the buildings are identified by letters provided by you and as shown on Figure 1.

1.1 Exterior Wall Findings

Visual Survey

Stone Masonry Buildings

- Stone masonry buildings include Buildings AB (administration building) (Photo 1), A, B, F, and G.

- The stone masonry is Medina sandstone, which is purplish brown in color. In general, the stone appears in relatively good condition considering that it has been in place for over 100 yrs (Photo 2).

- The stone is heavily soiled on the underside of stone projections, particularly in areas of concentrated water flow such as below windows and where water from the roofs flows on to the walls.

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- Some mortar joints exhibit cracking with cracks typically measuring from 0.025 in. to 0.05 in. wide (Photo 3).

- In numerous cases on double and triple windows with intermediate stone mullions, the vertical stones at the intermediate mullions have vertical cracks that align with the joint between horizontal stones. Cracks typically extend into the stones above and below the joint in the horizontal stones (Photo 4).

- Some of the stones at the window jambs and sills are cracked or spalled at embedded fasteners (Photo 5).

Brick Masonry Buildings

- Brick masonry buildings include Buildings H (Photo 6), I, and J.

- The brick pattern of the exterior wythe at the main buildings is Flemish-stretcher-bond with header courses ranging from every seven courses to every ten courses, varying by building and elevation.

- The main buildings are connected with two-story curved corridors. The brick pattern of the exterior wythe at these connector corridors is running-bond with no visible headers.

- The brick masonry is bulging and debonding in some localized areas. In the most-severe cases, the outermost wythe (in some cases the outermost two wythes) of brick have collapsed and fallen from the building. At these locations, the outer wythe(s) of brick appear to have almost peeled away from the building (Photo 7).

- These areas of the most-severe deterioration are typically below locations of concentrated water flow, such as below valleys or copper barrel vaults in the roof, or at locations of built-in gutters and down leaders. Often they are located on north-facing walls or on east- or west-facing walls that are frequently shaded from solar exposure.

- Outward displacement (“bulging”) of the exterior brick is visible in some localized areas where the header bricks are now recessed from the outermost plane of the brick facade (Photo 8). In these areas, it appears that the headers have remained in place, while the outer wythe(s) has moved outward. These areas appear to be in the early stages of deterioration and displacement that will ultimately lead to the collapsed areas observed elsewhere and described above.

- Although we observed a few isolated brick that are spalled or deteriorated, deteriorated brick represent a very low percentage of the overall brick on the buildings. In general, the brick are in good condition, with little or no degradation. Even in the areas of distress, the brick are generally intact and exhibit little or no spalling or degradation. At locations of collapsed masonry, the individual brick units are in good condition, while the mortar is severely deteriorated.

- The brick have five smooth surfaces and one rough top surface. This suggests the brick were formed by a molding process, with the top surface screeded to the mold.

Exploratory Exterior Openings

We made exploratory openings in many of the stone and brick masonry buildings to confirm the wall construction and to assess the causes and extent of the bulging and delaminating brick masonry. Figure 2 shows the locations of the exploratory openings. Our findings are as follows.

Stone Masonry Buildings

Typical wall construction consists of solid masonry with Medina sandstone face stones over a rubble and mortar backup.

- **Building G:**

  - **Exploratory Opening EWO-06:** Opening made at the first floor of the west elevation at an area of observed water damage at the interior. The wall construction is typical, with the rubble wall consisting of a mixture of brick and stone with mortar (Photo 9). Removed stones are 8 in. deep, while the blocks at the jambs are 6 in. deep. The original pointing mortar is light brown with a raised square bead at the center of the joints. The majority of the mortar joints appear to have been repointed using a light-brown mortar with a grapevine profile (round bead of mortar at the center of the joint). The bedding mortar at the outer face of the stone is colored red, while the bedding mortar at the interior of the stone is white.

- **Building F:** Plaster at the interior is applied to fluted terra-cotta (“structural clay”) tile (Photo 10). We observed the masonry wall section at existing openings in the masonry at previous beam pockets in the masonry where porches had been removed.

  - **Exploratory Opening EWO-08:** Opening in south elevation. Typical wall construction with a rubble stone and mortar backup wall. The bedding mortar at the face of the masonry is colored red.
  - **Exploratory Opening EWO-09:** Opening in south elevation, west of EWO-08 (Photo 11). Typical wall construction with a rubble brick, stone, and mortar backup wall. The bedding mortar at the face of the masonry is colored red.
  - **Exploratory Opening EWO-10:** Opening in east elevation (Photo 12). Typical wall construction. At the north side of the opening, the bedding mortar is colored red, and at the south side of the opening (not originally sheltered by the porch), the bedding mortar is white.

- **Building AB – Administration Building:**

  - **Exploratory Opening EWO-7:** Opening at third-floor level east of the tripartite window. Typical wall construction. Original pointing mortar is dark brown/black with a raised square bead, colored red at the center of the mortar joints (Photo 13). The majority of the masonry appears to have been repointed using a light-brown mortar with a raised square bead at the center of the joints. The bedding mortar is white.

Brick Masonry Buildings

The typical construction of the brick masonry buildings consists of two outer wythes of brick, an approximate 4 in. wide cavity, and two inner wythes of brick. The exterior mortar joints are flush with the face of the brick, and the pointing mortar is colored red. Collar joints between the outer two wythes are typically narrow and lack mortar. Brick headers span the cavity and tie the outer wythes and inner wythes together (Photo 14). These cross-cavity brick headers generally have 2 in. of bearing on the brick on either side of the cavity. The frequency of the cross-cavity header courses varies; however, they are typically located one course above the header course between the two outer wythes. Our observations of each exploratory opening are as follows:

- **Building I:**
  - **Exploratory Opening EWO-01:** Opening at area of partial collapse of the wall at the second floor of the east elevation (Photo 15). The wall construction is typical.
  - **Exploratory Opening EWO-02:** Opening at area of partial collapse of the wall at the top of the wall on the north elevation. The wall construction is typical. We removed brick samples from the outermost wythe at this location for testing.
  - **Exploratory Opening EWO-03:** Opening in area of wall that appears intact with no visible displacement or distress at the south elevation at the top of the wall below a gable dormer (Photo 16). We removed brick from the outer-most wythe from this location for testing.
  - **Exploratory Opening EWO-04:** Opening in area of partial collapse of the wall at the top of the wall at the east elevation. At the top five courses of the wall below the roof plate and at the window opening, brick fill the cavity, creating a solid masonry wall. The wall construction below the top five courses and away from the window is typical.
  - **Exploratory Opening EWO-05:** Opening in area of partial collapse of the wall at the east elevation. Wall construction is typical. The cavity is not filled with brick around the window opening (as we observed in EWO-04). Mortar in bed joint is white in color. We removed brick samples from the second wythe at this location for testing. The second-wythe brick are salmon colored, as opposed to the first-wythe brick, which are red.
  - **Exploratory Opening EWO-11:** Opening at area of wall with erosion of mortar from several head joints that appear to form a “vertical crack,” but it is otherwise intact (Photo 17). The vertical crack, measuring approximately 1/4 in. wide, extends from the head of the first-floor window to the second-floor belt course. We did not observe evidence of lateral wall movement on either side of the window or open joints or cracked brick on either side of the vertical crack. The head joint in the two-part window sill above the crack is missing mortar, and the head joint in the belt course above the crack has partial mortar loss. The wall construction is typical.
  - **Exploratory Opening EWO-A:** Opening at connector corridor between Buildings I and J at area of partial collapse of the wall. The wall construction is not typical and consists of one outer wythe of brick, a cavity, and two inner wythes of brick. Metal straps are used to tie the outer wythe of brick to the two inner wythes of brick. At the area of the opening, the metal straps typically are corroded (Photo 18).

    - **Exploratory Opening EWO-B:** Opening at the east elevation. Typical wall construction with header courses spaced seven to eight courses apart. The brick that span the cavity between the inner and outer wythes are paired (Photo 19).

- **Building H:**

    - **Exploratory Opening EWO-12:** Opening at the second-floor level in an area well protected below a porch roof (Photo 20). The wall construction is typical. The bedding mortar is colored red.
    - **Exploratory Opening EWO-C:** Opening at the second floor of the south elevation of the connector corridor between Buildings G and H. Wall is partially collapsed at area of opening. The wall construction is typical.

1.2 Interior Wall Findings

Exploratory Interior Floor Openings

With contractor assistance, we made exploratory floor openings in Buildings B and H to determine the bearing conditions and properties of the floor and ceiling joists.

- **Building B:**

    - **Exploratory Opening IWO-01:** Exploratory opening at floor/wall intersection at the third-floor level on the south elevation to observe the floor joist bearing condition at the exterior wall (Photo 21). The floor framing consists of 2 in. x 11-1/2 in. floor joists, spaced at approximately 16 in. o.c. At this opening, the brick wall is built tightly around the joists, and the joist ends are square cut, not firecut. The joist that we observed had approximately 5-1/4 in. bearing on the brick masonry wall below (Photo 22). The top of the 2 in. x 8 in. ceiling joist for the second-floor level are located 2 in. below the bottom of the floor joists; they are also spaced at 16 in. o.c. The wall construction at the location of bearing consist of one wythe of brick masonry on the interior face, approximately 2-1/2 in. of miscellaneous brick and stone masonry, and then stone masonry on the exterior face.

- **Building H:**

    - **Exploratory Opening IWO-02:** Exploratory opening at the floor/wall intersection at the second-floor level on the west elevation to observe the bearing condition at an exterior wall (Photo 23). The floor framing consists of 3 in. x 10 in. firecut floor joists, spaced at 16 in. o.c. (Photo 24). The joist we observed had approximately 5-1/2 in. bearing on the brick masonry wall below (Photo 25). The top of the 2 in. x 10 in. ceiling joist for the first-floor level are located 5 in. below the bottom of the second-floor joists. They are also spaced at 16 in. o.c. The wall construction at the location of bearing consists of two wythes of brick masonry on the interior face, a 4 in. gap, and then two wythes of brick masonry forming the exterior face.

- **Exploratory Opening IWO-03:** Exploratory opening at the floor/wall intersection at the second-floor level to observe the bearing condition at an interior wall (Photo 26). The floor framing consists of 3 in. x 10 in. floor joists, spaced at approximately 16 in. o.c. At this opening the floor joists are not firecut. The joist that we observed had approximately 5-1/2 in. of bearing on the brick masonry wall below (Photo 27). The top of the 2 in x 10 in. ceiling joists for the first-floor level are located 6-3/4 in. below the bottom of the floor joists. They are also spaced at 16 in. o.c. The wall construction at the location of bearing consists of two wythes of brick masonry, a 9 in. gap, and then two wythes of brick masonry on the other face.

1.3 Laboratory Test Results

Brick Testing

We removed and retained fifteen brick for testing, with samples consisting of five samples each from Exploratory Openings EWO-02, EWO-03, and EWO-05. Brick removed from EWO-02 and EWO-03 are first-wythe (outermost) brick, and those removed from EWO-05 are second-wythe brick. We tested the retained brick in our laboratory to determine their absorption and saturation coefficient in accordance with ASTM C67-03a and their compressive strength in accordance with ASTM C67-05 Section 7 (Photo 28). Table 1 below provides the average results of the brick samples by exploratory opening from which they were removed.

Table 1 – Brick Average Absorption and Saturation Coefficient

Brick Location	24 Hr Absorption	5 Hr Boil Absorption	Saturation Coefficient	Compressive Strength (psi)
EWO-02	17.3%	20.4%	0.85	6,279
EWO-03	17.5%	19.1%	0.92	7,332
EWO-05	19.2%	20.8%	0.92	6,033

ASTM C62-05 provides a method of grading brick based on their absorptive and compressive strength characteristics. Table 2 below shows the brick grading, as determined by ASTM, and physical requirements by grade.

Table 2 – ASTM C62-05 Brick Requirements by Grade

Grade	5-Hour Boil Absorption (max.)		Saturation Coefficient* (max.)		Compressive Strength, psi (minimum)
	(average of five brick)	Individual	(average of five brick)	Individual	
SW	17.0%	20.0%	0.78	0.80	3,000
MW	22.0%	25.0%	0.88	0.90	2,500
NW	No limit	No limit	No limit	No limit	1,500

*The saturation coefficient does not apply if the 24 hour absorption of each unit does not exceed 8.0%.

The grades are defined by ASTM C62-05 as follows:

- Grade SW (Severe Weathering): Brick intended for use where high and uniform resistance to cyclic freezing is desired and where the brick may be frozen when saturated with water.

- Grade MW (Moderate Weathering): Brick intended for use where moderate resistance to cyclic freezing damage is permissible or where the brick may be damp but not saturated with water when freezing occurs.

- Grade NW (Negligible Weathering): Brick with little resistance to cyclic freezing damage but that are acceptable for applications protected from water absorption and freezing.

Although the laboratory test results indicate the brick are Grade NW per ASTM C62-05, the brick are in good condition, especially given their age and the climate where they are located. Because of this inconsistency between the test results and the observed lack of deterioration, we observed two representative first-wythe brick using a microscope. Our observations are as follows:

- The brick are very compact and have few air voids.

- Existing air voids are typically small and isolated (not connected to each other).

- Air voids are concentrated at the center of the brick and the outermost layer of clay at the surface is nearly free of air voids (Photo 29).

Full results of our microscopic analysis of the brick are included in Appendix A.

Analysis of Mortar

We performed a microscopic analysis of representative samples of original mortar. The samples chosen for the analysis along with a brief description is provided in Table 3:

Table 3 – Mortar Samples Included in Laboratory Analysis

Sample #	Opening	Building	Wall Type	Description
5	EWO-05	I	Brick	Bedding mortar, white color
7A	EWO-06	G	Stone	Bedding mortar, colored red
8	EWO-07	AB	Stone	Pointing mortar, colored black
9	EWO-11	I	Brick	Bedding and pointing mortar, colored red
11	EWO-12	H	Brick	Bedding and pointing mortar, colored red
12	N/A	AB	Stone	Pointing mortar, colored black

On Mortar Sample 5, we performed a petrographic examination and chemical analysis in accordance with ASTM C1324 to determine the percent by weight of the mortar constituents. We performed a petrographic examination on Samples 7A, 9, and 11. The results of our analysis are provided in Table 4 below. The detailed results of the petrographic examination are included in Appendix A.

Table 4 – Results of Petrographic Analysis of Mortar

Sample ID	Binder-to-Aggregate Ratio	Binder Material	Limestone or Calcium Particles in Aggregate	Coloring Pigment
5	1: 2.75	Lime and small amounts of natural cement (8: 1 ratio, lime: cement)	5%	None
7A	1: 3	Lime and natural cement	10% to 15%	Iron oxide
9	1: 3	Lime and natural cement	20% to 25%	Iron oxide
11	1: 3	Lime and natural cement	20% to 25%	Iron oxide

Although not intentionally air entrained, we observed entrapped air in all samples.

We performed a microscopic analysis of Samples 8 and 12. Both samples contain an integral carbon-black coloring pigment. The red stripe of mortar in Sample 12 is similar to the mortar in Sample 7A and was applied as a separate layer to the black mortar. Sample 8 contains approximately equal amounts of natural cement and lime.

2. DISCUSSION AND CONCLUSIONS

2.1 Exterior Walls and Laboratory Test Results

Stone Masonry Buildings

The stone masonry construction is a composite solid masonry wall. Overall, the stone masonry walls appear in good condition. The areas of distress are relatively few and isolated. These isolated localized areas of cracking tend to occur at vertical mullions with either a short bearing length for a horizontal mullion above (at double or triple window) or at embedded ferrous fasteners.

Brick Masonry Buildings

The localized deterioration of the brick masonry (bulging, peeling, and localized areas of collapse of the outer wythes) appears due to freeze/thaw deterioration of the mortar at areas of concentrated roof runoff onto the brick masonry walls (e.g., beneath roof valleys, where the gutter and down-leader system has been damaged or missing for years). To some extent, these deteriorated areas also tend to correlate with areas of low solar drying potential, (such as the north facade, or areas of the east or west facade that are largely shaded). In areas of low solar drying potential, the masonry tends to stay wet longer after rains, exacerbating the deterioration mechanism and freeze/thaw cycle. In Buffalo's climate, the combination of concentrated roof runoff and low solar drying potential creates a severe microclimate for deterioration, particularly freeze/thaw deterioration.

In these deteriorated areas, the brick are typically in good condition while the mortar is severely deteriorated. Per the current ASTM test standards for absorption, the brick would not be expected to be highly durable in a severe cold weather climate. The ASTM test standards allow for freeze/thaw testing of brick in lieu of absorption tests as a measure of durability if time allows. However, the brick have proved durable for 120 years. Thus, we do not see a widespread problem with the individual brick units. The mortar sampls we tested were a lime, natural cement, and sand mix, with the proportion of natural cement varying widely. Those with the lowest proportions of natural cement (highest proportions of lime) would tend to have the lowest strength and the least durability in freeze/thaw conditions.

The original construction and section of the brick walls make them relatively more vulnerable to deterioration than the stone masonry walls under the same conditions of runoff, low solar drying potential, and freeze/thaw cycling for the following reasons:

- While the stone masonry walls are composite (solid, with no cavity), the brick walls are a two-wythe/cavity/two-wythe construction, with minimal lateral bonding of both the adjacent wythes and across the cavity.
- The brick that span the interior 4 in. cavity are essential for the lateral bond of the wall. However, in the best-case scenario, these brick have only 2 in. of "bite" (bond length) on both the interior and exterior wythes; in some cases, this "bite" or bond length is less.
- The collar joint between the first (outermost) and second wythes is not consistently filled with mortar, resulting in decreased bond between the first and second wythes.

As such, for the future preservation of the buildings, it is essential to protect the exterior brick masonry walls from the concentrated roof runoff that has caused severe areas of localized deterioration.

2.2 Interior Wall Findings

The masonry construction at the three interior openings is in good condition. There are also no signs of deterioration of the floor or ceiling joists at those locations. There are no signs of loss of bearing. There is typically an air gap at the end of the joist, which would allow the end grain to dry should it be wetted by water penetrating the outer withes of the wall. In general, the configuration of the joist bearing condition is adequate.

3. RECOMMENDATIONS

Other recommendations relating to the exterior wall, such as repointing, and choice of appropriate mortar joint profiles and colors, are covered elsewhere in this Historic Structures Report. These recommendations are only intended to address the specific issues investigated as part of this additional work – specifically, the bulging brick masonry on the exterior walls and the bearing conditions of wood framing members on interior walls.

3.1 Exterior Walls and Laboratory Test Results

Stone Masonry Buildings

The isolated areas of cracking in the stone masonry tend to occur at vertical mullions with either a short bearing length for a horizontal mullion above (at double or triple window) or at embedded ferrous fasteners. Remove the embedded ferrous fasteners in the masonry. Where those ferrous fasteners still serve a purpose (e.g., a shear pin or connector at stone mullions), replace them with a noncorroding metal pin or connector, such as stainless steel or bronze.

Evaluate cracks on a case-by-case basis considering the crack location, size, and loading on the stone to determine whether a structural repair to the crack (e.g., epoxy repair) is necessary.

Brick Masonry Buildings

Given the construction of the brick masonry walls and the climate in Buffalo, it is imperative to protect the exterior brick masonry walls from the frequent saturation resulting from concentrated roof runoff, such as beneath holes in gutters or down leaders or beneath valleys when downleaders are not present. As such, install and maintain a well-design gutter and down-leader system beneath all roof eaves on the brick masonry buildings.

In areas that are already deteriorated or have experienced localized collapse, repair or rebuild the walls. It is acceptable to use the existing brick where available. Use noncorrosive (e.g., stainless steel) ties across the cavity to improve the bond of the outer and inner wythes in these areas of failure and opportunity for access. In areas where bulging and separation of the outer and inner wythes has begun (as evidenced by apparently recessed headers), if the outer wythe is in good condition, install remedial stainless steel ties in the mortar joints to reconnect the outer and inner wythes. These remedial stainless steel ties can be drilled into the mortar joints, with the heads recessed from the surface, and pointed over so that they will not be visible when the repair is completed.

3.2 Interior Wall Findings

There are no indications of deterioration of either the masonry or the floor joists at the bearing condition. Our only recommendation is to observe a larger sample size of bearing conditions once the proposed floor demands are determined.

Sincerely yours,

Matthew B Bronski

Matthew B. Bronski

Erik W. Farrington

Katherine Wissink

Katherine S. Wissink

Rachel E Shanley

Rachel Shanley

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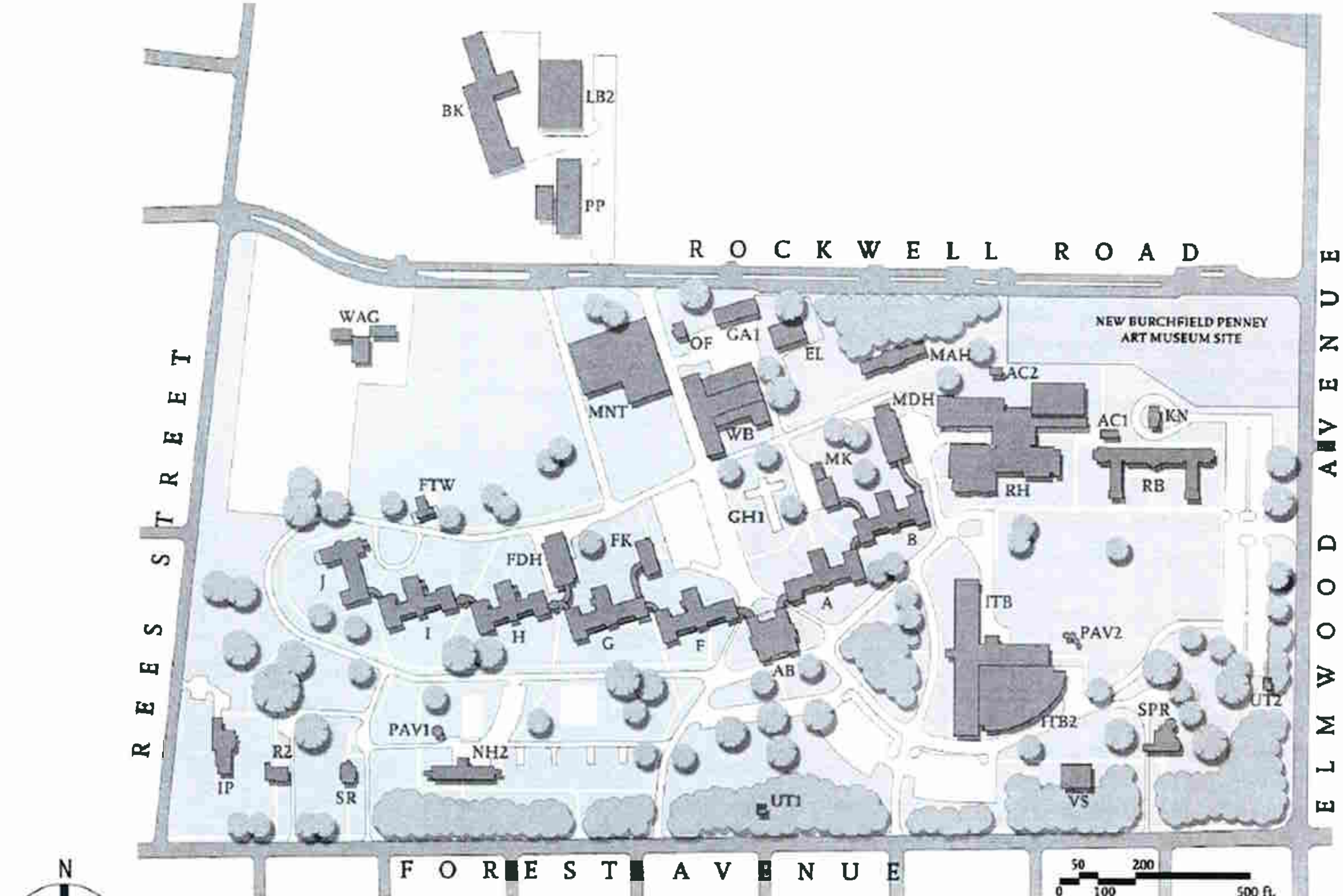
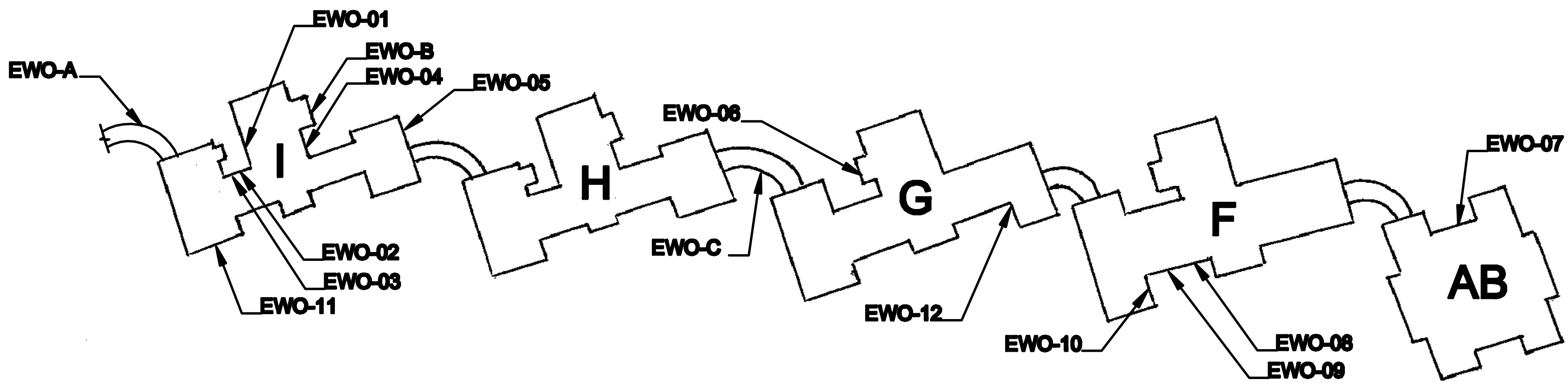


Fig. B.69.a Site Plan Detail 1975-2008

Image Courtesy GCA

FIGURE 1



Exterior Exploratory Opening Locations

N.T.S.

SIMPSON GUMPERTZ & HEGER
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Project: Richardson Complex Buffalo, NY				Drawing No.: Fig. 2
Drawing Title: Exterior Exploratory Opening Locations				
Proj.: 070771.03	Drawn: KSW	Checked:	Date: 05/19/08	Scale: N.T.S.

Photo 1

Typical stone masonry building, Building AB.

Photo 2

Medina sandstone face stones are purplish brown in color.

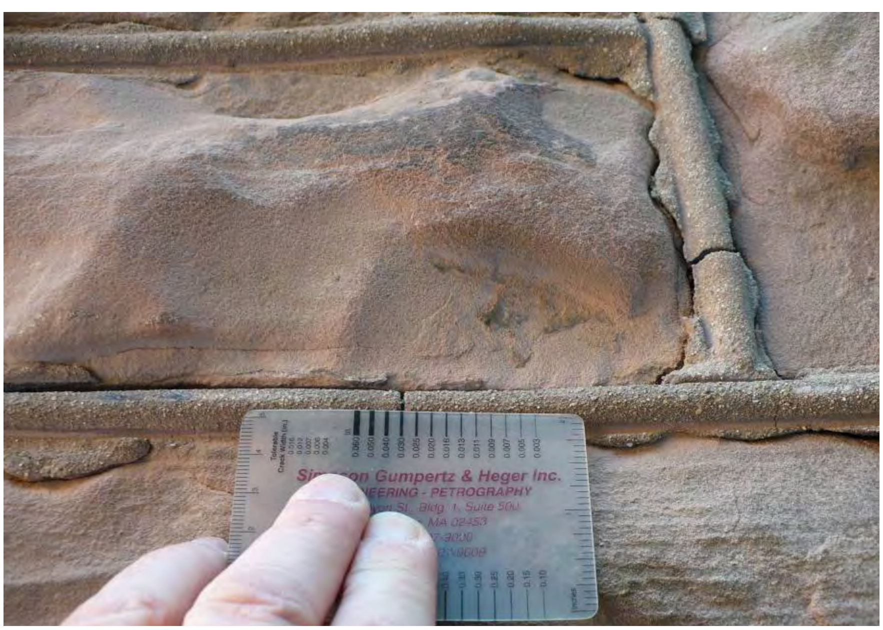


Photo 3

Typical cracking of mortar joints of stone masonry (Building G shown in photo)

Photo 4

Typical cracking (arrow) of vertical intermediate mullions.

Photo 5

Spalled stone at window mullion at location of fastener.

Photo 6

Typical brick masonry building, Building I.

Photo 7

Typical area of severe deterioration of brick masonry. Brick appears to be “peeling” away from the building.

Photo 8

Recessed header bricks indicate outward displacement (“bulging”) of the exterior brick.

Photo 9

Exploratory Opening EWO-06 in stone masonry wall of Building G.

Photo 10

Terra-cotta block at interior wythe of masonry wall of Building F.

Photo 11

Exploratory Opening EWO-09 in stone masonry wall of Building F.

Photo 12

Exploratory Opening EWO-10 in stone masonry of Building F. The bedding mortar at the face stones at the north side of the opening is white (as seen in the upper left corner of the photo), while the bedding mortar at the south side of the opening is red (as seen in the lower left corner of the photo).

Photo 13

Original pointing mortar of Building A is colored black with a raised square bead colored red at the center. Original pointing mortar at Building AB is similar.

Photo 14

Typical wall construction at brick buildings (photo taken at area of severe damage). Outer two wythes (though the outermost wythe is delaminating from the second wythe in the photo) are tied to the inner two wythes (left side of photo) by header bricks that span the cavity (arrow).

Photo 15

Exploratory Opening EWO-01 in collapsed brick masonry of Building I.

Photo 16

Exploratory Opening EWO-03 at intact masonry with no indication of displacement or distress in Building I.

Photo 17

Exploratory Opening EWO-11 at cracked masonry of Building I. Vertical crack in masonry between the head of the first-floor window and the bottom of the second-floor belt course. The crack only travels through the mortar joints as none of the brick are cracked.

Photo 18

Exploratory Opening EWO-A in the connector corridor between Buildings I and J. Metal ties used in place of brick to span the cavity and tie the outer brick to the inner brick. The metal ties are typically corroded.

Photo 19

Exploratory Opening EWO-B at area of collapsed brick masonry at Building I. Bricks that span the cavity between the outer wythes and inner wythes are paired (outer wythe bricks not seen in photo).

Photo 20

Exploratory Opening EWO-12 in area of brick masonry well protected below a porch roof.

Photo 21

Exploratory Floor/Wall Opening IWO-01 in the third floor of Building B.

Photo 22

Exploratory Floor/Wall Opening IWO-01 in the third floor of Building B. The floor joists are bearing approximately 5-1/4 in. on the masonry below.

Photo 23

Exploratory Floor/Wall Opening IWO-02 at an exterior wall in Building H.

Photo 24

Exploratory Floor/Wall Opening IWO-02 at an exterior wall in Building H. This shows the firecut floor joists.

Photo 25

Exploratory Floor/Wall Opening IWO-02 at an exterior wall in Building H. The floor joists are bearing approximately 5-1/2 in. on the masonry wall below.

Photo 26

Exploratory Floor/Wall Opening IWO-03 at an interior wall in Building H.

Photo 27

Exploratory Floor/Wall Opening IWO-03 at an interior wall in Building H. The floor joists are bearing approximately 5-1/2 in. on the brick masonry wall below.

Photo 28

Compression testing of brick.

Photo 29

Brick sample from Exploratory Opening EWO-02 under the microscope at 6x magnification. Note the absence of voids close to the edge of the brick and increasing frequency of voids deeper inside the brick.

30 April 2008

LABORATORY REPORT

BY Stephen M. Clooney

PROJECT 070771.08 – Option Six – Additional Services Laboratory Analysis, Richardson Olmsted Center Complex, Buffalo, NY

SUBJECT Testing of Brick Samples for Compressive Strength

SUMMARY We cut fifteen bricks to be tested in accordance with ASTM C67 – Standard Methods of Sampling and Testing Brick and Structural Clay Tile, Section 7. The average compressive strength of the bricks has to be greater than 3,000 psi to meet the requirements set forth in ASTM C62-92c, Table 1 for Grade SW bricks.

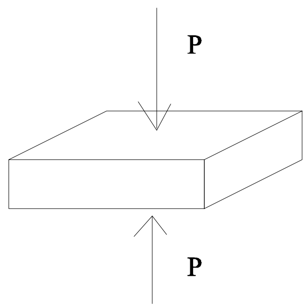
SAMPLES Fifteen brick samples were submitted by Katherine S. Wissink on 16 April 2008.

PROCEDURES

We tested the samples in accordance with ASTM C67 – Standard Methods of Sampling and Testing Brick and Structural Clay Tile, Section 7. The following summarizes the procedures used.

- We used a wet saw to cut fifteen rectangular bricks in half, creating samples approximately 4 x 4 in. square.
- We oven dried the specimens at 230°F for 24 hrs.
- We conditioned the samples for 22 hrs at room temperature.
- We measured the length and width of both bearing surfaces from each specimen with a caliper and recorded the average bearing surface area.
- We capped the bricks with a gypsum coating prior to testing and allowed the caps to dry overnight.
- We tested the bricks in a Forney Compression Tester and used the 250,000 lbs load scale. We applied the load at a rate of 35 psi per second. We recorded the load at which the brick broke under compression as “Maximum Load.”

- We tested the samples flatwise.



- We calculated the results using the following equations as given in ASTM C67 Section 6:

  Compressive Strength (psi) = Maximum Load (lbs) / Cross-Sectional Area (sq in.)

RESULTS

Sample ID	Surface	Length (in.)		Width (in.)		Cross-sectional area (sq in.)	Maximum load (lbs)	Compressive Strength (psi)
EWO 02 A2	Top	4.089	4.062	2.830	2.665	11.20	72,000	6457
	Bottom	4.086	4.093	2.784	2.647	11.10		
	Average	4.082		2.731		11.15		
EWO 02 B2	Top	4.113	4.076	2.661	2.624	10.82	53,500	4941
	Bottom	4.092	4.077	2.676	2.631	10.84		
	Average	4.089		2.648		10.83		
EWO 02 D2	Top	3.889	3.893	2.434	2.512	9.62	70,000	7223
	Bottom	3.787	3.910	2.497	2.577	9.76		
	Average	3.870		2.505		9.69		
EWO 02 E2	Top	4.024	4.056	2.739	2.700	10.99	76,000	6859
	Bottom	4.133	4.128	2.722	2.689	11.17		
	Average	4.085		2.712		11.08		
EWO 02 F2	Top	4.017	3.981	2.683	2.792	10.94	65,000	5913
	Bottom	4.021	4.010	2.746	2.754	11.04		
	Average	4.007		2.743		10.99		
EWO 03 A2	Top	4.161	4.157	2.699	2.689	11.20	66,000	5925
	Bottom	4.090	4.104	2.657	2.751	11.08		
	Average	4.128		2.699		11.14		
EWO 03 C2	Top	4.011	4.015	2.596	2.612	10.45	90,500	8577
	Bottom	4.050	4.047	2.665	2.598	10.65		
	Average	4.031		2.618		10.55		
EWO 03	Top	4.029	4.019	2.635	2.586	10.50	71,000	6730

Sample ID	Surface	Length (in.)		Width (in.)		Cross-sectional area (sq in.)	Maximum load (lbs)	Compressive Strength (psi)
D2	Bottom	4.060	4.042	2.645	2.585	10.59		
	Average	4.038		2.613		10.55		
EWO 03 E2	Top	4.039	4.062	2.580	2.603	10.50	90,000	8508
	Bottom	4.050	4.067	2.621	2.634	10.66		
	Average	4.055		2.609		10.58		
EWO 03 F2	Top	4.055	4.064	2.572	2.592	10.48	72,500	6919
	Bottom	4.056	4.014	2.585	2.609	10.48		
	Average	4.047		2.589		10.48		
EWO 05 A2	Top	4.066	4.040	2.430	2.457	9.90	70,500	7078
	Bottom	4.087	4.017	2.457	2.489	10.02		
	Average	4.052		2.458		9.96		
EWO 05 B2	Top	4.001	3.992	2.489	2.585	10.14	52,500	5296
	Bottom	4.050	3.928	2.405	2.454	9.69		
	Average	3.993		2.483		9.91		
EWO 05 C2	Top	3.986	4.108	2.436	2.469	9.92	57,000	5724
	Bottom	3.950	4.101	2.467	2.498	9.99		
	Average	4.036		2.467		9.96		
EWO 05 D2	Top	4.089	4.124	2.460	2.425	10.03	60,000	5960
	Bottom	4.160	4.276	2.407	2.386	10.11		
	Average	4.162		2.419		10.07		
EWO 05 F2	Top	4.102	4.134	2.539	2.451	10.27	62,500	6108
	Bottom	4.107	4.076	2.495	2.487	10.19		
	Average	4.105		2.493		10.23		

1 May 2008

LABORATORY REPORT

BY Stephen M. Clooney

PROJECT 070771.08 – Option Six – Additional Services Laboratory Analysis, Richardson Olmsted Center Complex, Buffalo, NY

SUBJECT C/B Ratio of Bricks

SAMPLES Fifteen brick samples were submitted by Katherine S. Wissink. Each brick was labeled accordingly.

PROCEDURES:

The samples were tested in accordance with ASTM C67-03a – Standard Method of Sampling and Testing Brick and Structural Clay Tile.

The following summarizes the procedures used.

Absorption (ASTM C67, Section 7):

- We cut the samples in half, and fifteen halves were tested.
- We oven dried the specimens for 24 hrs and then weighed at 2 hr intervals at the end of the 24 hr drying period to ensure that the difference in successive weighing was less than 0.2%. After cooling at standard laboratory atmosphere (73°F / 45% RH) for at least 4 hrs, the weight was recorded as "dry specimen."
- We soaked the specimens in a bath of distilled water at room temperature for 24 hrs. We then pat dried the specimens with a damp towel and weighed them. The weight was recorded as "weight after 24 hr soak."
- Immediately following the 24 hr soak, we placed the specimens back into the room temperature bath of distilled water, and the bath was brought to a boil within 1 hr. The heat was removed from the bath 5 hrs after the specimens were placed into the bath. The bath was allowed to cool to room temperature by natural heat loss (approximately 16 hrs). After cooling, we pat dried the specimens with a damp towel and weighed. The weight was recorded as "weight after 5 hr boil."
- We calculated the results using the following equations as given in ASTM C67, Section 7.
  - Absorption, % = 100(24 hr wt. - dry wt.)/dry wt.
  - Absorption, % = 100(5 hr boil wt. - dry wt.)/dry wt.

- Saturation Coefficient = [(24 hr wt. - ry wt.)/(5 hr boil wt. - dry wt.)]

RESULTS

Sample ID	Dry Sample Weight (g)	Sample Weight After 24 hr Soak (g)	Sample Weight After 5 hr Boil	24 hr Absorption %	5 hr Boil Absorption %	Saturation Coefficient
EWO 02 A	1,089.3	1,267.49	1,300.21	16.36	19.36	0.84
EWO 02 B	1,186.6	1,380.05	1,430.85	16.30	20.58	0.79
EWO 02 D	984.91	1,188.81	1,194.36	20.70	21.27	0.97
EWO 02 E	1,161.91	1,341.38	1,401.84	15.45	20.65	0.75
EWO 02 F	1,077	1,269.36	1,292.39	17.86	20.00	0.89
EWO 03 A	1,122.29	1,340.83	1,346.81	19.47	20.01	0.97
EWO 03 C	1,117.53	1,295.36	1,319.25	15.91	18.05	0.88
EWO 03 D	1,079.8	1,279.76	1,292.3	18.52	19.68	0.94
EWO 03 E	1,083.08	1,263.16	1,272.88	16.63	17.52	0.95
EWO 03 F	1,092.77	1,278.33	1,311.19	16.98	19.99	0.85
EWO 05 A	975.32	1,158.43	1,187.43	18.77	21.75	0.86
EWO 05 B	947.17	1,122.83	1,143.17	18.55	20.69	0.90
EWO 05 C	945.68	1,136.89	1,144.84	20.22	21.06	0.96
EWO 05 D	964.06	1,142.67	1,156.97	18.53	20.01	0.93
EWO 05 F	930.96	1,117.2	1,122.99	20.01	20.63	0.97

Memorandum

Date: 15 May 2008

To: Katherine S. Wissink

From: Daniela M. Mauro

Project: 070771.08 – Option Six – Additional Services Laboratory Analysis, Richardson Olmsted Center Complex, Buffalo, NY

Subject: Microscopic Examination of Void Spaces in Bricks

On 13 May 2008, Katherine S. Wissink asked me to examine the porosity of two brick samples. I arbitrarily designated the bricks Sample 1 and Sample 2.

Sample 1 contains significantly fewer voids than Sample 2, but both do not show interconnected voids throughout.

The bricks show increasing porosity toward the center of the brick, but few to no voids near the edges. This is exhibited especially clearly in Sample 2.

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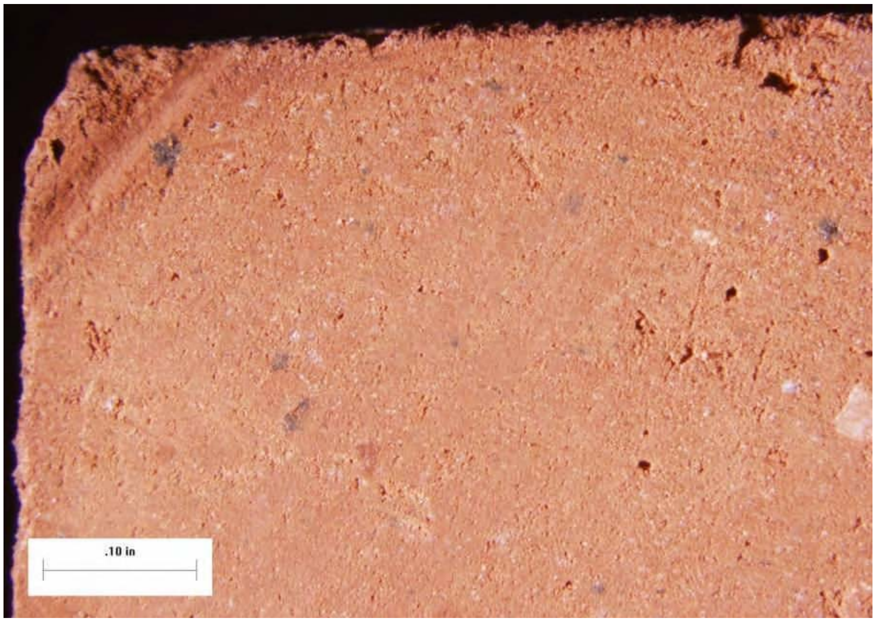

Photo 1

A cut corner of Sample 1 at 6X, showing small voids and a dense structure. Voids do not appear to be interconnected.

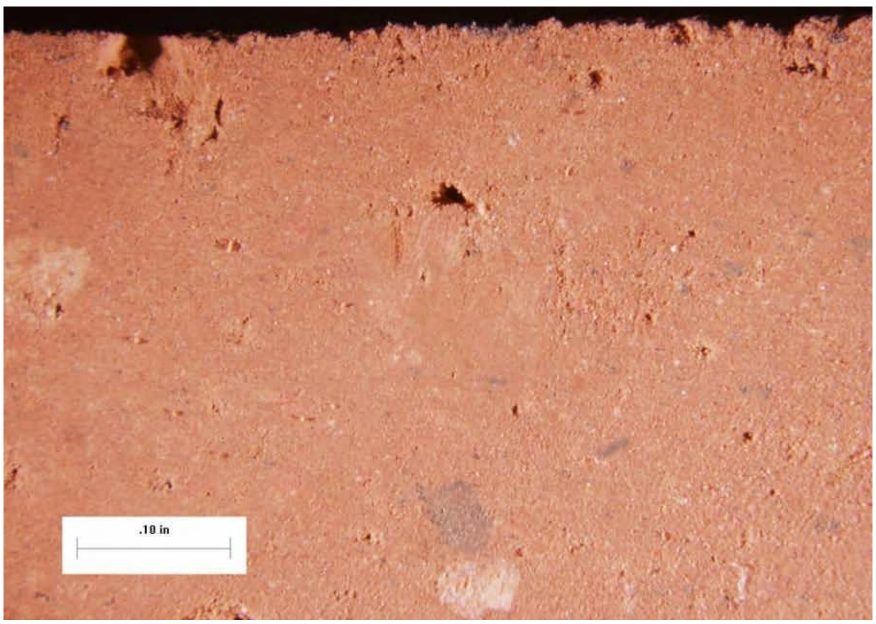

Photo 2

General photo of Sample 1 at 6X, showing average void distribution and size. Voids do not appear to be interconnected.

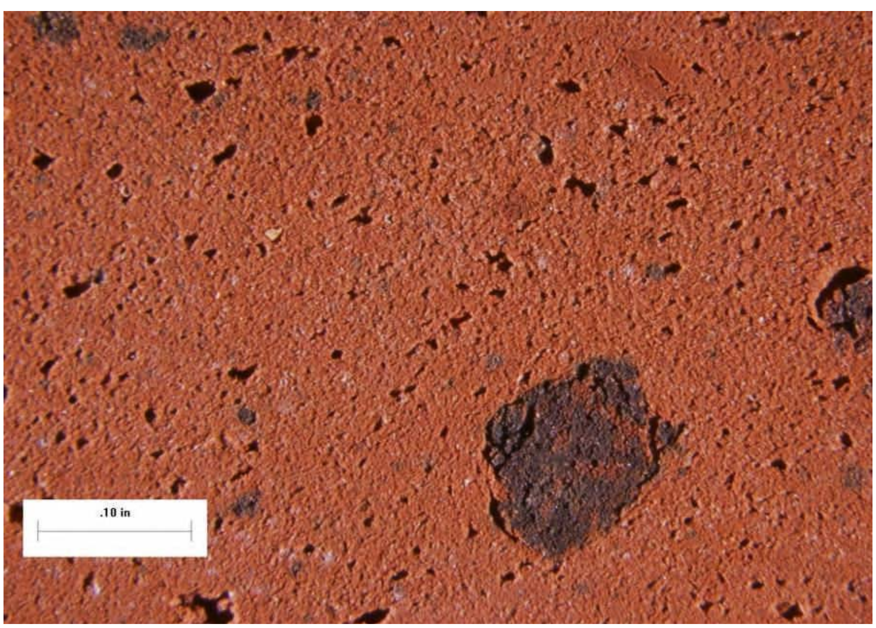

Photo 3

Sample 2 at 6X exhibits more voids than Sample 1.

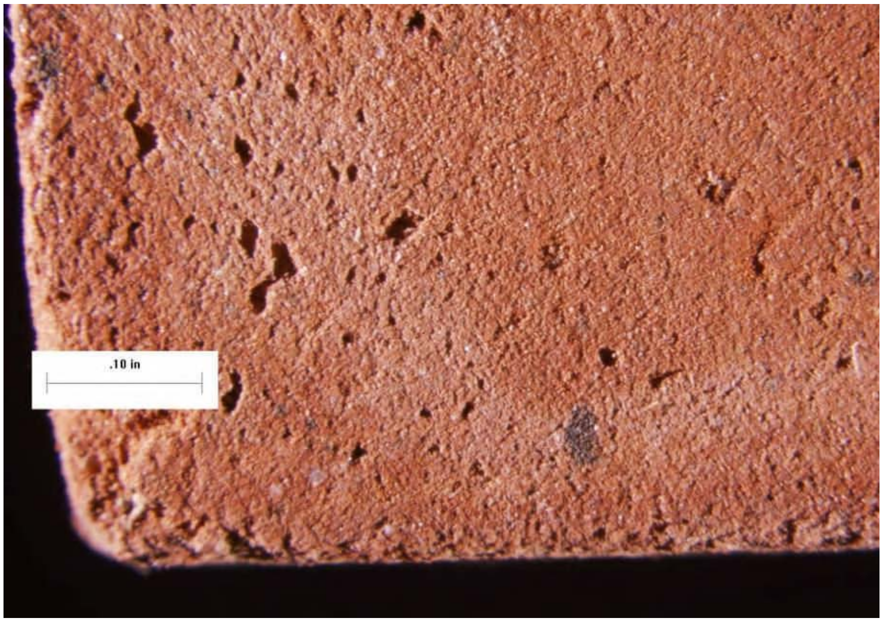

Photo 4

A cut corner of Sample 2 at 6X, showing less-frequent air voids near the edge of the brick. In this area, voids do not appear to be interconnected.

Photo 5

Sample 2 at 6X. Note the absence of voids close to the edge of the brick, and increasing frequency of voids deeper inside the brick.

Memorandum

Date: 2 May 2008

To: KS Wissink

From: DM Mauro, MJ Scali

Project: 070771.08

Subject: Examination and Analysis of Hardened Mortar.

At your request, we conducted testing on six mortar samples, identified as 5, 7A, 8, 9, 11, and 12. You told us that the mortar samples came from the Richardson Complex in Buffalo, New York. You asked us to perform a full petrographic examination on sample 5, and to determine the binder to aggregate ratios for samples 7A, 9, and 11. You also asked us to perform a microscopic examination on sample 8 and 12 to determine the general composition of the each mortar.

Sample Description

On 16 April 2008, you submitted six bags of hardened mortar samples, which are shown in Photos 1 through 6.

Sample Preparation

We used a representative portion of each mortar sample to prepare an ultrathin (< 30 µm) section to conduct our petrographic examination. In addition, we crushed and ground portions of samples 5, 7A, 9, and 11 to a fineness of less than 50 mesh to conduct chemical analyses in order to determine the binder-to-aggregate ratio for each mortar.

Laboratory Analysis

We analyzed the mortar in sample 5 in accordance with ASTM C1324 – Standard Test Method for Examination and Analysis of Hardened Masonry Mortar, which includes both chemical analysis in accordance with ASTM C114 – Standard Test Methods for Chemical Analysis of Hydraulic Cement, to determine the insoluble residue, soluble silica, and calcium oxide contents, and petrographic examination in accordance with applicable procedures of ASTM C856 – Standard Practice for Petrographic Examination of Hardened Concrete.

Chemistry

We conducted a full chemical analysis on sample 5 to determine the percent by weight of calcium, silica, and magnesium. We also conducted loss-on-ignition (LOI) testing at 110, 550, and 950°C to determine absorbed water, chemically bound water, and carbonate content of the mortar. We conducted an insoluble residue analyses on sample 5, 7A, 9, and 11, to determine the aggregate to binder ratios for each mortar sample/

Based on the results of our full chemical analysis of sample 5, we calculated the proportions of the constituents in the hardened mortar. Normally, we assume that the entire weight of insoluble residue represents the aggregate fraction of the mortar, per ASTM C1324. However, 5 to 25 percent of the aggregate in sample 5, 7A, 9, and 11 is composed of calcite and limestone fines that are soluble in acid, which result in a reduction in the measured aggregate fraction and a corresponding increase in percent binder. We used the results of our petrographic examination to obtain volume estimates of the amount of calcareous aggregate in order to correct the measured values for each sample. The results of our chemical analyses are presented below:

Sample ID:	**5**
Analysis	**wt%**
Silica	0.74
CaO	10.01
MgO	1.38
Insoluble Residue	73.76
LOI 110°C	0.26
LOI 550°C	0.99
LOI 950°C	9.21

Converting the measured weight percentages to corresponding volume proportions for cement and sand and assigning surplus calcium to lime, we calculate the following mix proportions and volume ratios for sample 5:

Cement	1
Sand	24-1/2
Lime	8
Binder-to-Aggregate Ratio	2-3/4

Microscopy

We conducted petrographic examinations on prepared ultrathin (< 30 µm) sections of each of the hardened mortar samples. We observed the following during our petrographic examinations:

Sample 5

- The mortar exhibits a white to light gray color.
- The mortar contains fully hydrated lime masses. We also observe minor amounts of natural cement.
- The mortar contains a natural sand that is primarily composed of quartz with lesser amounts of feldspar, micas, and limestone.
- The limestone particles comprise approximately 5% (by volume) of the sand fraction.

- The mortar is not intentionally air-entrained but does contain entrapped air voids.

Sample 7A

- The mortar sample is composed of two different colored mortars: one exhibits a dark brick red color, and the other exhibits a beige to light grey color.
- The dark brick red mortar contains an integral iron oxide coloring pigment, not brick dust. We observe occasional areas within the mortar sample that exhibit a light grey color due to the absence of coloring pigment.
- The mortar contains particles of natural cement as well as lime (see photos 7 – 9).
- The mortar contains a natural sand that is primarily composed of quartz with lesser amounts of feldspar, micas, and limestone (see photo 10).
- The limestone particles comprise approximately 10% to 15% of the sand fraction by volume.
- The mortar is not intentionally air entrained, but does contain entrapped air voids.
- The mortar contains sand-sized and smaller fragments of burnt wood or coal.
- The mortar has a binder-to-aggregate ratio of 1:3.

Sample 8

- Sample 8 is a black mortar contains an integral carbon black coloring pigment.
- The mortar contains equal amounts of natural cement and fully hydrated lime masses.

Sample 9

- The mortar exhibits a uniform brick red color.
- The mortar contains particles of natural cement as well as lime (see photo 11).
- The mortar contains an integral, iron oxide coloring pigment, not brick dust. We observe areas within the mortar that exhibit a light grey color due to the absence of coloring pigment.
- The sand fraction of the mortar is a natural sand that is primarily composed of quartz. We also observe lesser amounts of feldspar, micas, and limestone.
- The limestone particles comprise approximately 20% to 25% of the sand fraction, by volume.
- The mortar contains pieces of burnt wood or coal (see photo 12).

- The mortar has a binder-to-aggregate ratio of 1:3.

Sample 11

- The mortar exhibits a uniform brick red-orange color.
- The mortar contains particles of natural cement as well as lime.
- The mortar contains an integral, iron oxide coloring pigment, not brick dust. We observe occasional areas within the mortar that exhibit a light grey color due to the absence of the coloring pigment.
- The sand fraction of the mortar is a natural sand that is primarily composed of quartz, with lesser amounts of feldspar, mica, and limestone.
- The limestone particles comprise approximately 20% to 25% of the sand fraction by volume.
- The mortar contains pieces of burnt wood or coal.
- The mortar has a binder-to-aggregate ratio of 1:3.

Sample 12

- The black mortar in sample 12 is similar to sample 8, and contains an integral, black carbon, coloring pigment.
- The red “stripe” of mortar in sample 12 is similar to the mortar in sample 7A. It was applied in a separate layer on top of the black mortar evidenced by a distinct, as the boundary between the two different colored mortars which is clearly visible (see photo 13).

Photo 1

Mortar sample 5

Photo 2

Mortar sample 7A.

Photo 3

Mortar sample 8

Photo 4

Mortar sample 9

Photo 5

Mortar sample 11

Photo 6

Mortar sample 12

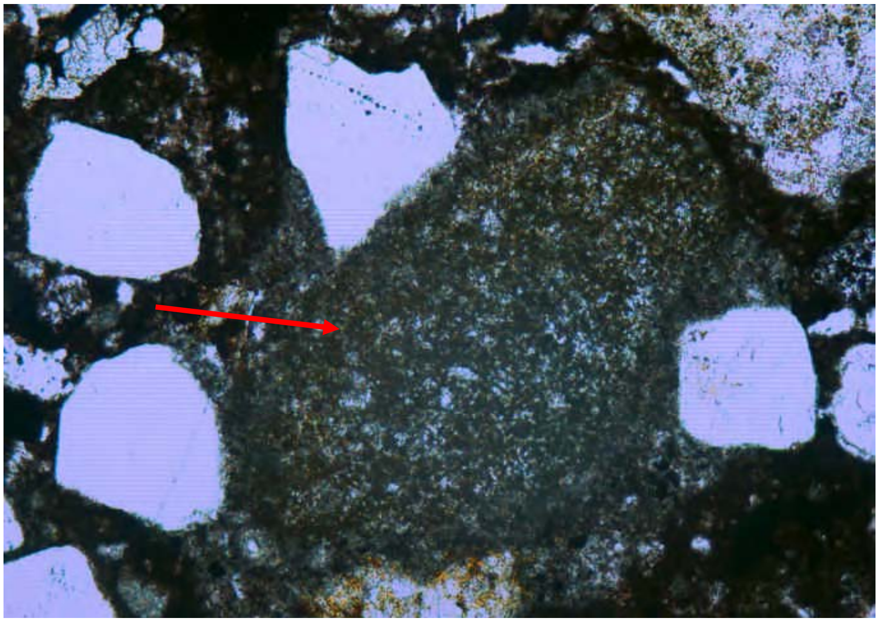

Photo 7

Natural cement particle at 100x, Sample 7A.

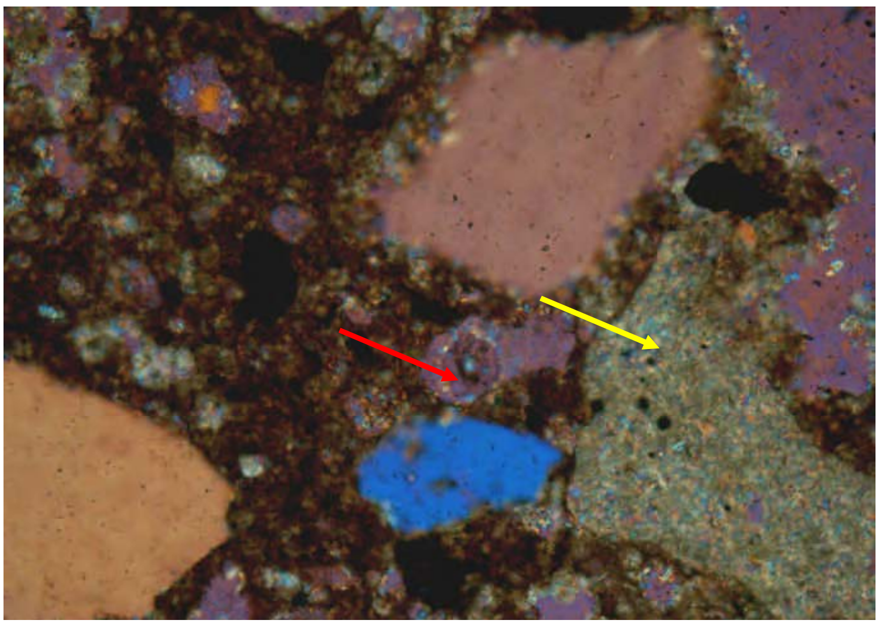

Photo 8

Small particle of quartz (red arrow) in natural cement (yellow arrow) located adjacent to limestone in the paste of sample 7A, at 200x.

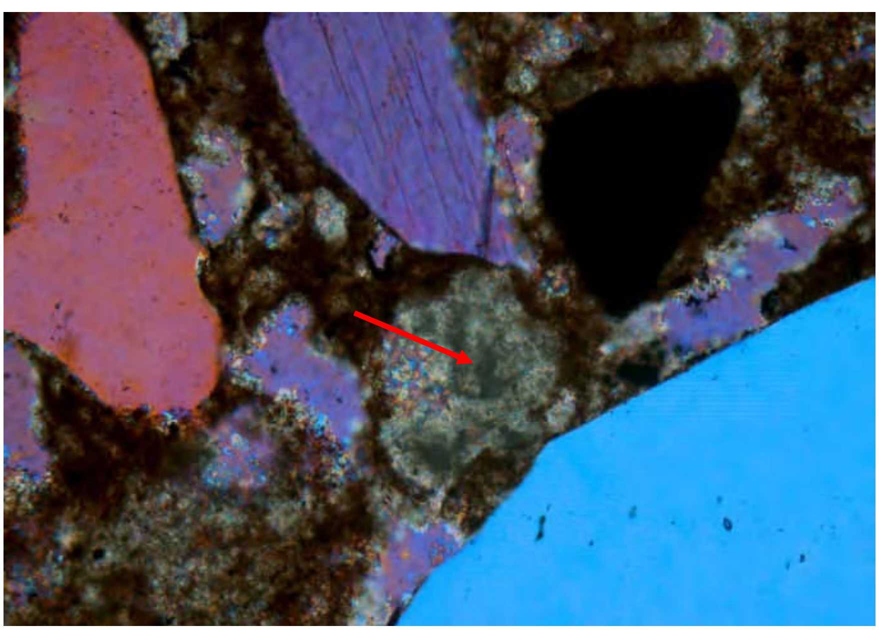

Photo 9

Lime mass surrounded by calcium hydroxide in matrix of sample 7A, 200x.

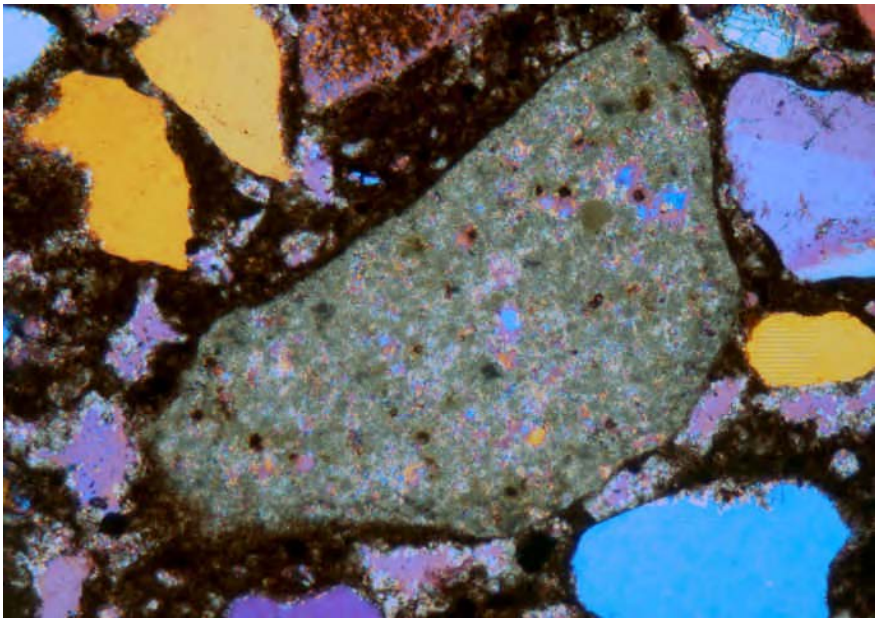

Photo 10

A particle of limestone, as compared to the lime mass shown in photo 9, 100x.

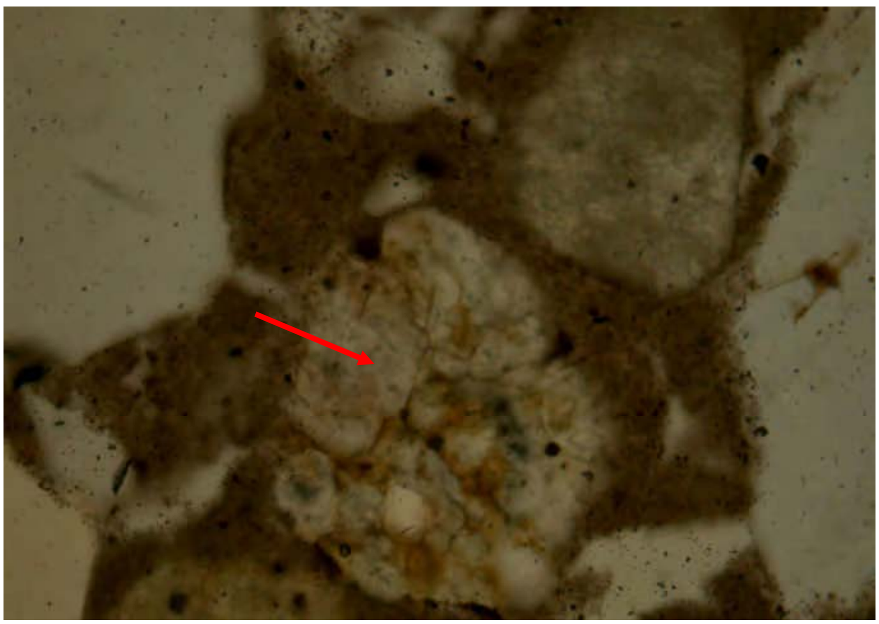

Photo 11

Particle of natural cement in the matrix of sample 9, 200X.

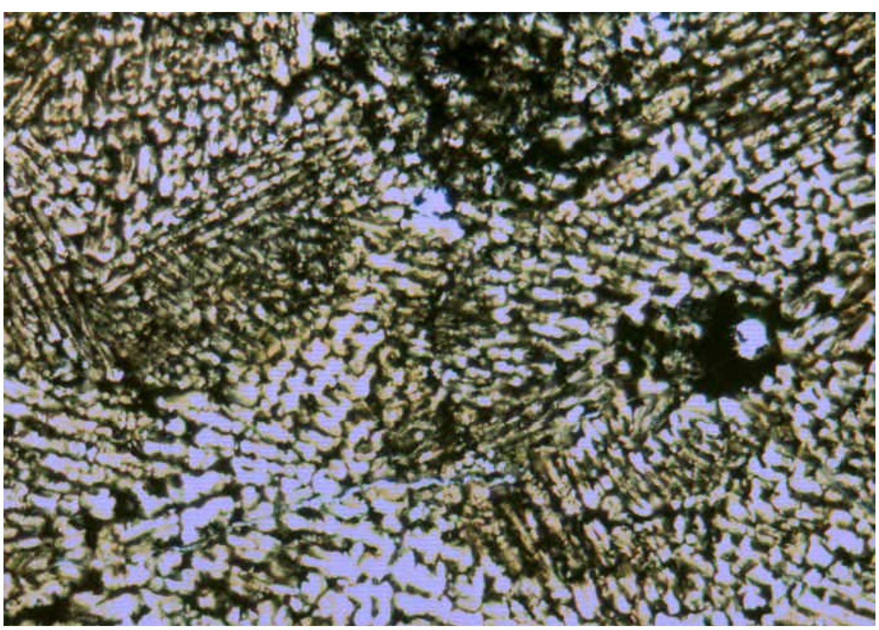

Photo 12

Cellular structure of burnt wood in the matrix of sample 9, 100x.

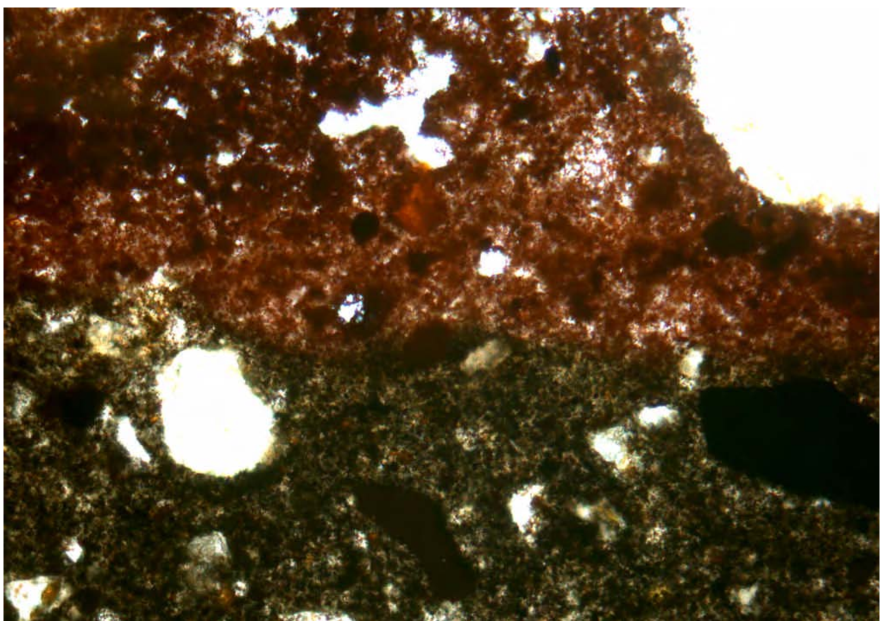

Photo 13

Boundary between red and black mortars in sample 12, 200x.