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ADAPTIVE USE PROPOSAL FOR THE HEADQUARTERS OF THE
HISTORICAL SOCIETY OF SCHUYLKILL COUNTY

Amy Michelle Loewenstein

A THESIS

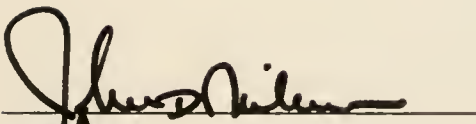
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Historic Preservation

Presented to the Faculties of the University of Pennsylvania in
Partial Fulfillment of the Requirements for the Degree of

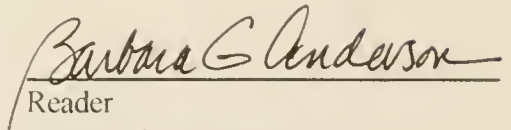
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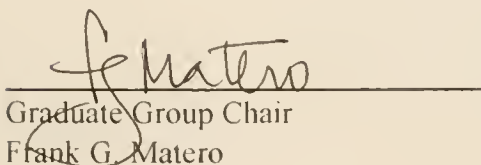
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Dedicated to the memory of my mother,
Barbara Elizabeth Loewenstein
1946-1996

“The real voyage of discovery consists
not in seeking new landscapes,
but in having new eyes.”

-Marcel Proust

Thank you for showing me how
to see with new eyes.

LIST OF ILLUSTRATIONS



1.

Original Plan of Pottsville, 1816

Courtesy of the Historical Society of Schuylkill County,
Pottsville, Pennsylvania

and

D. C. Henning, "Early Annals of Pottsville."

Publications of the Historical Society of Schuylkill County Vol. II.
page 104

2.

Centre Street School, circa 1900

Courtesy of the Historical Society of Schuylkill County,
Pottsville, Pennsylvania
Centre Street School Folder

3.

Jackson Street School, Pottsville, 1876

Courtesy of the Historical Society of Schuylkill County,
Pottsville, Pennsylvania
Pottsville School Folder

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Garfield School, Pottsville

Courtesy of the Historical Society of Schuylkill County,
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5.

Beideman School, Philadelphia, 1863

Courtesy of Franklin P. Edmunds,

The Public School Buildings of the City of Philadelphia from 1853 to 1867.
pages 53 and 56

6.

Wyoming School, Philadelphia, 1866

Courtesy of Franklin P. Edmunds,

The Public School Buildings of the City of Philadelphia from 1853 to 1867.
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Courtesy of Franklin P. Edmunds,

The Public School Buildings of the City of Philadelphia from 1853 to 1867.
pages 169 and 172

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INTRODUCTION

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Thesis Summary Statement



This thesis is a comprehensive adaptive use project concerning the Female Grammar School Building located at 301 North Centre Street in Pottsville, Pennsylvania. The three story masonry building was recently purchased by the Historical Society of Schuylkill County to serve as its headquarters. The first and second floors will be used by the Historical Society while the third floor will serve as leased office space. The Historical Society has proposed the following programmatic requirements for the new facility: exhibit space, reading room and library, collection storage, administrative offices, meeting room, work room and gift shop.¹

This thesis addresses many issues involved in the overall rehabilitation of the building to accommodate the Society's program. The scope of work included archival research to establish a general history of the site and document the physical appearance and function of the structure at the time of its original construction, recordation and assessment of existing conditions, preparation of adaptive use proposals for planning and design of the interior spaces while preserving their historical and architectural integrity, and recommendation of appropriate treatments to mitigate the deterioration identified in the conditions assessment.

Preservation Philosophy



Preserving a building on the basis of historic merit alone makes the building a false contributor to its surrounding environment. It is the purpose of a building to provide shelter for a human function or process. When a building can no longer fulfill its original purpose due to size, location, obsolete function, maintenance costs, or other limitations, it is necessary to adapt the building in response to the changing market. In some instances, like the Female Grammar School, this change can easily be accomplished without the loss of defining character or historic fabric.

The continued use of a building inevitably results in changes and modifications to its original configuration or appearance. Without change, the building might lose economic and aesthetic value which could result in the loss of historic and cultural value due to a lack of maintained community interest.

The Female Grammar School was built as a result of the Common Schools Act, enacted in Pottsville in 1834, in order to provide equal educational opportunities for the rich and poor citizens of Pennsylvania. At the time of its construction in 1863, the Female Grammar School, like its contemporaries, embodied the ideas of democracy, social equality and the formation of moral standards. It was commonly believed that, "the school houses of any community are gauges of its enlightenment."²

With the new use, proposed in this thesis, the building will continue to facilitate these ideas. The current mission of the Historical Society of Schuylkill County reflects these ideas. It states:

The objectives of the Society are as follows: To understand and support the unique contribution of the Historical Society to the community. To bring together those people interested in history and especially in the history of the area now comprising Schuylkill County. To discover, collect and preserve any materials which may help to establish or illustrate the history of the county. To disseminate knowledge of county history in the community, schools, houses of worship, and any other institutional or organizational channels.³

Continuing to use the building as an educational facility which also collects and preserves the social elements and history of Schuylkill County, is an excellent match for the Female Grammar School Building.

Endnotes for pages 1-4

1. Request for Proposal from the Historical Society of Schuylkill County, October 1996. This Request for Proposal defines the overall programmatic needs and project requirements that form the basis of this thesis.
2. Mills, Wilbur T. *American School Building Standards*. Franklin Educational Publishing Co., Columbus, Ohio, 1910. Page 9.
3. Historical Society of Schuylkill County Membership Publication

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BACKGROUND
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General Site History



It is the purpose of this general history to briefly introduce the historic development of Pottsville. Although of considerable importance to the history of Pottsville and Schuylkill County, the Native American or prehistoric settlements and early explorations in the area will be excluded in order to focus the topic on the context of the Female Grammar School.



The close proximity of the Schuylkill River, Norwegian Creek, and Mill Creek suggest that the first inhabitants of the area worked at the various saw mills which required water for their processes. Around 1780 it is believed that Basler's saw mill was located along Norwegian Creek. Isaac Thomas and Lewis Reese constructed a furnace in the area between 1795 and 1804. The industries that were most likely located near the numerous water sources include saw mills, grist mills, oil mills, and furnaces.¹ In fact, "at the time of its founding, the advantages of the site of Pottsville were considered only from the standpoint of its proximity to the stream and its availability for rafting lumber and conveying iron ore to the Philadelphia market."² The necessity of water to operate these industries plays an important role in the location of Pottsville and would continue to effect the industrial growth in the area.

Pottsville is considered the location of the discovery of anthracite coal; however, a controversial debate between historians and geologists continues to surround the

identification of the party responsible for the discovery. Some believe explorer William Scull should be celebrated as the original discoverer because his 1770 map of "The Provinces of Pennsylvania" notes "carbonne de terre" in the area near present day Pottsville.³ Others believe,

the first discovery of anthracite coal ...was made by ...Necho Allen, a lumberman who lived on Broad Mountain...one night in 1790 he camped out on a wild and desolate mountain, and built a fire among some rocks under the shelter of a small grove of trees. During the night he felt an unusual degree of heat close to him, and waking up, saw that the rocks were a glowing mass of fire. He had accidentally ignited a vein of anthracite coal.⁴

Other historians and geologists believe a group of men who set out to explore their land holdings in the area, "made the first discovery of anthracite while engaged on this tour of investigation; but that being unable to burn it, they decided it was a species of black rock with which they were not familiar, and gave it no further attention."⁵ It is also believed that "while engaged in building Greenwood furnace and forge, John Pott made a more satisfactory test of the virtues of "blackrock" as a fuel; and in 1810 while sinking the foundation for Orchard grist-mill he opened a vein of anthracite nine feet thick."⁶ Regardless of the disagreement surrounding the discovery of anthracite, coal was considered the foundation of the economy in Pottsville.

Aside from his controversial discovery of anthracite, John Pott contributed to the history of Pottsville as its founder. John Pott purchased the Reese and Thomas furnace in 1806. This furnace was removed and replaced with the Greenwood Furnace and Forge

in 1807.⁷ For the employees of the furnace and their families, John Pott built a tenant house development around 1809.⁸ From this development, John Pott envisioned a town plan bearing his name. In 1816 he hired surveyor Henry Donnell to lay out his plan and stake out the town lots. “The survey was commenced at the corner of Centre Street and Church Alley, and there the first stake was driven into the ground. From that point a line was run to the northeast corner of the square on which the Female Grammar School has since been located...”⁹ With the original plan, John Pott gave his town “...the ground of the square included between Centre Street on the east and Second Street on the west, and the two alleys now called High Street and Laurel Alley, for burial ground and for a building for a school and for religious services to be held by any regularly ordained minister of any denomination.”¹⁰ This lot will become the site for the Female Grammar School.

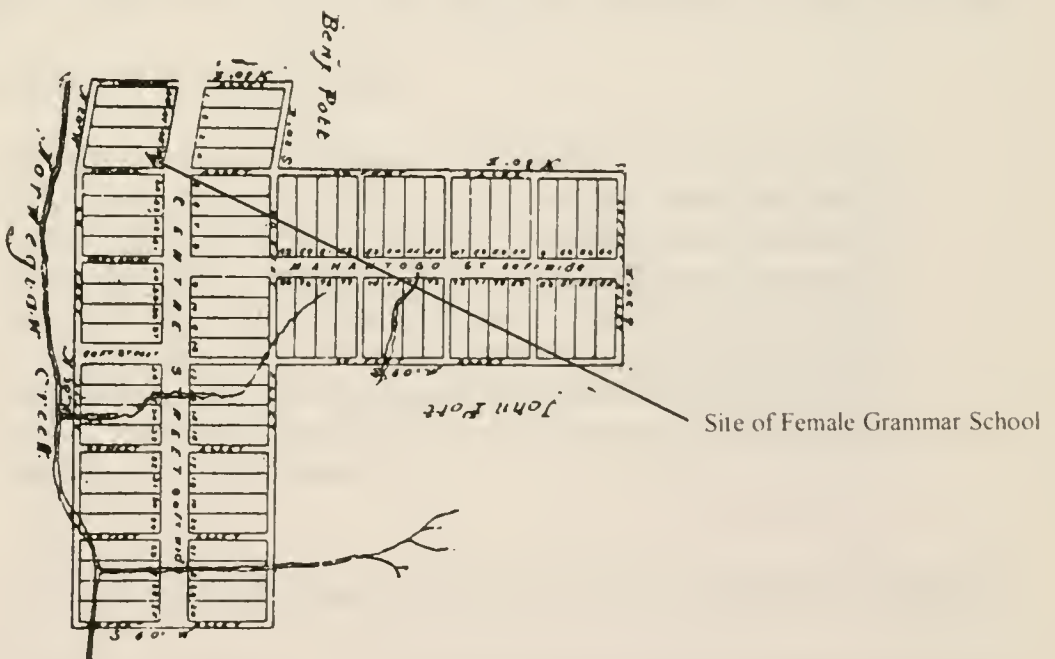


Illustration 1 Original plan of Pottsville, 1816

Pottsville was incorporated on February 19, 1828 by "An act to erect the town of Pottsville, in the County of Schuylkill, into a borough."¹¹ Pottsville would continue to grow in land size as Mr. Pott and others would add land to the original town plan.

Morrisville, which had been laid out by Israel W. Morris, formed Morris' Addition; Greenwood Addition, comprising the Orchard, was added by Brooks Buckley; Pott and Patterson's addition, Wynn's addition, Russell's addition, Faust's addition, and many others, including the lands of the Norway tract, the Samuel R. Potts tract, and other original warrants.¹²

Like other mining communities in Pennsylvania, Pottsville received a rush of speculators. "The quiet village in the wilderness became a bedlam of speculation and contention among fortune-seekers from distant sections of the country."¹³ The number of buildings in Pottsville increased six times its original size between 1826 and 1829.¹⁴ The Miners' Journal of May 2, 1829, reports:

Pottsville -- Great preparations are making in this place for the purpose of putting up a large number of buildings during the present season. The ten buildings situated on Coal Street, and ten situated on Mahantongo Street, and styled 'Clinton Row,' which was put up by Mr. Jacob Alter, an enterprising citizen of Philadelphia, will be ready for the reception of families in the course of the present month. We are pleased to state that a number of substantial brick buildings will be erected. This is as it should be, as they will greatly add to the beauty and appearance of the town.¹⁵

The increase in building stock is obviously related to the increase in population. An 1830 Miners' Journal article reports that Pottsville has 2,424 citizens in addition to the 1,350 people who do not consider themselves actual residents of the town.¹⁶

The great number of young men between 15 and 30 will serve to show enterprise of that portion of the community who have left friends and families to seek a livelihood in our region - upon the whole the census has resulted pretty much as we expected, and when we reflect that six years ago Pottsville contained but five or six houses and that the present town plot was a wilderness, and when joined to these we consider the great interest which has ever been opposed to the progress of Pottsville, the increase is almost unprecedented.¹⁷

The rapid population increase supplied the mills and mines with workers; however, the other necessary businesses and trades were not provided in the growing town. An article in the Miners' Journal of 1830 stated:

We are sadly in the want of mechanics here. A half a dozen good master blacksmiths, with three or more journeymen each, would find plenty of business. * * * A regiment of carpenters, bricklayers, and stone masons, with a strong detachment of sober laborers, would find employment. House painters, who understand mixing paints and using them without daubing the floors, are very rare among us... * * * A wheelwright, a cabinet maker and a pump borer are needed. A good barber shop we have not got... We really want a good, clean bakery and half a dozen of hucksters' shops. We have no ice houses and no milkman yet...A large hat factory much wanted...More dry good and grocery stores are wanted. It is high time that the union of all kinds of goods and wares, wet, dry, soft, hard, and grocery, in one room was abolished...More boarding houses are wanted, especially for the middling classes of persons. There are at present three large buildings in progress for the accommodation of the first class, which, when finished, will help to thin the floors of our hotels, which are frequently covered at night with persons who cannot find beds...Having given a hasty bit of our wants, it just occurs to us, that were these persons to come here en masse, they would be in great predicament for houses, wherein to put their families and pursue their different avocations. Those who are here can hardly live for want of room. We are daily, almost hourly, beset with applications for houses to rent.¹⁸

The population trends in Pottsville were also felt in Schuylkill County. By 1840 Schuylkill County had established itself as an area known for mining as 72% of its economy was founded in mining, 10% in agriculture, and 18% in business.¹⁹ Schuylkill County has remained a crucial location for the mining industry in the United States. A recent publication estimates that Schuylkill County accounts for half of the 15 million tons of coal produced each year.²⁰

Female Grammar School History



The history of the Female Grammar School and its site must be understood in the context of the rapid growth of Pottsville by diverse industries and thus, different economic classes, in the nineteenth century. The middle of the century saw the beginning of an economy based on the discovery and use of raw materials and improvements in transportation methods.²¹



As mentioned previously, in the original town plan, John Pott set aside a city lot to be used for burial, religious, and educational purposes which became the location of the Female Grammar School. The west side of the site was used as the burial ground while the east side was the location of the first building on the site. Abraham Pott testified in an 1859 suit against the School Board that,

...his father's first intention was to give the lot for a burial ground. It was fenced up and people began to be buried there. After that he told us ... that we should build a school house to have a school in, and for a church when people should be buried there; I think we built it by subscription; we had trustees appointed; the school house was on the south-eastern end of the lot he had given; I think the school house was erected in 1818 or 1819; it is there yet; the burial ground was from Centre street to Second street...²²

The school house Abraham Pott refers to was a log structure which served as the only school building in the borough of Pottsville for almost fourteen years.²³

The Common School Act was enacted in Pennsylvania in 1834 and Pottsville became one of the first towns to provide facilities in accordance with the act.²⁴ In fact, "so scarce were suitable buildings for the use as class rooms when the 'common school' concept began...that the earliest school boards used almost any available space - private homes particularly, small store rooms, church basements."²⁵ With the provisions for the common schools, the log school house was utilized by the public schools in 1835 to be used for educational and religious purposes.²⁶

As the public schools grew to accommodate more students, larger facilities were needed. The trustees of the burial ground donated by John Pott allowed the public schools to build a stone school building near the existing log school house in 1841 to provide more space for education.²⁷

This addition of space was inadequate and in 1859 the school district made plans to remove the two existing buildings on the lot and replace them with a new larger structure to be used specifically for the interests of female students.²⁸ The removal of the existing buildings was delayed due to a restraining order cited by the county court in a suit brought by John Pott's son, Benjamin, against the school district. He claimed that the proposed building and use of the lot was not in keeping with his father's original intentions since a larger building would encroach upon the burial ground. In addition, the use of the building by female students alone would not allow all citizens of Pottsville to use the lot that was originally set aside for their use. The State Supreme Court ruled, "...that the proposed erection of the building would be no encroachment on the rights of

burial, but recognizing such right of burial and directing the school district to properly define the cemetery's boundaries.”²⁹

With this victory, the school district hired John Fraser, a Philadelphia architect, to design the building. Begun in 1863, the Female Grammar School was built by Henry Zimmerman, carpenter, Jonathan Schum, carpenter, and Samuel Aumen, brickmaker.³⁰ The new building was completed in September of 1865 and dedicated in December.³¹ Upon completion, the building cost \$21,800 plus an extra \$9,500 allowance, but “in spite of the record cost, the new building was worth it in the opinion of the ‘Miners’ Journal’ editor who commented ‘we don’t believe there is a taxpayer in the borough who would regret paying his portion of the school tax if he would only visit the school of which we are speaking.’” The editor also mentions the extravagance of the interior of the new building- “Now we see beautiful cherry seats made in great measure for the special comfort of the pupils.”³²

Although the new building was celebrated, the rest of the lot set aside as a burial ground “...was used for no purpose but a habitation of snakes and other vermin...”³³ There had been no burials for thirty years and the appearance of the site was poor. In fact, some accounts report that “...graves were sunken down, tombstones had fallen, water cascading down from Laurel Street towards Race Street was washing away graves and exposing skeletons...”³⁴ A state law of 1891 declared certain sanitary conditions were to be maintained in the public schools. These new standards required separate toilet rooms be provided for both sexes. With only narrow play yards on each side of the

school building, the lot did not have enough room to comply with the act. Fortunately, an Act was passed in 1893 allowing school districts to use public burial grounds "...for the purpose of common school education."³⁵

In order to gain the space required to provide separate toilet rooms and a larger playground as well as improving the appearance of the lot, the school board purchased lots in the Presbyterian Cemetery. The remains of almost 500 dead were reburied at the Presbyterian Cemetery. Founder, John Pott and his wife, Maria were interred at the Charles Baber Cemetery.³⁶ With the newly acquired space, a small addition was constructed on the west side of the building to provide separate sanitary toilet rooms required by law.³⁷ A large play yard was established in the remaining space of the lot.

Aside from the small addition in the back, the building has remained mostly unchanged. The large play yard was converted to a parking lot shortly after the school closed in 1980.³⁸

Although originally intended for the education of female students, the school began to allow male students and at this time the Female Grammar School became known as the Centre Street School. Archival documentation suggests that boys were added between 1865 and 1888.³⁹

Grammar School Precedents and Contemporaries



Prior to the Common School Act, all schools were privately opened by educators who charged a fixed fee per pupil. These private schools were operated without any standards or rules and in most cases this system discouraged the education of the underprivileged. The Common School Act brought design and construction standards. Many of these standards are present in the Female Grammar School. These standards establish the character of the building and thus should be retained with the new use.



The Female Grammar School was designed by architect John Fraser and built in 1863 as a result of the Common Schools Act enacted in 1834.

There was always the distinction maintained between the rich and the poor. It was the mission of the State, however, to bridge over this chasm, which here and under similar conditions throughout the Commonwealth, necessarily, was threatening to become wider and wider as time advanced, and give the advantages of education to the rich and poor alike. The State recognized the principle that our institutions, both political and moral, could rest permanently and securely only on the foundation of the general education and the progressive intelligence of the whole body of the people, - the rich and also the poor - , and the female as well as the male citizens of the Commonwealth.⁴⁰

For the first few years after enactment, the schools established by the Common School Act were considered schools for the poor families who could not afford to have their children attend private schools.⁴¹

The buildings built for the Common School movement were depicted as monuments to the social ideas connected with the movement.

And something of the same spirit that once wrought to build a tabernacle or a cathedral worthy of a dwelling place of the Most High, is seeking expression in furnishing to the youth of our land nobler temples in which their hearts, minds, and bodies may better adjust themselves to the demands of a practical civic brotherhood. Whoever, then, undertakes to build a schoolhouse to meet and foster these ideals ought to approach his task with holy hands and a consciousness of the devotion which it is to typify. The problem, then, of building a schoolhouse to-day is in no small sense complicated by the growing tendency to use schoolhouses for all sorts of attempts at social betterment.⁴²

Authors of school pattern design books continued to spread the romantic notions of human betterment brought about by good school design. E. C. Gardner, author of *Town and Country School Buildings* insists,

magnificent cathedrals, consecrated to the name of religion, may stand in the midst of superstition, mental and moral degradation; colossal industrial enterprises may thrive upon the poverty and excessive toil of the multitude; but a nobly equipped institution of popular education is the strongest possible evidence of wise public sentiment, free thought, and all the noblest possibilities of human character.⁴³

The Common School movement made school pattern design books necessary to create formulas or standards for the design and construction of school buildings. Some

books were general instructions on the arrangement of rooms and general construction found to work well in a school building. Other books illustrated the specifics of completed school buildings as examples and standards to follow for future buildings. It was commonly understood that, “in the construction and arrangements of school-houses, certain fundamental principles must be observed. These principles, in the order of importance, are health, comfort, convenience and cost.”⁴⁴ The patterns of design combined with the social ideas of human betterment produced school buildings that stood as “the citadel[s] of democracy.”⁴⁵

The exterior form and treatment of buildings were described in school pattern design books to standardize issues related to health, safety, and cost. It was believed that good exterior designs were necessary to positively influence the moral character of the pupils.⁴⁶ Author Fletcher Dresslar claims that no other type of public building is “deserving of more sincere thoughtfulness and artistic treatment than those of school buildings designed to accommodate our children who here spend a great part of their waking hours during their early years.”⁴⁷ The overall exterior form and treatment of the building usually depicted a fashionable style built of local materials. The exterior of school buildings were not commonly standardized according to appearance as different populations or locations would dictate different materials and needs. The Female Grammar School exterior form has stylized Palladian and Italianate influences which include symmetrical massing, a low pitched pyramidal roof and square lantern,

overhanging eaves with brackets, arched windows, and entrance tower with projecting portico.⁴⁸



Illustration 2: Female Grammar School, Pottsville, before 1900.

While there are no standardizations, the form appears to be common to the contemporary buildings in Pottsville and in others designed by John Fraser. The following school buildings exemplify similar building forms, use of materials and ornament, stylistic influences and the configuration of interior spaces. The schools in Pottsville include the Jackson Street School (illustration 3) and the Garfield School (illustration 4). The school buildings of Philadelphia designed by John Fraser include the Beideman School (illustration 5), the Wyoming School (illustration 6), and the Southwestern School (illustration 7).



Illustration 3: Jackson Street School, Pottsville, 1876.



Illustration 4: Garfield School, Pottsville



Illustration 5: Beideman School, Philadelphia, 1863

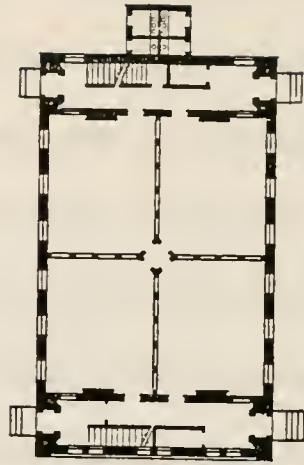


Illustration 6: Wyoming School, 1866

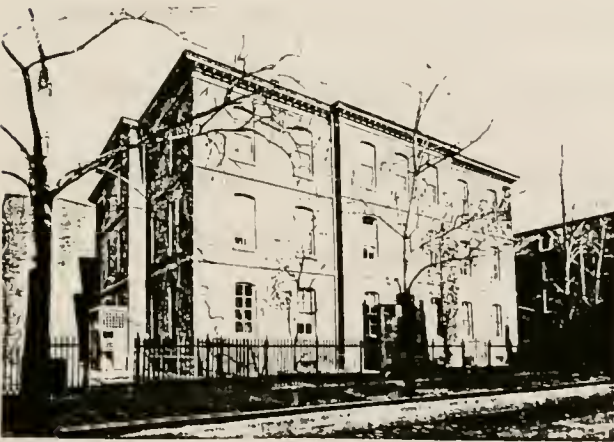
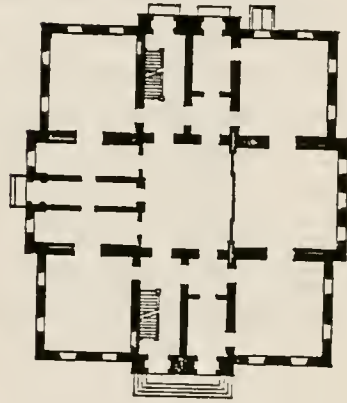
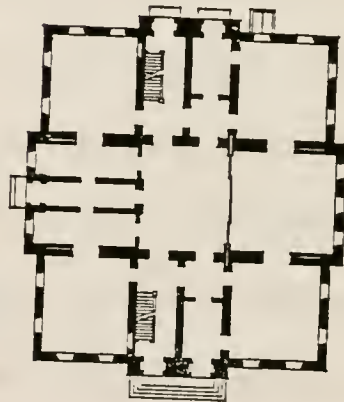


Illustration 7: Southwestern School, 1867.



Some pattern books illustrate completed school building designs by specifying the materials and methods followed in the construction. To establish the specifications that closely resemble those of the Female Grammar School during construction, a book containing the specifications of the North East Grammar School of Philadelphia was consulted because the example school has the same number of floors, same overall building form, and similar number of pupils. The exterior wall specification reads,

All the walls, from the cellar upwards will be of brick; the outside up to the first floor of joists will be twenty-four inches thick, and from that level up to the second floor of joists twenty-two inches, and from that to the square of the building eighteen inches. The vestibule walls will be thirteen inches thick one story high, and the remainder nine inches. The front and flanks are to be faced with the best pressed bricks,...and the back with the beat dark stretchers. A base will be formed around the building capped with a moulded brick. All the outside walls, above the level of the first floor, will be laid with a hollow space of two inches between the inner face and the body of the wall, to be bonded together with alternate headers every fifth course. The walls of the tympanum will be thirteen inches solid...⁴⁹

Aside from the fact that the North East Grammar School specification deals with brick construction above the water table, it shows construction methods similar to those of the Female Grammar School. The sandstone walls at the first floor are twenty-four inches thick while the brick walls at the upper levels are eighteen to twenty inches thick. Although not visible, it was common practice to construct exterior brick walls typical inner air spaces and alternate headers at regular spacing. In addition, the rusticated stone water table defines the base of the building as described in the above specification. Exterior construction methods were dictated by available local materials which, when

combined with a fashionable building style, created different appearances; therefore, the common standard in exterior form and treatment was that they were to be “simple, dignified and plain and should be built of the most enduring materials procurable; first, because this contributes to its safety, permanence and endurance, and second, because the true character of the building will be best expressed through such materials.”⁵⁰

Like the exterior of the school building, the school grounds were also places which influenced or established proper morals. Authors of school pattern design books were in agreement that “children have a divine and inalienable right to enough of the earth’s surface to ensure their healthful, happy growth.”⁵¹ The school grounds were described in school pattern design books in order to establish standards of safety, size, and exercise apparatus. Design books suggested the creation of obvious limits of the play area by planting low shrubs or erecting a low fence to keep pupils safely within the play yard and away from the dangers of the street or neighboring properties.

Separate play areas for each sex were suggested as boys and girls had different exercise needs. Boys were encouraged to run and jump in order to expend boyish energies and establish good physical fitness habits while girls, not accustomed to the energies of boys, were to learn principles of balance and grace and establish exercise regimens that “fit them for the duties of life...”⁵² Play areas set aside for boys were equipped with rotary swings, horizontal bars, parallel bars, rope swings, and large amounts of open space for running and playing with balls.⁵³ The play area for girls was usually smaller and equipped with parallel bars and a rotary swing. Open areas provided the use of jump

ropes, balls, and light dumbbells.⁵⁴ Some sources discuss the planting of trees in the play area to provide shade and elements of nature. Other sources discourage trees as they may interfere with the activities of the play areas and require seasonal maintenance.⁵⁵ The design books encouraged physical fitness training because “the organs of the body as well as the powers of the mind, were given for use, and to make either effective for the purposes intended, requires training.”⁵⁶

The Female Grammar School lot only provided two narrow play yards on each side of the building. These play yards were probably large enough for the proper exercise activities for girls, but as boys were added and the cemetery was removed, a larger playground was necessary. An early photograph (illustration 8) shows the larger playground with shade trees planted in neat rows and a low masonry wall around the perimeter of the yard to separate the playground from the sidewalk and the street.



Illustration 8. View of Female Grammar School playground looking to the northeast (Race Street in foreground) Pottsville, date unknown

The interior configuration and size of spaces were illustrated in pattern books in order to show efficient and space saving ways to layout a functional yet pleasant school building. The interior of the building was designed around the number and size of the classrooms needed.⁵⁷ According to the pattern books, the elementary school classroom

should be sufficiently large to seat properly from 40 to 45 pupils, and at the same time have sufficient space left for aisles and the requisite furniture and apparatus...A room 24 feet wide and 32 feet long will comfortably seat this number, allowing ample room for aisles, blackboard workers, and room for reference table, sand tables, or any other pieces of apparatus regularly needed.⁵⁸

The necessary classroom height should be determined according to many factors. First, the cost of extra height used to gain architectural effects, increases the cost of the building because the added height requires more materials for chimneys, ducts, and plumbing. Second, the extra height creates more interior space to maintain and keep heated. Next, the extra height combined with the plastered walls and wood floors can produce poor acoustic qualities in the classroom. Finally, the unnecessary extra height will effect the proper placement of windows in the classroom and subsequently provide uncomfortable amounts of light and excessive air drafts. Therefore, the recommended classroom height is 12¹/₂ feet from finished floor to finished ceiling.⁵⁹

Pattern books also suggested efficient space requirements for corridors, stairways, and cloakrooms. The recommended width of corridors for grammar schools is 12 feet.⁶⁰ This width is adequate to ensure unobstructed circulation in an emergency situation. Pattern books commonly suggested that transoms be placed above the doors in the

corridor leading into the classrooms in order to allow light into the hall. Two sets of stairways, located near exit doors, should provide access to all upper floors. The stairways should be 5½ to 6 feet wide to allow two people to pass comfortably and a rectangular landing should be located half way up the height of the run.⁶¹ Cloakrooms should be provided so classrooms remain free of clutter produced with coats and overshoes. Some pattern books suggested that cloakrooms be provided off of each classroom while others suggested outer garments could be hung along the walls in the corridors. All sources agreed that this area should be well ventilated to dry wet garments.

Standards of interior configuration were described for the efficient arrangement of the classrooms. It was commonly believed that

...under ideal conditions the rooms should be proportioned to allow 20 square feet of floor space and 260 cubic feet of volume for each pupil, but under no conditions should these figures be less than 15 square feet of floor space and 200 cubic feet of volume per pupil. It is almost universal practice to make school rooms slightly oblong with the teacher's desk at one end of the room, in the proportion of 24 feet by 30 feet and 25 feet by 33 feet...⁶²

Window location, blackboard size and placement, and desk configuration are also important elements in efficient classroom arrangement. Windows sills should be located at 3½ to 4 feet from the floor and the window should extend as close to the ceiling as possible since the upper quarter of the window provides a third of the light entering the room.⁶³ The heads of the windows should be at least twelve feet from the floor to insure adequate light to pupils seated to the opposite side of the room.⁶⁴ It was important to

properly locate the windows in the room to provide a comfortable classroom for the students and the teacher. The typical pattern book standard states,

There is now practically no dissent from the opinion that the proper method of lighting a school room is from the left side of the pupils, and that if it is necessary to admit light in any other side of the room it must be at the rear of the pupils. It is, of course, out of the question to admit light from in front of the pupils, as the light shining directly into their eyes would produce immediate and serious results. It is also very bad practice to admit light from the right of pupils because the great majority of children are righthanded and thus could not work at writing without casting a shadow thereon by the hand. When windows are placed in the rear of the pupils, even though the pupils themselves may not be injured by such an arrangement, the teachers are compelled to face the light almost continually, thus entailing risk of serious injury to their eyes.⁶⁵

In addition to the proper location of windows in the classroom, pattern books also suggested the size and placement of blackboards. It is necessary for a blackboard to receive enough light to illuminate the contrast of the white chalk on the black surface; therefore, blackboards should not be placed on walls containing windows. This situation would create a contrast between the bright light of the window and the darkness of the board which would render it unreadable.⁶⁶ Pattern books commonly suggest that a blackboard should be located at the front of the classroom near the teacher's desk. The bottom of the board should be located 3 feet from the floor and the board should be at least 4 feet wide. These dimensions allow the proper height for the blackboard to be used by an adult and be read by pupils sitting on the opposite side of the classroom.

Blackboards should be placed along the other walls at 30 to 34 inches from the floor for grammar school aged children to do board lessons comfortably.⁶⁷

The typical classroom should be arranged so that the desks form parallel rows facing the door into the classroom and the teacher's desk. The rows should have aisles measuring around 18 inches between them which will allow for movement and passage. Ample space should be left around the perimeter of the room to establish 3 to 4 foot side aisles for blackboard work or circulation. The pattern books discuss the configuration of the student desk; however, it is not possible to summarize a consistent theory as the design of the desk is dictated by fashionable styles or the cost of the piece. Most sources encourage single student desks although double desks are permissible. The chosen desks should fit the size of the student to be educated in that classroom.⁶⁸ Overwhelmingly, the pattern books insist, "...no principle is more firmly established than that physical comfort is a necessary condition to the highest state of mental and moral improvement."⁶⁹

Standards of interior surface finishes were described for ease of maintenance which directly influenced the health and happiness of students and administrators. The creation of construction standards increases the safety of the building and the overall building cost. Walls should be plastered with a smooth white coat to then be finished with a nongloss paint to reduce glare. This smooth plaster surface is convenient for later cleaning with a damp cloth. The walls should be painted a light grayish yellow or green color to provide a neutral background for the blackboard and other wall hung illustrations. The walls should never be painted in a reddish tint as these colors absorb too much light. The

ceiling should be painted white or a lighter color than the walls to reflect light down onto the desks.⁷⁰

The blackboards could be made of a number of materials that were recommended by pattern books. The least expensive method was to apply dark colored cement on lath like plaster. This surface was difficult to clean and cracked easily. Wood pulp materials were also recommended as inexpensive blackboards. They could be rolled and pressed into sheets of varying lengths although they would absorb water and buckle. Most pattern books recommended that the school administrators pay the extra expense for slate slabs which would last indefinitely if mounted properly to the wall. In addition, pattern books attempted to popularize the use of glass boards which were being used in England. A sheet of glass would be evenly ground on one side and painted a dark color on the other. The sheet would then be mounted on the wall with the ground side facing out so that the painted color would reflect through the glass. The glass boards were easily cleaned and did not suffer from buckling, but were not popularized outside of the eastern states.⁷¹ The pattern books also suggested liquid slating compounds which could be applied to board, paper or plastered walls. The compound could be applied over old layers to add life to a blackboard; however, the surface appears spotty or discolored over time.⁷² It is difficult to establish which blackboard surface was used most frequently, but it is known that the most common color of a blackboard is a dull black with a slight green tint which could be achieved by any of these methods.

The pattern books have conflicting suggestions for the use and application of wood moldings, trim, and wainscoting. Many believed that “wainscoting should never be used in a school building unless money enough is available to render it possible to use glazed brick or tile. Wainscoting of wood is unsanitary, soon becomes unsightly and also increases fire risk.”⁷³ These same sources suggest keeping the wood trim pieces at the cornice, baseboard, and blackboard, window, and door jambs to a minimum and creating smooth plastered surfaces for upper and lower walls due to the fact that these simple pieces are easier to clean. Other sources suggest that wood wainscoting should be installed at the same height as the window sill around the interior of the room.⁷⁴ In fact, these sources even specify the molding profile to be used in a specific location. For example, “put at the top of the black-boards...a scotia and torus moulding” or finish the floors “with rounded edge and cove moulding beneath.”⁷⁵ The common suggestion about wood moldings and trim is that since they add cost to the building they should be easy to clean and keep sanitary without unnecessary maintenance.

The pattern books agree that the floors of school buildings should be the most important element in establishing a standard of sanitation. The floor of the first level separating the basement from the classrooms should be constructed with a double floor which increases fireproof protection and prevents “the inflow of ground air and bad odors from the basement.”⁷⁶ In addition, the double floor acts as an insulator and aids in retaining the heat in the heated first level. Double floors are constructed by laying a rough floor surface diagonally across the floor joists. On top of this rough floor is a layer of

asbestos or tarred paper and then the finish floor. It is suggested that the noises of the upper classrooms be quieted by the use of a deadening quilt in the construction of the floors. The deadening quilt is two layers of paper with woven grass material in between. The construction of a floor with a deadening quilt is similar to that of a double floor. The rough flooring is laid diagonally on the joists and the deadening quilt is unrolled over the rough flooring. Nailing strips are applied over the deadening quilt on top of the joist spacing. The finish flooring is laid perpendicular to the joists and nailing strips.⁷⁷ Some sources suggest filling the space between nailing strips with mortar to reduce other noise.⁷⁸

Hard pine is suggested as a finish floor material because it is most available and reasonably priced although as the planks dry they also shrink leaving large cracks which collect filth and are difficult to clean. In order to remedy this problem, it is suggested that the planks be no wider than 3 inches because a wider plank is more apt to crack and splinter. Oak and maple floors are also recommended, but the expense of the material is usually inhibits its use. The finish floors are to be sanded, prepared and waxed.

The mechanical and electrical systems necessary in a school building are complex and the suggestions given in the pattern books are diverse and require more investigation than that given for the purposes of this thesis. Adapting the building for a new use will require the introduction of modern mechanical and electrical equipment which is briefly discussed in the "Adaptive Reuse Proposal" section.

The pattern books also provide standards for the configuration of lecture rooms, restrooms or privies, and libraries or other special-use rooms in the school building. This thesis excludes these standards because they are not relevant to the Female Grammar School or because these spaces have been updated numerous times and it would be difficult to determine if the original configuration of the space followed the suggestions in the pattern books.



The existing conditions of the Female Grammar School indicate that it was constructed with similar standards concerning the size of interior spaces. The classrooms in the Female Grammar School measure about 25 feet by 30 feet. The Female Grammar School has 10 feet wide corridors with transoms above the classroom doors to allow light into the corridor. The ceiling height from the finished floor is 11 feet 6 inches. The stairs are 4 feet 6 inches wide, but the landing is located one quarter of the way down from the upper floor instead of being located at half the height of the run.

In addition, the interior configuration and construction of the Female Grammar School is similar to the suggestions in the pattern books. For example the arrangement of the classroom is similar to the suggested standards for many reasons. The windows are located as close to the ceiling as possible and the sill height is 3 feet from finished floor to achieve adequate lighting conditions in the classrooms. The blackboards in each room are located on the walls at varying heights which would allow pupils and teachers to use them

comfortably. Marks in the floors of some classrooms indicate that the Female Grammar School had rows of single desks with narrow aisles and it is assumed that these desks faced away from the windows as recommended in the pattern books. The walls are plastered on the upper portion while the lower portion has wainscoting. The plastered portion of the walls have yellow and greenish gray paint layers as suggested by the pattern books as well as other colors not recommended by the standards. It is not known which blackboard material was originally used in the Female Grammar School as the majority of the original writing surfaces have been replaced. The floors are of hardwood planks except for a few where vinyl tile has been added. A disturbance in the floor on the third level should be investigated more carefully to determine if the floor had been constructed for the use of a deadening quilt as the standards suggest. Finally, the Female Grammar School does not have separate cloakrooms in each classroom as specified by many pattern books. Instead garments are hung on wall hooks in the main corridors.

The Female Grammar School is similar to other schools that were built as a response to the need to educate pupils according to the Common School Act. The standards suggested in the pattern books establish the elements that define the character of the building which should be retained as the use changes. The existing conditions of these elements should be assessed in order to determine their treatment and maintenance needs.

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2. Noland, J Bennett. *The Schuylkill*. Rutgers University Press: New Brunswick, NJ, 1951. Page 29.
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4. Ward, Leo L. and Mark T. Major. *Pottsville*. Arcadia Publishing: Dover, New Hampshire, 1995. Page 7.
5. Wiley, Samuel T. *Biographical and Portrait Cyclopedia of Schuylkill County, Pennsylvania*. Rush, West and Co., Publishers, 1893. Page 258
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7. Henning, D. C. "Early Annals of Pottsville." *Publications of the Historical Society of Schuylkill County Vol. II*. Daily Republican: Pottsville, 1907. Page 114.
8. Wiley, Samuel T. *Biographical and Portrait Cyclopedia of Schuylkill County, Pennsylvania*. Rush, West and Co., Publishers, 1893. Page 256.
9. Henning, D. C. "Early Annals of Pottsville." *Publications of the Historical Society of Schuylkill County Vol. II*. Daily Republican: Pottsville, 1907. Page 114-115.
10. *ibid.* Page 114-115.
11. *ibid.* Page 137.
Wiley, Samuel T. *Biographical and Portrait Cyclopedia of Schuylkill County, Pennsylvania*. Rush, West and Co., Publishers, 1893. Page 259.
12. *ibid.* Page 136.
13. Wiley, Samuel T. *Biographical and Portrait Cyclopedia of Schuylkill County, Pennsylvania*. Rush, West and Co., Publishers, 1893. Page 260. The stage coach between Reading and Sunbury brought its cargo of human freight on every trip, and many of the more thoughtful passengers carried bedding with them and were content to occupy a corner in the bar-room of the over-crowded tavern. Those men who succeeded in buying land naturally became residents of the town, temporarily at least, hence the growth of the place was hardly in keeping with the increase in population during those days when speculation was at its height."
14. Gudelunas, William A. and William G. Shade. *Before the Molly Maguires: The Emergence of the Ethno-Religious Factor in the Politics of the Lower Anthracite Region, 1844-1872*. Arno Press: New York, 1976. Page 20.
15. Henning, D. C. "Early Annals of Pottsville." *Publications of the Historical Society of Schuylkill County Vol. II*. Daily Republican: Pottsville, 1907. Page 119.
16. *ibid.* Page 123.
17. *ibid.* Page 123.
18. *ibid.* Page 141-143
19. Gudelunas, William A. and William G. Shade. *Before the Molly Maguires: The Emergence of the Ethno-Religious Factor in the Politics of the Lower Anthracite Region, 1844-1872*. Arno Press: New York, 1976. Considered mining-oriented borough in 1870. Page 16.
Ward, Leo L. and Mark T. Major. *Pottsville*. Arcadia Publishing: Dover, New Hampshire, 1995. Page 7. "Coal was King; so goes the phrase to describe a crucial era in the history of eastern Pennsylvania. During the latter part of the nineteenth century and the beginning of the twentieth, almost everyone who lived between Pottsville, Hazelton, Wilkes-Barre, and Scranton was affected by the daily activity of coal mining."
20. Pamphlet published by the Historical Society of Schuylkill County.

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22. The School District of the Borough of Pottsville vs. Benjamin Pott, Supreme Court of Pennsylvania, Eastern District, the Court of Common Pleas of Schuylkill County. Page 10.
23. *History of Schuylkill County, Pennsylvania*. W.W. Munsell and Co. New York 1881. Page 288.
Wells, W. G. "The History of the Public Schools of Pottsville." *Publications of the Historical Society of Schuylkill County Vol. II*. Daily Republican: Pottsville, 1907. Page 279.
Wiley, Samuel T. *Biographical and Portrait Cyclopedia of Schuylkill County, Pennsylvania*. Rush, West and Co., Publishers, 1893. Page 275.

24. *History of Schuylkill County, Pennsylvania*. W.W. Munsell and Co. New York 1881. Page 291
25. Hobbs, Herrwood E. *History of the School District 1834-1966*. Board of Education: Pottsville, 1964. Page 63.
26. The School District of the Borough of Pottsville vs. Benjamin Pott, Supreme Court of Pennsylvania, Eastern District, the Court of Common Pleas of Schuylkill County. Page 12
27. *History of Schuylkill County, Pennsylvania*. W.W. Munsell and Co.: New York 1881. Page 291.
Wells, W. G. "The History of the Public Schools of Pottsville" *Publications of the Historical Society of Schuylkill County Vol. II*. Daily Republican: Pottsville, 1907. Page 291.
Wiley, Samuel T. *Biographical and Portrait Cyclopaedia of Schuylkill County, Pennsylvania*
Rush, West and Co., Publishers, 1893. Pages 276-277.
28. Hobbs, Herrwood E. *History of the School District 1834-1966*. Board of Education. Pottsville, 1964. Page 28.
29. *ibid.*
30. The marble tablet on the wall of the west side of the stair hall names the Building Committee as follows: William Boyer, chairman, Joseph Derr, Richard Lee, John Roseberry, Charles Baber, and William Fox. John Fraser is listed as the architect and the contractors are Henry Zimmerman, Jonathon Schum, and Samuel Auman.
Boyd's Directory of Pottsville. W. H. Boyd Co.: Pottsville, 1860. In the general Pottsville listing. "Auman, Samuel, brickmaker, h Callowhill n 3d.; Schum, Jonathon, carpenter and builder, Norweg n 2d, h Lyon n 4th.; Zimmerman, Henry, carpenter, h Coal n Norweg."
Gospill's Directory of 1864-1865. In the general Pottsville listing: "Auman, Samuel, brickmaker, Westwood, h Callowhill n S3d.; Schum, Johnathon, carpenter, Norwegian n 2d, h Lyon n Wolcot.; Zimmerman, Henry, carpenter, Railroad opp E Market, h Coal n Callowhill."
31. Hobbs, Herrwood E. *History of the School District 1834-1966*. Board of Education: Pottsville, 1964. Page 66.
32. *ibid.*
33. *ibid.* Page 29.
34. *ibid.*
35. *ibid.*
36. *ibid.* Page 30.
37. *ibid.* Page 31.
Henning, D. C. "Early Annals of Pottsville." *Publications of the Historical Society of Schuylkill County Vol. II*. Daily Republican: Pottsville, 1907. Page 136. "...to be used as a place of burial and for school and religious purposes. Some years ago the stone wall that encircled the burial protion was taken down, the bodies that lay in the burying ground since the early days of Pottsville were removed, mostly to the Presbyterian cemetery on Howard Avenue, and the whole plot not occupied for school purposes was thrown open for a school park."
38. Interview with Historical Society of Schuylkill County President, Leo Ward.
39. The need for separate toilet facilities for each sex and a photo labeled "Centre Street School Class of 1888" in the Centre Street School folder at the Schuylkill County Historical Society suggests that boys were added relatively soon after the building was opened in 1865.

Endnotes for pages 16-33

40. Wells, W. G. "The History of the Public Schools of Pottsville." *Publications of the Historical Society of Schuylkill County Vol. II*. Daily Republican: Pottsville, 1907. Pages 283-284
41. *ibid.* Page 282.
42. Dresslar, Fletcher B. *American Schoolhouses*. Washington Government Printing Office: Washington D C., 1911. Page 100.
43. Gardner, E. C. *Town and Country School Buildings*. EL Kellogg and Co. New York, 1888. Pages iv-v.
44. Johonnot, James. *School-Houses*. JW Schermerhorn and Co.: New York, 1871. Page 20.
45. Dresslar, Fletcher B. *American Schoolhouses*. Washington Government Printing Office: Washington D C., 1911. Page 101.
46. Maddex, Diane ed *Built In the U.S.A*. The Preservation Press: Washington D.C., 1985. Page 150.
47. Dresslar, Fletcher B. *American Schoolhouses*. Washington Government Printing Office: Washington D C., 1911. Page 102.

48. Lanterns or cupolas were used to provide light to spaces below or to ventilate the building. In school houses they were sometimes used as the location for the school bell. The lantern of the Female Grammar School was used for ventilation before its removal. Research and field investigation will have to determine the exact size and use of the lantern in order to reconstruct the element. The treatment of the lantern is documented with historic photographs.
49. Burrowes, Thomas H. ed. *Pennsylvania School Architecture: A Manual of Directions and Plans*. A. Boyd Hamilton: Harrisburg, 1855. Page 132
50. Mills, Wilbur T. *American School Building Standards*. Franklin Educational Publishing Co.: Columbus, Ohio, 1910. Page 34.
51. Gardner, E. C. *Town and Country School Buildings*. EL Kellogg and Co.: New York, 1888. Page 114.
52. Burrowes, Thomas H. ed. *Pennsylvania School Architecture: A Manual of Directions and Plans*. A. Boyd Hamilton: Harrisburg, 1855. Pages 257-259.
53. Barnard, Henry. *School Architecture*. Charles B. Norton: New York, 1854. Pages 52-57.
54. Burrowes, Thomas H. ed. *Pennsylvania School Architecture: A Manual of Directions and Plans*. A. Boyd Hamilton: Harrisburg, 1855. Page 259.
55. Johonnot, James. *School-Houses*. JW Schermerhorn and Co.: New York, 1871. Pages 227-232
56. Burrowes, Thomas H. ed. *Pennsylvania School Architecture: A Manual of Directions and Plans*. A. Boyd Hamilton: Harrisburg, 1855. Page 249.
57. Dresslar, Fletcher B. *American Schoolhouses*. Washington Government Printing Office: Washington D C., 1911. Page 17.
58. *ibid.* Page 17.
59. *ibid.* Pages 20-21.
60. Dresslar, Fletcher B. *American Schoolhouses*. Washington Government Printing Office: Washington D.C., 1911. Page 53.
Moore, Joseph A. *The School House: It's Heating and Ventilation*. Griffith-Stillings Press: Boston, 1905. Page 12.
Mills, Wilbur T. *American School Building Standards*. Franklin Educational Publishing Co.: Columbus, Ohio, 1910. Page 39. Most sources agree that 12 feet is the suggested width for corridors; however, this source suggested that "main corridors should be at least 8 feet wide and in buildings of eight rooms or larger, 10 feet wide should be the minimum width."
61. Dresslar, Fletcher B. *American Schoolhouses*. Washington Government Printing Office: Washington D C., 1911. Page 56.
62. Mills, Wilbur T. *American School Building Standards*. Franklin Educational Publishing Co.: Columbus, Ohio, 1910. Page 26.
63. Moore, Joseph A. *The School House: It's Heating and Ventilation*. Griffith-Stillings Press: Boston, 1905. Page 16.
64. Dresslar, Fletcher B. *American School Buildings*. Washington Government Printing Office: Washington D.C., 1924. Page 47.
65. Mills, Wilbur T. *American School Building Standards*. Franklin Educational Publishing Co.: Columbus, Ohio, 1910. Pages 28-29.
66. Dresslar, Fletcher B. *American School Buildings*. Washington Government Printing Office: Washington D.C., 1924. Pages 33 and 35.
67. Dresslar, Fletcher B. *Rural School Houses*. Washington Government Printing Office: Washington D C., 1914. Page 51
Moore, Joseph A. *The School House: It's Heating and Ventilation*. Griffith-Stillings Press: Boston, 1905. Page 22.
68. Dresslar, Fletcher B. *American School Buildings*. Washington Government Printing Office: Washington D.C., 1924. Page 40.
Moore, Joseph A. *The School House: It's Heating and Ventilation*. Griffith-Stillings Press: Boston, 1905. Page 20.
69. Johonnot, James. *School-Houses*. JW Schermerhorn and Co.: New York, 1871. Page 29.
70. Dresslar, Fletcher B. *Rural School Houses*. Washington Government Printing Office. Washington D C., 1914. Page 50.
Mills, Wilbur T. *American School Building Standards*. Franklin Educational Publishing Co.: Columbus, Ohio, 1910. Page 42

71. Dresslar, Fletcher B. *American School Buildings*. Washington Government Printing Office. Washington D C., 1924. Page 35.
- Dresslar, Fletcher B. *Rural School Houses*. Washington Government Printing Office. Washington D C., 1914. Page 51
- Mills, Wilbur T. *American School Building Standards*. Franklin Educational Publishing Co. Columbus, Ohio, 1910. Page 31
72. Johonnot, James. *School-Houses*. JW Schermerhorn and Co.: New York, 1871. Pages 78-79.
73. Mills, Wilbur T. *American School Building Standards*. Franklin Educational Publishing Co. Columbus, Ohio, 1910. Page 42.
74. Burrowes, Thomas H. ed. *Pennsylvania School Architecture: A Manual of Directions and Plans*. A. Boyd Hamilton. Harrisburg, 1855. Page 134
75. Eveleth, Samuel F. *School House Architecture*. Geo. E. Woodward: New York, 1870. Pages 9 and 12 Design No. 15.
76. Dresslar, Fletcher B. *American Schoolhouses*. Washington Government Printing Office: Washington D.C., 1911. Page 39.
77. *ibid.* Page 39-40. A floor section on page 40 shows the use of a deadening quilt.
- Moore, Joseph A. *The School House: It's Heating and Ventilation*. Griffith-Stillings Press: Boston, 1905. Page 9.
78. Burrowes, Thomas H. ed. *Pennsylvania School Architecture: A Manual of Directions and Plans*. A. Boyd Hamilton. Harrisburg, 1855. Page 133. The specifications for the North East Grammar School of Philadelphia were consulted as due to similar building form, size, number of students and construction methods. The specification for the floors reads as follows: "All floors are to be laid with the best quality heart yellow pine on and one quarter inch boards, planed and grooved, well nailed to the joists and joints shot. The second and third floors will be deafened by cleating the joists, and flooring roughly between them, and filling the space to the top of the joists with two inches of mortar."

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EXISTING CONDITIONS
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Building Description



The Female Grammar School building is a three story brick and stone structure with a full basement and hip roof. Each level is approximately 5,000 square feet. The first level of the building is expressed on the exterior with dressed sandstone while the second and third levels are of red brick laid in running bond courses. The one story addition located at the center of the south elevation is of similar brick and has a sandstone water table and hip roof. The first floor level is defined by the change from rusticated stone at the water table to smooth cut sandstone at the first floor. The sandstone protrudes from the face of the wall creating a belt course at the second floor window sill level. Regularly spaced brick pilasters divide the wall surface above the belt course and continue to the underside of the cornice. The brick surface between the top of the pilasters and the cornice is decorated with a denticulated frieze. The double bracketed Italianate cornice, shown in early photographs, was removed and a horizontal flush board is now in its location. According to historic photos, a square lantern that once existed on the roof had double arched and louvered openings and a pyramidal roof.

The east elevation addresses Centre Street with seven bays defined on the upper levels by evenly spaced pilasters. The center three bays project out from the facade and are topped with a pediment-like roof. The bays flanking each side of the projecting center element contain one four-over-four doublehung window with a flat arched head on every level. On the first level, the central projecting bays indicate the location of the entry. The

entry is expressed by double stone pilasters on each side of the entry door and a stone entablature which meets the stone belt course. The double entry doors and arched transom are raised five steps from the sidewalk. Above the entry doors on the second level in the middle bay are two narrow four-over-four doublehung windows with flat arched heads. The outer bays of the central element contain arched head niches. On the third level in the middle bay are two narrow four-over-four doublehung windows with arched heads. Between the sills of the third level windows and the heads of the second level windows in the middle bay is a stone sign which reads "Female Grammar School 1863." The rectangular sign rests on three equally spaced stone brackets. The center projecting bays are topped with a pediment that contains a circular louver unit. Each side of the projected central bay on the north elevation contains two bays. Each bay contains one four-over-four doublehung window with flat arched head on each level. Small basement windows or window wells with metal ornamental grates correspond to the larger windows above.

The south elevation faces Race Street with five bays. The eastern most bay of the first level contains a side entry doorway with transom and flat arched head. The doorway is raised above the sidewalk by seven steps and the transom has been filled in. The western most bay contains a doorway which leads into a classroom and is raised above the grade by four steps. The doorway and transom are filled in. Each of the three middle bays contain one four-over-four doublehung window with a flat arched head. Small basement windows correspond to the above windows in the middle and second from the

north bay while the second from the south bay contains a bulkhead entry to the basement. The second and third levels contain one four-over-four doublehung window with a flat arched head in each bay. The western window on the second level is boarded up.

The west elevation contains five evenly spaced bays created on the upper levels by the brick pilasters. The original west elevation had a single door with transom and flat arched head in the middle bay on every level with metal fire exit stairs. Each remaining bay contains one four-over-four doublehung window at each level. The exit doors at the second and third levels have been filled in. The windows in the bays flanking each side of the exit door on the second story have also been filled in as well as the northern window on the third level.

A single story brick addition was constructed to house toilet rooms in the 1890s at the center of the first level of the west elevation. The width of the addition extended past the pilasters on the sides of the middle bay. The south elevation of the addition has four bays, each containing a window. The west elevation of the addition has two equally spaced windows. The north elevation of the addition has a door in the eastern central bay which is raised three steps above the grade and a window in each remaining bay. The windows and door of the addition have flat arched heads like the main building. Over time, these openings have been changed by being blocked in with brick or wood. Currently all the windows and the door of this addition are filled in.

The north elevation of the building has five equally spaced bays similar to the configuration of the east elevation. The eastern most bay of the first level contains a side entry door with a transom raised above the sidewalk by one step. The transom of this doorway is filled in. The western most bay contains a doorway with transom are both been filled in, while the middle bays each contain one four-over-four doublehung window with flat arch head.

Although the subject of the original placement of spaces is not the purpose of this thesis, the existing configuration of interior spaces is necessary to describe. Overall the space seems relatively unchanged, however, the existing evidence should be further investigated to determine the accuracy of this statement. The projected entry doors facing Centre Street lead into the stair hall located along the east side of the building. Two sets of stairs located on each side of the main corridor provide acces to the upper levels from the stair hall. The stair to the north also allows access to the basement. The interior configuration is organized around a central corridor which runs from east to west, perpendicular to the stair hall, with two classrooms flanking each side. At the west end of the main corridor, a small one story addition was constructed to house toilet rooms in the 1890s.

The current second and third floor configurations are similar to the first floor without the rear addition. In place of the rear addition, an original exit door opening is located in the center of the corridor on each level, but both are blocked in. In addition, the upper two levels of the fire escape have been removed from the building. The two

southern classrooms on the third floor have been modified to create one large room including the central hall. The original locations of walls are indicated by columns and by changes in the color of the flooring. The northern two classrooms remain similar to those below. The stairway to the attic is located in the northeast classroom on the third floor.

The basement is divided by thick masonry walls and light enters the space through small windows. The access to the basement is gained through the stairway to the north and the bulkhead entry to the south.

The classrooms and circulation spaces are typically finished with plastered walls and ceilings, wood trim and wainscoting, plaster cornice and hardwood plank floors. Changes have taken place over time to the original materials and finishes, but most are still intact. The interior is described in the previous section called “Grammar School Precedents and Contemporaries.”



The original configuration of the floor plan is not the subject of this thesis, although a discussion of it is necessary to determine the relationship between the changes that might have occurred and the conditions that are left as a record for interpretation. Before any treatment recommendations should be made, the cause of the condition should be investigated. The discrepancies concerning the floor plan will be briefly discussed in order to document the theories so proper treatment recommendations can be made for the adaptive reuse proposal.

A discrepancy arises concerning a lecture hall and administrative office that are believed to have existed in the building at some time. An article in the Miners' Journal dated December 30, 1865 states "...on the first floor is a lecture room capable of seating some 300 or 400 persons....On this floor (1st) there is also a room for the Directors to meet in, and a school room for about 60 pupils. The second and third floors contain four school rooms each, each room capable of holding about 60 pupils."

A photograph in the Centre Street School folder in the collection of the Historical Society of Schuylkill County shows a large lecture room that does not relate to the configuration of the current large space on the third floor. The location of the lecture room on the first level is possible although the consistent molding profiles throughout the building suggest that the spaces have remained unchanged or that the moldings were changed to correspond to the new configuration of the floor plan. The age of the pupils in the lecture room is questionable as the age of the pupils attending the Female Grammar School should be of grammar school age. The pupils in the photo appear older.

To increase the difficulty in determining the proper location for the lecture room, another photograph in the Centre Street School folder shows a classroom of younger pupils. The treatment of the wainscoting and the location of two single doors along one wall do not correspond to the configuration of the Female Grammar School unless the floor plan has been changed.

The current configuration of the interior spaces seems unchanged according to the use of similar molding profiles throughout the building and the character of other school

building floor plans by John Fraser. In order to explain the discrepancies, it is possible that the photo showing a lecture room should be in the Jackson Street School folder. In addition, it is possible that the photograph depicting a classroom of younger pupils should be placed in the Garfield School folder. These suggestions are made without consulting either of these folders to establish any other similarities to other photos. The article detailing the interior configuration of the building is not so easy to explain. This proves that the building should be investigated to document the original configuration before any damaging work destroys the evidence.

Condition Assessment

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The overall condition of the material in the Female Grammar School Building was assessed in order to determine their treatment and maintenance needs. A general field survey determined the condition of the materials according to appearance and facts gathered from the Historical Society of Schuylkill County about the maintenance of the building.

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The exterior of the building is in poor condition due to the state of certain areas of sandstone, the deterioration of window trim and sash and significant mortar loss. Areas of sandstone are suffering from weathering and exfoliation. Weathering is “the natural disintegration of the surface, edges, corners and carved details of masonry. It is caused...by conditions such as wind, windblown particles and rain.”¹ Exfoliation is “the splitting apart of the outer surface of the natural stone into thin layers that peel off. This is a natural condition in sedimentary stones where exfoliation occurs along bedding planes.”² The deteriorated surface of the stone allows water to penetrate and increase the severity of the problem. The sandstone areas suffering from exfoliation and weathering are concentrated along the belt course, near the ground in the water table, and on the stone pilasters and entablature at the front entrance.

It was common to paint brick to achieve a monolithic appearance for different fashionable styles and to provide a protective coating to prevent moisture penetration.

According to historic photographs, the brick of the Female Grammar School was originally painted. The surface has been painted numerous times and the layers are currently peeling. This peeling is caused by having moisture trapped between paint layers and by the exposure to the deteriorating effects of the sun and the weather. There is evidence of significant mortar loss in the brick and in the sandstone areas.

The areas of the sandstone that are suffering from exfoliation and weathering and the areas of brick where the paint is peeling are also areas where there is significant mortar loss. The function of a mortar joint is to transfer the load of the wall between masonry units, to provide a connection between units, and to create a weather resistant surface.³ By function, the mortar joint is supposed to weaken and deteriorate in order to save the stone or brick. The substantial loss of mortar allows water to penetrate into the masonry wall and cause spalling or exfoliation.

The downspouts are not conducting water properly and the exterior masonry near the downspouts has water staining and biological growth. The biological growth contains damaging soils and lichens which trap moisture against the surface and thus increase the problem of exfoliation or spalling. Aside from the discoloration and biological growth, the water running down the building at the downspouts introduces additional moisture to the masonry wall which accelerates mortar loss, exfoliation and weathering.

Window and door trim and window sills are cracking and deteriorating due to sun and water exposure. In addition, the lack of a protective layer of paint in many areas, but especially at the horizontal window sills, allows water to puddle and penetrate into the

cracks and natural fibers of the wood which encourages rot and cracking. Windows, doors, and transoms and their frames that were in poor condition have been completely removed and the openings have been temporarily boarded up or blocked in with brick.

The roof was replaced in the early 1980s by the Housing Authority of Pottsville who owned the building at the time.⁴ Due to the expense of roof replacement, the deteriorated upper cornice was covered with metal flashing order to allow water to run off instead of penetrating into the cornice to cause further damage.

The following illustrations document the existing exterior conditions:

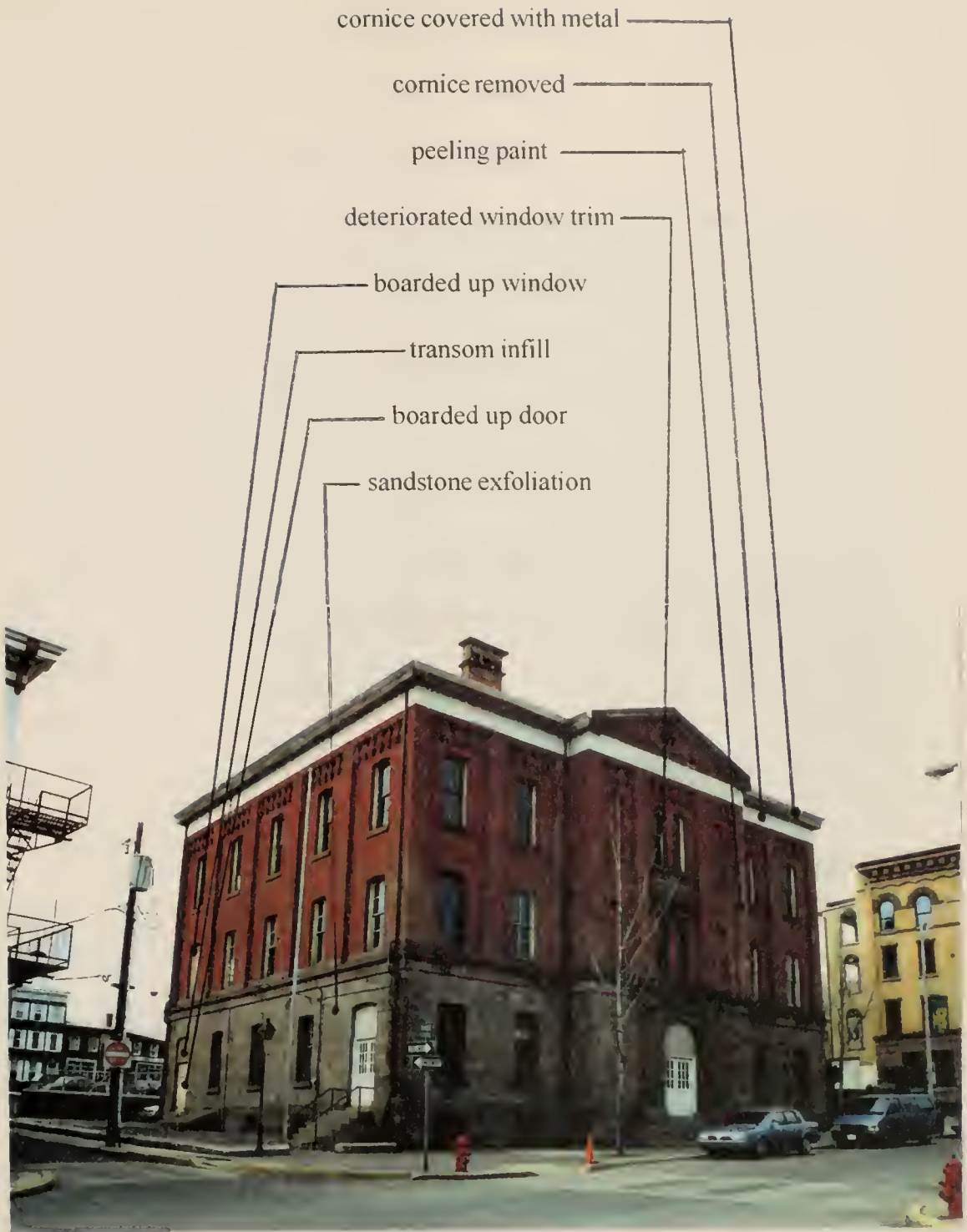


Illustration 9. View of the southeast corner of the Female Grammar School showing the existing condition of exterior materials

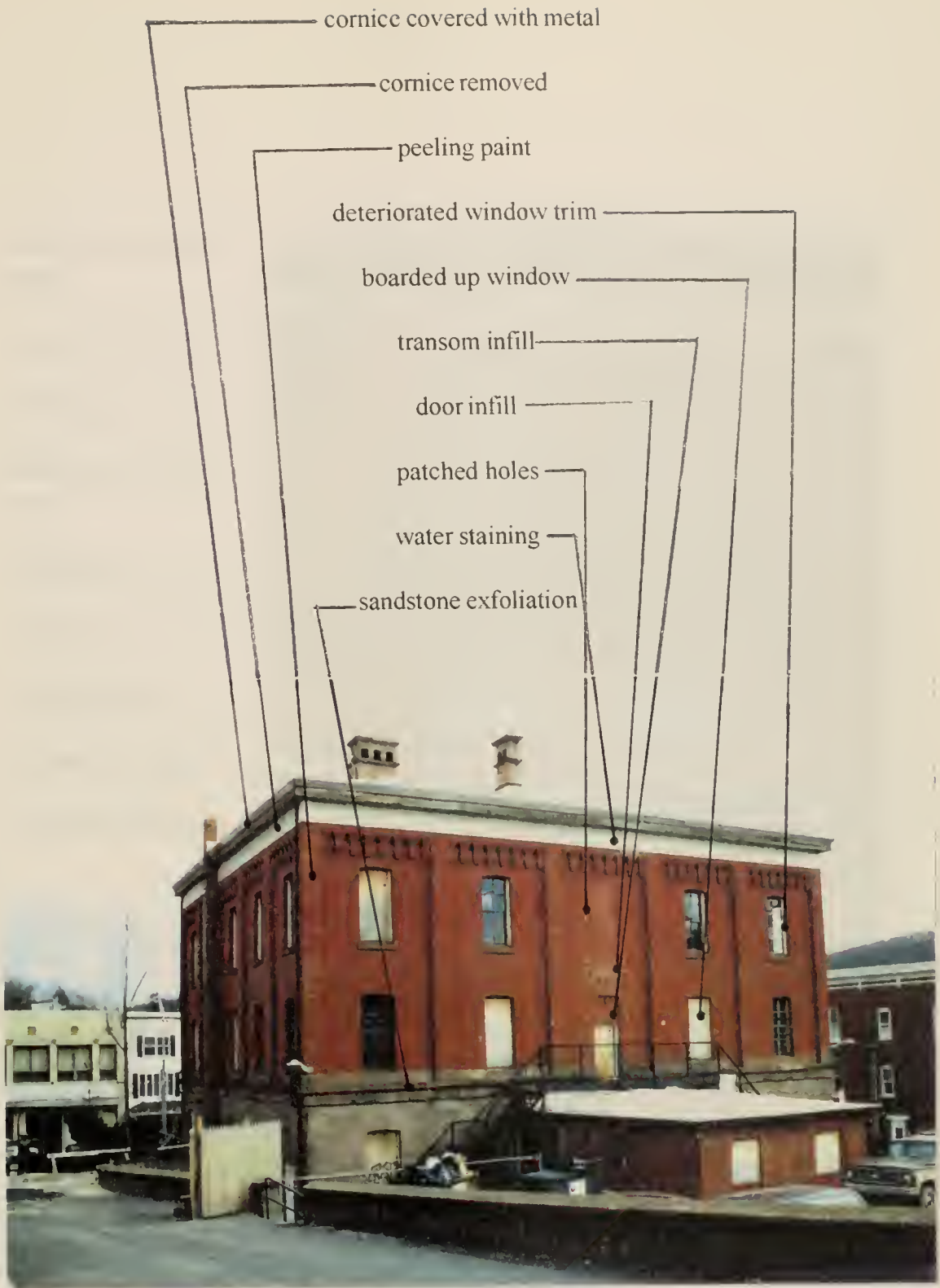


Illustration 10 View of the northwest corner of the Female Grammar School showing the existing condition of exterior materials

cornice covered with metal

removal of cornice

peeling paint

deteriorated window trim

peeling paint

mortar loss

water staining

exfoliating sandstone

weathering sandstone



Illustration 11 Detailed view of the east elevation of the Female Grammar School showing the existing condition of exterior materials

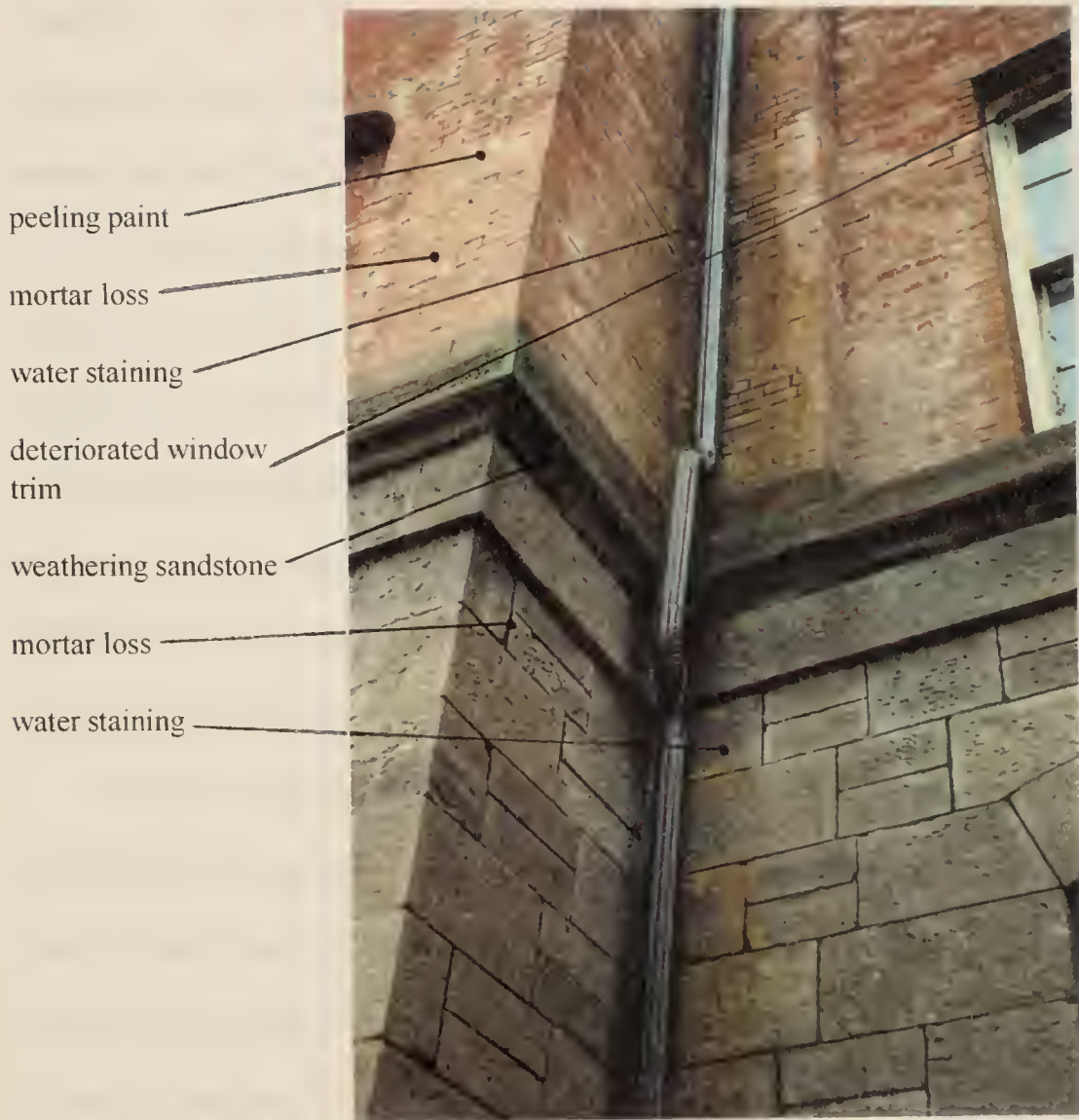


Illustration 12: Detailed view of the east elevation of the Female Grammar School showing the existing condition of exterior materials.

The interior of the building is in fair condition due in part to the good condition of the general structure, the wood trim and the plaster and in part to the poor condition of the window trim and sashes, the concentrated areas of plaster loss, and the infill of fenestration. Some areas of the baseboard, wainscot, and blackboard, door and window trim and some areas of plaster are worn or damaged by human use patterns or water staining, but the majority of these materials are in good condition.

The painted surfaces of the plastered interior walls and ceilings are peeling and cracking. This damage is probably caused by the recent periods of vacancy when the building was not heated during the winter months. The plaster would absorb the moisture in the air which would collect behind the paint layers which causes the paint to break its adhesion to the plaster or to other layers of paint. Winter cycles of humid and dry air with constant cold temperatures will also cause the plaster to produce hairline cracks which aid in breaking the adhesion between paint layers and the plaster surface.

In some areas plaster and lath are missing. Field inspection did not suggest a reason for the loss of material in these areas. In fact, it seems that the missing areas of plaster and lath occur in the ceiling on every floor near the air duct passages in the walls. The loss of plaster and lath is probably due to human intervention and not the product of the lack of maintenance.

The painted surfaces of wood trim are also peeling and cracking. This condition is probably related to the moisture in the building during the unheated winters. It is

possible that the failure of the paint is caused or accelerated by improper surface preparation between layers of paint or poor quality paint or application.

The condition of the windows vary. Some windows suffer from deterioration at the sills, lower sashes, and frames. These conditions are caused by water penetration from the exterior to the interior or from interior condensation. The moisture held in the wood causes water staining, cracking and rot. Over time some of the windows and transoms were removed and boarded up or filled in with brick. Others remain in poor condition.

Damage to the floors and wood trim are caused by patterns of human use, although areas of the floor in front of windows in poor condition show evidence of water staining. Areas of wood trim have been damaged by recent vandalism or constant use patterns.

The following illustrations document the existing interior conditions:

Items in Poor Condition

peeling paint

loss of plaster and lath

cracks in plaster

peeling paint



Illustration 13. Detailed view of the ceiling in a classroom of the Female Grammar School showing the existing condition of interior materials.

Items in Poor Condition

peeling paint —————

Items in Good Condition

plaster top coat —————

wood wainscoting —————

base molding —————

door trim —————

doors —————

hardwood planks —————



Illustration 14: View of the main corridor in the Female Grammar School showing the existing condition of interior materials

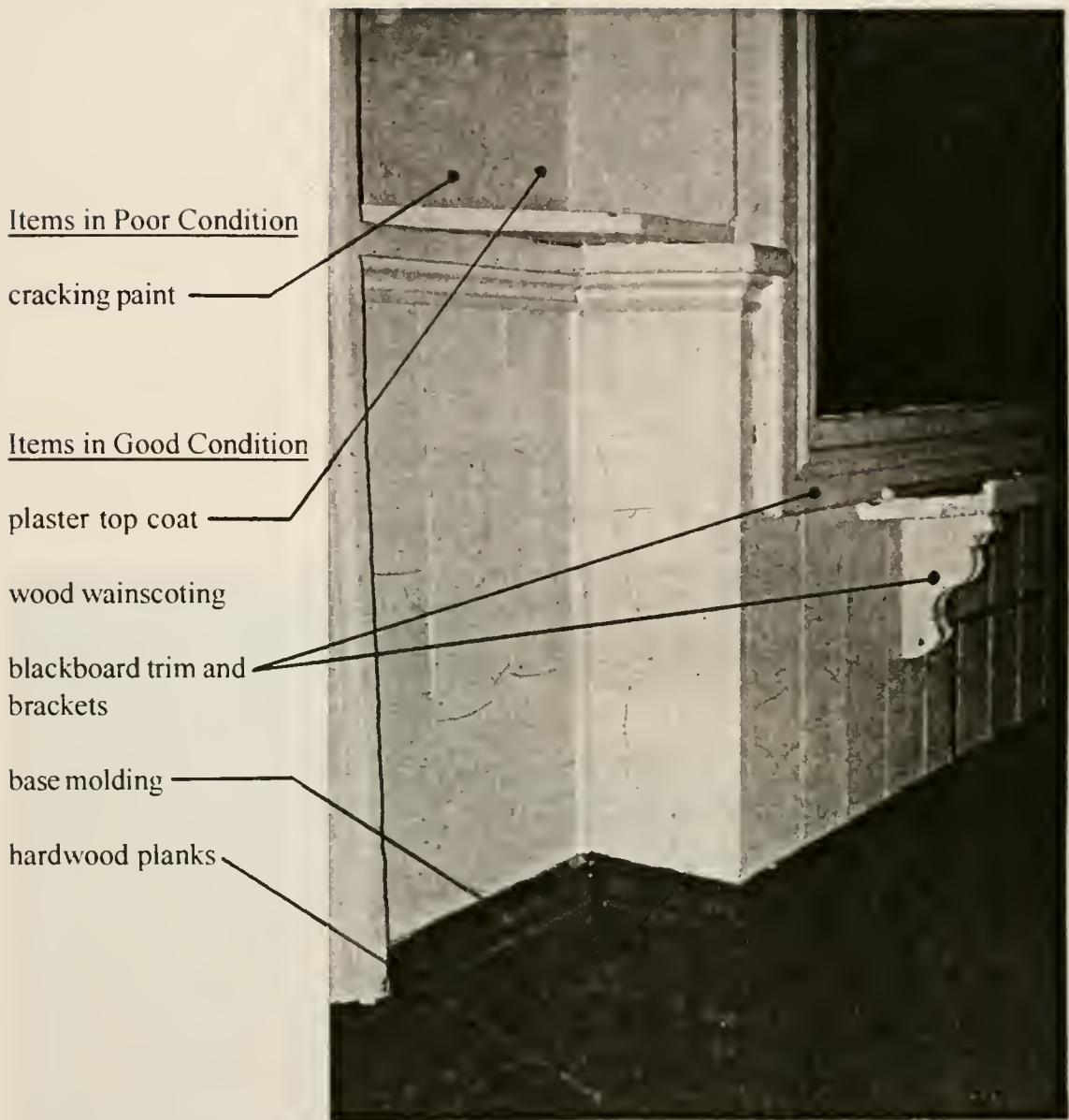


Illustration 15 Detailed view of a classroom in the Female Grammar School showing the existing condition of interior materials

Items in Poor Condition

deteriorated sash

deteriorated lower jamb trim

deteriorated sill

Items in Good Condition

wood wainscoting

upper jamb trim



Illustration 16 View of the main corridor in the Female Grammar School showing the existing condition of interior materials

Endnotes for pages 46-58

1. London, Mark. *Masonry: How to Care for Old and Historic Brick and Stone*. The Preservation Press: Washington, D C., 1988. Page 133
2. *ibid.* Page 136.
3. Bucher, Ward, ed. *Dictionary of Building Preservation*. John Wiley and Sons, Inc.. New York, 1996. Page 296.
4. Phone conversation with Historical Society of Schuylkill County President, Leo Ward February 1997.

❧
ADAPTIVE REUSE PROPOSAL
❧

Program Requirements



The Historical Society of Schuylkill County defined the space requirements of the first and second floors of the new facility to include: Reception and Lobby, Administrative Offices, environmentally controlled Storage, environmentally controlled Reading Room, environmentally controlled Museum, Library, Board/Meeting Room, Work Room, Gift Shop, and Receiving Area. The third floor will be leased as office or storage space.¹



The basement will be used for the location of the mechanical systems needed for general heating, ventilating, and air conditioning, specific climate controlling, and the elevator. It will also be the location for the circuit breaker and the telephone and security systems. In addition the basement will be used to store items on raised shelving units related to the operation of the Society like paper towels, unused furniture, and gift shop storage. The basement is not to be used as storage for items of historic value.

The first floor will contain the lobby and reception area, the museum space, the meeting room, the gift shop, the rear receiving area, and the restrooms. The lobby and reception area will be located near the entrance doors. Signage in this area should inform visitors about the location of the public spaces in the building as well as the topic of the temporary exhibits and other operational information.

The museum space will be used by school groups and individual visitors and will display significant artifacts relating to the history of the county and its development. The museum space requires approximately 1400 square feet and should be controlled by mechanical systems to establish a constant climate.

The meeting room will be used for the Society's monthly meetings that 40-60 people attend as well as for smaller board meetings. The space should be equipped with projection facilities, amplification equipment, a moveable podium, and stackable or folding chairs.

The gift shop will sell typical merchandise like books, post cards, and posters as well as arts and crafts made by local citizens. A checkout station with counter should be located near the gift shop entry door to provide security and serve as the information center for visitors asking general questions. The counter should also be visible to visitors as they enter from the main corridor. The display fixtures should be easily moved and interchangeable to display a variety of items without loss of space.

The receiving area will be used for large deliveries of office supplies, gift shop items, or large exhibit/archive related objects. An elevator should be located near the receiving area in order to transport items as well as visitors who are unable to climb the stairs.

The main corridor may be used for the temporary display of exhibits promoting the work or influence of local organizations or the Historical Society on the history of Schuylkill County.

A handicap accessible restroom should also be located on the first floor.

The second floor will contain the library and storage, the reading room, the staff work room, and the administrative offices.

The library and storage areas will only be accessible to employees or volunteers. Large shelves, file cabinets and map drawers will be provided for the proper storage of the artifacts, books, photographs, documents and other objects. This space will need climate control systems to protect the collection.

The reading room will serve as the space for visitors to research or look at the collections. It should contain large work tables and chairs, computer stations, microfilm readers, a copy stand, a copy machine and large comfortable chairs for reading.

The work room will be used by the staff for collection maintenance, new exhibit production, and collection inventory. Dark room facilities, microfilm reader, and drafting table should be provided.

The administrative office space will be used by the employees and volunteers of the Society. Desks, chairs, and filing cabinets should be provided at each work space and computer equipment should be provided in the desk areas of the curator and the president. A small break room with food preparation facilities including refrigerator, sink, and microwave should be provided near the administrative office area for the convenience of the staff.

The third floor will serve as leasable space for another agency's storage or small office which would not interfere with the operation of the Society. The income from the rent on this space will aid the Society in maintenance costs for the entire building. The third floor space will not need to be equipped with any specific utilities or equipment at this time.

Treatment Recommendations



In order to reuse the Female Grammar School as the headquarters for the Historical Society of Schuylkill County, it is necessary to improve the existing condition of certain elements of the building. The recommendations are presented here to give an introduction to the different processes and methods used to improve existing conditions. The following treatment recommendations should be executed with the supervision of a trained professional.



Those exterior elements found to need treatment include areas of sandstone and brick suffering from weathering, exfoliation, or biological growth and wood trim suffering from cracking and rot as well as mortar joints, the painted brick surface, the removal of the windows, transoms, and doors.

The sandstone and brick should be cleaned in order to eliminate areas of biological growth and paint. These areas should be cleaned with a low water pressure wash and a natural bristle scrub brush. A mild soap or organic chemical might be necessary to remove areas of paint or staining. Before using, a small area should be tested to determine if the soap or chemical solution has an adverse effect on the masonry surface. In accordance with the cleaning, the gutters and downspouts should be cleaned and repaired in order to properly conduct water.

Each piece of sandstone should be assessed to determine if the stone should be kept, be repaired, or be replaced according to the amount of damage caused by weathering, exfoliation, or biological growth. Repairing and replacing with new stone is difficult due to the difference in color. In this case it is possible to repair the face of the stone with a cement patch mixed with pigments to match the existing color. For this process, the loose or flaking areas of the stone are cut away to ensure that the cement will be applied to sound material behind. The new surface is scored so that the cement patching compound will form an adhesive bond with the stone backing.²

Another repair option is dutchman repair which consists of “the piecing-in of a natural stone or precast concrete imitation stone as a treatment for chipped or damaged stone.”³ The piece is attached to the existing surface with epoxy and held in place with stainless steel pins.⁴ It is also possible to replace stones by chiseling away the deteriorated stone and test fitting the new stone in the space of the old stone before applying mortar. When the new stone is the proper size the space should be covered with enough mortar to ensure that no air spaces will remain once the new stone is placed. The mortar joints around the new stone should be repointed to match the existing pointing on the wall.⁵

The masonry walls should be repointed where needed. Old mortar should be carefully removed from the joint with a hammer and chisel. Then the joint should be brushed with a stiff brush to remove loose material. The new mortar should match the old mortar in mixing proportion and application style. Portland cement creates a harder

inflexible joint that could lead to cracking of the stone and therefore it should be used sparingly.⁶ The width, color and texture of the mortar joint should be accurately reproduced in order to retain the architectural character of the building.⁷ It is important that ASTM standards are checked for complete procedures and specifications.

The brick surface of the Female Grammar School was originally painted to prevent the penetration of moisture into the inner area of the wall. The brick surface should be prepared for painting after being cleaned and repointed. The preparation of the surface includes cleaning the surface with a mixture of trisodium phosphate (TSP) and water. The surface should be allowed to dry for three days of warm weather before the primer coat is applied. Paint that creates an impermeable layer should be avoided because trapped moisture will cause peeling or blistering.⁸

The wood trim of windows and doors should be assessed to determine if areas need repair or replacement. Dutchman repair is a method for patching wood where “pieces of new wood [are] inlaid into voids left by the removal of damaged wood.”⁹ Two part epoxy patching compound can also be used to rebuild lost areas of wood trim. The epoxy can be sanded and painted once it has cured.¹⁰ Replacement of wood trim should match the existing trim of the building in profile and size. Regardless of the method of needed treatment, the trim should be prepared for being repainted. The preparation of the trim includes the removal of existing paint with a scraper and sandpaper. An organic paint stripper might be needed to remove areas of paint. Lightly sand the surface with the grain to be repainted making sure that the repaired areas are smooth with the existing

areas. Once the majority of the paint is removed and the surface has been sanded smooth, it is necessary to clean the trim with a mixture of trisodium phosphate and water. The trim should be repainted every five to ten years in order for the paint to continue to “withstand extremes of temperature and humidity.”¹¹

Removed windows, transoms, and doors should be replaced. The replacements should be similar to existing examples or be similar to those elements documented in historic photographs. The removed cornices should also be reconstructed according to the configuration documented in historic photographs. The reconstruction of the lantern is not suggested at this time because the construction cost and continued maintenance costs of this element should be spent on overall building maintenance or improved storage facilities. The evidence suggesting the location and construction of the lantern in the attic on roof rafters should be documented for a future reconstruction project while the evidence is still intact.

It is also necessary to improve the existing condition of certain interior elements of the building as the interior spaces will house the collection of the Society. Those interior elements found to need treatment include areas of plaster loss or cracking, peeling paint, and wood trim suffering from wear due to human use, cracking, and rot. The following treatment recommendations should be executed with the supervision of a trained professional.

The paint should be removed from the walls, the ceiling and the wood trim with a scraper and sandpaper. An organic paint remover may be needed to remove areas of paint

on the wood trim. The existing condition of the paint on the plastered walls and ceilings is such that it can probably be removed with a scraper. Like the exterior wood trim, the interior wood trim should be repaired or replaced as necessary and then be prepared for repainting. It is important that the persons involved in the paint removal process be trained to remove lead based paint. After the paint is removed and the surfaces have been patched, the walls, ceiling, and wood trim should be sanded, primed and repainted. The Society should plan to repaint the interior every 10-15 years depending on the amount of wear on the finish in certain areas of high use.

The areas of plaster loss and large cracks should be patched. The plaster on the walls is scored to look like stone and this pattern should be reproduced in patched areas in order to retain the original character. In order to repair a section of missing plaster, remove the loose plaster from around the area. Metal lath should be nailed and wired to the existing structure and three coats of plaster should be applied to the area in the same manner as plaster on a new wall. The finish coat should be feathered over the existing finish coat around the edges after it has been dampened.¹² After the plaster cures for a week cracks might be visible where the new finish coat meets the existing coat. The new cracks and existing cracks should be filled and then covered with fiberglass tape "...which is coated with flexible patching compound that is feathered into the surrounding plaster."¹³ Once sanded and painted the tape will not show and the crack will not reappear.¹⁴

In addition, the hardwood floors should be sanded, cleaned and refinished in a process similar to the removal and repainting of wood trim. Vinyl tiles in some classrooms should be removed. If the original hardwood finish floor has been removed or has been damaged, a vinyl tile or low pile carpet could be used instead of hardwood which is more expensive to install although a hardwood floor would be preferred.

A maintenance schedule with cost projections should be prepared for short and long term maintenance projects and their planning. An example of a short term project would be a gutter and downspout inspection and cleaning twice a year. An example of a long term project would be roof replacement.

Design Specifications



It is the responsibility of a museum, or in this case a historical society, to provide care and protection for a collection. Temperature, humidity, lighting, cleanliness, and security measures affect the deterioration or protection of the collection and influence the comfort and safety of the patrons or employees.¹⁵ It is the purpose of this section to introduce the factors involved in providing the appropriate systems for the building.



Temperature and relative humidity fluctuations or combinations of extreme conditions like extreme heat or cold or extreme dryness or moisture can cause serious damage to a collection; therefore, a stable and controlled environment is desirable in a museum or collection storage space.¹⁶ Temperature is the “degree of hotness or coldness of the air measured on a definite scale,”¹⁷ while relative humidity is the amount of water vapor in the atmosphere. More specifically, relative humidity is “the relationship between the absolute humidity (the amount of water vapor in a given volume of air) and the maximum amount of water vapor that a specific volume of air, at the same temperature and air pressure, is able to hold.”¹⁸ The suggested temperature for collection storage should be 65° while the humidity level should be between 45% and 55%. This range is suitable for organic and inorganic materials which respond differently to conditions.¹⁹ A low relative humidity will cause objects shrink or become brittle and crack. A high relative humidity will cause swelling and mold growth.²⁰

Natural and artificial light must be controlled in a museum or collection storage space. "Light initiates and accelerates chemical reactions that cause weakening, brittleness and fading."²¹ All light sources produce light radiation and some produce damaging heat. Sunlight generates heat and transmits ultraviolet radiation, while incandescent light generates heat, but does not radiate harmful amounts of ultraviolet rays, and fluorescent lights transmit ultraviolet radiation.²² Recommended light levels for storage spaces are 1-5 footcandles, for display or exhibit spaces are 5-15 footcandles and for reading or work areas are 30-60 footcandles. Light should be filtered to reduce the ultraviolet emission to below 75 microwatts per lumen.²³ Unfiltered light will cause fading and deterioration of textiles and damage to color and finish of wood. Filters for bulbs or light fixtures and heat reflecting film or protective plexiglass can be used to reduce ultraviolet emission. Heat producing lights should follow recommended footcandle levels and sunlight should be blocked from the collection storage space with shades or protective plexiglass.

The temperature and relative humidity as well as light levels of storage spaces should be monitored in order to maintain a stable environment for the collection. There are many devices which could be purchased to record and measure temperature, relative humidity and levels of light intensity. The staff could keep a detailed log of weather conditions and tour activities to compare with the readings taken by the devices in order to interpret the environment. Regardless of the device selected, it is possible that a climate controlled environment might be too costly to maintain in the uninsulated building. In order to provide a stable environment for the collection it might be necessary

to record temperature, relative humidity and light intensity in addition to the use of dehumidifiers between April and October in the storage areas.

The collection storage areas should be well organized and free of pests, dirt, and dust.²⁴ Metal shelving units are preferred over wood since they are not considered a fire hazard. The metal shelves should be made of enameled steel or of anodized aluminum to avoid corrosion or emitting damaging peroxides during oxidation.²⁵ Wood shelves release acids which may damage organic materials. Of course “the rate at which acids are released depends on the type of wood, how it is seasoned, and how much moisture it contains.”²⁶ The wood shelving units should be of high-grade exterior plywood that has been formed with phenolformaldehyde and has been primed and painted. Exhibit cases should be constructed in the same manner or be sealed with polyurethane and have ventilation holes if the case is to be closed or have a light source.

The suggestions for proper storage of the collection are numerous and varied. Most suggestions include the use of polyurethane, unbleached muslin, or acid free paper as shelf liners and mylar sleeves and acid free boxes as storage containers.²⁷ Instead of discussing the specific storage needs of the collection, the Society should consult a professional conservator who can help to provide the necessary materials and methods of preservation. The proper storage of the collection and a regular cleaning schedule will significantly control damaging dust, dirt, and pests.

It is also necessary to protect the collection and the building against fire, theft, or other disasters; therefore, fire prevention, detection, and suppression and security

systems are important. The building should be adapted for the new use using cautious methods during the rehabilitation work to prevent fires or other accidents.

Public buildings must be equipped with an early warning system that can detect smoke or high temperatures according to standards set by the National Fire Protection Association and local fire codes. These systems should be wired to alert local authorities or a commercial monitoring center. Photoelectric detectors shine a beam of light in the direction of a light sensitive cell. Particles that interfere with the beam scatter and reflect the light which is detected by the photo cell. When the particle activity becomes dense enough the alarm is sounded. Unfortunately spiders or airborne dust particles can also trigger the alarm thus causing a false alarm. Ionization detectors sense particles that disrupt the flow of electric current. Like the photoelectric detector, the alarm is sounded when the particle activity creates enough electricity. Heat detectors are used to detect rising temperatures. When a certain maximum temperature is reached the alarm is sounded. Heat detectors should be used in conjunction with smoke detectors since they only detect heat. These detectors must be wired to the electrical system of the building and have a battery back up option in case the power to the building is lost.²⁸

Immediate action taken to suppress a fire can extinguish the fire or at least contain it until authorities arrive. In addition, a suppression system can save the building, but it could cause water damage to the building or its contents. A wet pipe system is constantly filled with water and when the alarm is activated by heat, the system automatically releases water. Frozen pipes and false alarms are negative aspects of the system. A dry

pipe system eliminates the possibility of water damage since the pipes are free of water until the alarm is activated and the alarm valve opens to release water into the pipes to be discharged into the space.²⁹

Hand held fire extinguishers should be located in the main corridor and classrooms on each floor. Local building and fire codes will have more standards for emergency lighting and alarm placement. The Society should sponsor practice fire drills to familiarize the staff with safety procedures in the case of an emergency.

Security systems should be installed to protect the building and the collection from vandalism or theft. Entry, motion, sonic, or damage detectors are available for different protection needs.³⁰ The Female Grammar School should have motion detectors placed throughout the building in inconspicuous places to monitor the location of patrons and to notify the authorities of movement in the building after operating hours. The motion detectors should be disarmed with an activation code known only to staff. The storage or limited access areas should be locked with a key for staff entry. The Society should instruct the staff on the methods of securing the building and surveying the activities of patrons.

Endnotes for pages 60-64

1. Request for Proposal from the Historical Society of Schuylkill County, October 1996. This Request for Proposal defines the overall space requirements and programmatic needs for the new facility

Endnotes for pages 65-70

2. Shopsin, William C., *Restoring Old Buildings for Contemporary Uses*. Whitney Library of Design New York, 1989. Page 112.
3. London, Mark *Masonry: How to Care for Old and Historic Brick and Stone*. The Preservation Press: Washington, D.C., 1988. Page 147.
4. *ibid.* Pages 146-147.
5. *ibid.* Page 156
6. *ibid.* Pages 119-126.
7. Shopsin, William C., *Restoring Old Buildings for Contemporary Uses*. Whitney Library of Design New York, 1989. Page 113.
8. Weeks, Kay D. and David W. Look, "Exterior Paint Problems on Historic Woodwork: Preservation Briefs #10." Washington, D.C.: U.S. Department of the Interior, 1982. Page 6.
9. Shivers, Natalie. *Walls and Molding: How to Care for Old and Historic Wood and Plaster*. The Preservation Press: Washington D.C., 1990. Page 116
10. Shopsin, William C., *Restoring Old Buildings for Contemporary Uses*. Whitney Library of Design New York, 1989. Page 118.
11. Weeks, Kay D. and David W. Look, "Exterior Paint Problems on Historic Woodwork: Preservation Briefs #10." Washington, D.C.: U.S. Department of the Interior, 1982. Page 6.
12. Poore, Patricia, ed. *The Old-House Journal: Guide to Restoration*. Dutton Book: New York, 1992. Pages 260-262.
13. Shopsin, William C., *Restoring Old Buildings for Contemporary Uses*. Whitney Library of Design: New York, 1989. Page 146.
14. *ibid.*

Endnotes for pages 71-75

15. Purinton, Nancy and Sally Malenka. *History Society of Schuylkill County Survey*. Conservation Center for Art and Historic Artifacts. June 1993. Appendix A "Environmental control falls into two primary categories; the ambient environment (temperature, relative humidity, light, air pollution, and pests) and the immediate environment (storage and exhibit enclosures and materials)..." "Providing the best possible environment for collections is the single most important preservation measure an institution can undertake."
16. MacLeisch, A B *The Care of Antiques and Historical Collections*. The American Association for State and Local History: Nashville, TN, 1985. Pages 19-20.
17. Webster's Dictionary was consulted for a definition of "Temperature."
18. Butcher-Youngmans, Sherry. *Historic House Museums*. Oxford University Press: New York, 1993. Page 106.
19. Purinton, Nancy and Sally Malenka. *History Society of Schuylkill County Survey*. Conservation Center for Art and Historic Artifacts. June 1993. Page 5
Ideal conditions for people are 70° and 70%, for finishes are 60° and 50%, and for artifacts are 50° and 40%, however, it is impossible to create microclimates for each material.
20. Darragh, Joan and James S. Snyder. *Museum Design: Planning and Building for Art*. Oxford University Press: New York, 1993. Page 250.
21. Purinton, Nancy and Sally Malenka. *History Society of Schuylkill County Survey*. Conservation Center for Art and Historic Artifacts. June 1993. Page 6
22. *ibid.*
Butcher-Youngmans, Sherry. *Historic House Museums*. Oxford University Press. New York, 1993. Page 111.
23. Purinton, Nancy and Sally Malenka. *History Society of Schuylkill County Survey*. Conservation Center for Art and Historic Artifacts. June 1993. Page 6.

24. Butcher-Youngmans, Sherry. *Historic House Museums*. Oxford University Press: New York, 1993. Page 68.
25. *ibid.* Pages 70-71.
26. *ibid.*
27. Sullivan, Patricia C. *Report and Planning Recommendations Prepared for the Schuylkill County Historical Society*, March 1990. Pages 5-6.
28. Butcher-Youngmans, Sherry. *Historic House Museums*. Oxford University Press: New York, 1993. Page 178.
Fire Safety Retrofitting In Historic Buildings. Advisory Council on Historic Preservation and General Services Administration, 1989.
- Packard, Robert T., ed. *Architectural Graphic Standards*. John Wiley and Sons: New York, 1989. Page 432.
29. Butcher-Youngmans, Sherry. *Historic House Museums*. Oxford University Press: New York, 1993. Page 179.
Packerd, Robert T., ed. *Architectural Graphic Standards*. John Wiley and Sons: New York, 1989. Page 406.
Fire Safety Retrofitting In Historic Buildings. Advisory Council on Historic Preservation and General Services Administration, 1989.
30. Butcher-Youngmans, Sherry. *Historic House Museums*. Oxford University Press: New York, 1993. Page 168.
Feilden, Bernard M. *Conservation of Historic Buildings*. Butterworth-Heinemann Ltd.: Oxford, 1994. Page 322.

Drawings



The following drawings illustrate one comprehensive design solution for the adaptive reuse of the Female Grammar School Building. The drawings include:

First Floor Plan

Second Floor Plan

Third Floor Plan

East Elevation

South Elevation

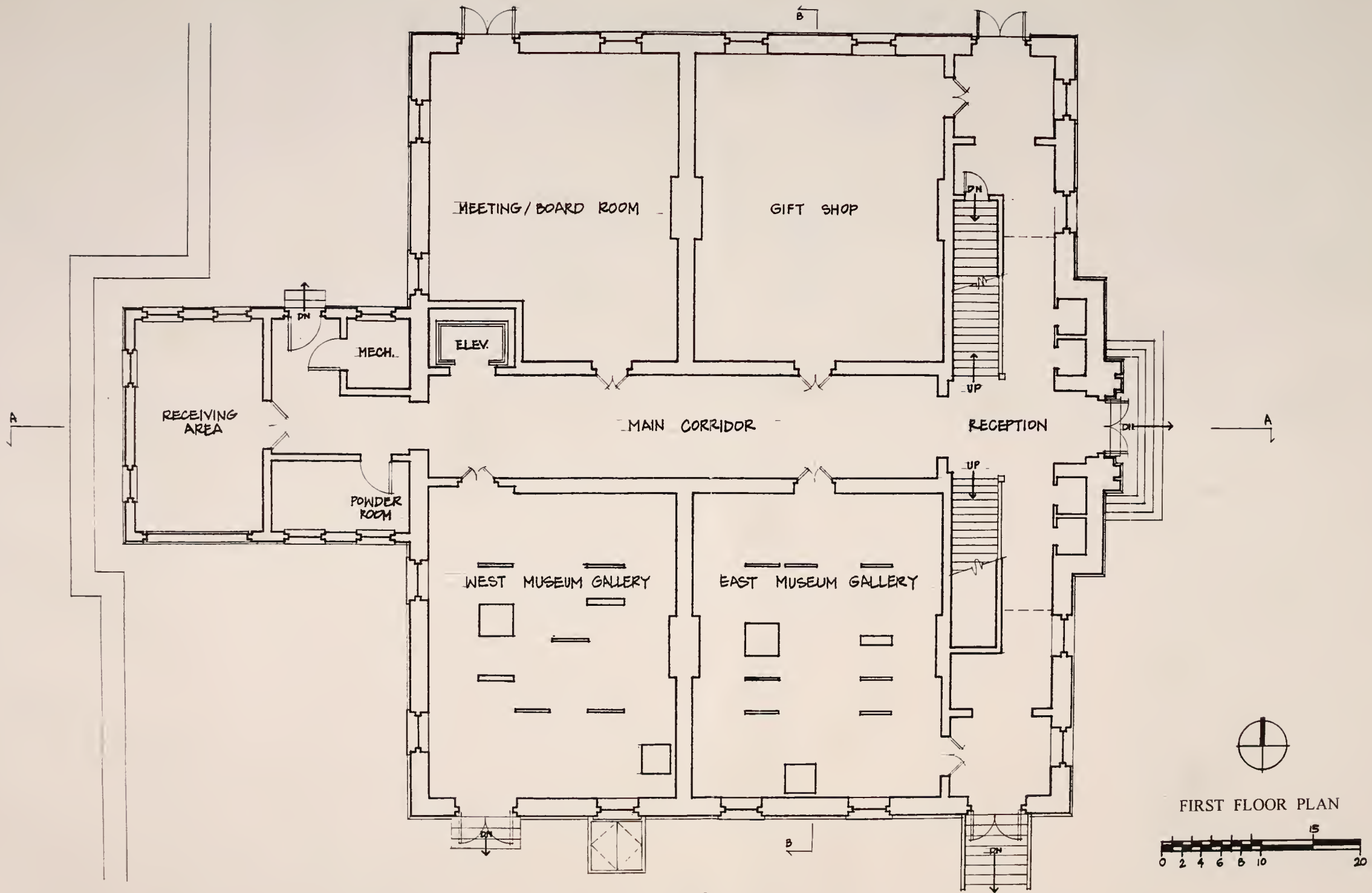
West Elevation

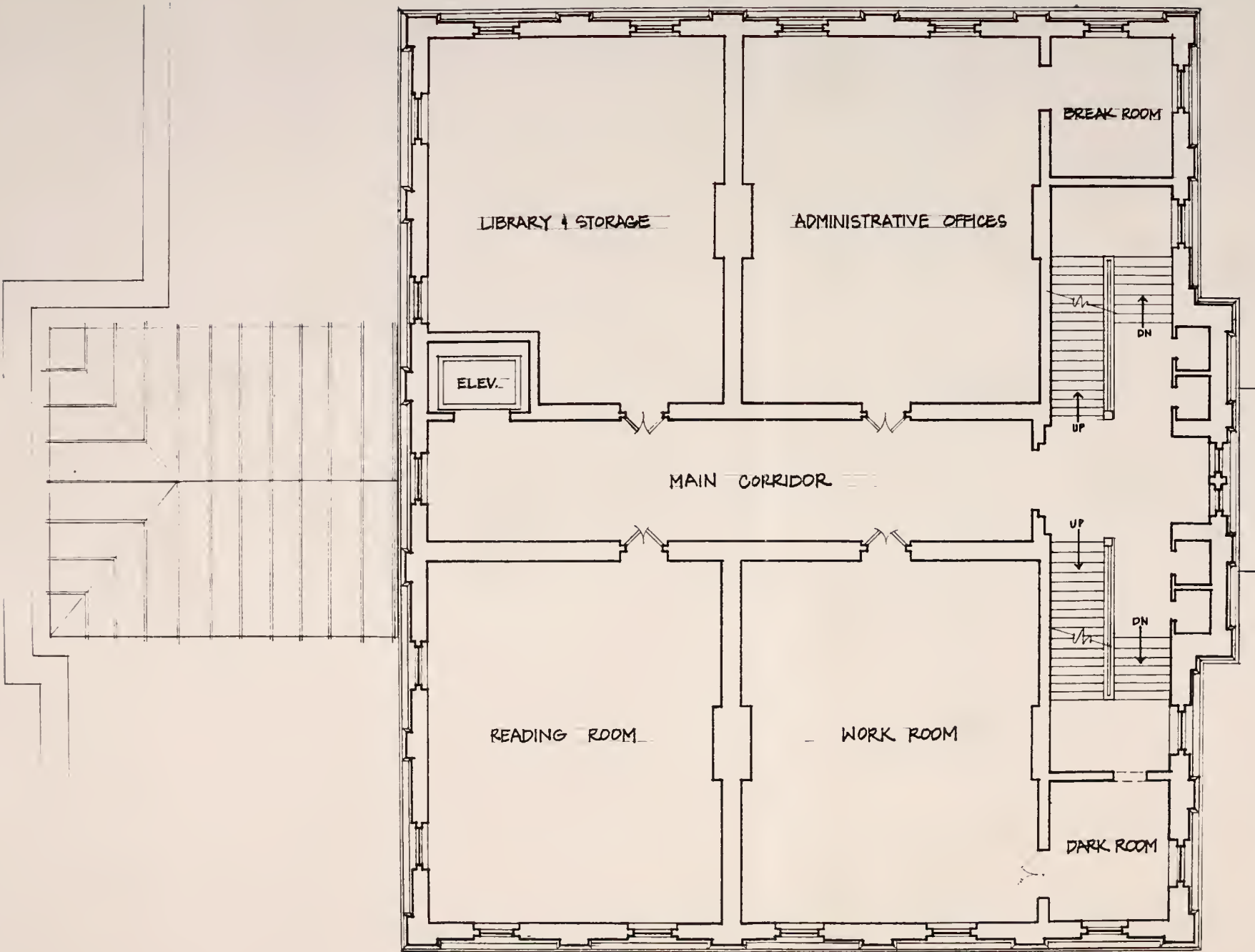
North Elevation

Building Section A

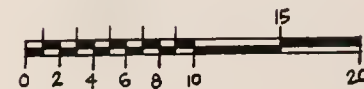
Building Section B

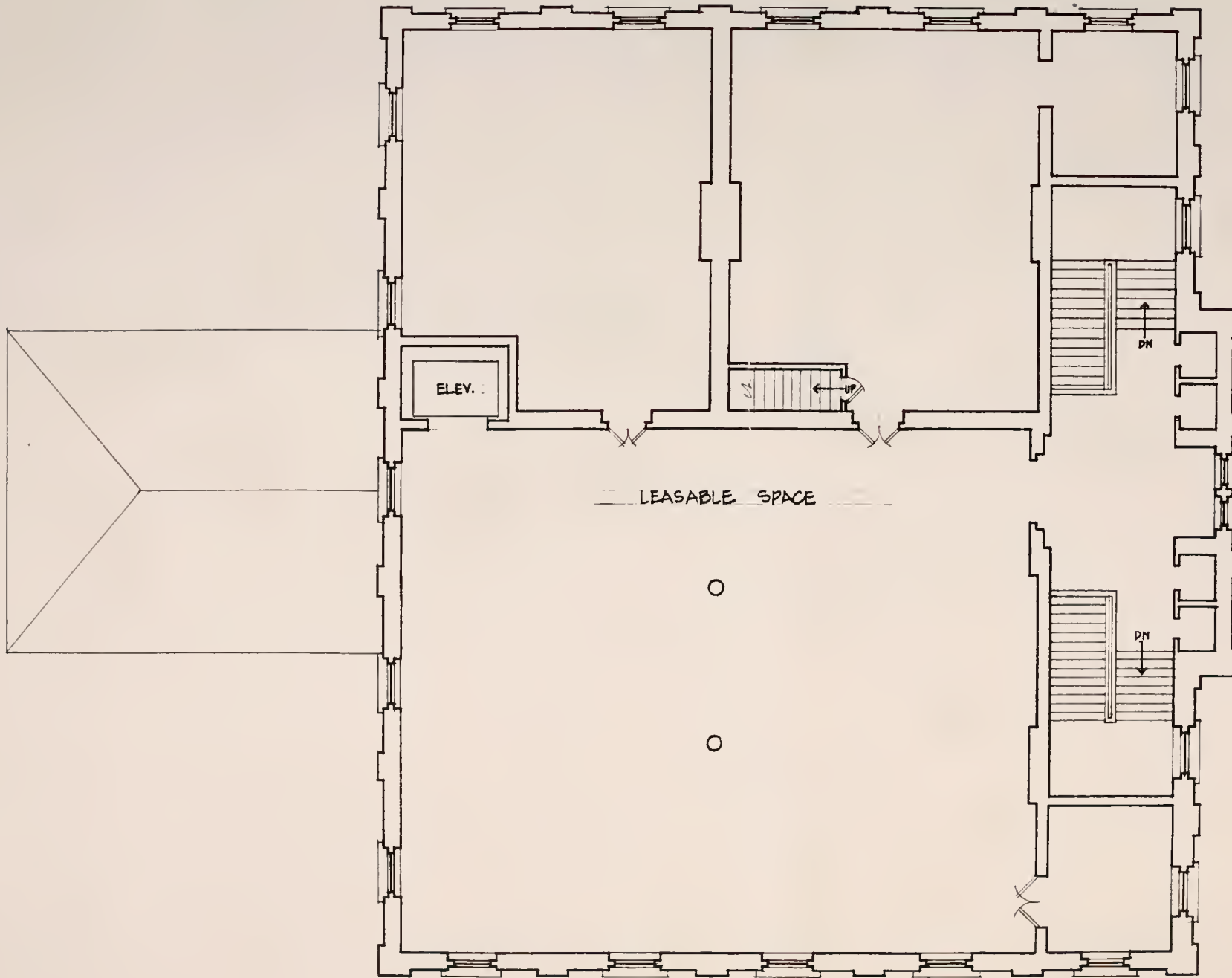
Interior Elevations



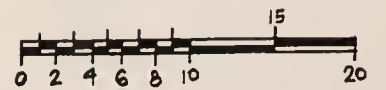


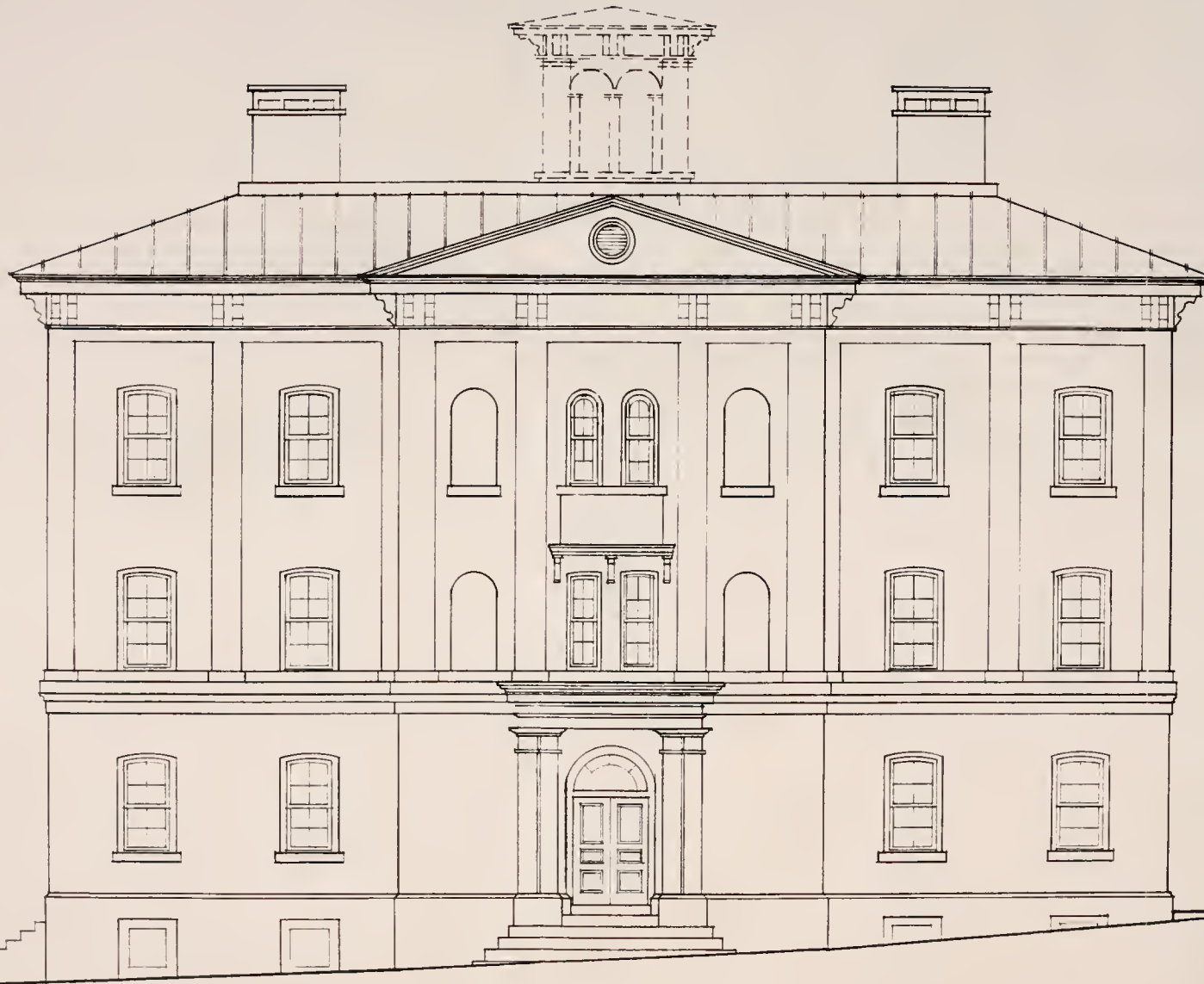
SECOND FLOOR PLAN



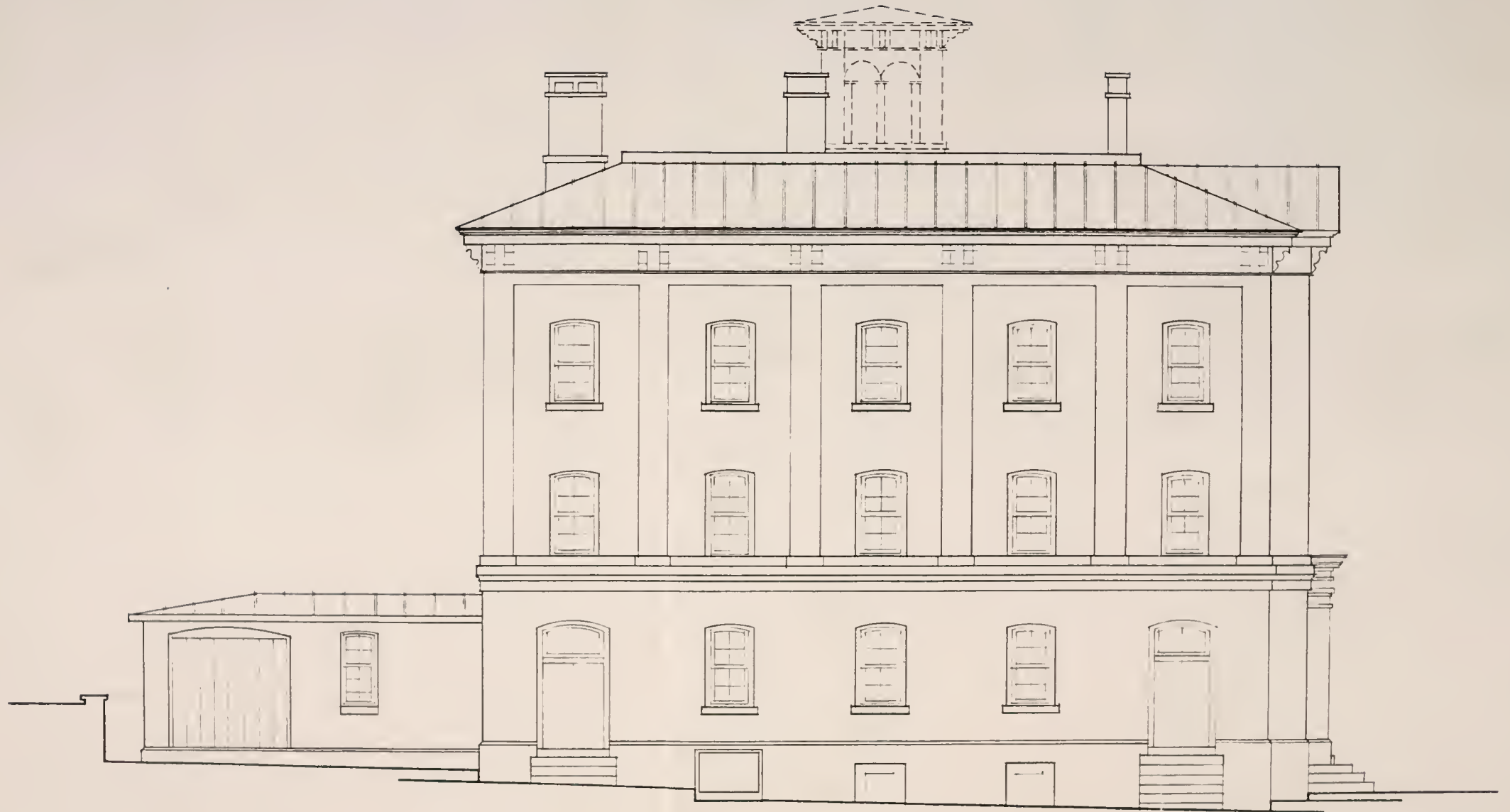


THIRD FLOOR PLAN





EAST ELEVATION



SOUTH ELEVATION



WEST ELEVATION



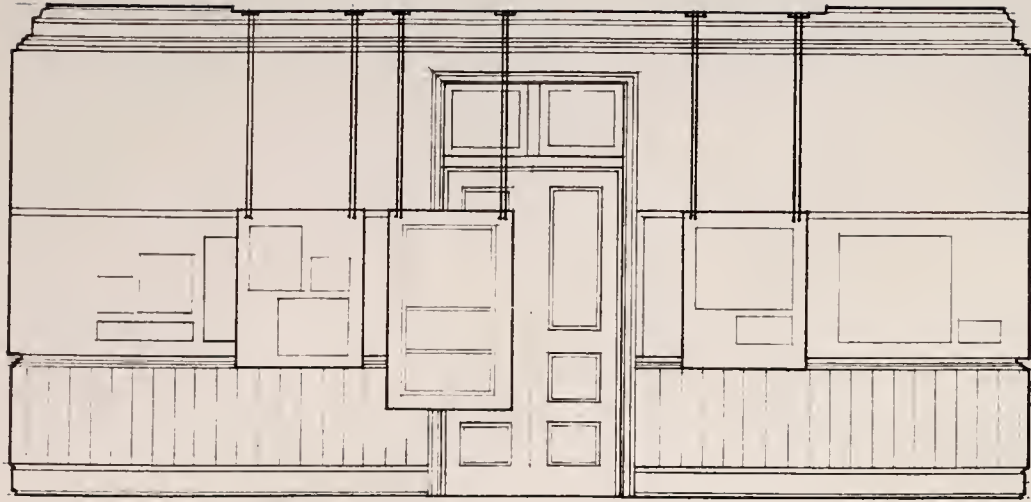
NORTH ELEVATION



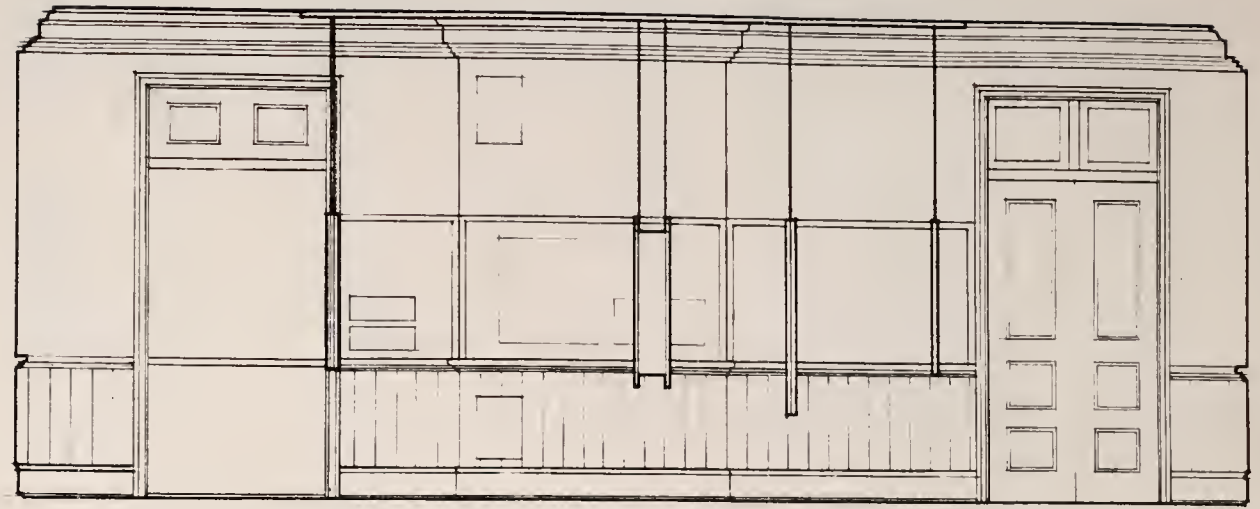
BUILDING SECTION A



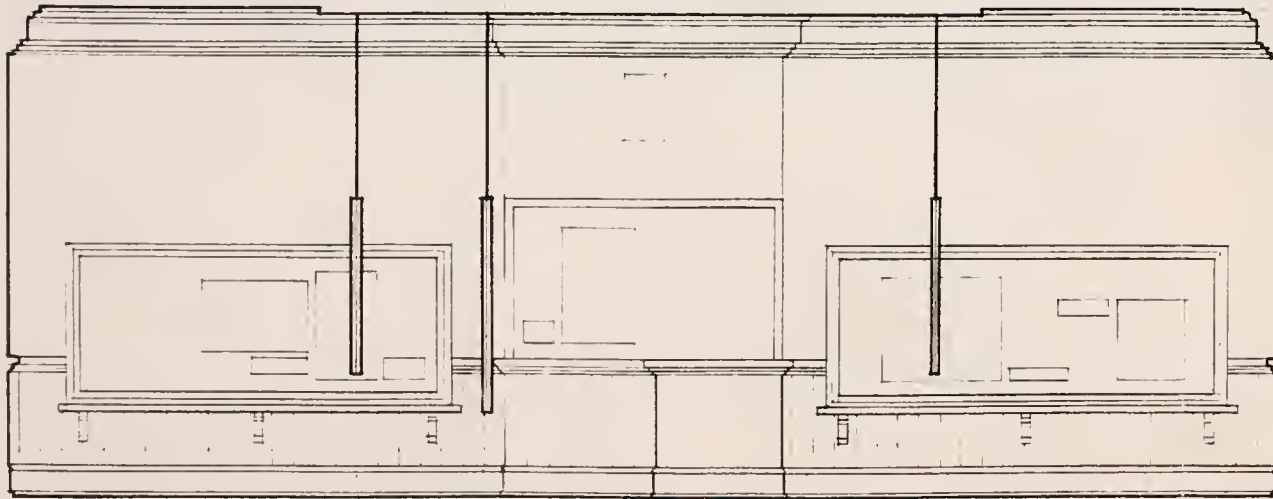
BUILDING SECTION B



NORTH ELEVATION OF EAST GALLERY $\frac{1}{4}'' = 1'-0''$



EAST ELEVATION OF EAST GALLERY $\frac{1}{4}'' = 1'-0''$



WEST ELEVATION OF EAST GALLERY $\frac{1}{4}'' = 1'-0''$



SOUTH ELEVATION OF EAST GALLERY $\frac{1}{4}'' = 1'-0''$

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CONCLUSION

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Design Theory



The most important element of this design is to retain the character of the space by showing the evidence of the past use while allowing for necessary functional and technological changes. The following comments describe how this element defined other aspects of the design.

The volume of the space should not be obstructed with added wall partitions or other built in pieces. Programmatic requirements have been combined in certain spaces to eliminate the need for partitions.

The axial relationship in the main corridor should be reintroduced in order to better experience the volume of the space. The opening to the rear addition should be relocated to the center of the wall and natural light from the southern windows should illuminate the rear hall on the first floor. In the main corridor of the upper floors, the previously blocked in doorways should be opened as windows to provide a focal point.

The elevator is located near the rear of the main corridor and its mass modifies the space of the semi-private meeting/board room. The location of the elevator in this room compromises the volume of the space; however, it is placed in this location to keep the intervention contained in the building. Adding the mass of the elevator to the southern elevation would change the exterior character and would not provide the axial relationship previously described.

A sophisticated climate control system may be too costly to operate and maintain. It is necessary to minimize and record temperature and relative humidity fluctuations in collection storage areas, but installing a climate control system will result in the substantial loss of fabric. Although it was previously recommended that the volume not be interrupted by built in pieces, fragile objects needing to remain in a climate controlled environment could be kept in a small room constructed in the library/storage space. This room should be constructed independent of the existing walls and provide storage space for those objects requiring climate control. Constructing the room independently allows it to be removed at a later date if further changes are necessary.

The design theory of the gallery spaces is more specific. These spaces should be easily modified for the introduction of new exhibits. The wall space in the main corridor and the closets in the stair hall of the first and second floors could be used for the display of temporary exhibits. The wall space would be better suited to flat work like text and pictures or even objects that can be mounted flush to a display board. The closets could be used for larger objects as well as text and images. The closets can be treated like display cases by covering the door with plexiglass or glass from the floor to 8 feet above the floor. Sufficient lighting would need to be added in these spaces.

The east and west galleries will house the collection display. These spaces should be easily modified for the introduction of new objects or for the installation of a

different exhibit. A track system used to hang exhibit panels and lighting should be added to the ceiling in a grid pattern that reflects the location of the desks and aisles below. The blackboards should be used to frame the layout of wall mounted materials. While wood trim should be replaced if damaged, it is unnecessary to replace blackboard material. Damaged writing surfaces should be removed and the wall in the area should be painted. Large items that cannot be wall mounted should be placed on pedestals that are constructed with similar molding profiles and dimensions as the base molding, the wainscoting, and the chair rail molding. The pedestals can be placed within the grid or around the perimeter of the room. The exhibit panels will hang from the tracks and be read from the direction that the pupils faced when sitting in their desks. The hanging arrangement of these panels can be changed and the panels are easily removed for new exhibit installations.

Preservation Intent



It is the purpose of a building to provide shelter for a human function or process. This purpose also includes providing shelter for the human process of memory which produces intangible elements of culture. The process of memory speaks of individual and thus, cultural reality and mortality. The social desire to remember or appreciate the essence of nostalgia is as significant as historical or architectural merit in terms of preservation. Just as school buildings were considered “gauges of [a community’s] enlightenment,” older buildings are visual memoirs which have witnessed the history of the place and the people. As contributors to the environment, their presence influences culture through memory. An older building reminds us of what was and tells us why it is. Too many times, the destruction of a building also marks the loss of memory and over time, the loss of culture.

“We shape our buildings, and afterwards our buildings shape us.”

Winston Churchill

“When we build, let us think that we build forever.”

John Ruskin

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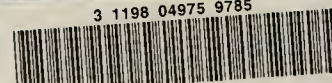
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