

U.S. Military Academy - West Academic Building
(Madison Hall, East Cadet Barracks, Pershing Barracks)
Immediately west of Thayer Road just north of
its juncture with Brewerton Road
U.S. Military Academy
West Point
Orange County
New York

HABS No. NY-5708-15

HABS
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PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Buildings Survey
National Park Service
Department of the Interior
Washington, DC 20013-7127

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HABS No. NY-5708-15
U.S.M.A. No. 751

HISTORIC AMERICAN BUILDINGS SURVEY
U.S. MILITARY ACADEMY - WEST ACADEMIC BUILDING
(MADISON HALL, EAST CADET BARRACKS, PERSHINC BARRACKS)

LOCATION: Immediately west of Thayer Road just north of its juncture with Brewerton Road, U.S. Military Academy, West Point, Orange County, New York.

USCS West Point Quadrangle, Universal Transverse Mercator Coordinates: 18.587200.4582440.

PRESENT OWNER AND OCCUPANT: U.S. Military Academy, Department of the Army.

PRESENT USE: Cadet Barracks.

SIGNIFICANCE: The West Academic Building is the largest surviving nineteenth-century building at the Academy. It was the first of the modern academic buildings at the Academy and foreshadowed the great architectural boom of the early twentieth century. It is the only extant work of Richard Morris Hunt at West Point.

PART I. HISTORICAL INFORMATION

A. Physical History:

1. Date of erection: 1819-1895. The Annual Report of 1895 states that the building was partially occupied in January 1895 and fully occupied in August of that year. Demolition of the old academy took place in June 1891.
2. Architect: Richard Morris Hunt, New York City.
3. Original and subsequent owners: U.S. Military Academy, Department of the Army.
4. Builders, suppliers: The Annual Report of 1892 states that J. E. and A. L. Pennock of Philadelphia were awarded a contract on May 18, 1891 for the construction. Stone for the building came from the Hudson and Chester Granite Company of Chester, Massachusetts. Eugene Kulinski and Company supplied the gas fixtures.
5. Original plans and construction: Original drawings exist and are in the possession of the Chief Engineer, U.S. Military Academy. These drawings are labelled "R. M. Hunt, Arct New York" and some of them are initialled "MO'C." These original drawings, of which only plans survive, were reused for subsequent alterations to the building. resulting in the loss of

many original details. Consequently, little is known about the completely altered interior.

A Congressional Bill "For the erection of an academic building and gymnasium at West Point," H.R. 9409, was read in the 50th Congress on April 16, 1888. This included drawings of a "proposed academic building" designed by Professor Charles W. Larned. A reproduction of these are included in the Supplemental Material section. In its basic massing, Larned's design is remarkably like that eventually designed by Richard Morris Hunt.

The Annual Report of 1895 stated that "the building has been supplied with plain substantial oak furniture made to order, conforming in pattern and finish to the character of the building itself." It also mentioned that "to complete the building according to the original design the clock tower remains to be constructed."

The Annual Report of 1896 went into a lengthy description of the new building; a copy of this is included in the Supplemental Material section.

The following descriptions of the interior and its original use were determined from the erased portions of the original drawings (Grashof). These descriptions are in detail here due to the altered state of both the drawings and the building.

Most of the basement use was confined to the south wing and the central area south of the sallyport. This latter space was used for the Department of Tactics and was the largest open space in the basement, spanning the 58'-4" east-west distance of the middle section (present 011 Locker Room and Latrines). The southeast corner was occupied by the Department of Ordnance and Gunnery (present 09 Storage), the janitor's office and supply room (present 08 Day Room), the Reproduction Department (present 07 Laundry Room) and the mechanical core of the elevator. The southwest wing contained a Steam Room (present 01DFE), Instrument Room (present 02, 02A Mechanical Room), a Janitor's Room (Trunk Room), a second Instrument Room (05 and 06 BP) and a Storage Room (Trunk Room). The north central and northern sections of the basement were unspecified. Basement floors were concrete and composition. Lighting was by gas lights and by windows in sunken areaways. All four floors above the basement were similarly finished: tile corridor floors; yellow pine floors in all other rooms, gas ceiling lights; slate stair landings; octagonal (iron?) columns supporting rivetted plate girders in open spaces; heavily molded baseboards, chairrails, door and window trim, plaster ceiling moldings and cornices; and wainscoting. Each corridor opening spanned with a pointed arch.

The first floor had 14'-6" high ceilings and was the most open of any floor. The southwest wing of this floor was a large

65' x 58' open Chemistry Laboratory filled with laboratory benches. Four octagonal columns occupied the center of the room which was open except for two small partitioned spaces in the northeast and southeast corners. In the southeast corner of the building was a Chemical and Electrical Lecture Room, a smaller unidentified laboratory room, and two small rooms adjacent to the elevator. Flanking the central sallyport were the Problem-Ordnance Model Room on the south and the Engineering Model Room on the north, each 59'-0" x 46'-5" with two central columns. A large Written Examination Room "B" (50' x 42') occupied the northeast corner space into which a 17' square Tower protruded. West of this room was another Written Examination Room (50' x 43'). The extreme west end of the northwest wing was taken up by a Toilet Room and a Court Martial Room.

The southwest wing of the second floor was divided into an east-west corridor with two rooms on either side. Three of these rooms are identified as 26' x 29' Chemical Section Rooms; the fourth room, probably a store room, was smaller because of a toilet. A half-turn staircase to the third floor was at the west end of the corridor. The southeast corner was divided into two rooms: a Chemical ? Room and an Electrical Laboratory. South of the elevator was a Chemical Store Room. The middle section of this floor between the two principal staircases was apparently five section rooms (approximately 22' square) on either side of a 14' wide longitudinal corridor. A series of six arches spanned this corridor. An unidentified lecture room occupied the northeast corner with an Engineering Room in the corner tower. A Written Examination Room filled the northwest wing except for two additional rooms at its extreme west end.

The entire south end of the Third Floor was a series of inter-connecting Geological Examination Cabinet rooms. Across a 12'-4" corridor in the southwest wing were a Chemical Section Room and a Geological Store Room. A staircase in this corridor led to the second floor. An unidentified section room across from the elevator completed the southeast corner. The middle section of the Third Floor was similar to that of the Second Floor, with at least three section rooms used for the Ordnance Department. The northeast corner room is unidentified but it had a balcony on its south wall. The northwest wing was an Examination Room which also had a balcony along its south and west walls. At the extreme west end of this wing was a store room and a U.S.M.A. Records Room.

The southwest wing of the Fourth Floor consisted of a central east-west corridor, two Philosophical Section Rooms on the west, and unidentified room and a core consisting of a Janitor's Room toilet, Photographic Room and a full-turn staircase to the roof. A Philosophical Lecture Room (48'-4" x 50'-8") occupied the southeast corner. The center section was composed of section rooms similar to those on other floors but two of these room spaces might have been combined as a large lecture room. The northeast

corner was the ? Class Drawing Academy and the wing to the west was the 3rd Class Drawing Academy. The corner tower space is unidentified.

6. Alterations: The interior of the West Academy Building remained fairly unaltered until the 1930s. At that time many of the larger open rooms were partitioned into smaller rooms. The Third Floor galleries were removed in 1934 and a new elevator was installed in 1942. Additional changes occurred in the early 1950s with the installation of acoustical wall and ceiling covering in some areas; the erection of more partition walls; and the removal of plaster ceiling moldings, window and door frame moldings, chairrails and baseboards.

The most dramatic and lasting alteration was approved in 1956 (revisions made in 1958) and completed in 1960. At that time 43 sheets of drawings by Gehron and Seltzer, Architects and Engineers, New York City, were used to convert the Academic Building into a cadet barracks. This conversion was very complete and called for the alteration of former classrooms, laboratories and office spaces into cadet rooms, latrines and showers. Only the corridors on some floors resembled the former space with some arches surviving in the juncture of stairways. The north basement retains its brick corridor vaults with I-beam spandrels and still has exposed stone and brick walls but little else survives. Interior finishes were also completely altered at this time except for the original wood and tile floors, which were then replaced with terrazzo and vinyl asbestos in 1976. Galvanized corrugated iron sections of the roof were replaced with copper, and ventilators and stairway skylights were removed. The 2nd-3rd floor staircase was removed, as was the northwest tower elevator, but the two principal staircases remain, retaining their original ballusters and handrail. Interior doors were replaced; exterior doors (reverse swing) and windows were retained.

In the Facilities Engineer's Office, Directorate of Engineering and Housing, U.S.M.A. are drawings by Walter Dorwin Teague Associates, Industrial Designers, entitled "Conversion of West Academic Building, drawn 3-28-58, approved 4-10-58." These fifteen drawings by Robert Scala and Boris Nepo are almost identical to those by Gehron and Seltzer. It is not known just what role, if any, this firm played in the conversion.

The exterior, on the other hand, has suffered few alterations. In addition to the aforementioned changes to the roof, second floor windows on the north elevation were altered in 1934 with stone spandrels and new lower sash. Other dated alterations include the addition of a loading platform on the southwest corner of the northwest wing, and overall repointing and waterproofing of the exterior walls in 1977.

Undated exterior alterations, based on physical examination, are minor and have been confined to windows. Due to the subdivision of interior spaces, some double first floor windows on the north, south and east elevations were altered with the addition of a wooden mullion in the transom window (possibly 1956). Metal window grilles have altered first floor windows on the north elevation and three first floor windows on the west elevation of the northwest wing. A corresponding basement window on the southwest wing was filled with stone.

- B. Historical Context: A new academic building had been part of an ever increasing need for new buildings at the Academy since the early 1870s. This need reached a climax in 1887 when the Superintendent submitted a report to the Secretary of War calling for a number of new structures, most notably an academic building and a gymnasium. Much of the report is a debate over the merits of remodeling the present academic building or building a new one. The Academic Board's final recommendations were to erect a new gymnasium, to build a separate building to house the departments of philosophy and chemistry and to renovate the old academic building, making it fireproof (Annual Report, 1887). The following year a bill was submitted to Congress for a new academic building and a new gymnasium, both of which were eventually designed by Richard Morris Hunt. For a full historical and architectural context of the Academic Building within the development of West Point, see HABS No. NY-5708, Volume 2: "West Point: An Overview of the History and Physical Development of the United States Military Academy."

PART II. ARCHITECTURAL INFORMATION

A. General Statement:

1. Architectural character: It has long been felt that the West Academic Building owed an architectural debt to the Delafield buildings at the Academy (Gray). Richard Morris Hunt did design a building of contextual quality that proved to be a transitional link with the secular Gothic style of Cram, Goodhue and Ferguson, which would later establish an architectural image for the Academy. If Hunt was influenced by the existing militaristic or collegiate Tudor Gothic style that he found at West Point, basic elements can be traced to the Central Barracks, old Grant Hall, the Cadet Dining Hall and the Library. Despite this stylistic dressing, Hunt's building is vaguely classical, no doubt a reflection of his strong Beaux-Arts training. The symmetry of the building, only off-set by the northeast and northwest towers, and its tripartite arrangement of floors, bespeak this classicism. While Hunt did use to a small degree the opportunity of freely mixing gothic details to reflect the interior spaces, for example the north windows of the Drawing Academy space, the rigidity of his overall fenestration and the non-

didactic use of some exterior forms makes his work look less studied when compared to that by Cram, Goodhue and Ferguson.

2. Foundations: Concrete footings and random range ashlar granite make-up the foundations. Exterior foundation walls range from 6'-6" at the sallyport to 3'-2" and 3'-4" for the wing walls. Interior foundation walls range from 1'-0" to 6'-0".
3. Walls: Like the other stone buildings that followed, the West Academic Building was built of rock-faced granite in a random range ashlar pattern. However, the gray granite from Chester, Massachusetts is slightly different in color from the local granite used in subsequent Academy buildings. The finished stone trim is the same Chester granite. Decorative features include a two-part watertable on the main building and one-part watertable on the wings; a belt course between the first and second floors and one between the third and fourth floors; and basket arches over the windows.
4. Structural system, framing: The exterior stone walls are load-bearing with a brick veneer on the interior. The basement's structural system consists of arched brick walls between steel I-beams which support the concrete slab of the first floor. The remaining floors are I-beams encased in concrete slabs with brick interior walls. Most of the brick arches in the corridor have been removed. A concrete slab forms the roof.
5. Sallyports, balconies, porches: Besides its towers, the major external features of the building are two sallyports, a fourth floor balcony and a first floor porch. Centered on the facade is a projecting sallyport that forms the entrance to an open air passage through the building (see HABS photograph). The sallyport, 25'-6" wide and projecting 4'-6" from the wall, is composed of a Perpendicular Gothic arch flanked by 4'-10' wide buttresses which end with a modillion cornice. Gargoyles project from each end of this cornice, above which is a crenelated parapet. Filling the spandrels of the arch are carvings symbolizing West Point. Flanking these spandrels are buttress weatherings with the dates 1891 and 1895. The sallyport rises as a slightly projecting bay which culminates above the roof in twin octagonal bartizans with crenels, loopholes and scuppers (see HABS photograph). On the west elevation the arched sallyport passage bay projects from the wall and rises above the roof in a crenelated parapet tower (see HABS photograph). Flanking each entrance to this sallyport passage are large wrought iron lanterns.

Spanning three double window bays of the south elevation's fourth floor is a meshrebeeyeh style balcony with machicolations and decorative wrought iron grilles.

The only porch is associated with a granite-faced quarter-turn stairway that leads to a first floor door on the south elevation.

6. Chimneys: Chimneys and vents are incorporated into the parapet walls above the roof. One exception is a granite wall that rises near the juncture of the south wing and the central section. This wall is both a chimney and the west wall of the elevator penthouse.
7. Openings:

- a. Doorways and doors: There are six principal entrances, two secondary entrances and two basement entrances. Of the principal entrances, four are 9'-0" masonry openings on opposite (east-west) ends of the two principal staircases. On the east elevation these north and south doors are bi-valves of eight and ten panels each, respectively, with three-light pointed arch transom windows above. The south door is higher due to a falling grade. On the west elevation the north bi-valve doors are vertical boards with four-light sidelights and a solid wooden transom. The south bi-valve doors on this elevation are similar to the corresponding east doors. The other two principal doorways face each other in the sallyport. These are six panel bi-valve doors with pointed arch transom windows above. Within each of the staircase doors is a second set of swinging doors. All of these doorways are set within Perpendicular Gothic arches.

Tower entrances consist of an eight panel door on the west elevation of the clock tower and a flush, vertical-board door with a one light transom window on the west elevation of the northwest stair tower.

A bi-valve door of four panels each of the south elevation is the only other entrance to the first floor.

Basement doorways include a bi-valve door on the west elevation of the south wing and a door with a four light window under the south doorway to the first floor.

- b. Windows: The windows in the West Academic Building differ from those in the Cram, Goodhue and Ferguson buildings. Hunt ignored traditional gothic windows for conventional 1/1 double hung wooden sash windows. While many of the segmental, pointed, relieving or round arched masonry openings reflect gothic forms, the windows in those openings do not. With the exception of the double wooden-mullioned windows on the first floor, all double windows have granite mullions. Dressed granite is used for all jambs, lintels and relieving arch filler spaces. The jambs are thin, narrow slabs rather than the in-and-out bond used in typical gothic work. Exceptions to double-hung windows are: the fixed narrow windows at the top of the towers; two-light pointed arch windows above the fourth floor of the western sallyport tower; and some pivoting third floor windows.

8. Roof:

- a. Shape, covering: The built-up roof is flat except for low copper-covered hip roofs of the southeast corner and the north wing.
- b. Cornice: The cornice of the West Academic Building is heir-archically arranged on different elevations. It is most elaborate on the east elevation on the lower wall of the central section where the upper parapet wall has an arched corbel band in a machicolated fashion. Windows occupy some of the segmental arch spaces. Above this arcade is a single finished-granite band. A similar cornice is used on the higher wall sections of the east, north and south elevations. The lower wall sections of the south and west elevations have a granite cornice band resting directly on granite brackets. The middle section of each tower and sallyport cornice is also machicolated.

Leaders on the roof feed downspouts attached through the cornice and down the exterior wall.

- c. Towers: Towers occupy the corners of the north elevation. The tallest, on the northeast corner, has clock faces on its east and north elevations. This tower was added to the corner after the facade had been completed. The tower, finished like the rest of the building, is divided into three sections by two belt courses and has a machicolated cornice below a crenelated parapet. Gargoyles similar to those on the sallyport extend from the northeast and northwest corners. The tower extends from the east elevation 10'-2", and from the north 10'-6". In plan the tower is 25'-0" square with a 17'-0" square interior; the load-bearing walls are 4'-0" thick at the first floor. A spiral staircase ell is attached to its west side.

The north tower extends from the north elevation 10'-6" and from the west 5'8". The appearance of this tower is similar to that of the northeast tower but without the clock. Functionally, this tower was an elevator shaft around which was a full-turn staircase.

C. Description of Interior:

1. Floor plans: The interior of the West Academic Building is effectively divided into four areas on the first floor and three areas above that. On the first floor the sallyport divides the building symmetrically north-south while the stairhalls divide the center section from the wings. Above the first floor the building is divided only by the stairhall. Each of these areas are in turn longitudinally divided by corridors with rooms on each side. In terms of original size, only the sallyport and

the stairhalls have remained unaltered. The remaining parts of the building have been completely altered.

D. Site:

1. The West Academic Building faces east onto Thayer Road across from the East Academic Building (HABS No. NY-5708-25). Its other neighbors include Grant Hall/South Barracks (HABS No. NY-5708-26) to the south, the Mess Hall/Washington Hall (HABS No. NY-5708-44) to the north and Pershing Barracks and the old Central Barracks (HABS No. NY-5708-8) to the west. Brewerton Road separates the building from Grant Hall while a limited access street separates it from the Mess Hall.

The West Academic Building occupies the site of the former Academic Building (1839) that was demolished in 1891 to make way for the new building. This replacement is significant not only because of a similarly used structure continued on the site but also because the building and its westward stretching wings, along with the eastern wings of the Old Central Barracks (HABS No. NY-5708-8), redefined the quadrangle area to the west. Central Barracks was demolished except for a small northeast section but Pershing Barracks and Washington Hall (HABS No. NY-5708-44) still maintain this quadrangle area along with the West Academic Building. Similarly, the facade of the building helps maintain the density of the Academic Area along Thayer Road.

PART III. SOURCES OF INFORMATION

- A. Architectural Drawings: Original ink-on-linen working drawings are in the Facilities Engineer's Office, Directorate of Engineering and Housing, U.S. Military Academy. Subsequent alteration drawings are also found there.
- B. Early Views: Early photographs can be found in the U.S. Military Academy Archives and Special Collections. Some of these are reproduced in the Grashof and Lange volumes of this project.
- C. Bibliography:
 1. Primary and unpublished sources: Records, U.S. Military Academy Archives and Special Collections. See bibliographic essay in the Lange volume of this project for a listing of record groups.
 2. Secondary and published sources:
Annual Reports, U.S. Military Academy Archives.

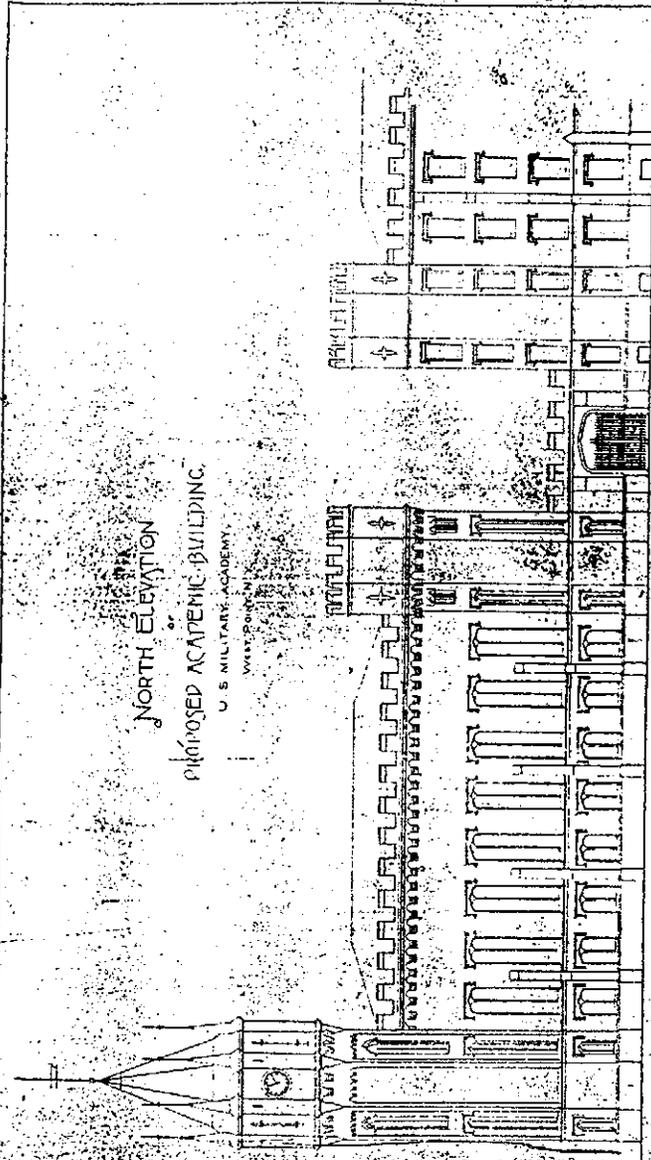
Grashof, Bethanie C. "Building Analysis and Preservation Guidelines for Category I and Selected Category II Buildings at the United States Military Academy, West Point New York." Historic American Buildings Survey, 1983. HABS No. NY 5708.

Lange, Robie S. "West Point: An Overview of the History and Physical Development of the United States Military Academy." Historic American Buildings Survey, 1983. HABS No. NY-5708.

D. Likely Sources Not Yet Investigated: Records of Richard Morris Hunt.

E. Supplemental Material:

1. Drawings from Congressional Bill H.R. 9409 from the Annual Report of 1887.
2. Description of the building from the Annual Report of 1896.



NORTH ELEVATION
 PROPOSED ACADEMIC BUILDING
 U. S. MILITARY ACADEMY

Designed by Gray W. Larson, Prof. of Drawing
 and Architecture at West Point
 and
 assisted by
 W. L. C. T. Tompkins, Architect

Gymnasium Military Academy	\$100,000.00	\$38,000.00
Massorium for cadets (appropriated)		
Arch. (vol. 2, p. 428, sec. 1)		

ANNUAL REPORT
 1887

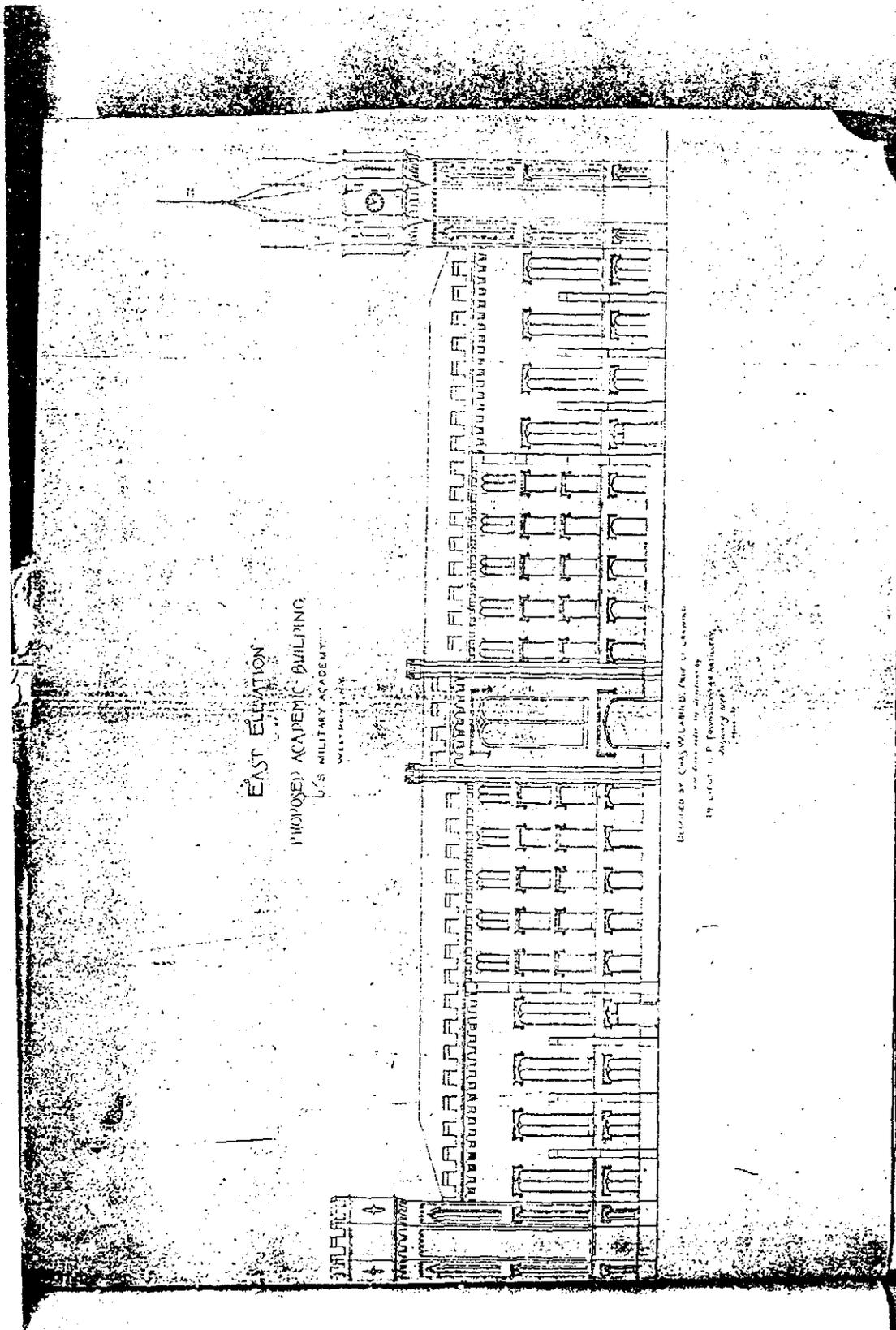
50TH CONGRESS,
 1ST SESSION.

H. R. 9409.

A. BILL

For the erection of an academic building and
 gymnasium at West Point.

APRIL 16, 1888.—Read twice, referred to the Committee
 on Military Affairs, and ordered to be printed.

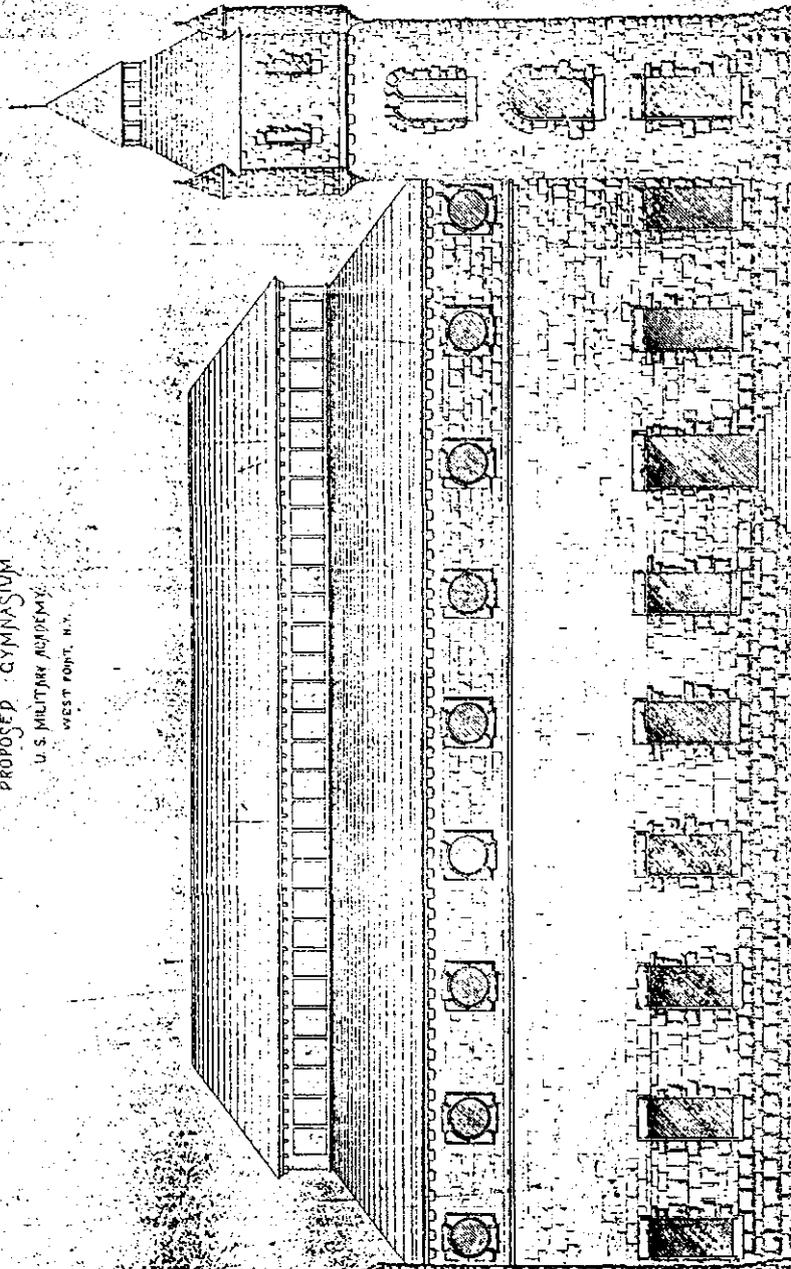


EAST ELEVATION
 PROPOSED ACADEMIC BUILDING
 U.S. MILITARY ACADEMY
 WEST POINT, N.Y.

Designed by CHAS. W. LARSEN, ARCHT. & ASSOCIATES
 1100 Broadway, New York 17, N.Y.
 In honor of U.S. MILITARY ACADEMY
 1957

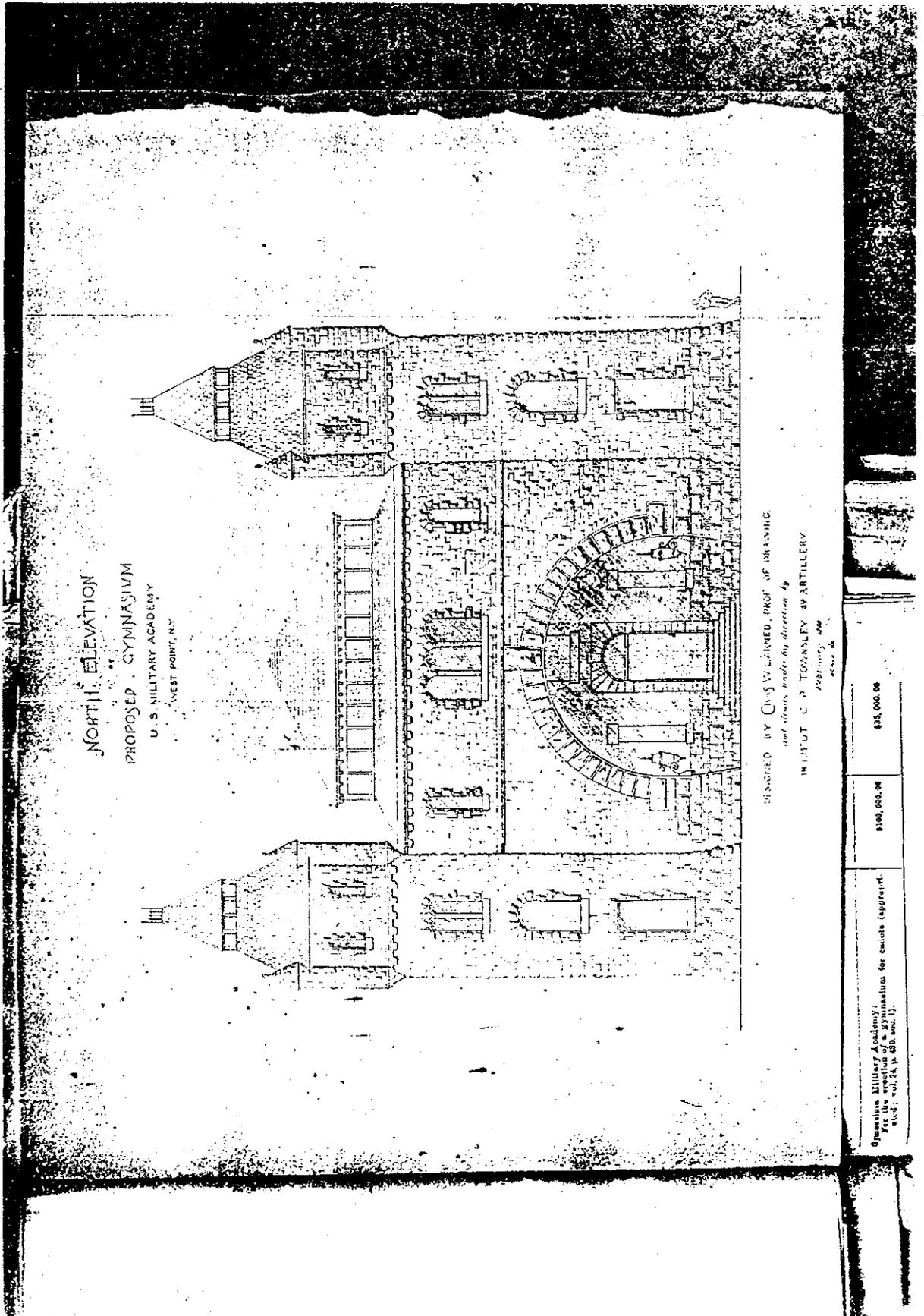
<p>Original Military Academy, for the acquisition of a building, vol. 31, p. 438, sec. 13.</p>	<p>\$100,000.00</p>	<p>\$35,000.00</p>
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EAST ELEVATION
 PROPOSED GYMNASIUM
 U. S. MILITARY ACADEMY
 WEST POINT, N. Y.



DESIGNED BY CHAS W LORING, PROF. OF ARCHITECTURE,
 and drawn under his direction by
 LT LIEUT. W. P. HUGHES, of CIVIL ENGRS.
 REGENTS, N. Y.
 SCALE: 1/4" = 1'-0"

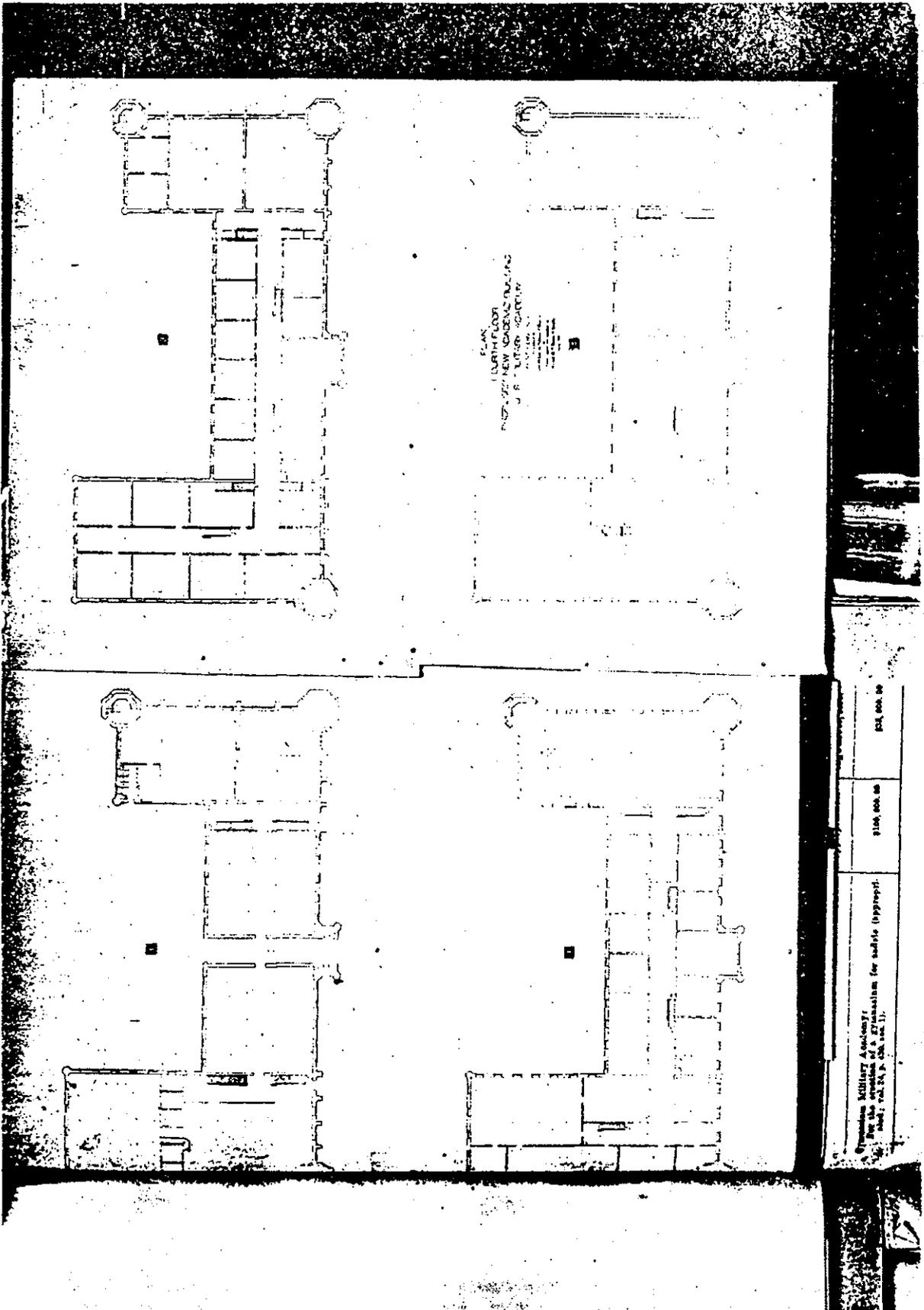
U. S. Military Academy Proposed Gymnasium for male (appropriation) HABS NO. NY-5708-15	\$100,000.00	\$105,000.00
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NORTH ELEVATION
PROPOSED GYMNASIUM
U. S. MILITARY ACADEMY
WEST POINT, N.Y.

DESIGNED BY CHAS. W. LARSEN, PROF. OF DRAWING
and others under his direction by
MAJOR C. P. TOMANLEY, ARTILLERY
February, 1916

Operation Military Academy: For the erection of a Gymnasium for cadets (approved Spec. vol. 24, p. 5th sec. 1).	\$100,000.00	\$35,000.00
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U.S. Military Academy
West Academic Building
14th Floor
Scale: 1/8" = 1'-0"

9100 000 00

000 000 00

E. Supplemental Material

2. Description of the Building from 1896 Annual Report, pp. 31-32, U.S.M.A. Archives and Special Collections.

The halls and rooms devoted to the department of drawing in the academic building completed in 1895 were planned by the head of the department to meet the requirements of the special and comprehensive course taught. They were designed also to give a maximum amount of light and a perfect system of ventilation, together with abundant space for both student and instructor. Besides these requirements of the drawing academies, there was to be provided a lecture room, with complete illustrative apparatus, and an auditorium which should accommodate 150 spectators, each of whom should have an unobstructed view of the platform; a photograph gallery with developing, enlarging, and chemical rooms; a model room; and a workshop for repairs, preparation of material, etc. All of these were to be so disposed as to occupy the same relative space in the new as in the old building.

The two main halls or academies are devoted to the work of the second and third classes, respectively. They are located upon the top floor, the ceilings being formed by the arched iron trusses supporting the roof, giving a maximum height of 29 feet at the crown of the arch. The second-class academy accommodates comfortably 50 students on a floor plan of 50 by 42, approximately 2,000 square feet. The cubic contents of the room is 49,000 cubic feet, affording nearly 1,000 cubic feet of air per man for a maximum seating of 50 men. As a matter of fact the size of sections has not yet exceeded 40 men. The room may be lighted either from sides or from above. Side light is given by four large double windows, 7 by 8 1/2 feet, two of which are on the east and two on the north side of the room. These are closed by double iron rolling shutters, meeting at the meeting rail and rolling up and down. Light from above is supplied by a north skylight on slope of roof, screened by draw shades of white cotton and of dark green hollands, working separately. The skylight is 20 by 22 1/1 feet, covered with one-fourth inch hammered glass. With side windows closed the skylight gives abundant light for the most exacting work on the darkest days. By the use of screens and side windows any desired effect of light and shade can be produced for free-hand model work.

The Third-class Academy is considerably larger, and is designed to accommodate a maximum of 100 men on a floor plan of 3,025 square feet--50 by 60 1/2 feet. Its cubic contents is 74,000 cubic feet, giving 740 cubic feet per man for a class of 100 men. It has a north skylight 20 by 44 feet, screened as in the second-class academy, and has eight similar windows, arranged three on north, three on west, and two on south side of room. Heated air is supplied through openings at middle height of north and west walls by the indirect system, being forced in by

steam fan and extracted through ventilators at bottom and top of walls. In addition large ventilators are build on ridge of roof, operated from side walls through universal joints. As a result the air of the academies is at all times fresh and odorless and sufficiently warm in the coldest weather. One large porcelain double sink in second-class and two in third-class academy, set in Tennessee marble with floor drip and facings, supply washing facilities.

The Lecture Room, 40 by 48 feet, is provided with a lantern gallery and Colt dissolving electric stereopticon. At the opposite end are black and white roller curtains, 20 by 25 feet, and the platform, when lantern is not in use, is lighted by a skylight over the auditorium, provided with roller iron shutters worked by a crank and gear from platform. The seats are arranged as in a clinic and the space beneath is utilized for storage.

The Photographing Rooms open from lecture room, and are arranged in two stories. Above is located the gallery, 23 by 23 feet, with skylight; below are dark room with small and large developing tanks, the latter capable of 9 feet enlargements; the Chemical Room, with tank, retouching table, and negative closet; the Enlarging Room, furnished with 9-foot enlarging screen on railway, sensitizing table, and lens screen, with light closet wired for electric are light.

The Model Room, 46 by 22 feet, contains models in plaster of Propyleum (restored), the Parthenon, the Temple of Paestum, and others; also of anatomical figure, the flying Mercury of John of Bologna, the Apollo, the Germanicus (so called), and other (casts from the Louvre); a large collection of hands and feet and ornamental details; a complete framed house in perfect detail, to a scale of one-sixth; a working model of four horse-power, direct-acting vertical steam engine, scale of one-half; topographical facsimile model in plaster; a collection of original water colors by English watercolorists; large cubes, spheres, and cylinder for lectures on light, shade, and form, besides a large number of smaller block models for free-hand drawing; a great variety of lithographs, engravings, prints, diagrams, and charts covering the field of geure and landscape drawing, studies of the human figures, architecture, building construction, steam engines and machinery, engineering and ordnance constructions, topography and cartography, including the complete issue of the Coast and Geodetic Survey and the United States Corps of Engineers. It is intended to complete the collection of topographical and cartographic prints so as to include the work of the principal European nations. Complete working shop drawings of the principal constructions of the ordnance department are on file, together with other of civil manufactories. In connection with descriptive geometrical drawing there is also a demonstrative apparatus with models, designed by the head of the department to overcome the difficulties experienced by many in understanding the graphical

elements and practical applications of this subject. This apparatus presents the demonstrations of all the elementary problems in descriptive geometry, shades, shadows, and perspective as actually seen in space.

DESCRIPTION OF SECTION ROOM. (p. 75)

The section rooms occupied by the department of mathematics are on the second and third floors of the curtain of the academic building. All are practically of the same dimensions, 22 by 23 feet, height of ceiling 11 feet, and each is lighted by two large windows. Upon the walls in oak frames, their surfaces flush with the face of the frames, are twelve or fourteen slates, usually 4 feet by 3 feet 6 inches. When the wall spaces are long and unbroken four or five of these slates are in a single frame; elsewhere they are framed singly or in pairs. They are all known by the generic name of blackboards. From the lower part of each frame projects a shallow chalk tray, having at its bottom still shallower drawers, and above each drawer a galvanized wire grating. The chalk crayons and erasers, when not in use, are kept on the grating in the tray, while the dust which these implements always generates falls into the drawers below and is removed periodically. Still below the chalk trays are brass racks to support rulers and pointers. On the side of each room next to the hall large ventilators are placed above and below the blackboards and above the door. In other parts of the walls are found still more ventilators and the register of the hot-air flue through which, in winter, air is forced, ranging in temperature from hot to cold at the option of the occupants of the room. Consequently, the rooms may be said to have almost perfect ventilations, a matter of extreme importance where the air is for the common use of from 10 to 14 persons.

On a platform, usually between the windows, is the instructor's flat-topped desk with a blackboard for his use behind it. Each member of a section is provided with a separate desk and chair, the latter of oak, the former having a sloping oak top, with a shallow receptacle beneath for books, resting on iron supports similar to those of a sewing machine. In section rooms occupied by the fourth class these desks are placed side by side in two rows, facing each other, parallel to, and equally distant from, the central line of the room through the instructor's desk. In the section rooms of the third class the desks face the blackboard on the side next the hall, and are arranged in four rows of three desks each, the desks of each row having intervals between them of about 3 feet. This permits the cadets to work at their seats, as is the constant custom in the third-class course, with slight danger of mutual assistance or interference.

PART IV. PROJECT INFORMATION

This documentation is part of a multi-year project sponsored by the National Park Service and the United States Military Academy, described in Volume 1, "Methodology," HABS No. NY-5708. This written documentation was prepared by Travis C. McDonald, Jr., architectural historian, in 1982-1985 based on fieldwork conducted in 1982.

ADDENDUM TO

U.S. MILITARY ACADEMY,

WEST ACADEMIC BUILDING

(U.S.M.A., Pershing Barracks)

(U.S.M.A., Madison Hall)

(U.S.M.A., East Cadet Barracks)

(U.S.M.A., Building No. 751)

At the Northwest Corner of Intersection of
Thayer and Brewster Roads

U.S. Military Academy

West Point

Columbia County

New York

HABS No. NY-5708-15

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