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VACANT HISTORIC SCHOOL BUILDINGS DISPOSITION PLAN

City of Detroit RFP# 19BW2717

Building Envelope and Structural Assessment Report

Wilkins Elementary School

Basic Property Information: COD 4-Wilkins-12501 Hamburg

Short Name:	Wilkins
Address:	12501 Hamburg Street, Detroit, Michigan 48205
Year Built:	1924
Additions Built:	1926
Outbuildings:	None
Year Vacated:	2013
Building Footprint:	190 feet x 170 feet
Square Footage:	48,920 sq. ft.
Number of Stories:	2
Building Height:	32 ft.

Current Ownership:	City of Detroit
City Council District:	4
SNF District:	NA

Structural Framing System:	■ Cast-in-Place Concrete ■ Brick Masonry ■ CMU Masonry ■ Structural Steel ■ Wood Decking
Exterior Wall System:	■ Brick ■ Limestone ■ Cast Stone
Window System(s):	■ Metal
Roofing System(s):	■ Built-Up Roof ■ Gutters ■ Internal Roof Drains ■ Stone Ballast

Assessment Summary

Assessment Date:	June 02, 2020
WJE Inspector(s):	Cheryl Early; Justin Barden
Report Date:	November 11, 2020
Building Risk Index:	**56.43**

Cost Estimate

Base Rehabilitation Cost Estimate:	$2,341,950
Preparation for Rehabilitation Work:	$900,000
Mechanical, Electrical, Plumbing, Fire Protection ($80/sq ft):	$3,913,600
Sub-Total	$7,155,550
Contingency (25%)	$1,788,887
Sub-Total	$8,944,437
Overhead and Profit (15-18%):	$1,341,665
Sub-Total	$10,286,103
Escalation (6% for 2 years)	$617,166
Sub-Total	$10,903,269
Architectural and Engineering Design Services (20%):	$2,180,653
TOTAL COST ESTIMATE:	$13,083,923

ASSESSMENT METHODS

Visual Survey

As requested, Wiss, Janney, Elstner Associates, Inc. (WJE) performed a visual review of the building envelopes and structures to assess the viability of the building for reuse. WJE was joined by Mr. Andrew Wald of Interboro Partners and Ms. Jennifer Ross and Mr. Garrick Landsberg of City of Detroit Planning and Development Department. During the time on site, Mr. Wald gathered information pertinent to the general building site and layout of the building, and Ms. Ross and Mr. Landsberg assessed the condition of the historic fabric of the building.

WJE performed a visual review of the building facades from grade, using binoculars as needed. Roof access was obtained through an existing interior roof hatch. On the interior, WJE performed a walkthrough of accessible areas of each floor of the building. The basement level is flooded near full height, and thus, was not accessed. The interior finishes are mainly intact, minimally exposing the structural framing systems. Up-close examination of building elements and destructive inspection openings involving the removal of building finishes to review underlying conditions were generally not performed.

WJE's observations were documented with tablets and digital photography. WJE has shared our field data with Interboro Partners; City of Detroit Planning and Development representatives; and A.M. Higley Company, the cost estimator for this project. Each observed condition is documented in the field data and assessed as discussed under "Risk Characterization" below. A summary of the conditions observed is provided in the "Building Overview" section below.

Limitations of Assessment

Limited to four hours on site, WJE visually assessed the exposed portions of the building envelope and structure. Recognizing the limitations on visually detecting distress from afar and the limitations on detecting concealed internal distress, the assessment may not include all current conditions. As such, completion of this assessment is not an indication, certification, or representation that all deterioration or hazards have been observed or recorded, including underlying deterioration not evident from the building exterior or interior. Additionally, the conditions of the building elements discussed herein are exposed to further damage and deterioration due to the existing condition and unoccupied status of the property, and as such, WJE cannot state the conditions discussed herein will remain unaltered and as observed during the visual survey. However, we have performed these assessments in accordance with the requirements of applicable regulations and the applicable standard of care for architects or structural engineers performing such services.

WJE identified structural or building envelope issues that have significant impact on the viability of future reuse of the property. Items posing little risk such as regular maintenance items are not included in the assessment. The assessment was limited to within the walls of the building; on-grade walkways, access roads, parking lots, landscaping, play structures, or other site features were excluded from this assessment. The assessment, remediation, and identification of hazardous materials (e.g., asbestos, lead, etc.) or other environmental issues were also excluded. Based on WJE's past experience with building rehabilitation projects, WJE has assumed existing mechanical, electrical, plumbing, interior finishes, and other building

systems are anticipated be removed and replaced with future reuse of the building, and as such, were not included in WJE's assessment.

Document Review

WJE performed a cursory review of documentation provided by Interboro Partners to gain familiarity of the property. The documentation provided included:

- Site Plan (included with this report)
- Floor Plans (included with this report)
- Environmental Reports

Other documents, such as original construction drawings, specifications, or maintenance records, were not made available for our review.

Risk Characterization

WJE has categorized each significant area of distress, damage, or deterioration observed with a systematic methodology to provide an objective, quantitative characterization of its relative condition and associated risk, or its Condition Risk Index (CRI). The CRI is based on the primary building system affected by the condition and the condition's severity, prevalence, and the associated consequence of failure. A higher CRI score indicates that observed conditions embody relatively higher risk than conditions with a lower CRI. The CRI is the product of each of the rankings below multiplied and normalized to meet a maximum score of 100 per condition.

Specifically, the CRI assigns a numerical value to the following:

- System (Structural, Roofing, Facade, Other)
  Conditions affecting the structure are assigned a higher rating than those affecting the facade or roofing systems. Other includes items such as non-load bearing partition walls and exterior steps, and are assigned a lower rating.
- Building Performance Impact (Minor, Moderate, Advanced, Critical, Imminently Hazardous)

  This parameter addresses the severity of the impact of the observed condition on the performance of the affected building system. Imminently Hazardous is assigned the highest rating. For example, a crack in a concrete slab may be a minor distress, but a damaged prominent skylight is considered advanced distress. Imminently hazardous conditions are discussed immediately with Interboro Partners and the City of Detroit representatives.
- Size/Distribution (Isolated/Infrequent/Frequent/Widespread/Pervasive)

  In short, this parameter rates how large and/or frequent a condition is with respect to the entire affected building system/component. Pervasive is assigned the highest rating. Examples include: an isolated step crack in a masonry wall versus pervasive corrosion of metal floor decking throughout a building.
- Consequence of Failure (Low, Moderate, High)

  This parameter allows inspectors to exercise judgment regarding general risk to the public, considering the unoccupied status of the buildings. High is assigned a higher priority, and, for

example, might be assigned to a condition whose failure would result in potential harm within the public right of way. Conditions rated with a high consequence of failure are discussed immediately with Interboro Partners and the City of Detroit representatives.

The CRI for each observed condition is summed to calculate a total Building Risk Index (BRI), as provided in this report. The reported BRI is therefore a numerical expression of the relative risk present at one property, as compared to other properties in the scope of this assessment.

Both the CRI and the BRI are expressions of WJE's professional opinion of the relative significance of an observed condition to other building conditions, and the collective relative risk of the structural and building enclosure elements of this property. Neither the CRI nor the BRI are an expression of actual risk or probability of occurrence of any event. The CRI for each condition is tabulated in WJE's electronic field notes. The BRI provides a numerical tool for the project team and the property owners to compare and make decisions about this property and the other properties included in this overall effort, in context with the cost estimate, market analysis and community input. Both the CRI and BRI are intended only for this assessment project. The numerical values do not have substantive meaning beyond the context of the Vacant Historic School Buildings Disposition Plan project.

Recommendations

Recommendations developed in the assessment are conceptual and are intended for budgetary and planning considerations. Recommendations are provided within the narrative below, and in the field data provided. It is not the intent or purpose of this report or the field data to direct a contractor to bid, or otherwise implement, the recommendations. Significant additional investigation by various professional disciplines is necessary to develop appropriate scopes of repair and rehabilitation efforts to enable the re-use of any facility included in this assessment.

Cost Estimating

The rehabilitation costs are opinions of probable construction cost and have been developed with the assistance of A.M. Higley Company, a contractor familiar with rehabilitation of historic buildings. The costs have been developed for evaluating the relative cost of repair of distressed conditions as well as establishment of order-of-magnitude repair budgets. They are based on national construction cost data, adjusted based on the local construction market, and our experience with similar past projects.

Understanding the rehabilitation cost may vary depending on type of future occupancy, this assessment assumes the building will be rehabilitated to a weathertight and "grey box" condition with unfinished walls, flooring and ceilings; no mechanical, electrical, plumbing or other building systems installed. The costs assume the rehabilitation work would occur in 2022 and are not inflated should the work occur in future years.

In addition to this "grey box" base rehabilitation cost, an allowance, based on percentage of costs and square footage of the building, is delineated for:

- Preparation for Rehabilitation Work
- Mechanical, Electrical, Plumbing, Fire Protection ($80/sq ft)
- Contingency (25%)

- Overhead and Profit (15-18%)
- Escalation (6% for 2 years)
- Architectural and Engineering Design Services (20%)

The preparation for rehabilitation work item includes mobilization, hazardous material abatement as well as salvaging for potential later duplication or re-installation pertinent historic interior finishes identified by the City. For the purposes of the cost estimating effort, all roofing replacement or repair work is recommended to be performed with like-kind materials; all windows are assumed to be replaced with new commercial window assemblies in lieu of restoration of existing elements, and any exterior doors are to be repaired or replaced in like-kind. Where like-kind materials may no longer be available, WJE will offer alternative materials for the cost estimating purpose. For rehabilitation design and construction efforts, further evaluation of each of these elements is recommended. All work is recommended to be performed as per the Secretary of Interior's Standards for The Treatment of Historic Properties.

The condition-based subdivision of repair recommendations used to develop the base cost estimate is not representative of how a repair program could be implemented to remediate building conditions. Moreover, the costs assume that all repairs would be remediated in the same rehabilitation project. Execution of separate repair projects, or phasing of the rehabilitation project, could result in increases in the total repair cost. Furthermore, the final scope of repair work and the actual repair costs may vary depending on underlying or concealed conditions that were not apparent during our limited assessment.

BUILDING OVERVIEW

Overall

The two-story building is U-shaped in plan and was constructed in two phases, the first in 1925 and the second in 1926.

The building facade generally consists of clay brick masonry with concrete masonry unit (CMU) backup. The brick masonry is laid in running bond with header courses every seventh masonry course. Limestone accent units are present at entrance surrounds, window sills, and horizontal bands at the base of the facade and near the parapet. Cast stone coping units are present at the top of the parapet at the main and upper roof levels. Terra cotta coping units are present at the top of the parapet at the lower roof within the courtyard area. Conventional steel-framed doors are located within punched entrance openings in the masonry facade. The original window configuration was modified as part of a past building improvement project, which reduced the size of the original openings in the masonry facade. New steel-framed windows were installed and the remaining space between the new windows and original openings was infilled with brick masonry. The low-slope roof assembly consists of a gravel surfaced, bituminous built-up roofing (BUR) system with granulated cap sheet base flashing and internal roof drains.

The primary structural system consists of concrete beams and columns, or concrete encased steel beams and columns, at the interior corridor walls and load bearing masonry walls at the exterior of the building. The roof structure over the auditorium consists of wood decking spanning between steel purlins and built-up steel trusses. Above the second-floor corridor, near mechanical equipment roof penetrations, the plaster ceilings are deteriorated and partially missing, exposing the concrete tee joist-slab roof structural system. The second-floor structure consists of concrete tee joist-slab systems, as verified in mechanical hatches and isolated areas where the finishes are deteriorated.

In general, the building is in serviceable condition with many of the interior finishes intact. The windows require replacement. Water infiltration within the wall assemblies due to failed drains and debonded sealant at roof flashings resulted in significant masonry distress and corrosion of embedded steel support elements within the facade. Although water infiltration has been causing damage to the plaster finishes, little to no distress was observed in the primary structural system. Further detail of the observed distress is provided below.

Facade

The facade is generally in fair-to-poor condition. The original window configuration was modified as a part of a previous building improvement project. Smaller steel-framed windows were installed along with brick masonry to infill the original openings. The original steel lintels were not removed. Cracking, bulging, and displacement of the brick masonry was observed at many of the original window infill areas, which is primarily attributed to water infiltration and corrosion of the original steel lintels. Additionally, vertical cracking in the plaster finish was observed at the interior side of the walls, adjacent to window openings, especially along the northern most exterior wall at the second-floor level. The interior cracking is suspected to be related to the efforts to complete the previous building improvement project.

Isolated stone units exhibited spalling throughout the facade. Stone units in the horizontal band at the courtyard walls are displaced outward, due to corrosion of the underlying steel support elements, and

could pose a potential falling hazard. Rehabilitation of the building should include repair of the distressed masonry elements to mitigate further distress. The repairs will be dependent on the decision to either keep the existing window configuration or to restore the original configuration.

The chimney attached to the south exterior wall is in poor condition. Bulging and cracking of the brick masonry was observed near the top of the chimney on all sides. Antennas appear to be secured to the masonry near the top interior surface of the chimney. The anchorage of these antennas may be corroding and attributing to the distress in the masonry. Rehabilitation of the brick masonry chimney and inspection/repair of the antenna anchorage should be performed to address the masonry distress at the chimney and mitigate potential falling hazards in the future.

The windows are missing throughout the facades and require replacement. Corrosion was observed on the surface of the existing steel frames, which may require full frame replacement of the window systems. Until a facade rehabilitation is undertaken, the existing plywood coverings over the window openings should be maintained to mitigate further water infiltration-related distress and deter vandalism. The exterior steel doors are typically corroded. Rehabilitation of the building should include replacement of the window and door assemblies.

Roofing

The roofing assembly is generally in fair condition, largely due to openings in the roof near abandoned or missing rooftop mechanical units, missing drain covers, and deferred maintenance. Cracking, seam failures, ponded water, and organic growth were observed on the roof surface. The metal flashing at vertical roof terminations is generally intact; however, some sections are missing and the sealant between the flashing and parapet is typically debonded, permitting water to enter behind the roofing assembly. Rehabilitation of the building should include maintenance repairs of the existing roofing assemblies, localized termination flashing repairs, and replacement of the drain and drain pipe systems.

Structure

Little to no distress was observed in the concrete structural members where exposed. The structure is minimally exposed due to the relatively good condition of the floor, wall, and ceiling finishes. Generally, the condition of finishes is indicative of the condition of the structural elements behind.

Minor cracking and scaling of the concrete roof tee joist-slab system is occurring at the roof penetrations for the mechanical systems. Full depth replacement of the slab sections between the tee joists is anticipated in these areas during future rehabilitation efforts.

The wood roof deck over the auditorium is water stained and fungal growth is present. Coordinate replacement of approximately 25 percent of this roof deck with a re-roofing effort.

Cracks have occurred in the interior masonry walls in several locations. The cracking appears to be generally related to corrosion of embedded steel lintels within the walls. Other locations may be related to volumetric changes of the materials in the unconditioned building. The steel lintels are recommended to be exposed, cleaned, assessed and recoated prior to repointing the masonry joints and replacing cracked masonry units.

The basement was flooded for more than half the height of the basement. The ponded water was reflecting the first-floor concrete tee joist-slab system above the northeastern fan room. No distress was observed in the floor structure reflection. The basement should be dewatered allowing for assessment of the basement level prior to the implementation of the recommendations stated herein.

Miscellaneous

Many of the finishes of the classroom walls oriented perpendicular to the exterior wall and the stairwell walls are cracked vertically or diagonally along the length of the walls. Repairs had been attempted at some of the crack locations. The cracking may be related to thermal or volumetric changes in the wall materials or relative stiffness of the walls within the structural frame system of the building. These cracks may recur after rehabilitation and remain an ongoing maintenance item unless the underlying cause of the cracking is further assessed and mitigated.

PLOT · PLAN ·

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Landscape Department

Drawn by SH · Nov 28 1927
Checked by

Scale 1" = 100'

STRASBURG AVE 50'

INDER AVE 50

219.8'

140'

ex. Fence

Surfaced Playground

First Unit 1925

Coal

Second Unit 1926

Drive

Walk

NASHVILLE AVE 50'

140'

4' opening

200' - 2' fence

HAMBURG AVE 50'

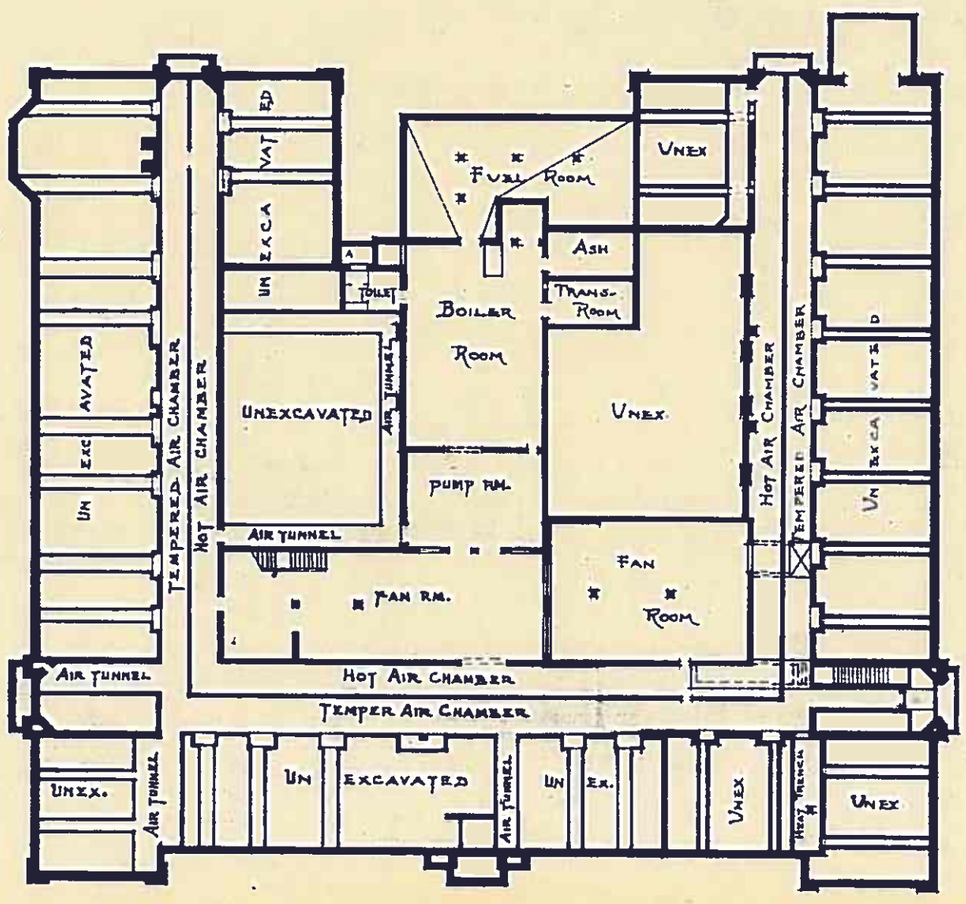
WILKINS SCHOOL

DEPT of ARCHITECTURAL ENGINEERING

BOARD of EDUCATION

DETROIT, MICH.

DRAWN	DATE	CHECKED	DATE	APPROVED	DATE
JES	7/9/24	SCHULZ	11-10-24	G. L. S	11-10-24



BASEMENT PLAN

SCALE: 1-0" = 32'-0"

WILKINS SCHOOL

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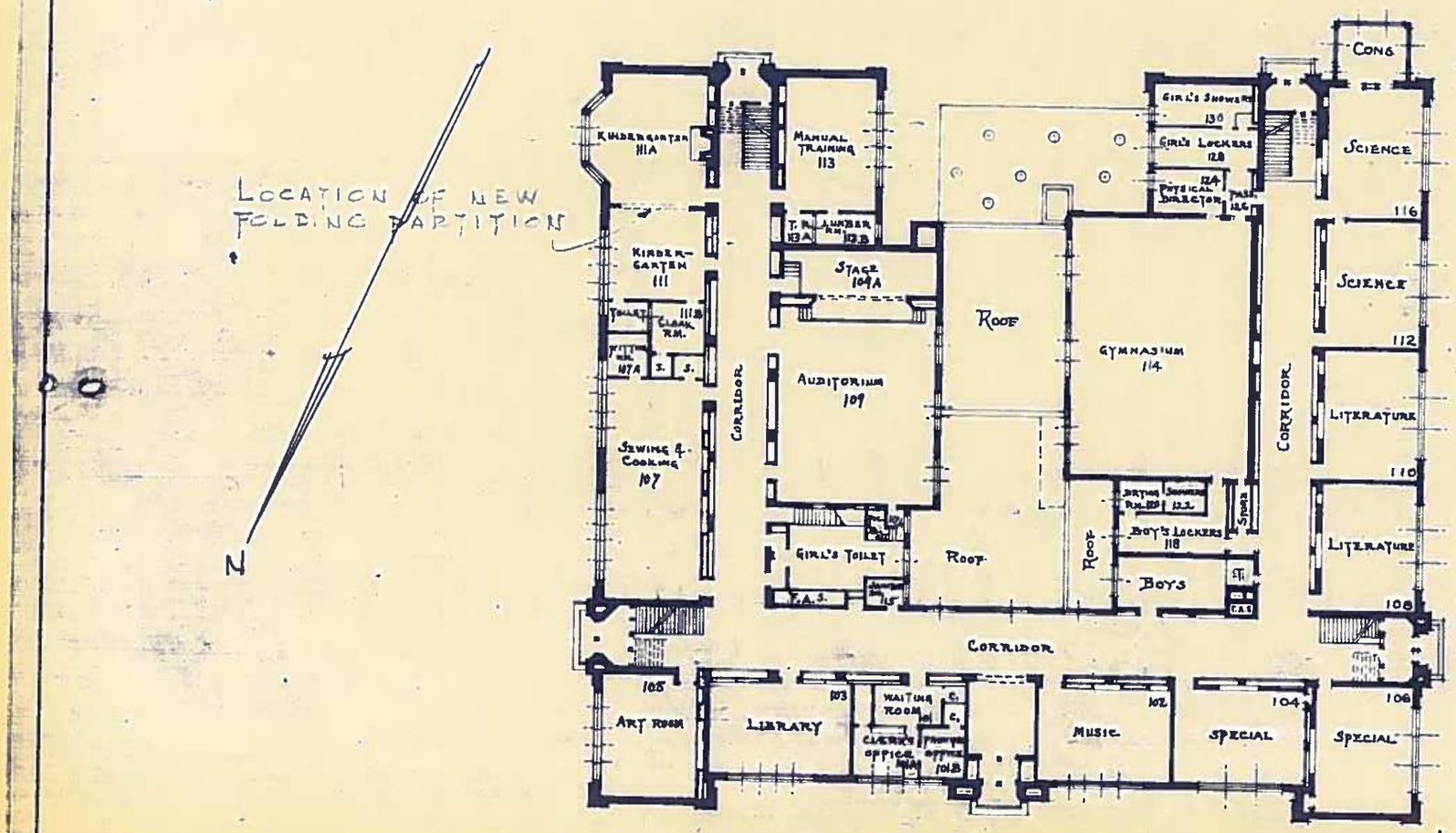
DRAWN	DATE	CHECKED	DATE	APPROVED	DATE
JES J.J.S.	7/15/24	SCHULZ	11-10-24	G. L. S.	11-10-24



FIRST FLOOR PLAN

SCALE : 1'-0" = 32'-0"

WILKINS SCHOOL

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DRAWN	DATE	CHECKED	DATE	APPROVED	DATE
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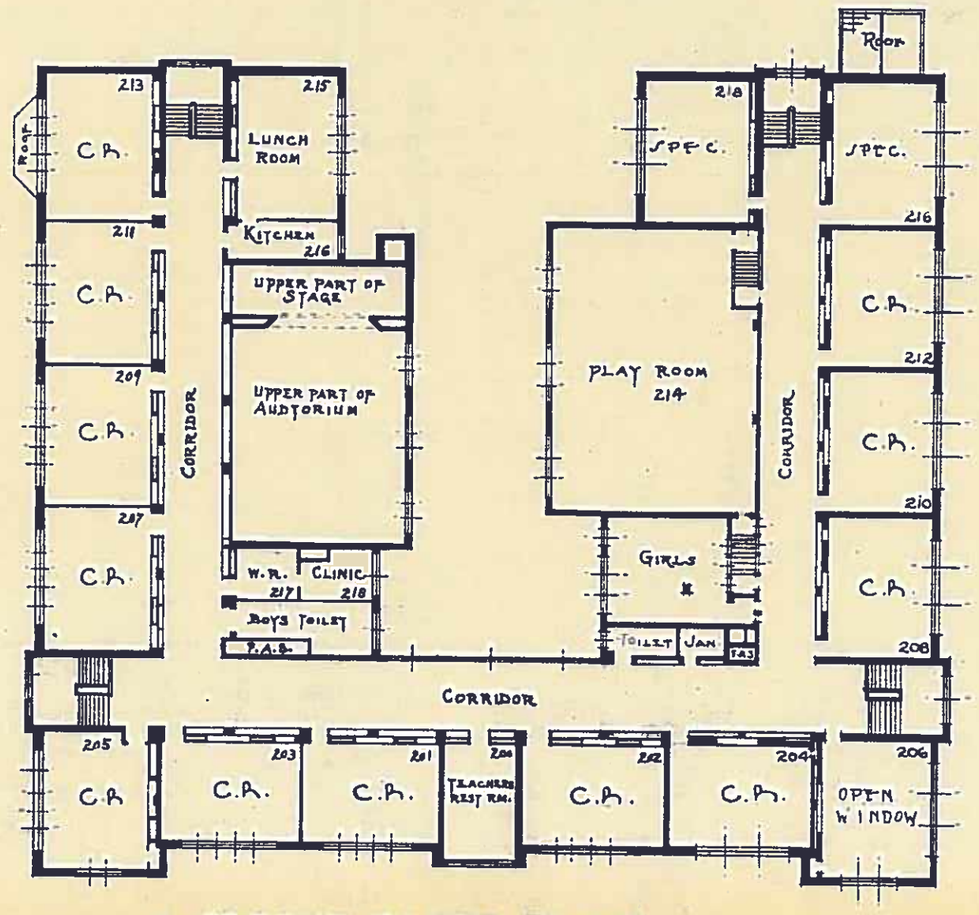

SECOND FLOOR PLAN

SCALE: 1'-0" = 32'-0"

32 6 192