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VACANT HISTORIC SCHOOL BUILDINGS DISPOSITION PLAN

City of Detroit RFP# 19BW2717

Building Envelope and Structural Assessment Report

Hutchinson Elementary School

Basic Property Information: COD 4-Hutchinson-5220 French

Short Name:	Hutchinson
Address:	5220 French Road, Detroit, Michigan 48213
Year Built:	1916
Additions Built:	1922
Outbuildings:	None
Year Vacated:	2011
Building Footprint:	204 feet x 636 feet
Square Footage:	56,711 sq. ft.
Number of Stories:	2
Building Height:	37 ft.

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

Structural Framing System:	■ Cast-in-Place Concrete ■ Brick Masonry ■ Wood
Exterior Wall System:	■ Brick Masonry ■ Terra Cotta ■ Limestone
Window System(s):	■ Wood ■ Aluminum replacement
Roofing System(s):	■ Built-Up Roof (coal tar) ■ Gravel Surfaced ■ Internal Roof Drains ■ Asphalt Shingle ■ Gutters

Assessment Summary

Assessment Date:	May 26, 2020
WJE Inspector(s):	Sarah Rush; Andrew Lobbestael
Report Date:	November 11, 2020
Building Risk Index:	**48.66**

Cost Estimate

Base Rehabilitation Cost Estimate:	$878,500
Preparation for Rehabilitation Work:	$900,000
Mechanical, Electrical, Plumbing, Fire Protection ($80/sq ft):	$4,536,880
Sub-Total	$6,315,380
Contingency (25%):	$1,578,845
Sub-Total	$7,894,225
Overhead and Profit (15-18%):	$1,184,133
Sub-Total	$9,078,358
Escalation (6% for 2 years)	$544,701
Sub-Total	$9,623,060
Architectural and Engineering Design Services (20%):	$1,924,612
TOTAL COST ESTIMATE:	$11,547,672

ASSESSMENT METHODS

Visual Survey

As requested, Wiss, Janney, Elstner Associates, Inc. (WJE) performed a visual review of the building envelope and structure 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 envelope from grade and roof level, using binoculars as needed. On the interior, WJE performed a walkthrough of accessible areas of each floor of the building. The basement level was partially flooded; flooded areas were not accessed. The interior finishes are deteriorated in some areas 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
- National Register of Historic Places Registration Form

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 main building is rectangular shaped in plan and is two stories in height with a basement level. The original school building was constructed in 1916 with an addition constructed to the south in 1922. A powerhouse structure and a chimney are connected to the east of the original building, though they were constructed during the 1922 addition.

The facades generally consist of a clay brick masonry, limestone masonry, and terra cotta. The brick masonry units are typically oriented in a running bond with a header course every seven courses vertically, while brick masonry units at pilasters are oriented in a stack bond. Limestone units are located at the window sills and copings; ashlar limestone accent units are also present near the tops of the walls and some of window corners. Terra cotta is present above the main building entrances, the upper horizontal bands and water table, and at ornate accent units located at the parapets and the tops of the pilasters. Steel-framed doors are set within the building entrances. The windows are primarily composed of aluminum replacement windows set into the original wood frames, which are covered with aluminum caps on the exterior surface.

The low-slope roof assembly consists of a gravel surfaced, built-up roofing (BUR) system with granulated cap sheet base flashing and internal drains. The BUR appears to consist of coal tar bitumen. The sloped conservatory roofing consists of asphalt shingles. The conservatory and some of the lower roofs above the entrances are drained with perimeter gutters.

The framing of the original building roof consists of wood joists and rafters supported by load bearing mass masonry walls. The structure for the addition consists of the reinforced concrete joist slabs, supported by concrete-encased steel columns.

In general, the building is in good condition. Repair of some decayed wood members below a missing access hatch and further investigation of the concrete structural framing below the fuel room are recommended. Maintenance repairs are recommended within the roofs. Localized masonry distress was observed throughout the facade; the majority of the observed masonry distress is attributed to prolonged moisture penetration through the masonry walls and failed previous repairs. The aluminum replacement windows are largely missing and require replacement.

Facade

Cracking and displacement of the brick masonry was observed at window heads due to corrosion of the embedded steel lintels caused by prolonged water infiltration. Severe corrosion and deflection of the steel lintels was also noted in some locations. Previous brick masonry repairs, involving replacement of localized brick units and repointing, were performed at some of the corroded lintels. These previous repairs are largely in good, serviceable condition, though some repairs near the base of the wall did not adequately address the steel lintel corrosion, causing continued distress to the masonry and steel support elements. Spalling of the brick masonry at the south facade alcove was observed due to corrosion of the embedded steel framing. Localized areas of eroded and debonded mortar was observed throughout the facade. Rebuilding localized regions of distressed brick masonry, window lintel repairs, and grinding and repointing mortar joints is recommended. Repair of the window lintels should include removal and

replacement of brick masonry to expose the steel, cleaning and painting of embedded steel lintels or replacement if steel exhibits severe deflection and/or section loss, and installation of through-wall flashing.

Cracking and spalling were noted at some of the terra cotta units above the main building entrances and within the upper horizontal band and water table. Unilateral cracks in terra cotta units should be repaired by routing and sealing the cracks and installing supplemental lateral anchors as needed. Small surface chips and spalls may be repaired in-place. If cracking is multi-dimensional, or if the unit is significantly spalled, the terra cotta units may require replacement. Terra cotta typically requires a long fabrication lead time (9 months minimum); therefore, this should be considered as part of a rehabilitation schedule. Alternate materials may also be considered to replicate the terra cotta, including fiber reinforced polymer (FRP), glass fiber reinforced concrete (GFRC), or cast stone/precast concrete to restore the original aesthetic. Repair or replacement of the distressed terra cotta elements, as well as grinding and repointing of deteriorated mortar joints to mitigate further distress is recommended.

The limestone coping units were missing in localized areas, and isolated units were cracked and spalled. The mortar in the coping unit head joints was typically eroded. Replacement of the missing coping units, repair or replacement of the distressed units, and repointing and installing sealant between all coping unit head joints is recommended.

The exterior wood canopy above the east entrance has localized areas of decay of the soffit elements caused by moisture infiltration through the roofing above. The paint on the underside of the canopy was typically flaked and blistered, but the supporting wood brackets were sound when probed. Repairs at the canopy, involving removal and replacement of the decayed wood elements and cleaning and coating of the exposed wood surfaces in conjunction with replacement of the roofing above, are recommended.

Masonry distress was observed near the top of the chimney, including cracking and displacement. Some of the limestone band units are cracked and spalled. Rehabilitation of the brick masonry chimney should include rebuilding the displaced areas of the brick masonry with appropriate lateral reinforcement, replacement or repair of the cracked and spalled limestone units, pointing of deteriorated mortar with crack stich repairs across vertical cracks as needed. Rehabilitation should also include removal and resetting or replacement of the copings with new through-wall flashing.

The majority of the aluminum replacement windows are missing, except in some isolated classrooms and some stairwells where the windows remain intact and in serviceable condition. The remaining original wood window frames and mullions are generally in serviceable condition, though localized regions of decay were observed in some regions, particularly near the sills. Installation of new aluminum replacement windows within the original wood frames, with localized rehabilitation of the decayed areas as necessary, is recommended. The conventional steel-framed doors contain minor corrosion and are welded shut and should be repaired or replaced.

Roofing

The low slope roofs are generally in good, serviceable condition. The counter flashing is missing within the south 1922 addition, potentially removed by vandals, and an isolated area of base flashing was pulled away from the south wall. Evidence of limited water infiltration was observed from the interior in isolated locations, including near the north roof hatch. Isolated shingle tabs are missing within the south

conservatory roof. Rehabilitation of the building should include maintenance repairs of the existing roofing assemblies including installation of new counterflashing to cover the existing base flashings within the south 1922 addition, replacement of base flashings where they are peeled away from the south wall, and replacement of isolated missing shingles at the conservatory.

An elevated concrete slab spans above the fuel room attached to the east facade. The slab is stepped up above grade level, and asphalt pavement is installed on top of the concrete slab, sandwiching the waterproofing between the concrete slab and asphalt pavement (i.e., a split slab assembly). The waterproofing system, where exposed, contains localized cracks and seam failures with vegetation growing along some of the failed seams. The interior surfaces of the elevated concrete slab could not be inspected due to flooding in the fuel room. Further investigation of the concrete slab is recommended to verify the extent of distress and determine appropriate repairs, though minor maintenance repairs to the exposed regions of the existing waterproofing should be anticipated in the near term.

Structure

Most of the structural framing was concealed by interior plaster finishes. The portion of the original building structure that was visible, including wood joists and wood roof decking, generally appeared to be in good condition; however, localized decay of the wood floor joists was observed below a missing roof access hatch. The portion of the building addition structure that was visible, including reinforced concrete joist slabs supported by concrete encased steel, also generally appeared to be in good condition. Significant structural repairs are not anticipated at this building. Replacement of the missing access hatch and decayed wood elements is recommended.

Efflorescence and moisture staining were observed on the interior of the original school building at the below-grade walls, attributable to water infiltration through cracks and joints through the failed exterior waterproofing. Repair or replacement of the exterior below-grade waterproofing and drainage systems is recommended. Alternatively, moisture-tolerant interior finishes may be used and the use of the space maybe modified to reflect the potential for periodic moisture exposure, depending on the future use of the building.

Miscellaneous

Two of the exterior concrete and limestone entrance steps and landings are cracked and spalled due to cyclic freeze-thaw deterioration caused by moisture penetration through cracks or joints. Given the vegetation growth, existing cracks, and presence of cracked previous repairs, repair and/or rebuilding of the stairs and landing is recommended with likely improvements in accessibility.

WJE was not able to access portions of the basement due to standing water. This included the Boiler Room, the Fuel Room, and the plenum chambers. WJE recommends dewatering these spaces and a follow-up condition assessment of these areas.

The interior finishes of the walls and ceilings were typically plaster, with vinyl composite tile and hard wood flooring. The plaster was typically intact with peeling paint. A large section of the plaster (about 400 square feet) is collapsed in Room 312. There were no obvious signs of water intrusion or other deterioration to suggest that the collapse is related to moisture. It would be appropriate to evaluate the integrity of any existing finishes to remain prior to the building re-entering service.

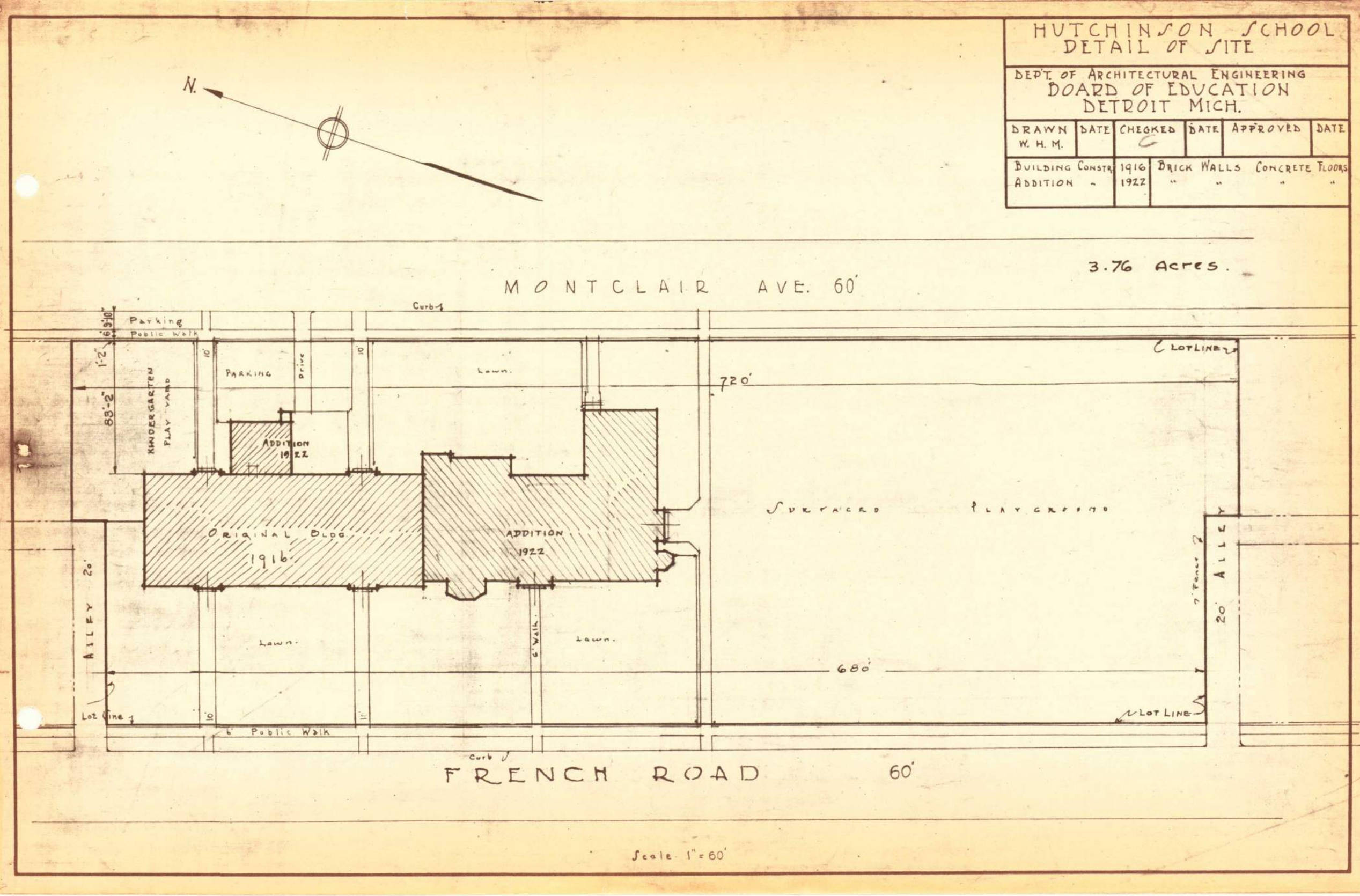
HUTCHINSON SCHOOL
DETAIL OF SITE

DEPT. OF ARCHITECTURAL ENGINEERING
BOARD OF EDUCATION
DETROIT MICH.

DRAWN	DATE	CHECKED	DATE	APPROVED	DATE
W. H. M.		C			

BUILDING CONSTR.	1916	BRICK WALLS	CONCRETE FLOORS
ADDITION -	1922	" "	" "

3.76 Acres.

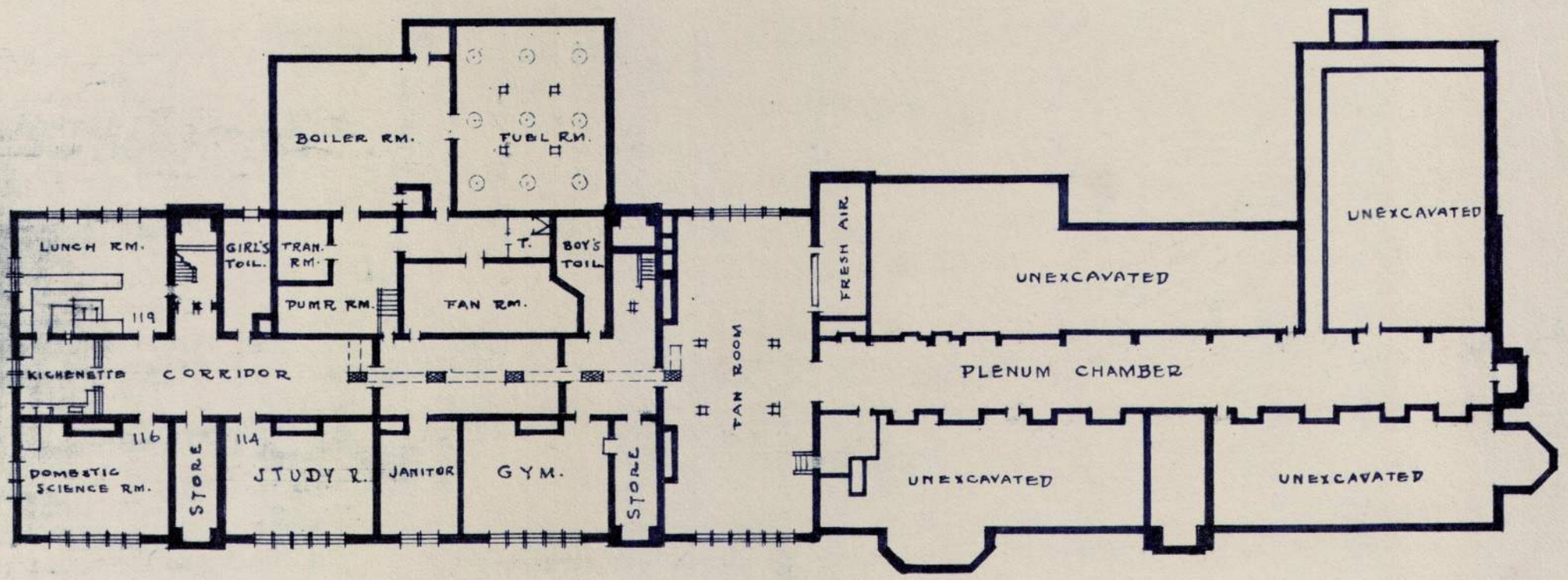


Scale 1" = 60'

HUTCHINSON SCHOOL
BASEMENT PLAN
Scale 1/32"=1'-0"

DEPT of BUILDING RESEARCH
BOARD of EDUCATION
DETROIT MICH

DRAWN	DATE	CHECKED	DATE
W.H.M. C.N.A.	3-19-23	S.L.O.	3-23-23



BASEMENT PLAN

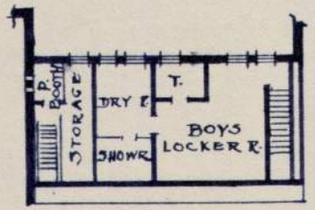
Scale 1/32"=1'-0"

HUTCHINSON SCHOOL
FIRST FLOOR PLAN

DEPT of BUILDING RESEARCH
BOARD of EDUCATION
DETROIT MICH

DRAWN	DATE	CHECKED	DATE	
W.H.M. C.N.A	3-18-23	S.L.O.	3-23-23	

BLDG. CONSTR.	1916	BRICK WALLS CON. FLOORS
ADD. "	1922	" " " "



MEZZANINE PLAN OVER GIRLS LOCKER ROOM

FIRST FLOOR PLAN

Scale 1/32" = 1'-0"

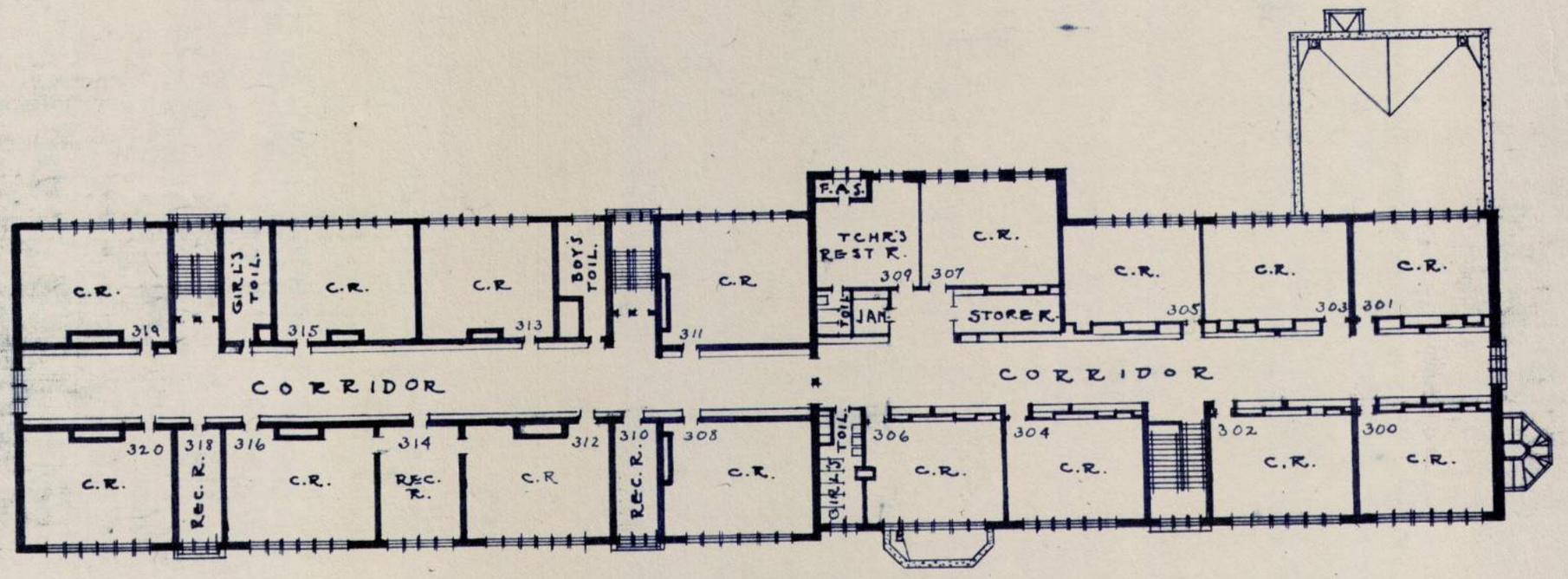
5.375
32
10750
16125
172000

2.25
32
450
675
7200

HUTCHINSON SCHOOL
SECOND FLOOR PLAN
Scale 1/32" = 1'-0"

DEPT OF BUILDING RESEARCH
BOARD OF EDUCATION
DETROIT MICH

DRAWN	DATE	CHECKED	DATE
W.H.M C.N.A.	3-18-23	S.L.Q.	3-23-23



SECOND FLOOR PLAN

scale 1/32" = 1'-0"