

VACANT HISTORIC SCHOOL BUILDINGS DISPOSITION PLAN

City of Detroit RFP# 19BW2717

Building Envelope and Structural Assessment Report

Detroit McKerrow / Transition School West

Basic Property Information: COD 7-Transition West-4800 Collingwood

Short Name:	McKerrow /Transition West
Address:	4800 Collingwood Street, Detroit, Michigan 48204
Year Built:	1926
Additions Built:	None
Outbuildings:	None
Year Vacated:	2011
Square Footage:	50,000 SF
Building Footprint:	185 feet x 170 feet
Number of Stories:	2
Building Height:	32 feet



Current Ownership:	City of Detroit	Structural Framing System:	<ul style="list-style-type: none"> ▪ Cast-in-Place Concrete ▪ Brick Masonry
City Council District:	7	Exterior Wall System:	<ul style="list-style-type: none"> ▪ Brick ▪ Stone
SNF District:	RW	Window System(s):	<ul style="list-style-type: none"> ▪ Metal ▪ Wood ▪ Aluminum Replacement
		Roofing System(s):	<ul style="list-style-type: none"> ▪ Built-up Roof ▪ Internal Roof Drains ▪ Asphalt Shingles



Assessment Summary

Assessment Date: January 23, 2020

WJE Inspector(s): Cheryl Early; Sarah Rush

Report Date: October 27, 2020

Building Risk

Index: 87.69

Cost Estimate

Base Rehabilitation Cost Estimate: \$1,806,150

Preparation for Rehabilitation Work: \$900,000

**Mechanical, Electrical, Plumbing,
Fire Protection (\$80/sq ft):** \$3,988,640

Sub-Total \$6,694,790

Contingency (25%): \$1,673,697

Sub-Total \$8,368,487

Overhead and Profit (15-18%): \$1,255,273

Sub-Total \$9,623,760

Escalation (6% for 2 years) \$577,425

Sub-Total \$10,201,186

**Architectural and Engineering
Design Services (20%):** \$2,040,237

TOTAL COST ESTIMATE: \$12,241,423

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 main 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 levels, using binoculars as needed. On the interior, WJE performed a walkthrough of accessible areas of each floor of the building. Limited access to the attic was obtained near the roof hatch. The basement level is flooded, and thus, was not accessed. The interior finishes are in a state of deterioration, exposing the structural framing systems in multiple locations. 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
- Investment Memo
- 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 two-story building comprises a U-shaped footprint with a central courtyard occurring over the basement level mechanical spaces.

The facade generally consists of multi-wythe clay brick masonry with limestone masonry accents. The original wood-framed window openings are essentially void and are currently boarded with plywood. The low-slope roofing consists of an internally drained, gravel surfaced, bituminous built-up roof (BUR) with granulated cap sheet base flashing. Small roof areas over the main south tower and two shaft openings consist of three-tab asphalt shingles over wood sheathing and framing.

The structural system generally consists of reinforced concrete beams and columns supporting reinforced concrete floor and roof construction. The second-floor joists are steel pan-formed concrete tee-joists. The roof structure consists of sloped, board-formed concrete beams and a steel pan-formed concrete roof deck. Interior load-bearing walls were observed to be of brick masonry. The interior corridor walls are non-load bearing partitions constructed of gypsum tile units and metal lathe-supported plaster.

Although initial appearances of the existing conditions are concerning based on the magnitude of the failure of the finishes and past crack repair attempts of the brick masonry, the building is in a repairable state. The windows require replacement, and stabilization of select stone elements of the facade is recommended. The roofing is recommended for replacement, though repairs may be possible in some regions. Failed and missing roof drains are allowing a significant amount of water to collect on the top of the second-floor corridor leading to material degradation of the concrete floor structure. Further assessment may determine partial depth concrete repairs are possible, but for the purposes of this effort, the corridor floors are assumed to require replacement with a new steel and concrete floor system as part of an overall rehabilitation project. The basement level is flooded and is recommended to be dewatered for additional assessment of the first-floor structure. Further detail of the observed distress is provided below.

Facade

The three and four wythe masonry walls are in fair condition. Localized cracking and masonry displacement were observed, which is primarily attributed to water infiltration, corrosion of the embedded steel support elements, and a lack of expansion joints in the mass masonry wall. At several brick masonry window jambs, the stacked bond units are displaced due to mortar bond failure and possibly a lack of ancillary support from the adjacent window frame. At the southwest corner of the south entrance, limestone masonry cornice is outwardly displaced and should be monitored and stabilized in the near term to prevent a falling object hazard. Limestone coping units at an alcove on the west elevation are missing, potentially due to vandalism. Previous flashing repairs have been completed at the window lintels on the east elevation, which are generally in good condition. Rehabilitation of the building should include repair of these masonry elements to mitigate water infiltration within the wall assembly and building interior, and to mitigate further distress.

The wood windows and frames are significantly distressed or missing and require replacement. Several existing plywood coverings over the window openings are displaced or missing, which is permitting

weather exposure to the interior elements and reduces building security. Such temporary window coverings should be maintained to mitigate further water infiltration-related distress and deter vandalism. Rehabilitation of the building should include replacement of the window assemblies.

Roofing

The roofing assemblies are in fair-to-poor condition. Visible areas of the low-slope membrane roofing (i.e., areas of minimal snow cover at the time of our visit) are cracked, worn and have seam failures. At one RTU location, water infiltration was visible within the building interior, indicating failure of the corresponding flashing elements. The internal roof drains have failed and are permitting large quantities of water into the building interior. Water management of the roof drainage systems should be stabilized in the near term to mitigate additional distress.

At the low-slope roof areas, the flashing terminations at the perimeter parapets are generally cracked or separated from the parapet, permitting water to enter the roofing assembly at the building perimeter. The exposed masonry substrate at the flashing terminations are in serviceable condition, likely due to the sloped roof structure which allows water to drain away from the perimeter walls if it enters the roofing assembly. Additionally, the mortar joints between the clay tile coping units are generally deteriorated and some localized units are displaced. Rehabilitation of the building should include removal and replacement of the existing roofing assemblies, localized parapet repairs, and replacement of the drain and drain pipe systems. Repairs may be possible in some areas to extend the service-life of the existing roof assembly, though further investigation would be required to determine if repairs are a viable option in lieu of replacement.

At the smaller asphalt shingle roof areas, several openings are present within the roofing assembly, and significant decay of the wood plywood sheathing and wood framing was observed. These areas will require reconstruction during rehabilitation of the building.

Structure

The building structure is in good condition except for localized distress of the second-floor corridor floor structure. However, the wall and ceiling finishes are fully deteriorated or missing in the corridors at the first-floor level, with the debris of the finishes collected on the first floor. The wall and ceiling finishes of the second-floor corridors are in similar condition, although the damage and deterioration are not as extensive. In the classrooms, the existing wood flooring has buckled, and the plaster finishes are distressed or damaged in some locations, but not to the extent of the first-floor corridors.

The roof structure over the auditorium is riveted structural steel construction with precast concrete planks spanning between the steel members. Water staining is prevalent along the edges of the precast planks with some cracking observed in the planks. Minor corrosion is present on the steel framing members. As part of a building rehabilitation project, the gypsum or concrete roof deck over the auditorium is recommended to be further assessed due to the extensive water staining observed and may require replacement. Removal of the planks would afford the opportunity to clean and re-coat the structural steel roof framing.

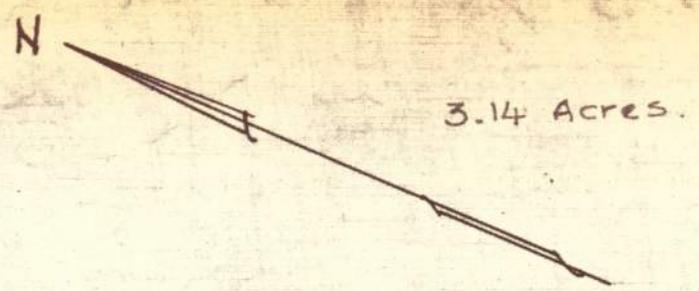
Steel reinforcing is exposed in the bottom of second-floor members (first floor ceiling) in the corridor areas. Stalactites were observed in multiple locations from the underside of the second-floor corridor

concrete structure indicating material degradation of the concrete. Areas of extensive moisture infiltration, related to missing or damaged interior roof drains, were observed in seven locations within the second-floor corridors. On the eastern half of the building, the moisture infiltration is extending down to the first-floor corridor. Ponded water on the second-floor corridor floors does not extend into the classroom spaces due to the structural detailing and interior door thresholds. Organic growth, related to the missing windows of the exterior wall, is present on the floor of the second-floor corridor in the south wing.

Replacement of the second-floor corridors, excepting the northern portion of the western wing, may be necessary due to the amount of water infiltration through the structure, but further investigation is required to determine whether the structural capacity of the framing has been significantly affected. The first-floor structure of the eastern wing corridor should also be anticipated to require full replacement due to the amount of moisture infiltration in this wing of the building. The structural floor framing in the remaining areas of the building is in good condition, and significant repair or replacement of these areas is not anticipated.

Ponded water was observed in the basement level preventing access to the basement spaces. The basement should be dewatered allowing for assessment of the basement level prior to the implementation of the recommendations stated herein.

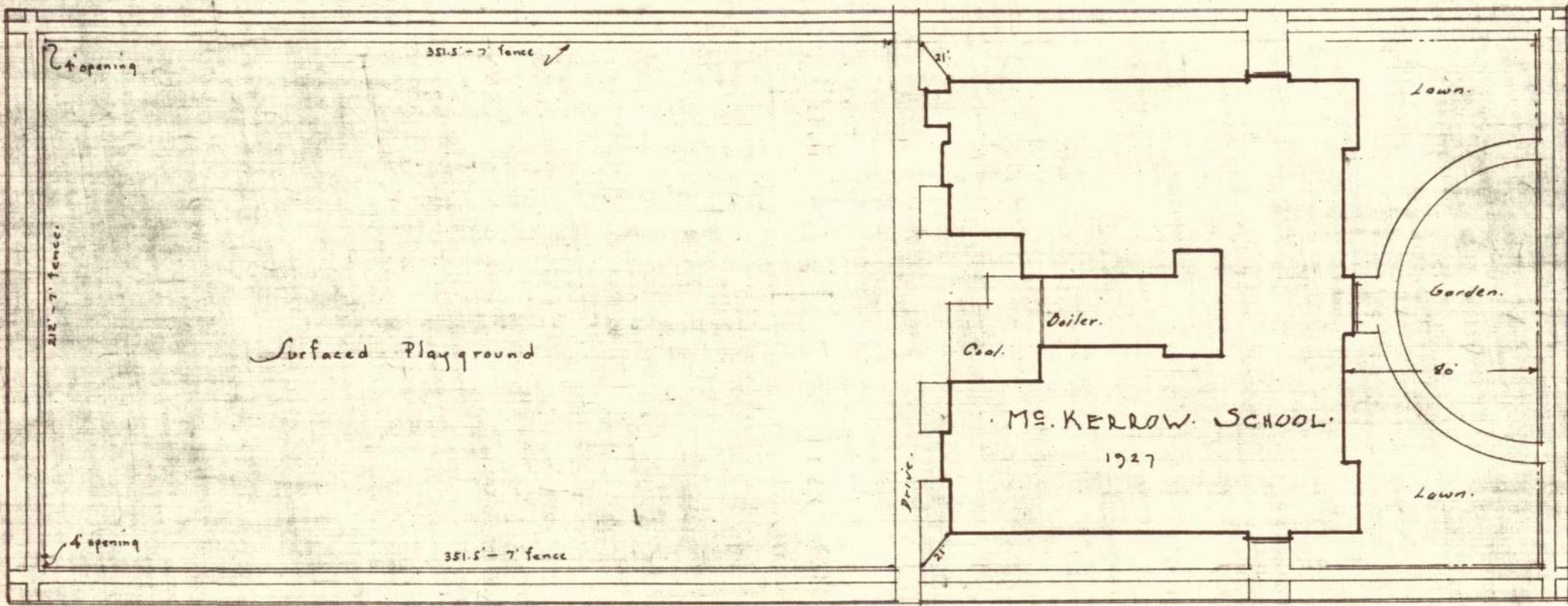
PLOT PLAN
McKERROW SCHOOL
BOARD OF EDUCATION
DETROIT
Dept of Building & Grounds
Drawn by S.H. Dec. 5, 1927.



Scale 1" = 60'

CASCADE AVE 50'

BURLINGAME AVE.



COLLINGWOOD AVE 60'

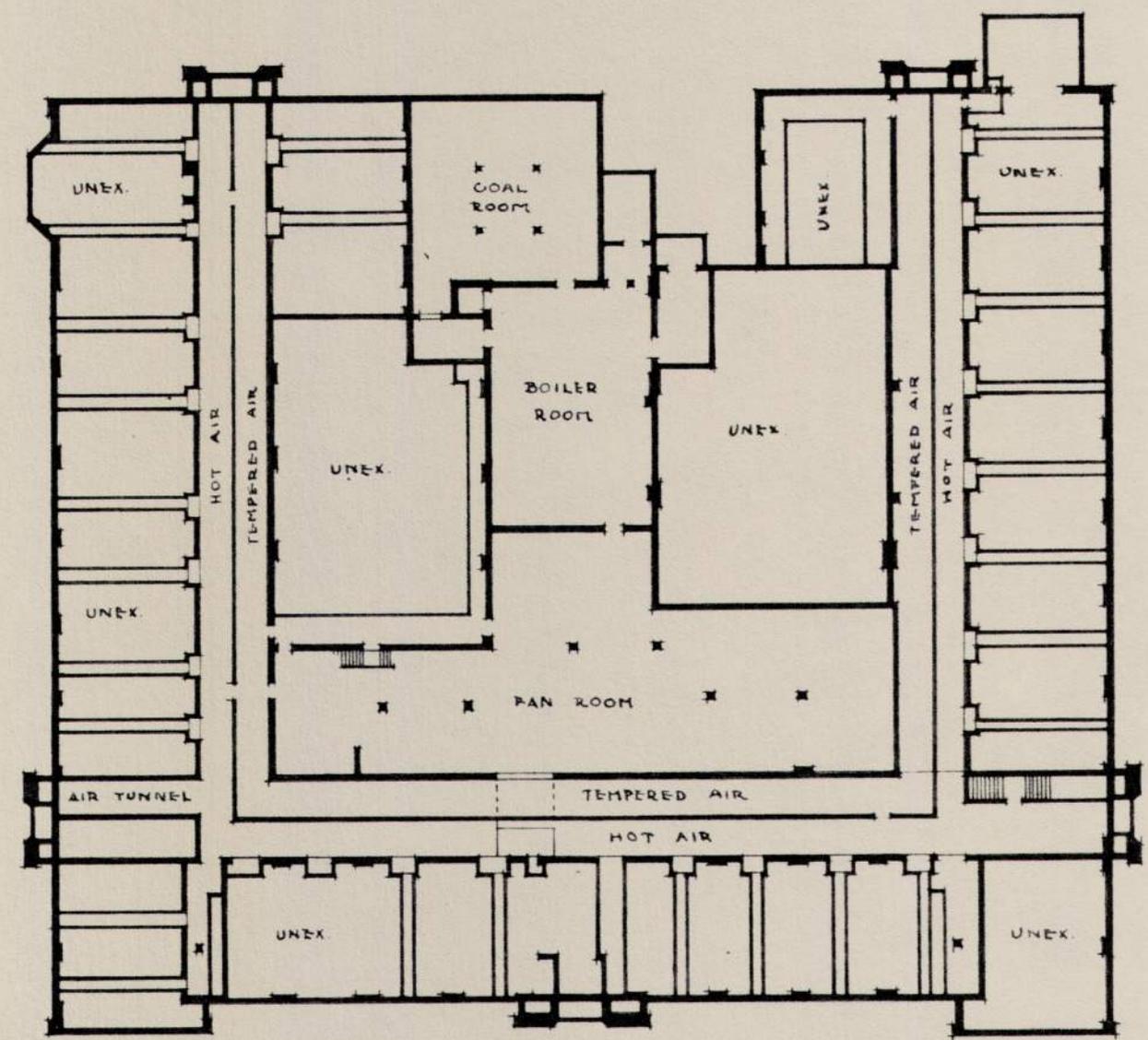
RAVENSWOOD SCHOOL.

YELLOWSTONE AVE. 50'

M^{rs} KERROW SCHOOL
 BASEMENT PLAN

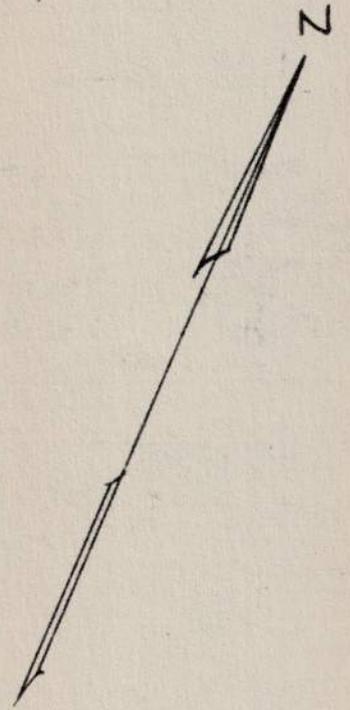
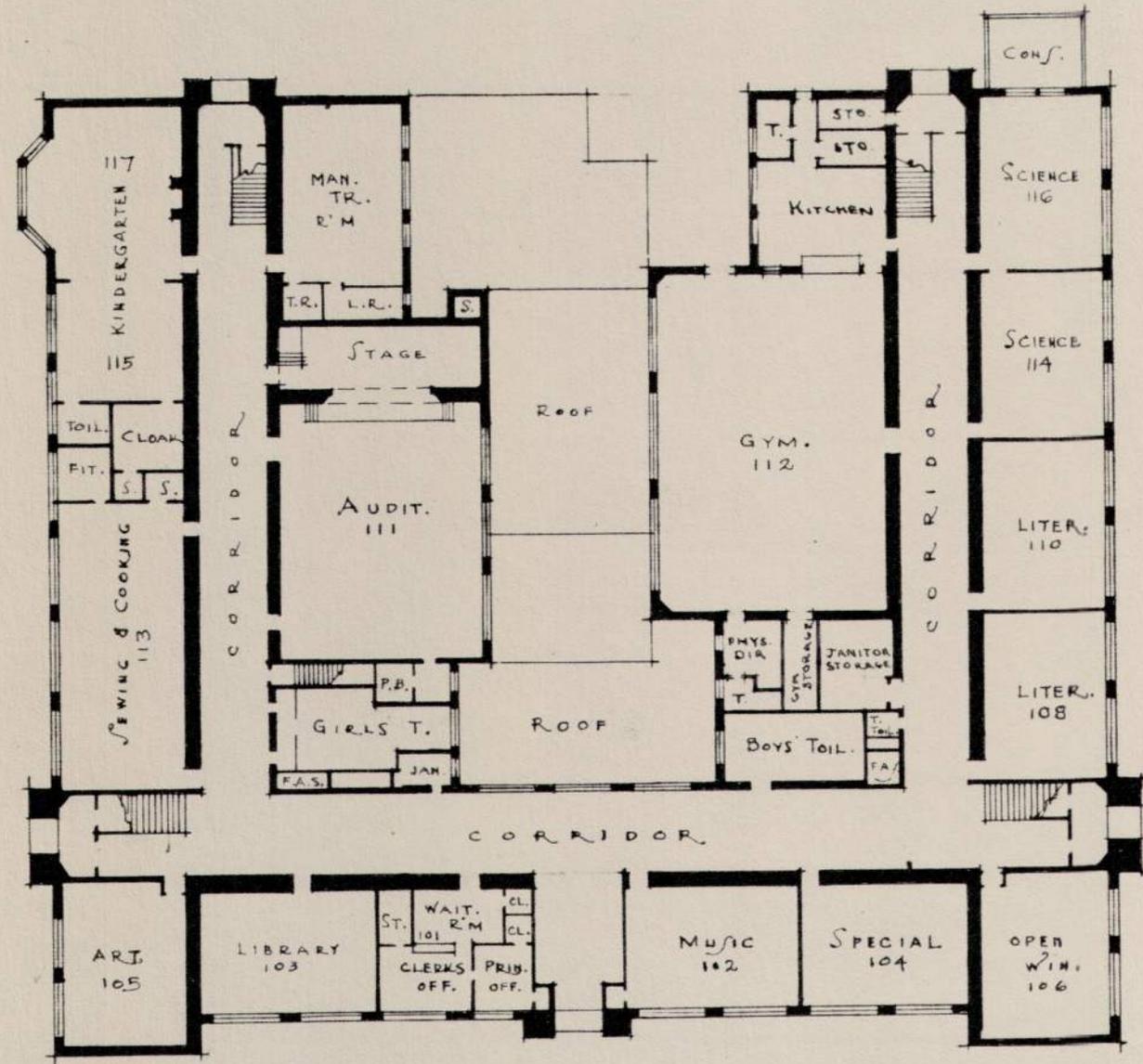
DEPARTMENT OF BUILDINGS & GROUNDS
 BOARD of EDUCATION
 DETROIT MICHIGAN

DRAWN	DATE	CHECKED	DATE	APPROVED	DATE
R.H.C.	6-27-27				



• Mc KERROW • SCHOOL •
 • FIRST • FLOOR • PLAN •
 DEPT OF BLDG'S & GR'DS
 BOARD OF EDUCATION
 DETROIT, MICH.

DRAWN	DATE	CHECKED	DATE	APPROVED	DATE
CWS	2-21-27	S.P.V.	2-25-27		



McKerrow School
SECOND FLOOR PLAN

DEPT OF BLDGS & GRDS
BOARD OF EDUCATION
DETROIT, MICH.

DRAWN	DATE	CHECKED	DATE	APPROVED	DATE
CMB	2-21-27	S.L.L.	2-25-27		

REV. 9-57 M04

