

## VACANT HISTORIC SCHOOL BUILDINGS DISPOSITION PLAN

City of Detroit RFP# 19BW2717

### Building Envelope and Structural Assessment Report

#### Burt Elementary School

#### Basic Property Information: COD 1-Burt-20710 Pilgrim

<b>Short Name:</b>	Burt
<b>Address:</b>	20710 Pilgrim Avenue, Detroit, Michigan 48223
<b>Year Built:</b>	1925
<b>Additions Built:</b>	1946,1959
<b>Outbuildings:</b>	None
<b>Year Vacated:</b>	2010
<b>Building Footprint:</b>	180 feet x 180 feet
<b>Square Footage:</b>	46,196 sq. ft.
<b>Number of Stories:</b>	2
<b>Building Height:</b>	30 ft.



<b>Current Ownership:</b>	City of Detroit	<b>Structural Framing System:</b>	<ul style="list-style-type: none"> <li>▪ Cast-in-Place Concrete</li> <li>▪ Brick Masonry</li> <li>▪ CMU</li> <li>▪ Structural Steel</li> <li>▪ Wood</li> </ul>
<b>City Council District:</b>	1	<b>Exterior Wall System:</b>	<ul style="list-style-type: none"> <li>▪ Brick</li> <li>▪ Cast Stone (painted typ)</li> <li>▪ Limestone</li> </ul>
<b>SNF District:</b>	NWGR	<b>Window System(s):</b>	<ul style="list-style-type: none"> <li>▪ Steel-framed</li> <li>▪ Glass block infill</li> </ul>
		<b>Roofing System(s):</b>	<ul style="list-style-type: none"> <li>▪ Built-up Roof</li> <li>▪ Granular cap sheet base flashing</li> <li>▪ Slag Surfacing</li> <li>▪ Internal Drains</li> </ul>



### Assessment Summary

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**Assessment Date:** March 17, 2020

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**WJE Inspector(s):** Cheryl Early; Justin Barden

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**Report Date:** October 26, 2020

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**Building Risk Index:** 84.99

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### Cost Estimate

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**Base Rehabilitation Cost Estimate:** \$1,999,000

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**Preparation for Rehabilitation Work:** \$900,000

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**Mechanical, Electrical, Plumbing,  
Fire Protection (\$80/sq ft):** \$3,695,680

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**Sub-Total** \$6,594,680

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**Contingency (25%):** \$1,648,670

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**Sub-Total** \$8,243,350

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**Overhead and Profit (15-18%):** \$1,236,502

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**Sub-Total** \$9,479,852

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**Escalation (6% for 2 years)** \$568,791

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**Sub-Total** \$10,048,643

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**Architectural and Engineering  
Design Services (20%):** \$2,009,728

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**TOTAL COST ESTIMATE:** \$12,058,372

## 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 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 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 partially flooded, and thus, was only partially accessed. The interior finishes are in a state of deterioration in localized areas, exposing portions of the structural framing systems in these 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:

- 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 (\$800/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 original 1925 building fronts Pilgrim Street and is generally symmetrical about the center of the southern facade. The 1940s and 1950s additions were constructed to the north of the building, housing additional classrooms in the eastern wing and the gymnasium and auditorium in the western wing. The mechanical spaces are located primarily below grade in the central courtyard created by the east and west wings.

The building facade generally consists of a clay brick masonry laid in running bond with a seven-course header bond and concrete masonry (CMU) backup. At the original portion of the building, painted cast stone accent units frame the entrances, window sills, and horizontal bands with clay tile coping units and steel-framed windows. The front, south facade of this original building portion also contains ornate brick coursework. At the building additions, limestone accent units are present at the entrance surrounds and coping. Punched wall openings contain glass block infill with operable steel-framed windows within lower lites. Limestone units frame the lower, operable units, as well as the glass block infill. The building entrances generally consist of conventional steel doors. The internally drained, low-slope roof assembly consists of a slag surfaced, bituminous built-up roofing (BUR) system with granulated cap sheet base flashing.

The structural systems are similar between the original building and its additions. The first floor of both the original portion and the additions are primarily of slab-on-ground construction, excepting the mechanical spaces. The structure over the boiler and coal room are of concrete slab and beam construction. The second-floor structures are primarily concrete tee joist-slab systems with stay-in-place corrugated metal forms used in the original portion and stay-in-place clay tile forms used in the additions. A reinforced concrete beam and column system supports the second-floor tee joist-slab construction in the original portion; structural steel encased in concrete supports the second floor and roof structure of the additions. The roof structure of the original building consists of wood decking and dimension lumber spanning to structural steel members. The roof structure of the east classroom addition is primarily the same concrete tee joist-slab system used to construct the second-floor framing of this addition. The roof structure over the gymnasium is constructed with a perforated metal ceiling spanning between built-up steel box beams that are bearing on the CMU walls, or steel columns located within the CMU walls. Structural steel and metal decking form the roof structure of the auditorium space.

In general, the building is in fair condition with many of the interior finishes intact. The windows require replacement. Water infiltration within the wall assemblies due to failed drains, missing roof flashings, and missing and deteriorated coping units has resulted in significant masonry distress and corrosion of embedded steel support elements within the facade. Many of the cast stone and limestone decorative units are distressed and require replacement, especially at the main north entrances and window surrounds. The roofing is recommended for replacement, though repairs may be possible in some regions. With the exception of isolated areas of concrete distress, the structure is in good condition with isolated areas of concern. Further detail of the observed distress is provided below.

## Facade

The facade is generally in fair-to-poor condition. Localized cracking and brick masonry displacement were observed, which is primarily attributed to water infiltration and corrosion of the embedded steel support elements. Previous masonry repairs have been performed at the building, including rebuilding of localized areas of masonry. These past repairs are generally in poor condition. At the ends of the parapet walls on the newer building additions, previous rebuilt areas are cracked, likely attributed to corrosion of the embedded steel support elements and/or a lack of expansion joints in the masonry wall. Where readily exposed and visible, several of the limestone and cast stone units at the windows and entrances are missing or are spalled due to corrosion of the embedded steel anchors and lintels and will require replacement. Rehabilitation of the building should include repair of the distressed masonry elements to mitigate further distress.

Some areas of the clay tile coping units within the original building portion have been removed and are now resting on lower roof levels or grade, largely damaged. Removal of these units has been attributed to vandalism to access flashing elements previously located below. Rehabilitation of the building should include resetting undamaged and replacing damaged coping units in coordination with the recommended roofing replacement work. Alternative coping materials may also be considered during the schematic design phase.

The steel-framed windows and areas of glass block infill are significantly distressed or missing and require replacement. 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 and should be replaced.

## Roofing

The roofing assembly is generally in poor condition largely due to missing rooftop mechanical units, failed drains, missing flashing elements, and deferred maintenance. Cracking, seam failures, ponded water and organic growth were observed on the roof surface. The flashing terminations at the perimeter parapets are generally cracked or separated from the parapet, and most of the metal flashing at vertical roof terminations is missing, permitting water to enter the roofing assembly. Evidence of water infiltration was observed within localized areas of the building interior in these areas of roof distress. Rehabilitation of the building should consider 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.

## Structure

In the original structure, the greatest distress is the deterioration of a second-floor concrete beam in the southwestern corner of the building. The deterioration is related to a failed internal roof drain which has also caused the gypsum block partition wall below the concrete beam to collapse. The concrete beam can likely be repaired with partial depth concrete repairs, pending the remaining concrete material is in sound condition. Additionally, concrete distress was observed on the underside of the concrete tee joist-slab system for the lower roof over the bay window of the south, central kindergarten room. Concrete roof



deck repairs are also anticipated within this region, which should be performed in coordination with the roofing work.

Water stained wood decking and framing was observed at localized locations near roof drains. The decayed wood members should be reinforced or replaced as appropriate, coordinating efforts with the roofing repairs. At areas where the copings have been removed, the bearings of the roof structural members were not exposed during the assessment but should be further investigated as part of a rehabilitation effort of the building considering the exposure of the top of the wall assembly.

Over the north stair of the west wing, the flat slab roof is cracked in a crazed pattern on its underside. This portion of the roof, and potentially a portion of the roof of the classrooms on each side of this stair, are anticipated to require replacement after further investigation.

The CMU in the east addition is significantly cracked at the edge of a window opening in classroom 213. The cracking may be related to the removal of the window or water penetrating the wall assembly and is also suspected to be related to the stone displacement observed on the facade at this location. In this same classroom, a horizontal crack has occurred in the joint below the uppermost course of CMU that is constructed tight to the concrete beam above. The exterior facade has been rebuilt and re-cracked in the region of the interior horizontal crack. Further investigation to determine if there is embedded steel in this area that requires cleaning and reinforcement is recommended to mitigate re-cracking of future repairs.

At the built-up box beams of the roof structure of the gymnasium, the CMU walls are vertically cracked. The steel beams may be supported on steel columns that are embedded within the CMU walls and the cracking of the CMU may be the result of steel corrosion of the columns. Further investigation of the bearing of the box beams at the CMU is recommended. Any embedded steel discovered should be cleaned, assessed and reinforced if necessary prior to re-coating with a rust inhibiting coating. This work can be coordinated with exterior facade and roofing repairs.

In the gymnasium and auditorium spaces, the perforated metal ceiling and metal deck is corroded on the underside. Further assessment of the metal panels and decking, and the roof structural members, is recommended.

Approximately three feet of ponded water was observed in the basement level preventing access to all of the basement spaces. At the portions of the basement that were accessed, the walls and underside of the first-floor structure visible are in good condition with no readily visible distress observed. The basement should be dewatered allowing for assessment of the basement level prior to the implementation of the recommendations stated herein.

### **Miscellaneous**

Some localized masonry infill areas and partition walls are damaged resulting from vandalism during the removal of plumbing and heating elements. Repair of these partition walls is recommended as appropriate for potential new use of the spaces.

Cracks have occurred in many of the interior walls. Further investigation is recommended to determine the cause of the distress, but it is suspected to be related to vandalism, water infiltration occurring, and thermal or volumetric changes in the wall materials. Cracking within select walls, such as stairwell walls and interior classroom walls, may be related to the relative stiffness of the walls within the structural building



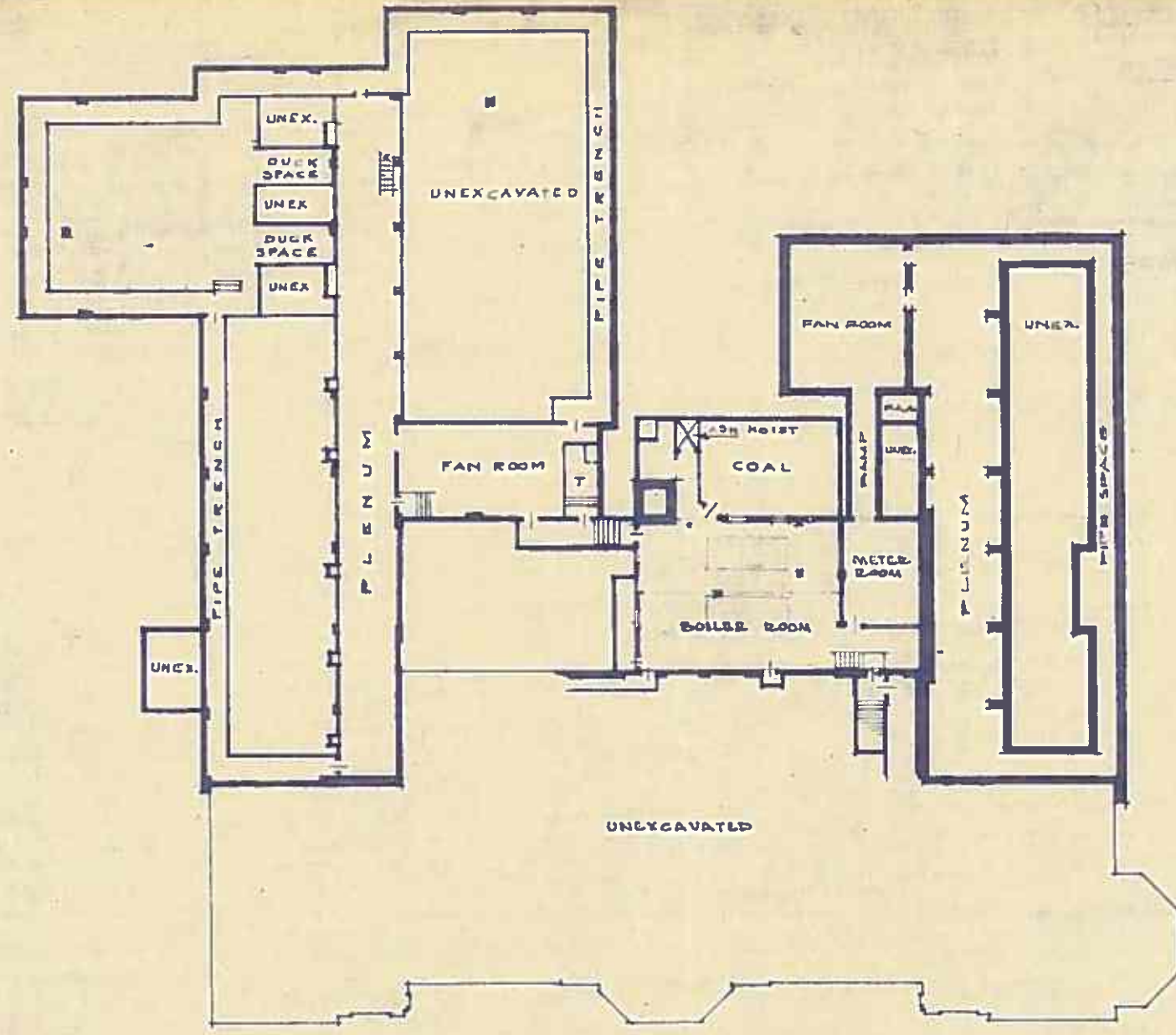
frame system. Repointing of the cracked mortar joints and replacement of cracked units is recommended. These cracks may recur after rehabilitation and remain an ongoing maintenance item unless the underlying cause of the cracking is further assessed and mitigated.

# BURT SCHOOL

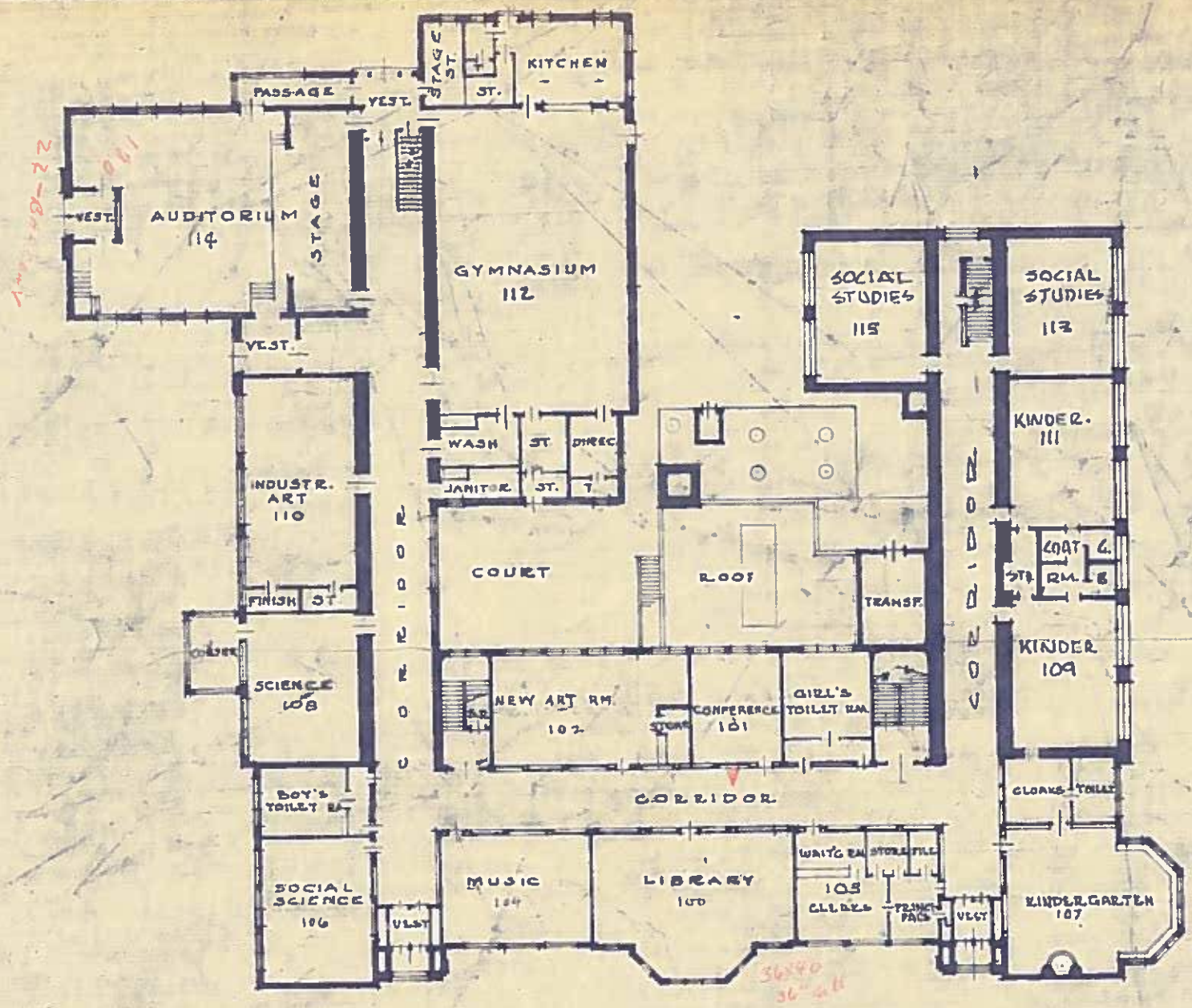
ARCHITECTURAL PLANNING DEPT  
BOARD OF EDUCATION  
DETROIT, MICHIGAN

DRAWN	DATE	CHECKED	DATE	ADDITION	DATE
A.F.F. J.J.	5-20-26 5-2-48	G.H.S.	5-20-26		

REVISED 9/20/46  
REVISED 6/20/52 *AL*



BASEMENT FLOOR PLAN  
SCALE 1/32"=1'-0"



# BURT SCHOOL

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DRAWN	DATE	CHECKED	DATE	ADDITION	DATE
O.P.F.	5-20-26	G.F.A.	5-20-26		
REVISED			9/20/46	G.H.M.	
REVISED			1-25-50	Ger.	
REVISED			6-30-51		

FIRST FLOOR PLAN  
 SCALE 1/32" = 1'-0"

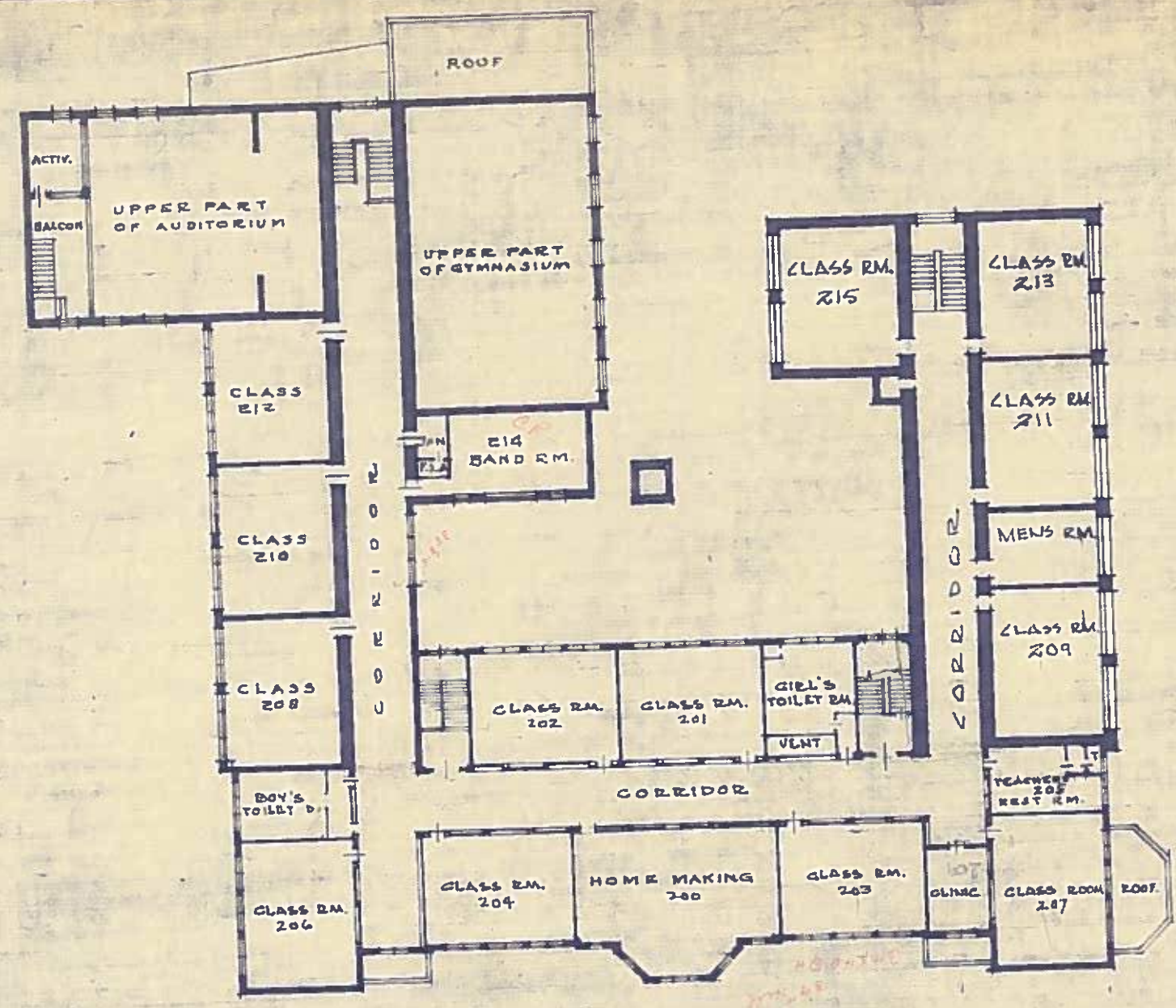
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# BURT SCHOOL

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DRAWN	DATE	CHECKED	DATE	ADDITION	DATE
O.F.F.	5-20-26	V.L.J.	5-20-26		
REVISED			9-20-46	G.H.M.	
REVISED			1-25-50	Ger.	
REVISED			6-10-53		



SECOND FLOOR PLAN  
 SCALE 1/32" = 1'-0"