

JAMES E. MCDADE CLASSICAL SCHOOL

LEGATARCHITECTS

SUSTAINABILITY | PERFORMANCE | DESIGN

PROJECT # IN19-0000

MCDADE CLASSICAL SCHOOL
CONCEPTS + ASSESSMENT

OCTOBER 26, 2018



8801 S. Indiana Ave.
Chicago, IL 60619



PROJECT TEAM

LEGATARCHITECTS

SUSTAINABILITY | PERFORMANCE | DESIGN

DESIGN ARCHITECTS

Legat Architects

651 W. Washington Blvd. Suite One
Chicago, IL 60661

Patrick Brosnan - Principal in Charge
Tom Kikta - Project Manager
Sarah Bruketta - Project Architect
Justin Banda - Project Designer
Mallory Rabeneck - Project Associate



CIVIL ENGINEERING
9501 West Devon Ave. Suite 702
Rosemont, IL 60018



LANDSCAPE ARCHITECTS
888 S. Michigan Ave. Suite 1000
Chicago, IL 60605



Structural Engineers
464 North Milwaukee Avenue
Chicago, Illinois 60654



Mechanical/Electrical/Plumbing/Fire Protection
36 S. Wabash Ave. Suite 310
Chicago, IL 60603

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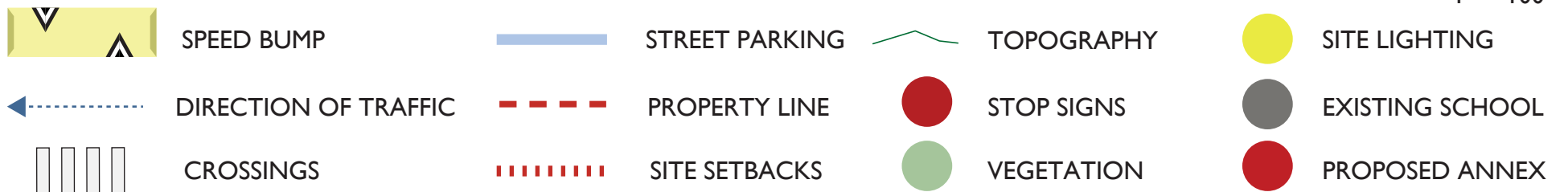
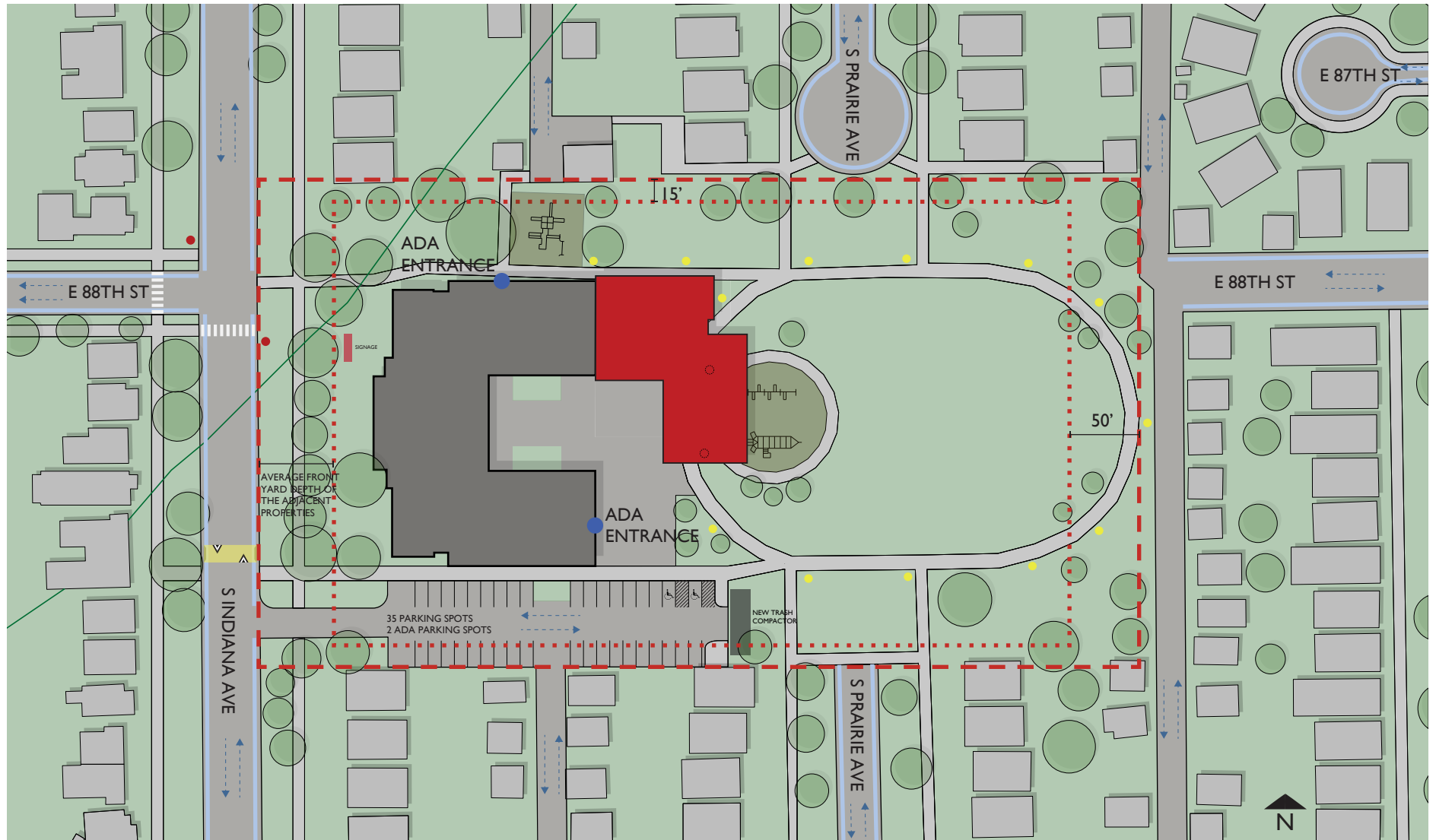


James E. McDade
CLASSICAL SCHOOL

CONCEPTS

I PROJECT

SITE ANALYSIS



SPACE PROGRAM

ROOM	CATEGORY	ROOM NAME	PROGRAM	TEST FIT	LEGAT DRAFT	DIFFERENCE	COMMENTS
AX-001	SUPPORT	ANNEX VESTIBULE	156	0	90	66	TEST FIT DOES NOT INCLUDE VESTIBULES (REQUIRED BY LAW)
AX-002	SUPPORT	CORRIDOR	675	796	704	-29	
AX-003	SUPPORT	EXTERIOR VESTIBULE	0	0	78	-78	PROGRAM AND TEST FIT DO NOT INCLUDE EXTERIOR VESTIBULE
AX-101	CLASSROOM	ART CLASSROOM	1080	933	925	155	
AX-101A	CLASSROOM	KILN	90	122	109	-19	
AX-101B	STORAGE	ART STORAGE	0	0	109	-109	TEST FIT DOES NOT INCLUDE STORAGE ROOM (933 SF SHOWN FOR ART ROOM)
AX-102	CLASSROOM	SCIENCE CLASSROOM	1080	933	987	93	
AX-102A	STORAGE	SCIENCE STORAGE	0	122	120	-120	SF IS INCLUDED AS PART OF SCIENCE CLASSROOM ALLOTMENT
AX-103	SUPPORT	UNISEX RESTROOM	0	96	112	-112	PROGRAM DOES NOT INCLUDE UNISEX RESTROOM
AX-104	SUPPORT	UNISEX RESTROOM	0	0	112	-112	PROGRAM DOES NOT INCLUDE UNISEX RESTROOM
AX-105	SUPPORT	MECHANICAL	200	483	404	-204	PROGRAM DOES NOT INCLUDE SECOND MECHANICAL ROOM, BUT TEST FIT SHOWS 2 MECH ROOMS AT 233 AND 250 SF (TOTAL 483 SF)
AX-105A	SUPPORT	ELECTRICAL ROOM	0	0	113	-113	PROGRAM AND TEST FIT DO NOT INCLUDE ELEC. ROOM (CONSULTANT REC.)
AX-105B	SUPPORT	PUMP ROOM	0	0	112	-112	PROGRAM AND TEST FIT DO NOT INCLUDE MDF ROOM (EXISTING: 121 SF)
AX-106A	MULTI	GYMNASIUM	3750	3600	3500	250	
AX-106B	MULTI	GYM ALCOVE	0	490	593	-593	PROGRAM DOES NOT INCLUDE GYM ALCOVE
AX-107	STORAGE	GYM STORAGE	156	57	159	-3	
AX-108	STORAGE	BUILDING STORAGE	232	325	272	-40	
AX-109	OFFICE	GYM OFFICE	107	122	109	-2	
AX-110	STORAGE	ALCOVE STORAGE A	0	57	72	-72	PROGRAM AND TEST FIT DO NOT INCLUDE GYM ALCOVE STORAGE
AX-111	STORAGE	ALCOVE STORAGE B	0	0	72	-72	PROGRAM AND TEST FIT DO NOT INCLUDE GYM ALCOVE STORAGE
			NSF SUM	NSF SUM	NSF SUM	DIF. FROM PROGRAM	
TOTAL NSF COMPARISON			7526	8136	8752	-1226	NET SQUARE FEET
			GSF TOTAL (@ 20%)	GSF TOTAL (@ 20%)	GSF TOTAL	DIF. FROM PROG. GSF	
TOTAL GSF COMPARISON			9031	9694	9728	-697	GROSS SQUARE FEET

ANNEX AREA CALCULATIONS

BUILDING AREA DIAGRAMS AND AREA CALCULATIONS PBC CPS - McDADE ELEMENTARY SCHOOL

Gross Square Foot Calculations

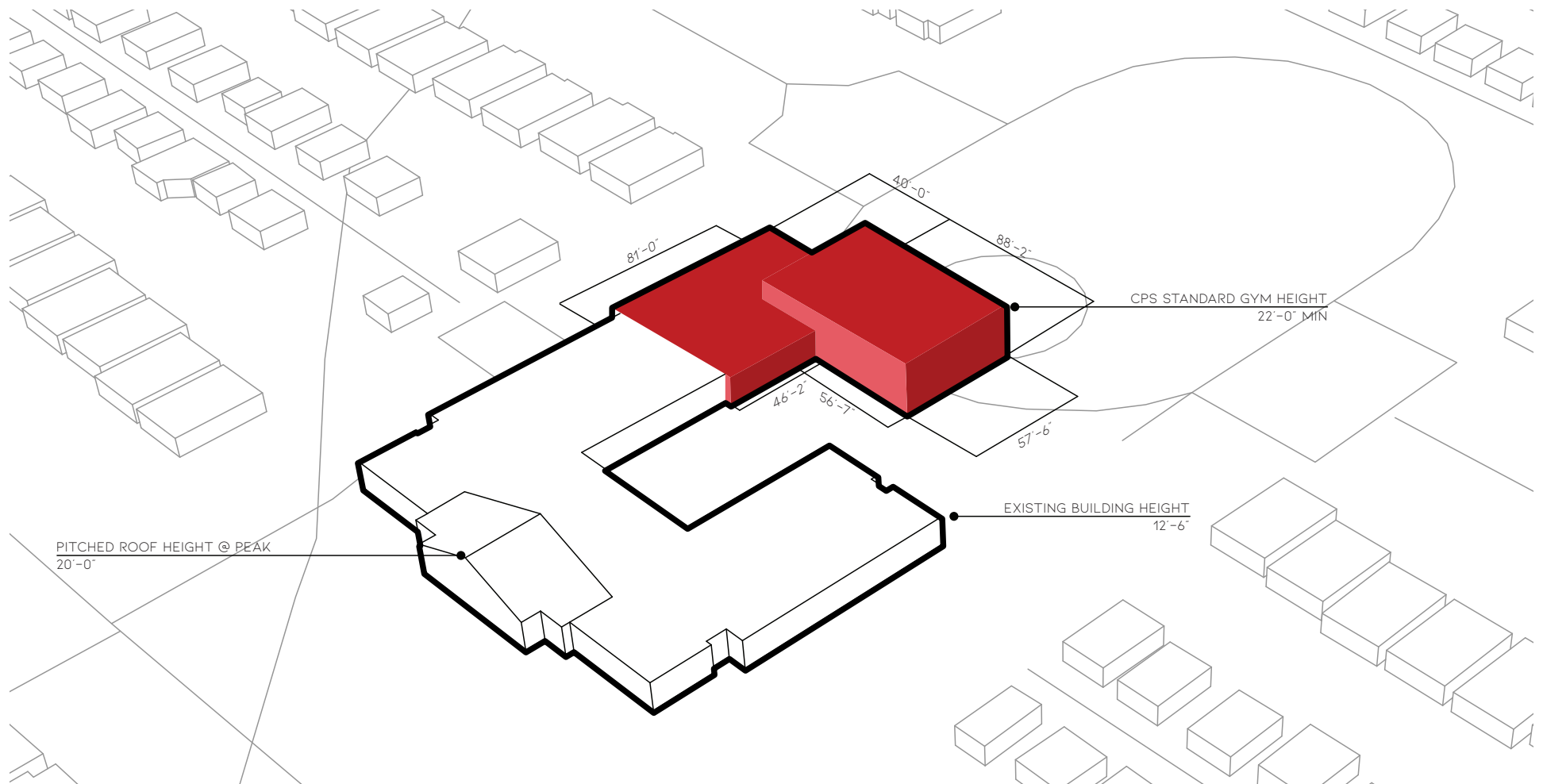
First Floor Area Gross: 9,728 SF

Usable Square Footage Calculations

First Floor Usable: 8,791 SF = 90.4% Efficient

Enclosed Volume: 185,097 cubic feet

Exterior Surface Area: 19,148 SF (not incl. slab or connecting faces)





LEED v4 for BD+C: Schools

Project Checklist

Y ? N

Y	?	N	Credit	Integrative Process	1
---	---	---	--------	---------------------	---

9	4	11	Location and Transportation		15
		10	Credit	LEED for Neighborhood Development Location	15
	1		Credit	Sensitive Land Protection	1
	2		Credit	High Priority Site	2
4			Credit	Surrounding Density and Diverse Uses	5
4			Credit	Access to Quality Transit	4
		1	Credit	Bicycle Facilities	1
	1		Credit	Reduced Parking Footprint	1
1			Credit	Green Vehicles	1

9	0	2	Sustainable Sites	12
Y			Prereq Construction Activity Pollution Prevention	Required
Y			Prereq Environmental Site Assessment	Required
1			Credit Site Assessment	1
1			Credit Site Development - Protect or Restore Habitat	2
1			Credit Open Space	1
3			Credit Rainwater Management	3
2			Credit Heat Island Reduction	2
1			Credit Light Pollution Reduction	1
		1	Credit Site Master Plan	1
		1	Credit Joint Use of Facilities	1

8	0	1	Water Efficiency		12
Y			Prereq	Outdoor Water Use Reduction	Required
Y			Prereq	Indoor Water Use Reduction	Required
Y			Prereq	Building-Level Water Metering	Required
2			Credit	Outdoor Water Use Reduction	2
5			Credit	Indoor Water Use Reduction	7
1			Credit	Cooling Tower Water Use	2
		1	Credit	Water Metering	1

15	0	6	Energy and Atmosphere	31
Y			Prereq Fundamental Commissioning and Verification	Required
Y			Prereq Minimum Energy Performance	Required
Y			Prereq Building-Level Energy Metering	Required
Y			Prereq Fundamental Refrigerant Management	Required
4			Credit Enhanced Commissioning	6
10			Credit Optimize Energy Performance	16
		1	Credit Advanced Energy Metering	1
		1	Credit Demand Response	2
		3	Credit Renewable Energy Production	3
1			Credit Enhanced Refrigerant Management	1
		1	Credit Green Power and Carbon Offsets	2

Project Name: James E. McDade Classical School

Date: 10.25.2018

7	0	2	Materials and Resources		13
Y			Prereq	Storage and Collection of Recyclables	Required
Y			Prereq	Construction and Demolition Waste Management Planning	Required
4			Credit	Building Life-Cycle Impact Reduction	5
		2	Credit	Building Product Disclosure and Optimization - Environmental Product Declarations	2
1			Credit	Building Product Disclosure and Optimization - Sourcing of Raw Materials	2
1			Credit	Building Product Disclosure and Optimization - Material Ingredients	2
1			Credit	Construction and Demolition Waste Management	2

14	0	0	Indoor Environmental Quality			16
Y			Prereq	Minimum Indoor Air Quality Performance	Required	
Y			Prereq	Environmental Tobacco Smoke Control	Required	
Y			Prereq	Minimum Acoustic Performance	Required	
1			Credit	Enhanced Indoor Air Quality Strategies	2	
2			Credit	Low-Emitting Materials	3	
1			Credit	Construction Indoor Air Quality Management Plan	1	
2			Credit	Indoor Air Quality Assessment	2	
1			Credit	Thermal Comfort	1	
2			Credit	Interior Lighting	2	
3			Credit	Daylight	3	
1			Credit	Quality Views	1	
1			Credit	Acoustic Performance	1	

1	0	0	Innovation	6
			Credit Innovation	5
1			Credit LEED Accredited Professional	1

4	0	0	Regional Priority		4
1			Credit	Regional Priority: Specific Credit	1
1			Credit	Regional Priority: Specific Credit	1
1			Credit	Regional Priority: Specific Credit	1
1			Credit	Regional Priority: Specific Credit	1

67	4	22	TOTALS	Possible Points: 110
Certified: 40 to 49 points, Silver: 50 to 59 points, Gold: 60 to 79 points, Platinum: 80 to 110				



James E. McDade
CLASSICAL SCHOOL

CONCEPTS

2 ZONING

ZONING ANALYSIS

Zoning Analysis

OWNER: Public Building Commission of Chicago
 PROJECT TITLE: **McDade Classical School Annex and Renovations**
 PROJECT ADDRESS: 8801 S. Indiana Avenue, Chicago, IL 60619
 WARD: 09 - Anthony Beale
 PIC PROJECT NUMBER: 06255
 LEGAT PROJECT NUMBER: IN19-0000
 DATE (LAST UPDATED): October 17, 2018

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ZONING INFORMATION	UNDERLYING ZONE	PROPOSED PROJECT	NOTES
Zoning District	RS-2	N/A	
Residential Units	N/A	N/A	
Off-Street Parking Spaces: (17-10-0101-B(1)ja) (17-10-0207)	Existing Parking Spaces: 40 (see also Automobile Parking, below) (req'd 8' x 18' with 22' aisle, per 17-10-1001)	FTE from CPS: 30 Parking Spaces Required: 10	
Maximum Floor Area Ratio (FAR): (17-2-0304-A)	Maximum FAR: 0.65	Existing FAR: 0.11 Proposed FAR: 0.15	Site Area: 207,672 sf (4.77 acres) Existing Building to Remain: 22,600 sf (22,600 sf footprint) Proposed Annex: 9,250 sf (9,250 sf footprint)
FAR of Public and Civic Uses: (17-13-1003-C)	The Zoning Administrator is authorized to approve an administrative adjustment to allow any permitted Public and Civic use in an R district to exceed the applicable FAR by up to 10% over the otherwise applicable maximum.	Max FAR not exceeded	No adjustment required
Minimum Lot Area (MLA): (17-2-0301-A)	5,000 sf	Complies; no change	
Automobile Parking: (17-10-0101-B(1)ja) (17-10-0207) (17-10-0501) prohibited in front 20'	Parking/loading standards apply when existing non-residential building/use is expanded or enlarged by 15% or more (25% for uses in excess of 50 years old). Applies to addition of floor area, seating capacity, employees or other measurement used for off-street parking and loading requirements; 1 per 3 employees + additional parking and drop-off spaces as determined by DZLUP.	Existing Parking Spaces: 40, including 2 accessible spaces	CPS FTE: 30 Parking Required per FTE: 10 No additional parking spaces required
Bicycle Parking: Table (17-10-0207)	1 per 10 auto spaces; minimum 4 spaces; 2'W x 6'L x 7'H each; may use up to (2) vehicle spaces req'd as space for providing bicycle parking (17-10-0302-C)	Minimum 1 per 10 off-street parking spaces; at 40 existing spaces, a minimum 4 bicycle spaces are required. Existing is TBD	A minimum of 4 will be provided to meet code requirement; regardless of CPS FTE.
Loading Berths: (17-10-1101)	0 - 24,999 gsf = 0 25,000 - 199,999 gsf = 1 Space Size: 10' x 25'; 10' x 50' for buildings over 50,000 sf	(1) 10' x 28' loading berth required; existing complies	No Zoning Relief required; existing berth is not being modified
Uses: (17-2-0207)	Schools Permitted by Right (existing)	No change	
SETBACKS: (17-2-0306-C)	Front: (17-2-0305) S. Indiana Avenue (west)	Setback distance equal to the average front yard depth that exists on nearest 2 lots on either side of the subject lot, excluding the lot with the least front yard depth	No work proposed along front yard No Zoning Relief required
	Side: (17-2-0306) Adjacent Lot (north)	15' or 50% of building height, whichever is greater	Existing Bldg. Height (mean height between eaves and ridge at gable roof): 16'-10" Height of Proposed Annex (underside of top floor's ceiling [joint at flat roof]: 23' 15' is greater than 50% of 23' (11'-6")
	Side: (17-2-0306) Adjacent Lot (south)	15' or 50% of building height, whichever is greater	Existing Bldg. Height (mean height between eaves and ridge at gable roof): 16'-10" Height of Proposed Annex (underside of top floor's ceiling [joint at flat roof]: 23' 15' is greater than 50% of 23' (11'-6")
	Back: (17-2-0306-C) Alley (east)	30% of lot depth or 50', whichever is less	Existing Lot Depth: 611.41' 50' is less than 30% of 611.41' (183.4')
Other Setbacks, Admin. Adjustment: (17-13-1003-I)	The Zoning Administrator is authorized to approve an administrative adjustment to permit a reduction of up to 50% in the depth of any setback required by the applicable zoning district regulations when such reduction would match the predominate yard depth of existing buildings on the block.		No Zoning Relief required
Site Coverage (if applicable):		Existing: 22,600 sf (11%) Proposed: 31,850 sf (15%)	
Height: (17-2-0311-A)	No maximum height requirement for principal, non-residential buildings (30' for residential)	Existing Bldg. Height (mean height between eaves and ridge at gable roof): 16'-10" Height of Proposed Annex (underside of top floor's ceiling [joint at flat roof]: 23'	No adjustment required
Rear Yard Open Space: (17-2-0307)	400' sf per dwelling unit or 6.5% of lot area, whichever is greater; 20' minimum dimension on any side	6.5% of 207,672 sf = 13,498.68 sf [13,498.68 sf / 339.66' (lot width) = 39.74' which is less than the required 50' rear yard setback]	Since rear yard setback is being maintained, rear yard open space is being maintained. No Zoning Relief
Green Roof / Features:	Green roof required	White reflective roof proposed	Site BMP
Total Project Cost:		TBD (est. \$9 million)	
Construction Jobs Created:			
Number of Permanent Jobs Created:			
Reason for PD: (mandatory, elective, why)	(17-8-0506) PD review and approval is required for development of land to be used for schools on sites with a net site area of 2 acres or more. The mandatory PD requirement does not apply of the Zoning Administrator determines that the proposed expansion will not result in a significant increase in adverse impacts on the surrounding area in terms of traffic congestion, incompatible building bulk or scale, or other measurable land-use impacts (17-8-0515-C(1)).	Net Site Area: 4.77 acres Request PD waiver for 17-8-0506; schedule requires construction to start Fall of 2019	PD waiver to be requested
Questions / Zoning Issues:			
Other Concerns, Information, Notes:			

CODE ANALYSIS

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Building Code Narrative

TO	Team	FROM	Sarah Bruketta
ORGANIZATION	Legat Architects	RE	Code Narrative
PROJECT TITLE	McDade Elementary School & Annex	PROJECT NO.	[PROJECT_NUMBER]
CC		DATE	10.26.2018

Chicago Building Code

1. 13-56-100 Occupancy Classification
- a. Class C, Assembly Units

b. Class C-3, Schools

c. Type IA Schools - kindergarten and elementary schools
2. Construction Type
- a. Type 1B, Fire Resistive
3. Fire resistance requirements
- a. Subject to the provisions of Chapter 15-8, combustible material may be used in buildings of fire- resistive construction for the following purposes: Doors, door frames and bucks; Windows and window frames; Interior trim, including grounds and turring; Finished flooring and sleepers; Frames, platforms and aprons of exterior show windows at street level; Handrails; Interior wall and ceiling finishes; Roof insulation; Exterior wall finishes, when in compliance with Sections 15-8-080 through 15-8-086.

b. Exterior Bearing Walls: 3 hours

i. 2 hours: when exterior walls face a street, public open space, yard or court not less than 30 feet in width

c. Exterior Nonbearing Wall, Outside exposure: 2 hours

d. Exterior Nonbearing Wall, Inside exposure: 2 hours

e. Interior Bearing Wall: 3 hours

f. Interior Nonbearing Walls/Partitions: 1 hour

i. At locations which require a higher rating: dependent on use

g. Exterior Columns: 3 hours

i. None: when building has automatic sprinkler system as defined in Chapter 15-16 & does not exceed 55 feet in height, or if column is outside building envelope, faces a public way of not less than 30 feet in width, and does not support exterior floors or walkway intended for normal human occupancy

h. Interior Columns

i. Beams, Girders, Trusses

i. Floor Construction
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- i. Roof Construction

k. Roof Construction

i.

4. 13-84-020 Capacity of Schools

a. The total capacity of a school shall be determined in accordance with the occupancy content factors established in Section 13-56-310, except that rooms not used or used only occasionally by students shall not be included in computing each total capacity. Such rooms and spaces include the following:

i. Assembly rooms and gymnasiums;

ii. Cafeterias and lunchrooms;

iii. Locker, toilet and storage rooms;

iv. Corridors and other circulation space;

v. Service and equipment rooms.

5. 13-56-310 Assembly units and open air assembly units – Occupancy content.

a. For assembly units and open air assembly units, the occupancy content shall be based on the capacity of the rooms or spaces used for assembly purposes and shall be determined as follows:

b. (a) In rooms or spaces with fixed seating, the occupancy content shall be the actual number of seats provided. When no divisions between seats are provided, fixed seating shall be computed at 18 inches per person.

c. (b) In rooms or spaces without fixed seating, the occupancy content shall be determined by the dividing of the net floor area (excluding the areas occupied by elevators, toilet rooms, stairways, other shaft enclosures, and by permanent fixtures such as bowling alleys, bars, cigar counters, exit facilities, entrance vestibules, lunch counters and serving spaces for same, etc.) by the floor area per person established in the following table:

d. Occupancy Floor Area Per Person

e. (1) School classrooms (other than open plan schools) and recreation rooms 20 sq. ft.

f. (2) Open plan schools, school laboratories and shops 30 sq. ft.

g. (3) Museums, libraries and similar uses 20 sq. ft.

h. (4) Cafeteria w/ tables and chairs 15 sq. ft.

(5) Other assembly uses 6 sq. ft.

(6) Kitchen, food preparation 100 sq. ft.

(7) Day care center – Class I 35 sq. ft.

(8) Offices 100 sq. ft.

10. 13-56-310 Occupant Load

a. In rooms or spaces without fixed seating, the occupancy content shall be determined by the dividing of the net floor area (excluding the areas occupied by elevators, toilet rooms, stairways, other shaft enclosures, and by permanent fixtures such as bowling alleys, bars, cigar counters, exit facilities, entrance vestibules, lunch counters and serving spaces for same, etc.) by the floor area per person established in the following:

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i. School classrooms (other than open plan schools) and recreation rooms: 20 sq. ft./person

b. Occupant Load Calculation

Main Building:

i. Classrooms = 10,619 NSF/ 100 SF/person = 531 people

ii. Offices = 1006 NSF/ 100 SF/person = 10 people

iii. Kitchen = 793 SF/ 100 SF/person = 8 people

Annex:

iv. Classrooms = 2,022 NSF/ 20 SF/person = 102 people

Total Occupant Load = 651 people

11. 13-84-030 Frontage requirements

a. Every assembly unit shall have frontage upon one or more open spaces consisting of streets not less than 30 feet wide or public alleys or other open spaces not less than ten feet wide which lead directly to a street.

i. Type I schools – 501 feet or less – Street, one side – Street or open space, one side

ii. Type I schools – 501 to 1000 – Street, one side – Street or open space, two sides

iii. Type I schools – 1001 to 2500 – Street, two sides – Street or open space, one sides

12. 13-84-050 Special enclosures and separations

a. The floor construction and enclosing partitions of assembly rooms having a capacity exceeding 300 persons shall be of construction providing fire resistance of not less than two hours. (Dining Room)

b. The floor construction and enclosing partitions of assembly rooms having a capacity not exceeding 300 persons shall be of construction providing fire resistance of not less than one hour.

c. Partitions, floor constructions and ceiling construction enclosing all public corridors of assembly units shall be of construction providing fire resistance of not less than one hour.

13. 13-84-140 Planning requirements for Type I schools.

a. Every Type I school shall comply with the following planning requirements:

b. Basement Rooms. No floor of a classroom or study room shall be located more than two feet below the building grade adjacent to such rooms except rooms used for shops and other vocation classes.

c. Fire Department Access Requirements. Excluding exterior wall areas of auditoriums, assembly halls, field houses, gymnasiums, swimming pools and theater areas, exterior wall areas in Type I schools which exceed 100 linear feet without windows, doorways, or other openings shall be provided with fire department access panels at each floor level spaced at intervals not exceeding 50 feet. Such access panels shall be not less than 32 inches wide and 48 inches high with the bottom of the access panel not over 32 inches above the floor. Panels shall be constructed of materials and installed in

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such a manner to be readily removed by the fire department. Their construction and installation shall be approved by the fire commissioner.

14. 13-160-140 Maximum Travel Distance

a. Assembly units (except open plan schools):

i. Grade and non-grade floors: 150 ft. (No travel distance increases are permitted due to 13-160-150)

15. 13-160-160 Maximum distance from end of corridor

a. The maximum travel distance to an exit from the end of a corridor shall be not more than 50 percent of the travel distance permitted in Sections 13-160-140 and 13-160-150, except that in Type I schools, such distance shall not exceed 20 feet, and in the case of nursing homes and sheltered care facilities as defined in Section 13-4-010 and as further defined by the rules and regulations promulgated by the board of health under the authority, as applicable, of Section 4-6-090 , Section 4-6-100 or Section 4-6-110 , there shall be an exit at the end of each corridor.

16. 13-160-040 Exit Types Above or below grade

a. Exits from a story above or below grade shall consist of interior stairways except as otherwise required in this section.

17. 13-160-190 Unit of Exit Width

a. 22 inches (add 12 inches for 1/2 unit)

18. 13-84-180 Width of exits

a. Capacity of stairs and other vertical exits: 100 persons per unit of exit width

b. Capacity of doorways, corridors, and horizontal exit connections: 115 persons per unit of exit width

c. Exit Width Calculation:

i. Loading Berths

a. 10x50 loading berth required

20. Parking Requirements

ATTACHMENTS None

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13

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PUBLIC BUILDING
COMMISSION of Chicago

Chicago
Public
Schools



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CONCEPTS



ARCHITECTURAL

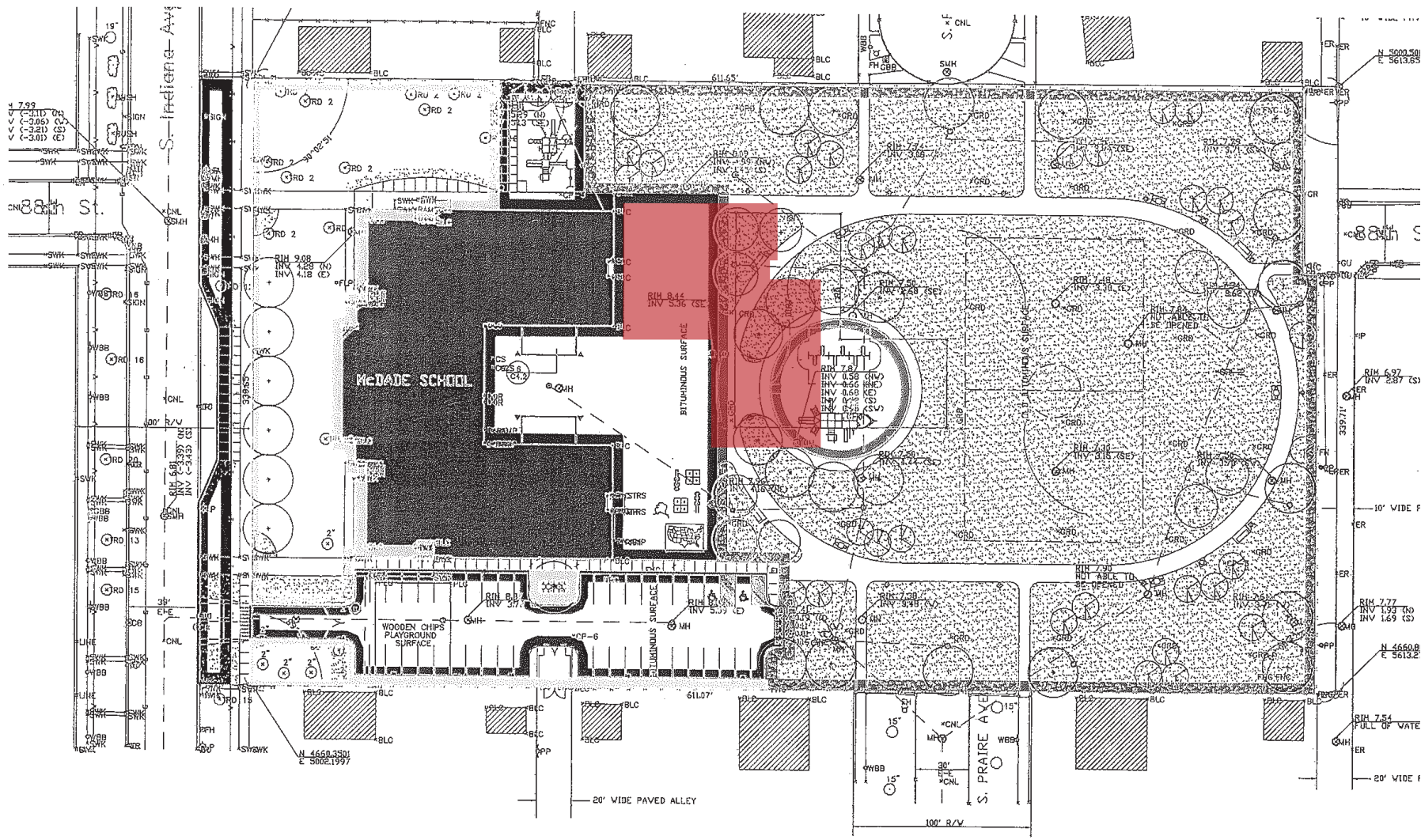
CONFIRMATION

Legat Architects has reviewed the Key Date Schedule provided by the Public Building Commission of Chicago (PBC), dated October 26, 2018, and find no objections. It is our understanding that 100% Schematic Design shall be submitted to the PBC on November 21, 2018, with interim completion dates as follows:

- Concept Design and Assessment: October 26, 2018.
- 60% Schematic Design (for aid in development of the CM RFP): November 2, 2018

Legat Architects has reviewed all documents distributed by the PBC and Chicago Public Schools (CPS) related to McDade Elementary School, including existing building drawings and assessment reports, design guidelines and standards, draft program and test fit, standard specifications etc., and will, to the best of our ability, provide a new annex and renovation of the existing facility conforming to said documents. Although several divisions of the CPS standard specifications are still in development, Legat Architects will incorporate the updated standards as they become available.

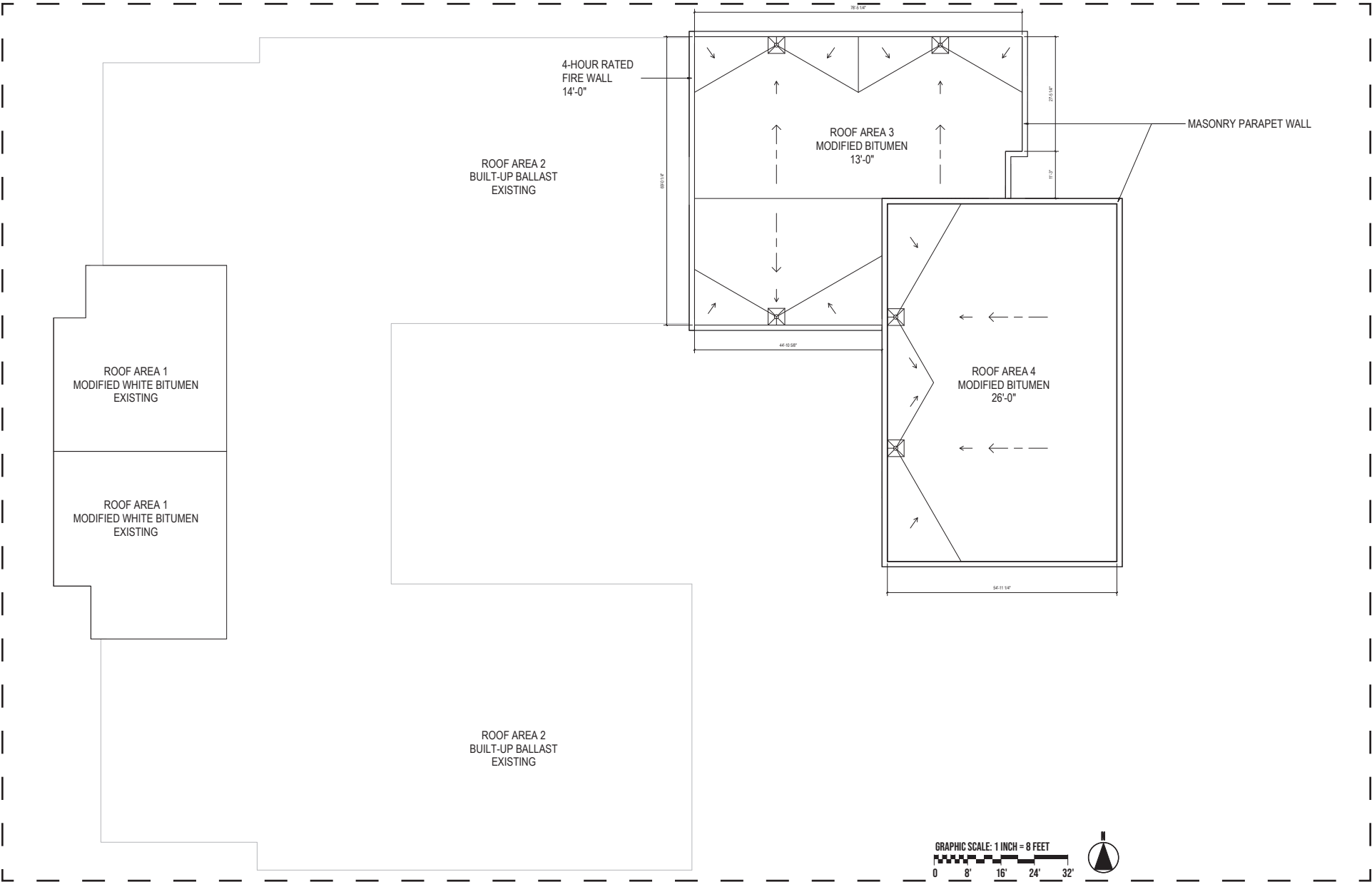
SITE PLAN



MCDADE CLASSICAL ELEMENTARY SCHOOL | CONCEPTS + ASSESSMENT



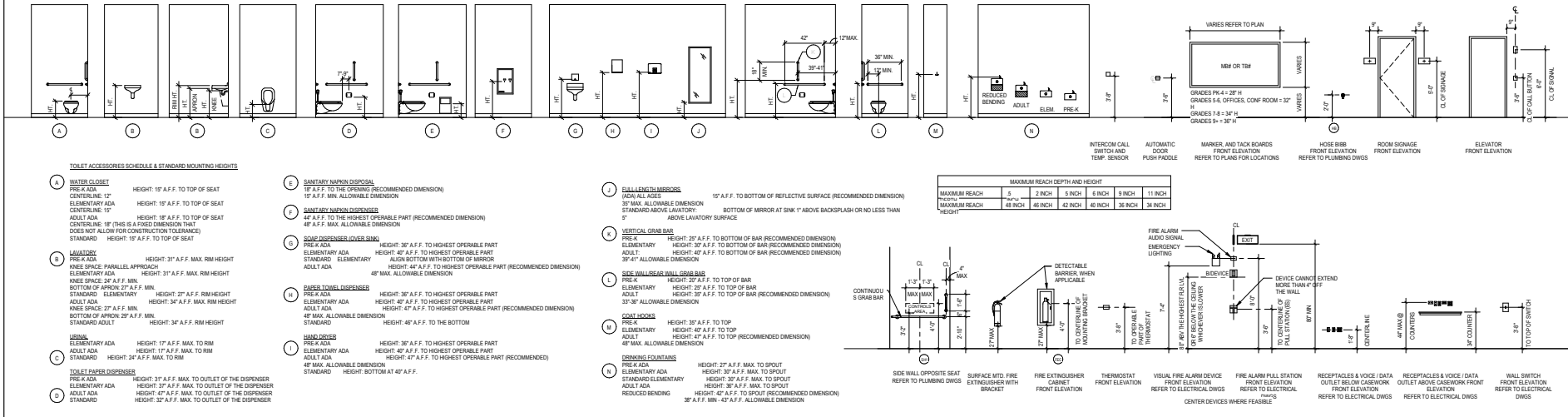
ROOF PLAN



TYPICAL MOUNTING HEIGHTS

TYPICAL MOUNTING HEIGHTS

NOTE: NOT ALL FIXTURES, EQUIPMENT, ACCESSORIES, AND DEVICES SHOWN BELOW ARE APPLICABLE FOR THIS PROJECT



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James E. McDade
CLASSICAL SCHOOL

FACILITY ASSESSMENT

3 ENVIRONMENTAL

ENVIRONMENTAL - SUMMARY

Legat has been provided with an environmental assessment report preformed by Terracon. The report highlights the existence of a REC on the project site which is due to the unknown removal method/condition of an old underground storage tank. The below inserts are highlights of Terracon's report which indicate information on the site itself and the concerns regarding the REC. Please refer to the full report for further information.

Site Reconnaissance

Site features observed during the site reconnaissance include suspect UST piping. Based on observations made during the site reconnaissance, Terracon considers the apparent remnant UST piping in the mechanical room to be indicative of a REC. The observed piping, in addition to the previously identified undocumented and unverified removal of a heating-oil UST in 1999 is considered to be a REC.

Terracon also observed evidence of an apparent incinerator from the exterior of the building in the vicinity of the mechanical room. Terracon's inability to assess the incinerator is considered to be a limitation of this report; however, is not considered to be a significant data gap. Additional indicators of RECs were not identified with environmentally significant features at the time of site reconnaissance.

Adjoining Properties

At the time of site reconnaissance, the adjoining properties were identified as residential dwellings. Based on visual observations of the adjoining residential properties from the site boundaries and public vantage points, indications of RECs were not observed.

Significant Data Gaps

Significant data gaps were not encountered during the performance of this ESA.

Conclusions

We have performed a Phase I ESA consistent with the procedures included in ASTM Practice E 1527-13 at the approximately 4.5-acre tract of land addressed as 8801 South Indiana Avenue in Chicago, Illinois (Cook County PIN #25-03-109-001-0000), the site. Controlled Recognized Environmental Conditions (CRECs) or Historically Recognized Environmental Conditions (HRECs) were not observed in connection with the site. The following is considered a REC to the site:

- The absence of sampling and laboratory analysis at the time of the removal a former on-site heating-oil UST and evidence of remnant piping from the system.

Recommendations

Based on the scope of services, limitations, and findings of this assessment, Terracon recommends additional investigation in the form of a Ground Penetrating Radar and Electromagnetic Survey (GPR/EM) survey and environmental borings/sampling in the location of the former UST system and remaining piping.

ENVIRONMENTAL - OBSERVATION

Phase I Environmental Site Assessment
Proposed McDade Classical School Annex ■ Chicago, Illinois
October 22, 2018 ■ Terracon Project No. A2187058



2.0 PHYSICAL SETTING

Physical Setting Information		Source
Topography (Refer to Appendix A for an excerpt of the Topographic Map)		
Site Elevation	Approximately 585 feet (NGVD).	
Surface Runoff/ Local Topographic Gradient	Relatively flat with general local gradient towards the northeast.	USGS Topographic Map, Lake Calumet, Illinois Quadrangle, 1997.
Closest Surface Water	Ponds at the Oak Woods Cemetery is located approximately 2.3-miles northeast of the site.	
Soil Characteristics		
Soil Type	Urban land (533).	
Description	Areas where 80% or more of the surface is covered with buildings, pavement, or structures underlain by Earthy man-made materials.	Cook County, Illinois United States Department of Agriculture Natural Resource Conservation Service (USDA-NRCS) issued 2012.
Geology/Hydrogeology		
Formation	Silurian-Devonian.	Illinois State Geologic Survey (ISGS) Illinois Map 14: Bedrock Geology of Illinois. (Kolata et al., 2005).
Description	Silurian aged limestone and dolomite Quaternary deposits.	
Estimated Depth to First Occurrence of Groundwater	Estimated to be 10 to 20 feet below ground surface (bgs).	ISGS Interactive Map of Water and Related Wells at http://maps.isgs.illinois.edu/
*Hydrogeologic Gradient	Not known - may be inferred to be parallel to topographic gradient (primarily to the northeast).	

* The groundwater flow direction and the depth to shallow, unconfined groundwater, if present, would likely vary depending upon seasonal variations in rainfall and other hydrogeological features. Without the benefit of on-site groundwater monitoring wells surveyed to a datum, groundwater depth and flow direction beneath the site cannot be directly ascertained.

3.0 HISTORICAL USE INFORMATION

Terracon reviewed the following historical sources for indications of RECs. A summary of the historical review is included at the end of the Historical Use Information section. Copies of selected historical documents are included in Appendix C.

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4.2 Local Agency Inquiries

4.2.1 Building Department/Inspections Department

Terracon queried the City of Chicago Public Data Portal for building permits, demolition permits, and asbestos permits. Records were identified for the site on the Public Data Portal and included a permit to remove and replace boilers and associated piping, duct work, boiler controls, emergency lighting fans, louvers, select interior doors and new direct digital control (DDC) system. The permit for Heating Ventilation and Air Conditioning (HVAC) system modifications, permit #1730522, was issued on October 12, 2006.

4.2.2 Health Department/Environmental Division

Terracon queried the City of Chicago Public Data Portal for Chicago department of Public Health environmentally significant records including storage tanks, National Emission Standards for Hazardous Air Pollutants (NESHAPS), inspections, complaints, and enforcements. Records for permits and tanks were reported by the data portal. Two permits were reported, an air pollution control permit and a removal permit for a UST. The UST removal permit, permit #104937, was issued by the historic Department of the Environment (DOE) on April 28, 1999, and the permit log indicated the removal was performed by Environmental Restoration Systems and that it was a "no-release site;" however, documentation of the removal activities or post-removal sampling was not available and is considered to be a REC.

Two records were reported in the data portal's tank database. An installation record for a 7,520-gallon fuel oil tank, dated July 12, 1961, indicated that the underground storage tank was installed by A.E. Asher. A removal record, for a reported 10,000-gallon heating-oil UST, was dated June 16, 1999 and referenced the removal permit #104937 discussed previously.

4.2.3 Office of the State Fire Marshal

The OSFM was contacted via web request regarding information for the site. Additionally, Terracon queried the OSFM online UST database for site listings. The site was identified as UST facility #2039083. The OSFM tank database indicate the former presence of a 1,000-gallon heating-oil UST that was removed June 16, 1999. A release or Illinois Emergency Management Agency (IEMA) number was not reported in conjunction with removal activities. Ms. Cheryl Kaufman, FOIA Officer at the OSFM, indicated that the OSFM did not have records responsive to Terracon's request.

4.2.4 Illinois and United States Environmental Protection Agency

Terracon queried the on-line IEPA document explorer for site listings. The site was not identified as a LUST or SRP facility. Additionally, Terracon submitted on-line requests for information regarding the environmental condition of the site to the IEPA and USEPA. At the issuance of this report, responses from the IEPA and USEPA have not been received.

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4.3 Records Review Summary

Selected federal and state environmental regulatory databases as well as responses from state and local regulatory agencies were reviewed. Evidence of installation and removal of at least one heating-oil UST was noted. The historic Department of the Environment records permitted an UST removal by Environmental Restoration Systems on June 16, 1999 and indicated that it was a "no-release site;" however, documentation of the removal activities or post-removal sampling was not available. Absence of confirmatory samples is considered to be a REC. Based on distance, environmental setting and/or facility characteristics, the remaining identified facilities and inquiry results from the local agencies do not constitute RECs in connection with the site at this time.

5.0 SITE RECONNAISSANCE

5.1 General Site Information

Information contained in this section is based on a visual reconnaissance conducted while walking through the site and the accessible interior areas of structures, located on the site. Exhibit 2 and 3 in Appendix A are Site Diagrams of the site. Photo documentation of the site at the time of the visual reconnaissance is provided in Appendix E. Credentials of the individuals planning and conducting the site visit are included in Appendix F.

General Site Information

Site Reconnaissance	
Field Personnel	Patrick F. Moakley
Reconnaissance Date	October 17, 2018
Weather Conditions	Cloudy and approximately 40 degrees Fahrenheit
Site Contact/Title	Kenneth Bill / McDade Classical Elementary School Maintenance Engineer
Site Utilities	
Drinking Water	City of Chicago
Wastewater	City of Chicago
Electricity	Commonwealth Edison (ComEd)
Natural Gas	Peoples Gas

5.2 Overview of Current Site Occupants and Operations

The site consists of the approximately 4.75-acre tract of land, addressed as 8801 South Indiana Avenue in Chicago, Illinois (Cook County PIN #25-03-109-001-0000-0000). The site is currently

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improved with an approximately 25,000 square-foot elementary school building, paved parking areas, and playground/recreation areas. Terracon understands that the site is proposed for interior and exterior renovations as well expansion of the existing structure and play areas.

5.3 Site Observations

The following table summarizes site observations and interviews. Affirmative responses (designated by an "X") are discussed in more detail following the table.

Site Characteristics		
Category	Item or Feature	Observed
Site Operations, Processes, and Equipment	Emergency generators	
	Elevators	
	Air compressors	X
	Hydraulic lifts	
	Dry cleaning	
	Photo processing	
	Ventilation hoods and/or incinerators	X
	Waste treatment systems and/or water treatment systems	
	Heating and/or cooling systems	X
	Other processes or equipment	
Aboveground Chemical or Waste Storage	Aboveground storage tanks	
	Drums, barrels and/or containers ≥ 5 gallons	X
	MSDS	
Underground Chemical or Waste Storage, Drainage or Collection Systems	Underground storage tanks or ancillary UST equipment	X
	Sumps, cisterns, catch basins and/or dry wells	
	Grease traps	
	Septic tanks and/or leach fields	
	Oil/water separators	
	Pipeline markers	
	Interior floor drains	X
Electrical Transformers/PCBs	Transformers and/or capacitors	X
	Other equipment	

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Category	Item or Feature	Observed
Releases or Potential Releases	Stressed vegetation	
	Stained soil	
	Stained pavement or similar surface	
	Leachate and/or waste seeps	
	Trash, debris and/or other waste materials	
	Dumping or disposal areas	X
	Construction/demolition debris and/or dumped fill dirt	
	Surface water discoloration, odor, sheen, and/or free-floating product	
	Strong, pungent or noxious odors	
	Exterior pipe discharges and/or other effluent discharges	
Other Notable Site Features	Surface water bodies	
	Quarries or pits	
	Wells	

Site Operations, Processes, and Equipment

Air compressors

Terracon observed an air compressor with an approximately 50-gallon reservoir in the mechanical room of the on-site structure. The air compressor is a part of the buildings fire suppression system. Evidence of staining or blowdown was not observed on the intact concrete floor surrounding the air compressor. A digitally controlled-mechanical pressurizing unit was also observed in the mechanical room. The pressurizing unit is a part of the site's sprinkler system.

Ventilation hoods and/or incinerators

Terracon observed the location of a former incinerator in the southwest corner of the mechanical room in the on-site structure. The interior of the incinerator was inaccessible at the time of reconnaissance and is considered to be a limitation of this report.

Heating and/or cooling systems

Terracon observed a natural-gas fired boiler system and heat exchange cooling system in the maintenance room of the on-site structure. Evidence of environmentally significant issues were not observed with the components of the HVAC systems.

Aboveground Chemical or Waste Storage

Drums, barrels and/or containers ≥ 5 gallons

Terracon observed three plastic drums labeled as containing ethylene glycol in the maintenance room of the on-site structure. The ethylene glycol is used as a heat transfer fluid for the buildings

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HVAC system. The drums were observed to be in good condition and evidence of spills or staining was not noted on the intact concrete floor beneath the drums.

Terracon observed approximately twenty-five 36-pound bags of fertilizer in the mechanical room. The fertilizer was reported by the site contact to be used for general upkeep of the on-site grassed areas. The bags appeared to be in good condition and evidence of a release or improper storage was not observed.

Underground Chemical or Waste Storage, Drainage or Collection Systems

Underground storage tanks or ancillary UST equipment

Terracon observed pipes consistent with those typically associated with USTs. The pipes appeared to be approximately 2" in diameter and were noted near the east wall of the mechanical room protruding from floor. Terracon's view of the pipes was partially obscured by the storage of fertilizer and bath tissue against the wall. Evidence of an apparent excavation (patch work in the pavement) immediately adjacent to the piping on the exterior side of the wall was also observed.

Interior floor drains

Terracon observed two, readily apparent, interior floor drains in the mechanical room. Piping collecting condensate from the HVAC system appeared to discharge to the floor drains. Evidence of improper disposal or dumping was not observed in conjunction with the floor drains.

Electrical Transformers/PCBs

Transformers and/or capacitors

Terracon observed a pad-mounted transformer to the east of the on-site structure. From public vantage points, evidence of a release associated with the pad-mounted transformer was not observed. A blue sticker indicating that the transformer unit was filled at the time of manufacture with non-polychlorinated biphenyl (PCB) containing fluid was observed on the north side of the pad-mounted transformer unit. Should the transformer contain PCB-containing dielectric fluids, they would be the responsibility of Commonwealth Edison, the owner and operator of the transformer.

Releases or Potential Releases

Dumping or disposal areas

An approximately 10 cubic-yard general refuse dumpster and an approximately 10 cubic-yard recycling receptacle were noted to the south of the on-site structure. Evidence of improper disposal or dumping associated with the dumpster and receptacle was not noted at the time of site reconnaissance by Terracon field personnel.

5.4 Site Reconnaissance Summary

Based on observations during the site reconnaissance, Terracon considers the apparent remnant UST piping to be indicative of a REC, previously identified by the undocumented and unverified

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3.6 Title Search

At the direction of the client, a title search was not included as part of the scope of services. Unless notified otherwise, we assume that the client is evaluating this information outside the scope of this report.

3.7 Environmental Liens

At the direction of the client, a search for environmental liens recorded against the site was not included as part of the scope of services. Unless notified otherwise, we assume that the client is evaluating this information outside the scope of this report.

3.8 Site Interview

The following individual was interviewed regarding the current and historical use of the site.

Interview			
Interviewer	Interviewee/Phone #	Title	Date/Time
Patrick F. Moakley	Kenneth Bill / (773) 535-3669	McDade Classical Elementary School Maintenance Engineer	10/17/2018 / 9:15 a.m.

Mr. Bill indicated that he had been familiar with the site for approximately three years. Mr. Bill stated he was not aware of any current underground storage tanks at the site and could not confirm the location of the tank reported by the City of Chicago to have been removed in 1999. Additionally, Mr. Bill was not aware of any regulated waste generated from the site, with the exception of light bulbs which are picked up for recycling. He was not aware of any pending, threatened or past environmental litigation; proceedings or notices of possible violations of environmental laws or liability or potential environmental concerns in connection with the site.

3.9 Prior Report Review

Previous environmental reports were not provided by the client to Terracon for review.

3.10 Historical Use Information Summary

Based on a review of historical information, the site appeared as vacant land until it was improved in 1961 with the McDade Elementary school. Playground equipment and a paved walking circle located east of the site structure were apparent by 2007.

Adjoining properties to the north, south, and east of the site appeared to consist of vacant land as early as 1929, until developed with residential dwellings by 1959. The west adjacent land

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appears to have been developed with residential dwellings early as 1929 and has remained as such until present-day.

Indications of RECs were not identified during the historical information review.

4.0 RECORDS REVIEW

Regulatory database information was provided by EDR, a contract information services company. The purpose of the records review was to identify RECs in connection with the site. Information in this section is subject to the accuracy of the data provided by the information services company and the date at which the information is updated, and the scope herein did not include confirmation of facilities listed as "unmappable" by regulatory databases.

In some of the following subsections, the words up-gradient, cross-gradient and down-gradient refer to the topographic gradient in relation to the site. As stated previously, the groundwater flow direction and the depth to shallow groundwater, if present, would likely vary depending upon seasonal variations in rainfall and the depth to the soil/bedrock interface. Without the benefit of on-site groundwater monitoring wells surveyed to a datum, groundwater depth and flow direction beneath the site cannot be directly ascertained.

4.1 Federal and State/Tribal Databases

Listed below are the facility listings identified on federal and state/tribal databases within the ASTM-required search distances from the approximate site boundaries. Database definition, descriptions, and the database search report are included in Appendix D.

Federal Databases			
Database	Description	Radius (miles)	Listings
SEMS / SEMS-Archive	Superfund Enterprise Management System / Superfund Enterprise Management System Archived Sites	0.5	0 / 0
CERCLIS / NFRAP	CERCLIS/NFRAP refers to facilities that have been removed and archived from EPA's inventory of CERCLA sites.	0.5	0 / 0
ECHO	Enforcement and Compliance History Online	Site	1
ERNS	The Emergency Response Notification System (ERNS) is a listing compiled by the EPA on reported releases of petroleum and hazardous substances to the air, soil and/or water.	Site	0
FINDS	Facility Index System	Site	1
IC / EC	A listing of sites with institutional and/or engineering controls in place. IC include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants	Site	0 / 0

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Database	Description	Radius (miles)	Listings
	remaining on site. Deed restrictions are generally required as part of the institutional controls. EC include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.		
NPL	The NPL is the EPA's database of uncontrolled or abandoned hazardous waste facilities that have been listed for priority remedial actions under the Superfund Program.	1	0
NPL (Delisted)	The NPL (Delisted) refers to facilities that have been removed from the NPL.	0.5	0
RCRA CORRACTS/ TSD	The EPA maintains a database of RCRA facilities associated with treatment, storage, and disposal (TSD) of hazardous waste that are undergoing "corrective action." A "corrective action" order is issued when there has been a release of hazardous waste or constituents into the environment from a RCRA facility.	1	0
RCRA Generators	The RCRA Generators database, maintained by the EPA, lists facilities that generate hazardous waste as part of their normal business practices. Generators are listed as either large quantity generator (LQG), small quantity generator (SQG), or CESQG. LQG produces at least 1000 kg/month of non-acutely hazardous waste or 1 kg/month of acutely hazardous waste. SQG produce 100-1000 kg/month of non-acutely hazardous waste. CESQG are those that generate less than 100 kg/month of non-acutely hazardous waste.	Site and adjoining properties	1
RCRA Non-CORRACTS/ TSD	The RCRA Non-CORRACTS/TSD Database is a compilation by the EPA of facilities which report storage, transportation, treatment, or disposal of hazardous waste. Unlike the RCRA CORRACTS/TSD database, the RCRA Non-CORRACTS/TSD database does not include RCRA facilities where corrective action is required.	0.5	0

State/Tribal Databases			
Database	Description	Radius (miles)	Listings
Brownfields	State and/or Tribal listing of Brownfield properties addressed by Cooperative Agreement Recipients or Targeted Brownfields Assessments.	0.5	0
IL BOL	Illinois Bureau of Land	Site	1
Chicago ENV	Chicago Environmental Records Database	Site	1
ECHO	Enforcement and Compliance History Online	Site	1
IC/EC	State and/or Tribal equivalent to the Federal IC / EC database list.	Site	0 / 0
LUST	State and/or Tribal database of leaking underground storage tanks in the state of Illinois.	0.5	14
IL NIPC	Northern Illinois Planning Commission Inventory of Historical Solid Waste Sites	0.5	1

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Database	Description	Radius (miles)	Listings
SHWS	The Illinois Environmental Protection Agency (IEPA) maintains a database of state equivalent CERCLIS facilities in the state of Illinois.	0.5	0
SRP	The IEPA maintains a list of sites involved in the voluntary Site Remediation Program (SRP).	0.5	3
SSU	Illinois EPA State Sites Unit	1.0	1
SWF/LF	State and/or Tribal database of solid waste facilities located within Illinois. The database information may include the facility name, class, operation type, area, estimated operational life, and owner.	0.5	0
UST	State and/or Tribal database of registered storage tanks in the State of Illinois which may include the owner and location of the tanks.	Site and adjoining properties	1

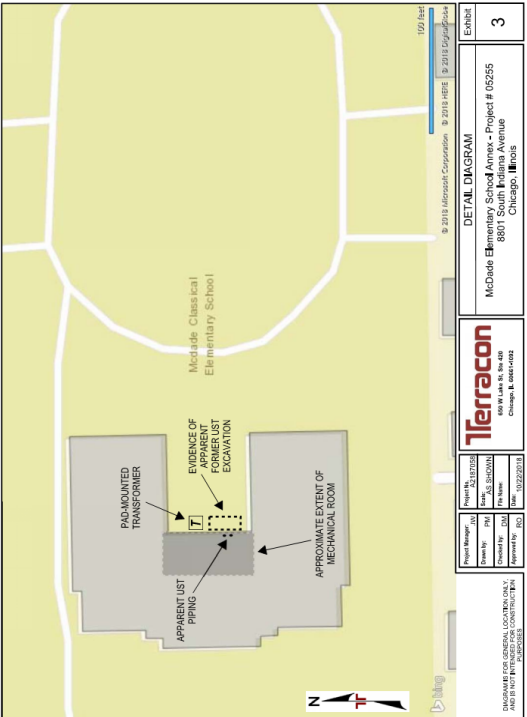
In addition to the above ASTM-required listings, Terracon reviewed other federal, state, local, and proprietary databases provided by the database firm. A list of the additional reviewed databases is included in the regulatory database report included in Appendix D.

The following table summarizes the site-specific information provided by the database and/or gathered by this office for identified facilities. Facilities are listed in order of proximity to the site. Facilities greater than 500 feet from the site are summarized in Appendix D. Additional discussion for selected facilities follows the summary table.

Listed Facilities		
Facility Name And Location	Estimated Distance/Direction/Gradient	Database Listings
McDade School; James E McDade School; Chicago Board of Education / 8801 South Indiana Avenue	Site	IL Chicago ENV, IL Tanks, IL BOL, RCRA-SQG, FINS, ECHO, UST, TANKS

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McDade Elementary School Annex ■ 8801 S. Indiana Avenue Chicago, IL 60619
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Photo 1 Incinerator in mechanical room.



Photo 2 Plumbing and heating system in mechanical room.

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McDade Elementary School Annex ■ 8801 S. Indiana Avenue Chicago, IL 60619
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Photo 3 General equipment storage in mechanical room.

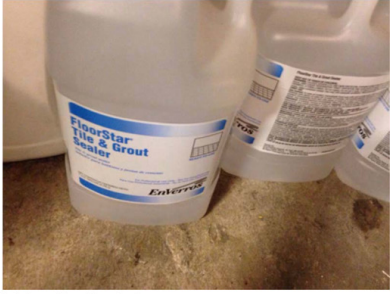


Photo 4 Containers of tile and grout sealer.

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Photo 5 Air compressor in mechanical room.



Photo 6 Evidence of UST piping noted behind fertilizer and bath tissue pallets.

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ENVIRONMENTAL - OBSERVATION

McDade Elementary School Annex ■ 8801 S. Indiana Avenue Chicago, IL 60619 Terracon
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Photo 7 Apparent UST piping.



Photo 8 Apparent UST excavation.

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Photo 9 Pad-mounted transformer.



Photo 10 Lawn equipment storage.

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ENVIRONMENTAL - OBSERVATION

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James E. McDade
CLASSICAL SCHOOL

FACILITY ASSESSMENT

4 CIVIL

CIVIL - DESIGN NARRATIVE

Proposed Improvements Submission

Existing Site Conditions

The existing school is located on South Indiana Avenue between East 88th Street and East 89th Street. The property is approximately +4.79 acres and contains a one-story school building, HMA parking lot, HMA playground, a grass play field, and two play lots. The play lots are located to the north and to the east of the existing building. The HMA parking lot is located south of the existing building and access is provided via Indiana Avenue.

The parking lot contains 2 Handicap Spaces and 33 regular spaces for a total of 35 parking spaces. The projected new FTE for the site is 30. The parking required for the site based on current zoning requirements is 1 space for every 3 employees plus additional parking and drop-off spaces as determined by Department of Zoning and Land Use. Therefore, the total parking required upon completion of construction is 10 spaces. The required parking is less than the existing number of spaces; therefore, additional parking is not proposed.

Proposed Improvements

Overall Summary

The total disturbed area for the project site will be approximately 1.21 acres. The new one-story linked annex will occupy a footprint of approximately +9,774 square-feet within the site. The primary entrance to the school will continue to be along the north side of the existing building.

Hardscape

1. All proposed entrances to the linked annex will be designed to provide a handicap accessible route per CDOT requirements.
2. Localized restoration of sidewalk, curb and gutter, and street pavement is anticipated for various utility connections.

Softscape

1. The play lots to the north and east of the existing building will be removed and replaced. Please refer to the landscape architect proposal for more information.

Utilities

1. The following utilities may need to be removed, relocated or abandoned as part of the proposed construction:
 - a. Based on field observation, a storm sewer system is located within the proposed annex. Portions of this storm sewer system will need to be relocated and/or abandoned.
 - b. A water fountain is also located within the area to be re-constructed. At this time, we do not have any information on how this water main is fed. Water main may need to be relocated.
 - c. A transformer is located within the existing courtyard. At this time, we do not have any information on how this transformer is fed. The existing ComEd service may need to be relocated.

2. Sanitary sewer services – The new sanitary sewer service to the proposed annex will be designed upon receipt of the topographic survey. The landscape plan from 1999 indicates a combined sewer is located within South Prairie Avenue (to the east of the proposed annex.) Our goal would be to connect to this sewer to avoid impacts to the west of the annex.

- a. It is our understanding the gymnasium will be converted to a warming kitchen. Therefore, a grease trap may need to be added on the existing sanitary sewer service and a separate service may need to be provided.

CIVIL - DESIGN NARRATIVE

3. Stormwater – The disturbed area for the project site will be approximately +52,894 square-feet. Per the City of Chicago Stormwater Management Ordinance, rate control and volume control practices are required when 15,000 square-feet or more of land is disturbed on site. The exact rate control and volume control practice will be designed as additional information about the disturbed area and existing conditions of the site are provided. We await further direction regarding the use of an underground tank or surface detention facility. As noted under the sanitary sewer section, we are hoping to discharge the detention facilities to the existing sewer located in S Prairie Avenue.

4. Water service – The new water service will be designed upon receipt of the current topographic survey. The landscape plan from 1999 indicates a water main is located within South Prairie Avenue (to the east of the proposed annex.) Our goal would be to connect to this water main to avoid impacts to the west of the annex.

5. Electricity/Gas/Telecom – The location of the internal connection and service routing to be determined and coordinated with the respective utility provider and MEP.

Erosion Control

During construction, erosion control measures shall be installed and maintained until stabilization or completion of the proposed improvements. The Volume Control areas shall be protected from all contaminants. All erosion control measures and operations shall comply with IEPA requirements.

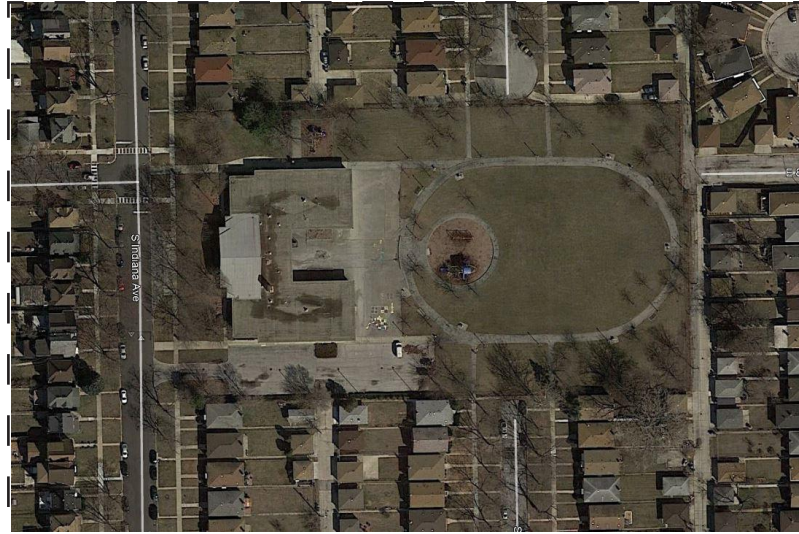
Permits/Approvals

Department of Buildings – Stormwater Management and CDOT requirements

Miscellaneous / Pending RFC's / Design Considerations

- Pending – Geotechnical investigation is being conducted to determine the conditions of the existing underlying soil.
- Pending – Topographic survey is being conducted to determine existing conditions and utility information.

CIVIL - SUMMARY



4- I.1

The existing school is located on South Indiana Avenue between East 88th Street and East 89th Street. The property is approximately +4.79 acres and contains a one-story school building, HMA parking lot, HMA playground, a grass playfield, and two playlots. The playlots are located to the north and to the east of the existing building. The HMA parking lot is located south of the existing building and access is provided via Indiana Avenue. The parking lot contains 2 Handicap Spaces and 33 regular spaces for a total of 35 parking spaces. A Handicap accessible entrance is located at the southeast corner of the school adjacent to the handicap parking spaces. The primary entrance on the north side of the school is also handicap accessible.

The projected new FTE for the site is 30. The parking required for the site based on current zoning requirements is 1 space for every 3 employees plus additional parking and drop-off spaces as determined by Department of Zoning and Land Use. Therefore, the total parking required upon completion of construction is 10 spaces. The required parking is less than the existing number of spaces; therefore, additional parking is not required.

CIVIL - OBSERVATION



4- 2.1

Figure 4-2.1: The existing parking lot has 2 Handicap Spaces adjacent to the handicap accessible entrance at the southeast corner of the school. Based on our field observation, the slope of the parking spots appears to exceed the 2% allowable cross slope per CDOT requirements (to be verified upon receipt of the topographic survey). We recommend re-constructing this area to meet current ADA standards.



4- 2.2

Figure 4-2.2: One of the existing Handicap Spaces does not have the required ADA signage. The ADA signage should be installed.

CIVIL - OBSERVATION



4- 3.1

Figure 4-3.1: Handicap accessibility to the southeast entrance of the school is provided along the existing sidewalk to the north of the parking lot. This sidewalk also connects to S Indiana Avenue, providing pedestrians access to the school and amenities on the east side of the school. This sidewalk does not meet current ADA standards for the pedestrians walking from Indiana Avenue. It also appears to not meet current ADA standards from the handicap parking spaces to the school (to be verified upon receipt of the topographic survey.) We recommend removing and replacing the sidewalk to meet current ADA standards.



4- 3.2

Figure 4-3.2: There is an existing chain link fence along the east side of the property that is tilting over. Based on our field observation, we recommend removing and replacing or repairing approximately 100 lineal feet of the fence starting from the northeast corner.

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James E. McDade
CLASSICAL SCHOOL

FACILITY ASSESSMENT

5 LANDSCAPE

LANDSCAPE - SUMMARY



5- 1.1

The site is comprised of a landscaped front yard to the west, a parking lot to the south, a small playground to the north and a large playground and oval walking path surrounding a lawn to the east. There is a small space created within three sides of the building, which contains two raised planters and is open to the playground and lawn to the east. This space will be largely enclosed due to the new addition, which may pose some safety risks unless closed off with a fence and gate. The front yard to the west is in good condition, but the trees could use pruning. The parking lot to the south is in fair condition, but will need some modification with the addition of a new trash enclosure. The north playground space will be replaced, but the adjacent trees need pruning, the adjacent fence is chipped throughout and there is a fairly low hanging power line cutting across the space. The lawn to the east is in good condition, but there are several broken/missing site lighting fixtures as well as missing site furnishings.

LANDSCAPE - OBSERVATION



5- 2.1



5- 2.2



5- 2.3

Figure 5-2.1: Trees in front of school to the west could use pruning to promote continued good health of trees.

Figure 5-2.2: Several shrubs are dead in hedge at northwest corner of the school.

Figure 5-2.3: Blue railing at main entrance is chipped and railing is rusted. There appears to be no structural issues but properly sanding and repainting is recommended.



5- 2.4



5- 2.5

Figure 5-2.4: Accessible entrance signage is broken and missing pieces.

Figure 5-2.5: The existing Ash tree is just west of the north playground, is dead with sucker and poisonous weed growth beneath. It is recommended to remove the weeds and dead Ash tree, grinding out the stump to a minimum depth of 18”.

LANDSCAPE - OBSERVATION



5- 3.1



5- 3.2



5- 3.3

Figure 5-3.1: Ornamental fence west of the north playground has chipped paint and exposed metal beneath the finish. There appears to be no structural issues but properly sanding and repainting is recommended.

Figures 5-3.2 and 3.3: Power lines extend over the north playground. Lines appear to be out of reach from current play equipment, but relocating lines is recommended.



5- 3.4



5- 3.5

Figures 5-3.4 and 3.5: The sixteen (16) existing site lighting is in various states of disrepair with only four (4) of the lights to the south of the circulation path and one (1) to the north appear to be in good working order. Several lamps are broken (3), not working (2), or missing entirely (4). The two (2) spotlights directly west of the east playground were not on and could not be assessed if they are in working order.

LANDSCAPE - OBSERVATION



5- 4.1

Figure 5-4.1: There is a utility with a missing cover located within the east lawn near the circulation path on the east.



5- 4.2



5- 4.3

Figures 5-4.2 and 4.3: There are five (5) exterior chess tables situated around the east circulation path, all of which have broken or missing seats.

LANDSCAPE - OBSERVATION



5- 5.1

Figure 5-5.1: There appears to be ample room for the proposed trash enclosure, which should not affect any parking counts.



5- 5.2

Figure 5-5.2: The accessible parking spaces do not appear to meet current standards and are missing signage.



5- 5.3

Figure 5-5.3: There is an existing chain link enclosure in the middle of the parking lot on the southern edge that does not appear to be used. The space could be used for a trash enclosure if large enough to meet school needs or could be converted to landscape island in the future to meet landscape ordinance.

LANDSCAPE - OBSERVATION



5- 6.1



5- 6.2

Figures 5- 6.1 and 6.2: The southern swing gate is broken off its hinges. The northern swing gate appears to lean and likely does not operate properly.



5- 6.3

Figure 5-6.3: Current parking lot does not appear to meet landscape ordinance. If new pavement is to be installed, parking lot will need to be updated to meet the ordinance.



James E. McDade
CLASSICAL SCHOOL

FACILITY ASSESSMENT

6 STRUCTURAL

STRUCTURAL - SUMMARY



6- 1.1

DMA Structural conducted a visual structural assessment of McDade Classical Elementary School. The building structure was observed from the first floor rooms and corridors, as well as the exterior. All exposed structural elements were observed to be in excellent condition. There were no visible signs (e.g. floor slopes, wall cracking, out-of-plumb construction) of damage to the main structural framing system. In general, the school has been well maintained over the years, and structurally, there are no areas of concern or elements in need of immediate repair.

STRUCTURAL - OBSERVATION



6- 2.1

Figures 6-2.1 illustrates a condition at a limestone window sill where vertical cracks have formed over time, and the bottom of the sill has spalled and broken off. This cosmetic type of deterioration of the limestone should be expected over the life of the building, and is not typical of all window sills of the building. There were no signs of water infiltration or other environmental issues with the sills. It is recommended that the cracks be packed with grout, as seen in many instances at existing cracks, with the sills being replaced if cracks appear to penetrate inwards inside the building, and/or the overall thickness of the sill has been reduced significantly.



6- 2.2

Figures 6-2.2 illustrates the condition at the top of concrete foundation wall above grade. There were no signs of damage or water infiltration as a result of these hairline cracks. It is recommended that the cracks be grouted as seen in many instances around the perimeter of the building.

STRUCTURAL - OBSERVATION



6- 3.1

Figure 6-3.1 illustrates the condition of brick veneer where mortar has been reduced, allowing the bricks to shift and develop further deterioration and cracking within the mortar beds. It is recommended that tuckpointing occur at various locations around the building where the non-structural brick veneer is shifting.



6- 3.2

Figure 6-3.2 illustrates a localized abnormality at the top of concrete foundation wall for the northeast corner of the southern half of the building. The original 90 degree corner of the wall has been damaged to the point where reinforcement is exposed to the elements, and the brick veneer has fallen off. A repair to the corner is recommended such that a portion of the wall is reconstructed on both sides of the corner. This would likely entail sawcutting or chipping away the concrete to create a clean surface, inspecting and grinding off the rust of the exposed reinforcement, forming a new portion of the concrete wall to match the original extents and to resupport the brick masonry veneer above.

STRUCTURAL - OBSERVATION



6- 4.1

Figure 6-4.1 illustrates the east façade on the north half of the building where the proposed annex is planned to connect. There are no observable structural issues at the existing exterior wall to preclude the annex to be positioned adjacent to the façade. Partial demolition of non-structural items along this façade is likely to be acceptable.



6- 4.2

Figure 6-4.2 illustrates the existing exit (Exit #2) that is proposed to be demolished to create a continuous corridor through the existing building and into the new annex. The structural opening in the masonry load bearing wall creating the framed out door appears to be in excellent condition, allowing removal of the architectural double-door, windows, and concrete stoop to be easily removed without impacted the structural integrity of the wall. The existing steel lintel above the door appears to be in excellent condition – no signs of corrosion, deflection, bending, out-of-plumbness. It is recommended that this be left in place as is unless the opening size needs to be increased.



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7 ARCHITECTURAL

ARCHITECTURAL - GOALS

October 26th, 2018

Design Goals:

The renovation and new construction work at McDade Classical School is intended to provide the school with improved conditions for the growth and success of their students.

Existing Conditions:

The overall goal of the renovation work within the existing building is to update finishes and repair existing amenities which limit the needs of the school. The largest focus of the renovation will be the conversion of the existing cafeteria/gymnasium into a hybrid kitchen as well as an updated cafeteria/multipurpose room. The space required for the Hybrid kitchen will be achieved by absorbing adjacent storage spaces near the current cafeteria. In addition to this expansion, the kitchen and cafeteria will receive finish upgrades, acoustical treatments and a new HVAC system to accommodate student and staff needs.

Further building renovations will target areas where finish upgrades of flooring and ceiling tile are needed. The walls of classrooms and corridors are to receive fresh coats of paint to revitalize each space and create a cohesiveness throughout the school. All classroom ceilings are to be repainted as part of the scope of work. In addition, all door frames and doors are to be refinished and new door hardware is to be installed. Lastly, new lockers are to be provided to meet current & future enrollment. Existing 99 lockers are to remain and be painted to match the new.

Besides finish upgrades, classrooms will receive new marker boards and tack boards at teaching walls as well as new wardrobe/furniture units at the side walls with cased openings.

In order to meet students of all needs, the existing boys' and girls' toilet rooms will receive full renovations. Restroom upgrades will include CPS standard adult ADA stalls as well as Chicago Plumbing Code compliant plumbing fixtures such as lavatories, water closets and urinals.

Lastly, the roof replacement is limited in scope and will focus on targeting areas of damage. Roof area 1 is a low slop, white modified bitumen roof with localized membrane bubbling along the eastern roof edge. Roof area 2 is a built-up roof (BUR) with a pea gravel ballast. Roof area 2 has blistering occurring in localized areas along the south side of the building as well as at internal drains.

Alternate Scope (Computer Lab/MDF):

In order to provide the CPS standard "island table" layout for the computer stations, the MDF room needs to be relocated to the newly proposed Annex. Power and data will need to accommodate the new table layouts accordingly. New flooring and updated finishes are to be provided in lab.

ARCHITECTURAL - SUMMARY

Annex:

The goal of the new Annex at McDade Classical School is to provide space for the expansion and growth of the Art, Science and Physical Education Programs. Programmatically, the project provides (2) new classrooms with storage spaces, rooms for building support operations and a gymnasium with basketball court and rock climbing wall. Additionally, this expansion will provide the school the space to add a unisex toilet room to serve students of all needs.

Storm water management, topography changes, walking path re-design and playground relocation will be addressed due to the location of the proposed Annex.

Facade studies will be further developed in schematic development. Access to daylighting and views have been integrated into the design and building layout of the Annex.

Exterior Envelope Design Values:

This project utilizes a durable, cost effective exterior envelope with thermal values meeting or exceeding current applicable energy code, including a glazing system with high performance solar heat gain values without adding additional costs.

Glazing Systems

Storefront Basis of Design – EFCO Series 400
IGU, Basis of Design Guardian SNX 62/27 SHGC: 27
AW-60 Performance grade aluminum architectural window integrated into storefront system

Wall System – Basis of Design – UL Design Number V424

Non-Bearing Wall Interior Rating – 1 Hr.

2 Layers High Impact GWB

Non-Bearing Wall Exterior Rating – 2 Hr.

Envelope Wall R-Value – 16.37 min.

4" Brick

1 1/2" Air space

2 1/2" High-R Expanded Polystyrene (XPS)

Fluid Applied Air and Vapor Barrier

5/8" Exterior Sheathing

6" Cold Formed Metal Framing (no insulation)

5/8" Interior GWB (1 or 2 layers)

Roof System

2-Ply Modified Bitumen Roofing System

1/2" Cover Board

2 Layers Polyisocyanurate Insulation (R-30 minimum)

Temporary Roof/Vapor Barrier

5/8" Roof Deck Sheathing

1 1/2" Galvanized Roof Deck over sloped structure (min 1/4" per foot)

Steel Frame Structure

Lateral Force Resistance System

Project Architect

Sarah Bruketta

ARCHITECTURAL - OBSERVATION - INTERIOR



7 - 1.1



7 - 1.2



7 - 1.3

Figures 7 - 1.1 - 1.3

Existing:

- Sealant between ceramic block wall base in and VCT tile in corridor has worn away.
- VCT tile at room entries are cracked, worn or damaged. (estimated 20 tiles per entry)
- Mosaic tiles at vestibules and in restrooms
- VCT damaged or cracked in corridors at cleanouts and floor drains.

Scope:

- Replace VCT tiles at classroom entries and in corridors at cracked tiles
- Provide new sealant at ceramic wall base and VCT in corridors
- Remove mosaic tiles in boys' and girls' restrooms and at connection vestibule into Annex



7 - 1.4



7 - 1.5

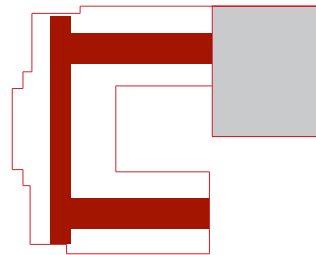
Figures 7 - 1.4 - 1.5

Existing:

- Corridor ACT tile has targeted areas of water damage, or cracks

Scope:

- Replacement of ACT tile is limited in corridors



ARCHITECTURAL - OBSERVATION - INTERIOR



7 - 2.1



7 - 2.2

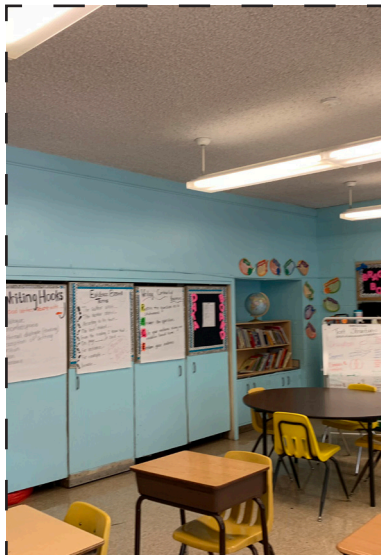
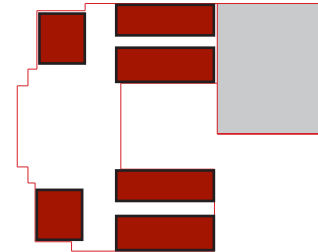
Figures 7 - 2.1 - 2.2

Existing Classrooms, Library or Pre-K:

- Teaching walls have chalkboards, tackboards or marker boards
- Existing walls are either CMU block or glazed block
- Existing classroom ceilings are plaster ceilings with a popcorn texture

Scope:

- Replace chalk boards or damaged tackboards with new marker boards
- All walls and ceilings to be receive new finishes



7 - 2.3



7 - 2.4

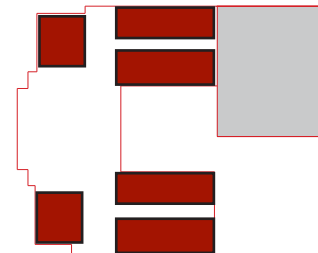
Figures 7 - 2.3 - 2.4

Existing Classrooms, Library or Pre-K:

- Doors to recessed wardrobes limit walking space or broken
- Classroom Doors are in fair condition. No apparent damage

Scope:

- Provide new furniture system to replace wardrobes
- Refinish all doors and provide new door hardware
- Replace door to computer lab and replace with CPS standard



ARCHITECTURAL - OBSERVATION - INTERIOR



7 - 3.1



7 - 3.2

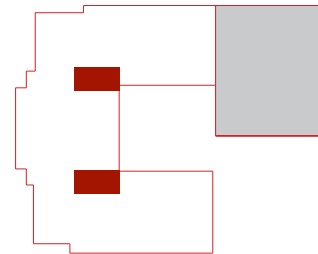
In Figure 7 - 3.1 - 3.2

Existing Restrooms:

- Girls restroom has modified stalls to provide temporary ADA stall
- Girls restroom (7) water closets (3) lavatories
- Boys restroom has (1) ADA stall (1) water closet (8) urinals (4) lavatories

Scope:

- Address Code issues and ADA compliance
- Address finish updates



ARCHITECTURAL - OBSERVATION - INTERIOR



7 - 4.1

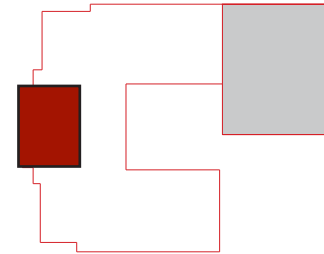
Figure 7 - 4.1

Existing:

- Cafeteria also serves as the school's gym
- 2x4 light fixtures are embedded into hard ceiling of pitched roof
- Windows are not reachable and need to be manually operated
- Poor Acoustics
- Poor Ventilation

New Scope:

- Address space requirements for new cafeteria & hybrid kitchen.
- Address finishes, lighting, acoustics, power needs, mechanical/ventilation needs for space



7 - 4.2



7 - 4.3

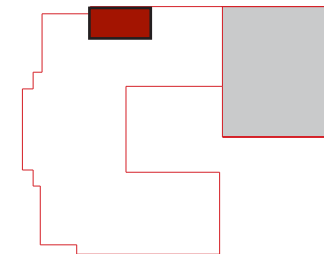
Figures 7 - 4.2 and 4.3

Existing:

- Computer stations face perimeter walls
- Power and Data are provided via wiremold along perimeter walls
- MDF Room located in Computer Lab
- Windows are boarded up to prevent theft

Alternate Scope:

- Relocate MDF room to new Annex
- Address finish updates
- Provide new layout for computer stations & adjust power and data accordingly



ARCHITECTURAL - OBSERVATION - EXTERIOR / ROOF



7 - 5.1



7 - 5.2

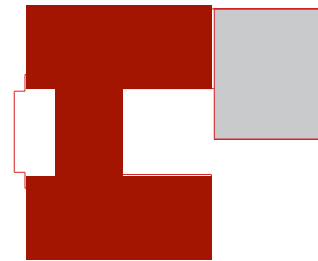
In Figure 7 - 5.1 - 5.2

Existing -

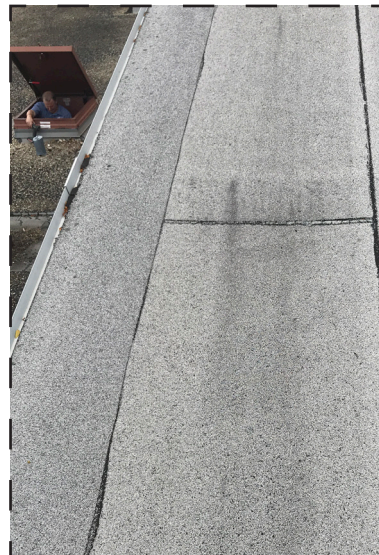
- Roof Area 2 - Modified bitumen at internal roof drains has bubbled
- Roof Area 2 - Built-up membrane has blistered in locations where ballast does not fully cover area.
- Roof Area 2 - Ballast is collecting at roof drain

Scope -

- Locally repair damaged areas



7 - 5.3



7 - 5.4

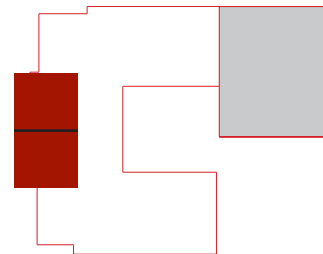
In Figure 7 - 5.3 - 5.4

Existing -

- Roof Area 1 - Wires are left on the roof & tree overhangs roof line to the west
- Roof Area 1 - Modified bitumen membrane is bubbled along eastern roof line on both sides of pitch.

Scope -

- Locally repair damaged areas



ARCHITECTURAL - OBSERVATION - EXTERIOR / ENVELOPE



7 - 6.1



7 - 6.2

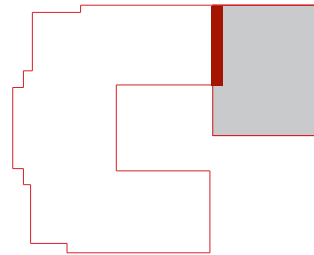
In Figure 7 - 6.1 - 6.2

Existing (Annex Connection Point):

- (3) Existing exterior lights
- (1) Set of exterior doors
- Several electrical cables which run below roof overhang
- Existing signage and existing sound system
- Concrete steps at door entry

Scope:

- Demolition of existing features along exterior wall needed for connection to Annex





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FACILITY ASSESSMENT

8 FIRE PROTECTION

FIRE PROTECTION - SUMMARY



8- 1.1

Existing Conditions:

Originally constructed in 1961, the main building is currently not served/protected by a sprinkler system. Therefore there is not an existing fire protection service for the current kitchen/cafeteria/gym space. Refer to FA assessment.

Annex:

The proposed development of the Annex will be single story which will determine the design of the sprinkler systems and the need for a fire pump. Fire Protection to be further developed in Schematic Design.

Fig. 8 - 1.1

Existing Kitchen/Cafeteria/Gym



8- 1.2

Fig. 8 - 1.2

Typical classroom ceiling:

Only FA devices on ceiling no FP device

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FACILITY ASSESSMENT

9 PLUMBING

PLUMBING - SUMMARY

The existing building has what appears to be an existing 3" cold water service coming into the building. Exact size could not be determined due to thickened insulation with asbestos likely. There is a gate valve on the rise and water meter on this main cold water line. There is no existing backflow preventer. Downstream of this is a pipe manifold with multiple taps. The first (2) in sequence appear to be 2" cold water taps. Exact sizing could not be determined in field due to insulation. The next (2) taps appear to be 1" cold water taps. Again, exact sizing could not be determined in field due to insulation. The last connection is a 2" tap, which is the dedicated main for the irrigation system.

The domestic water booster pump will be replaced.

The irrigation system is protected by a reduced pressure zone backflow preventer. The internal building components appear to be in good condition. Unsure of exterior lawn sprinkler system condition.

The existing water heater system has (1) gas fired, tank type water heater, hot water recirculation and recirculating pump. The existing water heater system to be replaced with a condensing, high efficiency tank type unit, sized for the existing and new load.

The existing boys and girls restrooms have a mix and match of fixtures. ADA bathroom will require selective demolition for code compliance, including and not limited to removing dead end domestic water and sanitary and vent piping. As well as removing existing wall carriers and stubs in wall.

There is no functioning kitchen and no existing floor mounted grease trap to account for.

The underground sanitary system would be existing to remain in the main building.

To accommodate the additional loads for the annex building, we recommend the following:

Reuse the incoming domestic water service. This would serve the domestic water load of the new addition. The domestic water service would have a new water meter and dual check backflow preventer. The hot water service will be provided by a new high efficiency gas fired tank type water heater with master thermostatic mixing valve and new recirculation system.

The existing domestic water booster pump will be replaced. It will be sized to account for additional GPM load requirements and friction loss.

There will be a new copper pipe domestic water distribution system and recirculation system.

The existing boys and girls restrooms to be renovated. Recommendation to phase and remodel once new restrooms and functional fixtures can account for the existing occupancy/fixture load. Selective demolition will be required for new domestic water distribution tie-in to new fixtures.

Existing classroom sinks do not function properly, in several classrooms sinks have been covered by staff to prevent use. Suggestion to replace existing conditions with similar type sink and faucet.

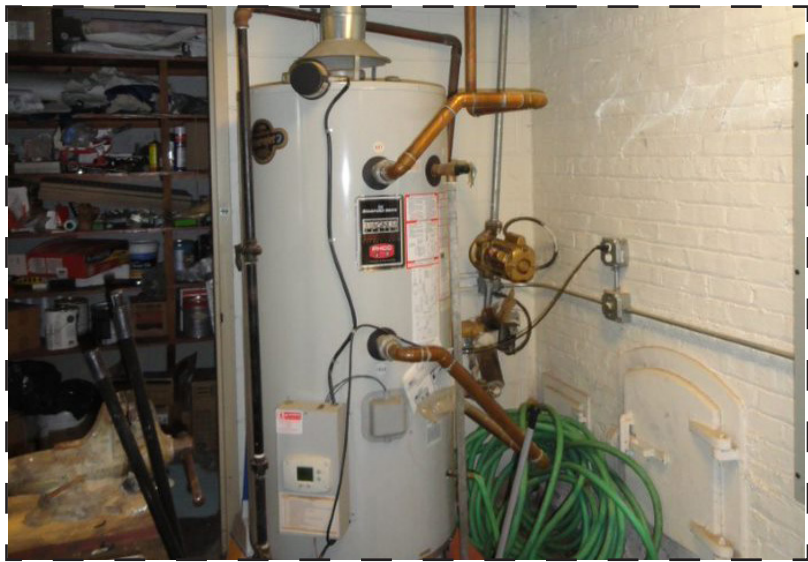
A new underground sanitary piping system will be provided and tie into the existing sewer. Kitchen grease waste will be treated with local grease interceptors.

PLUMBING - OBSERVATION



9- 2.1

Existing incoming water service. Recommend reworking service entry by replacing main gate valve and installed domestic water meter. Also recommend installing dual check back flow preventer. Asbestos abatement will be required.



9- 2.2

Existing water heater service and domestic water booster pump.

PLUMBING - OBSERVATION



9- 3.1

Existing girls toilet room “ADA”



9- 3.2

Existing girls toilet room; fixtures were removed and capped to accommodate “ADA”

PLUMBING - OBSERVATION



9- 4.1

Existing girls toilet room; fixtures were removed and capped to accommodate “ADA”



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FACILITY ASSESSMENT

10 MECHANICAL

MECHANICAL - SUMMARY

Ventilation for the existing building is via induction air units located in each classroom. Each induction unit has an outside air intake/grille located on the exterior of the building, return air opening within the space served, air filter, supply fan, heating coil, and supply air discharge grille at the top of the unit. The induction units are heating only via hot water from the boiler plant. Pneumatic thermostats in each classroom control these units. The existing induction units should be inspected for operation and possible repairs and/or upgrades as needed. The building is exhausted via general roof mounted exhaust fans. The fans exhaust the spaces via ceiling or wall mounted grilles and ductwork. The toilet rooms are exhausted to the outdoors via roof mounted exhaust fans. Based on field observations, one toilet exhaust fan serves the north toilet rooms while another serves the south toilet rooms. It is recommended to replace the toilet room exhaust fans due to the remodel of the existing boy's and girl's toilet rooms. The general exhaust fans are existing to remain and would not be used or extended to serve the new Annex.

Heating for the existing building is via two natural gas fired hot water boilers (each at 1500 MBH) located in the boiler room. The water (30% propylene glycol) temperature generated by the boilers is 115°F, per the building engineer; though, available existing drawings at the time of survey state 170°F entering water temperature and 200°F leaving water temperature. The heating hot water is distributed to the induction units, corridor cabinet heaters, and other heating devices throughout the building. According to the building engineer; only one boiler operates at a time, but on occasion both boilers have run to maintain building temperature during severe winter conditions. The boiler name plate states a year built of 2006. Both boilers appear in good working conditions, though the circulating in-line pump of one of the boilers was leaking.

There is no central cooling system or cooling plant serving the building. Cooling is provided by window AC units at each classroom. The units remain installed year-round, but are only operational during the cooling season. The units serving the classrooms were recently installed (2018).

The building engineer stated occupant complaints of overheating in the existing gym. Evaluation of the re-purposing of the gymnasium into a warming kitchen should consider providing cooling to the space via a forced air unit and exhaust of the kitchen as required. Location and type to be determined based on the new layout of the space.

The incoming natural gas service to the building is assumed to be low pressure (~5 to 7 in. wc.) from the utility at ~4" pipe size and increased to 6" inside the building. The gas meter is located inside the building, within the storage room southeast of the existing gymnasium. The piping is routed from this storage room and exposed through the gymnasium, across the corridor ceiling and into the mechanical room. Natural gas is distributed to the boilers, domestic water heater, and one natural gas booster (9,600 ICFH at 10.4 in. wc. pressure; based on model number). Per the building engineer, the gas booster is not used. A bypass around the gas booster is installed in the piping. Consideration for a gas booster is to be evaluated based on the expected natural gas usage of the new warming kitchen and pressure requirements.

Controls for the existing building include an Alerton computer station used to monitor the boilers plant only. There is no central automation system in the building. An air compressor is located in the mechanical room and appears to be working properly. The existing controls are existing to remain and would not be used or extended to serve the new Annex.

MECHANICAL - SUMMARY

New System

The programming for the new Annex is expected to include classrooms (art and science), unisex toilet room, lockers, and gymnasium. Ventilation for these spaces is to be provided by new roof top units; assuming one unit for the Gymnasium and another for the remainder of the spaces. Cooling for these spaces is to be provided by the roof top units; they shall include a packaged cooling section with refrigerant cooling coil and air-cooled condenser. A natural gas fired furnace section shall also be included in the roof top units.

Heating for the new spaces can be accomplished in different ways. One method is to expand the existing boiler plant, while another would be to provide an independent boiler plant within the new Annex. Expansion of the existing boiler plant would involve: replacing the existing boilers and pumps with larger units and extending new hot water supply and return piping from the existing boiler plant to serve the new Annex (piping to be routed above the corridor ceiling). An independent boiler plant within the new Annex would involve: providing new boiler(s), pump(s), and ancillary equipment, and extending the natural gas service from the existing building to the new Annex (either above the corridor ceiling or on the roof); the existing boiler plant would remain as is. Both options would deliver heating hot water to the new Annex radiant heating equipment; ceiling panels, radiators, cabinet heaters, etc.

MECHANICAL - OBSERVATION



10- 1.1



10- 1.2

Figure 10-1.1: Typical induction air unit at each classroom. Units are heating only with outside air intake/grille. They appear original to the building and should be evaluated for proper operation as well as operation with a condensing boiler heating plant.

Figure 10-1.2: Exterior building wall; induction unit outside air intake/grille.



10- 1.3



10- 1.4

Figure 10-1.3: Typical window AC unit. Units were installed within the year; 2018.

Figure 10-1.4: Exterior building wall; window AC unit mount.

MECHANICAL - OBSERVATION



10- 2.1



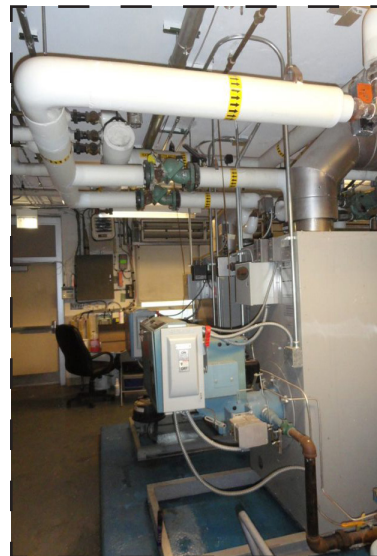
10-2.2

Figure 10-2.1: Indoor cabinet heater; located in boys toilet room. Similar unit mounted in the girl's toilet room and corridor.

Figure 10-2.2: Existing hot water heating boilers. The boiler name plate states 2006 for year built. The existing plant can either be upgraded to serve the new Annex; the existing boilers would be replaced with larger units and it would be advantageous to consider condensing boilers at this point as well as these units have can be more efficient than the existing boiler in use. This upgrade would include evaluating the existing heating equipment to operate with condensing boiler water temperatures



10- 2.3



10-2.4

Figure 10-2.3: Heating hot water pumps and supply main header. Should the existing plant be upgraded, a new header may be required, or the existing header would need to be increased. The existing distribution would remain, but an additional branch to serve the new Annex would be required. Existing pump performance is 165 GPM, 40 ft HD, and 3 HP. Pump size to be evaluated and replaced as necessary based on boiler plant upgrades.

Figure 10-2.4: Heating hot return main header. Should the plant be upgraded, a new header may be required or the existing header would need to be increased. The existing distribution would remain, but an additional branch to serve the new Annex would be required.

MECHANICAL - OBSERVATION



10- 3.1



10- 3.2

Figure 10-3.1: Boiler room combustion air intake. There are four louvers that open when the boilers are in operation. It may be possible to keep the existing louvers as shown; these would need to be evaluated further and the design progresses.

Figure 10-3.2: Boiler flue. Should the plant be upgraded, the size and material of flue is to be evaluated to operate with condensing boilers.



10- 3.3



10- 3.4

Figure 10-3.3: Boiler plant ancillary equipment; expansion tank, pressure fill, and chemical treatment. Equipment to be evaluated based on plant modifications as required.

Figure 10-3.4: Existing natural gas boosters. It is recommended that a functional test of the gas boosters be performed to determine the need for the boosters. A new connection would be recommended downstream of the boosters to serve the new Annex equipment.

MECHANICAL - OBSERVATION



10- 4.1



10-4.2

Figure 10-4.1: Existing incoming natural gas service from utility. Assumed to be low pressure (~7 in.wc.).

Figure 10-4.2: Existing incoming natural gas meter.



10- 4.3

Figure 10-4.3: Existing roof mounted exhaust fan serving boys toilet room. Recommended to replace the fan with along with the renovation of the toilet room (same for girl's toilet room).



James E. McDade
CLASSICAL SCHOOL

FACILITY ASSESSMENT



|| ELECTRICAL

ELECTRICAL - SUMMARY - POWER NORMAL

The existing building is served by a pad-mounted 75kVA transformer (good for 260A at 208/120V), which provides power to a two-bay service distribution, one for incoming feeders and the 800A-frame main circuit breaker with a 400A trip (per original drawings) and the other serving the building loads. The load-side has a mixture of old fused switches and relatively newer circuit breakers, the latter installed as part of the most recent building renovations. The main breaker and fused switches appear to be building original from ~1960. There are two existing 60A fused-switch spares and one 175A spare circuit breaker installed on the main distribution.

The branch panels in the building are a mixture of older and newer panelboards, generally circuit-breaker based. Typically, the newer panels serve mechanical loads during recent rehabilitations as well as the MDF room, while the older panels serve the miscellaneous classrooms and offices. Older distribution also appears to use cloth wiring and having no equipment grounding conductor with the feeders. A phased replacement of older equipment and their feeders should be considered for the long-term plans of the building.

One panelboard in the mechanical room was at an elevated location, requiring climbing the ladder to the roof to operate. This is a code violation and should be relocated at an appropriate location within the mechanical room.

There are no reported issues with nuisance tripping within the building; however, given the age of the main circuit breaker and presumed lack of maintenance it can't be ascertained that it is still operating properly. We recommend that the main circuit breaker be replaced and the rest of the main distribution having a full set of testing and maintenance performed on it. The existing fused switches should either be replaced with new or replaced with circuit breakers.

The current peak demand load (summer) is 68kVA (189A at 208/120V), although it is not known if this fully accounts for the new air-conditioning load installed this past summer. While the main board can accommodate 400A, there is limited ability for additional loads to be installed without major modifications. Coupled with the significant demand increase between the warming kitchen and the associated HVAC for it, the existing services are not adequate to accommodate both the new annex and the new kitchen.

ELECTRICAL - SUMMARY - POWER NORMAL

New Systems

In line with CPS' general preference to provide separate power to building annexes and the lack of available space in the existing distribution, our strongest recommendation would be to provide a second set of feeders tapped off the service transformer secondary to provide power to the new annex. ComEd may either upgrade the size of the existing pad-mounted transformer to accommodate the additional loads, and/or provide a separate transformer to serve it.

The power distribution system will include a main distribution panel (800A nominally) which will sub-feed separate panels for lighting, general power, other specialty power if required, and smaller mechanical systems; large mechanical systems will be fed directly from the main distribution. Isolated grounding systems will be provided where required.

To accommodate changes in the existing multi-purpose room to add a warming kitchen, there are two options available, assuming a separate service for the annex is sought:

Option #1: Upgrade the existing service (e.g. from 400A to 800A) and use that to serve the new warming kitchen. This will resolve both the issues regarding the existing condition of the equipment while accommodating the new loads. The main drawback to this is that it will require the main building to be taken offline during a summer, and that due to the poor condition of the older building loads, many of the existing feeders will require replacement as well, increasing overall construction costs.

Option #2: Increase the size of the anticipated annex service (e.g. from 800A to 1200A) and use that to serve the kitchen. The main drawback

to this option is the need for longer feeder runs routed in the hallway between the annex and the kitchen above the dropped ceiling. However, this will require no work on the existing service.

All service options should be coordinated with the mechanical design for any significant changes to the existing mechanical systems and their required electrical loads, as this may increase or decrease the existing power requirements on top of the additional requirements for the annex.

ELECTRICAL - OBSERVATION - POWER NORMAL



11- 1.1

Figure 11-1.1: Existing main distribution with one section for incoming feeders and the 800AF/400AT main breaker; and another section for loads. Besides newer circuit breakers installed during recent work, the equipment itself is old and building original. It is not likely that the main breaker has been maintained and exercised and there's a possibility that it does not operate properly anymore. There is limited capacity to install additional loads and the anticipated power draw for the new warming kitchen may exceed the rating of the board. Should CPS not want the warming kitchen to be fed from the annex, the existing main distribution will require upgrades to accommodate the new loads. Note: the existing feeders for the older equipment use cloth wire without grounding conductors; these will need to be replaced under this option.



11- 1.2

Figure 11-1.2: Existing 75 kVA pad-mounted transformer. With a 68kVA power draw, it has insufficient capacity to serve the existing building as well as the new annex and warming kitchen. A transformer upgrade and/or additional service transformer (for the annex) will be required and shall be coordinated with ComEd.

ELECTRICAL - OBSERVATION - POWER NORMAL



11- 2.1

Figure 11-2.1: Typical power panel that appears newer. No major work should be required if there are no known issues beyond standard maintenance.



11- 2.2

Figure 11-2.2: Mechanical room panel does not appear to have any grounding with its branch feeders, although one is brought with the incoming feeders. While use of raceway is generally permitted for the grounding, it is generally not recommended. CPS should consider whether its feeders should be replaced to include equipment grounding conductors on newer equipment.

ELECTRICAL - OBSERVATION - POWER NORMAL



11- 3.1

Figure 11-3.1: Typical older power panel. these panels are significantly old and likely use cloth wiring and have no equipment grounding conductors. Phased replacement for panels and associated incoming and branch feeders (with grounding) is recommended for planning of the building's long-term.



11- 3.2

Figure 11-3.2: Typical panels in the hallway serving the interior of the building. With a few exceptions, these panels are significantly old and likely use cloth wiring and have no equipment grounding conductors. Phased replacement for panels and associated incoming and branch feeders is recommended for planning of the building's long-term.

ELECTRICAL - OBSERVATION - POWER NORMAL



11- 4.1

Figure 11-4.1: Panelboard that is only operable by climbing a ladder within the mechanical room. This is a serious code violation and should be replaced and relocated elsewhere in the mechanical room. It should be noted that this panel appears to serve the emergency loads of the building (along with other loads); however, this panel is directly served by the main distribution and is not fed via the transfer switch. Refer to commentary of the emergency power for more information.



11- 4.2

Figure 11-4.2: Existing ATS. For this section, the point of interest is the presence of cloth wiring and no equipment grounding conductors. While other equipment was not able to be opened, it is expected that the older distribution equipment shares similar conditions. We strongly recommend phased replacement of the building's feeders to replace the cloth wiring and provide equipment grounding conductors; this should be coordinated with our recommended replacement of the panelboards itself.

ELECTRICAL - SUMMARY - POWER EMERGENCY

Per Chicago Code, the school requires a System II emergency power system that consists of a normal power source and at least one auxiliary source that is independent of utility power (e.g. approved battery units or a generator); CPS standards are to use individual battery units for emergency lights under this system for elementary schools.

The building appears to have had an emergency system via an automatic transfer switch (ATS), with one feed from the main switchboard and a separate feed directly from the utility. This ATS is severely aged and has an audible hum emanating from it. However, it is not clear that this ATS serves emergency loads, as a separate panel—the same panel flagged for being only operable from a ladder—has a direct connection to the main switchboard only and per its directory serves the fire alarm and emergency lights along with other additional loads (e.g. select A/C units and hardware). The ATS has two outgoing feeders, one was not presently traceable but does not serve the noted emergency panel, the other via an old Ryan Box seems to feed security systems.

The fire alarm system has battery backup as do all exit signs, while the emergency lights are via battery pack units that turn on during loss of power. Per Chicago Building Code, these units are already code compliant without the transfer switch.

Given the age of the transfer switch and its not serving any emergency loads—emergency lights, exit signs, and fire alarm—we recommend for its removal. Any loads currently served by it should be re-served by existing normal power, or be provided with small UPS units if some

degree of standby power is desired (e.g. for security systems).

New Systems

The new annex will use CPS standard EBU's and Exit Signs with 4-hour battery packs in line with the existing code-required System II emergency lighting.

The existing building does not presently have a fire pump. Per Chicago Building Code, a building of this type will not require one if the existing and new construction are of Type I-A or I-B; otherwise the building may be at the threshold for requiring one for being in excess of allowable square-footage. Should one be required, a new fire pump service will be required, sized by fire protection trades. The fire pump will presumably be located in the new annex, sized to feed the existing building as well as the annex.

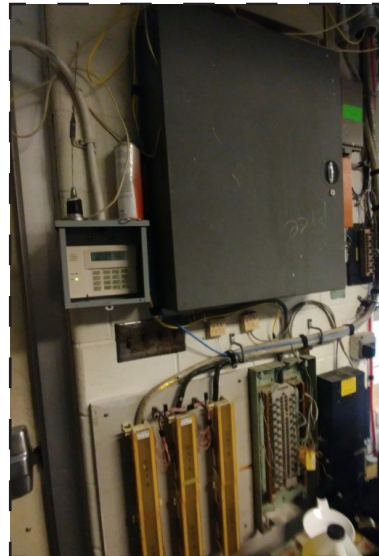
ELECTRICAL - OBSERVATION - POWER EMERGENCY



11- 6.1



11- 6.2

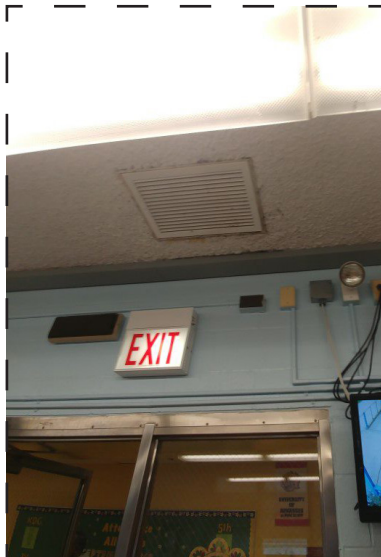


11- 6.3

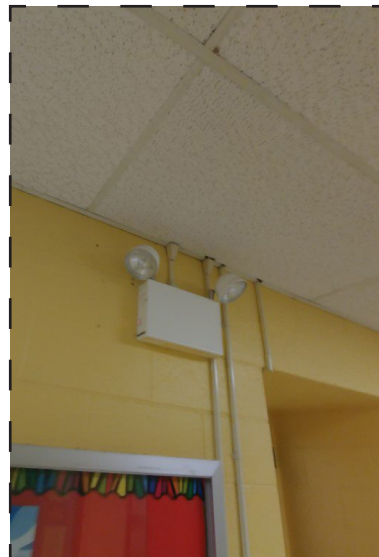
Figure 11-6.1: Existing ATS. This is a building-original system and no longer appears to serve the actual emergency loads in the building. One feeder goes to a Ryan Box that seems to serve small security loads, the other could not be traced at this time. This transfer switch should be removed with its loads transferred to normal power, providing a UPS system if standby power is desired.

Figure 11-6.2: Meter for the incoming “emergency” service.

Figure 11-6.3: Security and IT loads that is suspected to be fed by the transfer switch. These should be re-fed by the normal power system, providing a small UPS system if standby power is desired.



11- 6.4



11- 6.5

Figure 11-6.4: Typical existing exit sign. Per provided documentation these appear to be around 10-15 years old. Regular testing shall be provided to ensure that the batteries are still able to hold the required run-time. CPS may elect to replace these signs one-for-one in coordination with the annex construction to provide a common style throughout the building.

Figure 11-6.5: Typical existing EBU units. Per provided documentation these appear to be around 10-15 years old. Regular testing shall be provided to ensure that the batteries are still able to hold the required run-time. CPS may elect to replace these EBU's one-for-one in coordination with the annex construction to provide a common style throughout the building.

ELECTRICAL - SUMMARY - LIGHTING

The existing building uses fluorescent lighting throughout the interior with T8 lamps. The building has some degree of lighting controls via several astronomical time clocks, likely separately serving the interior and exterior lights.

We recommend a phased replacement of the existing building fixtures with new LED equal to those of current CPS standards, as well as providing new lighting controls compliant with present energy codes. Beyond providing energy savings, it will help preserve a common aesthetic between the existing school building and the new annex.

Existing site lighting consists of building-attached lights and pole-fixtures. Most if not all these fixtures appear to be HID type. The building-attached lights had those at the building entrances on and those elsewhere off (presumably to come on at night). Some of the pole lights appeared to be on despite the daylight hours and many have a significant build-up of leaves inside the luminaire. We recommend the replacement of the HID fixtures with more efficient LED fixtures. With the construction of the new annex and the need for more centralized lighting controls, we recommend that the exterior lighting be integrated into the new lighting control system at some point in the future.

New Systems

The new annex will use LED lighting with advanced lighting controls to meet LEED and energy code requirements. CPS standard types of fixtures will be used based on the space usage.

New external building-attached lighting will be installed on the new annex where required. All new site lighting should be connected to the lighting control system for time scheduling with optional photocell override.

Some of the existing poles will need to be relocated or removed to accommodate the footprint of the annex. Relocated fixtures are recommended to have their luminaires replaced, preferably with LED.

Refer to the “Power-Emergency” section for discussion of exit signs and battery packs.

ELECTRICAL - OBSERVATION - LIGHTING



11- 8.1

Figure 11- 8.1 and 8.2: Typical existing lights within the building. Generally, the lights are fluorescent (T8). There are time clocks installed for the building, but no other advanced lighting controls. To provide a common lighting standard to the building in coordination with the new annex construction, we recommend replacement of the existing lights with new LED-type of a standard CPS fixture, along with the installation of lighting controls in line with current energy codes and standards.



11- 8.2

ELECTRICAL - OBSERVATION - LIGHTING



11- 9.1

Figure 11-9.1: Time clocks to provide controls to hallway lights and exterior lights. When CPS performs a phased replacement of the existing building's lighting, we strongly recommend the replacement of the lighting controls to be more in-line with current energy codes.



11- 9.2

Figure 11-9.2: Existing building attached lighting. Those at the entrances were on, while those elsewhere were off (presumably to turn on at night). These older HID fixtures should have a phased replaced with new LED.

ELECTRICAL - OBSERVATION - LIGHTING



11- 10.1

Figure 11-10.1: Existing outdoor acorn style lights. While the concrete base appears to be in good shape, the same cannot be said of the luminaires. Some of these were on despite it being day-time, and many had their luminaires filled with debris. Given their poor condition, we recommend the replacement of the heads with new LED to coincide with the annex construction. Newer LED heads at a minimum should be used for any relocated or new poles installed as part of the project.

ELECTRICAL - SUMMARY - IT/AV/MISC. LOW VOLTAGE

The basement has a telecom service in the boiler room. Per current programming, CPS may be electing to provide a new MDF room in the annex to expand this space for a renovated computer lab. This service will likely be moved to the new annex under this option, with the existing MDF room becoming an IDF room.

The building has a single MDF room on the North end of the building within a computer lab closet to serve all the building's current IT loads. The space appears to be well-cooled and of sufficient power and spatial capacity to meet present needs. Should the MDF room be relocated, CPS should be aware that this would require significant work with replacing the existing data drops, and the additional lengths for the South end of the building may be more than recommended maximum distances, requiring a small IDF room on the South end.

Security systems include access control and security cameras at select locations. The existing systems appear adequate at this time. CPS should consider where additional security items would be desired and incorporate them into the building's upgrades. Cameras and building access control should be provided to the annex per CPS standards.

The existing public address (PA) system is old and the staff has noted issues with the sound quality at its speakers. While it has a master clock, all existing building clocks are hard-wired with syncing to a radio/satellite system for time setting. We recommend for the replacement of the existing PA systems to address both the existing sound quality issues and to provide additional capacity to serve the new annex.

New Systems

A new MDF/IDF room shall be installed in the new annex. This will house the IT loads for the annex and may serve as the new MDF room for the school under proposed CPS option. Data jacks will be installed where required.

A new security control panel will also be installed in the annex to serve its intrusion detection systems. Motion sensors, keypads and CCTV cameras will be installed per CPS standards.

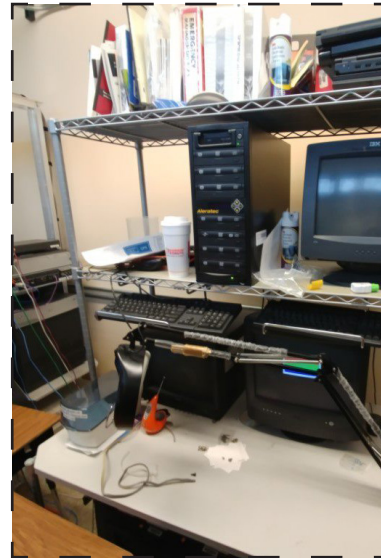
The existing central PA station is strongly recommended to be replaced with new. Existing systems shall re-fed by the new panel, along with new. The annex will have speakers and call buttons as required. It will be to CPS discretion if the existing clocks should be replaced and tied into the proposed new central station.

Additional clocks will be required in the Annex. These should be chosen to match the existing building, whether or not the master clock system is implemented.

ELECTRICAL - OBSERVATION - IT/AV/MISC. LOW VOLTAGE



11- 12.1



11- 12.2

Figure 11-12.1: Telecom service entrance. CPS should confirm existing capacity and its ability to handle the additional loads to the annex, unless the MDF is intended to be moved to the annex.

Figure 11-12.2: Existing first floor MDF room. The closet itself is inconveniently within the computer lab, but otherwise appears to be in good working condition without noted issues. CPS should determine if this shall sub-feed the annex's IDF room, become a sub-service to a new MDF room in the annex, or keep the two IT services separate.



11- 12.3

Figure 11-12.3: Existing PA head-in equipment. Per conversation with building staff, the PA system is old and the sound output is very poor. Its replacement is strongly recommended to provide better sound and capacity to serve the new annex along with the existing building.



11- 12.4

Figure 11-12.4: Typical security camera. The quantities and locations appear to be adequate. Some changes will likely be required in line with the annex construction.



11- 12.5

Figure 11-12.5: Typical clock. The building clocks are not connected to a master system, instead having separate power via hard-wired connection or battery. However, they do have an external communication for time-setting.

ELECTRICAL - SUMMARY - GROUNDING & LIGHTING PROTECTION



11- 13.1

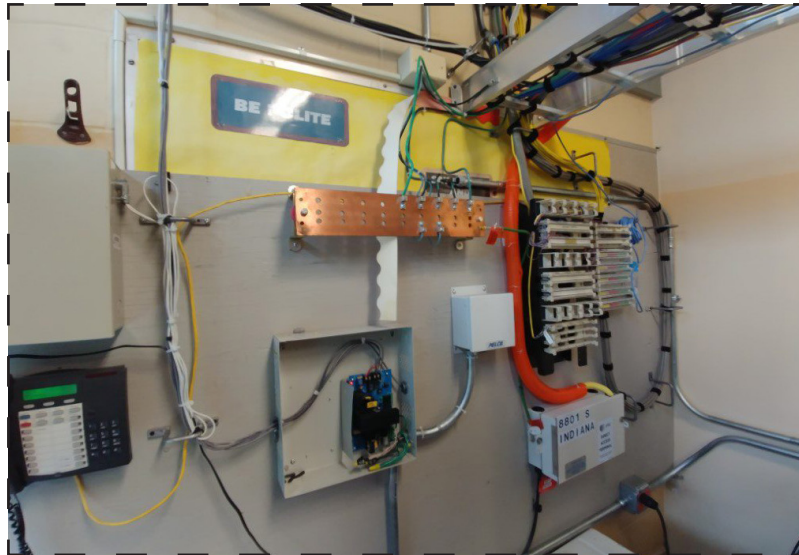
The building appears to have some degree of grounding, as the MDF room has a grounding bus. However, it is likely that the older distribution equipment does not have grounding conductors. With the limited ability to open equipment during survey the team could not ascertain whether the building is fully grounded. Further assessment of the building's electrical distribution is encouraged.

The building has no lightning protection; however, the building is only one-story tall with a somewhat limited footprint and there are taller buildings within the vicinity. A new lightning protection system is not necessary.

New Systems

All feeders in the annex will have an equipment grounding conductor. Should the annex have a separate service drop from ComEd, the main panel will have a bonded neutral and a grounding electrode system per electrical code.

ELECTRICAL - OBSERVATION - GROUNDING & LIGHTING PROTECTION



11- 14.1

Figure 11-14.1: Ground bus bar with connections in the MDF room.



11- 14.2

Figure 11-14.2: Roof lacks lightning protection, but the building likely does not require it.

ELECTRICAL - SUMMARY - FIRE ALARM

McDade Elementary currently has a City of Chicago approved Class-I Fire Alarm System. The original system installed is a conventional fire alarm system and not an addressable system as per current standard. The system consists of heat detectors, manual pull-stations and notification devices. There has not been any subsequent renovation of the system since its original installation in 2001.

The fire alarm control panel (FACP) is located in the main admin office. Pull-stations are installed at each exit throughout the building. Visual alarms are installed in every classroom and toilet rooms. Audio/visual alarms are installed throughout the building in corridors and other spaces. City of Chicago city tie is installed within a 100 foot distance of the principals office; however, according to the building engineer, the city tie is inoperable. The existing fire alarm system is not connected to the city tie or a central monitoring station. Although it is not required by code that the fire alarm system be connected to the city tie, it is good practice to do so. At present, the school administrator must physically dial 911 when the fire alarm system goes off.

The system has not been upgraded since original construction. While it appears to be in working condition, the entire system is showing signs of age. Moreover, the fire alarm control panel has been discontinued. At the time of the survey, there were no trouble or supervisory alarms indicated on the control panel. According to the building engineer, the school has not had any nuisance alarms. Existing conventional heat detectors and manual pull-stations are well past their rated life and are in a dire need of replacement throughout the original building. These devices are not supervised by the FACP and there is no way to tell, without a manual test, if the detector or pull-station is operable. Existing notification appliances that are part of the conventional system are also well past their rated life and need replacement.

New Systems

It is highly recommended to upgrade the entire fire alarm system with a new fully addressable fire alarm system along with new notification devices and fire alarm annunciator panel in the existing building. The system shall comply with the City of Chicago Class-I fire alarm system requirements. The upgraded system can be used to serve the same types of devices in the new annex (e.g. heat detectors, audio/visual devices, pull stations). New NAC panels shall be installed to provide circuits for notification appliances, including a separate NAC panel for the annex.

In addition to the building upgrades, the existing city-tie should be replaced with new to make it operable again. The fire alarm system would also be connected to the city-tie for central station monitoring.

Should a fire pump be required with the annex, a stand-alone supervisory system for the sprinkler tamper valves shall be required for the fire alarm system.

ELECTRICAL - OBSERVATION - FIRE ALARM



11- 16.1



11- 16.2

Figure 11-16.1: Existing Simplex conventional (non-addressable) fire alarm control panel. The fire alarm panel was installed in 2001 and has been discontinued by the manufacturer. Also, it is unmonitored by a central monitoring station. We strongly recommend for the replacement of the system in anticipation for the annex construction.

Figure 11-16.2: Existing conventional manual pull-station. Under our proposed upgrades these would be replaced with addressable devices throughout the building. Same shall be performed for other initiating devices (e.g. smoke/heat detectors).



11- 16.3



11- 16.4

Figure 11-16.3: Existing fire alarm horn/strobe installed in the original building as part of the conventional fire alarm system. It is passed its rated life and should be replaced regardless if the recommended addressable system upgrades are implemented.

Figure 11-16.4: Existing Gamewell City-tie Master Box. It is located approximately 50 feet from the main entrance. According to the building engineer, the city tie box is inoperable. Should it be required, it will need to be replaced.



THANK YOU