

Brooke Elementary School Site Summary

Address	3100 E. 4 th Street Austin, TX 78702
Number of Permanent Campus Facilities	1
Original Year of Construction	1954
Total Campus Building Area (combined)	52,282 SF



Introduction

The Brooke Elementary School campus is located at 3100 E. 4th Street in Austin, Texas. Brooke Elementary School was established in 1954, and consists of one building. The one permanent campus building is the Main School Building (BLDG-108A), which includes the administration offices, classrooms, cafeteria, and gymnasium.

Main School Building – BLDG-108A

Building Purpose	Administrative, Classrooms, Cafeteria and Gymnasium
Building Area	52,282 SF
Inspection Date	July 1, 2016
Inspection Conditions	93° - Sunny
Facility Condition Index	



System Deficiency Overview

The following table provides a summary of the systems and their respective conditions found by each discipline.

System	Subsystem	Condition and Deficiency Overview	System Condition Rating
Exterior	Exterior Walls	<p>The exterior walls are brick throughout the school with cast in place concrete above doors and windows. There are concrete sills below the windows. There is glass block and a painted strip of stucco above the covered walkways with painted steel supports periodically on the east classrooms wings. The west side of the school has brick sills at the windows. The main entrance at the front has cast in place concrete panels at the door and a cast in place concrete wing wall that supports the concrete walkway cover above.</p> <p>The exterior walls appear in good condition and are well maintained with good shade provided by overhangs and trees. There are limited areas that require cleaning due to buildup of organic material.</p>	Good
	Exterior Windows	<p>A majority of the exterior windows are updated anodized aluminum frames with single-pane glazing. The remaining windows on the south side of the classroom wings and in the kitchen appear to be original.</p> <p>The windows as a system are in average condition, considering the majority of the aluminum framed windows are in good condition and the older or original windows are in poor condition due to age and sealant failing.</p>	Average
	Exterior Doors	<p>The exterior doors are painted metal with painted hollow metal frames. The main entrance double doors have clear glass vision panels on the upper and lower portion of the doors. The other double doors on the east and</p>	Good

System	Subsystem	Condition and Deficiency Overview	System Condition Rating
		<p>west side of the school have integral side lites in hoolow metal farmes with clear vision glass. The classroom exterior doors have clear vision glass on the top half of the door.</p> <p>The exterior doors are in good condition. There are various types of door hardware throughout the school. There is a mixture of knob, lever, and push/pull type hardware. Facility staff requested the hardware be standardized. The electrical and mechanical room exterior doors are difficult to open and close.</p>	
Roofing		<p>The roofing covering is a modified bitumen system.</p> <p>The roof covering on the school was reportedly replaced five years ago and is in good condition except for the exterior covered walkways therefore the overall condition is average. The roof membrane covering the exterior walkways does not appear to have been replaced at the same time as the main roof. The exterior walkway roofs have ponding water and are deteriorating. There is evidence below the canopy that water is seeping through the concrete structure over the walkway. Facility staff report water causing issues with the lighting and electrical in the walkways.</p> <p>The roofing over rooms 105 through 108 was slick and does not have adequate walkway pads. Gutters and downspouts are in good condition, and all downspouts have splash blocks at grade.</p>	Average
Interior Construction	Interior Walls	<p>Interior walls are a mixture of glazed and painted block and gypsum board walls. The walls in classrooms 101 through 120 are glazed and painted block. The walls in surrounding classrooms 122 through 126 and in the administrative offices are gypsum board on metal studs. There is a building expansion joint along the east side of the corridor C1.</p> <p>The interior walls appear to be in good condition with no observable structural issues.</p>	Good
	Interior Doors	<p>The interior doors are painted wood or clear sealed wood veneer doors with painted hollow metal frames. The interior doors have glass vision panels in a range of sizes. A number of the vision panels are wire glass. There is a motorized gate in corridor C1 adjacent to the CCADM room.</p> <p>The doors and frames are in average condition due to age with peeling paint on the wood interior doors between classrooms in the 100-wings, specifically in 117-120. The doors have a mixture of knob, lever, and push/pull hardware. Facility staff requested the hardware be standardized.</p>	Average

System	Subsystem	Condition and Deficiency Overview	System Condition Rating
	Interior Specialties	System not present.	N/A
Stairs	Exterior Stairs	There are exterior concrete stairs with a metal railing at the rear kitchen at the loading dock. The stairs are in good condition.	Good
	Interior Stairs	System not present.	N/A
Interior Finishes	Interior Wall Finishes	The interior wall finishes consist of paint throughout on gypsum board walls. The interior block walls are glazed on the lower portion and painted above. There is ceramic tile below the whiteboards in rooms 117-120. The restrooms have ceramic tile wainscoting and painted gypsum board above. Corridor C2 and C4 has a plastic laminate wainscoting. The wall finishes are in average condition due to age and normal wear. There is paint peeling on the south side of rooms 102, 103 and 104. Facility staff reported the paint consistently fails in rooms 122 through 126.	Average
	Interior Floor Finishes	The interior floor finishes include vinyl composition tile with ceramic tile in the restrooms. There is carpet in rooms 122 and 123. There is also carpet in the Admin, Admin1, Admin2 and Admin10 which appears to have been replaced within the last five years. The floor finishes are in average condition due to age and normal wear and tear.	Average
	Interior Ceiling Finishes	The interior ceiling finishes include acoustic ceiling tile in classrooms, vinyl ceiling tile in staff restrooms and kitchen, and painted gypsum board in the male and female restrooms in corridor C1. The classroom restrooms are a mixture of acoustic ceiling tile and painted gypsum board. The interior ceiling finishes are in average condition with multiple locations needing minor patching or tile replacement, specifically in the classroom restrooms. The ceiling tile over the stage is in poor condition due to age and discoloration and facility staff requested replacement with a drop-in acoustical ceiling tile system.	Average
Conveying	System not present.		N/A
Plumbing	Plumbing Fixtures	Predominantly single-use restrooms are found throughout the facility with multi-use restrooms found outside the gymnasium and in the 120-wing of the building. Typical restrooms have floor-mounted vitreous china water closets with manual flush valves. Additionally, wall-hung vitreous china urinals with manual flush valves are located in the dedicated multi-	Average

System	Subsystem	Condition and Deficiency Overview	System Condition Rating
		<p>use male restrooms. Typical classrooms contain a vitreous china wall-mounted sink with a separate wall-mounted drinking fountain. Rooms 117-126 have stainless steel basin sinks with drinking fountains attached. Stainless steel drinking fountains can be found in the corridors of the building. A vitreous china handwashing trough with three faucets is located in the corridor outside of the cafeteria.</p> <p>The majority of plumbing fixtures are in average working condition, but are aged and show minor signs of deterioration. Some of the water closets had signs of rust in the bottom of the bowl. It was reported by facility staff that after summers and other long breaks when the plumbing sits stagnant, the water runs yellow, and all the fixtures need to be flushed. Multiple sinks were noted to need minor repairs. The sink in room 115 was noted to have a pipe draining into it. The bathroom sink in the lounge was observed to have irregular flow. The sink in the male restroom off of room 105 does not turn on. The female restroom in the corridor off of room 124 has a loose faucet. Drinking fountains in rooms 103 and 109 had low flow. The drinking fountain in room 107 is cracked, and the drinking fountain off of room 119 was observed to stick and stay on. Moisture was observed around the base of the water closet in the ADMWFRR staff restroom, indicating possible sign of a leak.</p> <p>There are showers in the gymnasium restrooms and gymnasium office. They were full of stored items and equipment and were therefore unable to be assessed for functionality. Visual inspection showed restroom showers were aged but no major deficiencies.</p> <p>A commercial kitchen is located in the school's cafeteria in BLDG-108A. The kitchen contains stainless steel kitchen equipment, including both three-basin and single-basin prep sinks. It also has various wall-mounted vitreous china and stainless sinks for personal use. All kitchen sinks were observed to be in good condition. The building also has service sinks located in various janitor closets. These were in average to poor condition, with some showing signs of leaks and corrosion around the base.</p>	
	Domestic Water Distribution	Domestic hot water to the kitchen is provided by a 97-gallon, 0.199-MBH gas water heater stored in the mechanical room (MAINMECH) located on the outside of the building just outside the kitchen. The unit is in	Average

System	Subsystem	Condition and Deficiency Overview	System Condition Rating
		<p>average condition but is aged and is reaching the end of its expected operational life. This room also houses an older gas water heater that is no longer in use. The unit appears to be abandoned in place and a "Do Not Use" sign was found attached. A smaller electric hot water heater is located in the CCCafe room and feeds the gymnasium showers. The unit is newer and in good working condition. Domestic hot water is not supplied to the classroom plumbing fixtures. No hot water is flowing to the sinks in the Administration 3 room and lounge, but sinks have both hot and cold water valves.</p> <p>The plumbing distribution equipment was observed to be in average condition with corrosion and rust observed on piping throughout the building.</p>	
	Other Plumbing	<p>The male restrooms in the corridor outside of room 124, the restrooms off of rooms 101, 103, 105, 107, 109, 111, 113, 115, 117, 122, and 124, and the female restroom off of room 103 are emitting an unpleasant odor. The floor drain by the dishwasher was noted to be emitting a rotten smell, but did not show any visual signs of deficiencies.</p>	Poor
Mechanical/ HVAC		<p>The building's HVAC (heating, ventilating, and air conditioning) system is composed of geothermal water pump units, rooftop packaged and air handling units, split system condenser air conditioner units and heat pump units for individual zone temperature controls. Rooms 109 through 116 are temperature controlled using a geothermal water pump system designated for each classroom. Water source heat pumps in each classroom were not accessible and assumed to be stored within the unit and working properly. The geothermal water pump units are approaching end of useful life. The units found in rooms 115 (HP-3) and 111 (HP-7) make a humming noise when in operation.</p> <p>Split system condenser air conditioner units and heat pump units feed the library, some of the administration rooms, and rooms 101 through 104 and 117 through 120. The majority of the units are newer and in average good condition. Some of these units are using R-22 refrigerant, which is an outdated refrigerant that is being phased out of use. Some of the condenser units had minor corrosion on the refrigerant feed lines. Heat pumps for the library are found in the mezzanine. The mezzanine is located on the roof and is a poorly lit confined space. The units in the mezzanine were hard to access but appeared to be older and worn. Additionally, there is a cooling unit outside the lounge by the roof access and bee hive that makes a very loud buzzing sound when operating. It also shows excessive corrosion on the outside and uses out-of-date R-22 refrigerant.</p> <p>Rooftop package units and heat pump systems feed the remaining administration offices, gymnasium, cafeteria, and rooms 122-126. Rooftop package units are in good working condition, while the heat pump systems are more aged and out of</p>	Average

System	Subsystem	Condition and Deficiency Overview	System Condition Rating
		<p>date with some insulation missing on the connecting piping.</p> <p>A rooftop unit on section A-19 EC appears to be decommissioned and abandoned in place. HP SC009444, shown in the cafeteria on the floorplan, was not found during the inspection, and it is suspected the unit has been removed and no longer exists. A chilled water pump was found in the MAINMECH room. The pump is very aged and out of date, and does not appear to be functional anymore. Additionally, there are two old radiator-type units, one in the kitchen cafeteria and one in the stage area. The units are no longer in use and abandoned in place. The exhaust fan in the female restroom off of room 122 was observed to be very loud. The male restroom off of room 105 is missing the exhaust fan. It was reported in the facility interview that the ductwork in the building is original. The majority of the ductwork resides in the ceiling and could not be inspected, but some spots of water damage were noticed on parts of the ceiling.</p>	
Fire Protection	Fire Alarm	<p>The building has a fire alarm system that consists of alarm and signaling devices such as strobes, horn/strobe combos, pull stations, and detectors. The fire alarm system is controlled by a Silent Knight control panel.</p> <p>The fire alarm system was observed to be in average condition due to some of the end devices being aged or worn from outdoor exposure. One heat indication end device was found to be hanging on the exterior wall at the west-side entrance, just south of the cafeteria. Room Admin 5 was also found to have an end device receptacle lying on a fire alarm control panel. The gymnasium has no fire detection end devices, only indication.</p>	Average
	Fire Protection/ Suppression	<p>A fire suppression system is present for the range hood in the kitchen with a tank mounted to the wall at ceiling height. The remaining fire suppression system consists of fire extinguishers throughout the building.</p> <p>Visual inspection showed these are in average condition.</p>	Average
Electrical	Electrical Distribution	<p>The electrical service enters the building at the 208Y/120-volt, 1600-amp main switchboard located at the north end of the facility. The main switchboard feeds several main panelboards and several older switchboards located in the MAINMECH room. The building does not appear to use a lightning protection system.</p> <p>The electrical distribution equipment was observed to be in average condition. The majority of the assets have been replaced or added in the past 20 years, but there are several asset and non-asset panels that have</p>	Average

System	Subsystem	Condition and Deficiency Overview	System Condition Rating
		<p>exceeded life expectancy.</p> <p>The first is Panel 1PZB, a 225-amp Federal Pacific panel dating from the 1970s, located in the front of the main corridor. This is a 'stab-lok' model and is widely considered as a code violation due to breaker failure. This panel is obsolete and should be replaced as soon as possible. This panel also features an old 150-amp ITE main switch below it that appears to have been added when the previous panel was replaced.</p> <p>The second is Panel DP1, a 600-amp Zinsco switchboard, which appears original to the building construction. This panel is in extremely poor condition due to corrosion and age. The third is Panel DP2, a 1200-amp GE switchboard. This panel appears to be a original switchboard from the building's construction, and receives electrical feed from switchboard MSB. The fourth is Panel DP3, a large 200-amp GE distribution panel from the 1970s. The majority of the circuits in Panel DP3 appear to be no longer in use. The fifth is Panel SP, a 225-amp Challenger panel located in the stage area. This panel is in poor condition due to age, corrosion, and the use of duct tape to cover breaker ports in the panel. The sixth is Panel 1PZD, an unknown capacity Zinsco panel in the Kitchen area that appears original to the building construction. This panel is obsolete due to age. The seventh is Panel 1PZH, a 150-amp GE panel from the 1960s and located in room MAINMECH. The eighth is an unknown 1960s Square D panel located within the wing for rooms 117 through 120.</p> <p>There are several other Challenger and GE panels dating from the 1970s and 1980s that are in average condition but are near the end of life expectancy. In particular, the Challenger panels use an obsolete breaker style that may be difficult to replace. There is also improper use of duct tape to cover open breaker ports on a few panels.</p> <p>It should be noted that room 125, as listed on the floorplan, has an AC adapter plugged into an electrical receptacle that appears discolored from overheating. This adapter powers unknown equipment. Also, the room plaque is listed as room 126 and does not match the floorplan.</p> <p>A newer GE kitchen panelboard has a breaker tagged out of service for repair dating back to 2011.</p>	

System	Subsystem	Condition and Deficiency Overview	System Condition Rating
		<p>There are several conduit feeds from main switchboard MSB that feed through the exterior wall into the MAINMECH space. These conduit feeds are missing covers and allow water infiltration into the conduit. These covers should be replaced as soon as possible. A large junction box is also present in the same area with significant corrosion present.</p> <p>An older 125-amp Square D panel is located in the ADMIN9 room. It should be noted that this panel's access was blocked by a file cabinet that had to be moved.</p> <p>The school faculty has reported that the cafeteria/kitchen circuits trip often and that additional circuits are needed throughout the campus. Faculty also reported that many of the panels throughout the school need labeling updates.</p>	
	Lighting	<p>The building's exterior lighting consists of metal-halide and fluorescent luminaires. The interior lighting primarily consists of fluorescent light luminaires throughout the building.</p> <p>The building's lighting system was found to be in poor condition. Many of the exterior luminaires were found to be in poor condition. Several areas of the building lack exterior lighting, including several inner classroom wings. Observed interior lighting deficiencies included missing lenses, missing lamps, and burned-out lamps. BLDG-108A has a variety of deficiencies in branch wiring. Much of the conduit appears original, typically found in storage, electrical, and mechanical rooms. Loose and improperly secured conduit and junction boxes were also present in these areas. Many of the light switches and electrical receptacles throughout the building are worn or have exceeded their life expectancy. Worn light switches and electrical receptacles can create life safety issues due to arcing when used.</p> <p>School faculty has reported complaints about the lack of exterior lighting around the campus and poor lighting within the gymnasium. School faculty have also requested outdoor electrical receptacles for the campus.</p>	Poor
	Communications & Security	<p>The building has telephone/networking/coaxial distribution. Telephone distribution equipment was found in a custodial storage room. The MAINMECH room also has telephone equipment, but due to the age</p>	Average

System	Subsystem	Condition and Deficiency Overview	System Condition Rating
		<p>and condition, it was assumed to be no longer in use. Telephone receptacles were found throughout the building. Major server equipment is in the locked room IDF2 (intermediate distribution frame 2) and within IDFB. Current voice communication is provided through a voice over IP (VOIP) system.</p> <p>Internal security cameras are found throughout the building: in the main entrance, within the administrative office, inside the gymnasium, and throughout the corridors. Exterior security cameras are found on the outer edges of the school building and wings, but coverage is lacking on the inner campus classroom wings (rooms 105 through 108 and rooms 109 through 112). There are exterior cameras overlooking the playground area and portable building area.</p> <p>There is a public address system and timekeeping system that both appear to be working properly.</p> <p>The security system was found to be in average condition. The building has some distribution equipment that is severely dated and may no longer be in use. School faculty have reported that the telecommunications and data systems are functioning properly. The school also lacks surveillance camera coverage in several areas. Faculty has requested additional exterior security coverage for the campus and security card access for certain areas of the school.</p>	

Exterior System Deficiency Examples

Exterior Walls



Exterior Windows

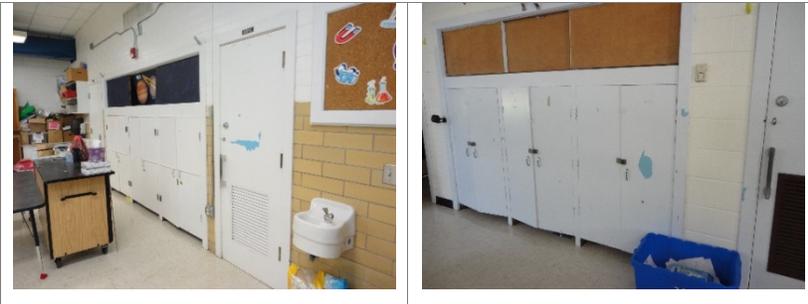


Roofing Deficiency Examples



Interior Construction Deficiency Examples

Interior Doors

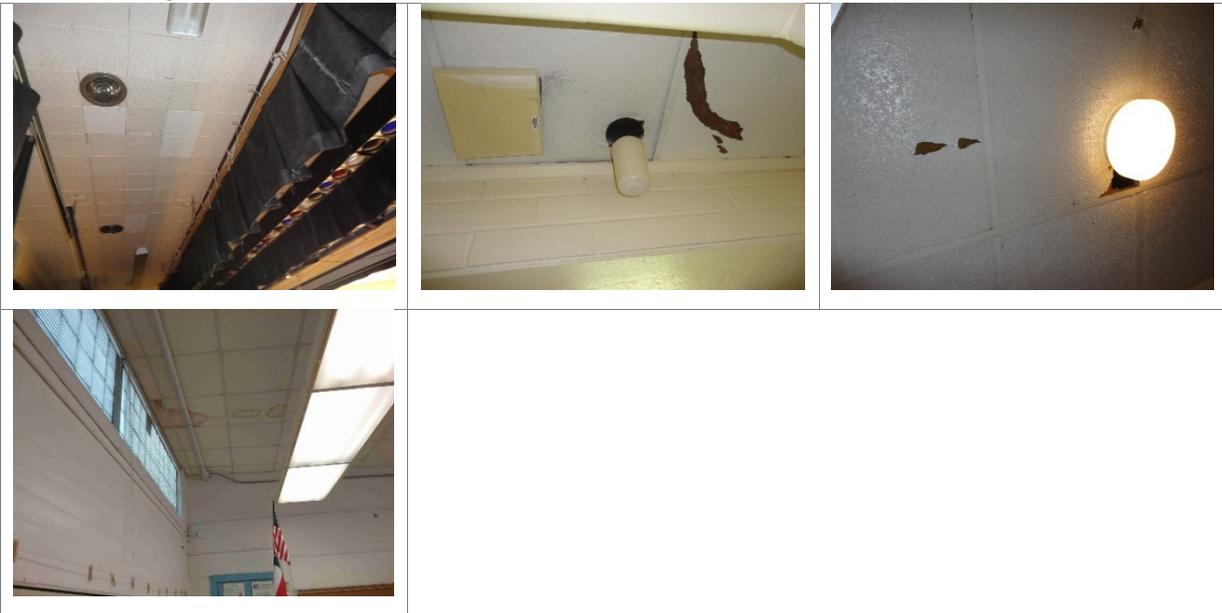


Interior Finishes Deficiency Examples

Interior Wall Finishes

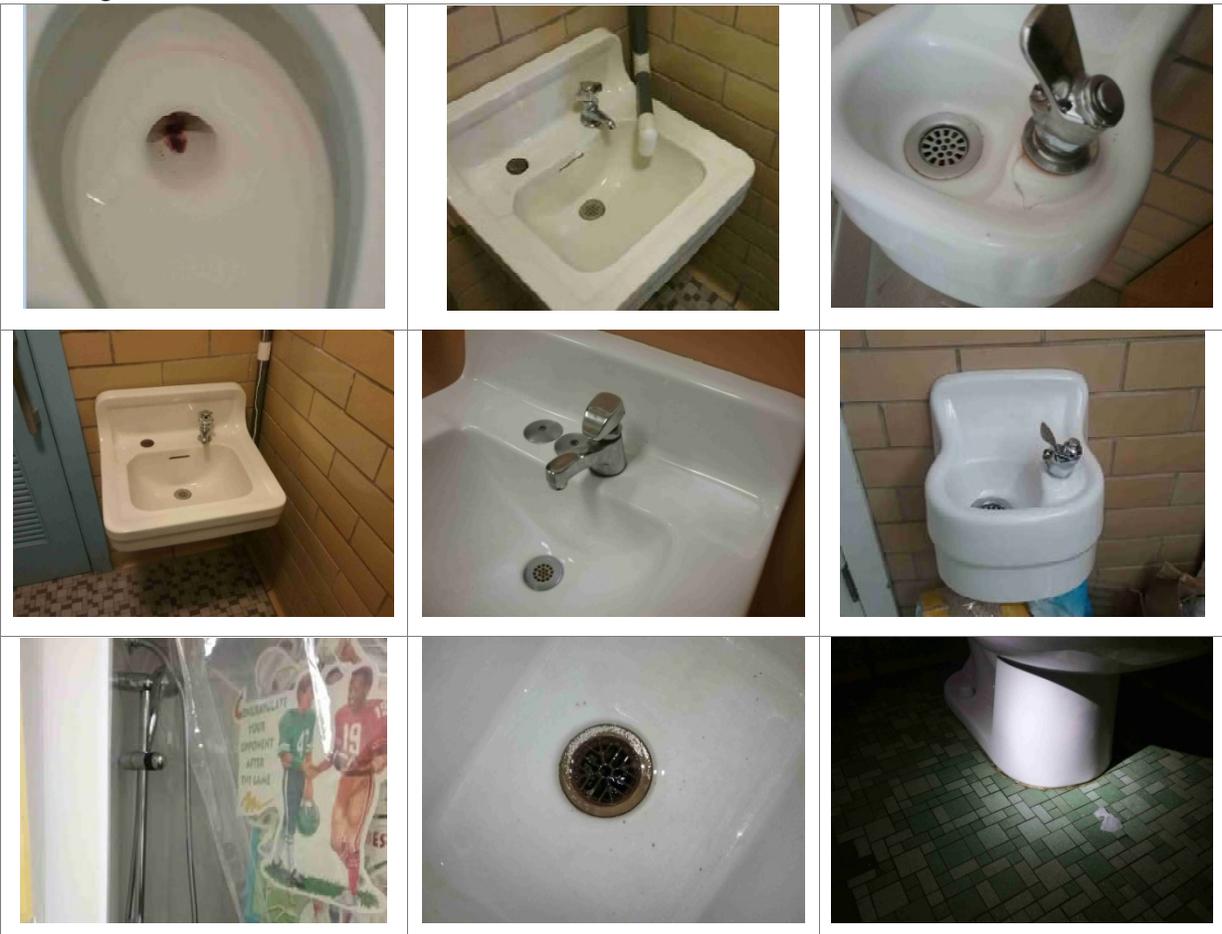


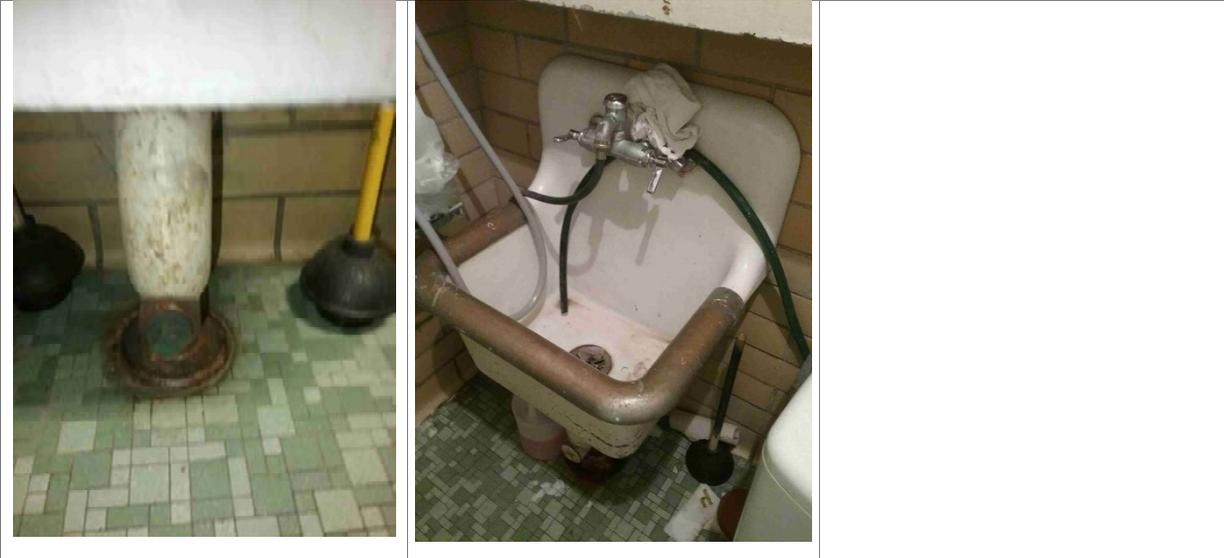
Interior Ceiling Finishes



Plumbing System Deficiency Examples

Plumbing Fixtures





Domestic Water Distribution



Other Plumbing



Mechanical/HVAC System Deficiency Examples



Fire Protection System Deficiency Examples

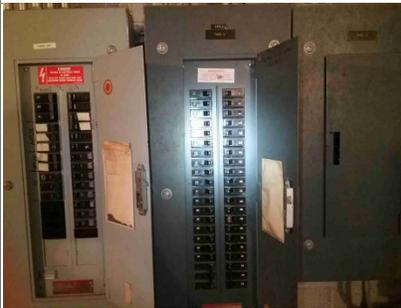
Fire Alarm



Electrical System Deficiency Examples

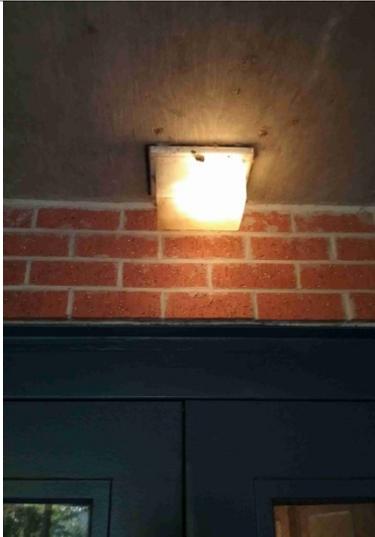
Electrical Distribution







Lighting





Communications & Security



Brooke Elementary School Campus Summary of Recommendations

This document is based on current conditions observed during fieldwork and provides recommendations for corrective actions by each discipline. The following recommendations provide a summary of the findings.

Campus / Main School Building Recommendations

Exterior

1. Replace windows on the south side of classrooms and surrounding kitchen.

Roofing

1. Further investigate covered walkway roof material at areas of ponding water to reslope to proper drainage points.
2. Provide additional walk pads to all equipment areas.

Interior Finishes

1. Repair damaged ceiling tiles in classroom restrooms.
2. Repaint interior doors and cabinets in rooms 101-108 and 117-120.
3. Repaint rooms 101-104.
4. Provide new drop-in acoustic ceiling tile system over stage.

Plumbing

1. Replace aged plumbing fixtures to maintain a functioning system.
2. Repair faucets on sinks that are not functioning properly.
3. Repair or replace drinking fountains that are not functioning properly or are cracked.
4. Verify functionality of the shower facilities and repair as necessary.
5. Repair the water closet in ADMWFRR that has signs of leakage.
6. Repair or replace janitor's sinks that are corroded and aged.
7. Repair or remove the water heater in MainMech with the "Do Not Use" sign attached.
8. Repair or replace fixtures that have separate hot and cold water handles but do not have both hot and cold water connections.
9. Address any rust or corrosion observed on the equipment, its associated piping, or any other sub-asset in all facilities by cleaning, repainting, or repairing to prevent further deterioration.
10. Replace electric water heaters that are nearing their expected design life before failure occurs.
11. Inspect, clean and repair plumbing in multiple bathrooms that are emitting an unpleasant odor.
12. Clean and flush out all bathroom and kitchen floor drains to ensure adequate drainage and prevent odors.

Mechanical/HVAC

1. Replace HVAC equipment that is beyond its expected design life before failure occurs.
2. Repair or replace any damaged or missing piping insulation as needed.
3. Repair any equipment that was noted to have excessive noise/vibration.
4. Investigate the cause of water damage seen on the ceiling, and repair any HVAC equipment and surrounding ceiling as necessary.
5. Remove any equipment that has been abandoned in place and is no longer functioning.
6. Repair or replace exhaust fans that are missing or not working.
7. Replace HVAC units that use R-22 refrigerant, which is an outdated refrigerant that is being phased out of use. These systems may need to be replaced before they meet their design life due to refrigeration restrictions.
1. Address any rust or corrosion observed on the equipment, its associated piping, or any other sub-asset by cleaning, repainting, or repairing to prevent further deterioration.

Fire Protection

1. Repair or replace loose fire indication end device on exterior wall at west-side entrance, just south of the cafeteria.

Electrical

1. Replace all panelboards in the building that are highlighted in the Condition and Deficiency Overview section of this report.
2. Consider replacement of aged 1970s GE panels and obsolete Challenger panels.
3. Install correct breaker port covers in panels that are currently using duct tape. Duct tape is not acceptable as a cover.
4. Relocate file cabinet in room ADMIN9 to allow proper access to panelboard.
5. Investigate repair tag in GE kitchen panel dated 2011.
6. Repair or replace rusted junction box on the south-side exterior wall of the MAINMECH room.
7. Investigate and repair the cause of kitchen circuits that often trip.
8. Update the labeling and circuit directories for older panels throughout the building.
9. Replace all outdated or poor condition exterior luminaires with LED luminaires.
10. Install additional exterior luminaires in areas with no lighting.
11. Repair or replace broken or non-functional interior luminaires.
12. Improve the gymnasium's lighting by replacing lamps to provide more illuminance or install additional luminaires.
13. Repair issues with wiring conduit. This includes poor condition conduit, exposed junction boxes, and exposed receptacles.
14. Replace electrical receptacles and lighting switches that have exceeded their life expectancy.
15. Investigate the discolored AC adapter located in room 125 of the floorplan map (room placard lists this as room 126). Discoloration on this adapter appears to be from overheating.
16. Install additional exterior security in areas that lack coverage.

CRAWL SPACE – Brooke ES – Main Building (BLDG No. 108A)

Building Purpose	Administrative, Classrooms, Gym, and Cafeteria
Inspection Date	August 12, 2016
Inspection Conditions	82° and Cloudy

Crawl Space System Deficiency Overview

NOTES CONCERNING CRAWL SPACE OBSERVATIONS: The areaway nearest the Library could not be opened due to conduit routed through the grating. The areaway near the lounge was inaccessible as bee hives were present. The areaways at the ends of the two northernmost east wings (at Rooms 112 and 116) were blocked with vegetation. Three areaways near the administration rooms and Room 124 were inaccessible as the area between these wings was fenced in and occupied by chickens.

The following table provides a summary of the systems and their respective conditions found by each discast-in-placeline.

System	Subsystem	Condition and Deficiency Overview	System Condition Rating
Soil, Drainage, Ventilation & Access	Soil Below Building, Site Drainage in Crawl Space	Soil was dry and relatively flat. No drainage system was found in the crawl spaces. Along the sides with areaways, the soil had been trenched, presumably to keep water from traveling farther under the building. Soil was moist along the perimeter. Roots were observed breaking the surface of the crawl space soil. Soil/Drainage deficiencies: <ul style="list-style-type: none"> • Roots could potential harm the building foundation. 	Good
	Soil Retainers	Concrete soil retainers were present around the exterior of the building. No deficiencies were observed.	Good
	Areaways/Ventilation	Ventilation in the crawl space areas observed appeared sufficient. Areaways were typically in good condition. Areaway/ventilation deficiencies: <ul style="list-style-type: none"> • Several areaways were inaccessible (described above) • Minor honeycombing in areaways • Light switches at areaway entrances did not work 	Average
	Access Hatches	N/A – Access hatches were not present at this school (access was through areaways alone).	N/A

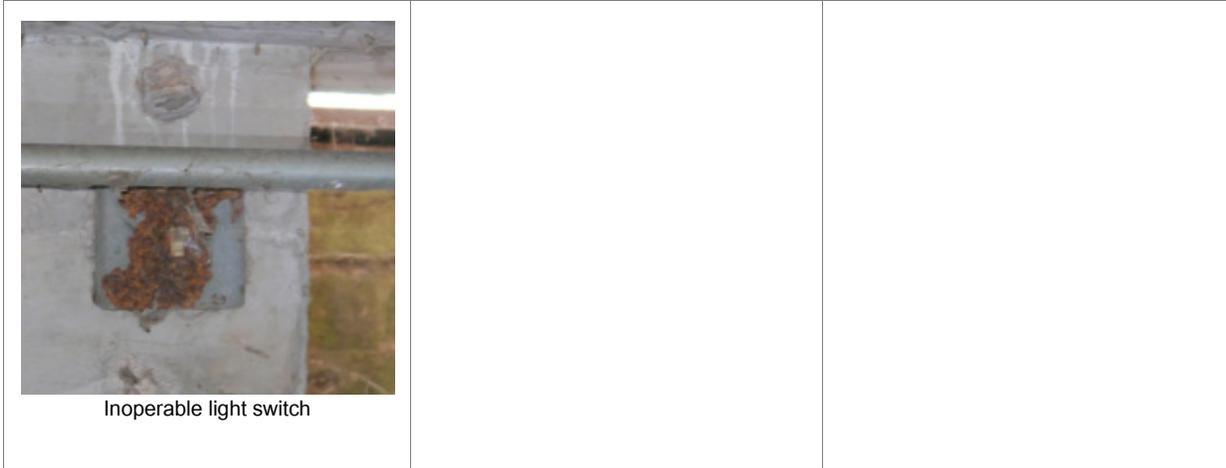
Exposed Structure	Exposed Columns & Tops of Foundations	<p>Drilled piers were observed supporting exterior and interior foundation beams. Columns were present above the piers at all interior piers.</p> <p>Column/Foundation deficiencies:</p> <ul style="list-style-type: none"> • One column was badly honeycombed • Mushrooming at top of shafts of piers at exterior beams 	Good
	Exposed Faces of Perimeter Walls / Grade Beams	<p>The underside and interior of the perimeter beams were visible.</p> <p>Perimeter wall/beam deficiencies:</p> <ul style="list-style-type: none"> • Minor honeycombing • Formwork ties left in place 	Good
	Exposed Portions of Suspended Floor Beams Above	<p>Floor beams were generally in good condition.</p> <p>Beam deficiencies:</p> <ul style="list-style-type: none"> • Minor concrete spillage filled the void under beam in one location • Honeycombing present in beams 	Good
	Underside of Suspended Floor Slabs Above	<p>A cast-in-place two-way slab was the predominant construction at the school. The southwest wing had a concrete slab over corrugated metal deck. Staining was observed on the underside of the slab, but the source of the staining could not be determined.</p> <p>Slab deficiencies:</p> <ul style="list-style-type: none"> • Slab had some spalled areas and had a few spots with exposed/corroded reinforcement • Cracks in slab at South-West areaway entrance • The metal form deck at the southwest corner of building was rusted on underside of deck ribs 	Average

Pipes, Ducts, Equipment & Fireproofing	Suspended Pipes & Hangers	<p>Cast iron and PVC pipes were present throughout the entire building. All pipes appeared to be intended to be suspended. Original hanger rods were still in place.</p> <p>Pipe deficiencies:</p> <ul style="list-style-type: none"> • Failed pipe hangers • Rusted pipes & hangers present throughout entire crawl space • AC condensate hose was dripping onto ground instead of into PVC drain at one location • Pipes were bearing on ground instead of being suspended • Torn/degraded pipe insulation in the southwest corner of school • Minor leak in U-turn joint of cast iron pipe 	Average
	Exposed Ductwork	N/A – No ductwork was present in the crawl space areas observed.	N/A
	MEP Equipment	N/A – No MEP equipment was present in the crawl space areas observed.	N/A
	Spray Fireproofing/ Insulation	N/A – No spray fireproofing or insulation was present in the crawl space areas observed.	N/A

Crawl Space Deficiency Examples

Soil, Drainage, Ventilation & Access

 <p>Soil Damp at exterior of crawl space</p>	 <p>Roots found in crawl space</p>	 <p>Honeycombing in areaway</p>
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Inoperable light switch

Exposed Structure



Honeycombing in column

Mushrooming at top of pier

Honeycombing in exterior beams,
exposed/corroded reinforcement

Formwork ties left in beams

Concrete spillage under interior beam

Staining of underside of slab

 <p>Exposed reinforcing at rusted pipe</p>	 <p>Crack in slab at areaway entrance</p>	 <p>Rust on corrugated deck</p>
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Pipes, Ducts, Equipment & Fireproofing

 <p>Pipe & hanger significantly corroded</p>	 <p>Condensate line leaking onto soil</p>	
 <p>Pipes running on the ground</p>	 <p>Insulation stripped off cast iron pipe</p>	 <p>Leaking cast iron pipe</p>

Brooke ES – Campus Summary of Crawl Space Recommendations

This document is based on current conditions observed during fieldwork and provides recommendations for corrective actions by each discipline. The following recommendations provide a summary of the findings.

Main Building Recommendations

Soil, Drainage, Ventilation & Access

1. Investigate need for improved drainage.
2. Repair light switches at areaway entrances.
3. Clean out areaways of vegetation, conduit, bee hives, etc. so all areaways provide access to crawl space.

Exposed Structure

1. Repair and clean underside of slab.
2. Investigate source of slab stains & repair any leaks, etc. as needed
3. Repair honeycombed piers and beams.

Pipes, Ducts, Equipment & Fireproofing

1. Repair leaking pipes.
2. Replace rusted/damaged pipes and hangers.
3. Investigate pipes resting on ground and suspend from slab as needed.
4. Repair damaged/degraded pipe insulation.
5. Ensure proper drainage of condensate lines.

APPROXIMATE LIMITS OF CRAWLSPACE OBSERVED ON 8/12/2016 SITE VISIT

APPROXIMATE LIMITS OF CRAWLSPACE PER AVAILABLE PLANS AND SITE OBSERVATIONS

Deficiencies found in this location:

- 1) Water infiltration through soil retainers
- 2) Soil near perimeter has been trenched in some locations
- 3) Minor honeycombing in areaways
- 4) Staining on underside of slab
- 5) Pipes running along ground

Deficiencies found in this location:

- 1) Water infiltration through soil retainers
- 2) Honeycombing in areaway
- 3) Minor honeycombing in basement walls
- 4) Honeycombing in beams
- 5) Spalling on underside of slab
- 6) Exposed reinforcing around rusted pipes in slab
- 7) Staining on underside of slab
- 8) Pipes are rusted and have torn insulation
- 9) Failed hangers
- 10) Rusted light switch that does not work

Deficiencies found in this location:

- 1) Water infiltration through soil retainers
- 2) Soil near perimeter has been trenched in some locations
- 3) Piers are badly honeycombed
- 4) Form ties remain in basement walls
- 5) Cracking in slab over areaway entrance
- 6) Formed corrugated deck has rusting on underside of ribs
- 7) Insulation missing from pipes
- 8) Minor rusting in pipes
- 9) Light switch inoperable

Deficiencies found in this location:

- 1) Water infiltration through soil retainers
- 2) Soil near perimeter has been trenched in some locations
- 3) Soil was more saturated toward the main building
- 4) Minor concrete spillage under exterior beam
- 5) Rusted pipes

Deficiencies found in this location:

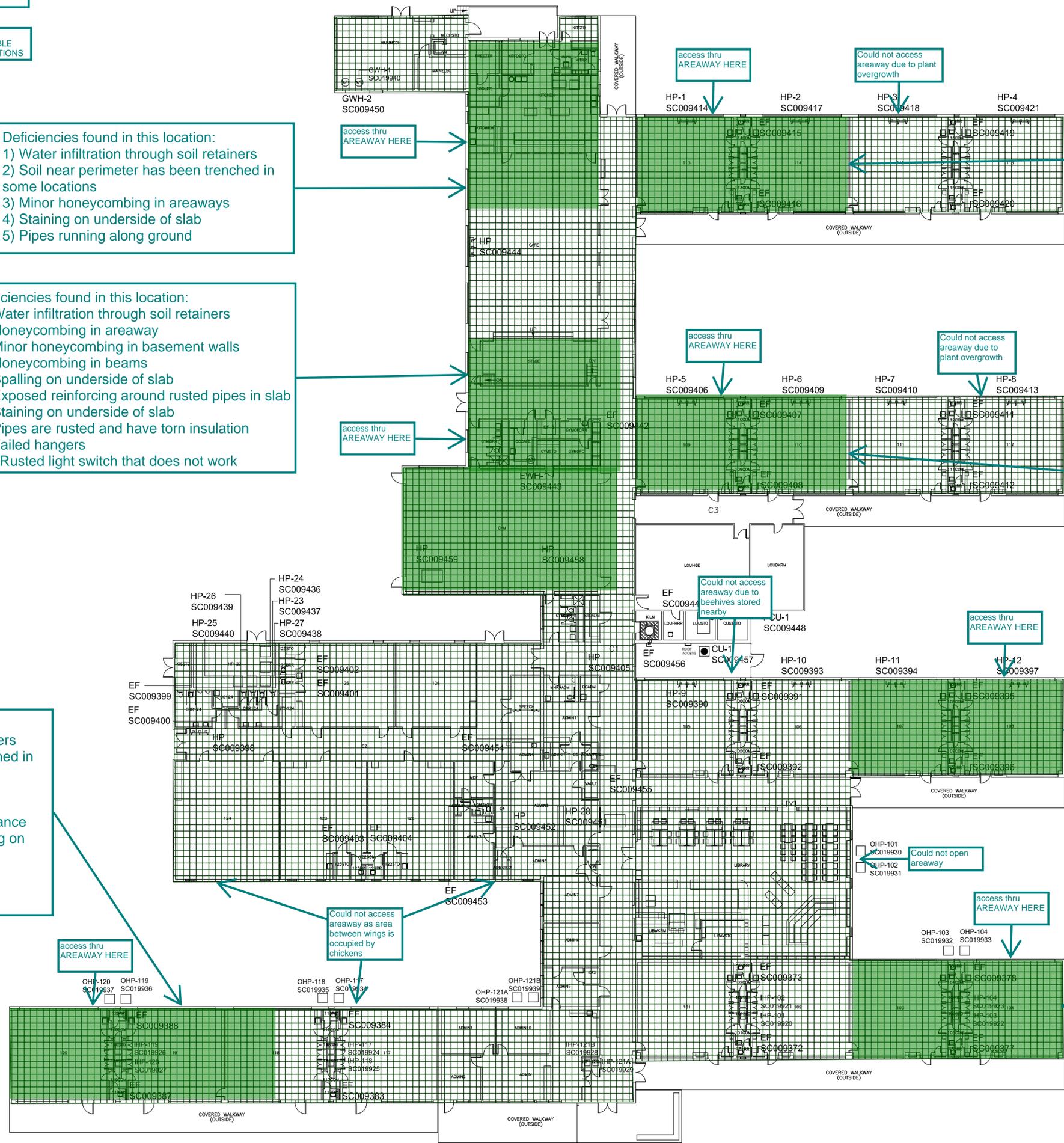
- 1) Water infiltration through soil retainers
- 2) Soil near perimeter has been trenched in some locations
- 3) Failed pipe hangers
- 4) Rusted and abandoned pipes
- 5) Water dripping from black hose from AC unit above. Water is dripping on soil, in other places this water drips into a PVC pipe.

Deficiencies found in this location:

- 1) Water infiltration through soil retainers
- 2) Soil near perimeter has been trenched in some locations
- 3) Mushrooming at top of piers
- 4) Failed pipe hangers
- 5) Rusted and abandoned pipes

Deficiencies found in this location:

- 1) Water infiltration through soil retainers
- 2) Soil near perimeter has been trenched in some locations
- 3) Mushrooming at top of piers
- 4) Failed pipe hangers
- 5) Rusted and abandoned pipes
- 6) Light switch was rusted and inoperable



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AUSTIN I.S.D.
DEPARTMENT OF CONSTRUCTION MANAGEMENT

BROOKE ELEMENTARY SCHOOL
3100 E 4th Street
Austin, Texas
FLOOR PLAN
FIRST FLOOR

APPROVALS		
DRAWN	CHECKED	APPROVED
J.R.		
09/11/13		
DWG: 108-FLR-01	SHEET	
DRAWING SCALE	1/16"=1'-0"	
	1 OF 1	