Huckabee

MONTGOMERY INDEPENDENT SCHOOL DISTRICT

FACILITIES ASSESSMENT VOL. I

MAY 2021

14 MAINTENANCE OFFICE

Campus Information
Summary of Assessment Deficiencies

15 TRANSPORTATION CENTER

Campus Information
Summary of Assessment Deficiencies

16 TRANSPORTATION CENTER SATTELITE

Campus Information
Summary of Assessment Deficiencies

TABLE OF CONTENTS

DISTRICT INFORMATION

00

ACKNOWLEDGEMENTS

Montgomery Independent School District

Administration
Dr. Heath Morrison, Superintendent
Kris Lynn, Chief Financial Officer
Wendy Graves, Asst. Super. of Elementary Education
Duane McFadden, Asst. Super. of Secondary Education
Justin Marino, Director of Commuications
Joe Kinard, Director of Maintenance

Board of Trustees
Matt Fuller, President
Gary Hammons, Vice President
Linda Porten, Secretary
Trey Kirby, Board Member
Laurie Turner, Board Member
Shawn Denison, Board Member
Mike Hopkins, Board Member

Assessment Team

Architectural
Huckabee Architects

Civil Engineering
Kimley-Horn

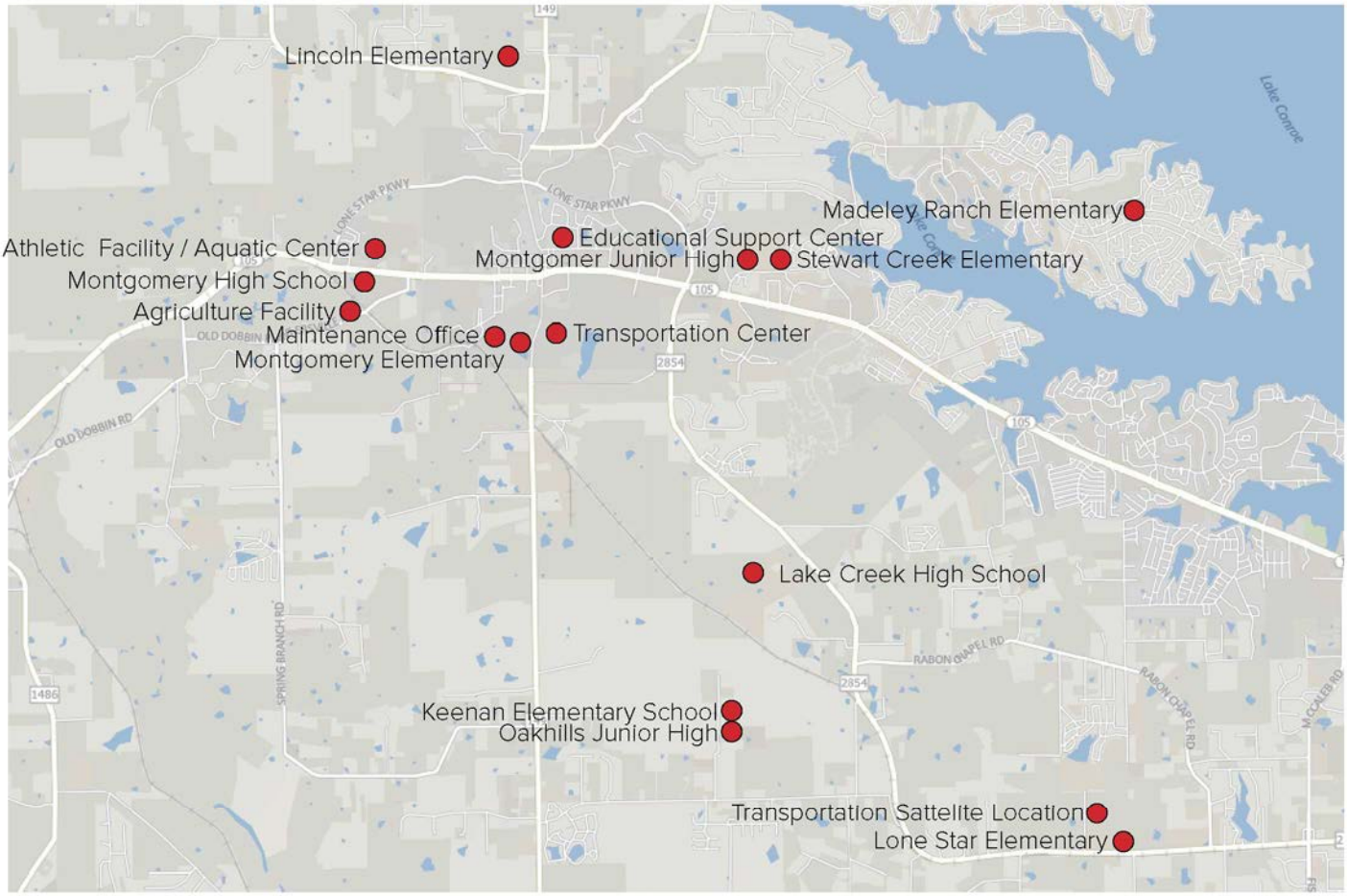
Structural Engineering
Wiss, Janney, Elstner Associates, Inc.

Mechanical, Electrical, Plumbing and Technology
LTY Engineers

Food Service
Foodservice Design Professionals

Roofing
Kuhn & Associates

DISTRICT FACILITIES ASSESSMENT MAP



MONTGOMERY INDEPENDENT SCHOOL DISTRICT
MONTGOMERY
Independent School District

PURPOSE/CHARGE

As commissioned by Montgomery Independent School District, Huckabee has prepared the following Facility Assessment Report of the existing physical conditions of several of the district's older facilities. The assessment includes visual observations of: campus sites, MISD support and athletic facilities, including parking lots, sports fields, etc. The report outlines the current conditions of the facilities as ascertained from visual observations of each campus/ buildings.

This report is intended to outline the general condition of each facility by visual observation and is not intended to be an exhaustive, detailed study of all existing conditions, potential hazards and/or important considerations for all possible future construction projects. The observations and assessment address building code, accessibility non-compliance and applicable general building conditions including, but not limited to, mechanical, electrical plumbing and fire protection, site, structural, roof, exterior materials and interior finishes.

Contained in the body of the report are executive summaries of each campus/facility and color-coded floor plans of the facility that show the areas of identified. Building plans were generated from egress drawings, and record drawings provided by Montgomery ISD with modifications identified during field observation and assessment, but are not represented as field verified, measured as-built drawings. The report also contains representative photographs and information noting different areas of concern. Complete assessment reports containing much more information and photos are provided as appendices for further review as needed for each campus. No guarantees are implied by these Professional Opinions which are limited by the conditions observed at area selected for viewing by each Professional on the Assessment Team.

It is important to note that existing buildings that do not undergo renovation or construction projects are not necessarily required to meet current adopted codes as it is expected they were code compliant at the time of permitting, construction and issuance of the certificate of occupancy. For those campuses determined to undergo renovation or addition; depending on the type of project and level of renovation, there are various levels of compliance required. The International Existing Building Code (IEBC) clearly identifies the requirements for compliance for various levels of renovation. Each level (1 through 3) includes greater scope and proportion of building being renovated and therefore has greater compliance requirements. If a building undergoes a major renovation or addition (level 3 per IEBC), the local jurisdiction can require that the entire building, not just the addition or renovation, be brought up to current codes. In this report, building code violations are identified as much as possible to assist in determining campus and project scope. In the event any facility is renovated, Huckabee will be happy to further explain and discuss the various levels of renovation scope and code implications.

Where ADA/TAS (handicap accessibility) non-compliance items were discovered and noted, the deficiency items will need to be repaired in order to bring the facility into compliance with the American Disabilities Act / Texas Accessibility Standards.

Unlike the building code, ADA/TAS is federal and state law that has no grandfather clause for non-compliant items.

There are often many ways to address any one issue or concern; some ways can cost more to address the concern and have a low risk or low maintenance cost, while other ways can cost less to address the concern but have a higher risk or higher maintenance cost. In some cases, action may be deferred.

The intent of this report is to assist the Montgomery ISD Task Force in reviewing existing conditions, identifying and prioritizing needs. At the request of Montgomery ISD, a proposal may be developed by Huckabee to aid in preparing informed recommendations for potential projects to the Board of Trustees.

This assessment should be considered a living document, to be reviewed and updated regularly as new deficiencies are identified, the District grows and as educational needs change. If the Board of Trustees would like to assess areas for a specific construction scope, a more focused assessment and field verification will be required and a proposal will be provided.

POTENTIAL CAPACITY OVERVIEW

Throughout the district each campus utilizes their rooms and spaces to meet needs that are unique to their students, teachers and administrative staff. While general education curriculum requires a specific number of spaces to accommodate specific student enrollments, other classes such as Music, Art, or Special Education require dedicated spaces of their own. Smaller break out spaces for math and reading intervention or student counseling are also required for the students' wholistic learning experience. In addition, professional learning spaces allow teachers and staff to elevate the level of education delivered at each campus. Many buildings throughout Montgomery ISD were built prior to these educational and professional needs being realized. As such, many of the traditional classrooms originally designed for each building now serve one or more of these evolving needs.

The Potential Functional Capacities identified in this report attempt to identify a number of rooms that should be dedicated to those uses that would not otherwise serve as regularly scheduled classrooms. An equitable number of spaces to accommodate both educational support and professional needs has been assigned to each campus, taking into account the dedicated spaces for these functions that may have originally been provided. Once these spaces have been identified, the remaining classrooms were used to calculated each building's maximum capacity. An industry-standard utilization factor was then attributed to each campus type of 90% to establish the Potential Functional capacity each campus can reasonably be expected to accommodate.

POTENTIAL CAPACITY OVERVIEW

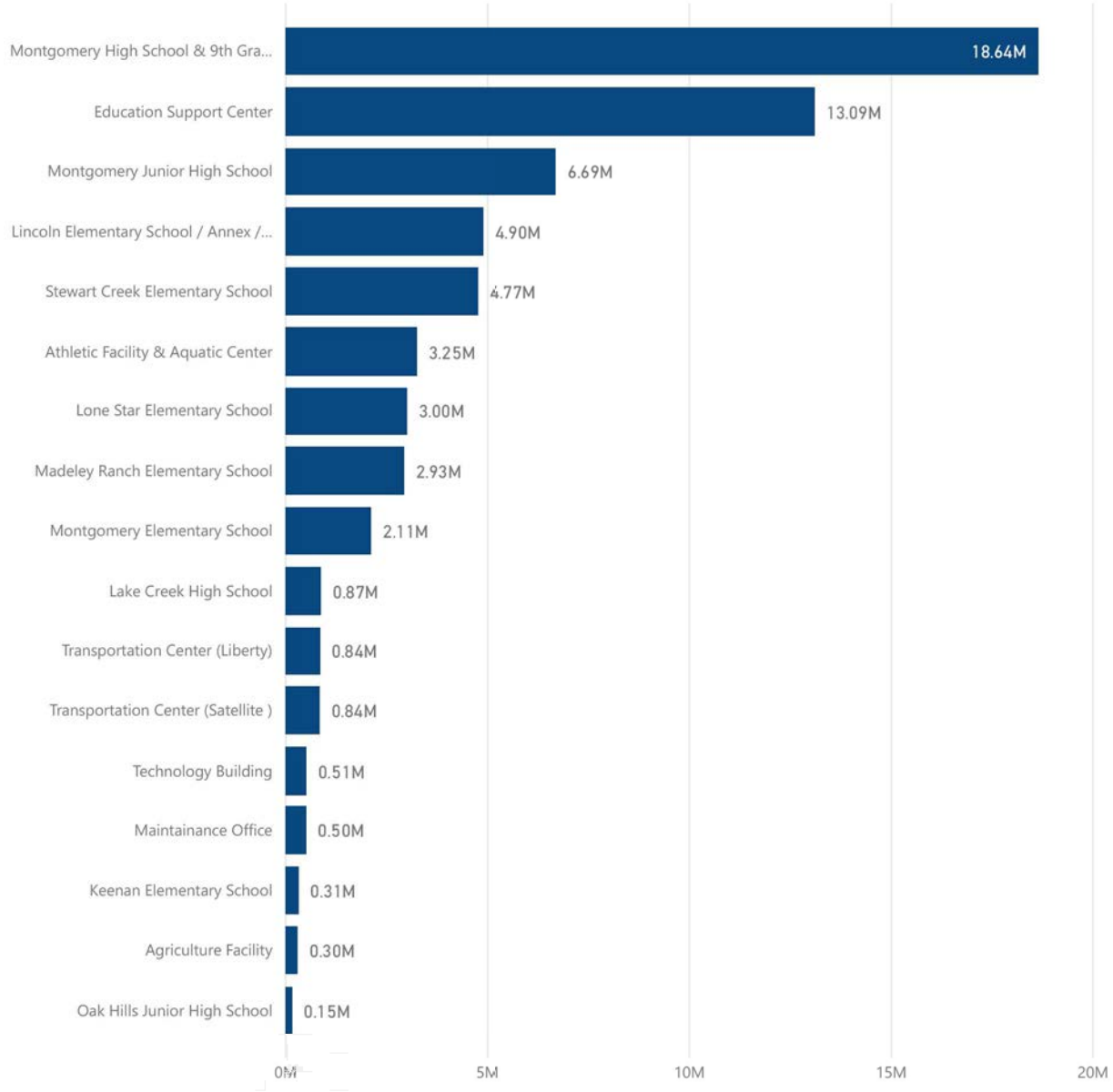
CAPACITY ANALYSIS

	Campus	Max Capacity	Functional Capacity	Current Enrollment	Functional vs Current
ES	Keenan	892	802	718	84
	Lincoln	672	604	411	193
	Lone Star	980	880	717	163
	Madeley Ranch	980	880	762	118
	Montgomery	1046	940	458	482
	Stewart Creek	980	880	696	184
	Total	**5,550**	**4,986**	**3,762**	**1,224**
JH	Montgomery Junior High	1664	1331	1,075	256
	Oak Hills Junior High	1652	1321	1,105	216
	Total	**3,316**	**2,652**	**2,180**	**472**
HS	Lake Creek High School	2204	1649	1,547	102
	Montgomery High School	3645	2730	1,435	1,295
	Total	**5,849**	**4,379**	**2,982**	**1,397**

COST SUMMARY

63.69M	0.96M	3.71M	40.91M	1.24M	3.65M	2.31M
District Total	Exterior	Interior	MEPT	Civil	Accessibility ...	Roof

Totals by Facility



KEENAN ELEMENTARY SCHOOL

01

GENERAL INFORMATION

KEENAN ELEMENTARY SCHOOL 19180 Keenan Cut Off Montgomery, TX 77316	
Year(s) Built:	2017
Approx. Total Building Square Footage	93,735
Grades Served	K - 5th
Max Capacity / Functional Capacity	892 / 802
Current Enrollment	718

FLOOR PLAN

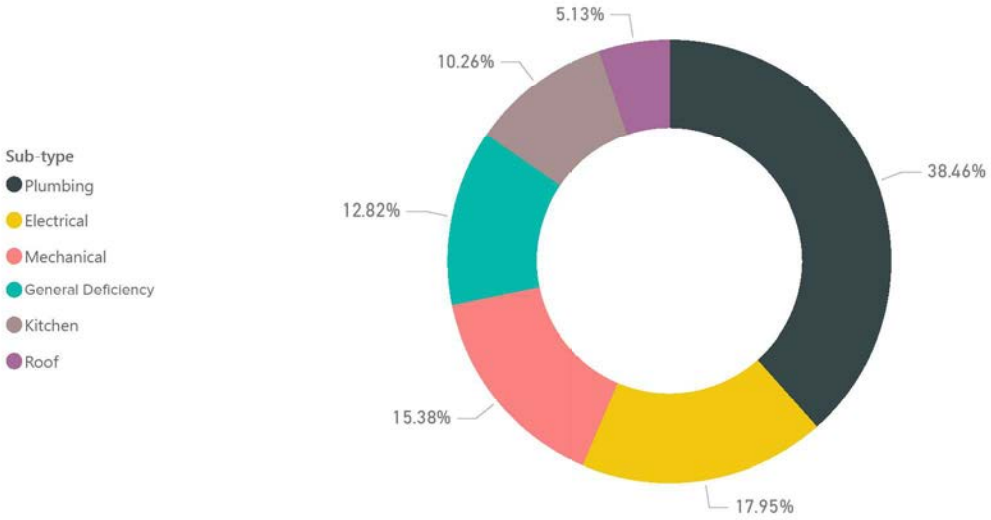
COLOR LEGEND

- Administration/ Administration Support
- Academic Spaces/ Academic Support
- Library/ Library Support
- Dining/ Dining Support
- Athletics and Physical Education/ Athletics and Physical Education Support
- Fine Arts/Fine Arts Support
- Building Support
- Circulation

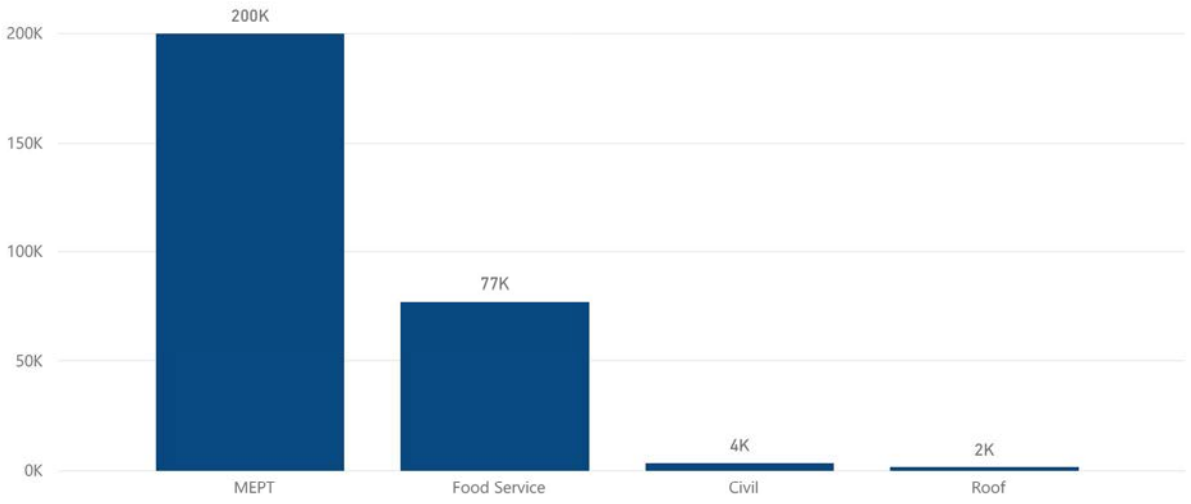
COST SUMMARY

314K	$3.10	101,156
Campus Total	$/SF	Facility Square Footage

Number Of Deficiencies



Cost by Deficiency Type



EXECUTIVE SUMMARY / KEY FINDINGS

ACCESSIBILITY/CODE

Accessibility within Keenan Elementary School seems to be in general compliance with TAS. The building is equipped with a fire suppression system and appears to be in good condition. The building is equipped with a voice evac system and it is in good contition.

+ In 2020 Montgomery County began to require the provision of a radio response system testing of educational facilities which will be required by the Fire Marshal.

SITE CONDITIONS

Upon review of the site conditions at the Keenan Elementary School, it appears that the site is in a relatively good condition, but the detention facility on the site needs maintenance. There are other areas along the boundary that show signs of erosion. There are small areas in the parking lots which show evidence of ponding water and sedimentation build up.

+ The pond seems to severely eroded along most banks with minimal sodding and maintenance apparent. The erosion is especially severe along the southeast bank, where it would most accurately be described as a washout.
+ Add wheel stops for all ADA stalls that are missing them.
+ Fill eroded areas and provide maintenance for the detention facility.
+ Change grate inlet tops east of the building to better accommodate small children. Currently, wider grate tops are in use.
+ Consider re-striping of the parking lot within 3-5 years.

WALLS / MASONRY WALLS

The interior and exterior walls seem to be in good condition.

WINDOWS

Window systems around the building seem to be in good condition. Continued maintenance of the exterior sealant will prolong the life of the window systems.

EXECUTIVE SUMMARY / KEY FINDINGS

ROOF

The Keenan elementary school roof appears to consist of various roof levels and areas consisting primarily of standing seam metal roof systems and low sloped single-ply roof membrane. Deficiencies observed in the standing seam metal roof sections appeared to include cracked sealant at a transition between a gutter system and an adjoining wall. Deficiencies observed in the single-ply roof areas appeared to include one exhaust fan lacking proper fastener placement. The standing seam metal roof areas appeared to be in overall good condition and has a remaining effective service life of approximately fifteen years, and the single-ply roof membrane appeared to be in overall good condition and appeared to have a minimum remaining effective service life of approximately ten years.

+ Replacement of the deficient sealant to prevent moisture ingress is recommended.
+ Install additional fasteners to this location to ensure proper mechanical attachment of the exhaust fan to the curb.

FLOOR

The flooring throughout the campus seems to be in good condition. In some areas the VCT may need to be removed and replaced as part of on going maintenance.

DOORS & HARDWARE

The doors, frames, and hardware throughout the campus seem to be in good condition. The hardware appears to be in compliance with current standards.

MILLWORK:

Millwork throughout the school appears to be in good condition.

CEILINGS

Ceilings and ceiling grid system throughout the building seem to be in good condition.

EXECUTIVE SUMMARY / KEY FINDINGS

DINING AND KITCHEN

Within the kitchen and server of Keenan Elementary School the floors, walls, and ceiling seem to be in general compliance with current health codes. The finishes within the kitchen and servery include Quarry tile on the floors, CMU and Tile walls, as well as vinyl lay in ceiling tiles. Equipment within the Kitchen is new and functioning as anticipated. If the district desires to continue with the current delivery schedule, in lieu of more frequent deliveries, the following recommendations were made to aid in storage of goods within the storage areas.

+ Increase Dry Storage to a minimum of 265 sq Feet
+ Increase Cold Storage to a minimum of 388 sq Feet
+ In lieu of each option above, the MISD could increase delivery frequency.

MECHANICAL / HVAC

The building cooling is provided by two (2) 5-year-old 280-ton Carrier air-cooled chillers. They appear to be in good condition. The chilled water pumps serving the chillers are in good condition. The building heating is provided by two (2) 5-year-old 3,000 MBH RBI XLF condensing boilers. They appear to be in good condition. The hot water pumps serving the boilers are in good condition. The library, common, gym, and kitchen areas are served by 4-pipe single zone air handling units with outside air pretreatment. They are in good condition. However, outside air is being introduced into building when school is not occupied. Also, pretreatment section condensate drain lines are not insulated. All the classroom spaces are served by 4-pipe multi-zone air handling units. They are in good condition. However, the one outside air supply fans serving these units are located above the computer lab is very noisy. The admin area is served by chilled water single zone VAV air handling unit with auxiliary DX-split. Unit is in good condition, but fan is moldy. The condensing unit on the roof is in good condition, but refrigerant piping insulation is deteriorating. The building automated system (BAS) is by ALC and in good condition.

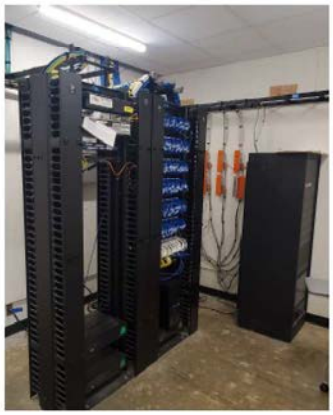
+ Recommission outside air delivery sequence of operation for all the AHU's to ensure that it is not activated when school is not occupied for energy saving purpose.
+ Provide new outside air supply fans with VFDs to help control noise problem.
+ Clean interior of air handling unit.
+ Replace refrigerant line insulation and provide aluminum jacketing.
+ Insulate all pretreatment section condensate drain lines.

EXECUTIVE SUMMARY / KEY FINDINGS

ELECTRICAL / TECHNOLOGY

The electrical service is fed via pad mount transformer outside of the service yard of the building, which is connected to 2000A, 277/480V, 3-phase, 4-wire main switchboard located in the main electrical/mechanical room. This main switchboard feeds additional distribution boards and panelboards throughout the building. The distribution boards provide mechanical equipment circuiting. The 277/480V panelboards are utilized for lighting, small mechanical equipment, and feeding 120/280V panelboards via stepdown transformers. The 120/208V panelboards are connected to small mechanical equipment, receptacle loads, and miscellaneous loads throughout the building. Equipment is new. There is a new 500 kw diesel generator. Lighting on the interior of the building consists of LED 2x4 fixtures, 3" recessed strip fixtures, and recessed cans throughout, with strip fixtures in mechanical areas. Exit signs appear to be LED. Three 3" recessed strip fixtures appeared to be defective. Exterior lighting consists of surface mounted LED lighting at the canopy, a couple fixtures seem to be defective. Parking lot fixtures are LED. Lighting controls are energy code compliant. The fire alarm system is an addressable system but could not be observed. Booster power supplies are located throughout the building. It is assumed the system has voice evacuation due to the age of the school.

+ Fix defective fixtures in corridor and exterior canopy.



PLUMBING

Existing plumbing fixtures (drinking fountains, toilets, flush valves, lavatories, faucets, sinks, etc.) are relatively new and in good condition. Some urinals throughout facility are not flushing properly. Gas water heaters for kitchen area. Electric water heaters are located throughout building for associated areas. All water heaters are relatively new and in good working condition. Gas water heater does not have combustion air installed. Sanitary waste and vent piping is no-hub cast iron above grade and PVC below grade. Piping is in relatively good condition. Roof drain piping is no-hub cast iron above grade and PVC below grade. Piping is in relatively good condition. Domestic water piping is copper and in relatively good condition. No water softener for building. Gas piping is in black steel and in good condition. Gas pressure at gas meter is 5-psig. Generator is diesel. In some mechanical rooms, no hose bibb is provided.

+ Provide general maintenance and repair urinal flush valves throughout facility.
+ Add hose bibb in all mechanical rooms.
+ Add combustion air intake ductwork to exterior of building at gas water heaters.
+ In Mech/Elect 5.16, relocate hose bibb.
+ Add water softener for gas water heater system.

CAPACITY AND TEA ANALYSIS

UTILIZATION	TEA		CAPACITY	
Room	Qty.	"Students/Room"	Max	"Functional (90%)"
Classrooms				
PK-1st	15	22	330	297
2nd - 5th	25	22	550	495
Life Skills	1	12	12	10
TOTAL	41		892	802

Enrichment Curriculum Spaces	
Art	1
Music	1
Science	1
Computer	2
Multi-Purpose	1

LINCOLN ELEMENTARY SCHOOL, GYM AND ANNEX

02

GENERAL INFORMATION

LINCOLN ELEMENTARY SCHOOL 700 Dr. Martin Luther King Jr. Drive Montgomery, TX 77356	
Year(s) Built:	1992
Approx. Total Building Square Footage	100,225
Grades Served	PK-5
Max Capacity / Functional Capacity	672 / 604
Current Enrollment	411
MONTGOMERY INTERMEDIATE GYMNASIUM	
Year(s) Built:	1967
Approx. Total Building Square Footage	17,450
MONTGOMERY ANNEX BUILDING	
Year(s) Built:	1958
Approx. Total Building Square Footage	22,050

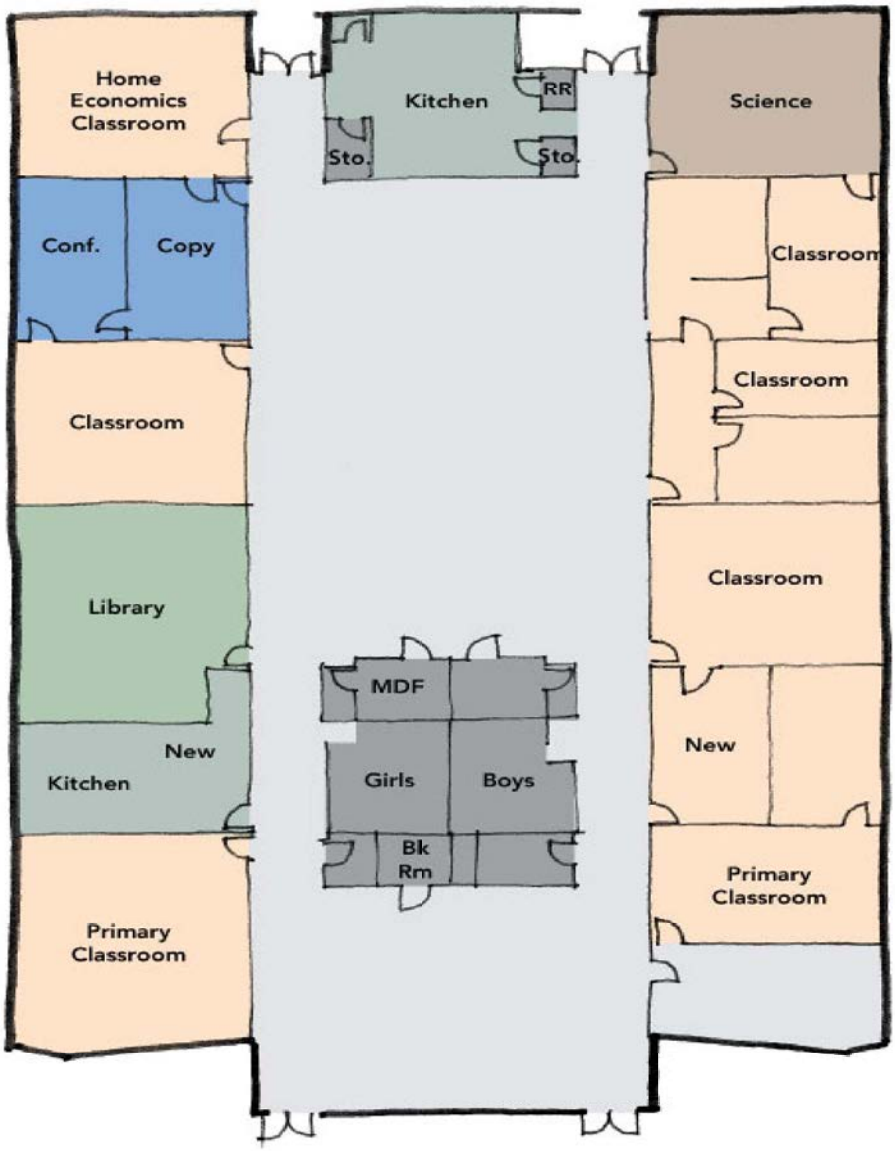
LINCOLN FLOOR PLAN

1ST FLOOR

COLOR LEGEND

- Administration/ Administration Support
- Academic Spaces/ Academic Support
- Library/ Library Support
- Dining/ Dining Support
- Fine Arts/Fine Arts Support
- Building Support
- Circulation

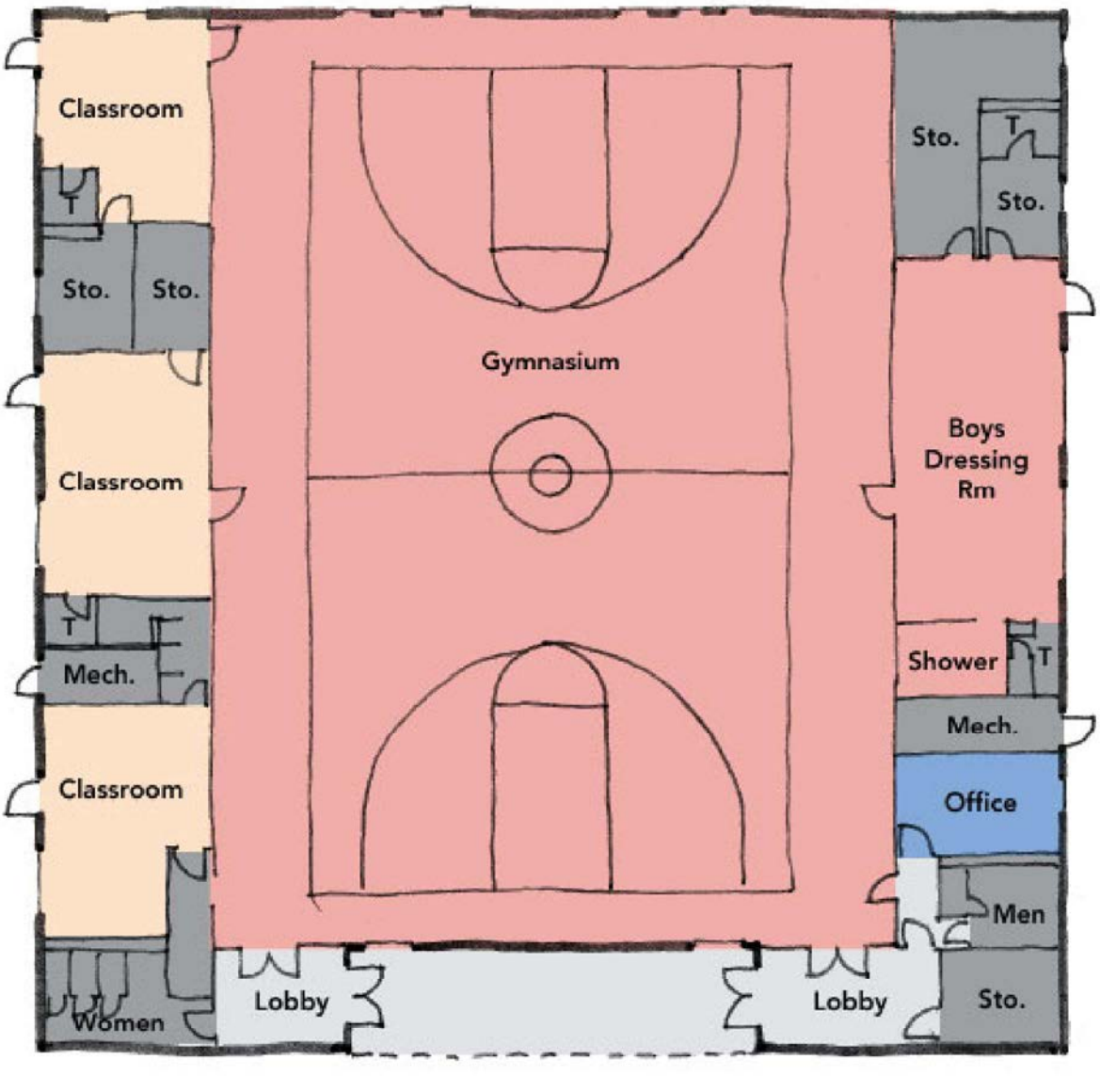
ANNEX PLAN



COLOR LEGEND

- Academic Spaces/ Academic Support
- Library/ Library Support
- Educational Support
- Building Support
- Circulation

GYM FLOOR PLAN



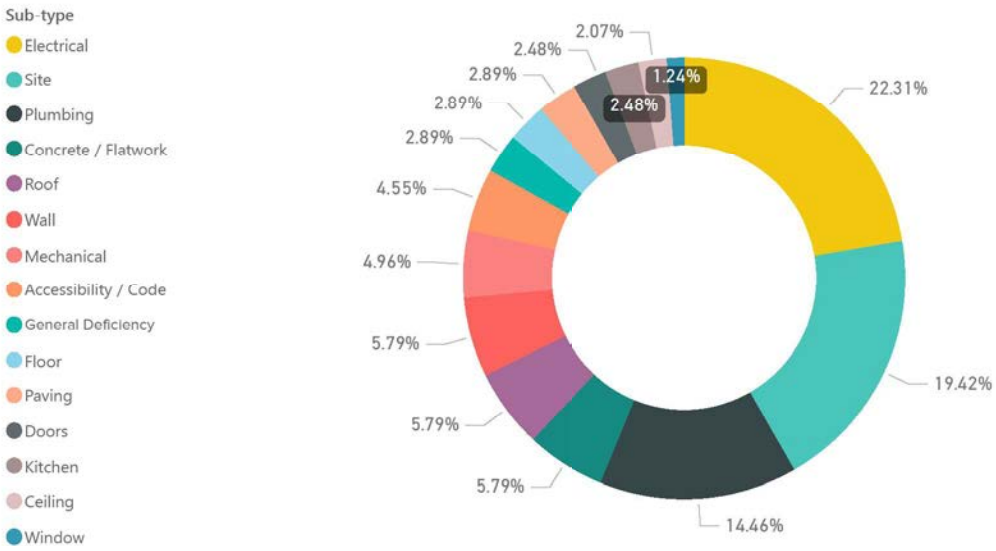
COLOR LEGEND

- Athletics / Physical Education
- Academic Spaces/ Academic Support
- Building Support
- Administrative Space

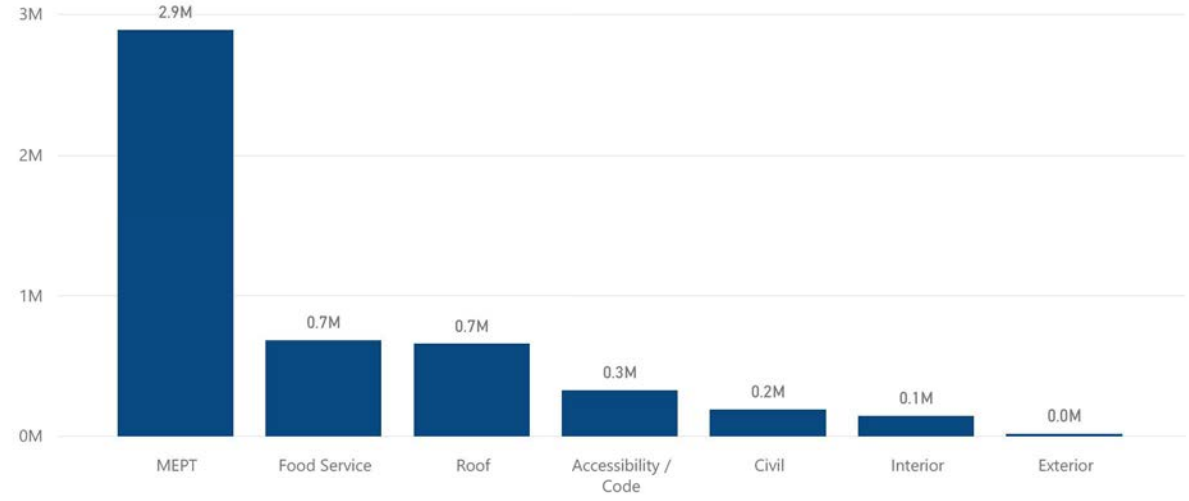
COST SUMMARY

5M	$40.03	122,275
Campus Total	$/SF	Facility Square Footage

Number Of Deficiencies



Cost by Deficiency Type



EXECUTIVE SUMMARY / KEY FINDINGS

ACCESSIBILITY/CODE

Lincoln: Accessibility inside Lincoln Elementary School seems to be in compliance with TAS. Upgrades to the toilet rooms, hardware, and sloped walks in the 2018 renovation seem to have brought the school into compliance.

+ In 2020 Montgomery County began to require the provision of a radio response system testing of educational facilities which will be required by the Fire Marshal.
+ There are water fountains throughout the building that require the addition of cane detection.
+ ADA Access to playgrounds should be provided.

Gym: Access to the Gym seems to be in compliance with TAS. Toilet rooms and door hardware in the Gym are non compliant. The building does not have a sprinkler system and should be reviewed with the AHJ if renovations are performed.

+ Bring all toilet rooms along the accessible path, or as required by TAS, into compliance.
+ Remove and replace all door hardware with code compliant hardware.
+ Provide accessible water fountains

Annex: General access to the Annex seems to be in compliance with TAS.

+ The building does not have a sprinkler system and should be reviewed with the AHJ if renovations are performed.
+ Toilet rooms, plumbing fixtures, and hardware should be brought into compliance with TAS and IBC.

SITE CONDITIONS

Lincoln: The site was reviewed as a campus in-lieu of a single building. It appears to have good drainage conveyance overall, but maintenance is required to attend to partially clogged and obstructed pipes and erosion occurring in areas of the site. Asphalt paving is in relatively poor condition. Recommended improvements include:

+ Upgrade site lighting to LED fixtures and confirm proper foot candle coverage is provided.
+ Mill and overlay asphalt pavement sections and repair any weakened sub-grade to address potholing and deterioration.
+ Reseal and restripe parking lots and restripe faded ADA accessible parking striping.
+ Address erosion issues adjacent to the building and








EXECUTIVE SUMMARY / KEY FINDINGS

sidewalk and ensure that splash pads are placed at roof downspouts.

+ Clean clogged pipe openings and flumes throughout the site.
+ Address ponding and poor drainage in the parking lot to minimize sedimentation buildup.
+ Provide lids at missing locations for the Sanitary Clean Outs.
+ Make provisions for ADA access to playground areas.

WALLS / MASONRY WALLS

Lincoln: The exterior of the building is in good condition with very minor cosmetic issues. Power-washing the building would improve exterior appearance. Exterior sealant seems to be drying out in some locations and should be replaced.

Gym: The exterior of the gym is a metal panel system and seems to be in fair condition. General maintenance of fasteners and washers should be continued. Power washing of the building is recommended.

Annex: Multiple deficiencies were observed with the exterior walls.

+ Exterior walls should be tested for water infiltration, and proper remediation should be performed. Based on visual observations the exterior wood wall system of the building may need to be removed and replaced in its entirety.
+ Rot board around the building should be removed and replaced.
+ Replacement of dried and cracked sealant, as well as power washing the brick is recommended.
+ Exposed steel members should be re-mediated as they are currently exposed to the elements and experiencing corrosion.

WINDOWS

Lincoln: The windows appear to be in good condition with minor issues. The drying out of some exterior sealant was observed, and should be addressed on an annual basis.

Gym: Deficiencies observed in window systems include improper installation at the head, jamb, and sill.

+ The window systems should be removed and replaced in their entirety.








EXECUTIVE SUMMARY / KEY FINDINGS

Annex: Deficiencies observed through a visual observation of the window systems include the cracking and peeling of caulk, and flanges that are not properly sealed around the system. Some of the gaskets seem to be delaminating.

+ The window systems around the building should be removed and replaced in their entirety.

ROOF

Lincoln: Deficiencies observed throughout the shingled roof system of the main building appeared to include slumped roof deck, buckled shingles, impact damage, loss of embedded granules, and unsealed fastener heads at roof penetrations.

+ Replacement is recommended.
+ All perimeter gutters, and flashing should be replaced as a component of the roof renovation.

Gym: Deficiencies observed at the metal panel roof of the gymnasium appeared to include rusted fasteners, poorly sealed penetrations, and rusted roof panels.

+ Based on the age of the roof and the current condition, replacement of the roof is recommended.

Annex: Deficiencies include rusted rooftop equipment, poorly sealed curb flashing, deteriorated sealant at pitch pans, and severely damaged perimeter strip-ins.

+ The roof system of the annex building appeared to require repairs to extend its service life to a maximum of three years before complete replacement is required.
+ Within the building there is evidence of multiple roof leaks throughout the building.

FLOOR

Lincoln: The flooring throughout the campus seems to be in overall good condition. It is worth noting that the flooring was replaced in 2018. Continued preventative maintenance will alleviate some of the markings noted in the cafeteria.

+ Patch and repair areas where maintenance machines have damaged the rubber base and wall.

Gym: Flooring within the gym is in good condition. General maintenance of the floor should extend the lifetime of the floor. Review with the manufacturer regarding preventative maintenance is recommended.

+ Flooring within the toilet room should be replaced and slopes shall comply with TAS.








EXECUTIVE SUMMARY / KEY FINDINGS

Annex: It appears the building has been used as a storage building for large equipment, and the floors throughout the building have sustained substantial damage.

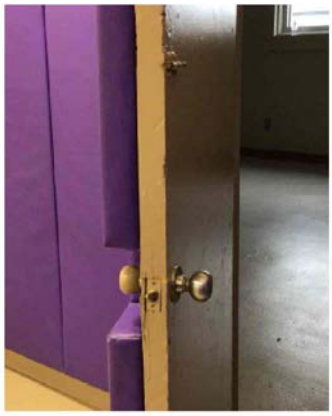
+ The VCT throughout the building should be removed and replaced.
+ The carpet within some rooms seems to be in moderate condition. However there are many spaces where tears at seams, and rips were observed. Replacement of carpet is recommended.

DOORS

Lincoln: The majority of doors observed within Lincoln Elementary School seem to be in good working order and seem to comply with current standards.

Gym: The door swing clearances need to be reviewed in multiple locations as they do not comply with TAS.

+ Recommend replacement of the doors and frames throughout the interior of the building.
+ Exterior doors are in fair condition, however the doors will need to be modified to receive new hardware to comply with TAS and IBC.



Annex: The doors seem to be in general compliance and in fair condition.

+ Recommend the installation of a 10" bottom rail at the entry to the building to comply with TAS.

HARDWARE

Lincoln: The door hardware observed within Lincoln Elementary School seems to be in general compliance and in good working order.

Gym: In multiple locations throughout the gym, hardware is non-compliant and should be brought into conformance with IBC and TAS.

Annex: At the time of the observation there were a number of doors that did not have hardware. Compliant hardware should be provided.

MILLWORK:

Lincoln: Millwork throughout the building was updated in 2018 renovation and seems to be in good condition. There was no millwork to observe in the Gym or Annex.

EXECUTIVE SUMMARY / KEY FINDINGS

CEILINGS

Lincoln: Ceilings and ceiling grid system seem to be in good condition as they were updated in the 2018 renovation.

Gym: In areas that have ceilings the grids, and ceiling systems seem to have exceeded their expected use and should be removed and replaced. Where old roof penetrations exist and are used they should be patched to prevent water infiltration.

Annex: The ceiling throughout the building seems to be damaged due to water infiltration. The ceiling grid and ceiling tile should all be removed and replaced.

DINING AND KITCHEN

Throughout the kitchen and servery many pieces of equipment were noted to be reaching or at the end of their useful life cycle. Replacement of many pieces is recommended. The floors, walls, and ceiling seem to be in general compliance with current health codes.

+ Provide smooth transition from kitchen into cooler and freezer compartments. Kitchen staff and carts impeded by ramp in freezer.
+ Dry storage size is insufficient and should be expanded.
+ Exhaust hoods were noted to not be properly functioning and should be repaired or replaced.
+ Re-work the serving counter to be at a lower height for the age group being served.
+ Replace grate at Tilt Braising Pan, as spacing is too wide and cart wheels get stuck. Grating bars to be spaced 0.4" apart per TAS requirements.
+ Recommend replacement of kitchen equipment within 0-5 years.

MECHANICAL / HVAC

Lincoln: The building cooling system is provided by two 5-year-old, 160-ton Carrier air-cooled chillers. The chillers appear to be in good condition. All AHUs and FCUs are in good condition. The library, commons, gym, and kitchen areas are served by 2-pipe single zone Carrier air handling units with electric heat. They are about 5-years-old and are in good condition.

Building heat is being provided by duct heaters at the AHUs and fan coil units. They are in good condition. Chilled water pumps are in good condition. Chilled water piping fiberglass insulation is starting to deteriorate in the central plant and the mechanical rooms. Chemical pot feeder is rusted and is in poor condition. All fans and vents are in good condition. A 1.5-ton, 5-year-old Toshiba mini-split condensing unit (ACCU-2) is in a flood zone. The BAS is by Reliable Controls and the

EXECUTIVE SUMMARY / KEY FINDINGS

control modules are in good condition. The following items are recommended:

+ Replace chemical pot feeder with a new one and insulate.
+ Relocate mini-split condensing unit to higher ground.

Gym: Building is being air-conditioned by two 5-year-old Carrier floor-mounted rooftop units. They are in good condition.

Annex: Building is being air-conditioned by (18) 3-4 ton, 15-year-old rooftop units. Units are old and oversized for the majority of the spaces they serve. If the building is going to be used, a new air-conditioning system should be provided.

ELECTRICAL / TECHNOLOGY

Lincoln:
Electrical service is fed via transformer bank to a bussed weatherhead at the exterior of the building, which is connected to 2000A, 277/480V, 3-phase, 4-wire main switchboard located in the main electrical room and has the maximum amount of NEC allowable service disconnects. This main switchboard feeds additional distribution boards and panelboards throughout the building. The distribution boards provide mechanical equipment circuiting. The 277/480V panelboards are utilized for lighting, small mechanical equipment, and feeding 120/280V panelboards via stepdown transformers. The 120/208V panelboards are connected to small mechanical equipment, receptacle loads, and miscellaneous loads throughout the building. Equipment is aging and some require replacement. There is a small, residential grade generator, that feeds selected receptacle and lighting loads.

Lighting on the interior of the building consists of fluorescent 2x4 fixtures, 1x4 fixtures, and recessed cans throughout, with strip fixtures in mechanical areas. Exit signs appear to be fluorescent. Exterior lighting consists of old surface mounted HID lighting at the canopy, while all other areas appear to be new LED fixtures. Lighting controls appear to be controlled via toggle switches and do not meet current energy codes.

The **Fire Alarm** system is an addressable system but could not be observed. Booster power supplies are located throughout the building. It appears the system does not have voice evacuation.

From a **Technology** standpoint, the intercom and clock system could not be observed but all devices indicate a newer system. The access control and security system could not be observed but all devices indicate a newer system. IT racks appear to be in good working condition but could only be observed from afar. The camera system could not be

EXECUTIVE SUMMARY / KEY FINDINGS

observed but all cameras indicate a newer system. The following recommendations for improvement include:

+ Replace existing main switchboard.
+ Replace all other outdated and damaged pieces of equipment throughout the buildings.
+ Replace all interior lighting with new LED fixtures.
+ Replace all remaining exterior lighting with new LED fixtures.
+ Replace all existing lighting controls with new controls in compliance with energy code.

Gym:
Electrical service is fed via pole mounted transformer to outdated, deteriorating panelboards.

Lighting on the interior of the building consists of fluorescent 2x4 fixtures and high bay fixtures. Exit signs appear to be fluorescent. Exterior lighting consists of old surface mounted HID fixtures. Lighting controls appear to be controlled via toggle switches and do not meet current energy codes.

Fire Alarm system appears outdated and does not have voice evacuation capabilities. A small IT rack is handling all technology items. Security cameras were not observed.

Annex:
Electrical service is fed via pole mounted transformers to an exterior panelboard.

Lighting on the interior of the building consists of fluorescent 2x4 fixtures, 1x4 fixtures, and recessed cans throughout, with strip fixtures in mechanical areas. Exit signs appear to be fluorescent. Exterior lighting consists of old surface mounted HID fixtures. Lighting controls appear to be controlled via toggle switches and do not meet current energy codes.

The **fire alarm** system is an addressable system with a SilentKnight 5820XL control panel. It does not have voice evacuation and was providing several trouble and supervisory signals.

With regard to **Technology** there is a small wall mounted IT rack that does not appear to be functioning. Security cameras were observed but appear to be outdated.

In order to bring the Gym and Annex up to code, and prolong the useful life of the building, the following recommendations are made for both facilities:

+ Replace all other outdated and damaged pieces of equipment throughout the buildings. Provide rewiring where needed.
+ Replace all interior lighting with new LED fixtures.
+ Replace all remaining exterior lighting with new LED fixtures.
+ Replace all existing lighting controls with new controls in compliance with energy code.
+ Replace IT equipment and racks where needed.

EXECUTIVE SUMMARY / KEY FINDINGS

PLUMBING

Lincoln:

Existing plumbing fixtures (drinking fountains, toilets, flush valves, lavatories, faucets, sinks, etc.) are relatively new and in good condition. Lavatories at gang restrooms are CW only. Mop basins in custodial closets are CW only. Electric water heaters are located throughout building. All are relatively new and in good condition. Most mechanical rooms do not have drains or hose bibbs for HVAC equipment. Sanitary waste and vent piping is cast iron and in relatively good condition. Propane piping is black steel and badly corroded. It was observed that the clinic sink is having issues with taking too long for HW to get to sink. 4" CW main in Central Plant area runs over the main electrical equipment. Wall hydrants around exterior of building are badly corroded.

+ Add HW to gang restroom lavatories and mop basins in custodial closets.
+ Add hose bibbs in mechanical rooms.
+ Replace exterior gas piping (gas piping only for generator).
+ Disconnect HW at clinic sink and add instant hot water heater to provide HW to sink.
+ In the Central Plant, re-route 4" CW above main electrical equipment.
+ Repair all corroded wall hydrants on exterior of building.

Gym:

Existing plumbing fixtures (drinking fountains, toilets, flush valves, lavatories, faucets, sinks, etc.) are old and in poor condition. Lavatories at gang restrooms are CW only. All plumbing piping is in poor condition. Gas piping around exterior of building has been disconnected. In order to prolong the life of the gym and to bring it into compliance with TAS and IBC the following are recommendations:

+ Replace all existing plumbing fixtures and associated piping.
+ Replace all water heaters and add circulator pumps and circulator loop piping.
+ Replace all sanitary waste and vent piping.
+ Replace all domestic water piping.
+ Add HW to lavatories in gang restrooms.
+ Remove abandoned gas piping outside of Gym building. Cap below grade.
+

Annex:

Existing plumbing fixtures (drinking fountains, toilets, flush valves, lavatories, faucets, sinks, etc.) are old and in poor condition. Lavatories at gang restrooms are CW only. All plumbing piping is in poor condition.

+ Replace all existing plumbing fixtures and associated piping.
+ Replace all water heaters and add circulator pumps and circulator loop piping.
+ Replace all sanitary waste and vent piping.
+ Replace all domestic water piping.
+ Add HW to lavatories in gang restrooms.
+ Remove abandoned gas piping outside of Gym building. Cap below grade.

CAPACITY AND TEA ANALYSIS

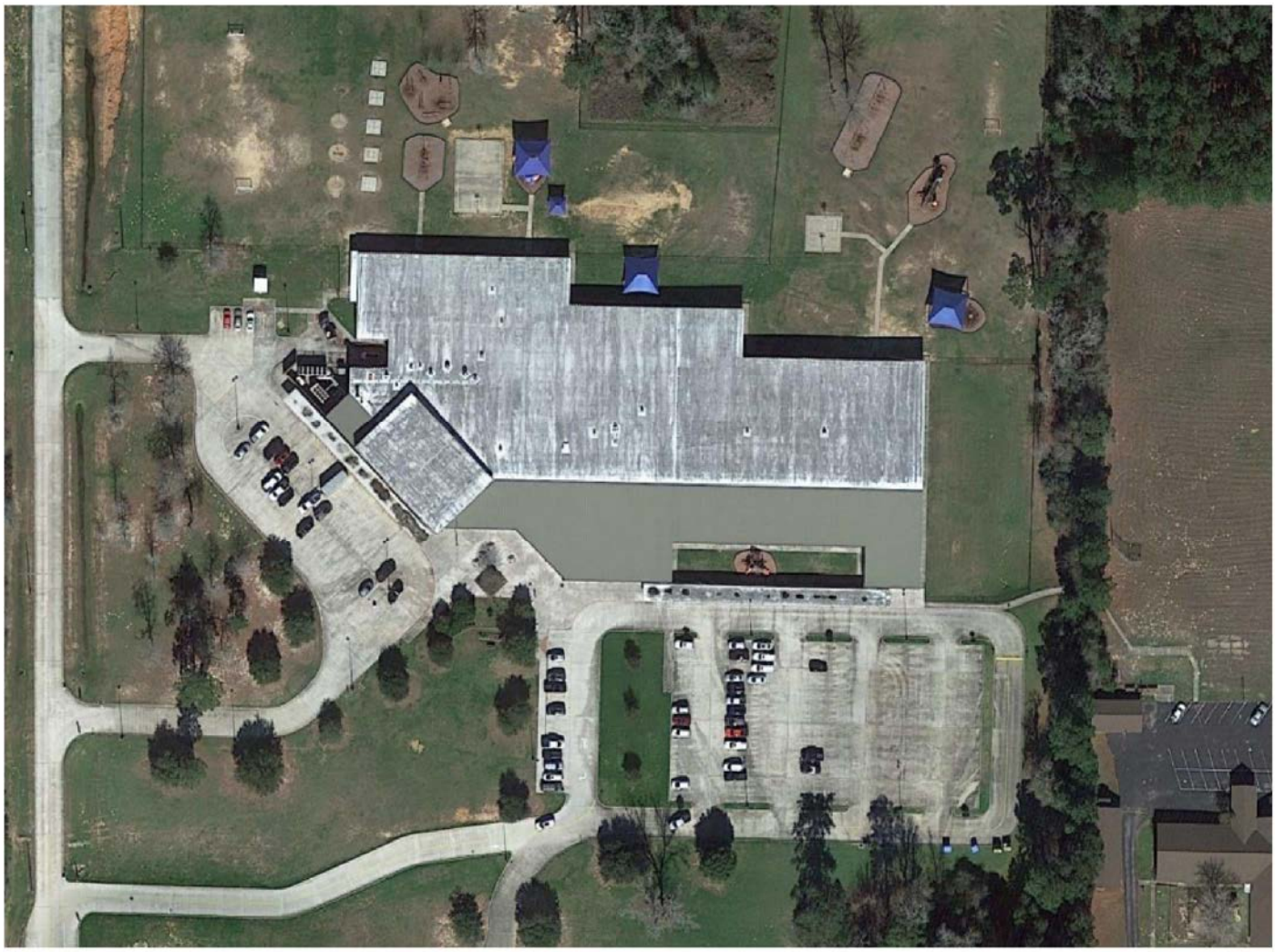
UTILIZATION	TEA		CAPACITY	
Room	Qty.	"Students/Room"	Max	"Functional (90%)"
Classrooms				
PK-5th	30	22	660	594
Life Skills	1	12	12	10
TOTAL	31		672	604

Enrichment Curriculum Spaces	
Art	2
Theater	1
Music	1
Band	1
Science	4
Computer	2
Multi-Purpose	1

LONE STAR ELEMENTARY SCHOOL

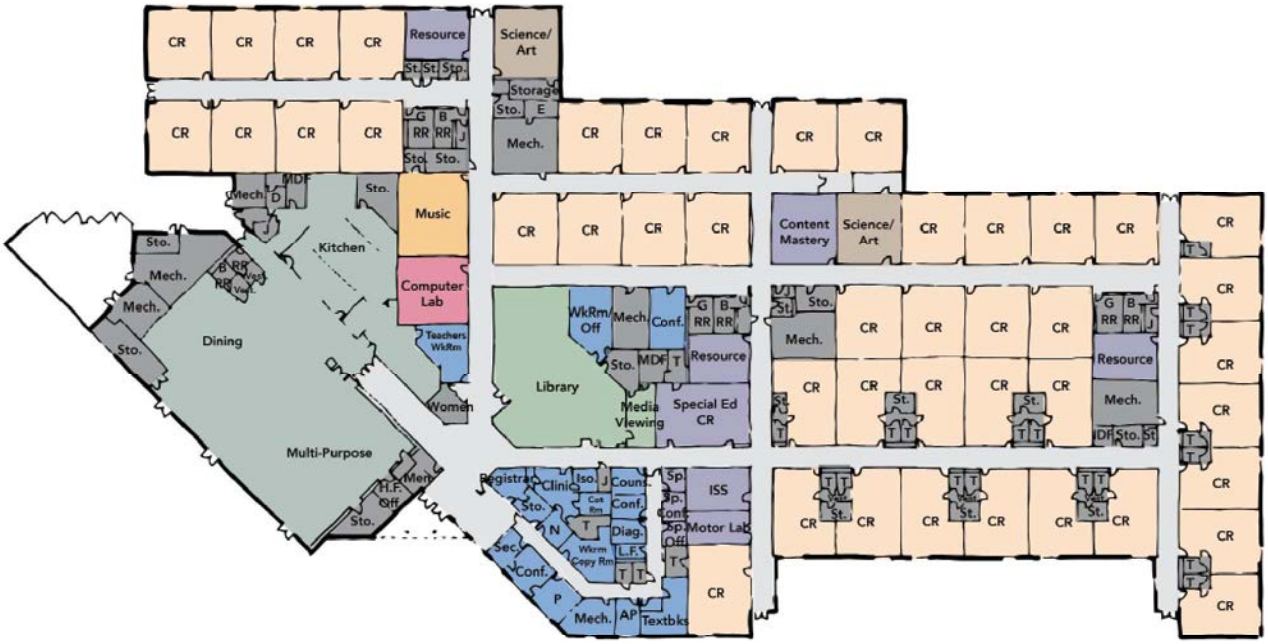
03

GENERAL INFORMATION



LONE STAR ELEMENTARY SCHOOL 16600 FM 2854 Montgomery, TX 77316	
Year(s) Built:	2006
Approx. Total Building Square Footage	94,325
Grades Served	Pre-K - 5th
Max Capacity / Functional Capacity	980 / 880
Current Enrollment	717

FLOOR PLAN



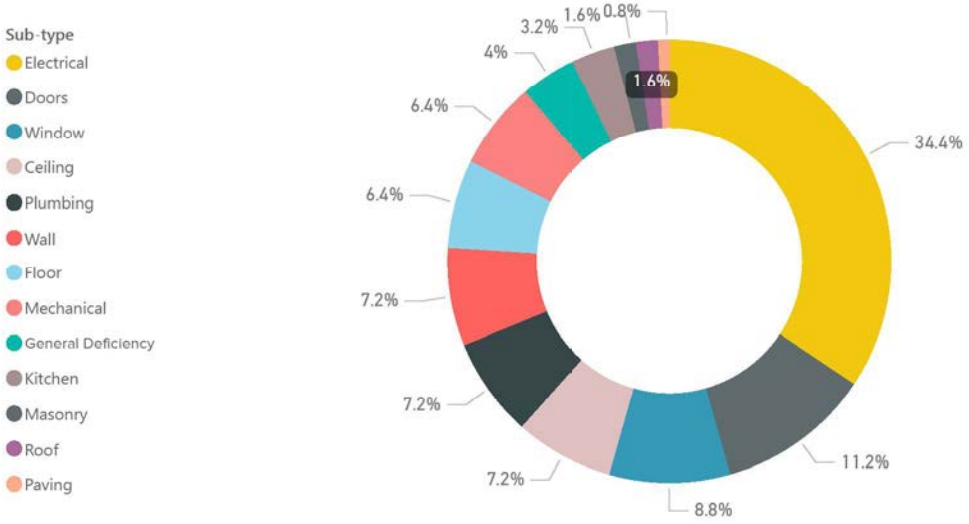
COLOR LEGEND

- Administration/ Administration Support
- Academic Spaces/ Academic Support
- Library/ Library Support
- Dining/ Dining Support
- Computer Lab
- Fine Arts/Fine Arts Support
- Resource
- Building Support
- Circulation

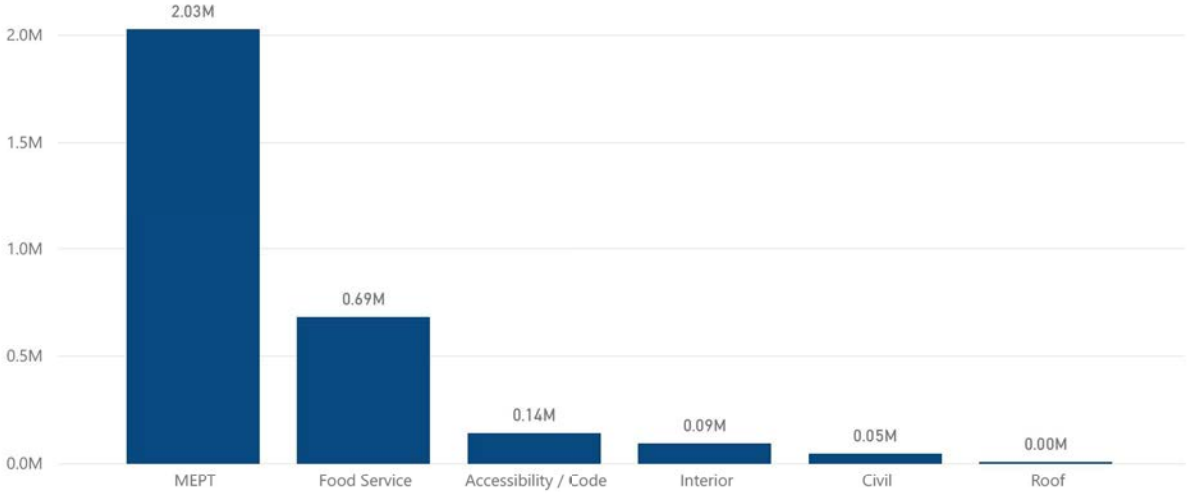
COST SUMMARY

3M	$31.78	94,325
Campus Total	$/SF	Facility Square Footage

Number Of Deficiencies



Cost by Deficiency Type



EXECUTIVE SUMMARY / KEY FINDINGS

ACCESSIBILITY/CODE

Accessibility within Lone Star Elementary School seems to be in general compliance with TAS. Toilet rooms seem to be relatively new and are in good condition. The building is equipped with a fire suppression system and appears to be in good condition.

+ In 2020 Montgomery County began to require the provision of a radio response system testing of educational facilities which will be required by the Fire Marshal.
+ Recommend updating Exterior ADA Signage and Striping to insure compliance.
+ Add striping to connect the ADA parking to the southwest of the building.
+ ADA Access should be provided to athletics fields, and playgrounds.
+ The fire alarm system is an addressable system but could not be observed. It appears the system does not have voice evacuation. AHJ should be consulted if a renovation is completed.

SITE CONDITIONS

Upon review of the site conditions at the Lone Star Elementary School, it appears that the site is in a relatively fair condition. The overall drainage infrastructure is unclear. The fence needs maintenance. There are areas in the field that show signs of erosion, and minor areas in the parking lot that show evidence of ponding. There is staining and possible ponding on the sidewalk in a small area south of the building. There is minor concrete joint failure in the pavement due west of the building. The fence along the north/west boundary along the unnamed street is in poor condition/. There seems to be minor erosion in the playground areas to the north/east of the building. Immediately southeast of the building, there is an apparent low spot with no drain present. While this is off-site, there is severe erosion present along the ditch banks to the west of the site adjacent to the unnamed street.

+ Replace joint sealants where necessary.
+ Repair fence in areas where it is damaged.
+ Fill in eroded areas.

EXECUTIVE SUMMARY / KEY FINDINGS

WALLS / MASONRY WALLS

Some of the brick facades seem to have discoloration that may be due to water leaks from gutters. Exterior walls do not have control joints located along openings, which creates issues related to building movement. In areas where stone is placed the displacement of stone, and cracking of stone was observed.

+ It is recommended that the stone wall is repaired.
+ Consider the installation of additional control joints within the masonry walls.
+ Pressure wash the masonry
+ Remove and replace exterior sealant.

The interior walls are in poor to fair condition. It appears that gypsum walls throughout the facility have sustained damages, some due to desk or chairs running against the wall. Some due wear and tear of a classroom over time. There also appear to be cracks, where control joints were not provided above doors.

+ It is recommended that all walls receive new finishes.
+ Consider cutting control joints above gypsum openings throughout the building.
+ Bases throughout the facility have sustained damage and appear to be in need of replacement. Determination can be done per area however it would be more effective to consider the replacement of all base within the facility.

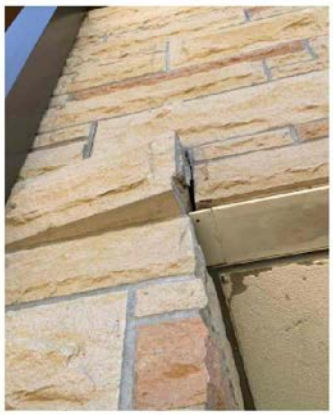
WINDOWS

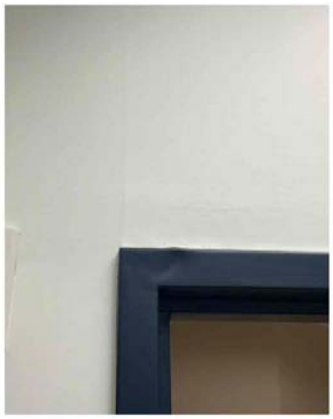
Window systems around the building seem to be in good condition. As mentioned above the Masonry walls do not have control joints. It appears that some sealant around windows is beginning to crack.

+ Recommend the replacement of window sealant throughout the campus.
+ Consider the installation of control joints at opening.

ROOF

Lone Star Elementary appeared to consist of two main roof areas with a combined measurement of approximately 100,000 square feet, one being a standing seam metal roof and the other appeared to consist of an asphaltic roof membrane with a Hydro Stop roof coating applied to its surface. Both the standing seam metal roof and the coated roof area appeared to be in overall good condition and very few deficiencies were observed. Deficiencies








EXECUTIVE SUMMARY / KEY FINDINGS

observed appeared to include one blister in the field of the low-sloped roof area, cracked sealant at rooftop units, and an exhaust fan lacking proper fasteners. It appears that if manufacturer recommended maintenance is continued it is possible that the low-sloped roof areas have a remaining effective service life of approximately six years, and the metal panel roof areas appeared to have a minimum remaining effective service life of approximately twelve years.

+ Recommend installation of additional fasteners to the exhaust fans lacking proper mechanical attachment, replacing deficient sealant/
+ Cut and patch the blister in the field of the roof.

FLOOR

Terrazzo flooring appears to have cracking throughout the facility. Cracking appears to be prominent along the expansion joints. VCT shows evidence of cracking in some areas and can be replaced on a room by room basis.

DOORS & HARDWARE

The door frames throughout the campus seem to have experienced damage over the years. The doors appear to be PLAM clad, and have also sustained damage. Narrow lites within doors seem to be peeling and some have been damaged.

+ Recommend the repainting and repair of hollow metal frames and window lites withing doors.
+ Recommend the patching and repair of PLAM doors as needed.

The door hardware observed throughout the campus seems to be in general compliance with TAS, and in fair condition. Some closers were observed to be dysfunctional.

+ General maintenance of door closers is recommended.
+ Recommend the review of classroom hardware sets to conform with district standards.

MILLWORK:

Millwork throughout the school appears to be in fair condition.

CEILINGS

Ceilings and ceiling grid system throughout the building seem to be in good condition. There are some areas that have been damaged and should be replaced.

EXECUTIVE SUMMARY / KEY FINDINGS

DINING AND KITCHEN

Within the kitchen and server of Lone Star Elementary School the floors, walls, and ceiling seem to be in general compliance with current health codes. The finishes within the kitchen and servery include Quarry tile on the floors, CMU and Tile walls, as well as vinyl lay in ceiling tiles. There were no hand sinks observed within the Main Servery which is non-compliant with current health codes.

+ Increase Cold Storage to a minimum of 388 sq. feet
+ In lieu of the option above, the MISD could increase delivery frequency.
+ Review ventilation throughout the kitchen space to insure proper air exchange.
+ Stackable washer and Dryer within kitchen do not appear to be compliant with TAS. Recommend replacement with side by side units.
+ In general the Kitchen and servery seem to be undersized and should be expanded to 3,500 square feet to accommodate the overall potential occupant load of he building.
+ It appears that the equipment is beginning to reach its expected life cycle and will all need to be replaced within the next 5 years.

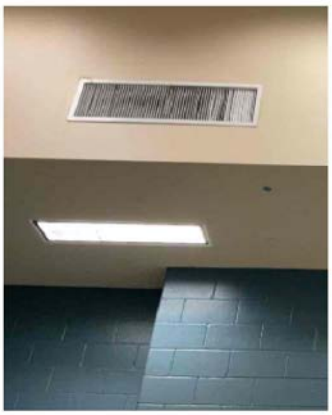
MECHANICAL / HVAC

The building cooling system is provided by one (1) 14-year-old 180-ton McQuay air-cooled chiller and one (1) 5-year-old 180-ton Carrier air-cooled chiller. The McQuay chiller is old and in bad condition. The Carrier chiller is in good condition.

The library, common, gym, and kitchen areas are served by 4-pipe single zone Carrier air handling units. Classroom areas are served by 4-pipe VAV Carrier air handling units. They are about 14 years old and are in good condition, however the interior is dirty. VAV boxes are in good condition. Building heat is being provided by one (1) 14-year-old Rite boiler. It is in good condition, however, does not meet current energy codes. Hot water pumps appear to be in good condition. Chilled water pump is dirty and rusted. Chilled water piping insulation is fiberglass. There are signs of previous condensation issue at many locations and insulation at the central plant and mechanical rooms is in poor condition. All fans and vents appear to be in good condition. Gym supply air grilles are damaged. A 16-year-old Liebert condensing unit on the roof is old and in bad condition. The BAS is by Automated Logic. The control modules are in good condition.

EXECUTIVE SUMMARY / KEY FINDINGS

+ Replace McQuay chiller with new.
+ Clean dirty coils, drain pains, motors, and fans for all air handling units.
+ Replace chilled water piping fiberglass insulation with new phenolic foam insulation.
+ Clean chilled water pump.
+ Replace/repair damages supply air grilles at gym.
+ Replace Liebert condensing unit with new.



ELECTRICAL / TECHNOLOGY

The electrical service is fed via pad mount transformer in the service yard of the building, which is connected to 2000A, 277/480V, 3-phase, 4-wire main switchboard located in the main electrical/mechanical room. This main switchboard feeds additional distribution boards and panelboards throughout the building. The 277/480V distribution boards and panelboards are utilized for lighting, small mechanical equipment, and feeding 120/280V panelboards via stepdown transformers. The 120/208V panelboards are connected to small mechanical equipment, receptacle loads, and miscellaneous loads throughout the building. Equipment is aging and some require replacement. There is a generator, that appears to feed selected receptacle and lighting loads. Lighting on the interior of the building consists of fluorescent 2x4 fixtures, 1x4 fixtures, and recessed cans throughout, with strip fixtures in mechanical areas. Exit signs appear to be fluorescent. Exterior lighting consists of surface mounted LED lighting at the canopy that are in poor condition, while all other areas appear to be fluorescent fixtures and old HID parking lot fixtures. Lighting controls appear to be controlled via toggle switches and do not meet current energy codes

+ Replace all interior lighting with new LED fixtures.
+ Replace all exterior lighting with new LED fixtures.
+ Replace all existing lighting controls with new controls in compliance with energy code.

PLUMBING

Most existing plumbing fixtures (drinking fountains, toilets, flush valves, lavatories, faucets, sinks, etc.) are relatively new and in good condition. Wash fountains at gang restrooms are CW only. Mop basins in custodial closets are in poor condition. Floor drain grates throughout building are badly corroded. Gas water heaters for kitchen and admin area. Electric water heaters are located throughout building for associated areas. All water heaters are

EXECUTIVE SUMMARY / KEY FINDINGS

relatively new and in good working condition. Gas water heater does not have combustion air installed. Sanitary waste and vent piping is no-hub cast iron above grade anc PVC below grade. Piping is in relatively good condition. Roof was drained primarily via gutters and downspouts. Only one primary and one overflow roof drain was observed. Roof drain piping is no-hub cast iron above grade and PVC below grade. Piping is in relatively good condition. No water softener for building. Gas piping is in black steel and in good condition. Gas pressure at gas meter is 5-psig. Wall hydrants around exterior of building are in good condition.

+ Repair urinal flush valves in BOYS 214.
+ Add HW to gang restroom wash fountains.
+ Replace mop sinks in all custodial closets.
+ Replace floor drain grates throughout building.
+ Install HW circulator pump at electric water heater in CUST 2.
+ Reroute HW piping that is currently above electrical panels in MECH 4ELEC.
+ Add water softener for gas water heater system.

CAPACITY AND TEA ANALYSIS

UTILIZATION	TEA		CAPACITY	
Room	Qty.	"Students/Room"	Max	"Functional (90%)"
Classrooms				
PK-1st	18	22	396	356
2nd - 5th	26	22	572	514
Life Skills	1	12	12	10
TOTAL	45		980	880

Enrichment Curriculum Spaces	
Science/Art	2
Music	1
Computer	1
Multi-Purpose	1

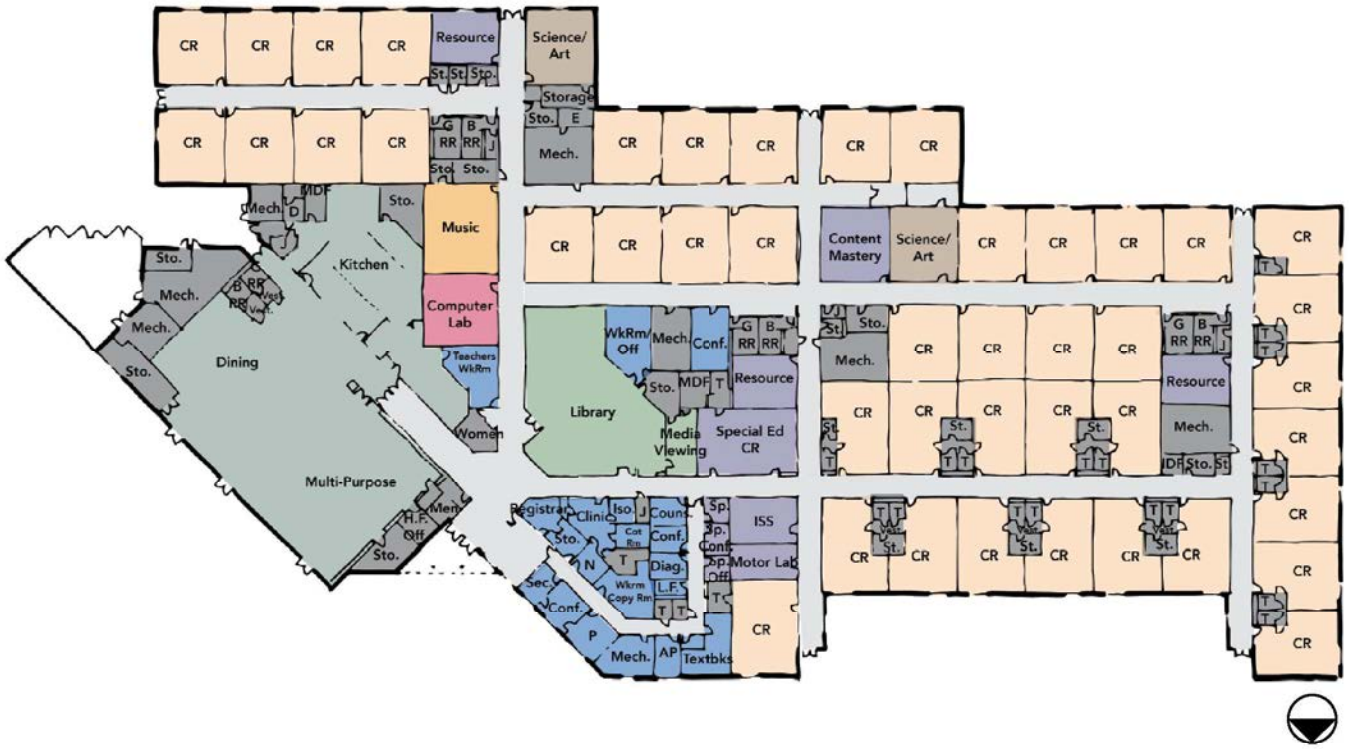
MADELEY RANCH ELEMENTARY SCHOOL

04

GENERAL INFORMATION

MADELEY RANCH ELEMENTARY SCHOOL 3500 Madeley Ranch Road Montgomery, TX 77356	
Year(s) Built:	2009
Approx. Total Building Square Footage	94,750
Grades Served	Pre-K - 5th
Max Capacity / Functional Capacity	980 / 880
Current Enrollment	762

FLOOR PLAN



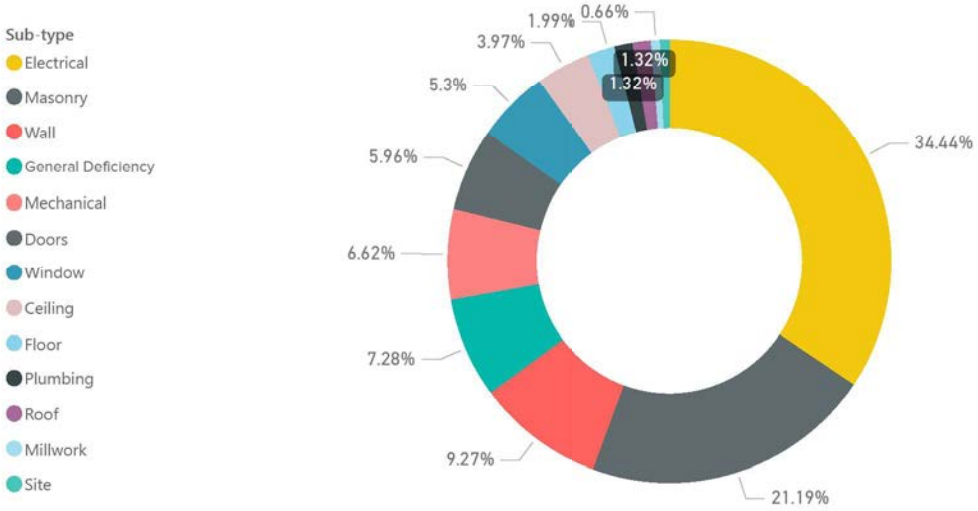
COLOR LEGEND

- Administration/ Administration Support
- Academic Spaces/ Academic Support
- Library/ Library Support
- Dining/ Dining Support
- Computer Lab
- Fine Arts/Fine Arts Support
- Resource
- Building Support
- Circulation

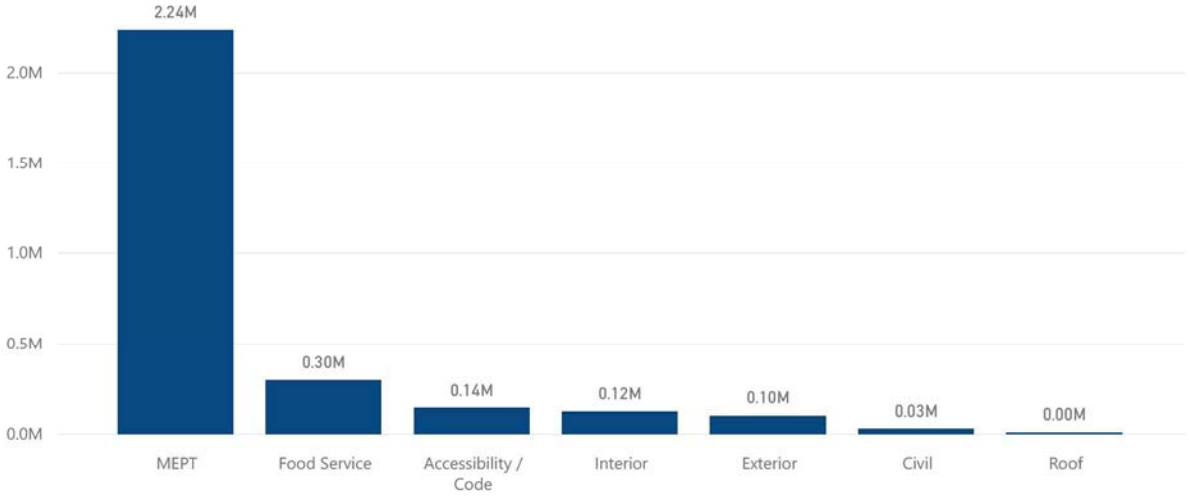
COST SUMMARY

3M	$30.94	94,750
Campus Total	$/SF	Facility Square Footage

Number Of Deficiencies



Cost by Deficiency Type



EXECUTIVE SUMMARY / KEY FINDINGS

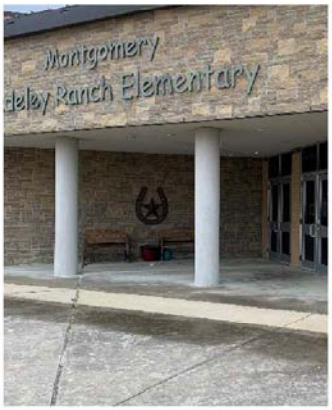
ACCESSIBILITY/CODE

Accessibility within Madeley Ranch Elementary School seems to be in general compliance with TAS. Toilet rooms seem to be relatively new and are in good condition. The building is equipped with a fire suppression system and appears to be in good condition.

+ In 2020 Montgomery County began to require the provision of a radio response system testing of educational facilities which will be required by the Fire Marshal.
+ The existing building is fire sprinklered with 8" fire main. System appears to be in good working condition.
+ ADA Access should be provided to athletics fields, and playgrounds. Consider Secured access to playgrounds.
+ The fire alarm system is an addressable system but could not be observed. Booster power supplies are located throughout the building. It appears the system does not have voice evacuation. Smoke detectors appear to be outdated type. AHJ should be consulted if a renovation is completed.

SITE CONDITIONS

Upon review of the site conditions at Madeley Ranch Elementary School, it appears that the site is in a relatively good condition. The site appears to have good drainage conveyance overall, but maintenance is required to attend to some partially clogged and obstructed pipes. Parking lot and fire lane striping appears to need to be repainted throughout. There are areas where the joint sealant is in disrepair throughout the site. The fire lane, parking stall, and traffic arrow paint is faded throughout the site. There is water staining at the main entrance and along the south and west faces of the building. There is water staining due to improper drainage located near a canopy downspout on the south side of the building. There is debris/vegetation located in the trench drain to the east of the main entrance. Grass is overtaking a manhole located near the maintenance area. The soils are washing out in the playground area near the western gate. There is ponding in the southwest drainage ditch at a drainage structure. The ROW culverts along the western portion of Madeley Ranch Road are clogged with grass clippings/vegetation. Some of the ROW culverts along the western portion of Madeley Ranch Road also have standing water/ponding issues. There is sedimentation build-up in the parking lot curb cut that leads to the ROW ditch.



EXECUTIVE SUMMARY / KEY FINDINGS

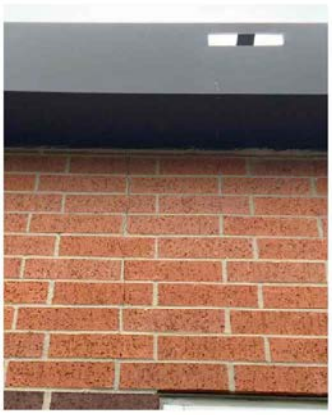
There is a sanitary cleanout with a missing lid. Along the front of the school, the landscape drain inlets are clogged with debris. There is a damaged Type E inlet nearing the walking track. The walking track pavement is worn down.

+ Power wash water stained sidewalk.
+ Clean out drainage inlets and trench drain.
+ Maintain southern drainage ditch and clear the vegetation from it and the ROW culverts.
+ Regrade east driveway to mitigate ponding issue.
+ Restripe the parking lots and replace joint sealants.
+ Restripe the fire lane and the traffic arrows.
+ Replace joint sealants where necessary.
+ Repair fence in areas where it is damaged.
+ Fill in eroded areas.

WALLS / MASONRY WALLS

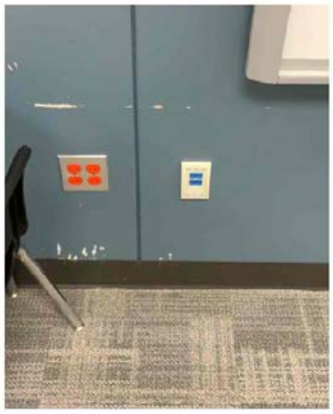
Some of the brick facades seem to have near the base which may have to due with the vapor-barrier, or issues with the gutter system. Some exterior walls do not have control joints located along openings, which creates issues related to building movement, cracking in exterior brick was observed.

+ It is recommended that the stone wall is repaired.
+ Consider the installation of additional control joints within the masonry walls.
+ Pressure wash the masonry



The interior walls are in fair condition. It appears that Cracks can be found in various gypsum and concrete masonry unit walls throughout the facility. It is recommended that all walls receive new finishes, and the conditions are monitored.

+ Cracks should be filled, and maintained as settlement occurs.
+ Normal wear and tear is present in all classroom walls, in some cases holes will have to be filled and painted; others may require replacement of gypsum



WINDOWS

Window systems around the building seem to be in fair condition. As mentioned above the Masonry walls do not have control joints.

+ Replace window sealant throughout the campus.
+ Consider the installation of control joints at opening.
+ Replace window gaskets throughout the campus
+ Replace window systems where remediation damaged the drainage system.

EXECUTIVE SUMMARY / KEY FINDINGS

ROOF

Madeley Ranch Elementary appeared to consist of two main roof areas with a combined measurement of approximately 100,000 square feet, one being a standing seam metal roof and the other appeared to consist of a single-ply roof membrane with a coating applied to exhaust fans in the field of the roof. Both the standing seam metal roof and the single-ply roof area appeared to be in overall good condition and very few deficiencies were observed. Deficiencies observed appeared to include cracked sealant at vent pipes, and deteriorated coating at exhaust fans in the field of the low-sloped roof area. t appears that if manufacturer recommended maintenance is continued it is possible that the existing low-sloped roof areas could have a minimum remaining service life of approximately eight years with proper repairs and maintenance, the standing seam metal roof areas appeared to have a minimum remaining effective service life of approximately twelve years.

+ Where roof coating is deteriorating it is recommended to apply additional layers of a compatible coating to prevent further degradation.
+ Recommend the replacement of the deficient sealant to prevent moisture ingress.

FLOOR

Flooring throughout the building appears to be in good condition. There is evidence of settlement cracking in various and should be monitored.

DOORS & HARDWARE

The door frames throughout the campus seem to have experienced damage over the years. Doors appear to be PLAM clad, and have also sustained damage.

+ Recommend the repainting and repair of hollow metal frames.
+ Recommend the patching and repair of PLAM doors as needed.

The door hardware observed throughout the campus seems to be in general compliance with TAS, and in fair condition.

+ Recommend the review of classroom hardware sets to conform with district standards.
+ Replacement of some exterior door hardware is recommended due to rusting.

EXECUTIVE SUMMARY / KEY FINDINGS

MILLWORK:

Millwork throughout the school appears to be in good condition.

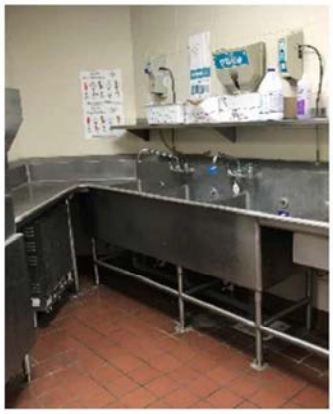
CEILINGS

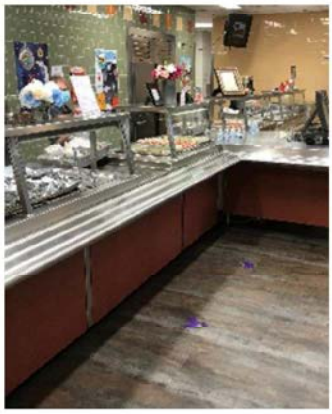
Ceilings and ceiling grid system throughout the building seem to be in good condition as they were installed in 2018. Regular maintenance of valves, and other above ceiling elements will extend the life of the ceiling tile, and hard ceilings.

DINING AND KITCHEN

Within the kitchen and server of Madeley Ranch Elementary School the floors, walls, and ceiling seem to be in general compliance with current health codes. The finishes within the kitchen and servery include Quarry tile and Ceramic Tile on the floors, CMU and Tile walls, as well as vinyl lay in ceiling tiles. There is evidence of structural settlement within the floors, and transferring into the walls. It was noted by staff that floor finishes were recently replaced to accommodate the settling of the stricture. It was noted that the warewash space is pinched at three compartment sink / dish machine table junction.

+ Increase Cold Storage to a minimum of 388 sq. feet
+ In lieu of the option above, the MISD could increase delivery frequency.
+ Stackable washer and Dryer within kitchen do not appear to be compliant with TAS. Recommend replacement with side by side units.
+ In general the Kitchen and servery seem to be undersized and should be expanded to 3,500 square feet to accommodate the overall potential occupant load of he building.
+ It is recommended that the warewash area is enlarged
+ The kitchen equipment is beginning to reach its expected life cycle and will need to be replaced within the next 5 years.





MECHANICAL / HVAC

The building cooling system is provided by two (2) 12-year-old 200-ton Carrier air-cooled chillers. One of the chillers appear to not be in operation. The library, common, gym, and kitchen areas are served by 4-pipe single zone Carrier air handling units. Classrooms areas are served by 4-pipe VAV Carrier air handling units. They are about 12-years-old and are in good condition, however the interior is dirty. VAV boxes are in good condition. Building heat is being provided by two (2) 12-year-old Patterson-Kelley boilers.

EXECUTIVE SUMMARY / KEY FINDINGS

They are in good condition, however one of the boiler's acid neutralization kit is not working properly allowing the boiler to drip on the floor. Boilers' flue vent is not sloped properly not allowing gas to vent properly. Chilled water pumps are starting to rust due to leaks. Hot water pumps are in good condition. Chilled water piping insulation is fiberglass. There are signs of previous condensation issue at many locations and insulation at the central plant and mechanical rooms is in poor condition. All fans and vents are in good condition, however they seemed to not be in operation. Technology room has no dedicated AC unit. The BAS is by Automated Logic. The control modules are in good condition.

- Replace both carrier chillers with new.
- Clean dirty coils, drain pains, motors, and fans for all air handling units.
- Repair AHU-5 motor.
- Repair boiler's acid neutralization kit and redesign venting system.
- Clean chilled water pumps and repair leaks.
- Replace chilled water piping fiberglass insulation with new phenolic foam insulation.
- Provide dedicated AC unit for technology room.
- Revise sequence of operation for all fans.

ELECTRICAL / TECHNOLOGY

The electrical service is fed via pad mounted utility transformer at the exterior of the building, which is connected to 2000A, 277/480V, 3-phase, 4-wire main switchboard located in the main electrical room. This main switchboard feeds additional distribution boards and panelboards throughout the building. The distribution boards provide mechanical equipment circuiting. The 277/480V panelboards are utilized for lighting, small mechanical equipment, and feeding 120/280V panelboards via stepdown transformers. The 120/208V panelboards are connected to small mechanical equipment, receptacle loads, and miscellaneous loads throughout the building. Some equipment is aging and require replacement. There is a 500kW diesel generator on the exterior of the building feeding all life safety and emergency loads via (2) ATSs and are in good condition. Lighting on the interior of the building consists of fluorescent 2x4 fixtures, 1x4 fixtures, and recessed cans throughout, with strip fixtures in mechanical areas. Exit signs appear to be fluorescent and outdated. Exterior lighting consists of old surface mounted HID lighting at the canopy, while all other areas appear to be new LED fixtures with some non-functional downlights at entrance. Parking lot have outdated HID fixtures. Lighting controls appear to be controlled via toggle switches and do not meet current energy codes. The intercom and clock system could not be observed but all devices indicate a newer system except for few illegible clocks.

- Replace all other outdated and damaged pieces of panels and equipment throughout the buildings.
- Replace all interior lighting and Exit signs with new LED fixtures.
- Replace all remaining exterior lighting with new LED fixtures.
- Replace all parking lot lighting with new LED fixtures.
- Replace all existing lighting controls with new controls in compliance with energy code.

EXECUTIVE SUMMARY / KEY FINDINGS

PLUMBING

Most existing plumbing fixtures (drinking fountains, toilets, flush valves, lavatories, faucets, sinks, etc.) are relatively new and in good condition. Some water closets in staff restrooms are broken. Wash fountains at gang restrooms are CW only. Gas water heaters for kitchen and admin area. Electric water heaters are located throughout building for associated areas. All water heaters are relatively new and in good working condition. Gas water heater does not have combustion air installed. No HW circulator pump for water heater in CUST 2. Sanitary waste and vent piping is no-hub cast iron above grade and PVC below grade. Piping is in relatively good condition. Roof was drained primarily via gutters and downspouts. Only one primary and one overflow roof drain was observed. Roof drain piping is no-hub cast iron above grade and PVC below grade. Piping is in relatively good condition. Gas piping is in black steel and in good condition. Gas pressure at gas meter is 5-psig. Wall hydrants around exterior of building are in good condition. No solids interceptors servicing art sinks. No HW service to Kindergarten sinks. Domestic water piping is copper and in relatively good condition. No water softener for building.

+ Repair damaged water closets and flush valves.
+ Add HW to gang restroom wash fountains.
+ Install HW circulator pump at electric water heater in CUST 2.
+ Install solids interceptors for art sinks.
+ Add HW and thermostatic mixing valve to Kindergarten sinks.
+ Add water softener for gas water heater system.

CAPACITY AND TEA ANALYSIS

UTILIZATION	TEA		CAPACITY	
Room	Qty.	"Students/Room"	Max	"Functional (90%)"
Classrooms				
PK-1st	18	22	396	356
2nd - 5th	26	22	572	514
Life Skills	1	12	12	10
TOTAL	45		980	880

Enrichment Curriculum Spaces	
Science/Art	2
Music	1
Computer	1
Multi-Purpose	1

MONTGOMERY ELEMENTARY SCHOOL

05

GENERAL INFORMATION

MONTGOMERY ELEMENTARY SCHOOL 13755 Liberty Street Montgomery, TX 77316	
Year(s) Built:	1986, 2009
Approx. Total Building Square Footage	116,971
Grades Served	Pre-K - 5th
Max Capacity / Functional Capacity	1046 / 940
Current Enrollment	458

FLOOR PLAN

COLOR LEGEND

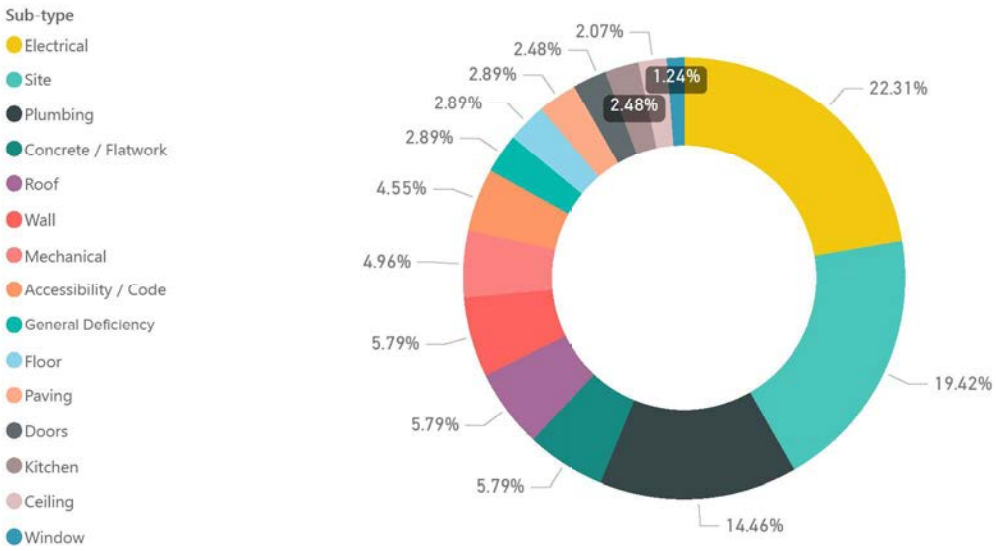
- Administration/ Administration Support
- Academic Spaces/ Academic Support
- Library/ Library Support
- Dining/ Dining Support
- Gym
- Fine Arts/Fine Arts Support
- Resource
- Science / Art
- Building Support
- Circulation

Huckabee

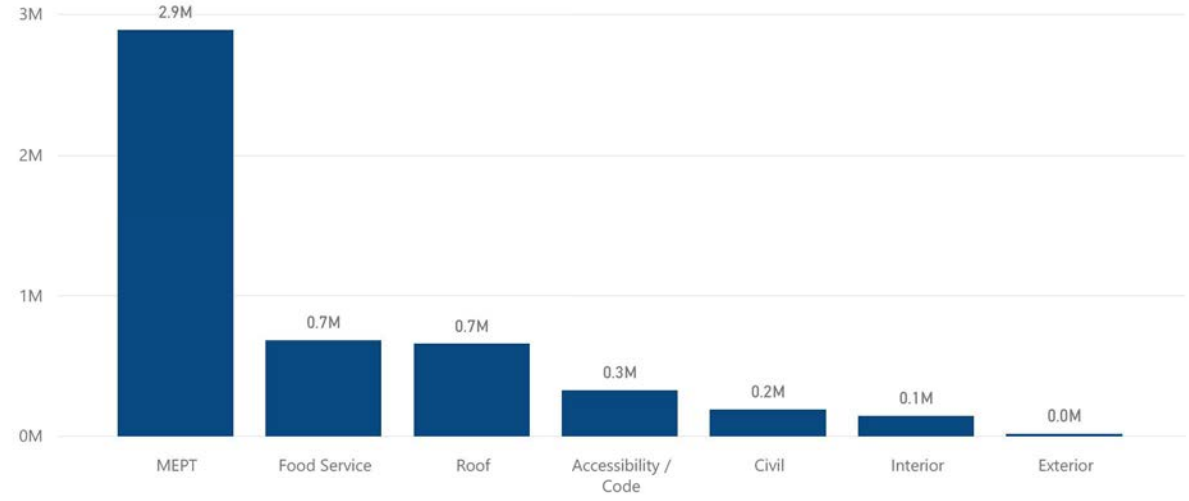
COST SUMMARY

5M	$40.03	122,275
Campus Total	$/SF	Facility Square Footage

Number Of Deficiencies



Cost by Deficiency Type



EXECUTIVE SUMMARY / KEY FINDINGS

ACCESSIBILITY/CODE

Accessibility within Montgomery Elementary Elementary School seems to be in general compliance with TAS. Toilet rooms seem to be relatively new and are in good condition, except within the Gym. The building is equipped with a fire suppression system and appears to be in good condition.

- In 2020 Montgomery County began to require the provision of a radio response system testing of educational facilities which will be required by the Fire Marshal.
- Kiln room is not ventilated, and should be brought into compliance.
- The ADA accessible stall at the southeast corner of the building has faded striping and appears to exceed ADA compliant sloping for accessible parking stalls and access aisles. ADA Access should be provided to athletics fields, and playgrounds.
- The fire alarm system is an addressable system with voice evacuation.
- No fire alarm system was viewed at the band hall, and should be added and tied to the main building.
- The existing building is fire sprinklered with 8" fire main. System appears to be in good working condition.
- The band hall is not sprinklered. If a renovation is completed addition of fire sprinkler may be required by the Fire Marshal.
- Toilet rooms within the Gym should be brought into compliance.

SITE CONDITIONS

Upon review of the site conditions at Montgomery Elementary School, it appears that the site is in a relatively fair condition, but the asphalt pavement on the site is in need of maintenance, and repair. The bus and parent drive aisles appear to be in good condition and overall it appears that the site drains well, there just may be areas of erosion that need to be addressed before they become problems in the future. There is evidence of rust and deterioration of the parking rail along the parking stalls in the front parking lot. The sidewalk in the front of the school appears to drain back to the building in areas and does not appear to have proper slope away from the building. There is evidence of water staining on the sidewalks surrounding the building which is indicative of poor drainage conditions. The drainage swale along the southern property has deterioration of the baffling devices and has evidence of erosion on the side banks and sedimentation build up in the concrete slope paving sections.

EXECUTIVE SUMMARY / KEY FINDINGS

+ Mill and overlay the asphalt in the front parking lot and repair any weakened sub-grade material. Seal and stripe the area when done.
+ Replace joint sealants between concrete panels.
+ Re-establish areas where erosion has occurred by filling the areas in and placing rip-rap along areas where sheet flow occurs across drive aisles to help attenuate the flow from storm-water runoff.
+ Re-stripe the ADA Accessible parking space in the front of the school and look to bring area up to compliance with current standards for sloping.
+ Perform maintenance on drainage structures and conveyance paths to rebuild side slopes, remove blockages obstructing pipes, and clear sedimentation and vegetative growth buildups.
+ Establish better drainage patterns for paved areas adjacent to the buildings to help prevent against water buildup at the building walls.
+ Pressure was the sidewalks around the building.








WALLS / MASONRY WALLS

A majority of the brick facades seem to have discoloration that may be due to water leaks from gutters. The seems to be some efflorescence which can be cause by issues with the vapor barrier. There are some areas where cracking of brick was observed, and appears to be due to settlement of the buildings structure. Plaster facade is dirty, and is showing signs of cracking.

+ Pressure wash the masonry
+ Remove and replace exterior sealant.
+ Patch and repair Plaster

The interior walls are in fair condition.

WINDOWS

Window systems around the building seem to be in good condition. It appears that some sealant around windows is beginning to crack. Some lintels are being exposed to the elements.

+ Recommend the replacement of window sealant throughout the campus.
+ Paint Lintels throughout the campus.

EXECUTIVE SUMMARY / KEY FINDINGS

ROOF

Montgomery elementary appeared to consist of a main building with a Hydro Stop roof coating system, a gymnasium with a metal panel roof system, and a band hall with a metal panel roof system. The main building appeared to consist of a low-sloped coated roof system, deficiencies observed in this location appeared to include water-filled blisters in the base flashing along an adjoining wall in the east quadrant. The main building roof system appeared to be in overall good condition and appeared to have a minimum remaining service life of eight years with proper repairs and maintenance. The gymnasium roof that appeared to consist of a metal panel roof system with a coating applied to its surface appeared to be in overall good condition with no deficiencies observed. The gymnasium roof appeared to have a remaining effective service life of approximately eight years. The band hall appeared to consist of a metal panel roof system. Deficiencies observed at the band hall roof appeared to include rusted fasteners and poorly sealed roof penetrations.

+ It is recommended that a qualified contractor cuts into the blisters to drain the water, patching the location. It is further recommended that a water test is preformed to determine the source of moisture infiltration.
+ It appears that the band hall roof is near the end of its effective service life and should be replaced or coated in the near future.

FLOOR

The flooring through out the building seemed to be in fair condition. There are areas of VCT and Capet flooring where damage has occurred and areas should be replaced. Flooring within the gym should be re-finished and re-sealed.

DOORS & HARDWARE

The door frames throughout the campus seem to have experienced expected wear and tear. Doors appear to be PLAM clad, and are in good condition. Exterior hollow metal doors and frames are in bad condition.

+ Recommend the patching and repair of PLAM doors as needed.
+ The exterior doors and frames should be removed and replaced.

The door hardware observed throughout the campus seems to be in general compliance with TAS, and in fair condition. One door within the gym seems to have a knob, and it should be replaced.

EXECUTIVE SUMMARY / KEY FINDINGS

MILLWORK:

Millwork throughout the school appears to be in good condition. There are a few classrooms that need repair/ replacement of hardware pulls.

CEILINGS

Ceilings and ceiling grid system throughout the building seem to be in good condition. Regular maintenance of valves, and other above ceiling elements will extend the life of the ceiling tile, and hard ceilings.

DINING AND KITCHEN

Within the kitchen and server of Montgomery Elementary Elementary School the floors, walls, and ceiling seem to be in general compliance with current health codes. The finishes within the kitchen and servery include Quarry tile and Ceramic Tile on the floors, CMU and Tile walls, as well as vinyl lay in ceiling tiles. Overall the Kitchen and Servery are nearing the end of their life-cycle. The counters are too tall for students to reach self serve areas. The kitchen staff parking seems to be undersized.

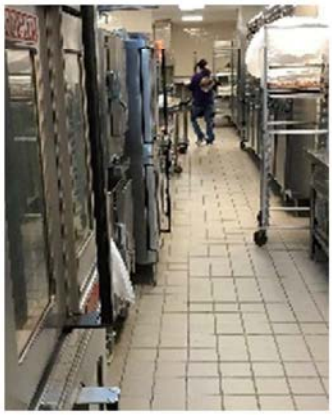
+ Complete Kitchen, and servery renovations are recommended.
+ It is noted that the kitchen equipment is beginning to reach its expected life cycle and will need to be replaced within the next 5 years.
+ Based on the age of the students the counters should be replaced to provide recess at self-serve areas to be level with tray-slide or replace three (3) Serving Counters.
+ Review ventilation throughout the kitchen space to insure proper air exchange. Specifically above the freezer space as there is evidence of moisture which will lead to mold.

MECHANICAL / HVAC

Main Building

The building cooling system is provided by two (2) 15-year-old York air-cooled chillers and two (2) 12-year-old 80-ton Carrier air-cooled chillers. The York chillers appear to be in fair condition. The Carrier chiller appear to be in fair condition. The library, kitchen, and dining areas are served by 2-pipe single zone Carrier and two (2) MacQuay air handling units with electric heat. Classrooms areas are served by 2-pipe VAV Carrier air handling units. They are





EXECUTIVE SUMMARY / KEY FINDINGS

about 15-years-old and are in good condition, however the interior is dirty. VAV boxes are in good condition. Building heat is being provided by duct heaters at the AHUs and VAV boxes. They are in good condition. Gym is served by two (2) 5-year-old 16-ton Carrier dx suspended air handling units with electric duct heaters. They are in good condition. Coaches office area is served by one (1) 5-year-old 16-ton Carrier dx suspended air handling unit with electric duct heaters. It is in good condition. Chilled water pumps are old. Outdoor chilled water piping insulation is damaged. Chemical pot feeders are rusted and are in poor condition. All fans and vents are in good condition, except for kitchen supply fans. Kitchen supply fans are old and in poor condition. Fan on Room 2.16 is dirty and growing a hornets nest. Fan is in bad condition. The BAS is shared by Automated Logic and Unify. The control modules are in good condition.

+ Replace York and Carrier chillers with new.
+ Clean dirty coils, drain pains, motors, and fans for all air handling units.
+ Replace pumps with new.
+ Repair outdoor chilled water piping insulation.
+ Replace chemical pot feeders with new and insulate.
+ Replace kitchen supply fans with new.
+ Replace fan in Room 2.16 with new.
+ Upgrade controls and consolidate under one manufacturer.

Band Hall

Building is being served by two (2) 10-year-old Payne vertical dx fan coil with electric duct heaters. Fan coil units are in good condition, however condensing units are in bad condition.

+ Replace condensing units with new.

ELECTRICAL / TECHNOLOGY

Main Building

The electrical service is fed via pad mount transformer at the exterior of the building, which is connected to an old 2500A, 277/480V, 3-phase, 4-wire main switchboard located in the main electrical room and has the maximum amount of NEC allowable service disconnects. The distribution boards provide mechanical equipment circuiting. The 277/480V panelboards are utilized for lighting, small mechanical equipment, and feeding 120/280V panelboards via stepdown transformers. The 120/208V panelboards are connected to small mechanical equipment, receptacle loads, and miscellaneous loads throughout the building. Equipment is aging and some require replacement. There is a generator that feeds select loads at the main building and additional loads at the adjacent technology building. Lighting on the interior of the building consists of fluorescent 2x4 fixtures, 1x4 fixtures, and recessed cans throughout, with strip fixtures in mechanical areas. Exit signs appear to be fluorescent. Exterior lighting consists of old surface mounted HID lighting at the canopy, while all other areas appear to be new LED fixtures. Lighting controls appear to be controlled via toggle switches and do not meet current energy codes.

EXECUTIVE SUMMARY / KEY FINDINGS

+ Replace existing main switchboard. Replace all other outdated and damaged pieces of equipment throughout the buildings.
+ Replace all interior lighting with new LED fixtures.
+ Replace all remaining exterior lighting with new LED fixtures.
+ Replace all existing lighting controls with new controls in compliance with energy code.

Band Hall

The electrical service is fed via pad mount transformer at the exterior of the building, which is connected to a wireway and 200A, 277/480V, 3PH, 4W service disconnect, which steps down via a step-down transformer and then to 120/208V, 3-PH panelboards. Lighting on the interior of the building consists of fluorescent 2x4 fixtures, 1x4 fixtures, with strip fixtures in mechanical areas. Exit signs appear to be fluorescent. Lighting controls appear to be controlled via toggle switches and do not meet current energy codes. The security system appeared to be outdated but headend equipment was not observed. IT racks appear to be in working condition, but the building appeared unused and could not be checked for function. The camera system could not be observed but all cameras indicate a newer system.

+ Replace all interior lighting with new LED fixtures.
+ Replace all existing lighting controls with new controls in compliance with energy code.
+ Tie building into existing main building security system.

EXECUTIVE SUMMARY / KEY FINDINGS

PLUMBING

Most existing plumbing fixtures (drinking fountains, toilets, flush valves, lavatories, faucets, sinks, etc.) are relatively new and in good condition. Plumbing fixtures in Gymnasium and choir hall are old and damaged. Kindergarten sinks are CW only. Electric water heaters are located throughout building. All are relatively new and in good condition. No gas water heaters were observed in building. No gas piping was observed on site. Sanitary waste and vent piping is cast iron and in relatively good condition. All plumbing piping in gymnasium and choir hall is in poor condition. Roof was drained via roof drains and overflow scuppers. Roof drains were in decent condition. Roof drain piping is no-hub cast iron above grade and PVC below grade. Piping is in relatively good condition. Sanitary waste and vent piping is no-hub cast iron above grade and PVC below grade. Piping is in relatively good condition. Wall hydrants around exterior of building are in decent condition.

+ Replace all plumbing fixtures and plumbing piping in gymnasium and choir hall.
+ Add HW to kindergarten sinks.
+ Add hosebibbs and drains in mechanical rooms.

CAPACITY AND TEA ANALYSIS

UTILIZATION	TEA		CAPACITY	
Room	Qty.	"Students/Room"	Max	"Functional (90%)"
Classrooms				
PK-5th	47	22	1034	930
Life Skills	1	12	12	10
TOTAL	48		1046	940

Enrichment Curriculum Spaces	
Art	1
Music	1
Computer	1
Multi-Purpose	1

STEWART CREEK ELEMENTARY SCHOOL

06

GENERAL INFORMATION

STEWART CREEK ELEMENTARY 18990 Stewart Creek Road Montgomery, TX 77356	
Year(s) Built:	2003
Approx. Total Building Square Footage	94,720
Approx. Total Site Area	Pre-K - 5th
Max Capacity / Functional Capacity	980 / 880
Current Enrollment	696

FLOOR PLAN

COLOR LEGEND

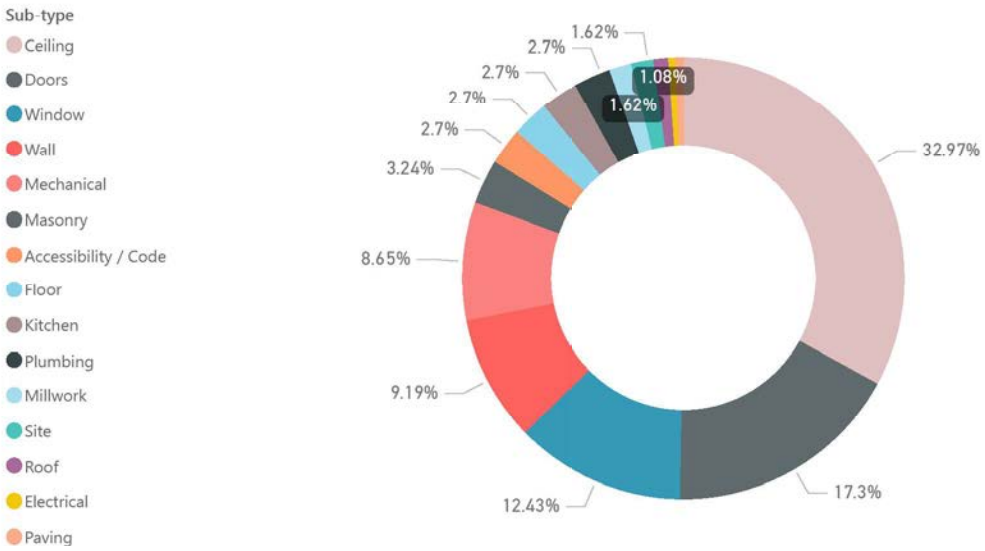
- Administration/ Administration Support
- Academic Spaces/ Academic Support
- Library/ Library Support
- Dining/ Dining Support
- Computer Lab
- Fine Arts/Fine Arts Support
- Resource
- Building Support
- Circulation

Huckabee

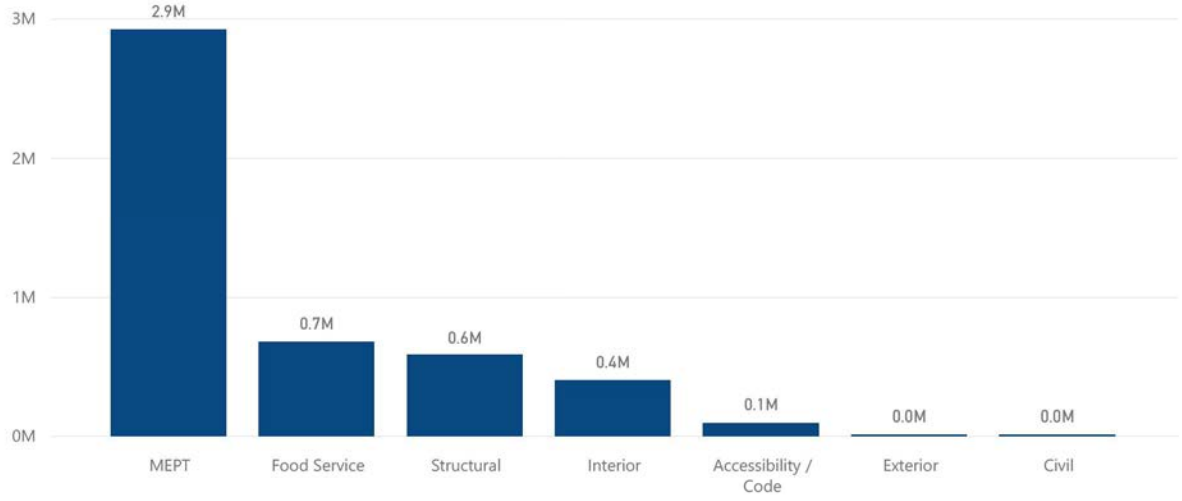
COST SUMMARY

5M	$50.32	94,720
Campus Total	$/SF	Facility Square Footage

Number Of Deficiencies



Cost by Deficiency Type

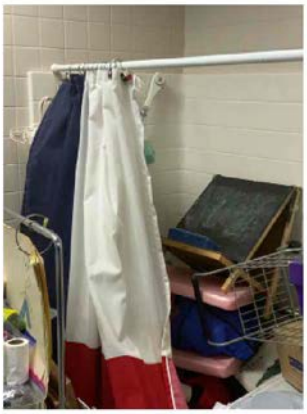


EXECUTIVE SUMMARY / KEY FINDINGS

ACCESSIBILITY/CODE

Accessibility within Stewart Elementary School seems to be in general compliance with TAS. Toilet rooms seem to be in fair condition. There are showers within the facility that are non-compliant. There are a few areas throughout the facility that do not have the required clear floor area. The building is equipped with a fire suppression system and appears to be in good condition.

+ In 2020 Montgomery County began to require the provision of a radio response system testing of educational facilities which will be required by the Fire Marshal.
+ Replace existing showers with accessible showers.
+ ADA Parking and access should be re-striped.
+ The fire alarm system is an addressable system but could not be observed. Booster power supplies are located throughout the building. It appears the system does not have voice evacuation.
+ The existing building is fire sprinklered with 8" fire main. System appears to be in good working condition.



SITE CONDITIONS

Upon review of the site conditions at Stuart Creek Elementary School, it appears that the site is in a relatively good condition. There are few areas on site with evidence of erosion or sedimentation building up which may impact drainage in the future. The dumpsters are located in an area that could potentially impede storm water runoff on the site or lead to trash building up in the storm sewer system over time. The ADA ramp behind the dumpsters is starting to exhibit cracking along the sloped curb and the joint connecting the ramp and landing pad with the drive pavement is starting to crack and spall. There are sections of sidewalk along the west building edge that is beginning to have erosion underneath the pavement. The drainage headwalls along the back of the building have erosion at the bottom of the concrete flume which is causing small pockets of standing water and is leading to erosion of the drainage path as it flows down the grass hill. There is staining of the concrete along the back side (west and north) of the building due to limited drainage across the sidewalk. The Type E inlet in the car-rider drop off lane has two curb cuts to allow pavement drainage in. These curb cuts have vegetative growth that is starting to obstruct water from leaving the parking lot which will result in ponding water in the drive lane and parking stalls. It appears that water is not properly drainage and may be seeping out of the downspout leads and onto the sidewalk.

EXECUTIVE SUMMARY / KEY FINDINGS

+ Place rip-rap at the bottom of the concrete channel flumes along the back of the school to help attenuate higher velocity flows to help protect against further erosion.
+ Establish vegetative cover in open dirt areas to help prevent sedimentation runoff in large storm events.
+ Clear a drainage path from the curb cuts to the Type-E inlet to allow for better drainage in the parking lot and parent drop-off drive.

WALLS / MASONRY WALLS

Some of the brick facades seem to have discoloration that may be due to water leaks from gutters. Exterior walls do not have control joints located along openings, which creates issues related to building movement. In areas where stone is placed the displacement of stone, and cracking of stone was observed. There is evidence of efflorescence which could be indicative of an issue with the vapor barrier.

+ Consider the installation of additional control joints within the masonry walls.
+ Pressure wash the masonry
+ Remove and replace exterior sealant.
+ Replace expansion joint caulk around the building.

The interior walls are in fair condition. It appears that miscellaneous gypsum walls throughout the facility have experienced wear and tear as would be expected and can be handled by continued maintenance.

+ Replace areas where substantial damage has occurred to interior walls.

WINDOWS

Window systems around the building seem to be in fair condition. As mentioned above the Masonry walls do not have control joints. It appears that some sealant around windows is beginning to crack.

+ Recommend the replacement of window sealant throughout the campus.
+ Consider the installation of control joints at opening.

ROOF

Stewart Creek Elementary appeared to consist of two main roof areas with a combined measurement of approximately 100,000 square feet, one being a standing seam metal roof and the other appeared to consist of an asphaltic

EXECUTIVE SUMMARY / KEY FINDINGS

roof membrane with a coating applied to its surface. Both the standing seam metal roof and the coated roof area appeared to be in overall good condition and very few deficiencies were observed. One hood installed to an equipment curb in the field of the low-sloped roof area appeared to be rusted but did not appear to require immediate attention or repair. It appears that at the low-sloped roof systems have a minimum remaining service life of eight years, and the standing seam roof areas appear to have a remaining service life of approximately thirteen years. The gutters around the building appear to not be sealed in some locations.

+ Properly seal joints at all gutters.

FLOOR

The flooring throughout the campus seems to be in fair condition. There are areas of the terrazzo flooring that appear to be cracking.

DOORS & HARDWARE

The door frames throughout the campus seem to have experienced damage over the years. Doors appear to be PLAM clad, are in fair condition.

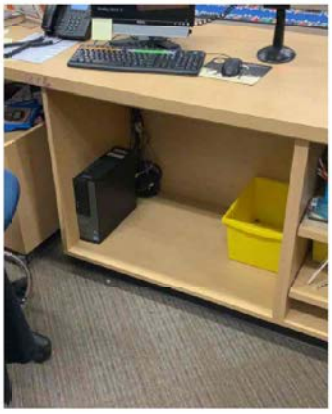
+ Recommend the repainting and repair of hollow metal frames.
+ Exterior doors and frames should be painted.

The door hardware observed throughout the campus seems to be in general compliance with TAS, and in fair condition.

MILLWORK:

Millwork throughout the school appears to be in fair condition. In some areas it was observed that there are no knee spaces provided.

+ Provide knee spaces in compliance with TAS.



CEILINGS

Ceilings and ceiling grid system throughout the building seem to be in poor condition and should be replaced. Leaks were observed throughout facility.

+ Provide new ceiling and grid system throughout the facility.

EXECUTIVE SUMMARY / KEY FINDINGS

DINING AND KITCHEN






Within the kitchen and server of Stewart Elementary School the floors, walls, and ceiling seem to be in general compliance with current health codes. The finishes within the kitchen and servery include Quarry tile and Terrazzo on the floors, CMU and Tile walls, as well as vinyl lay in ceiling tiles. Overall the Kitchen and Servery are nearing the end of their life-cycle. Layout of equipment over the years has made the kitchen inefficient. Cold storage continues to fail, and repairs are required frequently.

+ Increase Cold Storage to a minimum of 388 sq. feet
+ In lieu of the option above, the MISD could increase delivery frequency.
+ Complete Kitchen, and servery renovations are recommended. Increase the kitchen and servery to a minimum of 3,500 sq ft.
+ All of the Kitchen Equipment has reached is expected life cycle and should be replaced.
+ Hand wash stations need to be added to comply with health codes if renovations occur.
+ Review ventilation throughout the kitchen space to insure proper air exchange. Specifically above the freezer space as there is evidence of moisture which will lead to mold. Condensation is beginning to occur inside the assembly as penetration are not sealed. A: a minimum maintenance is required immediately.
+ Stackable washer and Dryer within kitchen do not appear to be compliant with TAS. They are also at the end of their life cycle. Recommend replacement with side by side units.

MECHANICAL / HVAC

The building cooling system is provided by two (2) 14 years old 230-ton Trane air-cooled chillers. The chillers, associated pumps and water specialty components are in bad condition. The building heat is being provided by a 14 years old 7,323 MBH Sellers boiler. Boiler appears to be in good condition. However, associated pumps are in poor condition. The library, common, gym, and kitchen areas are served by 4-pipe single zone Carrier air handling units. Some have been recently replace and some are in poor conditions. Classroom areas are served by VAV Carrier air handling units feeding VAV/FPB with reheating coil at the zones. AHUs are at the end of their life-cycle and some are in poor condition. Chilled water piping insulation is fiberglass. There are signs of previous condensation issue at many locations and insulation at the central plant and mechanical rooms is in poor condition. Roof fans, vents and outside air supply fans are not operational and in poor condition. Supply and return air grilles are rusted out and dirty at many locations. An 18-year-old Liebert condensing unit on the roof is old and in bad condition. The BAS is by Unify. The control modules are in good condition.

EXECUTIVE SUMMARY / KEY FINDINGS

- Replace chillers, associated pumps and water specialty components with new.
- Replace boilers, associated pumps and water specialty components with new.
- Replace old air handling units.
- Replace chilled water piping fiberglass insulation with new phenolic foam insulation in all mechanical rooms.
- Replace all exhaust & supply fans and vents with new.
- Replace rusted supply and return air grilles.
- Replace MDF Liebert condensing unit with new.

ELECTRICAL / TECHNOLOGY

The electrical service is fed via pad mount transformer in the service yard of the building, which is connected to 2000A, 277/480V, 3-phase, 4-wire main switchboard located in the main electrical/mechanical room. This main switchboard feeds additional distribution boards and panelboards throughout the building. The distribution boards provide mechanical equipment circuiting. The 277/480V panelboards are utilized for lighting, small mechanical equipment, and feeding 120/280V panelboards via stepdown transformers. The 120/208V panelboards are connected to small mechanical equipment, receptacle loads, and miscellaneous loads throughout the building. Equipment is aging and some require replacement. There is a small, residential grade generator, that feeds selected receptacle and lighting loads. Lighting on the interior of the building consists of fluorescent 2x4 fixtures, 1x4 fixtures, and recessed cans throughout, with strip fixtures in mechanical areas. Exit signs appear to be fluorescent. Exterior lighting consists of surface mounted LED lighting at the canopy that are in poor condition, while all other areas appear to be fluorescent fixtures and old HID parking lot fixtures. Lighting controls appear to be controlled via toggle switches and do not meet current energy codes. The intercom and clock system could not be observed but all devices indicate a newer system. The access control and security system could not be observed but all devices indicate a newer system.

- Replace existing generator with a new commercial grade and re-feed all existing circuits, as well as all other life safety items.
- Replace all interior lighting with new LED fixtures.
- Replace all exterior lighting with new LED fixtures.
- Replace all existing lighting controls with new controls in compliance with energy code.

EXECUTIVE SUMMARY / KEY FINDINGS

PLUMBING

Existing plumbing fixtures (drinking fountains, toilets, flush valves, lavatories, faucets, sinks, etc.) are relatively new and in good condition. Lavatories at gang restrooms are CW only. No mixing valves on any lavatories throughout building. Gas water heaters for kitchen and admin area. Electric water heaters are located throughout building for associated areas. All water heaters are relatively new and in good working condition. Gas water heater does not have combustion air installed. No HW circulator pump for water heater next to CUST 4. Sanitary waste and vent piping is no-hub cast iron above grade and PVC below grade. Piping is in relatively good condition. Roof was drained primarily via gutters and downspouts. Only one primary and one overflow roof drain was observed in good condition. Roof drain piping is no-hub cast iron above grade and PVC below grade. Piping is in relatively good condition. Gas piping is in black steel and in good condition. Gas pressure at gas meter is 5-psig. No water softener for building. Domestic water piping is copper and in relatively good condition. Wall hydrants around exterior of building are in good condition. HW from clinic sink is yellow.

+ Add HW to gang restroom wash fountains.
+ Install mixing valves on all lavatories.
+ Replace electric water heater next to CUST 4, add circulator pump and HW circulation loop.
+ Address HW system serving clinic sink. Replace piping, repair as needed.
+ Add water softener for gas water heater system.

CAPACITY AND TEA ANALYSIS

UTILIZATION	TEA		CAPACITY	
Room	Qty.	"Students/Room"	Max	"Functional (90%)"
Classrooms				
PK-1st	18	22	396	356
2nd - 5th	26	22	572	514
Life Skills	1	12	12	10
TOTAL	45		980	880

Enrichment Curriculum Spaces	
Science/Art	2
Music	1
Computer	1
Multi-Purpose	1

MONTGOMERY JUNIOR HIGH SCHOOL

07

GENERAL INFORMATION

MONTGOMERY JUNIOR HIGH 19000 Stewart Creek Road Montgomery, TX 77356	
Year(s) Built:	2007
Approx. Total Building Square Footage	198,700
Grades Served	6th - 8th
Max Capacity / Functional Capacity	1664 / 1331
Current Enrollment	1,075

FLOOR PLAN

2ND FLOOR

1ST FLOOR

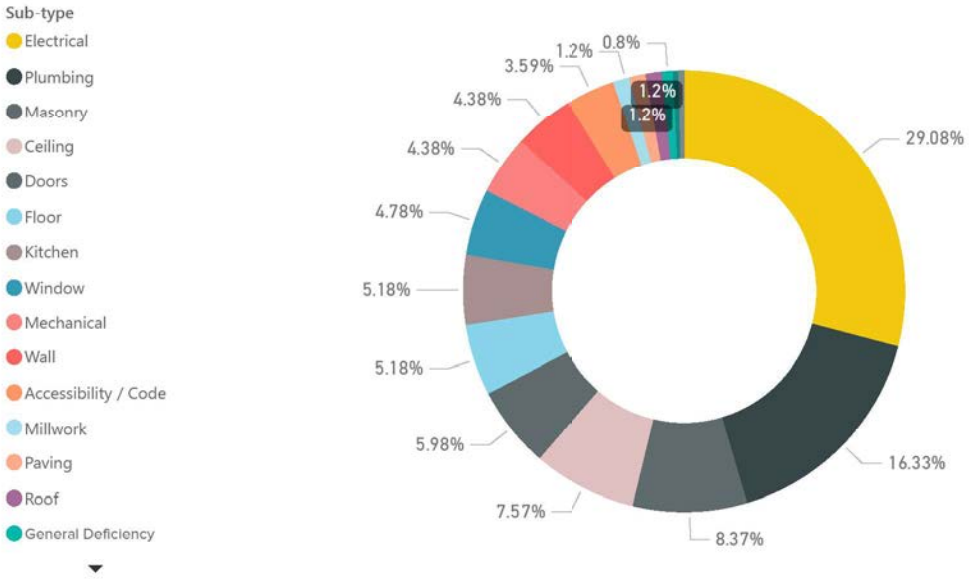
COLOR LEGEND

- Administration/ Administration Support
- Academic Spaces/ Academic Support
- Library/ Library Support
- Dining/ Dining Support
- Fine Arts/Fine Arts Support
- Resource
- Building Support
- Circulation

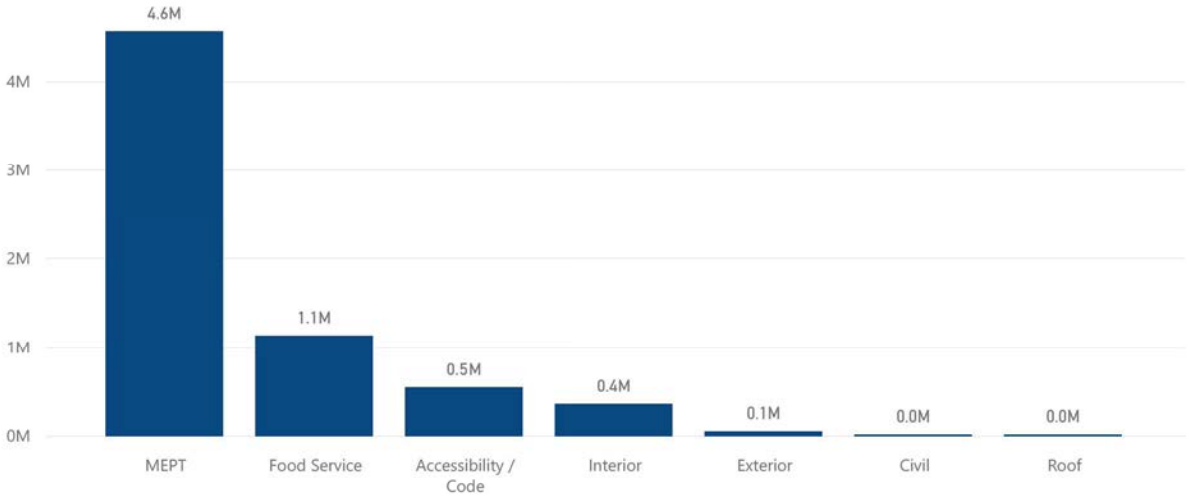
COST SUMMARY

7M	$33.65	198,700
Campus Total	$/SF	Facility Square Footage

Number Of Deficiencies



Cost by Deficiency Type



EXECUTIVE SUMMARY / KEY FINDINGS

ACCESSIBILITY/CODE

Accessibility within Montgomery Junior High School seems to be in general compliance with TAS. The building is equipped with a fire suppression system and appears to be in good condition.

+ In 2020 Montgomery County began to require the provision of a radio response system testing of educational facilities which will be required by the Fire Marshal.
+ ADA Parking and access should be re-striped.
+ Fire Lane should be re-painted to comply with Fire Codes.
+ Within the main building smoke detectors appear to be outdated type in poor condition. Missing fire alarm notification and annunciating devices as per code.
+ Within the weight room Fire alarm system and all devices are in good condition.
+ Existing building is fire sprinklered. Fire sprinkler guards are not installed on many upright pendant sprinkler heads in mechanical rooms.
+ All sink piping throughout the facility should be wrapped.

SITE CONDITIONS

Upon review of the site conditions at Montgomery Junior High, it appears that the site is in a relatively good condition. There are areas in the detention area where sedimentation and vegetative growth have occurred over concrete drainage swales and there are some areas of water staining on sidewalk that could be indicative of poor drainage across the pavement near the building. Clean clogged inlet southwest of the building. There are sections of concrete panels beginning to heave in the parent drop-off circulation drive where the detention pond outfalls.

+ Re-stripe the crosswalk in the front parking lot.
+ Address poor drainage along the sidewalks adjacent to the building by routing roof drains below grade into an underground storm sewer network.
+ Rebuild a section of the bus loop entry into the site that is damaged.
+ Clean the concrete drainage channel in the detention pond to remove sedimentation and vegetative growth to help promote better drainage.

EXECUTIVE SUMMARY / KEY FINDINGS

WALLS / MASONRY WALLS

Exterior walls do not have control joints located along openings, which creates issues related to building movement. In areas where stone is placed the stone, is dirty.

+ Consider the installation of additional control joints within the masonry walls.
+ Pressure wash the masonry, and stone.
+ Remove and replace exterior sealant.
+ Remove and replace EJ Sealant

The interior walls appear to be in fair condition. There are areas within the building that normal wear and tear were observed. General maintenance of the interior walls should continue.

WINDOWS

Window systems around the building seem to be in good condition. As mentioned above the Masonry walls do not have control joints. It appears that some sealant around windows is beginning to crack. Gasket for window systems have been caulked instead of properly repaired. Glass block was observed to be broken around the building.

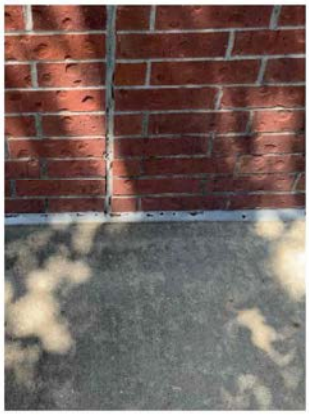
+ Recommend the replacement of window sealant throughout the campus.
+ Consider the installation of control joints at opening.
+ Remove and replace window system gaskets.
+ Replace broken glass block.

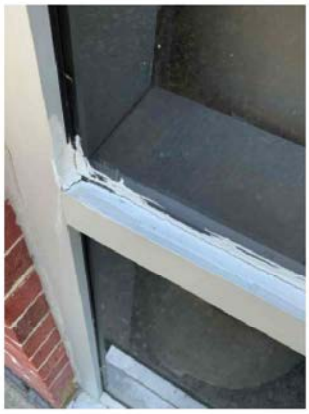
ROOF

Montgomery Junior High appeared to consist of various roof sections and levels including a main building, a weight room, and a press box for the football field which all appeared to have an existing system comprised of a single-ply roof membrane with a coating applied to its surface. The roof systems of all of the buildings on the campus appeared to be in overall good condition with very few deficiencies observed. Deficiencies observed appeared to include a poorly sealed exhaust unit in the field of a low roof area on the main building and unsealed fastener heads at a plate installed to the perimeter of a high roof section. If manufacturer recommended maintenance of the existing roof systems is continued on the campus there is a possibility that the roofs will have a minimum effective service life of approximately six years.

+ Reseal all joints in the exhaust units and the fastener heads to prevent moisture ingress and to protect the roof membrane from contact with harmful substances.








EXECUTIVE SUMMARY / KEY FINDINGS

FLOOR

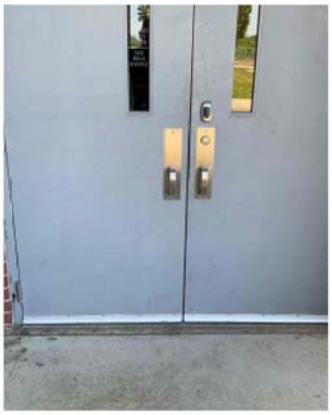
Flooring throughout the building seems to be in fair condition. High traffic areas of VCT near egress doors, storage rooms, and stairs are in need of replacement. Some areas of exposed and painted concrete were observed to have minimal damage.

+ Replace high traffic and high abuse areas of VCT.
+ Exposed concrete should be patched and painted as necessary.

DOORS & HARDWARE

Exterior Hollow Metal door and Frames are in poor to fair condition. Interior doors consist mainly of hollow metal frames with PLAM doors, they appear to be in fair condition. Narrow lites within doors seem to be peeling and have been damaged.

+ Recommend the repainting and repairing exterior hollow metal frames.
+ Repainting of Narrow lites within interior doors is recommended.



The door hardware observed throughout the campus seems to be in general compliance with TAS, and in fair condition. Exterior door hardware, and some egress doors seem to be coming to the end of their life cycle and should be replaced.

+ Replace weather stripping on exterior doors
+ Replace damaged panic hardware on egress doors.

MILLWORK:

Millwork throughout the school appears to be in good condition. In some areas it was observed that there was minimal damage that can be handled with preventative maintenance.

CEILINGS

Ceilings and ceiling grid system throughout the building seem to be in good condition There were a few areas that leaks were observed and should be monitored. There were two bulkheads that appear to need to be painted.

DINING AND KITCHEN

Within the kitchen and server of Montgomery Junior High School the floors, walls, and ceiling seem to be in general compliance with current health codes. The finishes within

EXECUTIVE SUMMARY / KEY FINDINGS

the kitchen and servery include Quarry tile on the floors, CMU and Tile walls, as well as vinyl lay in ceiling tiles. The dry storage and the Cold storage are undersized, and the freezer has become a maintenance issue. Within the servery, aisle widths between sinks do not comply with Code. Overall the current kitchen layout is too small, and components within do not meet the district standards. Concession Stands seem to be in compliance.

+ Increase Cold Storage to a minimum of 684 sq. feet from 400 sq ft.
+ In lieu of the option above, the MISD could increase delivery frequency.
+ Complete Kitchen, and servery renovations are recommended. Increase the kitchen and servery to a minimum of 5,200 sq ft.
+ All of the Kitchen Equipment has reached is expected life cycle and should be replaced.
+ Hand wash stations need to be added to comply with health codes if renovations occur.
+ Stackable washer and Dryer within kitchen do not appear to be compliant with TAS. They are also at the end of their life cycle. Recommend replacement with side by side units.

MECHANICAL / HVAC

The building cooling system is provided by three (3) 15 years old 250-ton Trane air-cooled chillers. The chillers and associated pumps are in poor condition. The building heat is being provided by a 15 years old 7,323 MBH Sellers boiler. Boiler appears to be in good condition. However, associated pumps are in poor condition. The library, common, gym, and kitchen areas are served by 4-pipe single zone Trane air handling units. Outside air is being pretreated by dedicated OAHUs. They are in good condition. However, the interior of the units is extremely dirty and moldy. Classroom areas are served by VAV Trane air handling units feeding VAV/FPB with reheating coil at the zones. They are in good condition. However, the interior of the units is extremely dirty and moldy. Chilled water piping insulation is fiberglass type but appears to be good condition. Roof fans, vents and outside air supply fans are good condition. Supply and return air grilles are rusted out and dirty at many locations. The BAS is by Unify. The control modules are in good condition. At he Weight Room Building the cooling and heating system is provided by packaged rooftop unit. It is in good condition. The concessions building, has a cooling and heating systems are provided by LG mini-split systems. They are in good condition.

EXECUTIVE SUMMARY / KEY FINDINGS

- Replace chillers and associated pumps with new.
- Replace hot water pumps with new.
- Clean the interior of all air handling units.
- Replace chilled water piping fiberglass insulation with new phenolic foam insulation in all mechanical rooms.
- Replace all exhaust & supply fans and vents with new.

ELECTRICAL / TECHNOLOGY

The electrical service is fed via pad mounted utility transformer at the exterior of the building, which is connected to 4000A, 277/480V, 3-phase, 4-wire main switchboard 'MSB' located in the main electrical room. This main switchboard feeds additional distribution boards and panelboards throughout the building. The distribution boards provide mechanical equipment circuiting. The 277/480V panelboards are utilized for lighting, small mechanical equipment, and feeding 120/280V panelboards via stepdown transformers. The 120/208V panelboards are connected to small mechanical equipment, receptacle loads, and miscellaneous loads throughout the building. Some equipment is aging and requires replacement. There is a 175kW gas generator on the exterior of the building feeding all life safety and emergency loads via (2) ATSs and are in good condition. Lighting on the interior of the building consists of fluorescent 2x4 fixtures, 1x4 fixtures, and recessed cans throughout, with strip fixtures in mechanical areas. Exit signs appear to be fluorescent and outdated. Interior lighting consists of old surface mounted HID lighting around the building. Parking lot have new HID fixtures and contactor controls. Lighting controls appear to be controlled via toggle switches and occupancy sensors that are outdated and do not meet current energy codes.

Cafeteria theatrical lighting and control racks are outdated. The fire alarm system is an addressable voice evacuation system. Booster power supplies are located throughout the building. The intercom and clock system could not be observed but appeared to be outdated.

The weight room building is relatively new, and all the systems are in good condition. The Electrical service is fed via 600A, 277/480V, 3-phase, 4-wire distribution panelboard and feeds additional panelboards throughout the building. The 277/480V panelboard is utilized for lighting, small mechanical equipment, and feeding 120/280V panelboards via stepdown transformers. The 120/208V panelboards are connected to small mechanical equipment, receptacle loads, and miscellaneous loads throughout the building. Lighting on the interior of the building is all LED and new controls in good condition.

The concessions building is relatively new. Electrical panels and equipment are relatively new and in good condition.

EXECUTIVE SUMMARY / KEY FINDINGS

Panels feed field house lighting poles, parking lot lights, concession area outlets, restrooms, and HVAC units

Within the Main Building:

+ Replace all other outdated and damaged pieces of panels and equipment throughout the buildings.
+ Replace all interior lighting and Exit signs with new LED fixtures.
+ Replace all remaining exterior lighting with new LED fixtures.
+ Replace all existing lighting controls with new controls in compliance with energy code.
+ Intercom system and clock system needs to be upgraded.

PLUMBING

Existing plumbing fixtures (toilets, urinals, and lavatories) are relatively new and in fair condition. Existing plumbing fixtures in PE and Athletics areas are in poor condition. Flush valves are not operating properly throughout entire building. Stops and supplies at all faucets show signs of corrosion. Lavatories at gang restrooms are CW only and metering faucets do not operate for appropriate time. Staff restrooms do not have mixing valve installed on HW. Casework sinks throughout building are in poor condition. Several drinking fountains are single units and/or are in poor condition. Electric water heaters are located throughout building. All are old and in poor condition. Sanitary waste and vent piping is cast iron. No hub piping is in good condition. Bell and spigot cast iron gaskets are old and in poor condition. Roof drain piping is bell and spigot cast iron. Gaskets are old and in poor condition. Water piping is copper. Some piping has been replaced with Pro-Press copper. Most appears in fair condition. Gas piping is steel. Exterior gas piping is unpainted and badly corroded. Clinic sink is leaking. Electronic trap primer piping in Stage mechanical room is badly corroded. Not enough exterior wall hydrants around building. No water softener installed for Kitchen HW system. In Athletics/PE locker room shower areas, handicap showers are damaged and there are not enough drains in the shower area. Water connections missing for refrigerator ice makers throughout school. Within the concessions, and weight room no issues were observed.

EXECUTIVE SUMMARY / KEY FINDINGS

+ Replace all plumbing fixtures and piping in Athletics/ PE areas.
+ Replace all flush valves.
+ Replace all stops and supplies at all lavatories and sinks.
+ Replace all casework sinks.
+ Replace all drinking fountains.
+ Add HW to gang restroom lavatories. Reconfigure HW loop piping as needed.
+ Replace all electric water heaters.
+ Replace electric water heaters for kitchen area with gas water heaters. Add water softener for kitchen water heater system.
+ Replace all bell and spigot sanitary waste and vent piping with no-hub cast iron.
+ Replace all gaskets in bell and spigot roof drain piping.
+ Replace all exterior gas piping.
+ Replace corroded piping at Stage mechanical room trap primer.
+ Install additional wall hydrants around exterior of building.
+ Repair damaged showers in Athletics/PE areas.
+ Rework drainage in Athletics/PE shower areas. Add new drains as necessary.
+ Add water connection for refrigerator ice makers throughout school.

CAPACITY AND TEA ANALYSIS

UTILIZATION	TEA		CAPACITY	
Room	Qty.	"Students/Room"	Max	"Functional (90%)"
Classrooms	48	25	1200	960
Science Labs	10	24	240	192
Life Skills	2	12	24	19
Art	2	25	50	40
Drama	1	25	25	20
Media CR	1	25	25	20
Band	1	25	25	20
Choir	1	25	25	20
Gym PE	1	50	50	40
TOTAL	67		1664	1331

OAK HILLS JUNIOR HIGH SCHOOL

08

GENERAL INFORMATION

OAK HILLS JUNIOR HIGH 19190 Keenan Cutoff Montgomery, TX 77316	
Year(s) Built:	2017
Approx. Total Building Square Footage	210,543
Grades Served	6th - 8th
Max Capacity / Functional Capacity	1652 / 1321
Current Enrollment	1,547

FLOOR PLAN

2ND FLOOR

1ST FLOOR

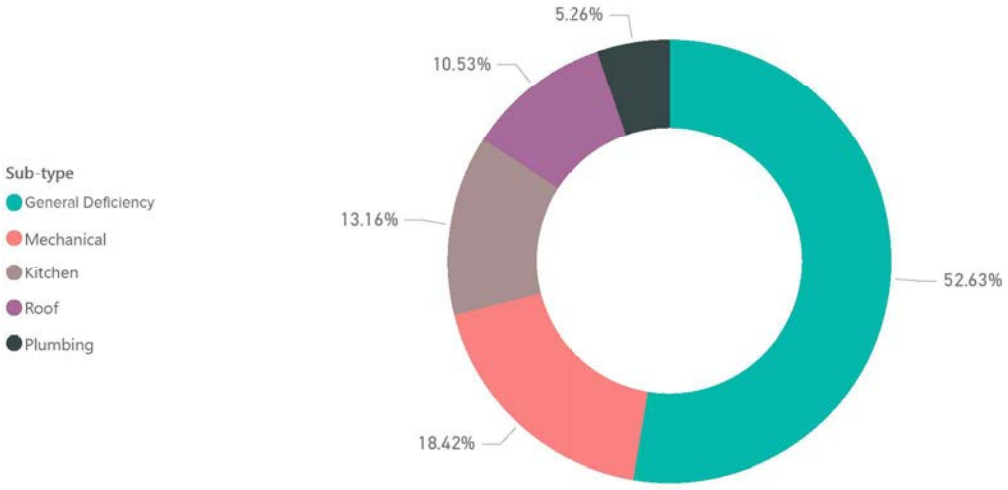
COLOR LEGEND

- Administration/ Administration Support
- Academic Spaces/ Academic Support
- Library/ Library Support
- Dining/ Dining Support
- Fine Arts/Fine Arts Support
- Resource
- Building Support
- Circulation

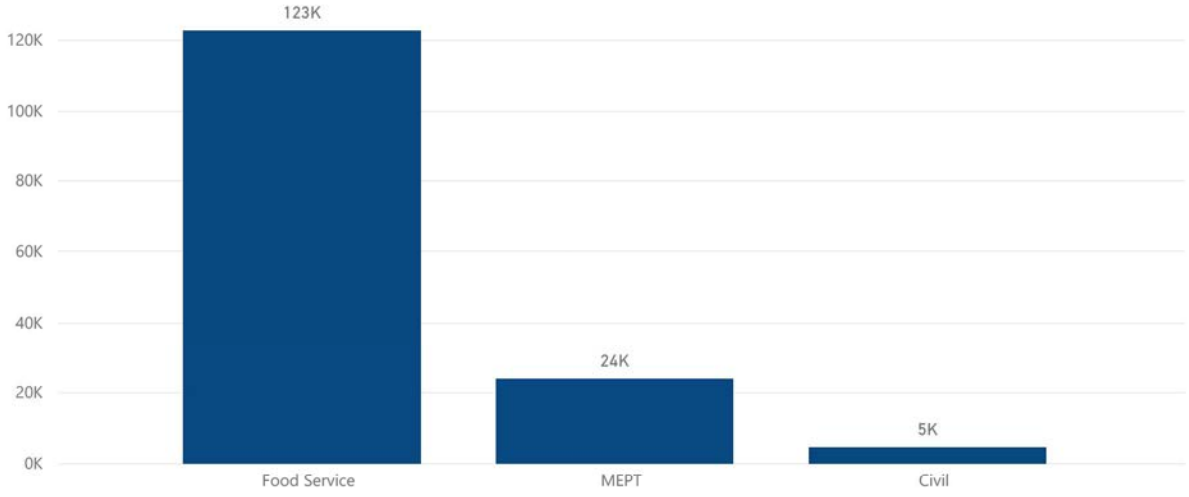
COST SUMMARY

151K	$0.72	210,063
Campus Total	$/SF	Facility Square Footage

Number Of Deficiencies



Cost by Deficiency Type



EXECUTIVE SUMMARY / KEY FINDINGS

ACCESSIBILITY/CODE

Accessibility within Oak Hills Junior High School seems to be in general compliance with TAS. The building is equipped with a fire suppression system and appears to be in good condition.

+ In 2020 Montgomery County began to require the provision of a radio response system testing of educational facilities which will be required by the Fire Marshal.

SITE CONDITIONS

Upon review of the site conditions at the Oak Hills Junior High School, it appears that the site is in good condition, but there is evidence of erosion along the boundaries, as well as minor utility infrastructure deficiencies. There are small areas in the parking lots which show evidence of ponding water and sedimentation build up. The inlet is clogged and full of grass and trash immediately to the southwest of the building. The irrigation back-flow preventer was leaking.

+ Clean clogged inlet southwest of the building.
+ Repair broken sample well lid.
+ Raise sanitary sewer manhole rim elevation northeast of the building.
+ Fill in around inlet box to the southeast of the track to prevent further washout in the area around the structure.

WALLS / MASONRY WALLS

The interior and exterior walls seem to be in good condition.

WINDOWS

Window systems around the building seem to be in good condition. Continued maintenance of the exterior sealant will prolong the life of the window systems.

ROOF

Oak Hills Junior High appeared to consist of various roof sections and levels including a main building with a single-ply roof system and standing seam metal roof system, a storage building, and a small press box for the athletic field. The roof systems of all of the buildings on the campus appeared to be in overall good condition with very few deficiencies observed. Deficiencies observed on the main building appeared to include an asphaltic substance in contact with base flashing at a parapet wall on the roof section above the gym, cracked sealant at vent pipes in the metal panel roof areas and single-ply roof sections, and lack of termination at the curb flashing installed to the roof hatch above the gym. With continued manufacturer recommended maintenance it appears that the standing seam metal roof areas appear to have a

EXECUTIVE SUMMARY / KEY FINDINGS

minimum remaining effective service life roof fifteen years and the single ply roof areas appear to have a minimum remaining service life of approximately ten years with proper repairs and maintenance.

+ Cleaning of the asphaltic substance from the base flashing to prevent degradation of the membrane, replacing deficient sealant at vent pipes, and installing termination bar and sealant to the roof hatch curb flashing to prevent moisture ingress is recommended.

FLOOR

The flooring throughout the campus seems to be in good condition. In some areas the VCT may need to be removed and replaced as part of on going maintenance.

DOORS & HARDWARE

The doors, frames, and hardware throughout the campus seem to be in good condition, and appear to be in compliance with TAS.

MILLWORK:

Millwork throughout the school appears to be in good condition.

CEILINGS

Ceilings and ceiling grid system throughout the building seem to be in good condition.

DINING AND KITCHEN

Within the kitchen and servery of Oak Hills Junior High School the floors, walls, and ceiling seem to be in general compliance with current health codes. The finishes within the kitchen and servery include Quarry tile on the floors, CMU and Tile walls, as well as vinyl lay in ceiling tiles. The dry storage and the cold storage are undersized, for the anticipated growth.

+ Increase Cold Storage to a minimum of 684 sq. feet from 360 sq ft. Increase Dry Storage to a minimum of 460 sq. feet from 310 sq. Feet.
+ In lieu of the option above, the MISD could increase delivery frequency.

EXECUTIVE SUMMARY / KEY FINDINGS

MECHANICAL / HVAC

The building cooling system is provided by three (3) 5-year-old 400-ton Carrier air-cooled chillers. The chillers are in good condition. The library, common, gyms, kitchen, band hall, stage, weight room and cafeteria areas are served by 4-pipe single zone Carrier air handling units with hot water. They are 5-years-old and are in good condition. Classroom wings are served by 4-pipe dual duct multizone vav air handling units with hot water. They are 5-years-old and are in good condition. Admin area is served by a VAV air handling unit with a dx-coil. Air handling unit and dx condenser unit are 5-years-old and are in good condition. All fan power/dual duct boxes are in good condition. Building heat is being provided by two (2) 4000MBH 5-year-old Raypak boilers. They are in good condition. Hot water pumps are in good condition. Chilled water pumps are starting to rust due to water leaks. Chilled water pumps temperature sensors appear to not be working. Chilled water piping insulation is phenolic foam. There are signs of previous condensation issue at pump discharge piping. All fans and vents are in good condition. Refrigerant piping insulation is phenolic foam. Piping insulation for mini-split condensing units and dx condensing unit are damaged. The BAS is by Automatic Logic and the control modules are in good condition. The Athletics buildings are in good condition.

+ Repair leaks on chilled water piping.
+ Cover outdoor refrigerant piping with aluminum jacketing.
+ Repair AHU-2-3 supply air ductwork insulation.

ELECTRICAL / TECHNOLOGY

The electrical service is fed via a pad mount transformer in the service yard of the building, which is connected to a 4000A, 277/480V, 3-phase, 4-wire main switchboard located in the main electrical/mechanical room. This main switchboard feeds additional distribution boards and panelboards throughout the building. The distribution boards provide mechanical equipment circuiting. The 277/480V panelboards are utilized for lighting, small mechanical equipment, and feeding 120/280V panelboards via stepdown transformers. The 120/208V panelboards are connected to small mechanical equipment, receptacle loads, and miscellaneous loads throughout the building.

EXECUTIVE SUMMARY / KEY FINDINGS

Equipment is only a few years old and in perfect condition. There is an emergency generator, that appears to feed selected receptacle and lighting loads. Interior and exterior lighting on the interior of the building is LED and compliant with current Codes. Lighting controls include energy code compliant controls. The same is true for the Athletics Facility.

PLUMBING

Existing plumbing fixtures (drinking fountains, toilets, flush valves, lavatories, faucets, sinks, etc.) are relatively new and in good condition. Electric water heaters are located throughout building. All are relatively new and in good condition. Sanitary waste and vent piping is cast iron and in relatively good condition. Roof was drained via gutters and downspouts. Roof drain piping is in good condition. Propane piping is black steel and in good condition. Wall hydrants around exterior of building are in good condition. Water piping is copper and in good condition. All lavatories have HW and thermostatic mixing valves. No water softener installed for kitchen HW system.

+ Add HW to gang restroom lavatories and mop basins in custodial closets.
+ Add hose bibbs in mechanical rooms.
+ Replace exterior gas piping (gas piping only for generator).
+ Disconnect HW at clinic sink and add instant hot water heater to provide HW to sink.
+ In Central Plant, re-route 4” CW above main electrical equipment.
+ Repair all corroded wall hydrants on exterior of building.

CAPACITY AND TEA ANALYSIS

UTILIZATION	TEA		CAPACITY	
Room	Qty.	"Students/Room"	Max	"Functional (90%)"
Classrooms	48	25	1200	960
Science Labs	10	24	240	192
Life Skills	1	12	12	9
Art	1	25	25	20
Drama	1	25	25	20
Computer	2	25	50	40
Band	1	25	25	20
Choir	1	25	25	20
Gym PE	1	50	50	40
TOTAL	66		1652	1321

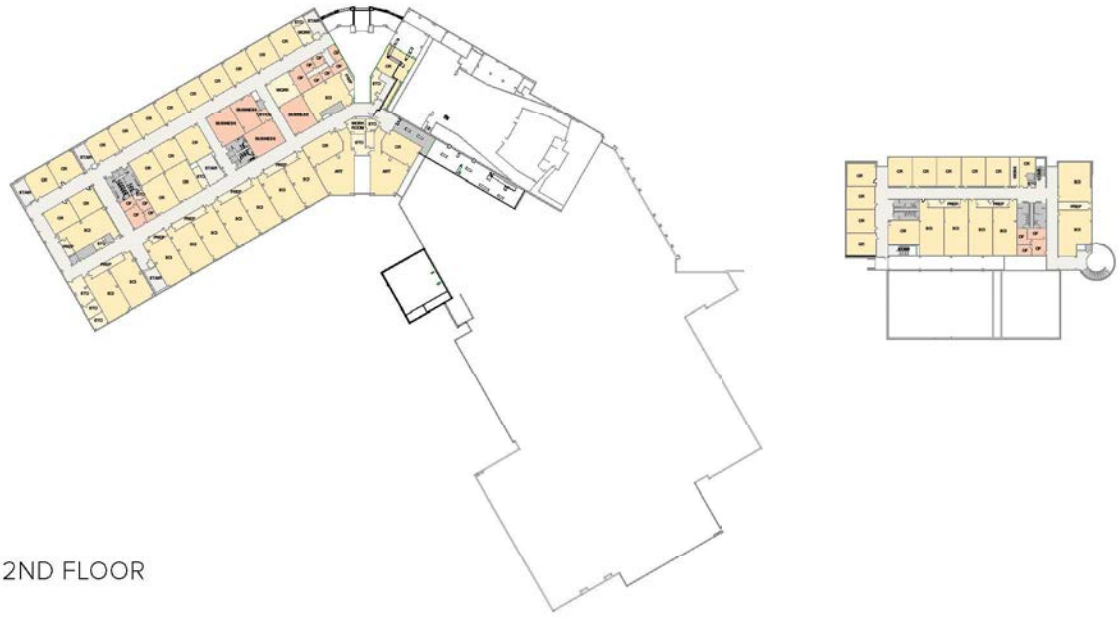
MONTGOMERY HIGH SCHOOL / 9TH GRADE CENTER

09

GENERAL INFORMATION

MONTGOMERY HIGH SCHOOL & 9th Grade Center 22825 Hwy 105 West Montgomery, TX 77356	
Year(s) Built:	1998, 1983, 2009
Approx. Total Building Square Footage	445,008
Grades Served	9th - 12th
Max Capacity / Functional Capacity	3,645 / 2,730
Current Enrollment	1,435

FLOOR PLAN



2ND FLOOR

1ST FLOOR

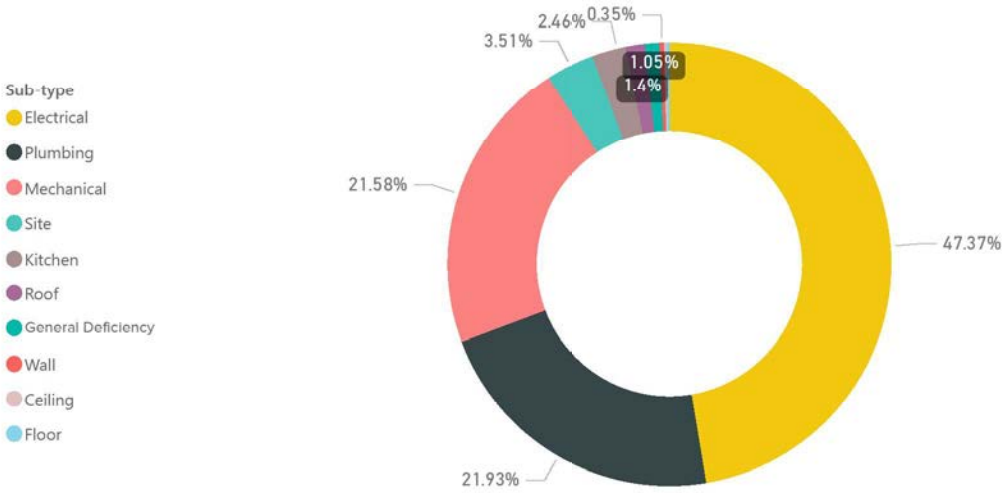
COLOR LEGEND

- Administration/ Administration Support
- Academic Spaces/ Academic Support
- Library/ Library Support
- Dining/ Dining Support
- Fine Arts/Fine Arts Support
- Resource
- Building Support
- Circulation

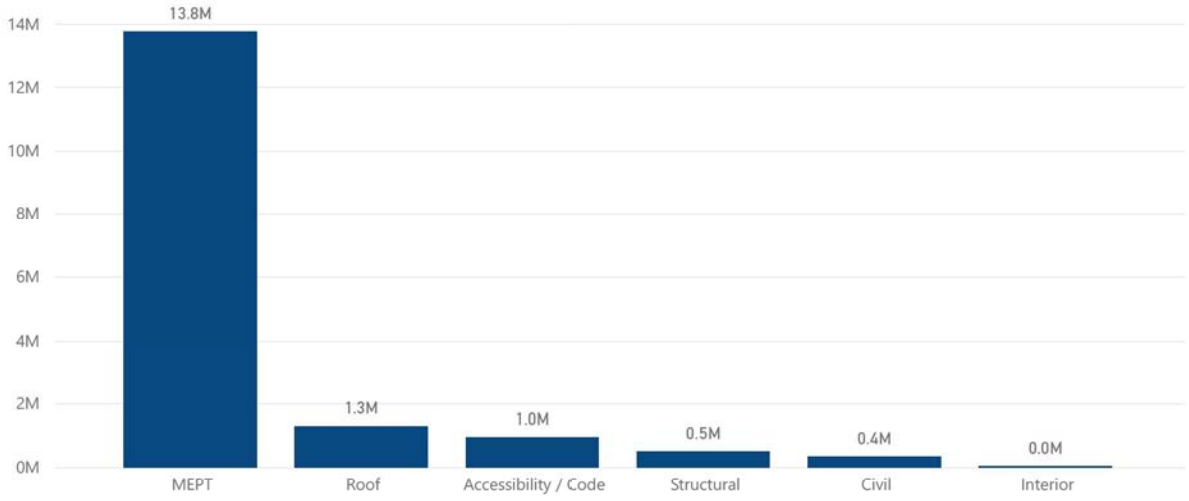
COST SUMMARY

19M	$41.88	445,008
Campus Total	$/SF	Facility Square Footage

Number Of Deficiencies



Cost by Deficiency Type



EXECUTIVE SUMMARY / KEY FINDINGS

ACCESSIBILITY/CODE

Accessibility within Montgomery High School seems to be in general compliance with TAS. The building is equipped with a fire suppression system and appears to be in good condition.

- In 2020 Montgomery County began to require the provision of a radio response system testing of educational facilities which will be required by the Fire Marshal.
- Re-striping of ADA Access, and parking ares is recommended.
- Fire lane striping should be re-finished.
- Within the Main building and the 9th Grade Center it appears that the fire alarm system is an addressable system. It appears the system does not have voice evacuation. If an improvement is complete the AHJ may require a system upgrade.
- There is a fire suppression system throughout the Main Building and the 9th Grade Center.






SITE CONDITIONS

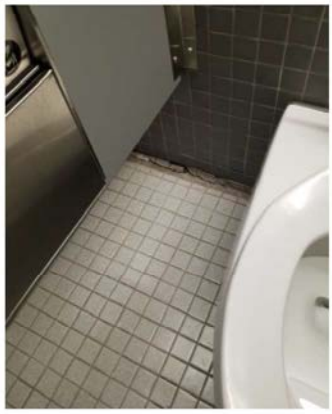
Upon review of the site conditions at Montgomery High School, it appears that the site is in a relatively good condition, but the drainage infrastructure on the site needs maintenance. There are areas in the detention ponds that are showing signs of sluffing and erosion which should be addressed to avoid continued wearing away of soil. Clean clogged inlet southwest of the building. Ponding water in the detention pond drainage channels leading to sedimentation buildup and overgrowth of grass. There is evidence of erosion around the acid separation tank along the north wall towards the northwest student classroom wing. This is allowing for water seepage to occur. Curb lines are cracking through the site. Spalling joints and cracking concrete are occurring at curb inlet sags along circulation drives. Roof drains splash on grade along the sidewalk of the north face of the building and are causing water staining on the sidewalk. There are offset cracks in the circulation lane in the northeast area of the site which could lead to deterioration of the paving in the drive. There are clogged drainage pipes connecting the different drainage areas along the southern side of the building. The southeastern parking lot has a drainage flume leaving that is leading to erosion of the grass drainage swale behind it. Concrete panels are heaving next to the drainage flume in the southeastern parking lot. Exposed sidewalk has ground eroding beneath it. Erosion occurring under parking slab in southeastern parking lot.

EXECUTIVE SUMMARY / KEY FINDINGS

+ Clean sediment from the drainage swales in detention areas that are blocking drainage and repair areas that have eroded or washed out.
+ Address erosion areas throughout the site.
+ Take roof leaders that splash on sidewalk under the pavement and discharge either in landscape areas or to underground storm that is routed to a collection system.
+ Cut drainage swales in landscape areas on the south side of the building to help prevent water from draining back to the building.
+ Replace joint sealants throughout the parking areas.
+ Address pavement erosion undercut in the southeast parking lot that is causing heaving in the pavement slabs.
+ Patch spalling and cracking concrete at the joints.

WALLS / MASONRY WALLS

The exterior of the Montgomery High Schoool and 9th Grade center is masonry and appears to be in good condition. The is an area at the south east side of the library where exterior cracking was observed. The concrete at a porch handrail was spalling off at the 9th grade center near the cafeteria and some brick movement was observed at the old original remaining D Hall in the 9th Grade Center.



Walls within the 9th Grade Center and High School seem to be in good condition. There area some areas within the 9th Grade center and the HS where settlement of the building has been observed and general maintenance of the walls is recommended. Further recommendations are made in the Structural portion of the assessment.

+ General patching and painting of interior wall damage is needed throughout out the campus.
+ Gutter at the exterior of the building appears to be leaking and should be repaired.

WINDOWS

Window systems around the building seem to be in good condition. Continued maintenance of the exterior sealant will prolong the life of the window systems.

ROOF

Montgomery High School appeared to consist of a main building with a Hydrostop roof system, a storage building at the practice field, a small stadium, and a small concession

EXECUTIVE SUMMARY / KEY FINDINGS

building near the tennis courts with a built-up roof system. The roof systems observed on the storage building at the practice field, the junior bear stadium, and the tennis concession building appeared to be in overall good condition with no deficiencies observed. The Hydrostop roof coating observed throughout the field of the various roof sections of the main building appeared to be in poor condition. Deficiencies observed throughout the main building appeared to include large blisters filled with water, small blisters consistently throughout the field of various roof sections, cuts into the coating near mechanical equipment in a low roof area, signs of ponding water, signs of moisture infiltration on interior ceiling tiles, and deteriorated coating near field drains. With continued manufacturer recommended maintenance the roof systems installed to the storage building, the tennis concession, and the junior bear stadium could have a minimum remaining service life of approximately eight years.

+ An infrared survey should be performed to determine the extent of subsurface moisture content beneath the Hydrostop roof system of the main building, depending on the extent of the subsurface moisture content the recommendation will be either repairing effected areas or replacing the existing roof system in the near future.

FLOOR

The flooring throughout the High School and 9th Grade Center appear to be in good condition with normal wear and tear. There are a few areas throughout he campus that require maintenance or replacement. There are some areas that have flooring that may not be appropriate for the use such as the wood shop with carpet finishes.

DOORS & HARDWARE

The doors, frames, and hardware throughout the High School and 9th grade center seem to comply with current standards and are in good working order.

MILLWORK:

Millwork throughout the High School and 9th Grade Center appears to be in fair condition, and generally complies with current standards. A majority of the sinks within casework should be replaced. Within the basket ball concessions the casework does not appear to comply with TAS, and is damaged.

+ Replacement is recommended.

EXECUTIVE SUMMARY / KEY FINDINGS

CEILINGS

Ceilings and ceiling grid system throughout the High School and 9th Grade Center seem to be in good condition. There are areas of the building that encounter frequent damage due to what appear to be roof leaks. At basket ball concessions it was noted that there was significant damage to the ceilings .

+ Recommend roof investigation as noted in the Roof assessment, and the replacement of ceilings in areas that have been exposed to moisture. Replace Ceiling in basketball Concessions.

DINING AND KITCHEN

Within the kitchen and servery of Montgomery High School the floors, walls, and ceiling seem to be in general compliance with current health codes. The finishes within the kitchen and servery include Quarry tile and sealed concrete on the floors, CMU and Tile walls, as well as vinyl lay in ceiling tiles. The dry storage and the cold storage are undersized, and should be expanded as part of an addition to the kitchen and servery.

+ Increase Cold Storage to a minimum of 1094 sq. feet from 385 sq ft. Increase Dry Storage to a minimum of 740 sq. feet from 310 sq. Feet.
+ An expansion to the Kitchen, and Servery is recommended based on the student population and anticipated growth.
+ Alll kitchen equipment within the High School Main Kitchen is has met or exceeded its expected life cycle and should be replaced.
+ Consider the replacement of the stackable washer and dryer with a side by side to comply with TAS.

The 9th Grade Center former Kitchen and servery has been converted to a Culinary Arts CTE. There are some components missing from with the lab that are required to meet the curriculum such as drying racks. There are also pieces of equipment that are not required for curriculum such as the Pizza Conveyor, and Tilt Braising Pan. The Stackable washer dryer are used by students and are non compliant. Due to the conversion of the Kitchen to culinary arts, the serving lines and pass-through cabinets are not in use.

+ Remove equipment not needed for curriculum.
+ Renovate Snack Bar area to expand Teaching Classroom.
+ Replace non-functional equipment. Disposer, 3HP; (1) 6' Worktable; Double Stack Hobart Gas Convection Oven;
+ Replace existing student classroom tables with larger tables as required for class size and curriculum.

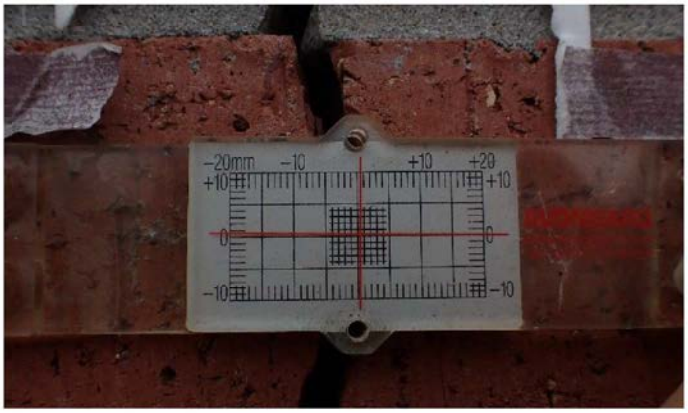
EXECUTIVE SUMMARY / KEY FINDINGS

- Replace (2) electric residential 4-burner ranges with (2) gas commercial ranges, provide (1) additional gas 4 burner commercial range to have total quantity of four (4)
- Provide qty 1-2 drying racks in Warewash area as necessary for curriculum
- Stackabe Washer and Dryer are used by students and should be replaced with side by side to comply with TAS.

STRUCTURAL

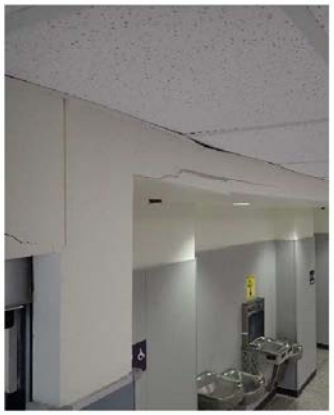
WJE previously performed an evaluation of the portion of the building experiencing visible differential foundation movement. The results of that initial evaluation are documented in our reports dated October 18, 2016 and May 28, 2017. In addition, our subconsultant Terracon produced a geotechnical report related to these areas dated September 8, 2016. The pertinent background details from those documents include:

- Foundation movement was apparent at that time; primarily apparent heave, primarily near the West Wing library and in the west wing of the ninth-grade center
- The majority of the distress (e.g., cracked drywall, cracked brick mortar joints, separation at expansion joints, crushed drywall at joints, displaced ceiling tiles/ceiling grid) was associated with the foundation movement.
- Soil samples obtained from the building demonstrated that the site is underlaid with fat clays with the potential for expansion/shrinkage due to moisture changes. Specifically, the fat clays below the area of the Ninth Grade Center exhibited the potential for additional heave of 2-1/2 to 3 inches based on the laboratory swell tests, and a Potential Vertical Rise (PVR) of about 1-1/2 to 2 inches based on test method TEX-124-E.
- From our follow-up work in 2017, a small leak was detected in the first-floor bathroom plumbing. See Figure 3 for the area of the apparent leak. It was recommended to repair this minor leak; however, the heave present was unlikely caused by this leak.
- From our follow-up work in 2017, the elevation data was relatively stable between the 2016 and 2017 surveys.



EXECUTIVE SUMMARY / KEY FINDINGS

Visual Survey Summary



Interior:

Ninth Grade Center

Distress related to foundation movement was observed throughout the western portion of the Ninth Grade Center. Distress such as cracking/buckling of drywall, displaced ceiling tiles and grids, and cracking in the slab on ground in the mechanical room, and buckled wall studs were observed in several areas of the west portion of the Ninth Grade Center . No structural concerns (e.g., floor beam connection distress) were observed.

Exterior:

West Wing

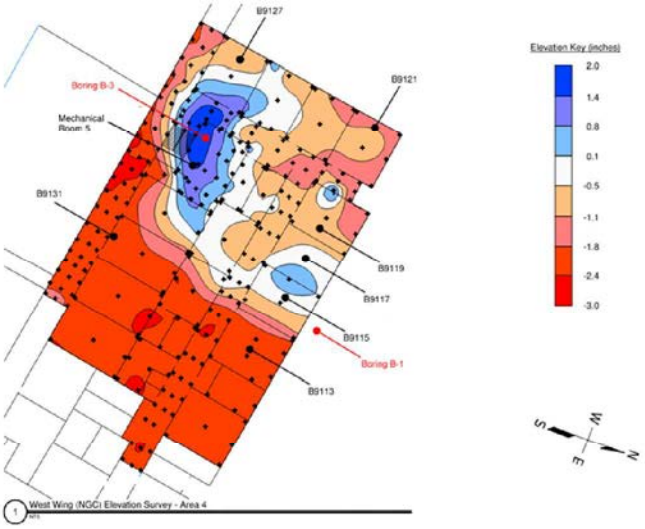
Distress conditions were observed such as cracking in the brick veneer joint sealant distress, previously identified and not yet repaired. Sealant joint between the concrete flatwork around the perimeter and the veneer wall has separated/failed in limited locations

Ninth Grade Center

Sealant joint between the concrete flat work around the perimeter and the veneer wall has separated/failed in isolated locations

Elevation Survey

Baseline measurements (elevation of 0 inches) were taken in locations to facilitate data collection and are not intended to indicate the correct foundation elevation for the area surveyed, but rather an arbitrary point of measurement. Select elevation data was collected at approximately the same locations as in previous surveys within the Ninth Grade Center only:



+ At the first-floor mechanical room in the Ninth Grade Center which previously exhibited an elevation difference of 1.5 inches from the door to the south wall where maximum heave was previously observed, currently exhibits a difference of 2.2 inches.
+ Between the south corridor and the entrance to the bathrooms the previous elevation difference was 1.6 inches, and currently exhibits a difference of 2.4 inches.
+ At door 47 (northwest corner of Ninth Grade Center) moving south along the hallway, the previous elevation difference between the entrance and the south stairs was 3.9 inches and currently is 3.9 inches.

Based upon this information, it appears isolated areas of the slab on ground, principally away from the exterior walls, has continued to move. We would anticipate that future foundation movement is possible within the Ninth Grade Center .

EXECUTIVE SUMMARY / KEY FINDINGS

Structural Recommendation:

+ Based upon the previous work performed by WJE and Terracon at the school, and the new findings from our work in this phase, we recommend that MISD consider repairs for the veneer at the West Wing which appears to be stable, and limited replacement of sealant joints between the concrete apron and the veneer wall. If the minor leak, identified in our 2017 report has not been addressed, we recommend that additional testing be conducted, and if the leak persists to perform that repair as required. Although the NGC appears to be prone to future slab-on-ground movement, the principal distress is associated with restraint of the walls at the underside of the second floor. If the partition walls were to be rebuilt, slotted deep leg tracks may be used to potentially allow for future vertical movement of the stud walls, mitigating risk of future damages; however, there is still the chance of additional damage to occur.
+ While the improvements constructed in 2019 have attempted to stabilize the foundation against future movement, there will remain risk for additional foundation movement to occur – in particular the areas where heaving appears to have continued, the risk for additional heave cannot be entirely eliminated, only mitigated by means of limiting additional moisture to the soil below the slab-on-ground foundation.

MECHANICAL / HVAC

Main Building

The building cooling system is provided by four (4) 8-year-old 200-ton Trane air-cooled chillers. The chillers appear to be in good condition. However, evaporator barrel insulations are compromised. The library, common, gym, and kitchen areas are served by 4-pipe single zone Engineered Air handling units. They are about 5 years old and are in good condition. The building heating system is provided by two (2) 8-year-old 3,350 MBH Sellers boilers. Boilers appear to be in poor condition. Hot water pumps are in bad condition. All the classroom spaces are served by 2-pipe fan coil units with electric duct heater. They are installed above the ceiling and are good condition. However, many supply and return air grilles are rusted and dirty. Outside air for the FCUs is being pretreated by three (3) roof mounted ERV units. They are in poor condition. Chilled water chemical pot feeder is rusted and is in poor condition. A few roof fans are in bad condition. The BAS is by Unify and the control modules are in good condition

+ Replace the chiller evaporator barrel insulations with new.
+ Replace existing boilers.
+ Replace the bad chilled water and hot water pumps.
+ Replace chemical pot feeder with a new one and insulate.
+ Replace outside air pretreatment ERVs on the roof.
+ Replace all rusted out supply and return air grilles.
+ Replace rusted and damaged roof fans.

EXECUTIVE SUMMARY / KEY FINDINGS

9th Grade Center

The building cooling system is provided by two (2) 1-year-old 280-ton Carrier air-cooled chillers. The chillers are in good condition. The library, common, and admin areas are served by one (1) 13-year-old 2-pipe VAV Carrier air handling unit with electric heat. They are in good condition, however the interior is dirty. All fan power boxes are in good condition. Classroom wing to the north of the gym is being conditioned by one (1) 13-year-old 4-pipe VAV Carrier air handling unit with hot water. They are in good condition, however the interior is dirty. All fan power boxes are in good condition. Kitchen, gyms, locker rooms and dancing areas are served by 13-year-olds 4-pipe Carrier rooftop units. Outside air is served by 100%OA 13-year-old 4-pipe Carrier rooftop units. They are in fair condition. Interior of unit is dirty and starting to rust. Heating is provided by two (2) 3348 MBH 13-year-old Sellers boilers. They are in good condition, however not compliant with current energy code. Chilled water piping insulation is fiberglass. There are signs of previous condensation issue at many locations and insulation at the central plant and mechanical rooms is in poor condition. Air separator and pot feeder insulation is damaged. Classroom wing to the east of the cafeteria is being conditioned by water source heat pumps units. Heating is provided by one (1) 13-year-old Safgard boiler. Boiler appears to be in fair shape, however not compliant with current energy code. Condenser water is provided by one (1) 13-year-old BAC cooling tower. Cooling tower appears to be in fair condition. Exposed hydronic piping's labels on roof are fading. ROAHU-2 hot water piping insulation is damaged. RAHU-4 hot water piping insulation is damaged. All mini-splits condensing units and dx condensing unit are in poor condition. Refrigerant piping insulation is damaged.

+ Replace the chiller evaporator barrel insulations with new.
+ Replace existing boilers.
+ Replace the bad chilled water and hot water pumps.
+ Replace chemical pot feeder with a new one and insulate.
+ Replace outside air pretreatment ERVs on the roof.
+ Replace all rusted out supply and return air grilles.
+ Replace rusted and damaged roof fan

Auxiliary buildings recommendations:

+ Replace fans with new at the batting cages.
+ Slope properly drain pan to allow condensate water to drain inside RTU at the Field house.
+ Clean all dirty exhaust grilles on tennis facility.

EXECUTIVE SUMMARY / KEY FINDINGS

ELECTRICAL / TECHNOLOGY

Main Building

The electrical service is fed via pad mount transformer in the service yard of the building, which is connected to 4000A, 277/480V, 3-phase, 4-wire main switchboard located in the main electrical/mechanical room. This main switchboard feeds additional distribution boards and panelboards throughout the building. The distribution boards provide mechanical equipment circuiting. The 277/480V panelboards are utilized for lighting, small mechanical equipment, and feeding 120/280V panelboards via stepdown transformers. The 120/208V panelboards are connected to small mechanical equipment, receptacle loads, and miscellaneous loads throughout the building. Equipment old and condition. There is an emergency generator, that appears to feed selected receptacle and lighting loads. Lighting on the interior of the building consists of fluorescent 2x4 fixtures, 1x4 fixtures, and recessed cans throughout, with strip fixtures in mechanical areas. Exit signs appear to be fluorescent. Exterior lighting consists of old surface mounted HID lighting at the canopy. Parking lot fixtures are old HID style fixtures. Lighting controls appear to be controlled via toggle switches and do not meet current energy codes.

9th Grade Center

The electrical service is fed via pad mount transformer in the service yard of the building, which is connected to 2500A, 277/480V, 3-phase, 4-wire main switchboard located in the main electrical/mechanical room. This main switchboard feeds additional distribution boards and panelboards throughout the building. The distribution boards provide mechanical equipment circuiting. The 277/480V panelboards are utilized for lighting, small mechanical equipment, and feeding 120/280V panelboards via stepdown transformers. The 120/208V panelboards are connected to small mechanical equipment, receptacle loads, and miscellaneous loads throughout the building. Equipment is only a few years old and in perfect condition. There is an emergency generator, that appears to feed selected receptacle and lighting loads. Lighting on the interior of the building consists of fluorescent 2x4 fixtures, 1x4 fixtures, and recessed cans throughout, with strip fixtures in mechanical areas. Exit signs appear to be fluorescent. Exterior lighting consists of old surface mounted HID lighting at the canopy. Parking lot fixtures are old HID style fixtures. Lighting controls appear to be controlled via toggle switches and do not meet current energy codes.

EXECUTIVE SUMMARY / KEY FINDINGS

Auxiliary buildings recommendations.

+ Replace all outdated and damaged pieces of equipment throughout the buildings.
+ Replace all interior lighting with new LED fixtures.
+ Replace all remaining exterior lighting with new LED fixtures.
+ Replace all existing lighting controls with new controls in compliance with energy code.

PLUMBING

Main Building

Existing plumbing fixtures (drinking fountains, toilets, flush valves, lavatories, faucets, sinks, showers, etc.) are old and in poor condition. Casework sinks are old and in poor condition. Mop sinks are old and in poor condition. Most are CW only. Gang restroom lavatories are CW only. A mixture of water heating systems. A lot of point of use electric water heaters at casework sinks and faculty restroom lavatories. Tank type electric water heaters for classroom and office areas. Gas water heater systems for athletics and kitchen areas. Some water heaters had recently been replaced. Most are old and in poor condition, some not working (i.e. point of use). Domestic water piping is copper. Evidence of many leaks and repair of piping. Gang shower areas do not have enough drains. Athletic training area does not have enough drains for equipment located in room. Also, fill faucets are old and in poor condition. Drinking fountains are not installed in close proximity to weight room. Refrigerator ice makers throughout building do not have CW connection. Solids interceptors are not installed for art sinks. In mechanical rooms, drains are badly corroded. In science labs, acid waste system is in poor condition and not draining properly. In science labs, emergency shutoff for gas is not provided. Backflow preventer for HVAC make-up water in Mech 1 is badly corroded. Greenhouse plumbing (water piping, gas piping, sink) in poor condition. Add HW to gang restroom lavatories and mop basins in custodial closets.

+ Replace all plumbing fixtures and associated piping and trim.
+ Replace all casework sinks.
+ Add solids interceptor at all art sinks.
+ Add HW to gang restroom lavatories and mop basins in custodial closets.
+ Install all new hot water heater systems. Building hot water systems should be re-designed to add hot water for gang lavatories and mop sinks. Installation of multiple circulated hot water systems should be considered in lieu of the multitude of different systems currently installed.
+ Replace all mechanical room and custodial room drains and associated waste and vent piping.

EXECUTIVE SUMMARY / KEY FINDINGS

- Replace all gang showers. Reconfigure shower areas and add drains where necessary so that water does not travel from one user area over the feet of another user.
- In science areas, add emergency shutoff of gas.
- In science areas, replace all acid waste and vent piping and any neutralization tanks.
- In athletics training area, add additional drains for equipment located in room. Replace fill faucets with new.
- Replace backflow preventer in Mech 1.
- Test and repair all domestic water piping in building. Replace piping where test reveals leaks.
- Replace all plumbing fixtures and piping in greenhouse. Properly insulate and jacket all water piping in greenhouse.

9th Grade Center

Some existing plumbing fixtures (drinking fountains, toilets, flush valves, lavatories, faucets, sinks, showers, etc.) are old and in poor condition. Mop sinks are old and in poor condition. Gang restroom lavatories are CW only. Domestic water piping is copper and in decent condition. Solids interceptors are not installed for art sinks. In mechanical rooms, drains are badly corroded. Electric water heaters are located throughout building. Existing heaters are in decent condition.

- Replace all plumbing fixtures and associated piping and trim.
- Add solids interceptor at all art sinks.
- Add HW to gang restroom.
- Replace mop sinks.
- Replace all mechanical room and custodial room drains and associated waste and vent piping.
- Replace all mechanical room and custodial room drains and associated waste and vent piping.
- Install solids interceptor at all art sinks.

Auxiliary building Recommendations:

- Tennis building replace plumbing fixtures and associated piping and trim.
- Replace casework sinks and concessions area handwash sinks at the Tennis building.
- Replace electric water heater. Add circulator pump and circulated HW loop at the Tennis building.
- Add HW to restroom lavatories at the Tennis building.

EXECUTIVE SUMMARY / KEY FINDINGS

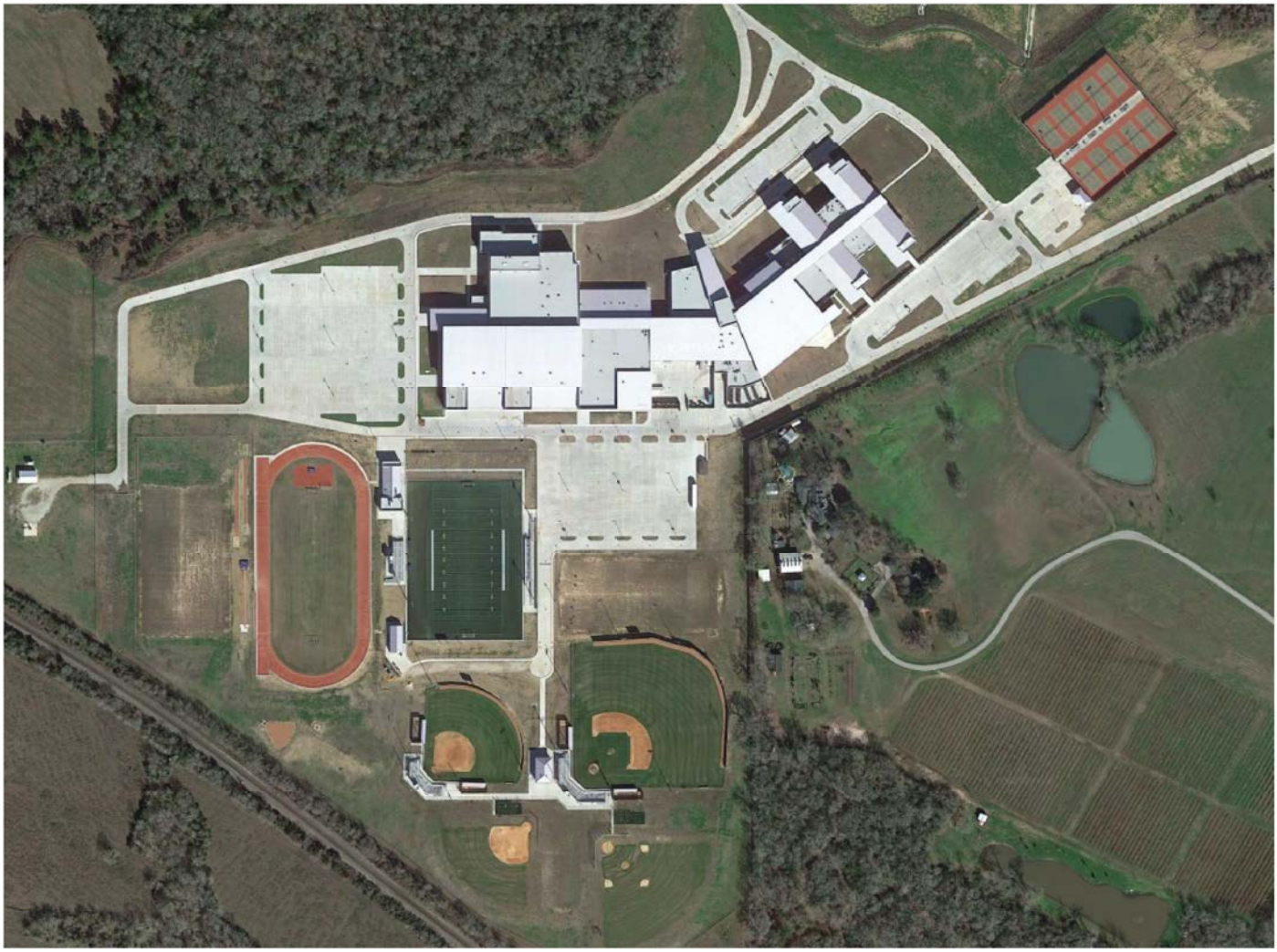
CAPACITY AND TEA ANALYSIS

UTILIZATION	TEA		CAPACITY	
Room	Qty.	"Students/Room"	Max	"Functional (90%)"
Classrooms	107	25	2675	2006
Science Labs	17	24	408	306
Life Skills	1	12	12	9
Art	4	25	100	75
Theater	2	25	50	37
CTE	7	25	175	131
Computer	0	25	0	0
Band	1	25	25	18
Choir	1	25	25	18
Instrumental	1	25	25	18
Gym PE	3	50	150	112
TOTAL	144		3645	2730

LAKE CREEK HIGH SCHOOL

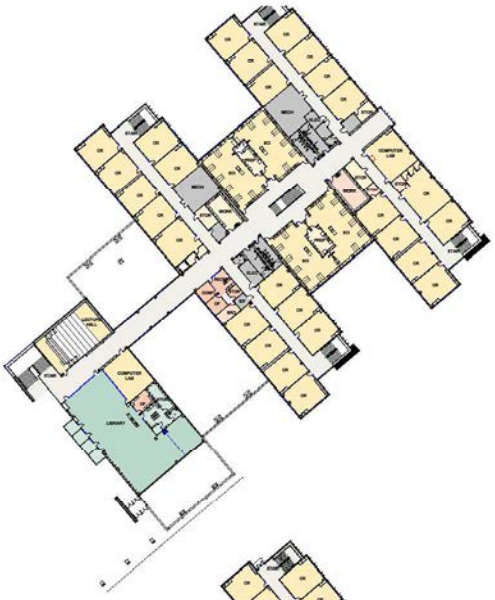
10

GENERAL INFORMATION



LAKE CREEK HIGH SCHOOL 20639 FM 2854 Montgomery, TX 77316	
Year(s) Built:	2018
Approx. Total Building Square Footage	361,528
Grades Served	9th - 12th
Max Capacity / Functional Capacity	2204 / 1,649
Current Enrollment	1,547

FLOOR PLAN



2ND FLOOR

1ST FLOOR

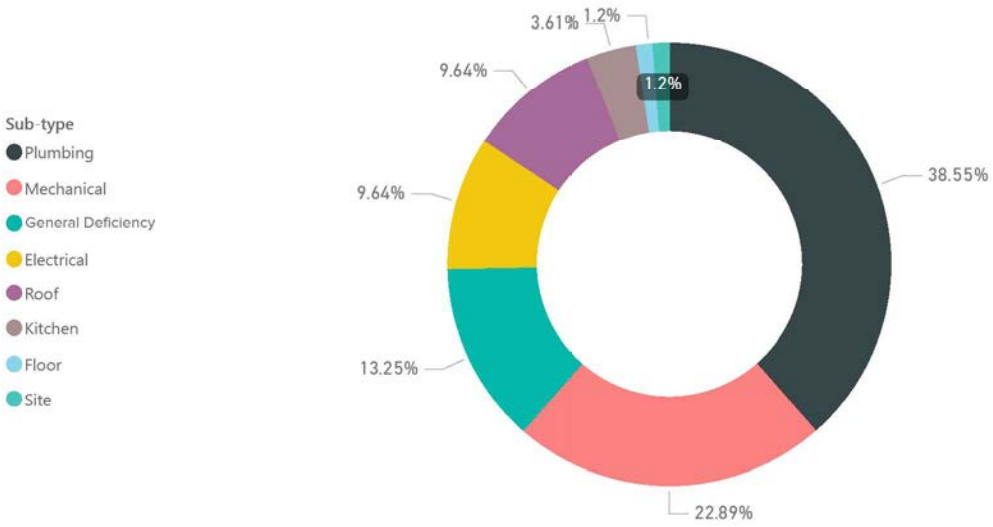
COLOR LEGEND

- Administration/ Administration Support
- Academic Spaces/ Academic Support
- Library/ Library Support
- Dining/ Dining Support
- Fine Arts/Fine Arts Support
- Resource
- Building Support
- Circulation

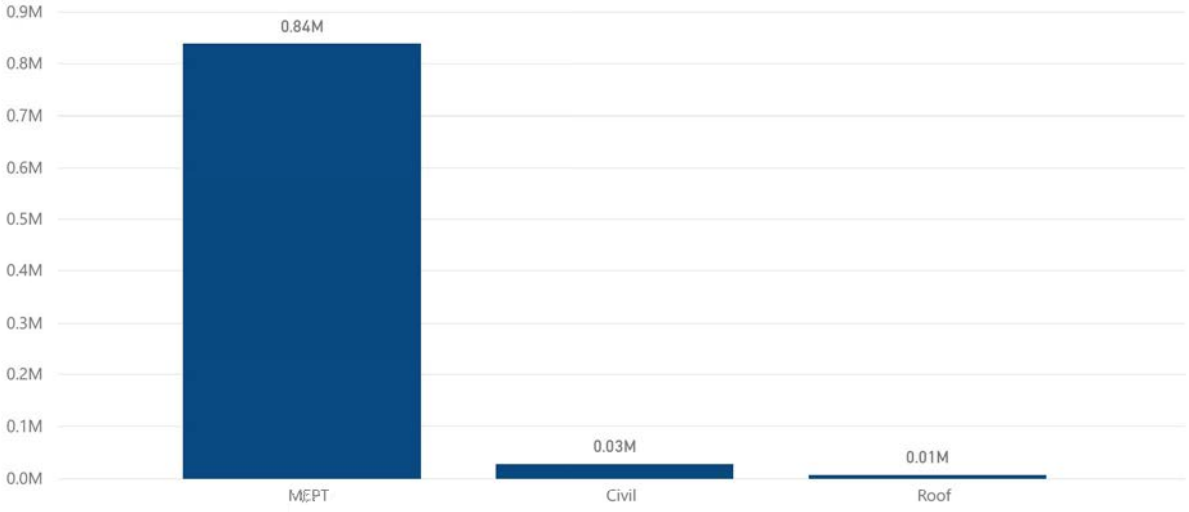
COST SUMMARY

872K	$2.45	355,247
Campus Total	$/SF	Facility Square Footage

Number Of Deficiencies



Cost by Deficiency Type



EXECUTIVE SUMMARY / KEY FINDINGS

ACCESSIBILITY/CODE

Accessibility within Lake Creek High School seems to be in general compliance with TAS. The building is equipped with a fire suppression system and appears to be in good condition. The fire alarm system throughout the High School it is an addressable voice evacuation system.

+ In 2020 Montgomery County began to require the provision of a radio response system testing of educational facilities which will be required by the Fire Marshal.
+ A propane grill was present in the HS Football Concessions. A hood, and proper enclosure should be provided.
+ Extension cords were observed serving equipment within the HS Football Concession. Power should be run by a qualified electrician, and be compliant with National Electric Code.

SITE CONDITIONS

Upon review of the site conditions at the Lake Creek High School, it appears that the site is in a relatively good condition. There are areas in the parking lots which show evidence of ponding water and sedimentation build up. There are minor accessibility issues and areas of exposed rebar in curb. There is also some erosion present along the side slopes of the pond and in pervious areas. Clean sediment from the drainage swales in detention areas that are blocking drainage and repair areas that have eroded or washed out. It is recommended that the grate top be changed to a junction box lid on the existing inlet on the north side of the building. It doesn't appear to be collecting any flow. There is erosion along the bank between the tennis courts and pond. There is an ADA ramp with no 5'x5' landing to the southeast of the building

+ Change the grate top to a junction box lid on the existing inlet on the north side of the building. It doesn't appear to be collecting any flow.
+ Repair broken curbs where exposed rebar is present.
+ Fill in eroded areas and add sod to detention pond.
+ Remove filter fabric from inlet south of the pond.
+ Add striping for the ADA parking spaces to connect to the sidewalk southeast of the building.








EXECUTIVE SUMMARY / KEY FINDINGS

WALLS / MASONRY WALLS

The exterior walls of Lake Creek High School are comprised of metal panel and brick veneer. Both of which seem to be in good condition.

Walls within Lake Creek High School are CMU and Gypsum board. Both of which seem to be in good conditions.

WINDOWS

Window systems around the building seem to be in good condition. Continued maintenance of the exterior sealant will prolong the life of the window systems.

ROOF

Lake Creek High School appeared to consist of a main building with various roof sections and levels consisting of a combination of modified asphalt and standing seam metal roofs, a baseball concession building with a metal panel roof system, a football locker and concession building with an asphalt and metal panel roof system, and a small tennis concession building with a metal panel roof system. Deficiencies observed at the main building roof areas appeared to include displaced counter-flashing in various locations on the low sloped roof areas, unsealed transitions between coping metal and adjoining metal panel cladded walls, and unsealed penetrations through metal panel cladded walls above the main gym. With continued manufacture recommended maintenance, the standing seam metal roof areas of throughout the campus appeared to have a minimum remaining service life of approximately fifteen years, and the modified asphalt roof sections appeared to have a remaining service life of approximately twelve years with proper repairs and maintenance.

- Install counter-flashing to locations where termination bar was exposed, and applying sealant to the transitions and penetrations at the metal wall panels to prevent moisture ingress.
- At the baseball concession there was a poorly crimped metal panel observed. Sealant should be applied to these locations.
- At the storage building near the football concession and locker building appeared to include a poorly sealed transition at the perimeter of the roof. It is recommended that sealing this location to prevent moisture ingress.

EXECUTIVE SUMMARY / KEY FINDINGS

+ Verify roof drainage system above Mech/Elect 12.28 is draining properly. Overflow drain is currently discharging large amounts of water during rainfall, which is of concern.

FLOOR

The flooring throughout Lake Creek High School consists of an epoxy terrazzo, LVT, VCT, and carpet. Overall the flooring seems to be in good condition. Continued maintenance will prolong the life cycle of the flooring systems throughout the building. The flooring in ancillary buildings is also in good condition.

DOORS & HARDWARE

The doors, frames, and hardware throughout Lake Creek High School seem to comply with current standards and are in good working order.

MILLWORK:

Millwork throughout Lake Creek High School are PLAM Clad. The laminate appears to be in good condition. Continued maintenance of the millwork will prolong the life of the units.

CEILINGS

Ceilings and ceiling grid system throughout Lake Creek High School seem to be in good condition.

DINING AND KITCHEN

Within the kitchen and servery of Lake Creek High School the floors, walls, and ceiling seem to be in general compliance with current health codes. The finishes within the kitchen and servery include Quarry tile and sealed concrete on the floors, CMU and Tile walls, as well as vinyl lay in ceiling tiles. The dry storage and the cold storage are sized to serve 1600 Students. There is an additional Point of Sale that will accommodate the future additional line.

+ Review air leak at the Cooler and Freezer with manufacturer.
+ If there is an addition to the school to increase the number of students, the Dry Storage and Cold Storage sizes should be reviewed. In-lieu of increasing the site, delivery frequency can accommodate the needs.

EXECUTIVE SUMMARY / KEY FINDINGS

+ At Football Concessions, provide Exhaust and Fire Suppression system for propane grill.
+ At Football Concessions, provide storage cabinet for propane cylinders.
+ At Football Concessions, provide code compliant electrical receptacles where extension cords are run.

MECHANICAL / HVAC

The building cooling system is provided by four (4) 4-year-old 350-ton Carrier air-cooled chillers. The chillers appear to be in good condition. However, chillers are noisy. The library, common, gyms, kitchen, band hall, stage, weight room and cafeteria areas are served by 4-pipe single zone Carrier air handling units with hot water. They are 4-years-old and are in good condition. Classroom wings are served by 4-pipe dual duct multizone vav air handling units with hot water. They are 4-years-old and are in good condition. Admin area is served by a VAV air handling unit with a dx-coil. Air handling unit and dx condenser unit are 4-years-old and are in good condition. The classroom areas being served by air handling units and fan power/dual duct boxes. They are in good condition. Building heat is being provided by three (3) 4000MBH 4-year-old RBI boilers. They are in good condition. Boilers are displaying an error alarm. Hot water pumps are in good condition. Chilled water pumps are in good condition. All fans and vents are in good condition. Electrical room 4.18 on first floor is hot. In-line exhaust fan appears to not be operating. Electrical room 16.22 on second floor is hot. In-line exhaust fan appears to not be operating. The Field House is being air-conditioned by one (1) 4-year-old Aaon Rooftop unit. Rooftop unit appear to be in good condition.

+ Provide additional sound proofing and treatment for noisy chiller.
+ Recommission and fix boiler issue.
+ Revise sequence of operation of exhaust fans in electrical rooms.
+ Balance air through grilles in library.
+ Add electric unit heater on concession rooms.
+ Replace exhaust fan grille at Concession

ELECTRICAL / TECHNOLOGY

Main Building

The electrical service is fed via (2) pad mount transformer in the service yard of the building, which is connected to (2) 4000A, 277/480V, 3-phase, 4-wire main switchboard located in the main electrical/mechanical room. This main switchboard feeds additional distribution boards and panelboards throughout the building. The distribution boards provide mechanical equipment circuiting. The 277/480V panelboards are utilized for lighting, small mechanical

EXECUTIVE SUMMARY / KEY FINDINGS

equipment, and feeding 120/280V panelboards via stepdown transformers. The 120/208V panelboards are connected to small mechanical equipment, receptacle loads, and miscellaneous loads throughout the building. Equipment is only a few years old and in perfect condition. There is an emergency generator, that appears to feed selected receptacle and lighting loads. Lighting on the interior of the building consists of LED 2x4 fixtures, 1x4 fixtures, recessed cans throughout, numerous other LED fixtures types, and with strip fixtures in mechanical areas. Exterior lighting consists of all LED lighting for building and parking lot fixtures. Lighting controls include energy code compliant controls.

Field House

The electrical service is fed via pad mount transformer near the fields, which is connected to a 120/208V, 3-phase, 4-wire panelboard. This panel feeds additional panelboards in the room. The panelboards are connected to small mechanical equipment, receptacle and lighting loads, and miscellaneous loads throughout the building. Equipment is only a few years old and in perfect condition. Lighting on the interior of the building consists of LED 2x4 fixtures in, with strip fixtures in mechanical areas. Exterior lighting consists of all LED lighting.

PLUMBING

Main Building

Existing plumbing fixtures (drinking fountains, toilets, flush valves, lavatories, faucets, sinks, etc.) are relatively new and in good condition. Some wall hydrants, floor drains, and flush valves are mildly corroded. Gas water heaters are installed for kitchen area and athletics areas. All are relatively new and in good condition. Water heater flues are PVC and installed in a return air plenum. Water heaters are not sealed combustion, but are installed in negative pressure mechanical rooms which could be dangerous. Electric water heaters are located throughout building for office and classroom spaces. All are relatively new and in good condition. Sanitary waste and vent piping is cast iron above ground and PVC below ground. Piping is in relatively good condition. Roof drain piping is cast iron above ground and PVC below ground. Drains and piping are in relatively good condition. Water piping is copper. There is a 6" main with domestic water booster pump system for the building. Domestic water system is in relatively good condition. Gas piping is steel and in relatively good condition. Generator is diesel.

EXECUTIVE SUMMARY / KEY FINDINGS

+ Repair all damaged plumbing fixtures, drains, and wall hydrants.
+ Change aerator and adjust all faucets for lavatories so that water does not spill outside of lavatory basin.
+ Re-insulate and install aluminum jacketing over new insulation all exposed plumbing piping in weight rooms.
+ For all gas water heaters, replace PVC flue with CPVC suitable for condensing water heaters.
+ For all gas water heaters, verify that they are operating properly and safely in negative pressure environment that they are installed in. If not, replace water heaters with sealed-combustion water heaters.
+ Add bottle fillers to drinking fountains in various locations throughout school.
+ Add water softener for gas water heater systems.
+ Replace air dryer for shop compressed air system.
+ In Central Plant and Boiler Room, insulate all water piping within 8 feet of exterior wall.
+ Install solids interceptor for Scene Shop sink.
+ Fire sprinklers missing above some electrical rooms. Suppression should be provided where required by code.

CAPACITY AND TEA ANALYSIS

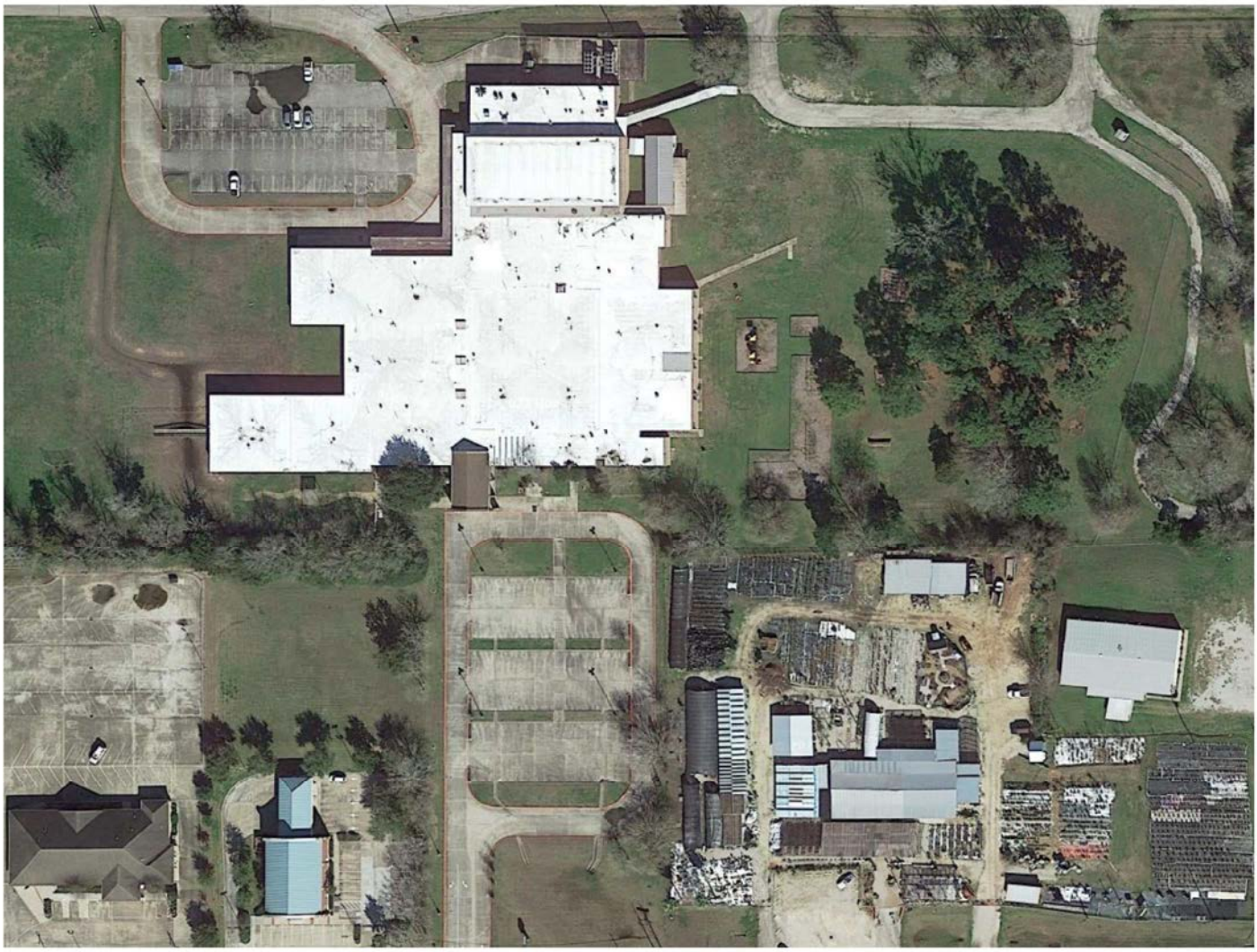
UTILIZATION	TEA		CAPACITY	
Room	Qty.	"Students/Room"	Max	"Functional (90%)"
Classrooms				
PK-1st	18	22	396	356
2nd - 5th	26	22	572	514
Life Skills	1	12	12	10
TOTAL	45		980	880

Enrichment Curriculum Spaces	
Science/Art	2
Music	1
Computer	1
Multi-Purpose	1

EDUCATION SUPPORT CENTER

11

GENERAL INFORMATION



EDUCATIONAL SUPPORT CENTER 20774 Eva Street (Hwy 105 West) Montgomery, TX 77356	
Year(s) Built:	1972, 1978, 1991, 1995
Approx. Total Building Square Footage	95,050
Building Levels	1

EDUCATIONAL SUPPORT CENTER PLAN

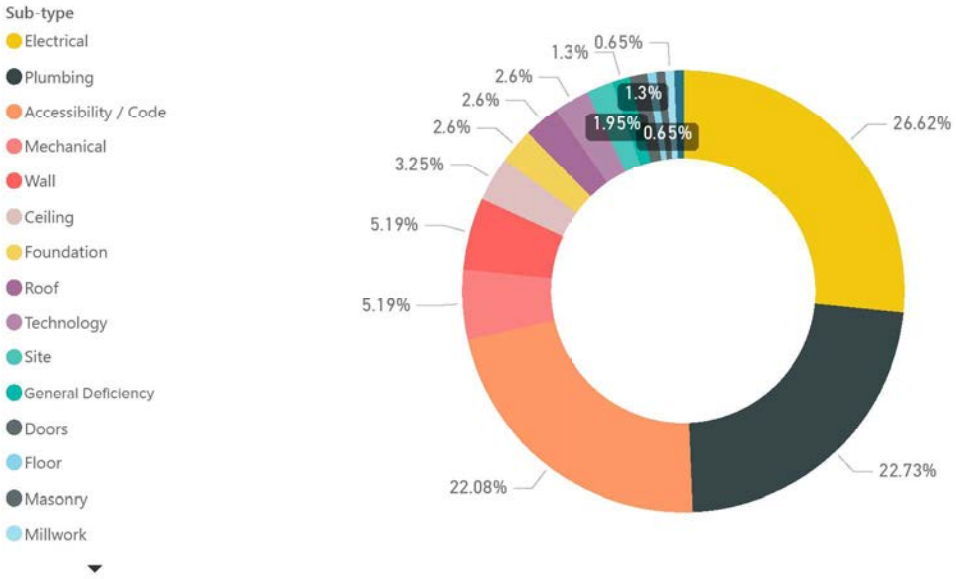
COLOR LEGEND

- Activity Room
- District Offices / District Storage
- Board Room
- Original Administrative Support
- Building Support
- Circulation

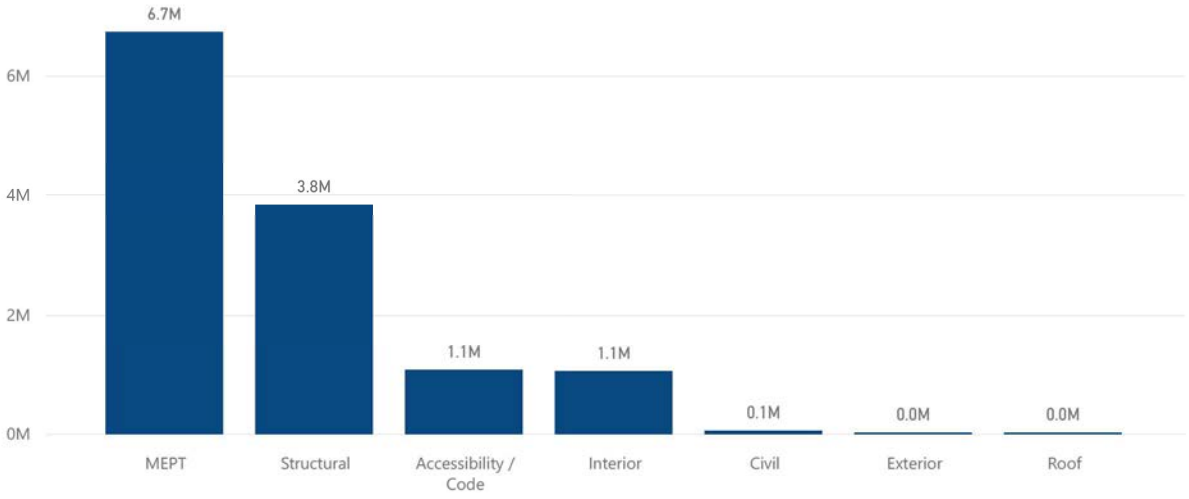
COST SUMMARY

13M	$137.77	95,050
Campus Total	$/SF	Facility Square Footage

Number Of Deficiencies



Cost by Deficiency Type



EXECUTIVE SUMMARY / KEY FINDINGS

ACCESSIBLY/CODE

Primary/original building was built prior to accessibility standards. Therefore, there are many aspects of the building related to accessibility that are non-compliant. Exterior grades seem to be in general compliance and have been addressed through previous improvement projects. Interior deficiencies were noted. One of the most significant ADA deficiencies identified were in the existing toilet rooms. Existing toilet rooms should be modified to ensure adequate turning space, grab bars, ADA compliant stalls, and lavatories are provided. Within many of the classrooms, non-compliant sinks were observed and need to be brought into general compliance.

+ In 2020 Montgomery County began to require the provision of a radio response system testing of educational facilities which will be required by the Fire Marshal.
+ Due to fact that the building is not equipped with a fire suppression system, if an improvement is made the AHJ should be contacted. The AHJ will determine whether or not the a Fire Suppression System will be required as part of the renovation. The means by which the Fire Marshal can require the system is related to the value of the renovation or improvement.
+ Throughout the building there are multiple water fountains that are non compliant, and require the addition of cane detection
+ In some corridors of the building the door hardware provided was non-compliant and should be modified to comply with TAS.

SITE CONDITIONS

Upon review of the site conditions at the Education Support Center, it appears that the site is in relatively fair condition, but the drainage infrastructure on the site needs maintenance. There appears to be erosion at the drainage outfall into the south detention pond which can lead to ponding water and further erosion. There are areas in the northern and southern parking lots which show evidence of ponding water and sedimentation build up.

The concrete drainage swales appear to be sinking from undercut erosion of water eroding soil underneath the concrete. There seem to be areas around the building that are not graded in a way that promotes the flow of water away from the building, causing water to stand and create issues along the building perimeter. This can lead to water migrating under the building pad and cause issues within the building

EXECUTIVE SUMMARY / KEY FINDINGS

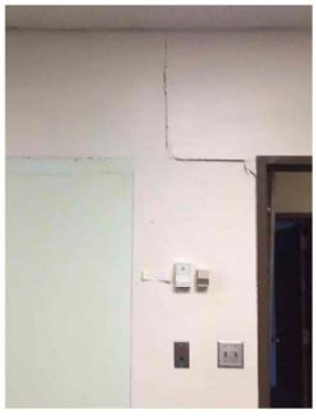
foundation system. Parking lot striping appears to need to be repainted in the parking lot on the SH 105 side of the site.

+ Upgrade site lighting to LED fixtures and confirm proper foot candle coverage is provided.
+ Clean sediment from parking lots and cut drainage swales in landscape areas that are blocking.
+ Repair broken curbs.
+ Clear obstruction of the outfall pipe in the detention pond and fill in eroded areas.
+ Throughout the site, strip and regrade to achieve positive drainage away from the building. It is further recommended that a survey is completed to confirm the overall drainage of the site.
+ Restripe the parking lots and replace joint sealants.
+ Patch asphalt drives to fill potholes.

MASONRY WALLS / WALLS

The exterior walls of the buildings have varying deficiencies. It appears that in locations where additions were made to the building there are dissimilar levels of settlement. There is evidence of water damage coming through the seams of the coping cap in multiple locations.

+ Pressure wash the facade and replace the exterior caulk.
+ Replace and re-flash the coping cap with a spring lock flashing system.
+ Reference the Terracon-produced geotechnical report dated July 21, 2017 for recommendations regarding the foundation which has caused cracking, and failure of the exterior wall system.
+ The existing exterior veneer brick walls seem to have inadequate vapor barrier for protection from water intrusion. There appears to be organic growth within the wall cavity, and remediation is recommended.
+ The Interior walls of the building are in various levels of repair. Within the currently occupied spaces the walls seem to be in fair condition.
+ Within these areas minor maintenance of VWC and drywall is recommended.
+ In areas that are not occupied, or that are currently used for storage, there is extensive damage to the gypsum board, VWC, and in some areas tile.
+ Where there is damage it is recommended that the walls are patched, repaired, and painted.
+ The impact resistant wall board seems to have been removed in various locations, and should be patched or replaced.



EXECUTIVE SUMMARY / KEY FINDINGS

+ There area areas in the southern portion of the building that exhibit structural settlement issues as described within the previously issued geotechnical report as well as the structural observations noted in this assessment. The walls will need to be removed and replaced during remediation of the structure.

WINDOWS

As noted in observation of exterior walls, there are areas in which the installation of the vapor barrier is inadequate. The vapor barrier ties into the window system and can lead to failure of the window system if improperly flashed. Water seems to be penetrating walls and leaking inside through deteriorated window sealant. Several windows have cracks at the corner of the lintels and along the EJs. Sealant at window control joints are in poor condition.

+ At a minimum, windows should be cleaned and new sealant should be applied around the system and within all adjacent control joints.
+ In order to maintain the integrity of the envelope it is recommended that the exterior window systems and associated flashing be removed and replaced.

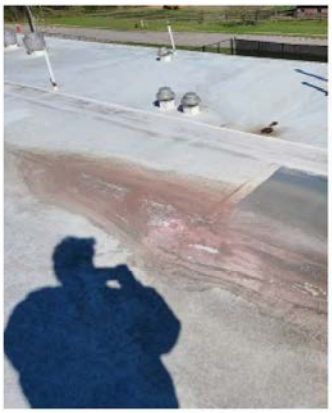
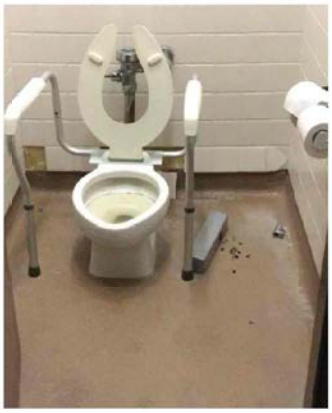
ROOF

The Montgomery Education Support Center appeared to consist of a single-ply roof system with a coating applied to its surface. No cores of the roof were taken. The drainage of the roof is accomplished by primary and overflow field drains throughout the roof. Deficiencies observed throughout the roof area appeared to include disbanded perimeter strip-ins, rusted and damaged rooftop equipment, rooftop units lacking proper fasteners, cracked sealant at roof penetrations, and indications of ponding water on the high roof. Ponding of water can indicate that water is not flowing to drains properly and cause issues within the building.

+ Based on the age of the roof, repair of the roof in its current condition would extend the serviceability life by roughly six years.
+ Abandoned equipment should be removed and openings within roof patched.
+ There is evidence of multiple roof leaks within the building.
+ Exterior coping and flashing should be removed and replaced.






EXECUTIVE SUMMARY / KEY FINDINGS

FLOOR

Throughout the building there are various conditions of each of the following flooring types: Rolled Carpet, VCT, Resinous Flooring, and Terrazzo.

+ Flooring on the south side of the building, where settlement has been observed, are in poor condition. Replacement or refinishing of flooring is recommended.
+ Rolled carpet throughout the building is stained or damaged. Replacement of carpet throughout the building is recommended.
+ VCT within classrooms is damaged and at the end of its life-cycle. VCT replacement throughout the building is recommended.
+ Resinous flooring within the toilet rooms should be replaced or refinished. In non-compliant toilet rooms the room and flooring should be brought into compliance with TAS.
+ In some corridors there seems to be bulging and cracking of Terrazzo. Some cross-slopes in corridors may need to be adjusted to comply with TAS.

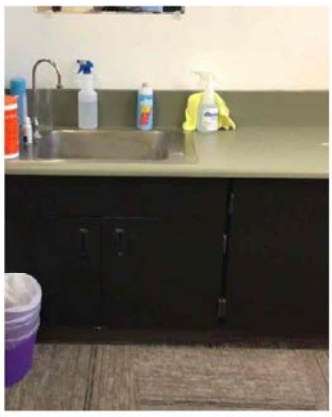
DOORS & HARDWARE

The doors throughout the building consist mostly of hollow metal frames and solid core wood doors. The doors seem to be in fair condition, while the frames seem to be in poor condition. In areas where settlement has been observed the doors and frames will need to be removed and replaced. The majority of doors observed throughout, that access toilet rooms, are equipped with non-compliant hardware and did not provide proper clearance.

+ Refinish all hollow metal frames.
+ Level all doors and frames.
+ Remove and replace doors and frames located on the southern portion of the building where settlement has been observed.
+ Remove and replace all non-compliant door hardware.
+ Recommend the installation of a 10" bottom rail at all exterior storefront and hollow metal entries to the building to comply with TAS.

MILLWORK:

Millwork throughout the building is plastic laminate and is at the end of its life cycle. There are some rooms in which the casework is in fair to poor condition but has components that are non-compliant with TAS. Laminate



EXECUTIVE SUMMARY / KEY FINDINGS

was observed peeling or chipping. Millwork hardware was damaged or coming off in several locations.

+ Recommend the removal and replacement of casework throughout the building.
+ All knee spaces at wash basins should be brought into compliance with TAS.

CEILINGS

Suspended acoustical ceilings throughout the building are in poor condition. In multiple locations there are stained tiles which are indicative of a leak above. In some areas of the building there appear to be sparse placement of new tile integrated with aged ceiling tile. Bulkheads in some portions of the building are separating from the wall.

+ Replacement of ceiling tile throughout the facility is recommended.
+ Recommend paint patch and repair of all bulkheads where damage has occurred.

DINING AND KITCHEN

The kitchen area was not observed as it is not in use.

STRUCTURAL

WJE previously performed an evaluation of the portion of the building experiencing foundation movement. The results of that evaluation are documented in our report on May 28, 2017. Our sub-consultant Terracon produced a geotechnical report dated July 21, 2017. The pertinent background details from those documents include:

+ Foundation movement was apparent at that time; both settlement, primarily along the south edge of the school, and heave, particularly at the west, were present.
+ The majority of distress (e.g., cracked drywall, cracked interior brick mortar joints, gaps below partition walls, displaced ceiling tiles/ceiling grid) was associated with foundation movement; however, waterproofing and damp proofing details of the veneer walls, as observed through inspection openings, were inadequate for protection from water intrusion or corrosion protection of various steel elements, and appeared to result in organic growth on the interior/exterior gypsum board sheathing.
+ Soil samples obtained from the building demonstrated that the site is underlaid with fat clays with the potential for expansion/shrinkage due to








EXECUTIVE SUMMARY / KEY FINDINGS

moisture changes. In general, testing of the samples in the location of apparent heave showed that the samples had higher moisture contents than those taken from the area of apparent settlement, which correlated well with the observed distress.

Visual Survey Summary

Distress related to foundation movement was observed throughout the southern portion of the school. Distress such as cracking/separation of interior partition walls and differential gaps in adjacent finishes, displaced ceiling tiles and grids, a crack in the slab-on-ground at a column blockout, and differentials in slab elevation were observed in several areas of the southern part of ESC. No loss of bearing in the steel joists was observed at the time of our investigation.

Additional minor distresses were consistently noted in the southern portion of the school, including visible gaps between the base of a partition wall and top of floor surface, and misalignment of cabinetry and doors. Several of the restrooms in the southern portion of ESC are no longer functional due to below grade plumbing damage due to slab movement. During our visual survey, a piezometer well in room 128 was opened and found to be dry. Exterior Facade distress was observed along the south elevation of the ECS building, primarily in the southeast corner. Conditions such as cracking in the brick facade and grade beam, joint sealant distress, and previously sealed cracks in the brick facade were observed (Figure 8 and Figure 9). A wooden frame has been erected by MISD staff to support the brick facade on the south face of the building.

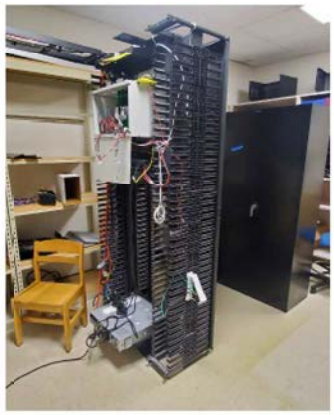
Structural Recommendation:

Based upon the previous work performed by WJE and Terracon, and the new findings from our work in this phase, we recommend that MISD consider mitigation efforts to prevent future foundation movement. Based on the magnitude of foundation movement and the combination of settlement and heave, WJE would recommend a combination of efforts to provide supplementary foundation support and prevention of future moisture addition.

Following the foundation improvements, we would recommend repairs to the exterior wall and repair/replacement of interior finishes. While the recommended repairs would attempt to stabilize the foundation against future movement, there will remain risk for additional foundation movement to occur – in particular the areas where heaving has occurred, the risk for additional heave cannot be entirely eliminated, only mitigated by means of limiting additional moisture to the soil below the slab-on-ground foundation. Further detailed recommendation for mitigation including Underpinning, the addition of French drains, plumbing repairs, exterior wall repairs, and interior finish repairs can be reviewed in the appendix of this document.

EXECUTIVE SUMMARY / KEY FINDINGS

MECHANICAL / HVAC



The building cooling is provided by two 3-year-old 160-ton Carrier air-cooled chillers. They appear to be in good condition. Two chilled water pumps serving the chillers are in good condition. The library, commons, gym, and kitchen areas are served by 2-pipe single zone air handling units with electric heat. They were installed in 1992 and are at their end of life-cycle. All the classroom spaces are served by 2-pipe fan coil units with electric heat. They are installed above the ceiling and are at the end of their life-cycle. The majority of the roof fans are not operational and are in poor condition. The building automated system (BAS) is JCI Metasys. It is a pneumatic system and in poor condition. HVAC recommendations include the following:

+ Replace all the existing air handling units.
+ Replace all the existing fan coil units.
+ Replace all roof fans and vents.
+ Replace the existing BAS.

ELECTRICAL / TECHNOLOGY

The **electrical** service is fed via pad mounted transformer at the exterior of the building, which is connected to an exterior, 277/480V, 3-phase, 4-wire main switchboard located adjacent to the transformer and was not accessible.

This main switchboard feeds additional distribution boards and panelboards throughout the building. The distribution boards provide mechanical equipment circuiting. The 277/480V panelboards are utilized for lighting, small mechanical equipment, and feeding 120/280V panelboards via stepdown transformers. The 120/208V panelboards are connected to small mechanical equipment, receptacle loads, and miscellaneous loads throughout the building. Equipment is aging and some require replacement. **Lighting** on the interior of the building consists of fluorescent 2x4 fixtures and recessed cans throughout, with strip fixtures in mechanical areas. Exit signs appear to be fluorescent. Exterior lighting consists of old recessed, surface, and wall mounted HID lighting. Lighting controls appear to be controlled via toggle switches and do not meet current energy codes.

The **fire alarm** system is an addressable system with a Silent Knight 5820XL control panel located at the main office. Booster power supplies are located throughout the building. The intercom and clock system is a Valcom system located in the MDF. All clocks and speakers appear to be in working condition. The headend equipment appears to require maintenance. The access control and security system appear to be very new and in good working condition. IT racks appear to be in good working condition. The camera system appears to be very outdated and has minimal coverage throughout the building.

+ Replace or repair existing exterior main switchboard and other outdated pieces of equipment throughout the building.
+ Replace all interior lighting with new LED fixtures.
+ Replace all exterior lighting with new LED fixtures.
+ Replace all existing lighting controls with new controls in compliance with energy code.
+ Replace or repair headend equipment for intercom and clock systems.
+ Upgrade existing security camera system and provide additional coverage throughout the building.

EXECUTIVE SUMMARY / KEY FINDINGS

PLUMBING

Existing plumbing fixtures (drinking fountains, toilets, flush valves, lavatories, faucets, sinks, etc.) are old and in poor condition. Lavatories at gang restrooms are CW only. Drinking fountains do not have bottle fillers. Most mop sinks in custodial closets are CW only. Floor drains are not trap primed in many instances. Water heaters in the central plant, presumably for the kitchen area, have been removed. Electric water heaters are located throughout building for classroom and administration areas. All are past their serviceable lifespan. None have circulated hot water piping or circulator pumps installed. Insulation of water piping (cold and hot) is deteriorate and requires replacement. Sanitary waste and vent piping is cast iron and shows sign of age and corrosion.

There were many locations where piping had been replaced with galvanized piping or PVC. Drains were also severely corroded in the kitchen area and in mechanical rooms. Roof drain piping is cast iron and shows sign of age and corrosion. Natural gas piping is black steel and is severely corroded. Domestic water piping is a mixture of galvanized steel and copper. Appears that it was originally galvanized steel and areas that have corroded over time have been replaced with copper piping.

+ Replace all existing plumbing fixtures and associated piping.
+ Replace all water heaters and add circulator pumps and circulator loop piping.
+ Replace all sanitary waste and vent piping.
+ Replace all roof drain piping.
+ Replace all domestic water piping.
+ Replace all gas piping.
+ Add HW to lavatories in gang restrooms and to all mop sinks.

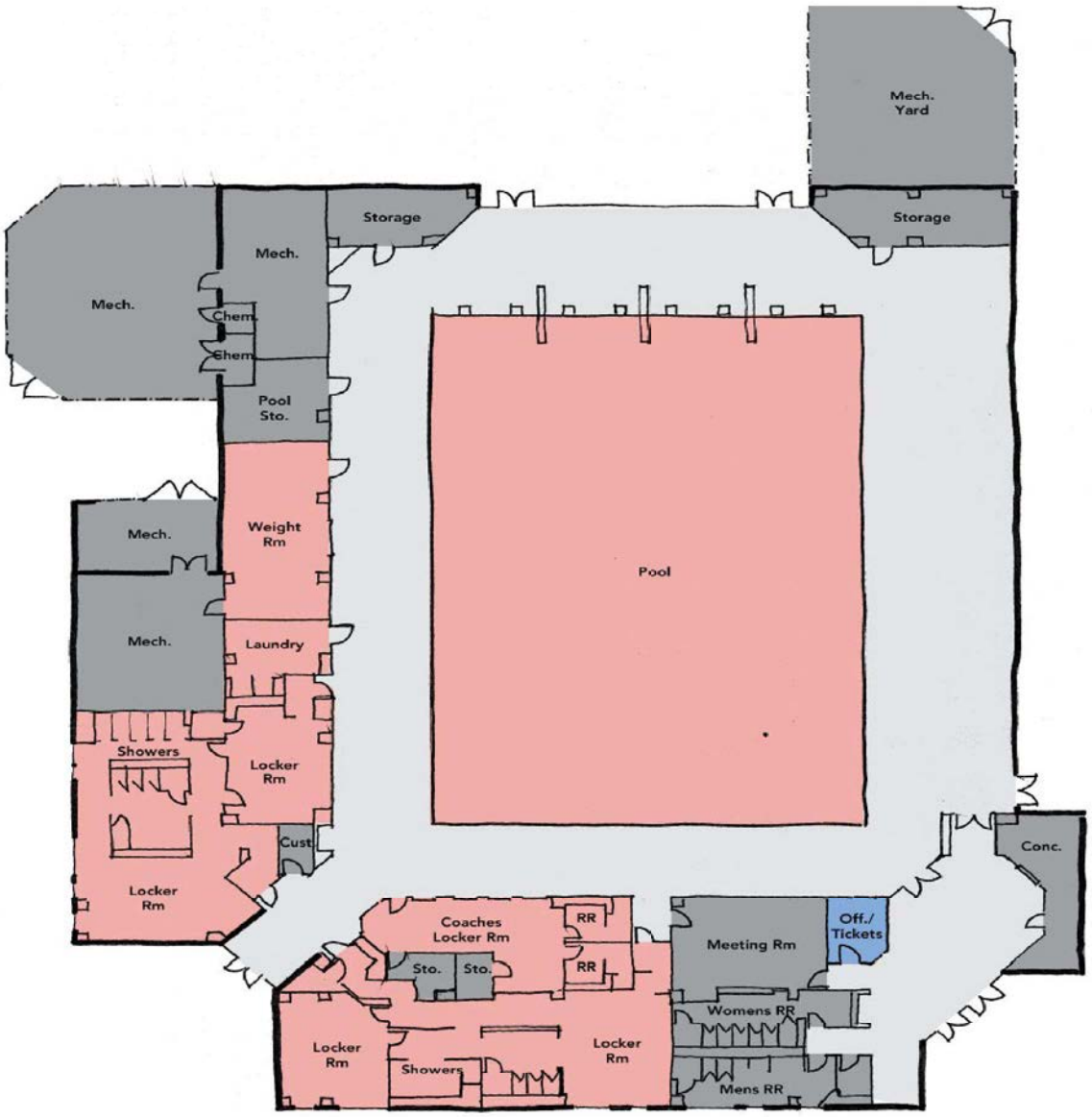
ATHLETIC FACILITY & AQUATIC CENTER

12

GENERAL INFORMATION

ATHLETIC FACILITY / AQUATIC CENTER 22628 Hwy 105 West Montgomery, TX 77356	
Year(s) Built:	2009
Approx. Total Building Square Footage	30,420
MONTGOMERY ISD FIELD HOUSE	
Year(s) Built:	2003
Approx. Total Building Square Footage	11,300

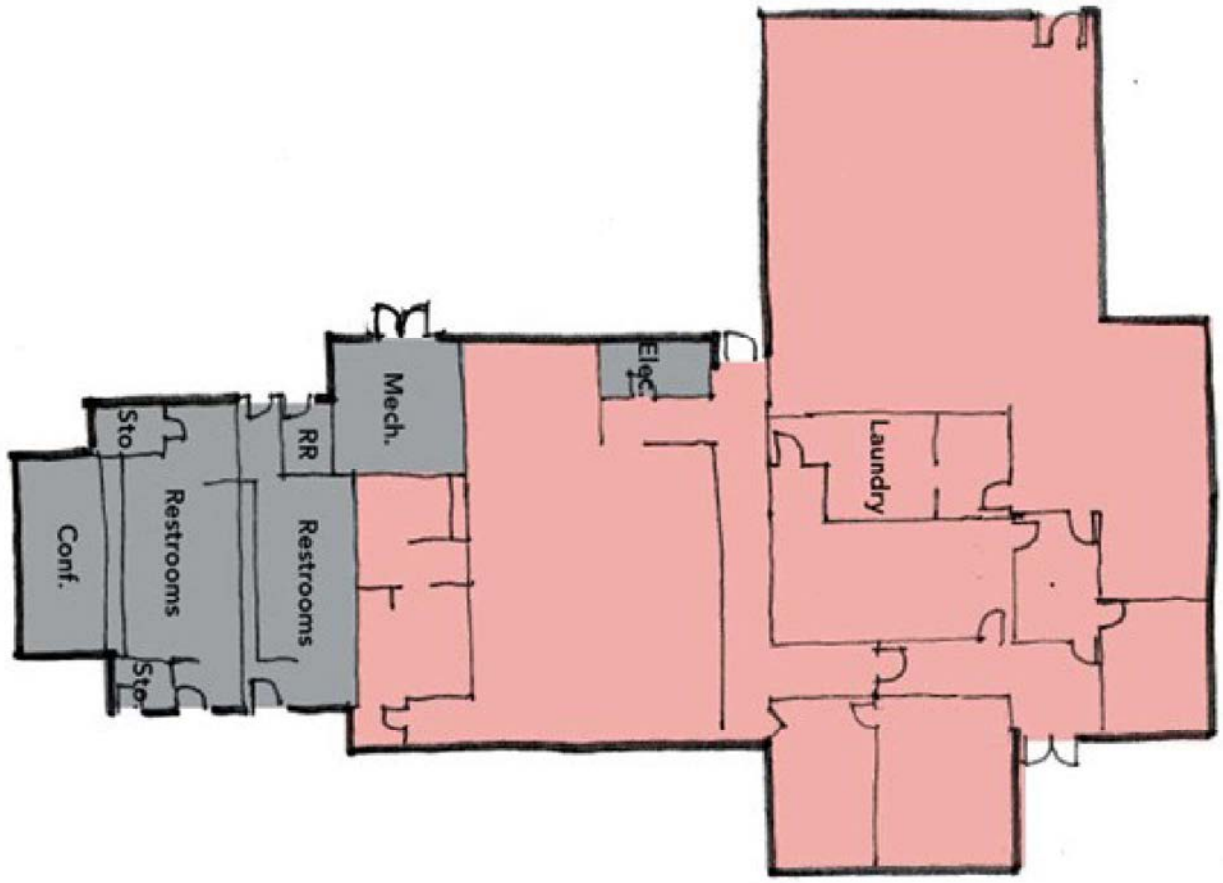
AQUATIC CENTER PLAN



COLOR LEGEND

- Athletics / Physical Education
- Building Support
- Administrative Space

FIELD HOUSE PLAN



COLOR LEGEND

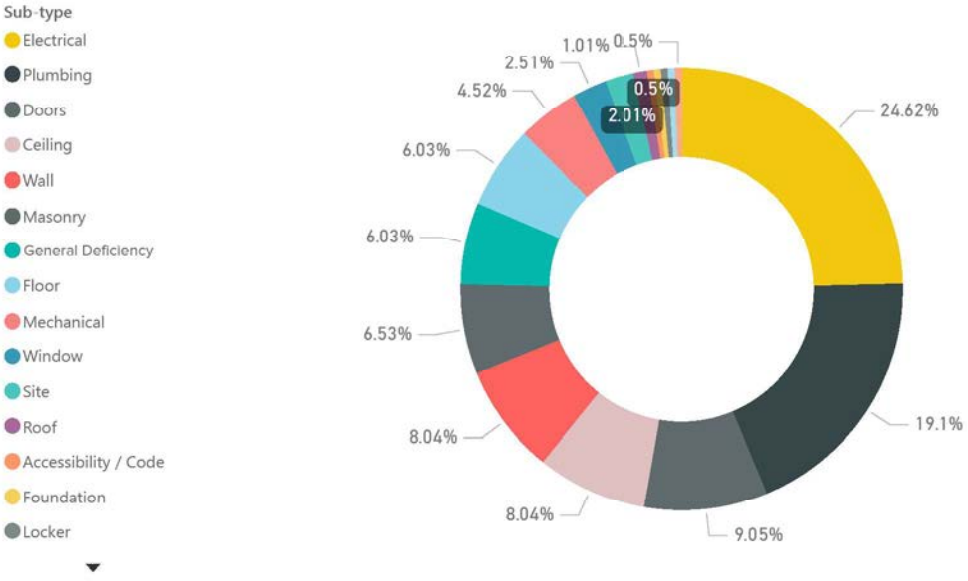
Athletics / Physical Education

Building Support

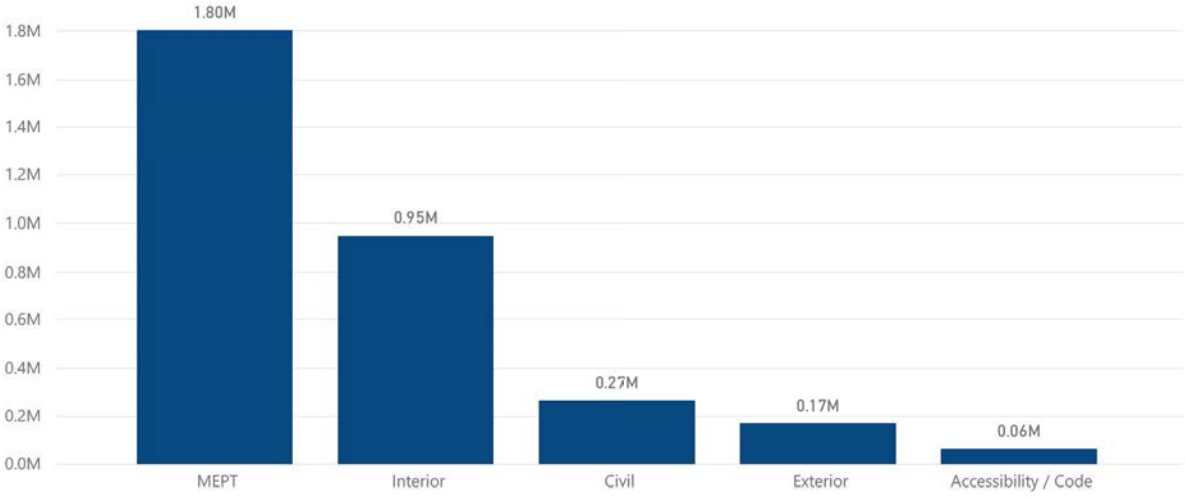
COST SUMMARY

3M	$77.91	41,720
Campus Total	$/SF	Facility Square Footage

Number Of Deficiencies



Cost by Deficiency Type



EXECUTIVE SUMMARY / KEY FINDINGS

ACCESSIBILITY/CODE

Aquatic Center

Accessibility within the Aquatic Center seems to be in general compliance with TAS. The existing Aquatic Center is fire sprinklered with 8" fire main. System appears to be in good working condition. Some sprinkler heads in mechanical rooms do not have guards installed. Piping, especially in pool equipment mechanical rooms is badly corroded.

+ In 2020 Montgomery County began to require the provision of a radio response system testing of educational facilities which will be required by the Fire Marshal.
+ Repair broken curbs and broken ADA ramp.
+ Install guards on all upright pendant sprinkler heads.
+ Replace all corroded piping. Clean off corrosion where piping is not replaced and paint all fire sprinkler piping to protect from corrosion.
+ There is not a Voice Evacuation, in the event of a renovation, the system would need to be replaced.

Field House

Toilet rooms within the Field House are in poor condition and require modification to comply with TAS.

+ Women's restroom layout should be modified to comply with TAS.
+ ADA locker benches should be modified to comply with TAS.
+ The fire alarm system is an addressable voice evacuation system with a Silent Knight 5820XL control panel and in good condition but there were multiple rooms with missing fire alarm which should be provided.

SITE CONDITIONS

Upon review of the site conditions at the Sports Complex, it appears that the site is in a relatively good condition, but maintenance is required to attend to some erosion occurring in the drainage ditches along the south side of the site. The asphalt parking lots have sections in need of repair but are overall in a fair condition.

+ Perform maintenance on south drainage ditches to address sloughing issues, rebuild side slopes, and clear sedimentation and vegetative growth buildups in the concrete channel.
+ Perform maintenance on pond outfall drainage structures and conveyance paths to remove blockages obstructing pipes and clear sedimentation and vegetative growth buildups.

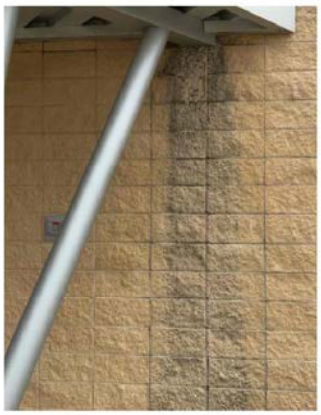
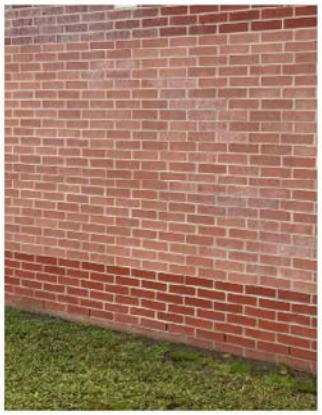






EXECUTIVE SUMMARY / KEY FINDINGS

- Establish better drainage patterns for paved areas near the football field concession entrances and near the west side of the aquatic center to help prevent against water buildup at the building walls.
- Address ponding and poor drainage at the end of the ADA parking stalls in the northwest parking lot to minimize sedimentation buildup.
- Power wash water stained sidewalk.
- Mill and overlay asphalt pavement sections and repair any weakened subgrade to address potholing and deterioration. Seal and stripe the affected areas when done.
- Address erosion areas throughout the site.




WALLS / MASONRY WALLS

Aquatic Center

The exterior walls of the Aquatic center are in poor to fair condition. Exterior sealant was observed to be failing. At connections to canopies the flashing seems to have failed.

- Remove and replace building sealant
- Power wash the face brick and stone.

Field House

The exterior walls of the field house seem to be in poor to fair condition. Exterior sealant was observed to be failing, and brick appears to have collected sediment that should be cleaned. In some areas it appears as though there are issues with the weather proofing which is causing efflorescence.

- Remove and replace building sealant
- Power washing the face brick will temporarily improve the appearance, however the residue will likely return over time.

WINDOWS

Aquatic Center

Window systems around the building are 1/4" Storefront systems that seem to be in fair condition. They do not comply with current energy code.

- Replace exterior storefront system with new energy efficient glazing systems.
- Remove and replace sealant

Field House

Exterior hollow metal frames seems to be in poor condition throughout the Field house.

- Replace all hollow metal frames and glazing.

EXECUTIVE SUMMARY / KEY FINDINGS

ROOF

Aquatic Center

The single ply roof system is bound by a pre-finished perimeter metal. There were no deficiencies noted at the Aquatic Center. With continued manufacturer recommended maintenance the roofing systems should have a minimum remaining effective service life of approximately eight years with regular maintenance.

Field House

The standing seam metal roof system is bound by a pre-finished perimeter metal, and is drained by gutters. There were no deficiencies noted. With continued manufacturer recommended maintenance the roofing systems should have a minimum remaining effective service life of approximately thirteen years

FLOOR

Aquatic Center

The flooring throughout the building is in fair condition. The pool deck shows signs of degradation and should be cleaned, sandblasted and resealed. The base of the pool appears to have areas of plaster that appear to be blistering and peeling. Within the locker rooms the applied floor finish has bubbled in some locations and is peeling up in others.

Field House

Floors within the Field House consist of sealed concrete and VCT both are in poor condition.,

+ Concrete floors should be resealed.
+ VCT throughout the facility Should be replaced.

DOORS & HARDWARE

Aquatic Center

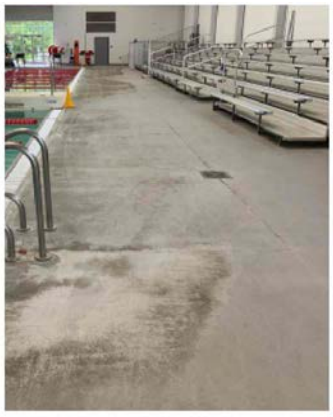
The doors, frames, and hardware throughout the Aquatic Center seem to comply with current standards. However in areas that are exposed to high humidity there appears to be corrosion of Hollow Metal door and Frames.

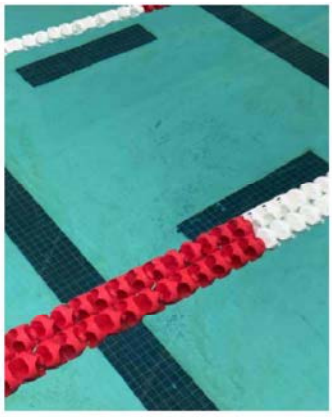
+ Remove and replace Hollow Metal door frames with FRP Doors and Frames for Caustic Environments.

Field House

Doors systems around the Field House are made up of hollow metal doors and frames and they are in poor condition. With evidence of rust, and damage over the years of use.

+ Doors and Frames should be repaired or replaced.





EXECUTIVE SUMMARY / KEY FINDINGS

CEILINGS

Aquatic Center

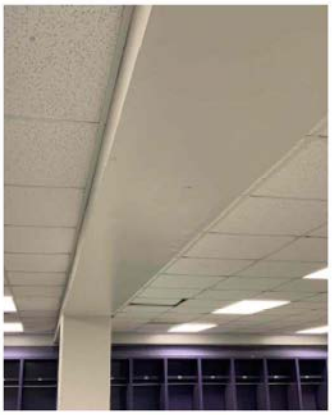
Ceilings and ceiling grid system throughout the Aquatic center are in need of repair and replacement. Pipe leaks above ceiling are apparent, and have caused damage to the tee-systems, and materials that are susceptible to corrosion.

+ Replace ceiling and ceiling grid system throughout the Aquatic Center.

Field House

Ceilings and ceiling grid system throughout the Field House are in poor condition. There are areas above ceiling the leaks are apparent.

+ Replace ceiling and ceiling grid system throughout the Field House.



DINING AND KITCHEN

Field House

Within the concessions of the Field House the floors and walls seem to be in general compliance with current health codes. The millwork within the space is damaged. The 3 compartment sink is undersized.

+ Replace 3 Compartment sink to accommodate size and service of concession.
+ Provide code compliant electric connection for warming unit near hand sink.
+ Repair Refrigerated Merchandisers.

Football Concessions

+ Replace 3 Compartment sink to accommodate size of concession
+ Add additional Hand Sink for area size
+ Repair/Replace Damaged Millwork Cabinets
+ Replace Popcorn popper (possibly exceeded lifespan)
+ Repair/Replace Residential Chest Freezer
+ Repair Refrigerated Merchandisers for condensation issues

EXECUTIVE SUMMARY / KEY FINDINGS

MECHANICAL / HVAC

Aquatic Center

The building cooling system is provided by one (1) 12-year-old 55-ton Carrier air-cooled chiller. Chiller appear to be in good condition. Locker rooms and entry area are served by two (2) 12-year-ol Carrier single zone air handling units with electric duct heaters. They are in good condition; however, the interior is dirty. Chilled water piping fiberglass insulation is starting to deteriorate in the central plant. Chemical pot feeder is rusted and is in fair condition. Pool area is served by two (2) 15-year-old Seresco dx rooftop floor mounted units. Unit's heating is being supply by two (2) 15-year-old Raypak boilers. Rooftop floor mounted units, condenser unit and boilers are in bad shape. Provide additional sound proofing and treatment for noisy chiller.

+ Clean dirty coils, drain pans, motors, and fan for both air handling units.
+ Replace entire pool system with new.

Field House

The building cooling system is provided by one (1) 19-year-old 25-ton Carrier air-cooled chillers. The chiller is in bad condition. The building is served by two (2) 19-year-old Carrier vertical 2-pipe fan coil units with electric duct heaters and one (1) 19-year-old Carrier dx vertical fan coil unit. Fan coil units are in fair shape. Two (2) 19-year-old condensing units seem to be abandoned (ACCU-3 and ACCU-6)Refrigerant piping insulation is damaged. Various supply, exhaust and return air grilles are dirty. All fans and vents are in fair condition.

+ Replace entire field house system.
+ Clean dirty supply, exhaust and return air grilles.

Concession, Restrooms, Press Box

Concessions are not air conditioned. Press boxes are served by window units. Window units are in fair condition. Restrooms exhaust fans are in good condition.

+ Add electric unit heater on concessions room.

ELECTRICAL / TECHNOLOGY

Aquatic Center

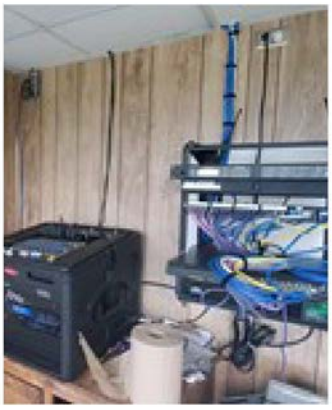
The electrical service is fed via Entergy pad mounted utility transformer at the exterior of the building, which is connected to 1200A, 277/480V, 3-phase, 4-wire main switchboard 'MSB' located in the Mechanical room #1. This main switchboard feeds additional distribution boards and panelboards throughout the building. The distribution

EXECUTIVE SUMMARY / KEY FINDINGS

boards provide mechanical and plumbing equipment circuiting. The 277/480V panelboards are utilized for lighting, small mechanical equipment, and feeding 120/280V panelboards via stepdown transformers. The 120/208V panelboards are connected to small mechanical equipment, receptacle loads, and miscellaneous loads throughout the building. Equipment is fair condition. Disconnect switches are corroded and in bad condition. Few receptacles and switches are corroded and in bad condition. Lighting on the interior of the building consists of fluorescent 2x4 fixtures, 1x4 fixtures, and recessed cans throughout, with strip fixtures in mechanical areas. Exit signs appear to be LED. Exterior lighting consists of old surface mounted HID lighting. Lighting controls appear to be controlled via toggle switches or outdated sensors and do not meet current energy codes.

The access control and security system could not be observed but all devices indicate a newer system.

+ Replace all other outdated and damaged pieces of equipment throughout the buildings.
+ Provide generator for life safety items.
+ Replace all damaged disconnect switches, receptacles and switches.
+ Replace all interior lighting with new LED fixtures.
+ Replace all remaining exterior lighting with new LED fixtures.
+ Replace all existing lighting controls with new controls in compliance with energy code



Field House

The electrical service is fed via pad mounted utility transformer at the exterior of the building, which is connected to 2000A, 277/480V, 3-phase, 4-wire main switchboard located in the main electrical room and has the maximum amount of NEC allowable service disconnects.

This main switchboard feeds additional distribution boards, panelboards and softball field, football field, baseball field, site lighting. The distribution boards provide mechanical equipment circuiting. The 277/480V panelboards are utilized for lighting, small mechanical equipment, and feeding 120/280V panelboards via stepdown transformers. The 120/208V panelboards are connected to small mechanical equipment, receptacle loads, and miscellaneous loads throughout the field house building. Equipment is aging and some require replacement. Generator was not seen at the field house building. Lighting on the interior of the building consists of fluorescent 2x4 fixtures, 1x4 fixtures, and recessed cans

EXECUTIVE SUMMARY / KEY FINDINGS

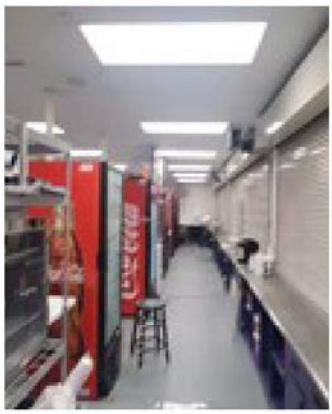
throughout, with strip fixtures in mechanical areas. Exit signs appear to be fluorescent. Exterior lighting consists of outdated surface mounted HID lighting. Lighting controls appear to be controlled via toggle switches and do not meet current energy codes. IT racks appear to be in good working condition with aged equipment and outdated wireless access points. The camera system could not be observed but few cameras looked outdated.

+ Replace outdated portion of existing main switchboard. Replace all other outdated and damaged pieces of equipment throughout the buildings.
+ Replace all interior lighting with new LED fixtures.
+ Replace all remaining exterior lighting with new LED fixtures.
+ Replace all existing lighting controls with new controls in compliance with energy code.

PLUMBING

Aquatic Center

Existing plumbing fixtures (drinking fountains, toilets, flush valves, lavatories, faucets, sinks, etc.) are relatively new and in good condition. Some damaged drinking fountains, handicap showers, flush valves, water closets and urinals throughout facility. Gas water heater with additional hot water storage tank is in poor condition. Circulator pump and piping at water heater system is badly corroded. Sanitary waste and vent piping is no-hub cast iron above grade and PVC below grade. Piping is in relatively good condition. Water piping is copper and in relatively good condition except in pool equipment rooms where piping is badly corroded. Gas piping is black steel and shows signs of corrosion in some locations. Backflow prevent in Cust 112 is leaking. No drip leg is installed on gas piping to boilers. Wall hydrant in mechanical yard is damaged.



+ Replace all corroded piping, mainly located in pool equipment rooms. Paint piping to protect against corrosion.
+ Repair the few damaged plumbing fixtures.
+ Flush/clean/repair all flush valves.
+ Repair all handicap showers.
+ Repair all drinking fountains.
+ Replace gas water heater system, including all corroded piping and circulator pump.
+ At boilers, add drip leg to gas piping.
+ Repair damaged wall hydrant in mechanical yard.
+ Replace pool equipment.

EXECUTIVE SUMMARY / KEY FINDINGS

Field House

Existing plumbing fixtures (toilets, urinals, and lavatories) are in relatively good condition. Flush valves were not operating properly throughout facility. Sanitary waste and vent piping is cast iron and in relatively good condition. Roof was drained via gutters and downspouts. No roof drains. No natural gas for facility. There are two (2) 60-KW electric water heaters serving the building. The water heaters are relatively new (2019) and in good working condition. Pipe insulation is missing on piping at water heaters. There is some corrosion on piping at water heaters. Mechanical rooms do not have hose bibbs. Casework sinks are stainless steel. Fixtures are old and in poor condition. Exterior drinking fountains are damaged and in extremely poor condition. Hose bibb was damaged in public men's restroom. Mixing valves not installed on lavatories in Coaches' restrooms. Several of the showers in the locker areas were damaged, leaking or in poor condition. There are not enough drains in the locker room shower areas. Water travels from one user over the feet of another user to get to a drain. Drain beneath ice maker in training room is damaged. Mop basin in custodial closet is old and in poor condition. Insulation for exterior CW piping is in poor condition. Locker room drinking fountains are single units. There is no bottle filler on drinking fountains in entire facility. No water softener.

+ Repair/replace all flush valves in entire facility.
+ Replace corroded piping at water heaters. Install insulation on all piping at hot water heaters. Install aluminum jacketing over all insulation at water heaters.
+ Add hose bibbs in mechanical rooms.
+ Replace all casework sinks and faucets.
+ Replace all exterior drinking fountains.
+ Replace damaged hose bibb at men's public restroom.
+ Repair damaged showers.
+ Rework drainage in shower areas. Add new drains, as necessary.
+ Replace floor sink at training room ice maker.
+ Replace mop basin in custodial closet.
+ Install new insulation on building CW entry. Install closed cell insulation with stainless steel jacketing.

EXECUTIVE SUMMARY / KEY FINDINGS

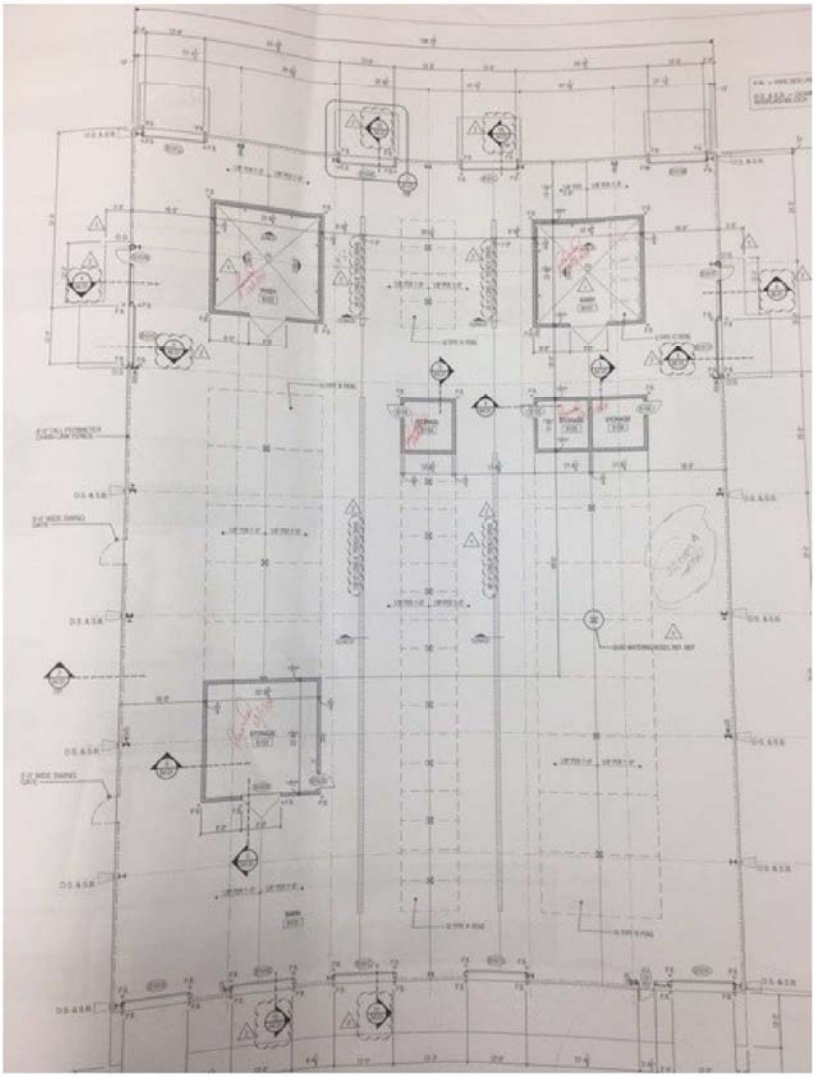
AGRICULTURE FACILITY

13

GENERAL INFORMATION

AGRICULTURE FACILITY Old Dobbin Plantersville Road Montgomery, TX 77356	
Year(s) Built:	2009
Approx. Total Building Square Footage	22,000
Grades Served	9

FLOOR PLAN



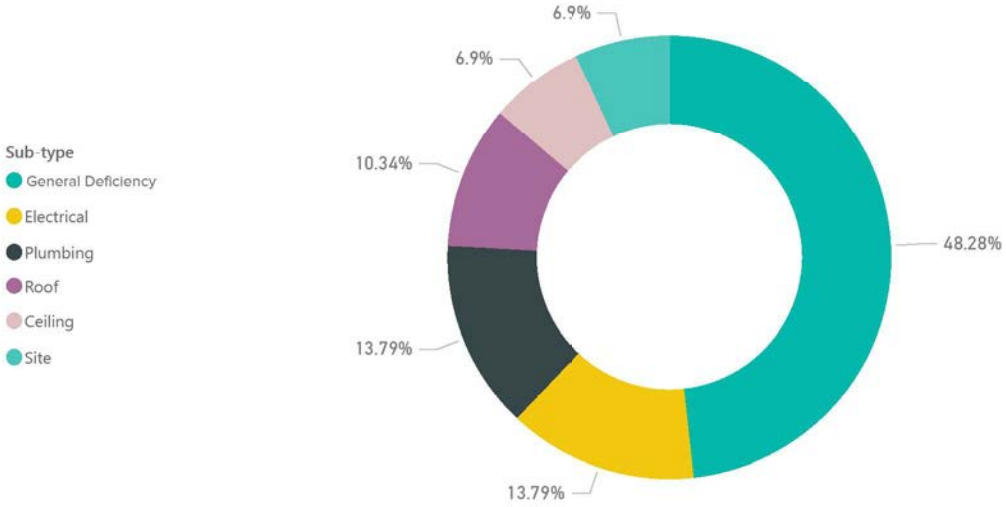
COLOR LEGEND

- Administration/ Administration Support
- Academic Spaces/ Academic Support
- Library/ Library Support
- Dining/ Dining Support
- Computer Lab
- Fine Arts/Fine Arts Support
- Resource
- Science / Art
- Building Support
- Circulation

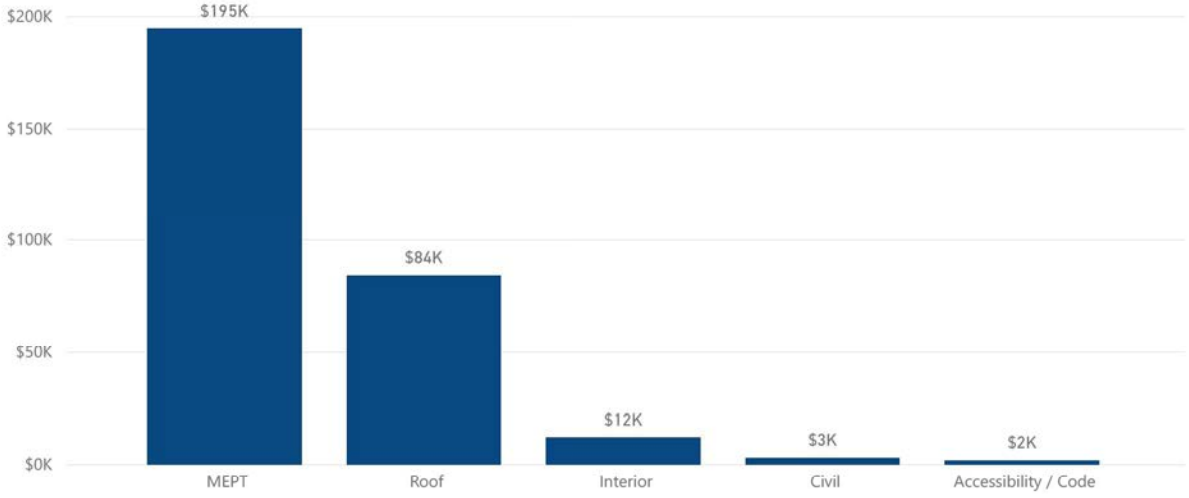
COST SUMMARY

295K	$13.42	22,000
Campus Total	$/SF	Facility Square Footage

Number Of Deficiencies



Cost by Deficiency Type

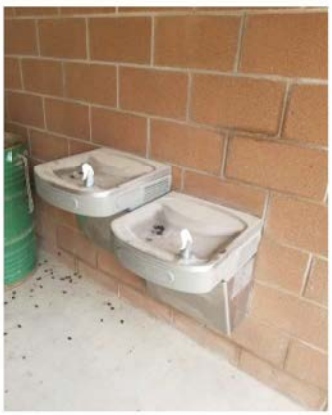


EXECUTIVE SUMMARY / KEY FINDINGS

ACCESSIBILITY/CODE

Accessibility in general seems to be in compliance with TAS.

+ ADA Parking and access should be provided.
+ Provide power which is adequate to the serve load required in all areas of the Ag facility.
+ Drinking fountains are compliant however they are Non-functional and should be repaired.



SITE CONDITIONS

Upon review of the site conditions at the Montgomery High School Ag Barn, it appears that the site is in a relatively good condition overall. There are no major deficiencies observed. There is some evidence of potholing beginning to occur at the entry drive that could be cause for concern in the future and the appearance of rutting in the rear parking area for the trailers.

+ Fill in the potholes at the entry drive.
+ Smooth out the rutting that is taking place on the site.

WALLS / MASONRY WALLS

The walls of the Ag facility are in fair condition. Exterior sealant was observed to be failing in some areas.

+ Remove and replace building sealant
+ Power wash the CMU.

ROOF

The Montgomery ISD agriculture facility appeared to consist of three main roof areas; one conditioned space with an asphalt shingled roof system measuring approximately 2,500 square feet, an open canopy metal panel roof area measuring approximately 8,500 square feet, and an unconditioned wildlife area with a metal panel roof system measuring approximately 22,000 square feet. Deficiencies observed on the shingled roof area appeared to include unsealed fastener heads at roof curbs and vent pipes, and buckled shingles. The shingled roof area appeared to be in fair condition and has a remaining effective service life of approximately three years. Deficiencies observed at the metal panel roof connected to the shingled roof area appeared to include rusted fasteners and stained panels. The canopy roof area appeared to be in fair condition and has a remaining effective service life of approximately three years with regular maintenance. The wildlife area metal panel roof system appeared to be in overall good condition and did not appear to require immediate repair

EXECUTIVE SUMMARY / KEY FINDINGS

or replacement. The wildlife roof area appeared to have a minimum remaining service life of approximately ten years.

+ Recommend applying sealant to the fastener heads at roof penetrations and replacing the previously noted buckled shingles.

FLOOR

The flooring throughout the Ag Facility are exposed concrete which appears to be in fair condition.

DOORS & HARDWARE

The doors, frames, and hardware throughout the Ag Facility seem to comply with current standards. However, locking the door from the interior seems to require a key and may not comply with District Standards. Doors seem to have sustained some damage and should be refinished.

MILLWORK:

There is limited millwork within the facility, and it is in poor condition.

CEILINGS

Ceilings within the Ag Facility seem to be in fair condition. Some areas show signs of Damage, due to replacement of plumbing lines throughout.

MECHANICAL / HVAC

Aquatic Center

The building is being air-conditioned by one (1) 13-year-old Carrier horizontal DX fan coil unit with electric heat. Fan coil unit and condensing unit are in good condition. Technology room is served by one (1) 13-year-old Carrier mini-split system. Unit is at the end of service life. Exhaust fans serving restrooms are in good condition. Clean dirty coils, drain pans, motors, and fan for both air handling units.

+ Replace mini-split system with new.

ELECTRICAL / TECHNOLOGY

The electrical service is fed via a pole mounted transformer which feeds a wireway that is tapped by a 400A and 200A disconnect switches at the side of the building. The is 200A 120/240V, 1-phase, 3-wire disconnect appears to feed (2) panelboards located, inside the building. These panels feed

EXECUTIVE SUMMARY / KEY FINDINGS

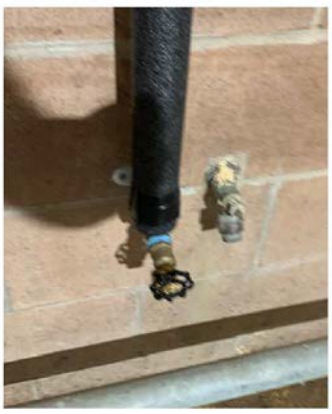
lighting, receptacle, and mechanical loads for the building. The 400A 120/240V, 1-phase, 3-wire disconnect appears to feed (3) panels at the back building that have all the animal containers. These panels feed lighting, receptacle, and mechanical loads for the building. Emergency lighting is handled via battery backup units. Lighting on the interior of the building consists of fluorescent 1x4 surface mounted and recessed fixtures. Exit signs appear to be fluorescent. Exterior building lighting consists of LED fixtures. Exterior canopy and animal housing areas appear to be old HID fixtures. Lighting controls are controlled via toggle switches and do not meet current energy codes. The fire alarm system is a conventional system and showed no evidence of issues. Replace all other outdated and damaged pieces of equipment throughout the buildings. Provide generator for life safety items.

+ Replace all interior lighting with new LED fixtures.
+ Replace all remaining exterior lighting with new LED fixtures.
+ Replace all existing lighting controls with new controls in compliance with energy code.

PLUMBING

Existing plumbing fixtures do not flush properly. Lavatories have both CW and HW. Electric water heater is relatively new and in good condition but does not have a circulator pump. Sanitary waste and vent piping is cast iron and in relatively good condition. Water piping is a mixture of copper and galvanized steel. Piping appears in good condition but is not properly insulated. Roof was drained via gutters and downspouts. No roof drains. No gas piping on site. Wall hydrants around exterior of building are improperly installed in chain link fence. Floor drain in men's restroom is not trap primed. Hose bibbs and associate piping in barn is badly corroded, insulation damaged. Trench drains overflow during heavy rainfall

+ Install new flush valves on all plumbing fixtures.
+ Install circulator pump and circulation loop on hot water system.
+ Insulate and jacket all water piping with closed cell insulation and aluminum jacketing.
+ Replace all existing wall hydrants, hose bibbs and associated piping in barn.
+ Install trap primer for all floor drains.
+ Install backwater valve in building storm connection to site storm.



EXECUTIVE SUMMARY / KEY FINDINGS

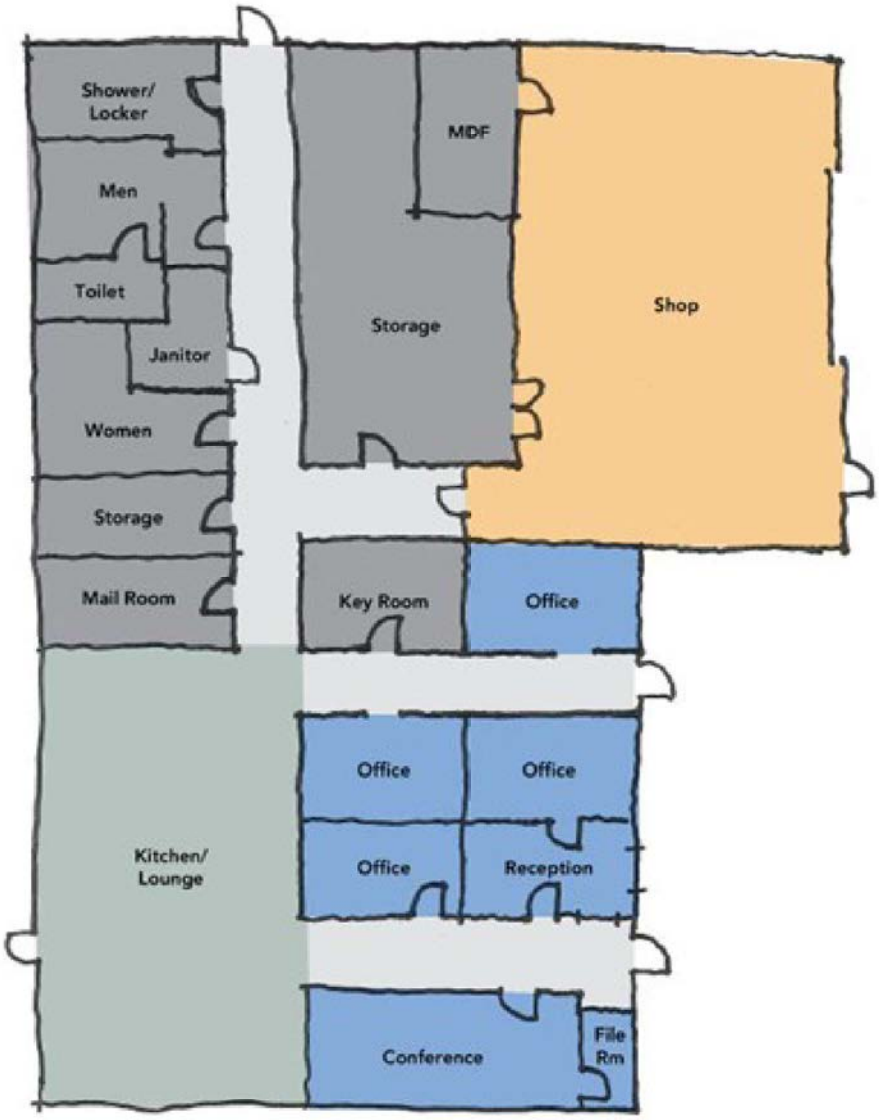
MAINTENANCE OFFICE

14

GENERAL INFORMATION

MAINTENANCE OFFICE 13763 Liberty Street Montgomery, TX 77316	
Year(s) Built:	1968
Approx. Total Building Square Footage	5,625
Grades Served	N/A

FLOOR PLAN



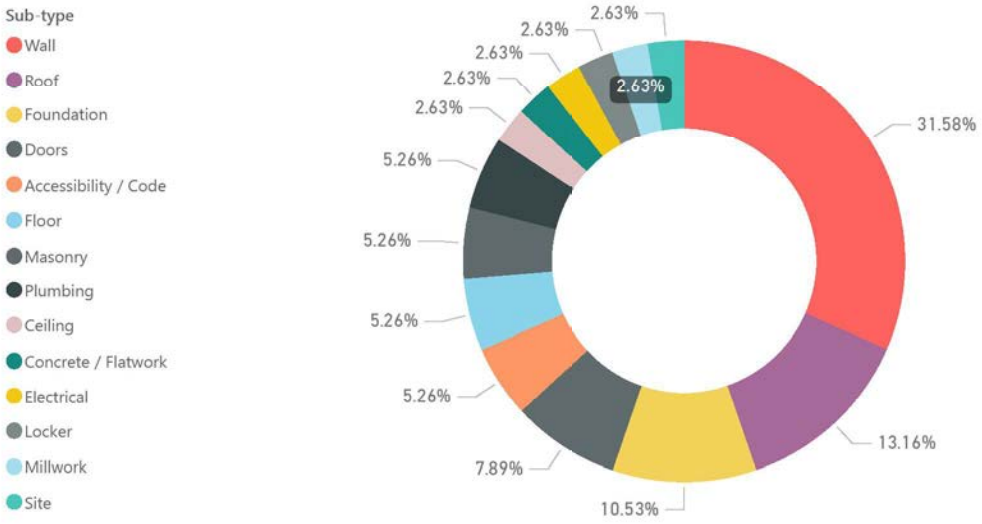
COLOR LEGEND

- Administration/ Administration Support
- Building Support
- Shop Space
- Dining/ Dining Support

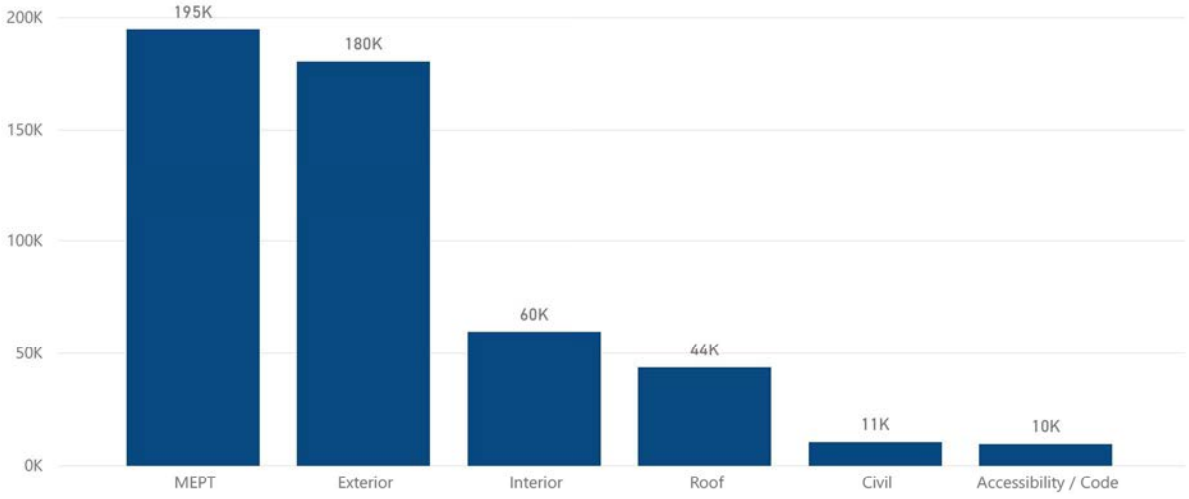
COST SUMMARY

498K	$88.49	5,625
Campus Total	$/SF	Facility Square Footage

Number Of Deficiencies



Cost by Deficiency Type



EXECUTIVE SUMMARY / KEY FINDINGS

ACCESSIBILITY/CODE

Accessibility within Maintenance Office seems to be in general compliance with TAS.

+ In 2020 Montgomery County began to require the provision of a radio response system testing of educational facilities which will be required by the Fire Marshal.
+ Sinks in millwork are non-compliant and should be replaced.
+ An ansul system is required above the range.
+ No fire alarm system was observed at the building. A fire alarm system should be added to this building, or tied to the existing Montgomery Elementary School.
+ Fire sprinkler was not installed within this facility. If a substantial improvement is completed with regard to this building the AHJ should be consulted.

SITE CONDITIONS

Upon review of the site conditions at the Maintenance Building, it appears that the site is in a relatively good condition overall. The pavement joint sealants are starting to wear away and there is evidence of vegetative growth coming through in areas that could lead to future cracking and spalling along the joints.

+ Reseal pavement joints.
+ Place gravel or some other longer-term material to help with future potential erosion or rutting under the trailer storage area.
+ Joint sealant between wall and building should be replaced.

WALLS / MASONRY WALLS

The exterior walls of the Maintenance Office is metal an metal R-Panel system, and some areas have a brick wainscot. Cracking of exterior brick was observed. It seems that the cracking is related to settlement of the building foundation. The base of some of the metal panel seems to show the initial stages of rust development. The exterior walls seem to in poor to fair condition. Interior walls have minor damages that should be patched and repaired.

+ Remove and replace areas of damaged brick.
+ Replace all building sealant.
+ Pressure wash the facility.
+ Seal areas of foundation that have exposed rebar.








EXECUTIVE SUMMARY / KEY FINDINGS

ROOF

The maintenance building located behind the Montgomery elementary school appeared to consist of two small adjoining buildings consisting of metal panel roof systems with a combined measurement of approximately five-thousand square feet. Deficiencies observed at the maintenance buildings appeared to include a poorly detailed gutter system between the adjoining buildings that has reportedly caused interior leaks, and poorly sealed roof penetrations.

+ Gutter joints are loose allowing water to leak, thus staining concrete pavements and bricks below. Downspouts are missing splash blocks or drains to direct water away from the building. Due to water collecting under downspouts, concrete pavements and bottom brick courses are stained at several locations.
+ It appears that the gutters need to be cleaned, and plant-life removed.
+ Repair the roof penetrations to minimize potential points of moisture ingress, and perform a water leak test to determine the cause of the reported interior leaks to make repairs and prevent moisture ingress until plans can be made to replace the existing roof systems.
+ Install counter-flashing to locations where termination bar was exposed, and applying sealant to the transitions and penetrations at the metal wall panels to prevent moisture ingress.

FLOOR

The VCT flooring throughout the facility seems to be in fair condition. The flooring is nearing the end of its life cycle and should be replaced.

DOORS & HARDWARE

The doors, and frames throughout the building interior and exterior should be refinished. Hardware seems to be compliant with TAS.

MILLWORK:

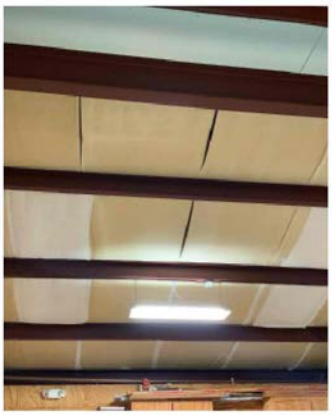
Millwork throughout the Maintenance Office is limited; However, all millwork should be replaced.

EXECUTIVE SUMMARY / KEY FINDINGS

CEILINGS

Ceilings and ceiling grid system throughout the Maintenance Office seem to be in good condition, and some seem to have water leak markings.

+ The hanging insulation throughout should be replaced.



MECHANICAL / HVAC

The building is being air-conditioned by two (2) 11-year-old Carrier floor-mounted rooftop units. They are in fair condition. The BAS is by Honeywell. The control modules are in good condition.

ELECTRICAL / TECHNOLOGY

The electrical service is fed via pad mount transformer at the exterior of the building, which is connected to a wireway and 277/480V, 3PH, 4W service disconnect, feeding a 277/480V panel and steps down via a step-down transformer and then to 120/208V, 3PH panelboard. Lighting on the interior of the building consists of fluorescent 2x4 fixtures, with strip fixtures in mechanical areas. Exit signs appear to be fluorescent. Exterior lighting consists of old surface mounted HID lighting wall packs. Lighting controls are energy code compliant.

+ Replace existing main switchboard. Replace all other outdated and damaged pieces of equipment throughout the buildings.
+ Replace existing generator with a new commercial grade and re-feed all existing circuits, as well as all other life safety items.
+ Replace all interior lighting with new LED fixtures.
+ Replace all remaining exterior lighting with new LED fixtures.

PLUMBING

Existing plumbing fixtures (drinking fountains, toilets, flush valves, lavatories, faucets, sinks, etc.) are relatively new and in good condition. Electric water heater is relatively new and in good condition but does not have circulator pump. Sanitary waste and vent piping is cast iron and in relatively good condition. Roof was drained via gutters and downspouts. No roof drains.

EXECUTIVE SUMMARY / KEY FINDINGS

TRANSPORTATION CENTER

15

GENERAL INFORMATION

TRANSPORTATION CENTER 13900 Liberty Street Montgomery, TX 77316	
Year(s) Built:	1987
Approx. Total Building Square Footage	14,800
Grades Served	N/A

FLOOR PLAN

COLOR LEGEND

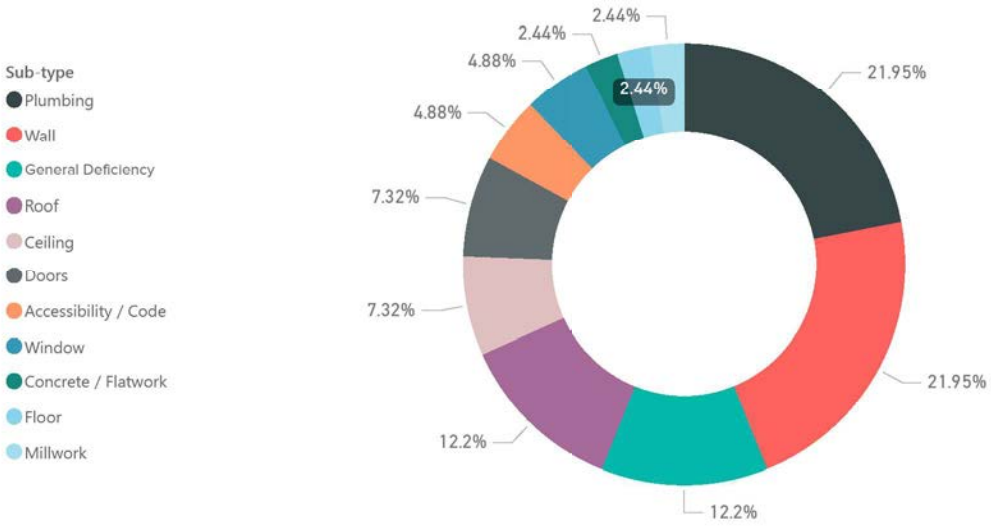
- Administration/ Administration Support
- Building Support
- Shop Space

Huckabee

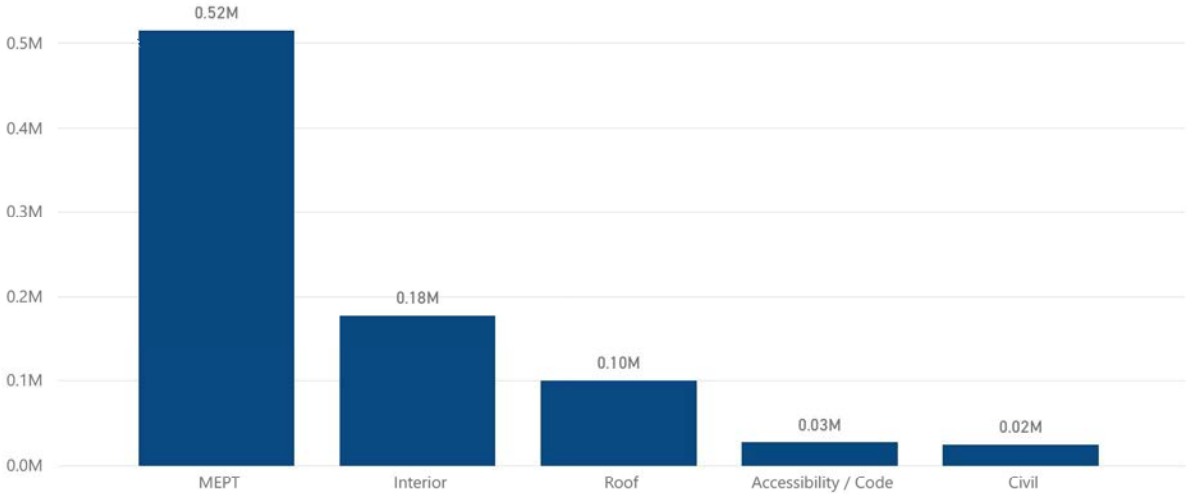
COST SUMMARY

845K	$57.07	14,800
Campus Total	$/SF	Facility Square Footage

Number Of Deficiencies



Cost by Deficiency Type



EXECUTIVE SUMMARY / KEY FINDINGS

ACCESSIBILITY/CODE

Accessibility within Transportation Center seems to be in general compliance with TAS.

+ There is no fire alarm system in this building, as it is not required.
+ An ansul system is required above the range.
+ ADA compliant parking, and accessible route should be provided. Parking within a Fire Lane is non-compliant.
+ Fire sprinkler is not installed within this facility. If a substantial improvement is completed with regard to this building the AHJ should be consulted.

SITE CONDITIONS

Upon review of the site conditions at the Transportation Center, it appears that the site is in a relatively good condition. Overall, there appears to be good drainage on the site and minimal issues with the bus parking. There are areas in the concrete parking that have joints that are beginning to spall and cracking and deteriorating pavement at the driveway entrances.

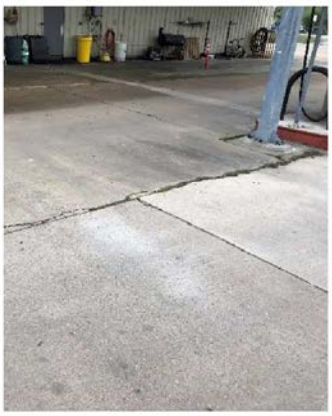
+ Repave driveway entry transitions from the shoulder to the driveway gate for the southern drive and the transition from asphalt to concrete for the northern driveway.
+ Treat cracks in the concrete and spalling joints to help prevent against future deterioration.
+ Consider the addition of gravel at the edges of the concrete bus parking to help attenuate storm water runoff from the paving to help alleviate future erosion at the transition from pavement to grass.

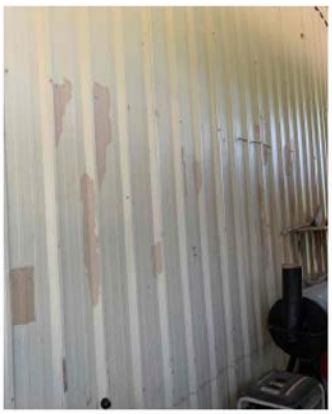
WALLS / MASONRY WALLS

The exterior walls of the Transportation Center is metal an metal R-Panel system. The exterior walls seem to in poor to fair condition.

+ Sealants around the building envelope and between the building and paving should be replaced.
+ Exterior walls are showings signs of degradation and require repair or replacement.





EXECUTIVE SUMMARY / KEY FINDINGS

WINDOWS

Window systems around the building seem to be in fair condition. The window gaskets are showing signs of failure. Widows appear to be 1/4" glazing which is not compliant with current codes.

+ Replace the window systems around the building.

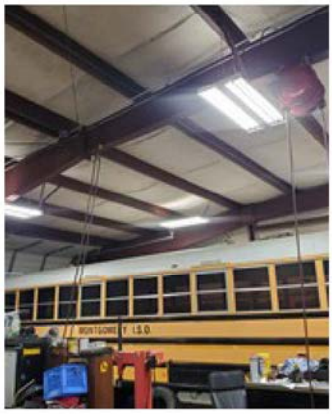
ROOF

The Montgomery ISD transportation center appeared to consist of two buildings with metal panel roof systems with a combined measurement of approximately 13,500 square feet adjoined by a breezeway. Deficiencies observed throughout the metal panel roof systems appeared to include poorly sealed roof penetrations, rusted fasteners, cracked sealant at the transition between the breezeway and the adjoining roof sections, and deteriorated sealant between adjoining metal panels in the field of the roof. It

+ The roof systems appeared to be near the end of their effective service lives and should be coated or replaced in the near future.

FLOOR

The VCT flooring throughout the facility seems to be in poor condition and should be replaced.



DOORS & HARDWARE

The doors, and frames throughout the building interior and exterior should be refinished, or replaced. Egress Hardware should be reviewed and replaced with compliant hardware. All exterior doors should be refinished. Overhead doors seem to be damaged and should be replaced.

MILLWORK:

Millwork within the Transportation Center is limited but seems to be in poor condition and should be replaced.

CEILINGS

Ceilings and ceiling grid system throughout the Transportation Center seem to be in poor condition, with damage ceiling and missing tile. Some areas show evidence of leaks above.

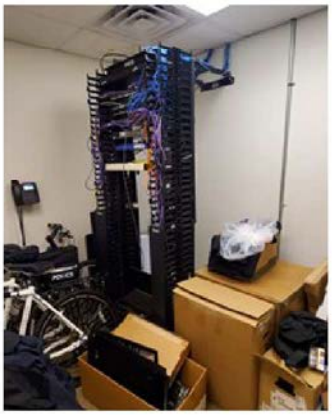
EXECUTIVE SUMMARY / KEY FINDINGS

MECHANICAL / HVAC

Conference room is served by two (2) 15-year-old Carrier vertical DX fan coil units with electric heat. They are in fair condition. Offices are served by two (2) 13-year-old Carrier horizontal DX fan coil units with electric duct heaters. They are in good condition. Bay area is served by two (2) Reznor gas unit heaters. Unit heaters appear to be in good condition.

ELECTRICAL / TECHNOLOGY

The electrical service is fed via pole mounted transformers 200A service disconnect at the exterior of the building, which is connected to 200A, 277/480V, 3-phase, 4-wire main panelboard located electrical room. This main panelboard feeds additional panelboards and an ATS via step down transformer. The 120/208V panels feed receptacle and mechanical loads throughout the building. There is a small residential grade emergency generator that feeds select loads. Lighting on the interior of the building consists of fluorescent 2x4 fixtures, strip fixtures in mechanical/storage areas, and fluorescent high bay fixers in the shop area. Exit signs appear to be fluorescent. Exterior lighting consists of mix with old wall mounted HID fixtures at the building, surface mounted LED fixtures at the canopy, LED flood lights, and LED fixtures for parking lot lighting. Lighting controls are controlled via toggle switches and do not meet current energy codes. The access control and security system appear to be up to date and functioning properly.



+ Replace all interior lighting with new LED fixtures.
+ Replace all exterior lighting with new LED fixtures.
+ Replace all existing lighting controls with new controls in compliance with energy code.

PLUMBING

Existing plumbing fixtures (drinking fountains, toilets, flush valves, lavatories, faucets, sinks, etc.) are old and in poor condition. Lavatories do not have mixing valves. Electric water heater is old and does not have a circulator pump. Sanitary waste and vent piping is cast iron and PVC and in relatively good condition. Exterior water piping is galvanized steel and insulation is old and in poor condition. Roof was drained via gutters and downspouts. No roof drains. Air compressor is old. Toilets get backed up during heavy rainfall.

+ Replace all plumbing fixtures throughout building.
+ Replace electric water heater and install new circulator pump and hot water circulating loop.
+ Replace all galvanized water piping with copper. Install new insulation and jacketing for piping subject to freeze.
+ Replace air compressor.
+ Address site sanitary so that building sanitary does not backup during heavy rainfall.

EXECUTIVE SUMMARY / KEY FINDINGS

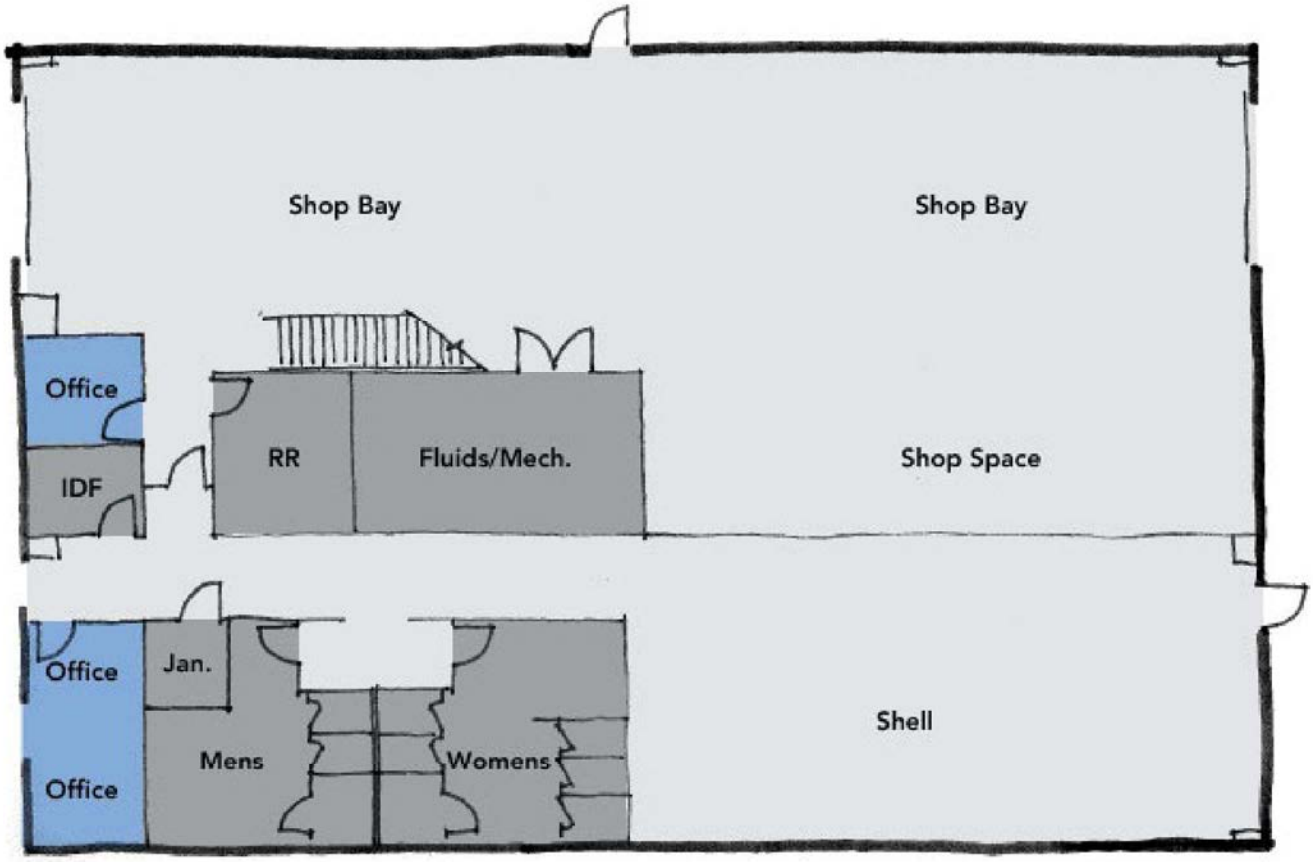
TRANSPORTATION SATTELITE

16

GENERAL INFORMATION

TRANSPORTATION SATELLITE 15696 Bear Cub Drive, Montgomery, TX 77316	
Year(s) Built:	2011
Approx. Total Building Square Footage	7,550
Grades Served	N/A

FLOOR PLAN



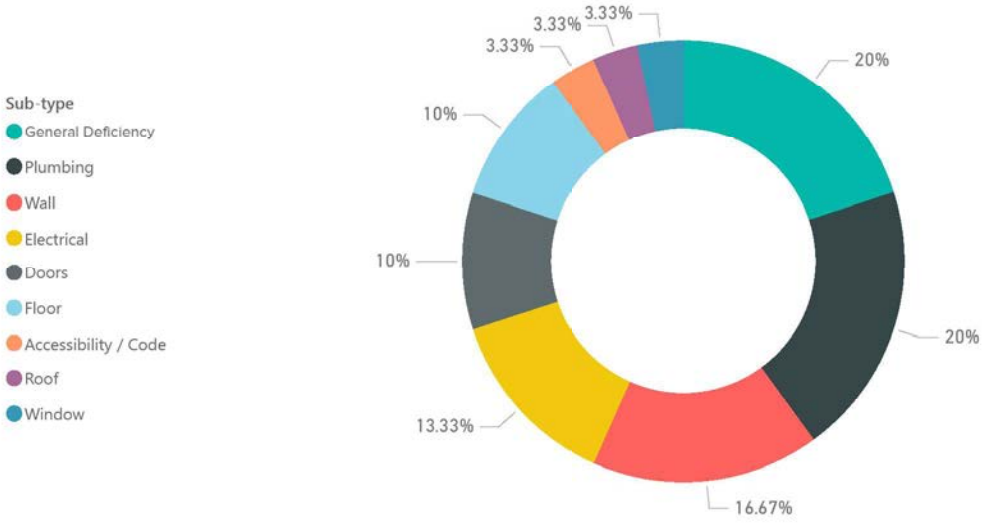
COLOR LEGEND

- Administration/ Administration Support
- Building Support
- Shop Space

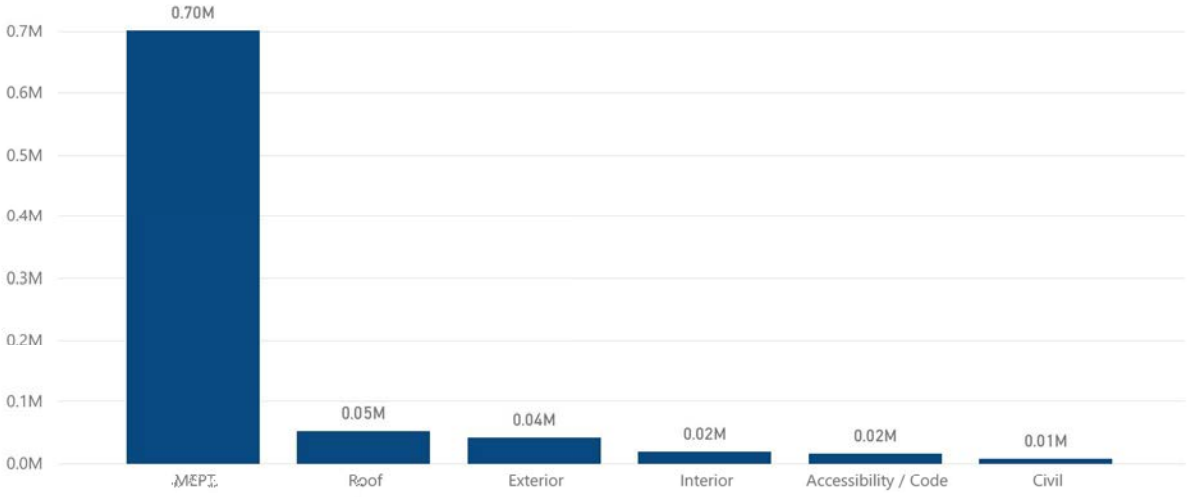
COST SUMMARY

837K	$110.90	7,550
Campus Total	$/SF	Facility Square Footage

Number Of Deficiencies



Cost by Deficiency Type



EXECUTIVE SUMMARY / KEY FINDINGS

ACCESSIBILITY/CODE

Accessibility within Transportation Satellite seems to be in general compliance with TAS.

+ There is a Fire Alarm however it is not functioning properly. Replacement with a compliant system is recommended.
+ Fire sprinkler is not installed within this facility. If a substantial improvement is completed with regard to this building the AHJ should be consulted.

SITE CONDITIONS

Upon review of the site conditions at the Satellite Transportation Center, it appears that the site is in a relatively good condition overall. There are no major deficiencies observed upon review. There is some evidence of sloughing along the service road leading back to the site but it is not an item that appears to be of concern at this time.

+ Level out the gravel bus parking area at the entrance of the site.
+ Regrade the side slope of the sloughing area along the entry drive and reestablish vegetative cover.

WALLS / MASONRY WALLS

The exterior walls of the Transportation Center is metal an metal R-Panel system. The exterior walls seem to in good condition.

WINDOWS

There are limited window systems around the building and they seem to be in good condition. Widows appear to be 1/4" glazing which is not compliant with current codes.

+ Replace window system with code compliant assembly.

ROOF

The Montgomery ISD satellite transportation center appeared to consist of one single-story building with a metal panel roof system measuring approximately seven-thousand square feet. Deficiencies observed throughout the metal panel roof system appeared to include poorly sealed roof penetrations, a displaced exhaust unit, and interior signs of moisture infiltration.

+ The existing roof system appeared to be near the end of its effective service life and should be coated or replaced in the near future.

EXECUTIVE SUMMARY / KEY FINDINGS

FLOOR

The VCT flooring throughout the majority of the flooring is in good condition. There are several places where VCT has been damaged due to high traffic. chair dragging, and lack of maintenance.

DOORS & HARDWARE

The doors, and frames throughout the building seem to be in compliance with TAS. The exterior doors should be re-finished.

MILLWORK:

Millwork within the Transportation Center is limited but appears to be in good condition, and code compliant.

CEILINGS

Ceilings and ceiling grid system throughout the Transportation Center seem to be in good to fair condition. Leaks above ceiling were apparent due too damaged ceiling tile. ,

MECHANICAL / HVAC

Building is served by two (2) 11-year-old Trane horizontal dx fan coil units with electric duct heaters. Indoor and outdoor units are in good condition. Exhaust fan in restroom is loud. The BAS is by Trane and the control modules are in good condition.

+ Repair restroom exhaust fan.

EXECUTIVE SUMMARY / KEY FINDINGS

ELECTRICAL / TECHNOLOGY

The electrical service is fed via pole mounted transformers to a 600A service disconnect at the exterior of the building, which is connected to 600A, 120/208V, 3-phase, 4-wire main distribution board located in the shop area. This main distribution board feeds additional panelboards and an ATS. The panels feed receptacle, lighting, and mechanical loads throughout the building. There is an emergency generator that feeds emergency lighting and select receptacle loads. Lighting on the interior of the building consists of fluorescent 2x4 fixtures, wall mounted linear fixtures, and recessed cans throughout, with strip fixtures in shop and mechanical areas. Exit signs appear to be fluorescent. Exterior lighting consists of old wall mounted HID fixtures at the building, surface mounted HID fixtures at the pump station, and old show box HID fixtures for parking lot lighting. Lighting controls are controlled via toggle switches and do not meet current energy codes. The fire alarm system is an addressable system and did not appear to be functioning properly as the LCD screen was displaying random patterns and no legible words or numbers.

+ Replace all interior lighting with new LED fixtures.
+ Replace all exterior lighting with new LED fixtures.
+ Replace all existing lighting controls with new controls in compliance with energy code.

PLUMBING

Existing plumbing fixtures (drinking fountains, toilets, flush valves, lavatories, faucets, sinks, etc.) are old and in poor condition. Electric water heater is old and in poor condition. Sanitary waste and vent piping is cast iron and in relatively good condition. Roof was drained via gutters and downspouts. No roof drains. Fuel tank, remote fuel fill boxes and fuel piping are badly corroded. Propane tank and associated piping are in poor condition.

+ Replace all plumbing fixtures.
+ Disconnect HW at clinic sink and add instant hot water heater to provide HW to sink.
+ Replace existing electric water heater with new.
+ Replace existing fuel tank, remote fuel box, fuel piping and entire fueling system.
+ Replace existing Propane tank, piping and fueling system.

EXECUTIVE SUMMARY / KEY FINDINGS

MORE THAN ARCHITECTS