FACILITY CONDITION ASSESSMENT MANUAL

This instruction manual outlines the standards, policies, and procedures established for the management of internal Facility Condition Assessment (FCA) services for educational facilities. Designed for use by public school districts, it provides guidance on means and methods throughout the assessment process, ensuring consistency and adherence to established good practice. The manual serves as a comprehensive reference for conducting FCA services, detailing the necessary steps, required documentation, and expectations for staff involved in the process.

A companion Excel-based workbook for collecting FCA data is available for download and use at school-infrastructure.org.

National Center on School Infrastructure

National Council on School Facilities
States Advancing Effective K-12 Policy, Planning, and Practice

Sturtz & Company

Version 1.0

January 2026

ACKNOWLEDGEMENTS

Editor: David Sturtz, Sturtz & Company

This manual began as an internal training document and was improved over time with contributions from dedicated professionals working in the field of public school facilities planning. Much gratitude to all who invested their time and expertise to make this available.

The companion Excel-based workbook for collecting FCA data is available for download and use at school-infrastructure.org.

NOTE: The cost model included in the workbook is a placeholder; users should update costs to reflect current local market conditions.

DISCLAIMER

Contents of this manual were developed under Award #S184R230005 from the U.S. Department of Education. However, the contents do not necessarily represent the policy of the Department of Education, and you should not assume endorsement by the Federal Government.

National Center on School Infrastructure

The National Center on School Infrastructure is a national resource hub that supports states and school districts in the stewardship of America's elementary and secondary public school facilities. https://school-infrastructure.org/

Contents

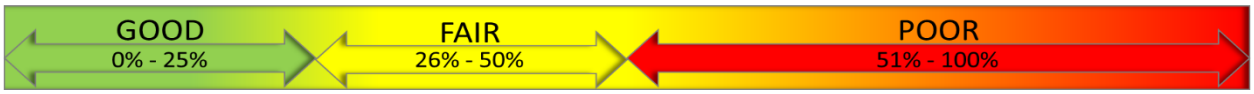
1 INTRODUCTION

This instruction manual outlines the standards, policies, and procedures established for the management of internal Facility Condition Assessment (FCA) services. It is designed to provide guidance on means and methods throughout the assessment process, ensuring consistency and adherence to established good practice. The manual serves as a comprehensive reference for conducting FCA services, detailing the necessary steps, required documentation, and expectations for staff involved in the process.

1.1 Glossary of terms

Facilities Condition Assessment (FCA) is the process of developing a picture of physical conditions and the functional performance of a site including all buildings and infrastructure; analyzing the results of data collection and observations; and reporting and presenting findings.

Facility Condition Index (FCI) is an industry-standard metric that serves as an objective benchmark following a facility condition assessment. FCI scores are calculated by taking the total cost of existing renewal/repair costs and dividing this number by the total estimated replacement value. As an example, Middle School XYZ will cost $100 million to replace and the FCA identified $25 million in estimated repairs, yielding a "Good" FCI score of 25%.



Cost Estimating Resources

- RS means - North America's leading construction estimating database.
- Local contractors and assistance with local construction estimation
  - Both options can provide Rough Order of Magnitude Cost Estimates (ROM). The purpose of a ROM estimate in project management is to provide stakeholders and decision makers with a rough idea of the project cost's order of magnitude.

Americans With Disabilities ("ADA") Audit – a unique survey that can provide the LEA with high level accessibility data across the entire school site. An example survey is included with this manual as an appendix. This is NOT a code compliance ADA assessment.

Uniformat Level III - this is an industry standard classification methodology for building systems and related sitework by major, building, and individual elements. Using this standard ensures consistency in the evaluation of building projects over time.

Like for Like System Replacement for estimating replacement costs. It does not take into consideration any potential design changes, code upgrades, or other variables that might impact on total cost. Replacement cost estimates should be current as of the date of the estimate. Replacement cost and budget estimates are to be provided for general planning purposes only and should not be an expression of actual or future replacement

costs or requirements. The LEA should always review and update the construction scope and estimates prior to seeking funding.

2 PURPOSE

1.2 What is a "Facility Condition Assessment"?

A Facility Condition Assessment (FCA) is a systematic process used to evaluate the physical condition of a building or group of buildings along with all associated infrastructure on that site. This includes utilities, security, hardscapes, recreation areas, and landscaping in addition to all major building systems. The assessment focuses on identifying the overall state, remaining useful life, and maintenance requirements of key building systems and components. Commonly assessed elements include the roof, mechanical systems, electrical systems, plumbing systems, interior finishes, exterior finishes, site envelope, and other critical structural elements. The primary objective of an FCA is to provide building owners with a clear understanding of the current condition of their facilities and to highlight any potential issues that could impact the building's safety, functionality, and long-term viability.

It is also important to understand what a Facility Condition Assessment is not. A FCA is not necessarily a measure of how well a maintenance staff has upkept a building. A FCA would likely note that a 35-year-old roof with 25 years of expected life, for example, needs replacement. Staff may have worked diligently to keep the roof in good working order, but if it is far beyond its designed useful life, it will likely need replaced soon.

1.3 Why is it important?

The physical condition of a school facility plays a crucial role in the overall learning environment and research indicates that well-maintained, modern school buildings contribute to higher student achievement. Facilities are faced with ever increasing challenges as enrollments drop, the cost of goods continue to rise and overall demands for expanded student support services. These programming costs are critical to delivering on the mission of the LEA but must be properly analyzed alongside facility condition data so that systems which keep occupants warm, safe, and dry are not impacted. This delicate balancing scale is easier to navigate when a team can comprehensively look at all the data.

Beyond academic performance, a safe, clean, and properly maintained facility also positively influences student behavior and mental health, which in turn can enhance academic success. Poor educational adequacy or unsafe facility conditions—such as inadequate lighting, insufficient ventilation, or poor acoustics—can detract from students' physical and mental well-being, leading to decreased concentration, fatigue, and increased absenteeism.

Additionally, the design of a school building can directly affect student learning. For instance, classrooms with abundant natural light and access to outdoor spaces are

shown to improve student performance, while poor acoustics and ventilation can hinder concentration and disrupt behavior. A capital asset audit or FCA is a critical step in any long-range improvement plan which can identify achievable solutions with measurable impact.

3 CONDITION ASSESSMENT PROCEDURES

1.4 Planning and Preparation

Before visiting a school campus, it is important to gather key data and prepare appropriately. The following steps outline the process and provide essential information for individuals and/or teams conducting the assessment. This preparation will also offer valuable insight into the history and context of each campus.

- **Step 1: Pre-assessment Scheduling**
  Assessors must coordinate with local personnel who have the most in-depth knowledge of building conditions. This step is essential, particularly if the assessor is not already familiar with the specific details of the facility. Engaging with these individuals ensures that the assessment is based on accurate, comprehensive information. Ensure arrangements have been made to gain access and follow appropriate building access procedures before beginning.
- **Step 2: Research**
  Before conducting an assessment, collect available information about the assets/facility to be assessed unless already familiar with the site. Sources of this historic information include (but are not limited to) previous assessment reports and cost estimates, currently scheduled or in-process minor repairs and specific projects, related third-party contracted projects, warranty data, in-process emergency and corrective work orders. Major systems include:
    - Mechanical systems
    - Electrical systems
    - Plumbing systems
    - Roof and foundation conditions
    - Hazardous materials (e.g., mold, mildew, asbestos)
    - Additionally, inquire with staff or note other observed systemic issues in additional areas, such as:
      - Casework (e.g., cabinetry)
      - Furniture (e.g., desks)
      - Flooring
      - Lighting systems
      - Security hardware
      - Playground equipment
      - This step provides an opportunity for the facilities/operations staff to share information about ongoing or emerging concerns.

  Before beginning the FCA, the assessor should obtain scaled floor plans (one-line drawings) for marking deficiency locations and Assessment Report forms; organize into an assessment folder on the servers for ease of use until the assessment is complete.

- **Step 3: Document Information**
  After gathering the information from Step 2, compile the data into individual campus workbooks. Ensure that any major issues are shared with the team prior to your visit to the school sites.
- **Step 4: Review and Update Campus Workbooks**
  Once the requested data has been returned, incorporate any new or additional information into the individual campus workbooks.

1.5 Essential Items for Entering a School Campus:

Before visiting a school site, ensure you have the following:

1. **Campus Map**: A map of the school campus is essential for navigation. Acceptable types include:
   - Fire escape map.
   - Floor plans (digital or paper)
2. **Identification**: A valid form of identification, typically a driver's license, which will be scanned through the local background check system (e.g., Raptor, commonly used for visitor clearance). Employees with the LEA should wear their uniform and badge as usual.
3. **Equipment**: Bring a notepad, tablet, camera, measuring devices, PPE, and any other tools needed to complete the FCA and document all results. Any outside consultants working on an FCA for the LEA should also provide a business card in case the office staff is unfamiliar with them as a visitor.

1.6 Facility Condition Assessment Workbook

Following are images of a FCA Workbook but the tool you use may look quite different. Regardless of the tool you use, the guidance in this document is organized according to Uniformat categories and provides guidance for determine remaining useful life based on visual inspection. Follow the steps below to ensure proper use and accuracy in data entry.

- **Step 1: Save a Copy of the File**
  Save a copy of the FCA workbook to the appropriate site folder for easy access and data management.
- **Step 2: Update Building Costs and Factors**
  Update the building and county cost data and other relevant factors based on local area(s).
  Step 3: Input Building Information
  Upload all relevant building information into the "Base Information" sheet of the workbook. The following details are required for each individual school site:
  - District Name
  - Building Name
  - Building Type

- Physical Address
- Original Year Built
- Years of Additions
- Original Construction Type
- County
- Gross Square Footage
- Site Acreage
  - If the entire district is located on a single site, input the data for each building as necessary.

- **Step 4: Calculate Building Material Percentages**
  Calculate and observe the percentage of building materials for each system type. This section should always total 100% across each Level III system type. Refer to the example image below for clarification.

Level 1	Level 2	Level 3	Type (as applicable)	% of Building or Number	
B SHELL					
	B20 Exterior Enclosure				
		B2010 Exterior Walls	Concrete Formed / Tilt		
			Masonry	50%	x
			Framed w/ Wood Siding	10%	x
			Framed w/Metal Panel	10%	x
			Framed w/Stucco	30%	x
			Framed w/Masonry Veneer		

Indicate the level of action for each system, using minor, moderate, major, and replace for majority of systems.

					LEVEL OF ACTION								
Level 1	Level 2	Level 3	Type (as applicable)	% of Building or Number		None		Minor		Moderate		Major	Replace as part of Renovation
B SHELL													
	B20 Exterior Enclosure												
		B2010 Exterior Walls	Concrete Formed / Tilt			None		Minor		Moderate		Major	Replace
			Masonry	50%	x	None	x	Minor		Moderate		Major	Replace
			Framed w/ Wood Siding	10%	x	None		Minor		Moderate	x	Major	Replace
			Framed w/Metal Panel	10%	x	None		Minor		Moderate	x	Major	Replace
			Framed w/Stucco	30%	x	None	x	Minor		Moderate		Major	Replace
			Framed w/Masonry Veneer			None		Minor		Moderate		Major	Replace

Based on your visual assessment of each system, indicate the percentage that requires action for each deficiency level.

					LEVEL OF ACTION									
Level 1	Level 2	Level 3	Type (as applicable)	% of Building or Number		None		Minor		Moderate		Major	Replace as part of Renovation	% of System or Finish
B SHELL														
	B20 Exterior Enclosure													
		B2010 Exterior Walls	Concrete Formed / Tilt			None		Minor		Moderate		Major	Replace	
			Masonry	50%	x	None	x	Minor		Moderate		Major	Replace	100%
			Framed w/ Wood Siding	10%	x	None		Minor		Moderate	x	Major	Replace	50%
			Framed w/Metal Panel	10%	x	None		Minor		Moderate	x	Major	Replace	20%
			Framed w/Stucco	30%	x	None	x	Minor		Moderate		Major	Replace	10%
			Framed w/Masonry Veneer			None		Minor		Moderate		Major	Replace	

- **Step 5: Automated Cost Estimation**
  Once all information is correctly entered into the "Base Information" and "Physical Condition Assessment" sheets, the workbook will automatically generate a cost estimate. This is an automated calculation based on several

key factors. Do not alter the automated calculation unless directed by the Facilities Director.

- **Step 6: Document Deficiencies**
  For each system, record detailed notes for each deficiency. Use your best judgment to categorize major facility findings and flag any unusual issues that

					LEVEL OF ACTION											
Level 1	Level 2	Level 3	Type (as applicable)	% of Building or Number		None		Minor		Moderate		Major		Replace as part of Renovation	% of System or Finish	Automated Budget Estimate
B SHELL																
	B20 Exterior Enclosure															
		B2010 Exterior Walls	Concrete Formed / Tilt			None		Minor		Moderate		Major		Replace		$0
			Masonry	50%	x	None	x	Minor		Moderate		Major		Replace	100%	$171,782
			Framed w/ Wood Siding	10%	x	None		Minor		Moderate	x	Major		Replace	50%	$110,117
			Framed w/Metal Panel	10%	x	None		Minor		Moderate	x	Major		Replace	20%	$45,713
			Framed w/Stucco	30%	x	None	x	Minor		Moderate		Major		Replace	10%	$9,736
			Framed w/Masonry Veneer			None		Minor		Moderate		Major		Replace		$0

should be addressed with further evaluation (e.g., foundation settlement). Note that some deficiencies may not require detailed notes (e.g., minor interior paint throughout the building). For major deficiencies, such as significant structural concerns, report the issue and recommend additional professional evaluation (e.g., by an engineer).

- **Step 7: Record On-Site Findings**
  During the on-site assessment, enter the percentage and level of action for each system before **leaving** the facility. Take detailed notes for any major issues that may require attention. For systems or components that were not physically inspected, use data obtained from facility staff. Any item or system not included in the "Physical Condition Assessment" worksheet should be added to the "Other" category at the bottom of the sheet.

OTHER								
Description of System			Unit of Measure	Quantity	Unit Budget		Extended	Notes
							$0	
							$0	

1.7 Key Actions for Ensuring Quality Facility Condition Assessments

To ensure the highest quality of work in Facility Condition Assessments, assessors must adhere to the following critical steps:

1. **Take Photos:** It is essential to capture photos of both the exterior and interior of the facility to document all observed deficiencies. Required photos include:
    a) **Exterior**
        i. School sign or digital marquee sign
        ii. Front entrance
        iii. Security fencing
        iv. Walkways or concrete pads
        v. Parking and roadways
        vi. Fields / Athletic stadium
        vii. Landscape
        viii. General building photos
        ix. General rooftop photos
        x. General HVAC photos
        xi. All observed deficiencies across any system
    b) **Interior**
        i. General office area
        ii. General hallway
        iii. General classroom
        iv. Specialty classrooms (e.g., art, science, CTE)
        v. Specialty spaces (e.g., gymnasium, MPR, auditorium, stage, cafeteria, library, media center)
        vi. Kitchen
        vii. All observed deficiencies across any system

2. **Take Detailed Notes:** Each deficiency observed must be accompanied by detailed notes. These notes should describe the location and extent of the deficiency, including the room type, room number, section of the building, or directional references for clarity. For example:
    a) **Deficiency Documentation**
    Assessors should identify the worst level of deficiency across each system, while providing general notes about the condition of that system throughout the facility. Example: "Classrooms 100-105 require major patch repairs to the wallboard system, with holes and surface degradation. All other classrooms need minor painting or resurfacing."
    b) **Exterior Door Deficiencies**
    If deficiencies are found in exterior doors, specify the location. This is a critical safety and security concern for immediate repairs, particularly for the “Safety and Security” and “ADA” audit surveys.

These steps ensure that Woolpert delivers high-quality services and provides adequate documentation in the event the client has questions regarding the report.

3. **The top systems that frequently** fail in school facilities and cost the most money to repair or replace them include:
    a) **Roofing systems:** Leaks and structural damage can be costly to repair and may result in damage to other building systems (i.e. rooftop units, electrical systems, gas systems, or interior finishes)
    b) **HVAC systems:** Inefficient or outdated heating, ventilation, and air conditioning systems can result in high energy costs and may require frequent repairs.
    c) **Plumbing systems:** Old or broken pipes can result in leaks, backups, and other problems that can cause significant damage and require extensive repairs.
    d) **Electrical systems:** Outdated electrical systems can pose a fire hazard and require frequent repairs. Modernizing outdated electrical systems can also be expensive. Lastly, some buildings may need to be retrofitted in order to install new electrical lines or wiring.
    e) **Flooring systems:** Worn or damaged flooring can be hazardous to building occupants. Flooring replacements can be costly for large portions or areas of a school facility.

4 EXTERIOR ASSESSMENT

Each section of the assessment will outline a series of steps to evaluate individual systems. Keep in mind that multiple systems and sub-types may need to be assessed simultaneously when you are physically on-site. This section will help direct your focus to key aspects of each system, what to observe, and the likely recommendations for each.

Note: Be sure to reference all notes within the assessment workbook, as these will provide valuable guidance during the field assessment.

1.8 A10 Foundations

Assessment subtypes include standard foundations, special foundations, and slab on grade. Majority of school buildings will be under standard foundations (portable or modular buildings) or slab on grade (brick and mortar).

In general, assessing the foundations includes the following steps:

1.) Visual inspection of the foundation type. Check for cracks, holes, signs of settlement, visual rebar (that was never cut) or structural damages.
2.) Check for any type of moisture or signs of moisture. Water staining or mildew buildup are signs of constant moisture buildup. This should include any sign of water damage or water pooling against the building.
    a. Check to make sure the landscaping and soil grade is sloping away from the foundation.

The biggest items to be aware of are found below:

1.) Slab cracking – make any notes as you walk the exterior of the building. Make detailed notes regarding the side of the building or direction (example – northwest corner of the building).
    a. If you see cracking that continues into the exterior wall material, make additional notes. This typically means that the foundation is moving causing the slab and exterior building material to crack.
    b. Sometimes you may need to go inside to look for further systemic issues across the building.

        i. If the cracking is substantial, make a recommendation as follows: Example "Recommendation to have structural engineer assess this building for further evaluation."
2.) Crawl spaces – Make any notes as you walk the exterior of the building (same as above). Majority of these spaces will be sealed off to prevent animals from living under the buildings. However, make specific notes if you see large openings or evidence suggesting animals are living under the building. Further, make notes

regarding water ponding around or under the building. This will continue to cause issues with the building's foundation.

1.9 A20 Basement Construction

Assessment of the basement construction only includes the basement walls and concrete slab. Assumed as concrete walls with waterproofing on the exterior. Includes only the structural portion and not the wall finishes. Based on building's gross square footage (*note – if the basement is only a portion of the buildings total square footage make these corrections*).

Basement assessment can be included in exterior or interior site walks. If a basement is present the assessment team will need to discuss roles and responsibilities.

1.) Venting – basement ventilation is essential to prevent large temperature and humidity changes across the building. This is specifically important if the basement floods or has any type of moisture. Venting can be found as a minor repair.
2.) Concrete cracks – Concrete cracking can be noticeable on the floor and walls. Look for water intrusion around these cracks. Concrete cracking can be either a moderate or major level of action.

1.10 Roof Construction

Roof superstructure construction consists of three types: Wood, Steel, or Concrete. This can be discussed with staff or assessed while on site. However, these will often not be available to view from inside the building. Majority of school campuses will have some type of ceiling finish covering the roof superstructure.

1.) While on the roof, make notes of any "soft" spots that may indicate water intrusion. This may be hard to distinguish a soft spot in the roof decking vs water under the membrane material. It's best to push on soft spots to see if water or air moves out of the area.
    a. If you encounter soft spots on the roof, it's best to walk through the inside of the building. Look for water stains on the ceiling tiles or missing tiles (sign of water damage from the last rainfall).

1.11 B2010 Exterior Walls

Exterior wall building material consists of Concrete Formed / Tilt, Masonry, Framed w/ Wood Siding, Framed w/Metal Panel, Framed w/Stucco, and Framed w/Masonry Veneer. These materials can vary in level of deficiency based on the problem.

1.) Inspect the exterior wall material by physically walking around the outside of the building. Make notes of any and all deficiencies. Make detailed notes regarding side of the building or direction (example – northwest corner of the building). You can also use campus maps(s) to indicate room(s) presenting the issues. Example – the northwest corner of the building is cracking along the windows and expansion joints. This problem is present from rooms 101-105.
    a. Concrete Formed / Tilt
        i. Inspect the expansion joints Make notes of degrading expansion joint(s). This will be a minor deficiency across each site. Recommendation and cost estimate will match replacing the joints with new caulking sealer.
        ii. Inspect the surface itself for any minor to major cracking.
    b. Masonry or Brick Veneer
        i. Make notes of mortar cracks in masonry or brick veneer building material. Tuckpointing is a recommendation used for mortar degrading throughout the building. Tuckpointing is typically used on the bottom edge of the exterior wall to replace the mortar. Further, any cracking or staircase cracking should be noted in our findings. Recommendations should include replacing the mortar to waterproof the exterior surface of the building.
        ii. Inspect the expansion joints Make notes of degrading expansion joint(s). This will be a minor deficiency across each site. Recommendation and cost estimate will match replacing the joints with new caulking sealer.
        iii. Make notes of masonry or brick veneer block cracks. This is a greater level of action compared to mortar cracking. Typically, straight

block cracks are stemming from foundation movement. Small block cracks can typically be repaired. However, if the cracks are substantial 1" or more in width, we should recommend a second opinion from structural engineer.

c. Metal Panel / Seam Panel
    i. Make notes of degrading seams and hardware. This is specific to wood panel and metal panel siding. Wood panel seams can start to degrade over time. Wood rot and re-surfacing (i.e. paint) are very popular deficiencies. Metal panel hardware can start to degrade overtime. This is a perfect location for water intrusion into the building. Check several sections of the hardware across the building. Certain sections or areas might be worse than others.
d. Wood Panel Make notes of any wood rot or surface damage to wood siding. This is especially true for portable or modular buildings. Further, inspect the connection between the roof and wall siding, along with the connection between the wall siding and the substructure. Make notes of the presence of any mildew or mold buildup across the surface.

1.12B2020 Exterior Windows

The exterior window systems include Wood, Aluminum/Steel, Clad, and Curtain Wall. The windows are assessed as a COUNT across the entire school site. Please count all windows across each building.

1.) Inspect the windowpanes. Look for fogging or broken glass. These should be replaced.
2.) Inspect the seals and weather stripping around the window frames. If the caulking seal is degrading, this is a minor deficiency. Note the percentage of windows that need new seal and weatherproofing.

1.13B2030 Exterior Doors

The exterior door panel systems include Wood, Hollow Metal, Storefront, Overhead Metal Garage, and Rollup Metal. The doors are assessed as a COUNT across the entire school site. Please count all the doors across each building.

1.) Inspect the door panel. Look for degrading finish/paint, chips in wood, dents, holes, or other physical damage observed in the door panel.
2.) Inspect the door hardware. Check a sample number (~5% of the exterior door hardware) to provide evidence that its functional. If door hardware is non-ADA compliant, broken, non-functioning, or has been tampered with it must be replaced.

1.14B3010 Roof Coverings

The roof membrane types found across school sites include Asphalt Shingle, Modified Bitumen, Gravel, Spanish Tile, Built-Up, Single Ply, Metal, and Concrete Tile. Other system

types may be found. If other system types and/or membranes are found, please pick the closest system type relative to the replacement cost.

While on the roofing system it is important to assess the parapet walls and HVAC (RTU) curbs. Majority of water intrusion issues can be found in these transition points.

Parapet wall inspection should include:

1.) Make notes of different roofing materials. Estimate the percentages of each section of material across the entire facility or campus. All percentages should add up to 100% of the entire roof square footage. *Note – this does not always correlate with the square footage of the facility (i.e. two-story buildings)*
2.) Make notes of any different roof slopes across the entire facility.
3.) Inspect the metal flashing cap across the top of the parapet wall(s). The finish can start degrading across the parapet walls. This will start to rust and cause water pooling. Further, rust will start to accumulate on the roof membrane from rainfall runoff.
    a. Further, inspect the hardware and seals across the parapet wall flashing cap. Degrading seals and hardware is a perfect location for water intrusion into the building.
    b. Inspect the parapet wall transition from the coping/flashing. Some membranes will cover a portion or the entire parapet wall up to the flashing. This decreases the likelihood of water pooling against the wall. However, this is often a perfect site for the roof membrane to pull away from the wall. This is often caused by heat/cold along with a weak adhesion point. The adhesion will fail, and this will cause the membrane to pull away from the roof deck/parapet wall.
4.) HVAC curbs are simple support framing for the rooftop HVAC units. Often times the roof membrane will be installed up and over the HVAC curbs. This is essential to provide a smooth transition for water to run off. However, curbs will degrade much faster on a roof system compared to the primary low-sloped surface membrane. Inspect the corners and rounded runoff areas. Membranes will crack and blister in these locations causing a perfect site for water intrusion.
    a. This is also true for any and all additional equipment that can be found on a rooftop (i.e. exhaust fans, kitchen equipment, antennas electrical wiring, gas lines, etc.…)

Primary roof inspection:

1.) Inspect the roof membrane across the entire surface. Look for exposed areas of the membrane. Finish is degrading and granules are worn away.
    a. Look for any punctures in the roof membrane.
    b. Look for any mildew, moss, or debris on the roof that may cause a breakdown in the membrane.
2.) Inspect the membrane seams (if possible). Inspect for any areas of the seam that is no longer adhering. Seams are typically the first point in low-slop roofing systems that degrade. This will cause blistering and water pooling. This will become a perfect spot for water intrusion over time.

3.) Inspect any sporadic roof repairs. A roofing system over time will leak and the facility team may start to fill these areas with a roof repair kit. Sometimes the roof repair material does not match the membrane. This will eventually make the issue worse over time. Further, some roofing systems will have a large number of patches in place. This is a sign that the roof membrane needs to be replaced. Often times, the roof deck may need to be replaced if water intrusion is persistent.

Assessors are NOT required to:

A. walk on any pitched roof surface.
B. inspect underground downspout diverter drainage pipes.
C. remove snow, ice, debris, or other conditions that prohibit the observation of the roof surfaces.
D. move insulation or other debris.
E. inspect antennae, lightning arresters, de-icing equipment, or similar attachments.
F. walk on any roof areas that appear, in the opinion of the inspector, to be unsafe. This includes any type of overhang, awning, shade structure, or patio covering.
G. walk on any roof areas if it might, in the opinion of the inspector, cause damage.
H. perform any form of formal or engineering test. This includes any material sampling.
I. warrant or certify the roof.
J. walk on any roofs that lack rooftop access doors.

1.15B3020 Roof Openings

The roof openings can include Skylights and Access Hatch(s). It is important to make a count of each system across the entire campus.

Skylights typically do not last the entire life cycle of a building. You will notice several issues with skylights if they are 10+ years old:

1.) Inspect the seams and seals around the skylights. This will be the first place of deterioration for all skylights. Sometimes you will notice the caulking seams have been replaced by maintenance staff. Inspect the seams for longevity, cracking, splitting, or completely deteriorated. All leading to water intrusion into the building. This will be a minor deficiency in the workbook.
2.) Inspect the panels for degrading membrane or panel systems. Sometimes the skylight panels will start to degrade from weathering. This will expose the membrane over time and cause water intrusion. Further, pane skylight systems can fog or crack. This is a sign of a potential water intrusion in the future.
3.) Inspect if the maintenance department has sealed off the skylights. Meaning, you will notice a skylight on the roof, but it is closed off below. Wood or metal is used to close off a skylight. This is often done because of systemic water intrusion into the building. Inspect to see if water is still entering the building.

Roof Access hatches are typically functional among buildings that are 30 years or newer. School sites older than 1990 may not have standard roof access hatches. If a roof access

hatch or external mounted ladder is not available, a movable ladder will be needed to assess the roof system and other systems on the roof.

1.) Inspect the roof membrane and materials surrounding the roof access hatch. The room membrane can often times degrade faster at this point of entry. This is simply because of sharp corners the membrane needs to be adhered to during installation.
2.) Inspect the locking mechanism. Make note if one is not present.
3.) Inspect the automatic arm that holds open the hatch during use. This is often a coil or spring tension arm that will hold the roof access hatch open. If this is not installed, make note as a minor deficiency. If this is not found, make sure the notes indicate where the access hatch is located.

1.16 D2050 Rainwater Drainage

Rainwater drainage is for the presence of interior water drains found on the roof.

1.) Inspect the condition of the drain itself, looking for any cracks, holes, or other signs of damage. This can indicate a potential leak or weakness in the drain. If necessary, coordinate with local personnel who have the most in-depth knowledge about any leaks found inside the building that may be coming from the drainage system.
2.) Inspect the drain cover to make sure it is securely in place and free of debris.
3.) Make sure that the drain is properly connected to the main drainage system and that water flows freely through it. Make sure water is not pooling next to the drain cover.
4.) Check for any blockages in the drain, such as debris or buildup. You are not required to move any debris found on the roof that may cause a blockage.

1.17 G2010 Roadways & G2020 Parking Lots

1.) Inspect for any cracking across the asphalt or concrete systems. Conduct a visual inspection: Look for signs of damage, such as cracks, potholes, or areas of unevenness. Take note of any areas that appear to be in need of repair.
    a. The level of action in the assessment workbook is based on the level of deficiency. Minor cracking vs large potholes is an example.
2.) Inspect the curb paint. Minor deficiency to re-paint curbs and stripes.
3.) Check the drainage: Make sure that water is draining properly away from the pavement. Look for any areas where water may be pooling or where the drainage system may be blocked.
4.) Check the subgrade: The subgrade is the layer of material beneath the asphalt. Make sure that it is stable and does not show signs of settling or erosion.
5.) Check the edges: Look for any areas where the pavement may be separating from curbs or other structures.

Take measurements: use an application such as google maps or google earth to measure the total square footage of asphalt systems.

1.18G2030 Pedestrian Paving & Concrete Walkways

1.) Inspect for any cracking across concrete systems. Conduct a visual inspection: Look for signs of damage, such as cracks, lifting, or areas of settlement. Take note of any areas that appear to be in need of repair.
    a. The level of action in the assessment workbook is based on the level of deficiency. Minor cracking vs large lifting between panels
2.) Inspect any expansion joint sealer. Minor deficiency to replace the expansion joints and sealer.
3.) Check the drainage: Make sure that water is draining properly away from the pavement. Look for any areas where water may be pooling or where the drainage system may be blocked.
4.) Check any landscaping or concrete benches that need repair.

Take measurements: use an application such as Google Maps or Google Earth to measure the total square footage of concrete systems.

1.19G2040 Site Development or Security Fencing

1.) Assess for signs of damage, such as bent or broken posts, loose or missing panels, or areas where the fence has been cut or breached. Take note of any areas that appear to be in need of repair.
    a. If necessary, coordinate with local personnel who have the most in-depth knowledge about security fencing. They will know of any breaches or security issues.
2.) Make sure that the fence is properly aligned and that all of the posts are plumb. Look for any areas where the fence may be leaning or sagging.
3.) Assess for any rust on the fence, especially on the posts and panels. This can weaken the fence and make it more susceptible to damage.
4.) Make sure that all of the gates are functioning properly, including the latches and hinges. Look for any areas where the gate may be sticking or where it is difficult to open or close.
5.) Look for any signs that the fence has been breached, such as cut or bent panels, or footprints or other evidence of entry.

Take measurements: use an application such as Google Maps or Google Earth to measure the total Linear footage of fencing.

1.20G2050 Landscaping

Landscaping in the Excel file is specifically referring to irrigation systems. This is a conversation with the relevant facilities staff:

1.) Does the campus have irrigation? Yes or No.

2.) Is it functioning? Yes or No.
3.) Any problematic issues? Yes or No.

Take notes of any brown or dead spots in fields or open play areas that are irrigated. This can be a sign of an irrigation issue or improper drainage.

Take measurements: use an application such as Google Maps or Google Earth to measure the total square footage.

1.21 G2060 Playgrounds

Equipment

1.) Look for signs of damage, such as cracks, rust, sun fade, overall degrading, or missing parts. Take note of any areas that appear to need repair.
2.) Make sure that all of the bolts, screws, and other hardware are tight and that there are no loose parts that could come off and cause injury. All playground systems must have damper proof security hardware.
3.) Check for sharp edges: Look for any sharp edges or corners that could cause cuts or scrapes.
4.) Check for exposed bolts: Make sure that there are no exposed bolts or screws that could cause injuries.
5.) Check for proper spacing: Make sure that there is proper spacing between the playground equipment to ensure that children can't get their heads, limbs or clothing stuck.
6.) Check for accessibility. Make sure all playground equipment is easily accessible for occupants with disabilities (i.e. curb ramps, concrete walkway connections etc.)

Playground fall surfaces

1.) Look for any signs of wear, such as holes, rips, tears or uneven covering across the entire area. Also, check for any areas of unevenness or settling.
2.) Check the depth of the surface material: Make sure that the depth of the surface material align.
3.) s the recommended depth for the type of surface being used. For example, loose-fill surfaces such as wood chips, should be at least 9 inches deep.
    a. Loose-fill surfaces (e.g. wood chips, mulch, pea gravel): A minimum depth of 9 inches is recommended for loose-fill surfaces.
    b. Rubber tiles or mats: A minimum thickness of 1.5 inches is recommended for rubber tiles or mats.
    c. Poured-in-place rubber surfacing: A minimum thickness of 2 inches is recommended for poured-in-place rubber surfacing.
    d. Artificial turf: A minimum thickness of 1 inch is recommended for artificial turf.
4.) Check for proper drainage: Make sure that the surface material is well-draining and that there is no standing water on the surface. Look for any potential areas of water ponding on the fall surface material.

5.) Make sure that the surface is free of debris, such as glass or sharp objects.
6.) Assess for any safety hazards, such as exposed metal or tripping hazards.
7.) Check for accessibility: Make sure that the playground is accessible to children of all abilities.

Take measurements: use an application such as google maps or google earth to measure the total square footage.

1.22S2010 Concrete Bleachers

Some larger stadiums at high schools can be built into the landscape via concrete bleacher systems.

1.) Look for signs of damage, such as cracks, spalling, or areas of unevenness. Take note of any areas that appear to be in need of repair. Make specific notes for any observed deficiencies.
2.) Make sure that all of the seats are securely attached and that there are no loose or missing parts. Metal bleachers can also be found on top of the concrete foundation. Check for any loose or degrading connections.
3.) Assess that the handrails are securely attached and that they are free of any sharp edges or rust.
4.) Make sure that the stairs are in good condition and that they are free of any cracks or loose steps.
5.) Proper drainage around the bleachers to prevent water from pooling and causing damage. Assess for any leveling issues that may cause water pooling.
6.) Look for any safety hazards, such as exposed electrical wires or tripping hazards.

If there are concerns regarding "structural integrity," it's best to advise that an assessment be completed by a licensed structural engineer.

1.23S2020 Metal Bleachers

1.) Look for signs of damage, such as cracks, spalling, or areas of unevenness. Take note of any areas that appear to be in need of repair. Make specific notes for any observed deficiencies.
2.) Make sure that all of the seats are securely attached and that there are no loose or missing parts.
3.) Check the accessibility ramps for any observed deficiencies.
4.) Assess that the handrails are securely attached and that they are free of any sharp edges or rust.
5.) Make sure that the stairs are in good condition and that they are free of any cracks or loose steps.
6.) Look for any safety hazards, such as exposed electrical wires or tripping hazards.
7.) Check a sample number of fasteners to make sure they are secure and not missing.

If staff mentions "structural integrity," it's best to advise they have an assessment completed from a licensed structural engineer.

1.24S4010 Turf Field

Turf Field has an 8–10-year life expectancy. This can also match the warranty period for a turf field replacement (7-11 years). If necessary, coordinate with local personnel who have the most in-depth knowledge to inquire about the year of last installation of the turf field.

1.) Walk through a majority of the field turf. Majority of the wear will be found around the 50-yard line, sidelines, and endzones on both ends. Assess for signs of wear, such as bare spots, discoloration, or areas of unevenness. B Specific and take note of any areas that appear to be in need of repair.
    a. Look for any signs of damage caused by heavy use, such as rips or tears on the turf.
2.) Check for the paint fade of the endzones, stripes, and center logo. Minor deficiency if re-striping is needed.
3.) Assess for proper drainage on the field to prevent water from pooling and causing damage. Look for water pooling or signs of water pooling.
4.) Look for any safety hazards, such as exposed electrical wires or tripping hazards.
5.) Check for any signs of disease or pests, for example, fungus, moss or insects.

1.25S4030 Running Track

Typically, a running track will be re-surface or replace around the same time the turf field is replaced. Inquire about last year of installation as these tracks have a short life expectancy.

Synthetic tracks, such as those made of polyurethane, have a lifespan of 8-12 years. Asphalt tracks have a lifespan of 8-15 years. Concrete tracks have a lifespan of 20-25 years. Tar based tracks have a lifespan of 8-15 years.

1.) Assess for signs of wear, such as bare spots, discoloration, or areas of unevenness. Be Specific and take note of any areas that appear to be in need of repair.
    a. Make sure that the surface of the track is free of any debris or foreign matter, and that it is not too slippery.
    b. Look for any signs of damage, such as rips, tears or holes.
    c. Make sure that the markings are clearly visible and are in the correct location.
2.) Make sure that the drainage is adequate and that there is no standing water on the track. Look for signs of water pooling.
3.) Check for safety hazards: Look for any safety hazards, such as exposed electrical wires or tripping hazards.

1.26G4020 Site Lighting

Site lighting needs to be counted. Count each light fixture across the buildings and in the parking lot.

1.) Assess for any damage or wear, such as cracked lenses, broken mounts, or rusted parts. Make specific notes where the deficiency is observed.
2.) Check for any exposed light bulbs. Sometimes lights will not have a cover, and the bulb is directly exposed (i.e. safety hazard).
3.) If possible, check the campus at night to see if lights are covering all access points across the campus.
    a. Observe the light distribution of the fixtures, make sure the light is directed where it's needed and not creating any unwanted glare or light pollution.
4.) Inspect for any frayed or exposed wires.
5.) Check the security of the fixtures, make sure they are not easily tampered with, and they are well protected.

5 Interior Assessment

1.27B1010 Floor Construction

Includes:
- Floor Structural Frame: Columns, girders/beams, trusses, joists
- Decks, Slabs, Toppings
- Balcony Floor Construction
- Mezzanine Floor Construction
- Ramps

1. Check for rot, water damage, bug infestation, deterioration, cracking, splitting, distortion of members, proper connection of members, settling, and corrosion and rust.
2. Repair or Replacement Criteria: If in doubt about repairing or replacing the construction of a facility, recommend a more detailed engineering study be performed.

1.28B1020 Roof Construction

Includes:
- Roof Structural Frame
- Decks, Slabs, Sheathing; canopy

3. Instructions for Trusses: Comply with current safety precautions. To identify truss members for the assessment report, use a sketch of the truss and label the panel points either numerically or alphabetically. The deficient member may then be identified by indicating the panel points between which it lies. Check for the following.
    a. Painted Surfaces: Check for blistering, checking, cracking, scaling, wrinkling, flaking, mildew, bleeding, rust, corrosion, complete absence of paint, particularly at end of members.
    b. Timber Trusses
        i. From the ground use field glasses to detect twisted and bowed members, excessive number and size of knots, slope of grain over one inch in ten, checks and splits in ends of web members, separation or slippage at joints, sag, and overloading.
        ii. From the truss itself, check for loose bolts, split rings, shear plates, fastening devices, checks and splits in bracing, chord members,

splice plates (scabs), web members and filler blocks, missing filler blocks, improper end and edge distances, and looseness of tie rods. (Bolts may be considered loose if after striking head of bolt a sharp blow with a hammer, the nuts can be taken up two full turns or more.)

iii. Steel Splice Plates: Check for rupture, shearing, crushing, and rust.
iv. Wooden Parts: Check for dry rot, dampness and surface moisture of long duration, termite and other insects, and fungus infestation. Termite and fungus infestations are often detected prior to actual visual damage by probing with a sharp-pointed instrument those areas where prolonged dampness is not directly associated with rainfall or damp climate.
v. Wooden Supports near or at Ground Level: Check for termite tubes or tunnels, dirt piled up to wood level, and areas in need of protective treatment. If removal of dirt piles is impracticable, wood in direct contact with, or less than 8 inches from ground level should be given protective treatment.

c. Steel Trusses
   i. From the ground ascertain if there are twisted, bowed, deformed, or broken members.
   ii. From the truss itself, look for loose bolts, rivets, and defective welds.
   iii. Look for signs of rupture, shearing, or crushing of steel plates, members, bolts, and rivets.

4. Repair or Replacement Criteria: If in doubt about repairing or replacing the construction of a facility, recommend a more detailed engineering study be performed.

1.29C1010 Partitions

The interior partitions include framed, masonry, or curtain wall systems. Assessing the interior partitions involve evaluating structural stability, soundproofing, insulation, and any observable deficiencies.

Framed Wall Systems

1.) Visual assessment of the system observing any visible signs of damage, settlement, cracks, holes, or bowing of the wall system.
   a. Any deficiencies observed should be noted as structural issues. All minor deficiencies in the wallboard system should be noted in the "interior finishes" section of the assessment.
2.) If obvious signs of settlement or structural issues are observed, it's important to advise an engineering assessment for further evaluation.

Masonry Wall Systems

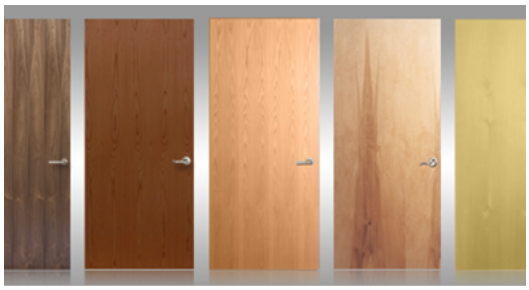
1.) Visual assessment of the system observing any visible signs of damage, settlement, cracks, holes, or bowing of the wall system.
    a. Any deficiencies observed should be noted as structural issues. All minor deficiencies in the masonry system should be noted in the "interior finishes" section of the assessment.
2.) If obvious signs of settlement or structural issues are observed, it's important to advise an engineering assessment for further evaluation.

Curtain Wall Systems (*i.e. glass with metal framing*)

1.) Visual assessment of the system observing any visible signs of damage, settlement, cracked glass, holes, gaps, corrosion of the metal frames, looseness, or bowing of the wall system.
a. Any deficiencies observed should be noted as structural issues. All minor deficiencies in the masonry system should be noted in the "interior finishes" section of the assessment.
2.) If obvious signs of settlement or structural issues are observed, it's important to advise an engineering assessment for further evaluation.

1.30C1020 Interior Doors

The interior door panel systems include Wood, Hollow Metal, Storefront, Overhead Metal Garage, and Rollup Metal. The doors are assessed as a COUNT across the entire school site. Please count all the doors across each building.



1.) Inspect the door panel. Look for degrading finish/paint, chips in wood, dents, holes, or other physical damage observed in the door panel.
2.) Inspect the door hardware. Check a sample number (~5% of the exterior door hardware) to provide evidence its functional. If door hardware is non-ADA compliant, broken, non-functioning, or has been tampered with it must be replaced.

1.31 Interior Windows

The interior window systems include Wood, Aluminum/Steel, Clad, and Curtain Wall. The windows are assessed as a COUNT across the entire school site. Please count all windows across each building.

1.) Inspect the windowpanes. Look for fogging or broken glass. These should be replaced.
2.) Inspect the seals and weather stripping around the window frames. If the caulking seal is degrading, this is a minor deficiency. *Note the percentage of windows that need new seal and weatherproofing.*

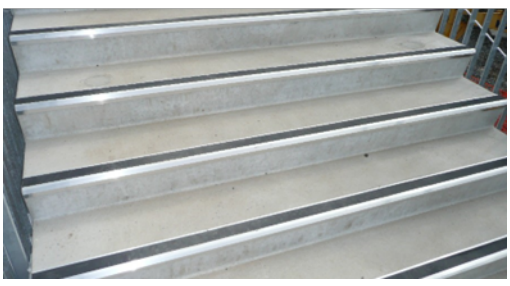
1.32 C2010 Stair Construction

Stair construction focuses on the structural integrity of the system. If obvious signs of settlement or structural issues are observed, it's important to advise an engineering assessment for further evaluation.

Wood Stairs

Concrete Stairs

Metal Stairs



Concrete Finished Stairs

1.33 C2020 Stair Finishes

Stair finishes include concrete, wood, resilient, or metal. Take notes for any and all stair finishes throughout the facility. This should include interior and exterior stairs.

Counting: Count the number of flights for each finish throughout the facility. A stair flight is a run of stairs or steps between landings. Count each throughout the facility.

1.) Check for signs of obvious damage or wear, such as cracks, loose or missing treads, loose or missing handrails, or unstable risers.
2.) Check the treads (if observed) for signs of wear, such as cracks, chips, or roughness.
3.) Check the risers for signs of wear, such as cracks, chips, or roughness.
4.) Inspect all handrails and guardrails for signs of wear, such as looseness, bending, or missing sections.

In addition, it is important to be mindful of any safety concerns, such as checking for tripping hazards or other safety hazards before conducting a stairs inspection.

1.34 C3010 Wall Finishes

Interior wall finishes include Paint on Masonry, wallboard, wainscot, wood paneling, vinyl paneling, Formica, and ceramic tile. Each wall finish needs to be assessed for any and all deficiencies across the school site.

Paint on masonry

1.) Complete a visual inspection of the masonry wall systems. Look for any paint flaking, water stains, holes, cracks, mortar cracking, or other physical damage.
    a. Make notes of any issues or deficiencies found. This should include different levels of action across the entire school site. *Example – room 202 has a large vertical crack and the blocks should be replaced, while the remaining of the paint of masonry system needs new paint.*
        i. Be specific and use room numbers.
2.) Complete a visual inspection of any expansion joints found in the wall system. Make notes of any issues with the expansion joints.
3.) Assess for any hazards that might be found in the masonry wall systems. Exposed rebar or mold/mildew build up.

Wallboard

1.) Complete a visual inspection of the wallboard systems. Look for any paint flaking, smudges, water stains, holes, cracks, separation, or other physical damage.
    a. Make notes of any issues or deficiencies found. This should include different levels of action across the entire school site.
        i. Be specific and use room numbers.
2.) Check the connection points at doors and windows. This is a very popular area wallboard will crack from settlement or expansion throughout the building.
3.) Assess for any hazards that might be found in the wall systems.

Wainscot

1.) Complete a visual inspection of the wainscot systems. Look for any water stains, holes, cracks, separation, or other physical damages.

a. Make notes of any issues or deficiencies found. This should include different levels of action across the entire school site.
    i. Be specific and use room numbers.
b. Check for wainscot wall covering separation. Often times, the panels will separate from each other causing the wallpaper material to pull away from the wall.

Wood Paneling

1.) Complete a visual inspection of the wood paneling wall systems. Look for any surface flaking, water stains, holes, cracks, grout cracking, separation from the wall or other physical damage.
    a. Make notes of any issues or deficiencies found. This should include different levels of action across the entire school site.
        i. Be specific and use room numbers.
2.) Assess for any hazards that might be found in the masonry wall systems. Old wood paneling can hold mildew/mold. Check with client for age of system.

Vinyl Paneling *(often found in portable or modular buildings)*

1.) Complete a visual inspection of the vinyl paneling wall systems. Look for any water stains, holes, cracks, separation from the wall or other physical damage.
    a. Make notes of any issues or deficiencies found. This should include different levels of action across the entire school site.
        i. Be specific and use room numbers.

Formica

Often found on the bottom 4ft of a wallboard system to protect the wallboard. This is typically a thin plaster layer over the wallboard system.

1.) Complete a visual inspection of the Formica wall systems. Look for any paint flaking, water stains, holes, cracks, separation from the wall or other physical damage.
    a. Make notes of any issues or deficiencies found. This should include different levels of action across the entire school site.
        i. Be specific and use room numbers.

Ceramic Tile

1.) Complete a visual inspection of the ceramic tile wall systems. Look for any water stains, holes, cracks, grout cracking, or other physical damage.
    a. Make notes of any issues or deficiencies found. This should include different levels of action across the entire school site.
        i. Be specific and use room numbers. Most likely found in restrooms, locker rooms, or a portion of hallways.
2.) Assess for any hazards that might be found in the ceramic tile wall systems. Broken tiles that could fall or cut an occupant.

1.35 C3020 Floor Finishes

The flooring finishes in the assessment include Carpet / Soft Surface, Resilient Tile, Resilient Sheet, Polished Concrete, Ceramic Tile, Liquid Applied, and Wood Sports Flooring. If a different flooring is present in a facility, coordinate with local personnel who have the most in-depth knowledge about how to price an estimated deficiency using the "other" category.

Carpet / Soft Surface

1.) Visual inspection looking for any obvious signs of wear, tear, or damage, such as stains, fraying, or holes.
    a. Inspect the seams between the carpet and walls or other flooring materials to make sure they are secure and not coming apart.
2.) Look for signs of fading throughout the facility. Examine the carpet in different lighting and angles for conditions to see if there are any noticeable differences in color or brightness.
3.) Assess for any obvious signs of water intrusion.
4.) Check for odors, if there are any unpleasant odors that might indicate mold, mildew, or other problems.

Resilient Tile

1.) Visual assessment for any cracks, chips, lifting, warping, swelling, water staining (discoloration), or missing tiles.
    a. Visual assessment for any asbestos containing tile flooring.
        i. These tiles will be old and originally installed before the 1980's. Check with the client if any flooring systems are 40+ years old.
        ii. The popular size for asbestos tiles is 9x9. However, they can also be found in 12x12 or 18x18.
        iii. These tiles may appear stained, grimy, discolored, or oily.
        iv. If some of the flooring tiles have come off, look for thick black adhesive underneath. Black mastic, also known as cutback adhesive, was commonly used.
2.) Assess for levelness around the tile floor to see if there are any noticeable dips or high spots.
3.) Make sure the tiles are securely attached to the floor and that the adhesive is in good condition.
4.) Check for odors to see if there are any unpleasant odors that might indicate mold, mildew, or other problems.

Resilient Sheet

1.) Visual assessment for any cracks, chips, lifting, warping, swelling, bubbling, water staining (discoloration), or missing portions.
2.) Assess for levelness around the tile floor to see if there are any noticeable dips or high spots.
3.) Make sure the sheets are securely attached to the floor and that the adhesive is in good condition.
4.) Check for odors to see if there are any unpleasant odors that might indicate mold, mildew, or other problems.

Ceramic Tile

1.) Visual assessment for any cracks, chips, lifting, warping, water staining (discoloration), or missing tiles.
2.) Assess for levelness around the tile floor to see if there are any noticeable dips or high spots.
3.) Visually inspect the grout for any cracks, water staining, or missing grout.
4.) Make sure the tiles are securely attached to the floor and that the adhesive is in good condition.
5.) Check for odors to see if there are any unpleasant odors that might indicate mold, mildew, or other problems.

Polished Concrete

1.) Visual assessment for any cracks, chips, lifting, holes, water staining, and color.
    a. Check the surface finish for uniformity, absence of scratches, and overall level of gloss/shine.
    b. Check for slip resistance surface finish (depends on location)
    c. Check for staining based on location of space.
    d. Check for textured flooring based on location of space.
2.) Inspect for any mildew, algae, or overall grim on the surface.

Liquid Applied

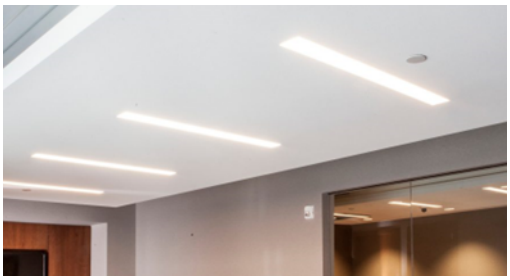
This is typically considered as a polyurethane synthetic flooring found in gymnasium spaces. However, it can also be used for other items based on the fee to replace.

1.) Visual assessment for any dips, bubbling, separation cracks, holes, surface damage, water staining, warping, or degrading sections of the flooring.
2.) Inspect the slip resistant surface across a portion of the flooring. Distinguish between dirty or degrading surfacing.
3.) If necessary, coordinate with local personnel who have the most in-depth knowledge for age from the original installation.

1.36 C3030 Ceiling Finishes

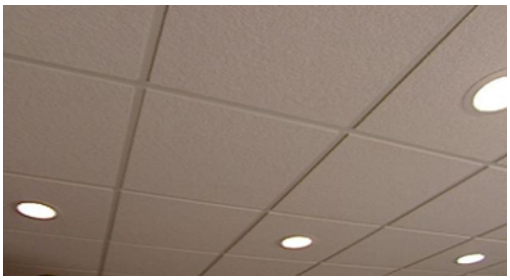
Ceiling finishes include Wallboard, Lay-In Ceiling Tile, Glued-Up Ceiling Tile, Tectum, and Painted Structure.

Wallboard ceilings



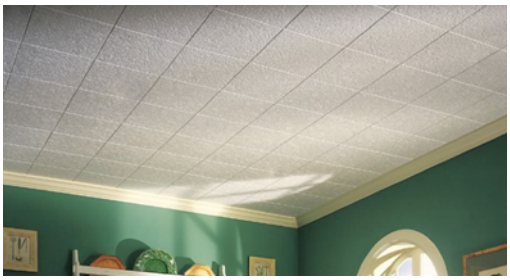
1.) Check for cracks, holes, or other signs of damage. Look for signs of moisture damage, such as warping, bubbling, or discoloration.

Lay-in ceiling tiles



1.) Check for sagging or other signs of damage to the grid. Large separation gaps will be noticeable at seams and transitions to wall surfaces.
2.) Look for signs of damage to ceiling tiles, such as cracks, chips, or water stains.

Glued-up ceiling tiles



1.) Check for cracks, chips, or other signs of damage. Tiles often fall due to old adhesive, check for replaced tiles or screw heads holding up tiles. Inspect seams and transitions to other ceiling types or wall finishes.

Painted structure ceilings

1.) Check for signs of corrosion, such as rust, degrading paint, or discoloration. Inspect seams and transitions to other ceiling types or wall finishes.

It is important to be mindful of any safety concerns, such as checking for asbestos or other hazardous materials before conducting a ceiling assessment.

Note – Assessors are not required to lift ceiling tiles to inspect grid, roof deck, or HVAC components unless discussed otherwise with the client and/or team.

1.37 E1010 Commercial Equipment

Food Services

Food services equipment does not need to be physically assessed. Each inspector should try to communicate with kitchen staff during site walk inspection. If necessary, coordinate with local personnel who have the most in-depth knowledge regarding what appliances are needed, what appliances are broken/breaking, and what appliances need to be replaced. Majority of systems should be included in a lifecycle replacement model outside of deficiencies.

Average lifespan

1.) Commercial kitchen appliances, such as ovens, warmers, fryers, grills, hoods, 10-15 years with proper maintenance.
2.) Dishwashers 8-12 years
3.) Refrigerators and freezers really depend on size and proper maintenance for 10-20 years.
4.) Mixers and food processors 5-10 years
5.) Storage and shelving can last up to 20 years.

1.38 E1020 Institutional Equipment

Restroom Stalls and Accessories

1.) Check for proper operation of stall doors and latches to ensure that they open and close smoothly and lock securely.
2.) Inspect the condition of the partitions, walls and ceilings for signs of damage, wear or discoloration, and check that they are properly anchored to the floor. This includes graffiti, drawings, or marks in the partition.
3.) Check for any signs of water damage or leaks, and make sure that the flooring is in good condition, free of cracks, chips or stains.
4.) Inspect the condition of the toilet seat, including the hinges and mounting hardware, and ensure that it is securely attached to the toilet bowl.

5.) Check the condition of the toilet paper dispenser, soap dispenser and other fixtures, and make sure that they are clean and in good working order.
6.) Check for proper ventilation to ensure that the restroom is well-ventilated, this could be done by inspecting the exhaust fans and or windows.
7.) Inspect the condition of the urinals and toilets, including the flush valves, supply lines, and traps. Check for any signs of leaks or water damage, and make sure that they are functioning properly. Simply look for any standing water on the floor. Investigate if you see pooling or standing water around any plumbing fixture.
8.) Check the condition of the hand dryers and paper towel dispensers and ensure that they are in good condition.
9.) Finally, check the general cleanliness of the stalls and make sure that they are free of debris, dust and other contaminants.

1.39 E2010 Fixed Furnishings

Lockers

The typical life expectancy of school lockers ranges from 10 to 15 years. However, with regular cleaning, maintenance, and timely repairs, lockers can last beyond their expected lifespan. Establishing a preventive maintenance program, conducted by a qualified and certified technician, is crucial to ensure lockers are properly inspected, cleaned, lubricated, and maintained. This proactive approach helps identify and address potential issues before they escalate into major problems.

It is also important to consider factors that can impact the lockers' longevity, such as the frequency of use, the size and weight of the users, and the types of activities carried out while using the lockers. These variables can significantly affect the wear and tear on the lockers.

Signs of wear, such as broken parts, loose joints, or discoloration, may indicate that locker replacement is necessary. Additionally, be vigilant for signs of rust or corrosion, as these can compromise the structural integrity of the lockers over time.

Fixed Furnishings (i.e. cabinetry, desks, shelving, countertops)

1.) Inspect the finish across all fixed furnishings. Assess for faded finishes, scratches, tears, and de-laminating across all fixed furnishings.
2.) Major findings may include cracking, chips, holes, or mildew build-up.
3.) Discuss with operations about age, usability, and issues regarding the fixed furnishings.

1.40 E2020 Movable Furnishings

The life expectancy of desks in a school can vary depending on the quality of the materials used, the manufacturer, and the level of use. In general, desks made from high-quality materials and manufactured by reputable companies can last for several years with proper care and maintenance. However, desks that are frequently used by students and are not well-maintained may have a shorter life expectancy. A typical life

expectancy for school desks is around 5-10 years. However, with regular cleaning, maintenance, and repairs, desks can last longer.

Also, it's important to take into account the frequency of use, the size and weight of the users and the type of activities that are performed while using the desks, this will affect the desks' life expectancy.

When the desks show signs of wear and tear, like broken parts, loose joints, or discoloration, it may be time to consider replacing them.

6 Mechanical, Electrical, and Plumbing (MEP) Assessment

The assessment of Mechanical, Electrical, and Plumbing (MEP) systems plays a critical role in understanding the overall condition and functionality of a facility. For most MEP systems, it is essential to engage with staff to gain insights into the system's age, usage, maintenance history, and remaining useful life.

To ensure an accurate evaluation, photos of the MEP systems (where applicable) are required. Additionally, include key information such as the manufacturer date, last inspection date, and any other relevant details. This documentation helps provide a comprehensive understanding of each system's condition, enabling more precise recommendations.

1.41 D1010 Elevators & Lifts

If necessary, coordinate with local personnel who have the most in-depth knowledge to inquire about elevator and lift usage and condition. Take pictures if possible.

Ride the elevator if possible. Note any issues with the door opening and/or closing. Chatter, squeaking, or similar is not good. Must be smooth.

In the mechanical room this is what's needed:

1.) Fire extinguisher (take photo)

2.) Check last inspection report (take photo)

3.) Check for any fluid staining and debris (take photo)

4.) Take photo of power shut offs (if available)

1.42 D1020 Escalators & Moving Walks

If necessary, coordinate with local personnel who have the most in-depth knowledge to inquire if the system is working properly. Take pictures if possible.

1.43 D2010 Plumbing Fixtures

If necessary, coordinate with local personnel who have the most in-depth knowledge to inquire if the system is working properly. This provides a better understanding of the maintenance and age of all plumbing fixtures across each facility. Sometimes, facility staff will indicate fixtures are working properly but are beyond useful life. This is important information to include in our assessment notes.

Remember, plumbing fixtures need to be COUNTED throughout each facility.

1.) Begin by visually inspecting the outside of the fixture. Look for any signs of cracks, chips, or other damage. Check for any discoloration or rust that may indicate a leak or other issue.
2.) Turn on the water and observe the flow. Look for any signs of reduced water pressure or irregular flow. Check for leaks or drips around the fixture.
    a. Test any accessories or features of the fixture, such as handles, knobs, or sprayers, to make sure they are functioning properly.
    b. This should be conducted on a sample number of fixtures in each restroom or space. Example – 5% of the fixtures in one restroom need to be ran/tested.
3.) Look inside the fixture. Use a flashlight to examine the interior of the fixture for any signs of damage or debris. Check for any buildup of minerals or other materials that may cause clogs or other issues.
4.) Check any connections. Examine any connections between the fixture and the pipes for signs of leaks or damage. Standing water is a sign all assessors need observe.

1.44 D2020 Water Heater

If necessary, coordinate with local personnel who have the most in-depth knowledge to inquire if the system is working properly. Take pictures if possible.

1.) Begin by visually inspecting the exterior of the hot water heater. Check for any signs of rust, corrosion, or damage to the tank or pipes. Look for leaks around the connections and valves.

Average useful life of commercial hot water heaters can vary depending on the type of heater, usage, and maintenance. Here are the average useful life spans for different types of hot water heaters:

Electric tank water heaters: 10-15 years

Gas tank water heaters: 8-12 years

Tankless water heaters: 15-20 years

1.45 D2030 Domestic Water Distribution

If necessary, coordinate with local personnel who have the most in-depth knowledge to inquire if the system is working properly.

Below is a list of items that may be present throughout the site walk. If these items are available, take pictures and make notes accordingly.

1.) Start by examining the main water line that enters the building. Check for any signs of leaks, damage, or corrosion. Look for any cracks, gaps, or signs of wear and tear on the pipe.
2.) Check the water meter and pressure regulator. Make sure they are properly installed and functioning correctly. Check for any signs of damage or wear.
3.) Examine the water supply pipes. Look for any signs of corrosion, leaks, or damage. Make sure the pipes are properly secured and insulated.
4.) Check the shut-off valves. Make sure they are easily accessible and functioning properly.
5.) Look for signs of water damage or leaks around the building. Check for any water stains or discoloration on walls or ceilings.
6.) Check the hot water recirculation system. Look for any signs of damage or leaks. Make sure the system is properly insulated.

The average useful life of a commercial domestic water distribution system can vary depending on the materials used, water quality, and maintenance. Here are the average useful life spans for different types of pipes:

Copper pipes: 50+ years

Galvanized steel pipes: 20-50 years

PVC pipes: 25-40 years

PEX pipes: 40+ years

1.46 D2040 Sanitary Waste

Building support plumbing systems include stormwater drainage equipment, stormwater drainage piping, stormwater drains, gray water systems, and supplementary valves and meters. If necessary, coordinate with local personnel who have the most in-depth knowledge to inquire if the system is working properly.

1.) Check for proper operation and flow, damage or deterioration to equipment or piping.
    a. Submersible Sump Pump: Check for water and debris in pits and drain if necessary. Check pump for proper operation.
2.) Repair: Less than 20 years old; adequate flow; piping/parts are easy to procure; replacing or repairing parts is cost effective; records show few repairs

3.) Replace: Over 20 years old; records show many repairs; related piping badly deteriorated; inadequate flow; parts difficult or impossible to procure; or replacing or repairing parts is not cost effective.
4.) Look for any signs of gas leaks. Check for the smell of gas, hissing sounds, or bubbles in soapy water around connections and joints.

1.47 D3010 Energy Supply

This system will be noticeable for roof top HVAC units. Lines and pipes will be available to assess on the roof.

5.) Begin by visually inspecting the exterior of the gas supply lines. Check for any signs of corrosion, damage, or wear and tear on the pipes.
    a. All exterior pipes should be painted yellow or similar color. Paint finish is important to decrease corrosion and help inspectors know the pipes use.
    b. Inspect the connections and joints. Check for any signs of damage, corrosion, or wear. Make sure they are properly tightened and sealed.
6.) Check the gas meter and pressure regulator. Check for any signs of damage or wear.
7.) Look for any signs of gas leaks. Check for the smell of gas, hissing sounds, or bubbles in soapy water around connections and joints.
8.) Check the shut-off valves. Make sure they are easily accessible and functioning properly.
9.) Look for any signs of damage or wear on the appliances that are connected to the gas supply lines.

The average useful life of commercial energy gas supply lines can vary depending on the materials used, environmental conditions, and maintenance. Here are the average useful life spans for different types of gas supply lines:

Steel pipes: 20-50 years

Copper pipes: 50+ years

Plastic pipes: 50+ years

1.48 D3020 Heat Generating Systems

This Includes Boiler, Air Handler, Furnace, and Heat Exchanger. These items need to be discussed before entering the school site. Further, each assessor should visually inspect the mechanical equipment while on site.

Boiler

1.) Determine the age of the boiler by checking the serial number or by consulting the manufacturer's documentation. If the boiler is over 15 years old, it may be approaching the end of its lifespan and should be closely inspected.
2.) Check for any signs of corrosion on the boiler, such as rust on the exterior or discoloration. Corrosion can indicate a potential leak or weakness in the system.

3.) Look for any signs of water leakage around the boiler, such as water spots on the floor or walls. Also, check for any drips or leaks coming from the boiler itself.
4.) Make sure that the boiler is properly ventilated and that there are no obstructions blocking the vents.
5.) Document any issues you find, including their location and severity, so that they can be addressed in the future.

1.49 D3030 Cooling Generating Systems

Cooling systems include central cooling: compressors, chillers, evaporative air cooling, thermal cooling storage, decentralized cooling: split systems, and supplementary: valves and meters.

1.) Check the metal cabinet, fan and coil in the condenser.
2.) For the evaporator check for the following:
    a. Metal cabinet condition: Check for
        i. Fan and coil condition
        ii. Proper drainage of drain pan
        iii. Electrical wiring condition
        iv. Condition and proper operation of control circuits
    b. Refrigeration piping and insulation: Check for
        i. Hanger system condition
        ii. Deteriorated piping
        iii. Leaking and weeping joints
        iv. Insulation condition and type
        v. Asbestos insulation condition whether encapsulation or removal is necessary.
        vi. Piping to ensure that piping is same throughout (copper, black, and galvanized are not mixed)
    c. Fan coil units: Check for proper operation of unit, cabinet damage, drainage of drain pan, leaks, and proper mounting.
    d. Duct system including air diffusers and return air grills: Check for cleanliness, proper operation of dampers, insulation damage and type, diffuser operation, and return air grills operation and condition.
    e. Compressors: Check for excessive noise, oil on deck, and leaks at connections to compressors
    f. Pumps: Check for leaking at packing glands, excessive noise, and leaking at connections
    g. Electric and pneumatic controls: Check for proper operation
    h. Check water treatment chemicals and system.
    i. Water cooling towers, casings, baffles, fans and tower water distribution system including piping and insulation, sump heaters (steam and electric): Check condition and operation
    j. Absorption chillers (centrifugal and reciprocating): Check for proper operation and condition
    k. Expansion tanks: Check for condition and proper operation
    l. Vacuum pumps: Check for condition and proper operation

3.) Repair or Replacement Criteria
    a. Chillers
        i. Repair: General good condition; only specific parts require replacement or repair; parts are easy to procure; replacing or repairing parts is cost effective.
        ii. Replace: Over 20 years old; badly rusted, damaged, deteriorated; leaking refrigerant or oil (indications of frequent or continuous leaks); many breakdowns and repairs (check activity record); parts difficult or impossible to procure; replacing or repairing parts is not cost effective.
    b. Cooling Towers
        i. Repair: Only minor repairs are required.
        ii. Replace: Over 15 years old; many or severe leaks; heavy corrosion and deterioration.
    c. Controls (electric/pneumatic)
        i. Repair: Only minor adjustments are required; repair is cost effective.
        ii. Replace: Old, broken, damaged, or inoperative thermostats, valves, and/or other major components; uncontrollable temperature variations throughout facility.

1.50 D3040 Distribution Systems

1.) Inspect HVAC distribution systems for corrosion or other damage.
    a. Note locations of rust, sagging, or any leaks in ductwork.
    b. Include notes for missing or damaged insulation at duct and pipe along with any damage to duct supports or bracing.
    c. Pay attention to grilles registers and diffusers around the building and include any high dollar value deficiency work in those areas within this category. Replacement of a diffuser does not warrant inclusion in a capital asset inventory.

1.51 D3050 Terminal & Package Units

1.) Rust or corrosion on the unit. Any physical damage to the unit should also be observed.
2.) damage to the fins. Some units will have a guard over the fins. Damage up to 20% of the fins without causing the unit any harm.
3.) Check any damage to the gas input line. Also check the gas lines running across the building. These should be coated and raised. Yellow is the color for gas. If the pipe is now coated yellow, it should have a tag/badge indicating it's a gas pipe. All gas lines should have a drip line/leg or a T to catch condensation in the line itself before connecting to the RTU.
4.) Check any damage to the condensation exit line. Make sure other plumbing or exhaust fans are not within 10 feet of the RTU.

5.) Review filter maintenance schedules. Note which type of Merv filtration system is used.
6.) Check the distribution fans (visually). Look for the cage to be rusted. Look for oil stains in and around the fan unit, indicating a failing fan unit. If the fans are on - warm air indicates the unit is providing cool air inside, while hot flue gas indicates the unit is providing warm air inside (typically comes out of the side of the unit not the fans).

1.52 D3060 Controls & Instrumentation

Heating and cooling controls include supply air, return air, exhaust air, outside air, air-to -air recovery, HVAC air cleaning, and supplementary hangers and controls. If necessary, coordinate with local personnel who have the most in-depth knowledge to inquire if the system is working properly.

1.) Check for proper rotation, Belts and sheaves for proper condition, alignment and tension, Fan inlet and outlet for system defects, Measure fan speed, motor speed, voltage, amperage, static pressure at the fan inlet and outlet, total flow rate at the fan inlet. Request technical support for proper selection of fans to meet special activity requirements of temperature, corrosiveness, abrasiveness, and flammability.
2.) Check the restroom exhaust fan for proper ventilation, proper operation, cleanliness of filters, and proper operation of dampers.
3.) Check the Exhaust system for clothes dryer, proper operations, and cleanliness of filters.
4.) Repair: General good condition; parts are easy to procure; replacing or repairing parts is cost effective; minor parts required to make operable.
5.) Replace: Over 15 years old; badly corroded or rusted; undersized; inoperable; parts difficult or impossible to procure; replacing or repairing parts is not cost effective.

1.53 D3070 Systems Testing & Balancing

Heating and cooling controls include a special purpose snow melting system. It is difficult to assess such systems as they are typically installed within or under pavement slabs or within roofing systems. If necessary, coordinate with local personnel who have the most in-depth knowledge to inquire if the system is working properly.

1.) Repair or Replacement Criteria Making repair/replacement recommendations for snow melting systems is difficult because of the many factors to consider that include other constructed assets affected by a repair or replacement. Discussion with on-site staff should assist in categorizing deficiencies.

1.54 D4010 Sprinklers

Fire protection systems include water-based systems, fire extinguishing, and supplementary valves and meters. If necessary, coordinate with local personnel who have the most in-depth knowledge to inquire if the system is working properly.

1.) Assess the "Riser" or "Sprinkler" rooms. Ensure that all components are easily accessible for inspection. Clear any obstructions, such as storage items or debris, which may impede your ability to inspect the system thoroughly.
    a. This includes taking pictures of the inspection / certification tags on all components.
2.) If possible, check all control valves to ensure they are in the correct position (open or closed) based on the system design. Look for any signs of leaks, corrosion, or damage. Verify that the valves are properly labeled and easily identifiable.
3.) If possible, inspect alarm devices, such as flow switches and pressure gauges, to ensure they are clean, functional, and within their calibration period. Look for any visible signs of damage or malfunction.
4.) Inspect the pipes and fittings for signs of leaks, corrosion, or physical damage. Look for any loose connections or joints that may need tightening or repair. Pay particular attention to areas where pipes pass through walls, floors, or ceilings.
5.) Inspect each sprinkler head for proper positioning, cleanliness, and damage. Ensure that no obstructions, such as dust or debris, are blocking the spray pattern. Verify that the sprinkler heads are not galvanized or degrading.
6.) Examine the water supply connections, including the main control valve and any backflow prevention devices. Check for leaks, proper labeling, and any signs of damage.

1.55 D4020 Standpipes

Follow the same protocol as section 6.14 Sprinklers. If necessary, coordinate with local personnel who have the most in-depth knowledge to inquire if the system is working properly.

1.56 D4030 Fire Protection Specialties

Fire protection specialty systems include cabinets, extinguishers, breathing air systems, and accessories. If necessary, coordinate with local personnel who have the most in-depth knowledge to inquire if the system is working properly.

1.) Instructions: Check for missing parts, broken hinges, signs of rust. Check to ensure extinguishers have been inspected as required by code.
2.) Repair or Replacement Criteria: Fire protection specialties typically must be repaired by authorized service centers or the original manufacturer. Replacement costs are minimal.

1.57 D5010 Electrical Service & Distribution

Electrical service and Distribution systems include packaged generator assemblies (e.g., gate box, line drop, frequency changer), battery equipment (EGSE), PV Collectors, fuel cells, power filtering/conditioning, transfer switches, and supplementary: grounding, and hangers. If necessary, coordinate with local personnel who have the most in-depth knowledge to inquire if the system is working properly.

1.) For Motors and Generators: Comply with current safety precautions. Determine if preventive maintenance inspection is adequate. When practicable, start, run, and cycle motor and generator equipment through load range. Take care of starting motors and generators. On standby or infrequently operated equipment, check rotor freedom and lubrication. Check records for evidence of regular exercise; if not found arrange for drying out windings; megger windings before starting motor.
    a. Running Inspection (While Equipment Operates)
        i. Log or Operator Records: Check for evidence of motor or generator overload, induction motor underload, low power factor of load, excessive variations in bearing temperature, and operating difficulties.
        ii. Exposure: Check for unsafe accessibility for maintenance of instrumentation, exposed to physical or other damage from normal plant functions, processes, traffic, and radiant heat, inadequate personnel guards, fences, and insufficient, missing, or illegible signs, identification, or operating instructions.
        iii. Housekeeping: Identify need to remove oil and solvent cans, oil or solvent soaked rags and waste, other combustibles, particularly those near commutating machinery. Identify need to remove obstructions that may interfere with rotation or ventilation such as dust, dirt, airborne grit, sand; dripping oil, water, other fluids; vapors, rust, corrosion, and peeling, scratches, abrasions or other damage to painted surfaces.
        iv. Machine Operation: Check for noisy, unbalanced, rubbing, excessive vibration, and rattling parts.
        v. Structural Supports: Check for inadequate, cracks, settlement, defective or inadequate vibration pads, shock mounts and dampers, and loose, dirty or corroded bolts and fittings.
        vi. Ventilation: Check for dirty, inadequate amount of air passing through machine, clogged, stator-iron air slots causing excessive temperature. (Too hot to touch. Measured temperature should not exceed 80 degrees F for open frames, or 90 percent for enclosed frames. Compare with manufacturer's data.)
        vii. Motor and Generator Leads: Check for exposed bare conductors, frayed, cracked or peeled insulation, poor taping, moisture, paint, oil or grease, vibration, abrasions, breaks in insulation at entrance to conduit or machines, arcs or burns, overheated, inadequate terminal connections, lack of resiliency, lack of life or dried-out insulation, and exposure to physical damage, traffic, water, heat, for semi-permanent, temporary, or emergency connections.
        viii. Bearings: Check for improper lubrication (check lubrication schedules for lubricant used and frequency); improper oil level in oil gages; incorrectly reading gages; noisy bearings; and overheated bearing caps or housings. (If bearings are too hot to touch, determine causes. A slow but continuous rise in bearing temperature after

greasing indicates possible over lubrication or under lubrication, improper lubricant, or deteriorated bearings. Under normal conditions, the temperature of ball or roller bearings will vary from 10 to 60 degrees F above the ambient temperature.)

ix. Collector Rings, Commutators, Brushes: Check for excessive sparking, surface dirt, grease (check cleanliness with clean canvas paddle), sparking or excessive brush movement caused by eccentricity, sprung shaft, worn bearings, high bars or mica, surface scratches, roughness, end-play resulting from magnetic-center hunting of rotor, inadequate brush freedom, nonuniform brush wear, poor commutation, improper brushes, and incorrect brush pressure. Brush spring pressure should be between 1-3/4 to 2-1/2 psi of brush-commutator contact area for light metallized carbon or graphite brushes, for pressure for other type brushes, check manufacturer's data. (Measure with spring scale.)

x. Starters, Motor Controllers, Rheostats, Associated Switches: Check for damaged or defective insulation, loose laminations, defective heater or resistance elements, worn contacts, shorts between contacts, arcing, grounds, loose connections, and burned or corroded contacts. Worn contacts and defective heater resistance elements should be replaced.

xi. Protective Equipment: Check for dirty, signs of arcing, symptoms of faulty operation, improper condition of contacts, burned-out pilot lamps, and burned-out fuses.

b. Shutdown Inspection: A shutdown inspection includes a running inspection while equipment is not in operation and is electrically disconnected.

i. Stators: Check for dirt, debris, grease, coils not firmly set in slots, burns, tears, aging. Embrittlement, moisture in insulation, clogged air slots, rubbing, corrosion, loose laminations of stator-iron, charred or broken slot wedges, abrasion of insulation or chafing in slots and signs of arcing or grounds.

ii. Rotors: Check for difficult turning, rubbing, excessive bearing friction, end play, overheating, looseness of windings, charred wedges, broken, cracked, loosely welded or soldered rotor bars or joints, cracked end rings in squirrel cage motors, loose field spools and deteriorated leads and connections in synchronous motors, and deteriorated insulation in wound rotors

iii. Roto-Stator Gaps: Check gaps on 5 hp or larger induction motors, particularly of the sleeve bearing type. Where practicable, measure and record gaps on the load, pulley or gear end of the motor. Measure at two rotor positions, 180 degrees apart, four points for each rotor position. If there is more than 10 percent variation in gaps, arrange for realignment.

iv. Mechanical Parts: Check for corrosion, improper lubrication, misalignment, end play. Interference, and inadequate chain or belt tension

2.) Repair: If in general good condition, no overloading, no evidence of burning, fire or shock hazard
3.) Replace: If over 20 years old, badly damaged or deteriorated, equipment is overloaded or displays evidence of burning or fire or shock hazard

1.58 D5020 Lighting and Branch Wiring

All electrical lighting and branch wiring systems include metering, transformers, switchboards, panelboards, motor control centers, facility grounding, and hangers If necessary, coordinate with local personnel who have the most in-depth knowledge to inquire if the system is working properly.

1.) Inspect the branch wiring throughout the facility. Look for any visible signs of damage, such as frayed or exposed wires, loose connections, or outdated wiring. Pay attention to areas where wiring passes through walls, ceilings, or floors, as these are common locations for wear and tear.
2.) Inspect all outlets and switches for proper operation and any visible signs of damage. Ensure that they are securely mounted and not loose. Check for any burn marks or discoloration around the outlets or switches, which could indicate electrical issues.
3.) Examine each lighting fixture in the facility. Check for proper installation, secure mounting, and any visible signs of damage or deterioration. Verify that the fixtures are clean and free of dust or debris that could affect their performance.
4.) If the facility has emergency lighting systems, inspect them for proper operation.

1.59 D5030 Communications & Security

Communications and security systems include branch wiring systems, wiring devices, grounding, and hangers. If necessary, coordinate with local personnel who have the most in-depth knowledge to inquire if the system is working properly or out of date.

1.) Instructions for General Wiring: Check for broken conduit, exposed wiring, missing box and conduit covers, deterioration of conductor insulation, sagging or improperly supported conduit, condition of electrical devices, receptacles, switches, electrical equipment, motors, etc., and Romex wiring exposed to physical damage.
2.) Repair or Replacement Criteria for General Wiring:
    a. Repair: General good condition, problem area can be spliced in an accessible area.
    b. Replace: Insulation badly cracked, damaged, deteriorated, undersized conductor.

1.60 G3050 Cooling Distribution

All electrical lighting and branch wiring systems include hydronic heating, steam energy, and hydronic cooling. If necessary, coordinate with local personnel who have the most in-depth knowledge to inquire if the system is working properly.

1.) Instructions for Steam Utility System: Start the assessment from the steam generating plant and follow the lines until they reach a facility or other destination. Obtain steam utility system drawings before the assessment. Nothing should be turned on or off and nothing should be opened or closed unless special arrangements have been made. Have operating personnel available to provide information on conditions and to provide access to pits, mechanical rooms, and fenced enclosures. Check through a visual inspection for:
    a. Leaks
    b. Proper insulation
    c. Condition of components, including pipe, valves, flanges, pumps, expansion loops, expansion joints, steam traps, anchors, and alignment of guides and roller supports.
    d. Check trouble logs for recurring outages or areas that require continuing repairs.
    e. Have steam pits opened and check for condition and water intrusion
    f. Ensure proper pressure drop across pressure reducing stations.
    g. Hanger and support condition
2.) Repair or Replacement Criteria
    a. Repair: Less than 20 years old; adequate flow; piping/parts are easy to procure; replacing or repairing parts is cost effective; records show few repairs.
    b. Replace: Over 20 years old; records show many repairs; related piping badly deteriorated; inadequate flow; parts difficult or impossible to procure; replacing or repairing parts is not cost effective.

1.61 G3060 Fuel Distribution

Fuel Distribution systems include, gas, fuel oil, gasoline, diesel fuel, aviation fuel, and supplementary manholes. If necessary, coordinate with local personnel who have the most in-depth knowledge to inquire if the system is working properly.

1.) Instructions: Start the assessment from the storage facility or source of the fuel onsite and follow lines until they reach their destination. Obtain airport site drawings of the distribution system before conducting the assessment. Nothing should be turned on or off and nothing should be opened or closed unless special arrangements have been made. Have operating personnel available to provide information on conditions and access to secured enclosures. Check through a visual inspection for leaks, proper insulation, condition of components, including pipe, valves, flanges, pumps, expansion, joints, and anchors. Check maintenance logs for recurring outages or areas that require continuing repairs.
2.) Repair: Less than 20 years old; adequate flow; piping/parts are easy to procure; replacing or repairing parts is cost effective; records show few repairs
3.) Replace: Over 20 years old; records show many repairs; related piping badly deteriorated; inadequate flow; parts difficult or impossible to procure; replacing or repairing parts is not cost effective

1.62 G4010 Electrical Distribution

Electrical Distribution systems include. If necessary, coordinate with local personnel who have the most in-depth knowledge to inquire if the system is working properly.

1.) Instructions for General Wiring: Check for broken conduit, exposed wiring, missing box and conduit covers, deterioration of conductor insulation, sagging or improperly supported conduit, condition of electrical devices, receptacles, switches, electrical equipment, motors, etc., and Romex wiring exposed to physical damage.

2.) Instructions for the Electrical Utility System: Start the assessment from the source (power plant, local power company feed, or where the power lines come up from the ground.) Obtain electrical utility system drawings prior to conducting the assessment. Nothing should be turned on or off and nothing should be opened or closed unless special arrangements have been made with F&I.
   a. Overhead; check for:
      i. Condition of components, especially rusting of metal parts, rotting of pole (knock the base of the pole with a hammer and listen to sound), and broken insulators.
      ii. Proper sag of conductors
      iii. Proper installation of components
      iv. Leaking transformers
   b. Underground: The underground electrical system may only be checked by a visual inspection of opened pad-mounted transformers and other devices. A maintenance representative should open the devices. Assessor should not attempt to open or touch parts of an open device. Check for cleanliness inside and out, proper gage readings, proper installation of all components, and condition of all components.

3.) Instructions for Power Poles and Structures: Comply with current safety precautions. Remember these structures are part of an electrical system and may be conducting current. Avoid contact with line poles and structures until they have been grounded and/or deenergized.
   a. Ground Area: Check for trash, debris, weeds or brush one foot in height within 3 feet of pole or structure.
   b. Concrete Bases, Pads and Anchor Bolts: Check for cracks, including surface cracks wider than 1/16-inch, breaks, chipped areas deeper than 1/2-inch, settlement, movement, defective paint/galvanizing, visible rust or corrosion to depths exceeding 1/16-inch, loose or missing nuts/bolts; where visible, check metal where it enters concrete.
   c. Light Standard Handholes and Bell Interiors: Visual assessment only, if energized; check for rust, corrosion, installed transformers, loose wires, excessive discolorations from heating and sparking, signs of insulating compound or other leakage, charred, burned, or missing insulation.
   d. Poles, Structures, Crossarms and Beams: Use field glasses to assess from the ground. Look for defective paint/galvanizing, visible rust or corrosion, especially pitting where visible, metal in contact with, or entering concrete,

loose bolts and pins, excessive rust and corrosion between pole and/or structure and braces, equipment supports, insulator pins, guy fastenings, and similar locations, checking, chipping, flaking, or scaling of paint on pole and attachments, broken or bent structural or accessory members, especially near bolts, and misalignment.

e. Guys and Anchors: Check for corroded, cracked or worn hardware at guy takeoffs, anchors and insulators, cracked, broken, or dirty insulators, missing insulators, defective galvanizing, corrosion, broken strands, battered or corroded guy shields, excessive sag or tautness, and guy anchor movement.
f. Ground Wire: Note, this is a visual assessment only. Look for failure to install at least one wire at every steel pole or structural support, including each steel column in substation or switching station.
g. Connections: Check for corrosion, looseness, discolorations from overheating, and other substandard conditions.

4.) Instructions for Disconnect Switches: Comply with current safety precautions. Do not operate until tests show circuit is dead and grounding harnesses have been attached. Do not operate without prior clearance from operating staff. Pole-mounted switch assessment requires an assistant to operate the switch from the ground. Determine if the preventive maintenance assessments are adequate. Check for:

a. Group-Operated Switches: Check for rust, corrosion, loose brackets and holding bolts, and nonrigid bearings and supports.
b. Grounding Cables, Clamps and Straps: Check for weak support, broken or frayed portions of conductors, and loose connections.
c. Insulating Section of Operating Rod: Check for indications of cracks or signs of flashovers
d. Movable Connections: Check for inadequate lubrication, rust, corrosion, and other conditions resulting in malfunctioning.
e. Switch: Check for gears stiff or adjustment needed.
f. Mounting and Bases: Check for rust, corrosion, twisted, bent, or warped, and loose or missing ground wire.
g. Insulators: Check for cracks, breaks, chips or checking of porcelain glaze, more than thin or transparent film of dirt; dust, grease, other deposits on porcelain, damage indicated by streaks of carbon deposits from flashovers; loose, broken or deteriorated cement holding insulator to other parts. (Arrange for insulator cleaning during this inspection since it is performed only when line is deenergized.)
h. Blades and Contacts: Check for excessive discoloration from overheating, roughness and pitting from arcing, misalignment of blades with contacts, and Arcing Horn Contacts(burns, pits, failure to contact each other throughout their length when switch is opened and closed); inadequate tension of bolts and springs, inadequate blade stop, lack of hinge lubrication, insufficient non-oxide grease for blades and contacts.

i. Cable or Other Electrical Connections: Check for loose bolts, discolorations indicating excessive heating at connection points, and corrosion particularly that resulting from atmospheric conditions.
j. Electrical Clearances of Cable or Another Conductor: Check for inadequate to other phases or to ground for applicable circuit voltage. (Switch both open and closed)
k. Flexible Connections: Check for frayed, broken or brittle. (Excessive discoloration indicates overheating.)
l. Cable from Grounding Switch to Grounding System: Check for frayed, broken strands, and loose connections.

5.) Instructions for Distribution Transformer: Comply with current safety precautions. Determine if preventive maintenance assessments are adequate. Transformer must be deenergized and circuit switches locked out. Use grounding harnesses on input terminals. Before conducting the assessment, arrange to have electricians and other required labor available.
a. Bushings and Insulators: Check for grease, dirt, other foreign materials, and improper oil level in oil-filled bushings
b. Insulators and Porcelain Parts: Report for investigation by a qualified electrical engineer any chipped glaze exceeding 1/2-inch in depth or an area exceeding one square inch on any insulator or insulator unit. Check for cracks, checks, chips, breaks, where flashover streaks are visible, re-reexamine for injury to glaze or for presence of cracks, and severe cracks, chipped cement, or indications of leakage around bases of joints of metal to porcelain parts at terminal and transformer ends.
c. Terminal Ends: Check for mechanical deficiencies, looseness, corrosion, and damage to cable clamps
d. Connections: Check for heating evidenced by discolorations, looseness, frayed or broken strands, broken cable insulation, and corrosion indicated by blue, green, white, or brown corrosion products on metallic portions of all main and ground terminals, including terminal board and grounding connections inside transformer case
e. Enclosure and Cases: Check for signs of moisture if case is opened, plugged breathers, inactive desiccant, enclosure leakage, weathertightness, and rust or corrosion on inside cover.
f. Coils and Cores: If feasible, probe downside with glass rod, and if dirt and sludge exceed approximately 1/2-inch, arrange to change or filter insulating oil, and have coils and cores cleaned. Use low-pressure air, if available, to blow out dust from air-cooled transformers, or pull-out dust with vacuum equipment. Check for interior deficiencies, dirt, and sludge.
g. Energized Components: Do not contact any part of the transformer or associated equipment.
h. Concrete Foundations and Supporting Pads: Check for settling and movement, surface cracks exceeding 1/16-inch in width, and breaking or crumbling within 2 inches of anchor bolts.

i. Anchor Bolts: Check for loose or missing parts and corrosion, particularly at points closest to metal base plates and concrete foundations resulting from moisture or foreign matter, and exceeding 1/8-inch in depth.
j. Mounting Platforms, Wooden: Check for cracks, breaks, signs of weakening around supporting members, rot, particularly at bolts and other fastening, holes through which bolts pass, wood contacting metal, burning and charring at contact points, indicating grounding deficiency, and inadequate wood preservation treatment
k. Mounting Platforms, Metallic: Check for deep pits from rust, corrosion, and other signs of deterioration likely to weaken structure
l. Hangers, Brackets, Braces and Connections: Check for rust, corrosion, bent, distorted, loose, missing, broken, split, other damage, and burning or charring at wood contact points resulting from grounding deficiencies.
m. Enclosures, Cases and Attached Appurtenances: Check for collections of dirt and other debris close to enclosure that may interfere with radiation of heat from transformer or flashover; dirt, particularly around insulators, bushings, or cable entrance boxes; leaks of liquid-filled transformers; deteriorated paint; scaling, rust, and corrosion, particularly at all attached appurtenances, such as lifting lugs, bracket connections, and metallic parts in contact with each other
n. Nameplates and Warning Signs: Check for dirty, chipped, worn, corroded, illegible, and improperly placed signs.
o. Grounding: Check for loose, missing, broken connections; signs of burning or overheating; corrosion, rust, frayed cable strands, more than 1 strand broken in 7-strand cable and more than 3 strands broken in 19-strand cable
p. Bushings and Insulators: Check for cracked, chipped, or broken porcelain, indication of carbon deposits, streaks from flashovers, dirt, dust, grease, soot, or other foreign material on porcelain parts, and signs of oil or moisture at point of insulator entrance.
q. Grounding and Phase Terminals: Check for overheating evidenced by excessive discolorations of copper, loose connection bolts, defective cable insulation, no mechanical tension apparent as a result of temperature changes, and if leads appear improper and create danger of flashovers from unsafe phase-to-phase or phase-to-ground clearances caused by deterioration of leads or expansions during temperature changes.
r. Lightning Arresters: Check where attached to or mounted on, refer to Ground Test
s. Breathers: Check for holes plugged with debris and desiccant-type breathers need servicing or replacement
t. Grills and Louvers for Ventilation of Air-Cooled Transformers: Assess openings located near floor or ground line with small nonmetallic framed mirror having long insulated handle, used in conjunction with light from hand flashlamp having insulated casing. Throw light beam onto mirror and reflect upward into openings. Check for plugged with debris or foreign matter, interfering with free passage of air.

6.) Instructions for Switchgear: Comply with current safety precautions.

a. Asbestos: Inspect ARC chutes and flash pads for friable asbestos. Vacuum to eliminate safety and health hazard using high efficiency particulate air vacuum (HEPA VAC) Do not use compressed air. Avoid dispersing asbestos. Encapsulate and seal with insulating paint such as "Gyptal" or equivalent from any manufacturer. Use protective clothing and respirator as required. Empty HEPA VAC into plastic bag for disposal at approved asbestos disposal facility,
b. Ascertain whether preventive maintenance inspections are adequate.
    i. Housekeeping: Check for dampness, dirt, inaccessibility, detrimental conditions such as ambient temperatures in excess of 100 degrees F., humidity causing sweating of metal enclosures, rodents or insect infestations, stored combustibles, trash, dirt or dust accumulations, poor location, poor ventilation, and gas, steam or water leakage,
    ii. Exterior Housing and Enclosure Ground: Check for rust, corrosion, need for painting signs of abuse, unauthorized or improper signs, storage materials or dust accumulating on top of enclosures missing parts or other items, and poor condition or inadequacy of enclosure ground,
    iii. Interior of Compartments, Cubicles and Drawers: Check for dirt, condensation, symptoms of overheating, burns from ground and short circuits, defective insulation, and defective operation of locks, doors, and drawers.
c. Air and Oil Circuit Breakers, Oil-less-Type Air Blast Breakers (Deenergized/50 Amperes and above): Check for incorrect wipe of main and arcing contacts on opening and closing, overheating, lack of continuity, looseness of connections on all mechanisms, incorrectly placed pins and cotter pins, and improper functioning of rods and moving parts and binding occurs when breaker is operated.

7.) Repair or Replacement Criteria
    a. Repair: Less than 20 years old; adequate operation; component parts are easy to procure; replacing or repairing parts is cost effective; records show few repairs
    b. Replace: Over 20 years old; records show many repairs; related components badly deteriorated; inadequate power; parts difficult or impossible to procure; replacing or repairing parts is not cost effective

1.63 G4050 Site Lighting

Exterior site lighting includes, area lighting, flood lighting, building lights, and light poles.

1.) Check for the safety and security of the area, appropriate illumination for area needs. Assess lighting components for proper performance, efficiency, and functionality. Examine bulbs, fixtures, transformers, light pole mountings, poles.
2.) Repair: Less than 20 years old; adequate lighting for the respective area and system operation; component parts are easy to procure; replacing or repairing parts is cost effective; records show few repairs

3.) Replace: Over 20 years old; records show many repairs; related components badly deteriorated; inadequate light coverage/lumens; parts difficult or impossible to procure; replacing or repairing parts is not cost effective

1.64 G5010 Site Communications & Security

Exterior site lighting includes towers, distribution systems, and wireless distribution systems.

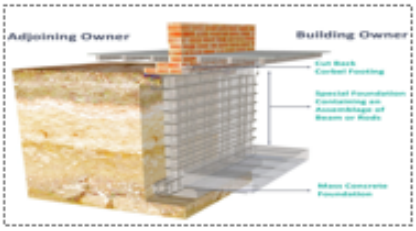
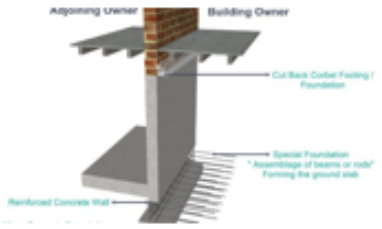
1.) Collect existing documents regarding the communications system and its components. Check for safety and security of the area; assess components for proper performance, efficiency, and functionality.
2.) Repair: Less than 20 years old; adequate function and system operation; component parts are easy to procure; replacing or repairing parts is cost effective; records show few repairs.
3.) Replace: Over 20 years old; records show many repairs; related components badly deteriorated; parts difficult or impossible to procure; replacing or repairing parts is not cost effective.

APPENDICES

Substructure and Interior Systems

A - Substructure

Includes all foundations (wall & column), special foundations and basement construction.

Material	Description	Photo
Standard Foundations	**Continuous footings, spread footings, grade beams, foundation walls, pile caps, and column piers.** **Standard slab-on-grade is supported by compacted earth or gravel fill. The soil bearing capacity is sufficient to support the slab. Assemblies include fine grade, gravel fill, under slab insulation, edge forms, termite treatment (interior slabs only), vapor barrier, reinforcing, expansion joints, control joints, and finish and curing. Assemblies are based on thickness of slab.**	 
Special Foundations	**Pilings or other extended foundation systems that overcome non-standard soil conditions. Includes piles, caissons, and any other special foundation situation.**	 
Basement Construction	**Assembly includes basement perimeter walls that are below grade and below the ground floor level of the building; this also includes elevator pits and other pits.**	

A1030 Slab on Grade

Slab-on-grade or floating slab foundations are a structural engineering practice whereby the concrete slab that is to serve as the foundation for the structure is formed from a mold set into the ground. The concrete is then placed into the mold, leaving no space between the ground and the structure. System should be sealed to prevent moisture intrusion. Follow all cracks to see where they lead and if they expand or travel in a different direction.

Level of Action	Deficiency	Photo
Moderate	No signs of water damage, spalling, or expansion. Prep and reseal as funds allow.	
Major	Spalling and slab separation exceeding 1/8" should be ground down, floated, prepped, and resealed. No vertical displacement or exposed rebar observed.	
Replace	Full replacement is likely cost prohibitive and should not be noted unless system poses life safety concerns. This also includes Slab on Deck systems installed on higher floors. Differential settlement occurring - requires removal of section of slab, adjustment to sub-grade, and new infill.	

C – Interiors - C10 Interior Construction (C1010 Partitions)

Includes interior construction: partitions and interior doors; includes fixed partitions, demountable partitions, retractable and movable partitions, operable partitions, interior balustrades & screens, interior window & storefronts & field constructed toilet partitions.

Material	Description	Photo
Partitions – Framed Wood	Non-load-bearing interior wall assemblies constructed primarily from wood framing members, such as studs, plates, and headers, typically covered with gypsum board or wood paneling.	
Partitions – Framed Metal	Framed metal interior partitions are non-load-bearing wall assemblies constructed using cold-formed metal framing members, primarily steel studs and tracks, and are a common system in schools. Metal stud walls may sound hollow. Wood stud walls are more rigid and "deadened".	
Partitions - Masonry	Partitions constructed from unit masonry, including concrete block (CMU), clay brick, or natural/manufactured stone, bonded with mortar. These partitions can be left exposed or finished with plaster, tile, or paint. Commonly used where fire-resistance, acoustics are critical.	
Partitions - Retractable and Movable	Systems consisting of a series of interconnected, movable wall panels that provide acoustic separation, visual privacy, and spatial flexibility when deployed. Typically suspended from an overhead track system with no floor track.	
Partitions - Interior Window & Storefronts	Non-load-bearing glazed openings installed within interior partitions or walls, typically framed in aluminum, hollow metal, or wood. These are used to provide visual connection, light transmission, and observation between spaces.	

C10 Interior Construction (C1010 Partitions)

Framed Partitions

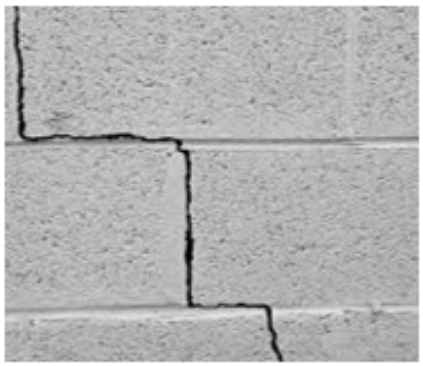
This section applies to metal stud framing and timber framing. Anything not clearly constructed with masonry is likely a framed partition. Tap on the surface to ensure you can hear hollow cavities which would not be present on a masonry wall covered with wall board. Damages at the partitions are likely held in the finishes section of the assessment. Any major issues would require replacement of the entire system.

Level of Action	Deficiency	Photo
Moderate	NOT APPLICABLE (Moderate deficiencies at partitions will typically be reflected in the section for system finishes, not the partition itself)	Insert Image
Major	Evident water damage indicates the need for immediate replacement. (Major deficiencies at partitions will typically be reflected in the section for system finishes, not the partition itself)	
Replace	There is evidence of settling, failure, or a compromised structure that requires removal and replacement	

C10 Interior Construction (C1010 Partitions)

Masonry Partitions

The masonry partitions themselves will not typically have moderate or major damage. Any damage to these partitions is likely structural and a full replacement of the partition would be recommended. Cinder block masonry have been historically finished with Block Filler which is known to include asbestos material. Sample any material before removing.

Level of Action	Deficiency	Photo
Moderate	Vertical gaps traveling straight up or holes from old equipment can likely be sealed without any further action. (Moderate deficiencies at partitions will typically be reflected in the section for system finishes, not the partition itself)	
Major	Seal interior masonry to extend useful life. Any other significant work should include a sampling of block filler to determine presence of ACM. (Major deficiencies at partitions will typically be reflected in the section for system finishes, not the partition itself)	
Replace	There is evidence of settling, failure, or a compromised structure that requires removal and replacement. Seal and monitor for additional settlement if system cannot be replaced.	

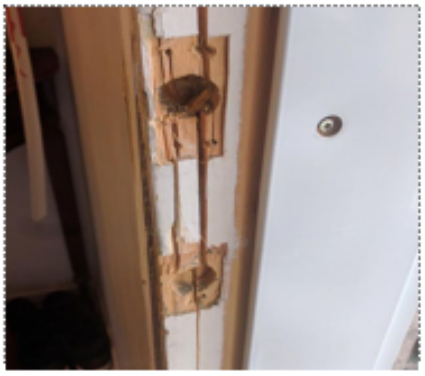
C – Interiors - C1020 Interior Doors

Includes interior construction: partitions and interior doors; includes standard swinging doors (wood & hollow metal), glazed doors, sliding and folding doors, fire doors, door frames & hardware, door painting and staining, and latches & access doors.

Material	Description	Photo
Interior Doors - Wood	Non-rated or fire-rated interior doors constructed of wood or wood composite cores, with optional wood veneer, plastic laminate, or painted finishes. Installed in metal or wood framed. Rating badge found on strike side of leaf.	
Interior Doors – Hollow Metal	Refers to a swinging door constructed from sheet steel, commonly known as a hollow metal door. These doors are designed for interior use and are specified for their durability, security, fire resistance, and impact resistance. Not always fire rated.	
Interior Doors – Glazed (fire rated)	Full- or partial-height glazed swinging doors set within aluminum-framed storefront systems, used to provide access between interior spaces while maintaining transparency, daylighting, and visual connection. These doors are typically non-rated.	
Interior Doors – Door Hardware	Including, but not limited to; handles hinges, locks, latches, exit devices, closers, stops, holders, weather stripping, thresholds, and electrified components. Note the fire rating, and accessibility standards – ADA.	
Interior Doors – Access Door (roof access hatch)	Refers to the means of access to the facility roofing system. Includes latch, pistons, and guardrails.	

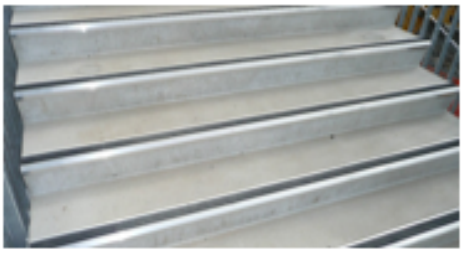
C – Interiors - C1020 Interior Doors

Apply deficiency to number of doors. ADA compliant hardware is needed for egress and all path of travel, but not critical for doors not being used by primary occupants. Ensure hardware is both compliant and operable. Damages are typically found near the bottom of the door which can be repaired with metal kickplate covers and near the strike plate which could be fixed with door closers or other hardware. Inspect doors for seals particularly at classrooms and loud areas like music and art rooms.

Level of Action	Deficiency	Photo
Moderate	Door hardware is not ADA, damaged, or non-functional and requires replacement.	
Major	Door and hardware are damaged and require replacement.	
Replace	Door frame, door, and hardware are damaged and require replacement.	

C – Interiors – C20 Stairs – Construction & Finishes

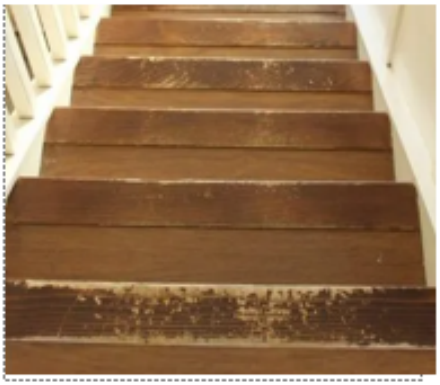
Includes stairs constructed of wood, metal and concrete; & stair finishes filled with concrete or covered with resilient tile/flooring.

Material	Description	Photo
Wood Stairs	Stair systems with primarily wood components for treads, risers, strings, landings.	
Metal Stairs	Stair systems with metal components, typically for maintenance and not primary egress.	
Concrete Stairs	Stairs constructed entirely of unfinished poured concrete.	
Concrete Finished Stairs	Concrete stairs which have been polished and sealed. Also applies to terrazzo concrete.	
Resilient Stairs	Stairs with any type of covering. Typically, rubberized material with traction dome pads.	

C – Interiors – C20 Stairs – C2010 Stair Construction

Wood Stairs

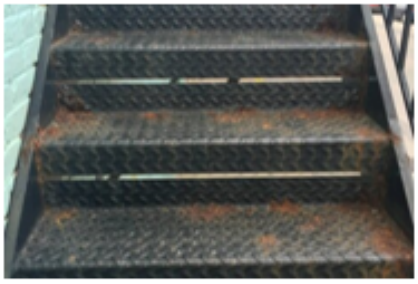
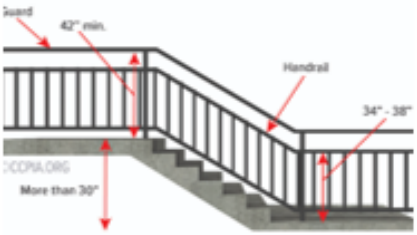
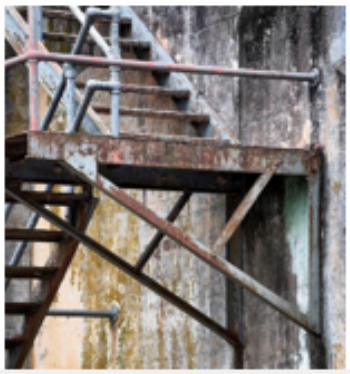
Wood stairs are not common but may be encountered at a stage or maintenance area. Always confirm safety criteria in addition to the quality of the construction and finishes.

Level of Action	Deficiency	Photo
Moderate	System should be fully refinished, but replacement is not needed. Nothing out of compliance.	
Major	Select components are not in compliance and should be replaced. No open risers. Riser heights must be between 4 and 7 inches. Tread depth to be least 11 inches. Handrails between 34 and 38 inches.	
Replace	Structural integrity of stair unit is compromised and requires its removal and replacement	

C – Interiors – C20 Stairs – C2010 Stair Construction

Metal Stairs

Metal stair construction can sometimes have concrete plans for the stair treads which should be noted as metal stairs with a concrete finish. Metal stairs can also have resilient coatings so it's important to examine the structural components of the staircase to confirm the construction type.

Level of Action	Deficiency	Photo
Minor	Rust visible - prep and re-finish	
Moderate	Significant rusting needing expanded repairs. Full replacement not expected.	
Major	Major damage present and/or rails not compliant with code and require removal and replacement.	
Replace	Structural integrity of stair unit is compromised and requires its removal and replacement	

C – Interiors – C20 Stairs – C2010 Stair Construction

Concrete Stairs – DO WE ALSO NEED THIS SECTION?

Level of Action	Deficiency	Photo
Moderate	An isolated structural crack or separation requiring re-enforcement in place.	
Major	Systemic cracking but with no major structural concerns.	
Replace	Structural cracking and separation occurring in multiple locations - remove and replace the stair unit.	

C – Interiors – C20 Stairs – C2020 Stair Finishes

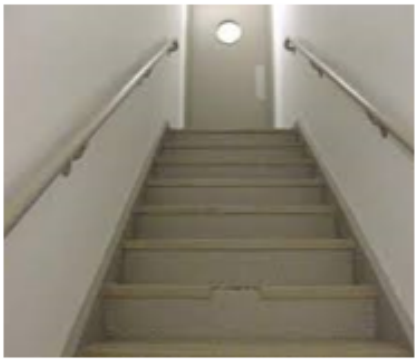
Concrete Fill

Level of Action	Deficiency	Photo
Minor	Surface feels rough and/or taking in moisture from the surface resulting in staining - prep and re-seal.	
Moderate	Coming away from the building or select stairs are damaged.	
Major	NOT APPLICABLE	
Replace	Severe cracking requiring removal and replacement of tread in fills.	

C – Interiors – C20 Stairs – C2020 Stair Finishes

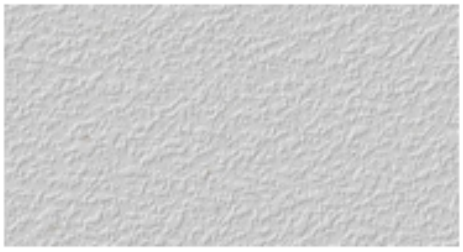
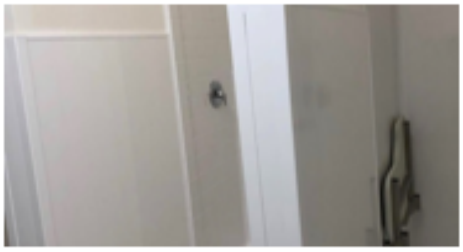
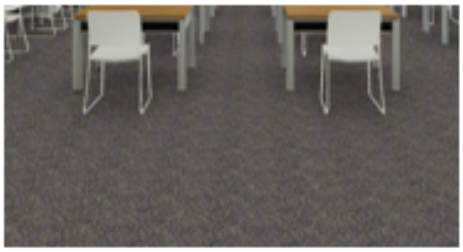
Resilient Tread

Any stairway which is not clearly wood, carpet, or metal likely has this resilient tread finish. Check for loose adhesion or bubbling of the surface and any other tripping hazards. This system is not typically repaired, and full replacement is usually preferred.

Level of Action	Deficiency	Photo
Moderate	NOT APPLICABLE	
Major	NOT APPLICABLE	
Replace	Finish is lifting or separating and creating trip hazards - remove and replace.	

C – Interiors – C30 Interior Finishes

Wall finishes: includes paint on masonry, wall board, wainscot and ceramic tile. Floor finishes: includes carpet/soft surface, resilient tile, resilient sheet, polished concrete, ceramic tile, liquid applied and wood sports flooring. Ceiling finishes: includes wallboard, lay-in ceiling tile, glued up ceiling tile and painted structure.

Material	Description	Photo
Wall Finishes: Paint on Masonry		
Wall Finishes: Wallboard		
Wall Finishes: Wainscot		
Wall Finishes: Ceramic Tile		
Floor Finishes: Carpet / Soft Surface		

C – Interiors – C30 Interior Finishes (cont.)

Wall finishes: includes paint on masonry, wall board, wainscot and ceramic tile. Floor finishes: includes carpet/soft surface, resilient tile, resilient sheet, polished concrete, ceramic tile, liquid applied and wood sports flooring. Ceiling finishes: includes wallboard, lay-in ceiling tile, glued up ceiling tile and painted structure.

Material	Description	Photo
Floor Finishes: Resilient Tile		
Floor Finishes: Resilient Sheet		
Floor Finishes: Polished Concrete		
Floor Finishes: Ceramic Tile		
Floor Finishes: Liquid Applied		

C – Interiors – C30 Interior Finishes - C3010 Wall Finishes

Paint on Masonry

Significant cracking or failures in masonry partitions should be noted as structural deficiencies, but minor cracking and sealant repairs can be noted as part of masonry wall finishes.

Level of Action	Deficiency	Photo
Minor	Surface is intact but finish is deteriorated - paint	
Moderate	Efflorescence requiring extensive cleaning before refinishing	
Major	Systemic failure of finish, possible water intrusion - requires removal and replacement of finish.	
Replace	Structural damage likely. Investigate need for full replacement.	

C – Interiors – C30 Interior Finishes - C3010 Wall Finishes

Wallboard / Drywall

This is the most common system found in almost every building. It is important to capture capital improvement dollars for this system and not every scuff or dent since that will be covered under annual preventative maintenance and repairs. Note water damage and any comment on locations of any cracking including at windows and door frames.

Level of Action	Deficiency	Photo
Minor	Surface is intact but finish is deteriorated . Touch up paint is all that is needed.	
Moderate	Surface is damaged - patching of the surface is required prior to painting.	
Major	Cracking requiring patching and additional corrective repairs.	
Replace	Systemic failure of finish, possible water intrusion - requires removal and replacement.	

C – Interiors – C30 Interior Finishes - C3010 Wall Finishes

Wainscot

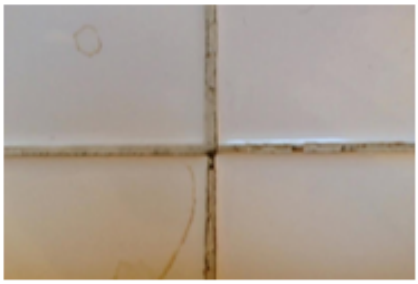
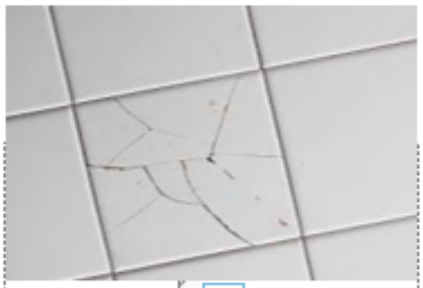
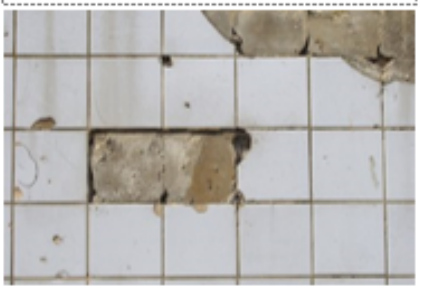
Wainscot is a finish applied onto of another finish. A tile wainscot is typical in restrooms or corridors, but this is assessed as a tile finish. Wainscot in this scenario typically refers only to vinyl wall covering, or wallpaper, along with acoustic, felt, or other misc. Surfaces mounted on the wall and not already covered in another category. Repairs are not typically made to this system, and any deficiencies are usually fully replaced or painted over.

Level of Action	Deficiency	Photo
Minor	Surface is intact but finish is deteriorated – paint.	
Moderate	NOT APPLICABLE	
Major	NOT APPLICABLE	
Replace	Systemic failure of finish, possible water intrusion - requires removal and replacement. Mold remediation as needed.	

C – Interiors – C30 Interior Finishes - C3010 Wall Finishes

Ceramic Tile

This system is frequently installed up only half the wall in restrooms and corridors which should be considered when estimating total building composition. Ensure care and cleaning instructions are being followed if a residue or discolored grout is observed on a newer system.

Level of Action	Deficiency	Photo
Minor	Grout is damaged or deteriorated.	
Moderate	NOT APPLICABLE	
Major	Major damage could be noted for a system with a high amount of broken tiles, but which does not require a full replacement.	
Replace	Tiles are cracked or in disrepair.	

C – Interiors – C30 Interior Finishes - C3020 Floor Finishes

Carpet / Soft Surface

Always note if the system is carpet tiles or broadloom carpeting. This impacts the replacement quantities needed as tiles can be replaced as needed. Carpet has a relatively low designed useful life of less than 10 years for high traffic areas. Look for a compression of the pile height, separation of seams, exposed pad, and pulling away at threshold and baseboards. Damage to broadloom carpet will most likely require replacement of the entire room.

Level of Action	Deficiency	Photo
Moderate	Repair carpet until the end of designed useful life if possible. Repairs for seams and thresholds along with regular preventative maintenance should mitigate most issues.	
Major	Damaged portions of broadloom carpet may require replacement of the entire section which should be considered in deficiency calculations.	
Replace	Worn or severely stained or starting to pull up / bubble.	

C – Interiors – C30 Interior Finishes - C3020 Floor Finishes

Resilient Tile

This material is also referred to as Luxury Vinyl Tile (LVT) or Vinyl Construction Tile (VCT). Wood grain is a common LVT finish and should not be mistaken for wood flooring. This is one of the most common materials encountered during a K-12 facility assessment. Discuss preventative maintenance plans with the owner which will inform remaining useful life assumptions for the report.

Level of Action	Deficiency	Photo
Minor	Sporadic number of tiles are lifting or cracked / broken and require replacement.	
Moderate	Large gaps are forming between tiles, but material could be salvaged.	
Major	The majority of tiles are lifting, cracking / broken and require replacement - the tiles or glue are NOT asbestos.	
Replace	The majority of tiles are lifting, cracking / broken and require replacement - the tiles or glue are asbestos – ***typically 9" x 9" tiles. Further investigation/testing will be required.*	

C – Interiors – C30 Interior Finishes - C3020 Floor Finishes

Resilient Sheet

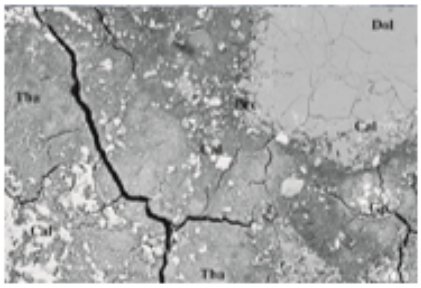
This system is evident by limited seams every 5-8 feet. Large public areas with a vinyl flooring design are also typically constructed with sheet vinyl. This system is similar to liquid applied flooring as it is difficult to replace small sections. Damage to this system will likey require a full replacement of all material in the area.

Level of Action	Deficiency	Photo
Moderate	NOT APPLICABLE (Picture shown is example of good condition)	
Major	Bubbling or other issues which could be fixed with specialized equipment without replacing system.	
Replace	Severely worn or seams separating.	

C – Interiors – C30 Interior Finishes - C3020 Floor Finishes

Polished Concrete

This system is encountered more often in 21st century construction. System requires less preventative maintenance than carpet or tile but still needs resealing every 5 years. Concrete is expected to crack. Any vertical displacement or tripping hazards are a more systemic issue to be noted in foundations and floor construction.

Level of Action	Deficiency	Photo
Minor	Surface feels rough and/or taking in moisture from the surface resulting in staining - prep and re-seal.	
Moderate	More extensive discoloring or staining requiring a grind and recoloring.	
Major	Significant cracking, but not differential - requires prep and crack filling prior to re-seal. Note gaps larger than 1/8". Hairline cracking is expected. If differential, refer to slab on grade of floor construction above	
Replace	Spalling and exposed rebar in addition significant cracking. Floor system should be releveled patched and repaired before being resealed. Hold additional costs in floor construction for more significant repairs.	

C – Interiors – C30 Interior Finishes - C3020 Floor Finishes

Liquid Applied

This flooring is evident from its lack of seams. It will likely be clear if the system is composed of individual tiles or poured in place. System can be cleaned, sealed, and maintained to prevent deterioration, but the only appropriate capital repairs are to fully replace missing or damaged material. An entire section may need replacement depending on the product.

Level of Action	Deficiency	Photo
Moderate	NOT APPLICABLE (Photo shown is in good condition)	
Major	NOT APPLICABLE (Photo shown should be stripped and replaced)	
Replace	Systemic blistering or severely worn traffic areas - strip and replace.	

C – Interiors – C30 Interior Finishes - C3020 Floor Finishes

Wood Sports Floor –

Confirm age and any existing warranties for these systems. Confirm preventative maintenance plan and any outside maintenance support for courts. Review HVAC and overall climate control in tandem with sports flooring if major issues are present. Theatrical stage flooring condition notes could also be held here based on client preference.

Level of Action	Deficiency	Photo
Moderate	Surface is damaged - requires sanding, repair, and re-coat / re-stripe.	
Major	Boards show signs of water damage and cupping. Separation of planks and failing sealant is present.	
Replace	Wood planks are deteriorated, separating, and multiple dead spots - replace floor. Signs of obvious water damage.	

C – Interiors – C30 Interior Finishes - C3030 Ceiling Finishes

Wallboard ceiling systems

These ceilings are typically encountered in restrooms and closets. Access panels may be present if MEP equipment is located above the ceiling. Unfinished wood ceilings are also typically classified as wallboard systems and recommended costs can be held to build out a full ceiling system.

Level of Action	Deficiency	Photo
Minor	Surface is intact but finish is deteriorated – paint.	
Moderate	Surface is damaged - patching of the surface is required prior to painting.	
Major	NOT APPLICABLE	Insert Image
Replace	Systemic failure of finish, possible water intrusion - requires removal and replacement. Any mold should be removed and affected surfaces replaced.	

C – Interiors – C30 Interior Finishes - C3030 Ceiling Finishes

Lay-in Ceiling Tile – Dropdown

A ceiling style with a fixed grid structure holding up tiles set in from above. Typical tiles have acoustic dampening properties, and the material is refered to as ACT (acoustical ceiling tiles). Grid space can be reserved for HVAC supply and return vents which can either be ducted or lead to open air space above the ceiling grid.

Level of Action	Deficiency	Photo
Minor	Stained or damaged ceiling tiles.	
Moderate	Diagonal bracing missing from grid.	
Major	Grid is not level, and sections need to be reset. Major damage could also indicate full replacement of all tiles if moisture damage or bowing is present.	
Replace	Grid is sagging with tiles compromised - requires replacement of system.	

C – Interiors – C30 Interior Finishes - C3030 Ceiling Finishes

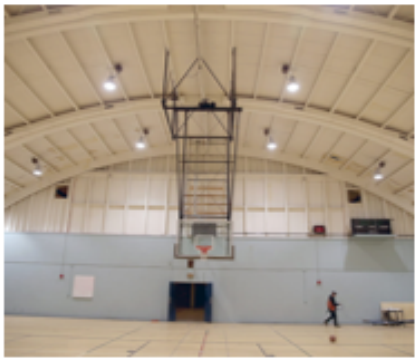
Glue Up Ceiling Tile –

In many scenarios this system should be recommended for replacement regardless of observed deficiencies. Material requires adhesives impacting IAQ, and existing systems are likely beyond designed useful life and installed with hazardous or asbestos containing materials.

Level of Action	Deficiency	Photo
Minor	Stained or damaged ceiling tiles are present, but system is in near perfect condition overall.	
Moderate	Major staining requiring numerous tile replacements.	
Major	Repair to ceiling surface behind tiles is needed before repairs can be made.	
Replace	Systemic failure of finish, possible water intrusion - requires removal and replacement. Ceiling structure repairs also assumed with this level of damage to ceiling finish.	

C – Interiors – C30 Interior Finishes - C3030 Ceiling Finishes

Painted Structure

Level of Action	Deficiency	Photo
Moderate	Refinishing needed above normal preventative maintenance.	
Major	Surface requires cleaning, sealing, or restoration before system can be refinished.	
Replace	Surface and finish are completely deteriorated and should be fully stripped, resurfaced, and refinished.	

ADA Assessment Check List

ADA ASSESSMENT				
	YES	NO	N/A	COMMENTS
There is at least 1 route from site arrival points that does not require the use of stairs.				
If parking is provided for the public, there are adequate number of accessible spaces provide (1 per 25).				
There is at least 1 van accessible parking space among the accessible spaces.				
The slope of the accessible parking spaces and access aisles is no steeper than 1:48 in all directions.				
The access aisles adjoin an accessible route.				
Accessible spaces are identified with a sign that includes the International Symbol of Accessibility.				
There are signs reading "van accessible" at van accessible spaces.				
If the accessible route crosses a curb, there is a curb ramp.				
Ramps are sloped no greater than 1:12.				
The main entrance is accessible.				
If the main entrance is not accessible, there is an alternative accessible entrance.				
The alternative accessible entrance can be used independently and during the same hours as the main entrance.				
All inaccessible entrances have signs with the International Symbol of Accessibility indicating the location of the nearest accessible entrance.				
The door is equipped with hardware, including locks, that is operable with one hand and does not require tight grasping, pinching, or twisting of the wrist.				
The operable parts of the door hardware are no less than 34" and no greater than 48" above the floor or ground surface.				
In locker rooms, there is at least one room with an ADA bench.				
There is a route to the accessible toilet room(s) that does not include stairs.				
The door is equipped with hardware that is operable with one hand and does not require tight grasping, pinching, or twisting of the wrist.				
The operable parts of the door hardware are no less than 34" and no greater than 48" above the floor or ground surface.				
The door can be opened easily (5 lbs. maximum force).				
Lighting controls are operable with one hand and without tight grasping, pinching, or twisting of the wrist.				
Mounted switches are no less than 34" and no greater than 48" above the floor or ground surface.				
Executive Summary Enter overall recommendations from above survey in the space to the right				