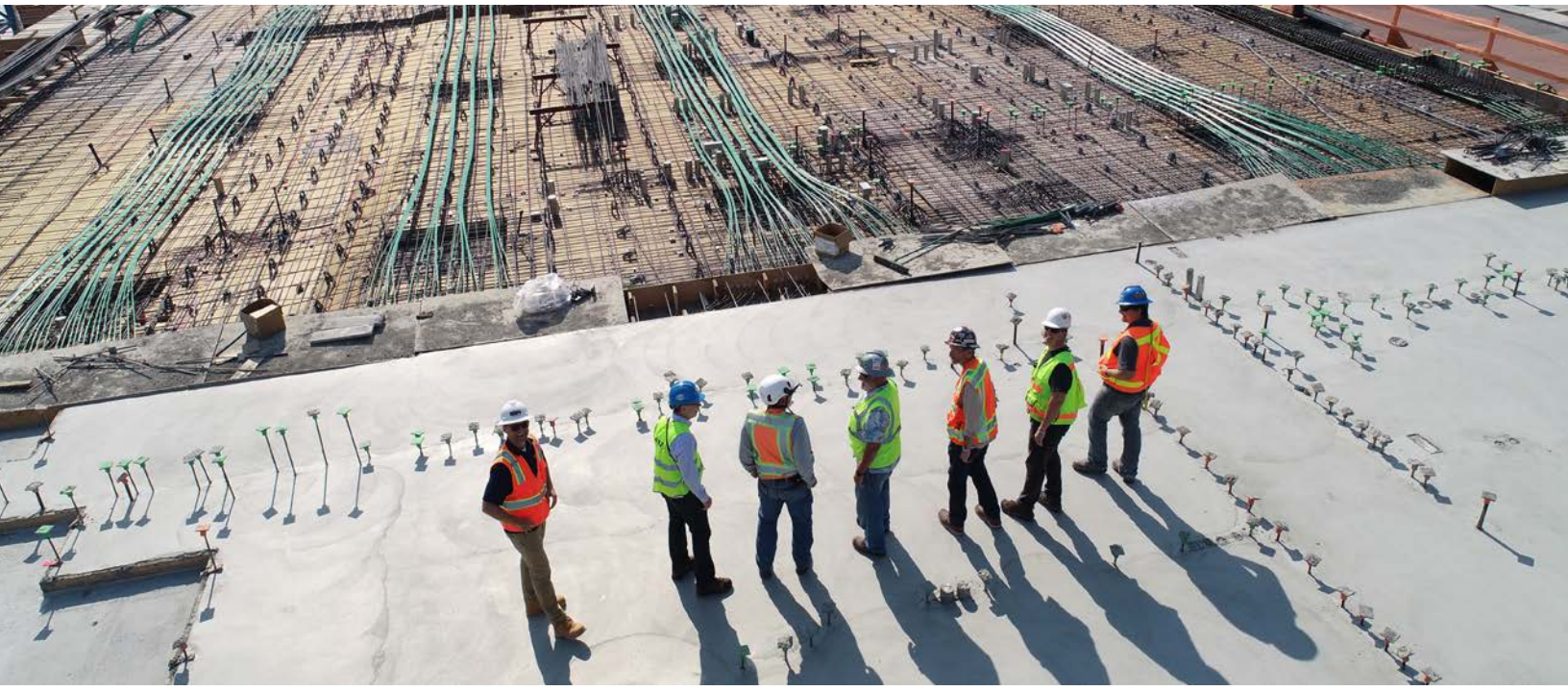
A Guide to Performing Facility Condition Assessments

By: Andrew Hauss



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Abstract

In this paper, Cumming Sr. Project Manager Andrew Hauss draws on his deep facility condition assessment experience to explain the key factors that should be considered when carrying out an assessment, what a proper assessment consists of, and how an assessment can help owners meet their short- and long-term needs and goals.

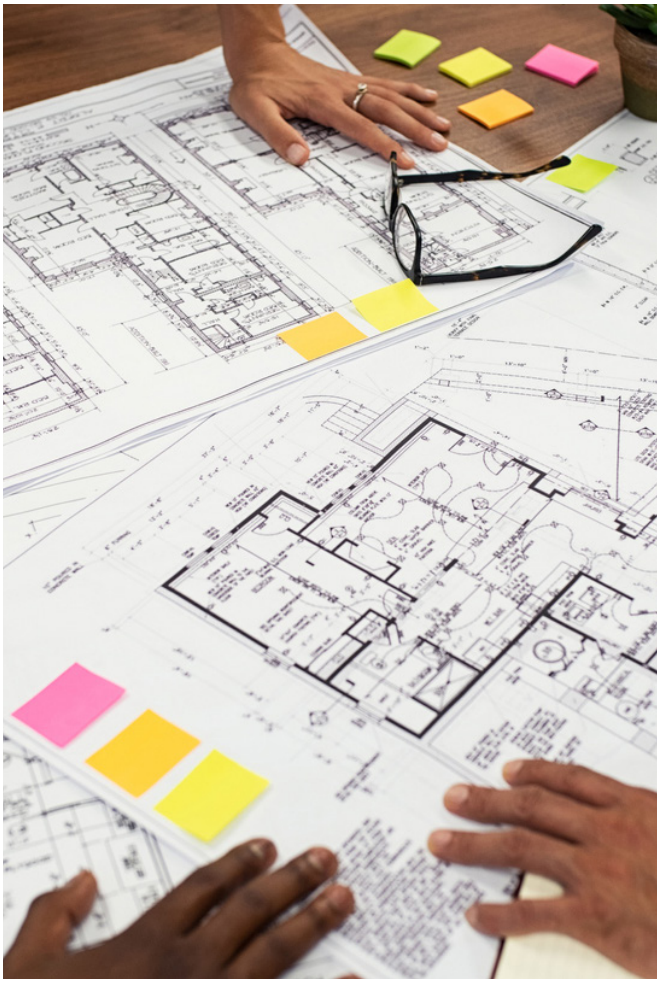
Overview

Since a facility condition assessment may be commissioned for any number of reasons, it is important for the consultant performing the assessment to first establish its purpose and goals, which in turn will help define its scope and depth. For example, if an assessment is being requested as part of the due diligence process prior to acquiring a property, the client may only be interested in knowing about any major issues that need to be considered before finalizing the purchase.

Other reasons for conducting a facility condition assessment include an owner wanting to know which improvements need to be made to bring the facility up to current standards, or which aspects of the facility need to be modified in order to meet its new intended purpose. The information developed during this process will assist the owner in determining the viability of investing in the current facility, or whether they need to look for an alternative location that would have less of a financial or operational impact. If the owner decides to make improvements to the current facility, the assessment provides the design team with much of the information they need for their initial planning efforts, thus saving the time and cost of waiting for the design team to research that information themselves.

A third reason to perform a facility condition assessment is to support and enhance long-term maintenance and budget planning. Building systems have limited lifespans depending on the quality of the existing materials/equipment and how they are maintained over time. Knowing the condition and expected remaining life of the systems, as well as potential replacement costs, can help the owner plan for future expenses. It is worth noting that this kind of assessment takes considerably more effort than one focused on establishing existing issues for a purchase.

In any case, it is important to understand the requirements related to the goals of the facility condition assessment, as this will ensure that the final report provides the information the owner needs to align their scope, schedule, and budget.



1. Defining the Scope

A low-level facility assessment typically includes:

- An executive summary of findings
- A summary of any existing documentation (drawings, reports, etc.)
- A facility condition summary (materials, structure, parking, etc.)
- A visual evaluation of the site and structure (site features, exterior walls, windows, doors, roof, etc.)
- A visual evaluation of facility systems/infrastructure (electric, mechanical, plumbing)
- Documentation and examples of findings
- Recommendations to address issues
- Rough order of magnitude estimate of cost to address issues (optional)

A higher level of facility assessment would include the above as well as some, or all, of the following:

- Square footage and use of areas
- Recommendations for potential use
- Potential for expansion
- Plan development / code analysis
- Accessibility compliance (three different levels of assessment)
- Analysis of facility systems/infrastructure and energy usage — requires past utility bills (testing optional)
- Documentation of existing equipment
- Condition of interior finishes
- Hazardous material reports
- Projections and prioritizations of costs over several years

Collecting and understanding the existing documentation — including one-line diagrams, floor plans, utility plans/billings, original construction documents, old reports and studies, and maintenance records — is valuable at any level of assessment. Typically, the assessment team will provide a list of documents needed for the assessment."

For a low-level assessment, the assessment team may only include an engineer, an architect, and the facility engineer. A high-level assessment is more involved and should include discussions with executives, directors, and staff to determine operational requirements and identify issues with the facility and/or its systems. Executives can provide insight as to how the assessment data will be used to manage the facility and set priorities. The staff can provide information that may not be apparent during a visual observation. Depending on the facility, the team may need to include specialty consultants for energy audits, aquatic areas, vertical transportation, accessibility, and hazardous material testing.

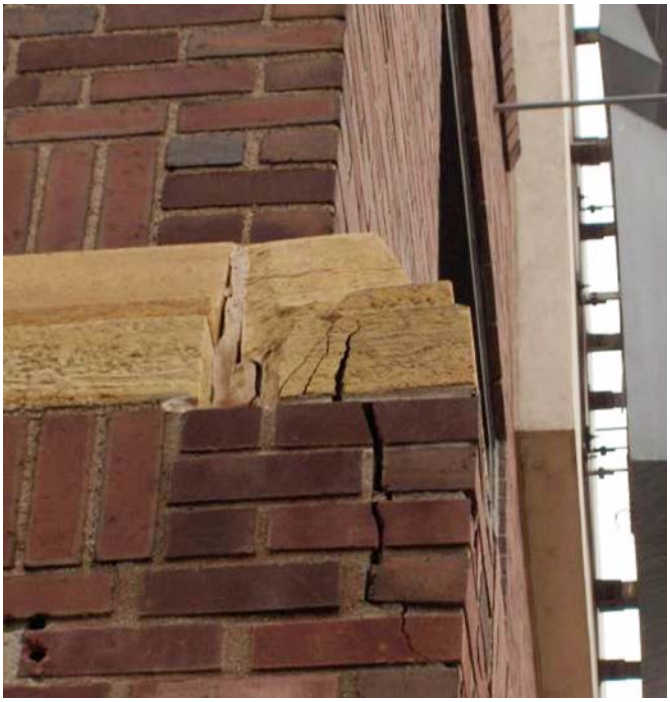
If the assessment is to include an accessibility survey, it is important to understand the extent of information that will need to be defined, as there are three tiers of this type of survey. Tier I is a limited-scope visual survey that excludes the taking of measurements or counts. Tier II is an abbreviated-scope survey that involves taking limited measurements and counts. Tier III is a full in-depth survey in full compliance with the Americans with Disabilities Act. Identifying these requirements early will help the assessment team be as efficient as possible.

Typically, code reviews are not part of assessments, as they can require extensive investigations and document development. If code reviews are required as part of the assessment, it is important for the team to understand the intended use of the information so the information provided meets expectations.

2. The Assessment

The assessment team will review existing documentation, meet with facility executives and staff, and walk the site to perform visual observations. The observations should include materials, operation, condition, and deficiencies. Depending on the owner's requirements, the scope typically includes:

- Site observation of parking counts, major ingress/egress issues, pavement/curb material and condition, sidewalks, plazas, patios, landscaping, site features, drainage issues, and obvious accessibility issues.
- Observation of the building's shell and core, including decks, exterior walls, insulation, doors, windows, curtainwall, flashings, joints, and roof system.
- Observation of building interiors, if included, such as fire separations, egress devices, moisture damage, equipment, elevators, finishes, hazardous materials, accessibility issues, fixtures, and evidence of mold.
- Hazardous materials are not typically part of the report unless identified by a previous special report, information from staff, or visual observation of potential asbestos-containing materials.
- Structural assessments are sometimes required if there have been issues or failures in the past, or if potential additions are being considered. In these cases, the assessment may need to go into much greater depth and document foundations, column types/spacing, roof framing, building loads, seismic zones, and previous repairs.
- Mechanical, electrical, and plumbing system observations, which are divided into the following:
  - HVAC air systems, including the function, age and maintenance level of equipment, pressurization, distribution, filtration, and air handling
  - HVAC room/zone control, including VAV boxes, radiant panels, and baseboard heat
  - HVAC piped systems, including water treatment, central plant, chilled water boilers, humidification, automation, and controls
  - Plumbing systems, including domestic water supply, domestic hot water production, distribution piping, sanitary sewer, gas systems, and fixture condition
  - Medical air and gasses
  - Electrical systems, including service, normal power, emergency power, and equipment (switchgear, circuit breakers, transformers, meters, generators, and lighting)
  - Life safety systems, including fire alarms, fire protection, and smoke control
  - Utilities including water, sewer, power, natural gas, and fuel oil
  - Vertical transportation, including elevators and escalators
  - Pneumatic tube systems



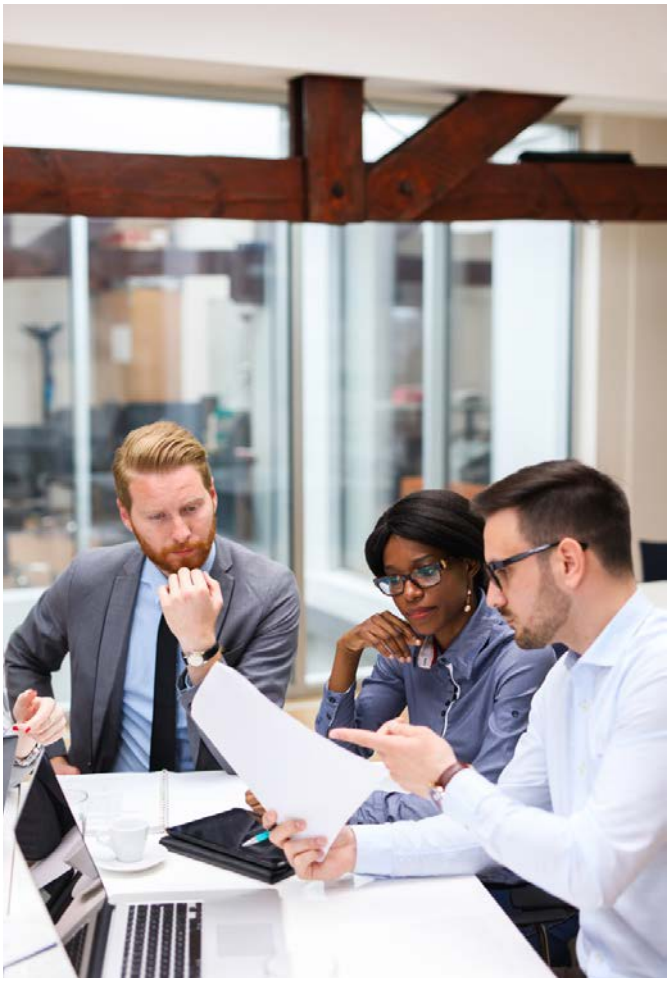
3. The Report

The report should contain information that was obtained through the review of existing documents as well as the site observations. Documentation should include the age, square footage, construction type, construction materials, floor-to-floor heights of the original structure, and any additions. Observations of deficiencies should be documented with example photographs, as well as an explanation of the nature and extent of the deficiency. Assessments of system deficiencies should explain their impact on life safety, energy usage, long-term viability, and potential options.

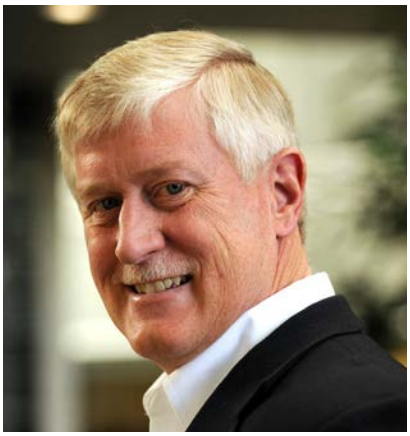
Taking observed conditions and expected remaining lifespans into account, a high-level report should prioritize, with timeframes, the order in which deficiencies and system replacement needs should be addressed. Typical timeframes are immediate (zero to one year), short term (one to three years), and long term (four years or more). Immediate timeframes are often assigned to life safety systems or facility components facing imminent failure. Deficiencies or replacements can have ballpark costs associated with them and be prioritized within the aforementioned timeframes to provide maintenance and budget guidance.

Some high-level reports require expected useful life (EUL) information, remaining useful life (RUL) information, and calculations based on a conditions index (CI) formula that captures the ratio of facility maintenance and repair costs to the overall replacement value of the facility. The CI formula, which places the facility in one of the following categories, is useful for determining if the facility should be maintained or replaced:

- Level 1: Excellent (CI is greater than or equal to 95%)
- Level 2: Good (CI is greater than or equal to 90% but less than 95%)
- Level 3: Fair (CI is greater than or equal to 65% but less than 90%)
- Level 4: Poor (CI is less than 65%)



Whatever the outcome, a thorough and reliable facility condition assessment provides the project owner with the information they need to properly prioritize their needs over both the short and long terms, and help ensure they are meeting their goals for years and even decades to come.



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Andrew Hauss is a licensed architect and senior project manager with more than 35 years of experience in the planning, design, and development of projects. He has a broad industry perspective, having worked as a designer, owner's rep, and consultant. Andrew has performed numerous facility condition assessments throughout his career and currently focuses primarily on large and complex healthcare assignments, although he has a diverse work history spanning numerous project types and sectors.