

SECTION 2-3: FACILITY CONDITION ASSESSMENTS

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2-3-00 POLICY

HHS facilities policy, in general, is to exercise responsible stewardship of its infrastructure. Linking facilities requirements to the budget decision-making process is a key element of stewardship, with facility condition assessments being fundamental to establishing facilities requirements. HHS specific policy relative to facility condition assessments is as follows:

- A. HHS land-holding OPDIVS will conduct visual facility condition assessments of their constructed assets (buildings and structures) at a minimum of once every five years to identify associated deficiencies.
- B. A “desk-top” assessment will be conducted every year in the off-years of the visual assessment cycle. The purpose of a desk-top assessment is to update the cost-basis of visual assessments, to add any deficiencies that have emerged since the last visual assessment, and to delete any deficiencies that have been mitigated since the last visual assessment.
- C. Condition assessment data will be reported in compliance with HHS ARIS (Automated Real Property Information System) data and data transport standards. Note that Condition Index (CI) is a required field for ARIS reporting purposes but that total Repair Needs is not. The CI reported shall be calculated as follows, and formatted on forms and reports as a percentage value:

$$(1 - (\text{total repair needs}/\text{plant replacement value})) \times 100$$

- D. Available capital will be invested in the maintenance, repair, renovation and construction of facilities consistent with condition assessment metrics, sound business practices, and HHS/OPDIV priorities. Among the top priorities is to reduce repair needs so as to achieve a condition that reflects comprehensive stewardship of Department assets. For classification purposes, ranges of CI will be:

Level 1: Excellent: CI \geq 95% and \leq 100%

Level 2: Good: CI \geq 90% and $<$ 95%

Level 3: Fair: CI \geq 65% and $<$ 90%

Level 4: Poor: CI $<$ 65%

HHS's goal is to achieve a minimum CI of 90 per every constructed asset in a land-holding OPDIV's owned portfolio.

- E. The Facilities Condition Assessment Program (FCAP) will be a pillar of the land-holding OPDIV facilities program as it is an essential investment decision-making tool for OPDIV and HHS senior management. CI will be one of the indicators used to grade OPDIV scorecards.

2-3-10 PROCEDURES

Consistent identification of repair needs is a key to an effective condition assessment program. The following elements are provided to assist in implementing an effective program and in linking it to a land-holding OPDIVs budget decision-making process. These elements are not intended to supersede policy or to limit OPDIV flexibility.

- A. ASTM standard E 2018-01 “Standard Guide for Property Condition Assessments: Baseline Property Condition Assessment Process” shall be considered in developing an assessment program.
- B. As a compliment to ASTM E2018-01, assessment and data quality control procedures shall follow the Guideline Specification for HHS Facility Condition Assessments attached as Exhibit X2-3-A.
- C. Assessment scope for reported CI shall include only physical deficiencies that exist at the time the assessment is conducted and should not include program related deficiencies (*i.e.*, deficiencies that require correction from a funding source other than facilities). “Repair needs” should be linked to existing defects. If a physical defect affects the mission or operation of a facility at the time the assessment is being conducted, then it should be considered to be a “repair need”. Potential defects that have not manifested into physical defects that affect mission or operation, but based on analysis of industry standard EUL/RUL data, will do so before the next scheduled assessment, should not be identified as a “repair need” since they are not reflective of the condition of the facility at the time it is being inspected. Layout alterations, additions, customer-requested improvements, or any other projects that are not linked to defects are not “repair needs”.
- D. Standard/recognized cost sources such as R.S. Means or DoD Cost Estimating Guide shall be used to estimate repair needs and plant replacement values.
- E. Plant Replacement Value (PRV) shall be the total cost, at current rates, for constructing existing assets to current construction standards using existing asset sizes and layouts. PRV shall not include personal property, *e.g.*, portable fixtures, furnishings, and equipment that are not part of the constructed fabric of the asset.
- F. Only include repair needs greater than a minimum threshold value of \$1,000.
- G. The total cost for each repair need, including both direct and indirect costs, shall be identified. Total cost shall include the rates/costs used for non-construction items associated with repair needs. Such items/rates may include, but are not limited to, Contingencies, Architects/Engineers fees, Pre-design & Design Fees, Contracting Fees, and Management Fees.
- H. All valid repair needs, regardless of priority, shall be used to calculate the CI value. Estimates of potential available budget or potential project timing, though they may be used in prioritization, are irrelevant and should be ignored when calculating CI.
- I. Replacements that have become necessary due to failure of aged or obsolete systems should be identified as repair needs. Allowances should be made for performing repairs or replacements with modern systems.
- J. The prioritization of deficiencies across an OPDIV’s portfolio shall be based on the careful consideration of the mission dependency and use of the constructed asset, as well as on the nature of the associated deficiencies and the risks associated with them. Hence, it is important that the assessment data includes the mission and use of the constructed assets as well as the nature

(category), severity of the deficiencies, and other prescribed attributes. It is this data set that facility planning/programming personnel shall rely on in developing projects, annual budget submissions, and out-year plans.

2-3-20 GUIDANCE AND INFORMATION

Guidance for developing effective condition assessment contracting and data collection procedures are contained in the Guideline Specification at Exhibit X2-3-A. This guidance is provided in recognition of the significant time and effort required to organize and/or contract for services, collect, validate, and document accurate condition assessment information and to calculate and report an accurate, reliable condition index. It is important for facility management personnel to recognize and consider that other facility management objectives, both at the OPDIV and Department levels, are supported by the assessment process. To realize maximum benefit, the process must be efficient and the data collected must be accurate, complete, and useful.

2-3-30 REPORTING REQUIREMENTS

OPDIV's are required to report CI for each constructed asset (buildings and structures) by November 30th as part of their annual ARIS data submission.

HHS FACILITY CONDITION ASSESSMENT PROGRAM ASSESSMENT GUIDANCE

*FACILITIES MANAGEMENT
BUSINESS PROCESS AND TECHNOLOGY PLANNING
FOR*



DEPARTMENT OF HEALTH AND HUMAN SERVICES (HHS)
FACILITY CONDITION ASSESSMENT GUIDANCE

The assessment guidance contained in this document is created specifically for the Department of Health and Human Services (HHS) landholding operating divisions (OPDIVs). It shall be used in conjunction with ASTM E2018-01 (produced by ASTM International); which is the current recognized standard for facility condition assessment. If discrepancies arise between this assessment guidance document and ASTM E2018-01, this HHS document shall be used. This guidance document is intended for use only when assessing assets that are reported by HHS to OMB and shall not be used for any other purpose. To the extent allowed by federal law, this guidance document shall be reproduced by and on behalf of HHS (including HHS contractors and tribal members whose tribe is operating a facility pursuant to an Indian Self-Determination Act agreement who must have access to this guidance document) and shall not otherwise be reproduced or used by or for any other organizations.

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1.0 Introduction

1.1 Document Use

This document is intended to be used by OPDIVs to help define appropriate scope of work documents for performing facility condition assessments at their facilities. In addition to requirements defined by the guide, OPDIVs will need to prepare a request for proposal and define OPDIV (or site) specific requirements. Sections of this guide that are highlighted within boxes may be used by HHS OPDIVs as necessary and may be inserted into specifications or Request for Proposals (RFPs) as required. Text written in italics is intended to be guidance information.

1.2 Objectives

The objectives of this guide are to:

Objective 1 - *Provide OPDIVs with a standardized template and suggested content for a visual assessment project. OPDIVs are required to perform visual assessment of each OPDIV owned & operated constructed asset at a frequency of no greater than five years. In addition, OPDIVs must maintain a Condition Index (CI) for each owned and operated constructed asset and report the CI to HHS OFMP annually. Maintaining a CI involves updating the capital repair projects list to account for completed and new projects as well as updating the estimated cost basis for each project. The purpose of the objective is for OPDIVs to utilize similar practices consistent with industry best-practices in order to streamline OPDIV efforts and so that results are uniformly superior.*

Objective 2 - *Define, for real property constructed assets owned and operated by HHS, the scope, level of detail, processes and practices for performing facility condition assessments (FCA) and generating condition index (CI) metrics by performing visual surveys, research and interviews.*

Objective 3 - *Define assessment and reporting methods and results so that they support and contribute to both Department and Federal requirements for reporting real property management information.*

Objective 4 - *Provide assessment results in useful formats, to include a written report that identifies repair needs and condition index values for each constructed asset and electronic data sets to allow recordkeeping, analysis and reporting.*

Terminology used throughout this guide and in ASTM E2018-01 is referenced in Appendix A.

The objective/purpose of the facility condition may be communicated to assessors as follows:

1.2.1 Purpose

The purpose of the Facility Condition Assessment is to:

1. Identify and communicate “repair needs” to operating departments (OPDIVs). The term “repair needs” means “the amount necessary to ensure that a constructed asset is restored to a condition substantially equivalent to the originally intended and designed capacity, efficiency or capability.” (FRPC Guidance for Real Property Inventory Reporting – Section 2.11).
2. Produce a “Condition Index” (CI) for each constructed asset. CI is a general measure of the constructed asset’s condition at a specific point in time. CI is calculated as the ratio of repair needs to “plant replacement value (PRV)”. The CI will be reported as a “percent condition” on a scale of 0% to 100% (positive whole numbers; for cases in which the calculation results in a negative number, the percentage should be reported as zero). The higher the CI the better the condition the constructed asset is in. The “Plant Replacement Value” is the cost of replacing an existing constructed asset at today’s standards. (see Section 3.7 for formula)

1.3 Limitations

Contractual and legal obligations are entirely beyond the scope of this guidance document. Neither the guide as a whole nor individual elements should be used in legal documents without HHS and/or OPDIVs first applying appropriate contractual and legal language and review processes. This applies to both internal and external (e.g.,: agreements with outside assessors or reviewers) uses.

The guide is a companion to HHS facility management policy documents. As such, it must be reviewed, revised and updated whenever policies are revised and/or re-interpreted.

Appendix C of this guide identifies many physical conditions that may exist in HHS constructed assets, but it does not describe every possible physical condition. HHS is encouraged to revise Appendix C of the guide as new common physical conditions are discovered in HHS constructed assets.

This guide does not replace the need for assessors to have completed suitable training for performing facility condition assessments and is not a substitute for such training.

This guide does not address safety concerns when performing visual assessments. It is the responsibility of the OPDIV and assessor using this guide to establish and define appropriate safety and health practices.

1.4 Anticipated Results

This guide will:

- *Describe and define the practice necessary for performing facility condition assessments of HHS constructed assets;*
- *Describe and recommend standard of care and practices for visual assessments and research;*
- *Describe and recommend protocols for communicating results in a manner meaningful to the OPDIVs and to the Department;*
- *Facilitate consistent FCA results.*

2.0 Assessor & Reviewer

The quality of a FCA is highly dependent on the qualifications of the assessment team. Improved assessment results are achieved by using both assessors and reviewers. Assessors and/or Reviewers may be either HHS staffs or contractors. Either resource must, however, meet all qualifications described in Section 2.1.

Ideally, these should be two functionally separate individuals or teams. Assessors and reviewers do not need to be organizationally independent from each other and are often part of the same company, team or organization.

The descriptions of the assessors and reviewers may be communicated as follows:

2.0 Assessor & Reviewer

The Assessor is the person or team that performs the visual assessments and records the results. The Reviewer is the person or team that checks the accuracy of the assessor's results and presentation of their findings.

2.1 Qualifications

Qualifications should include factors such as experience, education, training, certification, and professional registration/licensure in appropriate subjects. The following minimum qualification standards should be used and, in addition, each OPDIV should augment their standards to account for local factors such as asset type and scope (special functional use, asset size, age, complexity, etc.), and the OPDIV's risk tolerance level.

Each OPDIV will need to decide what characteristics demonstrate professional competence and compare this with the subject property type and scope (size, complexity, etc). For example, a shed may be assessed by an individual with a basic background in construction (e.g., building engineer), while a high-rise building should be assessed by an experienced Registered Professional (e.g., professional engineer).

The qualification requirements of the assessors and reviewers may be communicated as follows:

<p>2.1 Qualifications</p> <p>2.1.1 Qualifications of the Assessor:</p> <p>An Assessor shall have a minimum of 1 year professional experience and demonstrated professional competence in the scope element for which he/she is responsible for assessing (e.g., architectural experience for the assessment of physical building elements and mechanical engineering experience for the assessment of mechanical systems, etc).</p> <p>2.1.2 Qualifications of the Reviewer:</p> <p>A Reviewer shall have a minimum of 3 years professional experience and demonstrated professional competence in the performance of facility condition assessments. In addition, the Reviewer should have acceptable qualifications and experience commensurate with the subject property type and scope (size, complexity, etc). Suitable experience combined with Registered Architect (RA), Professional Engineer (PE) licensure/registration, or Chartered Surveyor (MRICS) designations will demonstrate professional competence for Reviewers.</p>

3.0 Assessment Scope

3.1 Standard of Care

[ASTM E2018-01, Section 3 also discusses Standard of Care]

OPDIVs should balance the costs and time demands involved in performing condition assessments. It is unreasonable for OPDIVs to expect assessors to identify every deficiency in minute detail or undertake exhaustive analysis where not warranted.

Standard of care requirements may be communicated to assessors as follows:

<p>3.1 Standard of Care</p> <p>Assessors and reviewers shall perform condition assessments using the degree of care and skill ordinarily exercised by licensed professionals practicing in the same or similar locality under similar conditions.</p> <p>Assessors shall make visual observations, review records, and conduct interviews to enable them to identify and describe repair needs that are required at the asset.</p> <p>Assessors shall gather sufficient information to provide reasonably-accurate opinions of costs for repair needs (20% error against actual costs shall be considered to be reasonably accurate). Assessors are not expected to enter every single room or area of a building, but should review sufficient areas to obtain the necessary information to identify and report repair needs.</p> <p>Representative observations may be used when assessing conditions at similar locations and construction types. Where repetition is apparent and sampling can be justified, Assessors may perform representative sampling techniques and extrapolate the results.</p>

3.2 Scope Elements

Consistent assessment scope definitions are necessary for the generation of consistent assessment results that provide useful metrics to allow direct comparison of different constructed assets.

The following scope of services should be included in a facility condition assessment.

3.2 Scope Elements

Assessments shall identify and evaluate physical deficiencies. In addition, assessments shall identify and discuss existing warranties, provide opinions of costs for repair needs, and provide a comparison of estimated useful life to remaining useful life. In addition, a checklist for the elements that should be reviewed during an assessment is provided in Appendix B.

[If OPDIVs use the reference checklist, include Appendix B in the Scope of Services document]

3.2.1 Site Systems:

Identify the extent of the site systems and visually observe the systems for each of the following (if present). Site assets that are not reportable as 'constructed assets' to OMB are considered to be land elements. Land elements are not included in Federal Real Property Council (FRPC) reporting requirements. Constructed site assets not reportable under FRPC rules should be separately identified if they are to be assessed for HHS or OPDIV internal use.

Adjoining assets - if part of building or within the boundary, include:

Drainage: Identify and observe the condition of the storm water collection and drainage systems and note any problems with the removal of storm water and evidence of poor curbing and gutter systems.

Site Elements: Identify and observe the condition of site elements such as sidewalks, plazas, patios, decks, retaining walls, irrigation systems, fountains, lighting, signage, ponds, and recreational facilities, and note any physical deficiencies.

Utilities: Identify and observe the condition of on-site utility systems that are owned and operated by HHS. Examples may include water systems, wastewater treatment systems, power generation systems, gas supply pipelines, telecommunications lines, etc. Exclude utilities that are the responsibility of utility companies. Review operating costs against age and use of the systems. Assessors should not access concealed spaces (e.g., underground services, manholes or utility pits).

[While OPDIVs may elect to assess land elements, repair needs should not be included in CI metrics. Land elements are therefore excluded from this assessment scope.]

3.2.2 Structural Systems:

Identify and observe the condition of the structure for each constructed asset. Observe the substructure, including the foundation system, superstructure, or structural frame (floor and roof framing systems). Observe the structural elements for visible signs of distress (wall cracking, displacement, etc.). Perform seismic evaluations (Probable Maximum Loss (PML) Studies) in high earthquake risk areas that have been identified according to NEHRP guidelines.

Observations of the building's structure generally are to be limited to vantage points that are on-grade or from readily accessible balconies or rooftops. In order to adequately understand the structure, where drawings are available, assessments should include a detailed drawing review. The assessment should not include a review of original design assumptions, calculations, or structural design analyses. Entering of crawl or confined space areas is excluded (however, the assessor should observe conditions to the extent easily visible from the point of access to the crawl or confined space areas), determination of previous substructure flooding or water penetration unless easily visible or if such information is provided.

Observations of the building's structure generally are to be limited to vantage points that are on-grade or from readily accessible balconies or rooftops. In order to adequately understand the structure, where drawings are available, assessments should include a detailed drawing review. The assessment should not include a review of original design assumptions, calculations, or structural design analyses. Entering of crawl or confined space areas is excluded (however, the assessor should observe conditions to the extent easily visible from the point of access to the crawl or confined space areas), determination of previous substructure flooding or water penetration unless easily visible or if such information is provided.

3.2.3 Building Exterior Elements:

Identify and observe the condition of the building envelope including facades and/or curtain wall system, glazing system, exterior sealants, exterior balconies, windows, doors, stairways, parapets, canopies, etc and record physical deficiencies, including masonry pointing and sealant repair requirements. Identify the apparent or reported ages of building exterior elements and, combined with visual observations, identify the remaining useful life (RUL).

High level access either by ladders, lifting machines or exterior suspended platforms or slings is excluded. Observations of the building's exterior generally are to be limited to vantage points that are on-grade or from readily accessible balconies or rooftops.

3.2.4 Roof Systems:

Identify and observe the condition of the roof systems, accessories and details (exposed membrane and flashings) including, parapets, slope, drainage, etc. Identify previous repairs, evidence of significant ponding, or roof leaks. Observe flashing and penetration details for condition and conformance with standard accepted industry practices. Inquire as to the age of the roof and whether a roof warranty is reported to be in effect. Identify the apparent or reported ages of roof systems and, combined with visual observations, identify the remaining useful life (RUL).

Assessors should not walk on pitched roofs, or any roof areas that appear to be unsafe, or roofs with no built-in access. Assessments should exclude determining roofing design criteria.

3.2.5 Interior Finishes and Appliances:

Identify and observe the condition of floor, wall, ceiling and door finishes of typical internal areas, including, but not limited to, lobbies, corridors, assembly areas, and restrooms. Observe the condition of building amenities or other special features that are secured to the building fabric or are major components (such as pools, spas, fountains, major kitchen appliances, etc). Portable items (such as furniture or portable kitchen appliances) are beyond the scope of the condition assessment process. Assessors are not required to activate or operate appliances or fixtures. Assessments should exclude determining or reporting STC (Sound Transmission Class) ratings, and flammability issues/regulations.

3.2.6 Fire and Life Safety:

Identify and observe the condition and capabilities of structural fire protection, means of egress, fire suppression systems, and fire detection and alarm systems. Risks to general health and safety shall also be observed and recorded. Identify and observe the condition of life safety and fire protection systems, including sprinklers and standpipes (wet or dry, or both), fire hydrants, fire alarm systems, water storage, smoke detectors, fire extinguishers, emergency lighting, stairwell pressurization, smoke evacuation, etc. Identify the apparent or reported ages of life safety/fire protection systems and combined with visual observations identify the RUL. Assessments should exclude determining NFPA hazard classifications, classifying, or testing fire rating of assemblies.

3.2.7 Plumbing:

Identify and observe the condition of the plumbing systems, including piping (sanitary, storm and supply water), fixtures, and domestic hot water production, etc. Identify the apparent or reported ages of plumbing systems where available and, combined with visual observations, identify the RUL. Assessment should exclude determining adequate pressure and flow rate, fixture quantities, or pipe size verification.

3.2.8 Mechanical Systems:

Heating Systems: Identify and observe the condition of the heat generating and distribution systems, previous replacements/upgrades, the apparent level of maintenance exercised, and whether a maintenance contract is reported to be in place. Identify the apparent or reported ages of heating systems and, combined with visual observations, identify the RUL. The assessment should include a review of operating costs in relation the age and use of the heating systems. Observation of equipment in concealed spaces is excluded (*e.g.*, interiors of chimneys, flues or boiler stacks).

Cooling and Ventilation Systems: Identify and observe the condition of air conditioning and ventilation systems including air handlers, cooling towers, chillers, package units, split systems, thermal storage equipment, distribution systems, etc. Identify previous replacements/upgrades, apparent level of preventive maintenance exercised, and whether a maintenance contract is reported to be in place. Also identify and observe the condition of refrigeration equipment for cold storage systems, special computer cooling equipment, etc. Identify the apparent or reported ages of air conditioning and ventilation systems and, combined with visual observations, identify the RUL. The assessment should include a review of operating costs in relation the age and use of the air conditioning and ventilation systems. Observation of concealed spaces is excluded (*e.g.*, air plenums). Process-related equipment is also excluded from the assessment scope.

3.2.9 Electrical:

Identify and observe the condition of the electrical service and electrical distribution system including distribution panels, transformers, meters, emergency generators, lighting systems, security systems, telecommunications systems and other such asset-related equipment or systems. Observe types of wiring, energy management systems, emergency power, lighting protection, etc. Identify the apparent or reported ages of electrical systems and, combined with visual observations, identify the RUL of the electrical components. Assessments should exclude the removal of electrical panel and device covers, electrical testing, EMF issues, or operating of any electrical devices. Process-related equipment is also excluded from the assessment scope.

3.2.10 Vertical and Horizontal Transportation:

Identify and observe the condition of elevator cabs, escalators and moving walkways, equipment and controls in machine rooms, hoistways, cabs, communication equipment and lobby finishes. For safety reasons, assessors shall be escorted at all times by qualified elevator inspectors or maintenance personnel within machine rooms or hoistways. Identify the apparent or reported ages of vertical transportation and horizontal transportation systems and, combined with visual observations, identify the RUL. Assessments should exclude unescorted access of machine rooms and hoistways and entering concealed spaces such as elevator/escalator pits or shafts.

3.2.11 Accessibility Issues

Perform cursory level site reconnaissance to observe major systems that may not comply with the applicable accessibility requirements. This should also include a review of accessibility into and around facilities, including access from parking areas and nearby public transit routes. While HHS OPDIVs are not required to make each of their existing facilities accessible, they are obligated to comply with Section 504's program accessibility standard. See 45 C.F.R. 85.42. Under Section 504's accessibility standard, an HHS OPDIV is obligated to operate each program or activity so that, when viewed in its entirety, it is accessible to and usable by persons with disabilities. In meeting that requirement, an OPDIV would not be required to take any action that would result in a fundamental alteration or undue financial and administrative burden.

[OPDIVs should note that it may be necessary to seek legal counsel for Accessibility Issues.]

3.3 Identification of Deficiencies & Repair Needs

Instructions on identification and reporting of repair needs may be communicated to assessors as follows:

3.3 Identification of Deficiencies & Repair Needs

3.3.1 Questionnaire

The assessor shall generate and provide {OPDIV}, occupant/user, or both, with a pre-survey questionnaire. The purpose of this questionnaire should be to obtain details of available records (including drawings) and to provide an indication of construction/installation dates and recent maintenance history. Examples of the type of information that should be requested are provided in Sections 3.3.3 and 3.3.4.

[Commercially-available assessors will have their own questionnaire, which is normally issued to the asset/building managers for them to provide advance information prior to site visits.]

3.3.2 Visual Observations

During the site visit, the assessor shall record the general physical condition of the constructed assets and identify physical deficiencies observed or reported. Assessors shall use pre-defined checklists to collect all necessary assessment information¹. Testing, measuring, or preparing calculations to determine adequacy, capacity, or compliance with any standard is typically not required. However, sufficient quantities should be estimated and recorded to allow Assessors to identify repair needs and formulate opinions of costs.

Assessors shall document physical deficiencies and repair needs with photographs. Photographs should include examples of each repair need as a minimum. Excessive photographs of typical systems and components that do not help document repair needs should be avoided.

[See Appendix B for details of “necessary assessment information”]

3.3.3 Interviews

Prior to the site visit(s), {OPDIV} will identify those individual(s) that are knowledgeable of the physical characteristics, maintenance, and repair of the property and available for interview. During the assessment interviews, assessors shall inquire about:

- Approximate ages of systems
- Previous repairs and replacements and their costs
- Preventive maintenance details and frequencies
- Pending repairs and improvements
- Frequency of major repairs and replacements
- Ongoing problems or issues related to physical condition or building use (e.g., known roof leaks or inadequate heating/cooling). Avoid questions about availability of space or items considered to be “desired”.
- Existence of ongoing or pending litigation related to physical condition.

The Assessor shall comply with ASTM E2018-01, Section 7.7.

3.3.4 Maintenance History Reviews

Where available, {OPDIV} will provide the following information for review by assessors. This information shall be requested in the pre-survey questionnaire (see Section 3.3.1).

- Certificate of Occupancy
- Safety inspection records
- Warranty information
- Records indicating the ages of systems such as roofing, paving, plumbing, heating, air conditioning, electrical, etc.
- Historical costs for repairs, improvements, replacements, etc.
- Description of future work and contracts/proposals for executed and planned capital projects.
- Outstanding code violations.
- Previous assessments and studies and the status of any previously-identified repair needs.
- Drawings and specifications (as-built or construction).

Assessors may gather information from previous facility condition assessment reports. However, the assessor should exercise care when relying upon this information. Assessors shall comply with ASTM E2018-01, Section 3.5 for reliance on previous information.

3.3.5 Expected Useful Life (EUL) Matrix

When the annualized cost to maintain a building system or component exceeds its annualized replacement cost, then it has exceeded its expected useful life (EUL). In these circumstances a suitable repair need should be identified, which will usually be replacement of the system or component.

The following organizations have published standard guides for use in calculating EUL data for various building systems and components.

- Building Owners & Managers Association (BOMA)
- RS Means
- Building Cost Information Service (BCIS)

Assessors shall use these guides when identifying EUL information. Assessors shall make adjustments to the standard EUL data to reflect individual conditions, such as location, exposure, levels of maintenance, etc.

Assessors should also identify systems and components that are likely to reach the end of their expected useful life during the assessment forecast period or before the next planned assessment (see Section 3.8.1). The unexpired life should be recorded as the RUL, and a repair need should be identified and triggered at the end of the RUL.

[Repair needs may not simply reflect physical deficiencies but may be required due to age and maintenance costs. Abbreviated EUL data from recognized organizations are represented in Appendix D.]

3.4 Describing Deficiencies & Repair Needs

[ASTM E2018-01, Section 10 discusses producing an understandable assessment.]

The consistent identification of repair needs is a key element of an effective condition assessment program. See Section 3.6 and Appendix C for guidance relative to categorizing, and prioritizing repair needs. This guidance is provided to assist in implementing an effective condition assessment program and linking it to an OPDIV's budget decision-making process. It is not intended to supersede policy or limit OPDIV flexibility.

The assessment results are also only valid at the point in time at which the assessor's observations and research were performed.

Instructions on how to describe repair needs may be communicated to assessors as follows:

3.4.1 Understandability

For each material physical deficiency, Assessors shall identify one or more repair need, which may include recommending further research or testing, or both, if necessary. The assessor should provide sufficient detail (*i.e.*, location within asset, work required, opinion of cost, and the reason for the repair need) so that {OPDIV} can formulate an outline scope of work for the repair need without needing to revisit the asset.

Ideally, OPDIVs should communicate their desired report format that best meets their own individual preferences and operational requirements. OPDIVs should provide the desired report headings to the assessors. These headings typically include the following:

- *Executive Summary (including summarized repair needs and metrics)*
- *Scope of Services*
- *System Description, Conditions, Recommendations and Photographs*

In the absence of specific requirements, report format requirements may be communicated to assessors as follows:

<p>3.4.2 Report Formats</p> <p>Assessors shall provide written reports in accordance with ASTM E2018-01, Section 10.</p>

Classification and organization of repair needs can help OPDIVs run reports that present and summarize condition assessment data in a consistent manner.

Common classification requirements may be communicated to assessors as follows:

<p>3.4.3 Common Classification</p> <p>Assessors shall associate one of the following classifications with each identified repair need.</p>

Type of Repair Need	Common Classification Reference
Physical Repair Needs	Provide Uniformat II (Level 3) reference, (e.g., B2010 Exterior Walls, B3010 Roof Coverings, C3010 Wall Finishes, D3030 Cooling Generating Systems, D5010 Electrical Service & Distribution, etc).
Code-related Repair Needs	Provide relevant code name and clause number, (e.g., National Fire Protection Association – NFPA, International Building Code – IBC, Local Codes, etc).
Accessibility Repair Needs	Provide relevant clause reference from Americans with Disabilities Act Guideline clause (ADA-AG) or Fair Housing Act (FHA).

3.5 Costing Repair Needs

The consistent calculation of costs associated with repair needs is critical to providing information that allows for direct comparison of CI metrics.

Instructions on how assessors should prepare consistent opinions of costs for repair needs may be communicated as follows:

<p>3.5.1 Requirements</p> <p>When calculating Repair Needs costs, Assessors shall:</p> <ul style="list-style-type: none"> - Identify the total cost for each repair need. - Only include physical deficiencies, not program-related deficiencies. - Only include ‘repair needs’ greater than the minimum threshold value of \$1,000. If there are similar separate repair needs that can be grouped and are below this threshold requirement, but collectively total over \$1,000, such items should be included as one grouped item. - Identify and include replacements that have become necessary due to failure of aged or obsolete systems. Allowances should be made for performing repairs or replacements with modern systems. - Identify and include the rates/costs used for non-construction costs associated with “repair needs” using standard rates issued by each OPDIV. These rates may include but are not limited to Contingencies, Architects/Engineers fees, Pre-design & Design Fees, Contracting Fees, and Management Fees.

3.5.2 Acceptable Cost Sources

Assessors shall use the following sources to provide acceptable opinions of costs for repair needs:

- RS Means, DoD Estimating Guide or other nationally recognized cost estimating standard
- Actual historic costs adjusted for inflation and location (*i.e.*, recent costs incurred for similar work).
- Contractor's actual quotations

3.6 Classification of Repair Needs

It is not the intent of the facility condition assessment program to bring an existing building or structure into full compliance with the latest building code. The purpose of this section is to assist in providing uniformity in the classification of deficiencies.

The use of a facility generally determines its life-safety and health risk. The classification of buildings and structures or portions thereof is based on the purpose for which the building or structure is used. Use groups, as defined below, shall be used to determine the appropriate deficiency classification; provided found in Appendix C.

In order to allow assessors to provide consistent priorities for each repair need, the following classes shall be communicated by the OPDIV to the Assessor; and the OPDIV shall assign each asset to one of these classifications.

3.6 Classification of Repair Needs

3.6.1 Asset Classifications

{OPDIV} has classified each constructed asset into one of the prescribed categories. The Assessor shall reference these categories when assigning priorities to each repair need. [See Appendix D - FRPC codes for "predominant use categories" of buildings and structures.]

A list of deficiencies represents the work necessary to bring the facility into a proper and acceptable state of repair so that it will maintain and enhance the OPDIVs mission and its work environment.

3.6.2 Maintaining Integrity of Deficiency Definitions

Assessors shall classify deficiencies and repair needs as objectively as possible. In no case shall a higher classification be assigned to increase the likelihood that a deficiency will be funded. The integrity of the system must be maintained through professional objectivity.

Instructions need to be provided by OPDIVs to assessors explaining how deficiencies and repair needs should be classified (e.g., prioritized). The deficiency classification system may be communicated to assessors as follows:

3.6.3 Deficiency Classifications/Prioritization

It is strongly recommended that repair needs be classified into one of three categories as follows. While it is not required that OPDIVS use these letter-type codes, the coding schemes used must support reporting of deficiency details in these three summary groupings when requested by the Department.

THE FOLLOWING CLASSIFICATIONS ('S', 'A' & 'MR') SHOULD BE CONSIDERED TO BE REPAIR NEEDS AND SHOULD BE INCLUDED IN CI CALCULATIONS:

Classification 'S'- Projects for immediate implementation to correct hazardous life safety and health deficiencies.

Classification "A" - Projects to correct accreditation and Federal regulation related deficiencies. At the OPDIV's discretion, this category may be further subdivided into:

- A1 Deficiencies that are identified in an accreditation report such as AAALAC and JCAHO.
- A2 Deficiencies that are not in compliance with Federal or Departmental regulations or local codes.

Classification 'MR' - Projects for repair, replacement, or maintenance. At the OPDIV's discretion, this category may be further subdivided into:

- MR1 Deficiencies requiring repair, replacement, or maintenance that may result in an interruption of facility operations if not corrected.
- MR2 Deficiencies requiring repair, replacement, or maintenance that have minimal impact on operations that can be abated through OPDIV maintenance until the deficiency can be corrected.

THE FOLLOWING CLASSIFICATIONS SHOULD NOT BE CONSIDERED TO BE REPAIR NEEDS AND SHOULD NOT BE INCLUDED IN CI CALCULATIONS:

IMPROVEMENT PROJECTS - user requested or otherwise - are not to be considered to be repair needs.

3.7 Metrics – Calculation and Reporting

Instructions to assessors on how to calculate CI metrics for each constructed asset may be communicated as follows:

3.7.1 Condition Index

For each constructed asset, Assessors shall calculate and report the Condition Index (CI), as follows:

- *CI Formula*—Use the following formula to calculate a CI value for each constructed asset:

$$CI = (1 - (\text{Repair Needs}/\text{Plant Replacement Value})) \times 100.$$

- CI values shall be formatted as a percentage on forms and reports. All valid (*i.e.*, Class 'S', 'A' & 'MR') repair needs, regardless of priority, should be used to calculate CI values. Estimates of potential available budget or potential project timing, though they may be used in prioritization, should be ignored when calculating CI.
- CI field shall be formatted per ARIS specifications for data transfer.

3.8 OPDIV-Defined Scope Information

3.8.1 Required Information [ASTM E2018-01, Section 4 discusses required information]

As the requirements for each OPDIV and location are different, OPDIVs will need to provide certain information to assessors prior to performing assessments. The following master list includes items that an OPDIV should include in an assessment briefing/RFP.

Information may be communicated to assessors as follows:

3.8 {OPDIV} Supplied Information
3.8.1 Timeline Requirements:
* Critical contract performance dates: Contract Award: _____ Start Date: _____ Site Visit(s): _____ Submit Report(s): _____
* Planned Assessment Frequency: Every _____ Years
* Start Year for assessment results: 2____. <i>[This is typically the current year if the FCA is completed before June 30; or following year if the FCA is completed after July 1.]</i>
* Forecast period for assessment results: _____ Years <i>[e.g., 1, 3, 5, 10 or 20-year forecast period. A 10-year forecast period is generally the industry standard. Alternatively, if funding for assessments is limited, the forecast period may equal the assessment frequency.]</i>

3.8.2 Constructed Asset details
* Number of assets: _____
* Location of each asset: [Provide List]
* Type/Use of each asset: [Provide List]
* Size of each asset: [Provide List]
* Number of floors for each asset: [Provide List]
* Brief description of property construction: [Provide List]
* Approximate age of each asset: [Provide List]
* Plant Replacement Value (PRV) for each constructed asset: [Provide List]

[If PRV is unknown it may be necessary to instruct the assessor to estimate these values as part of the Condition Index (CI) calculations.]

[This information can be effectively presented to Assessors in a tabular format]

3.8.3 Access Restrictions
* Site contact for each asset: [Provide List of Names and Contact Details]
* Security & identification requirements (e.g., badges): [Describe Requirements]
* Working hour restrictions: [Text or List (if different for each asset)]
* Office space availability: [Text or List (if different for each asset)]

[This information can be effectively presented to Assessors in a tabular format]

3.8.4 Availability of background information
* Drawing availability: [Provide List of Drawings per Asset]
* Maintenance history availability: [Provide List of Documents per Asset]

[This information can be effectively presented to Assessors in a tabular format]

3.9 Technology Requirements

OPDIVs are required to report CI results to HHS in a format that can be uploaded into the HHS ARIS system. While most assessment software packages should be able to satisfy this requirement, OPDIVs should also evaluate how they want to use the assessment results to plan and manage capital projects and how they want to manage assessment information (e.g., OPDIV ability to manipulate repair needs, priorities, costs, produce reports, etc).

Most commercially-available assessors prefer to use their own proprietary assessment software systems. If these are required, OPDIVs will need to specify their own technology requirements. If OPDIVs use their own in-house systems, details, training, and access will need to be provided to assessors.

Software requirements may be communicated to assessors as follows:

<p>3.9 Technology Requirements</p> <p>Assessment information shall be collected and stored within an automated data-processing system that allows secure real-time access and remote manipulation of information.</p> <p>As a minimum requirement, Assessor-supplied software should be capable of providing the following functions:</p> <p>Calculate CI Information per Constructed Asset</p> <ul style="list-style-type: none">* Export CI Information to HHS ARIS system* Enter & Alter Classifications/Prioritizations of Repair Needs* Enter & Alter Costs for Repair Needs* Enter & Alter Repair Need Status information (e.g., is it planned, in design, completed)* Obtain and View Repair Need Information and Photographs* Produce Pre-defined and User-defined Queries and Reports
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If required, OPDIVs should also define the following for the Assessor:

- Required interaction with existing IT systems
- Photograph parameters (file format and size, naming protocol, file storage location, etc)
- Data Entry Methods
 - On-site / Web / Remote
- Reporting Methods
 - Required pre-defined queries and reports
 - Required user-defined queries and reports
- Communication
 - Web Capability requirement
 - Intranet Capability requirement
- Ownership of Information (OPDIV or Assessor). Typically OPDIVs should have ownership rights for all information produced by outside assessors and be able to distribute assessment information and results freely without hindrance.

APPENDIX A

Glossary

This section provides definitions, descriptions of terms, and a list of acronyms, where applicable, for the words used for defining condition assessment processes.

- A list of industry-standard terms may be found in Section 2 of ASTM E2018-01.

Additional terms:

- *AAALAC*, *n*— Association for Assessment and Accreditation of Laboratory Animal Care International.
- *Assessor*, *n*—the entity or individual that is responsible for the observance of and reporting on the physical condition of constructed assets in accordance with this guide. The assessor generally is an independent contractor; however, the assessor may be an HHS employee. The assessor may be an individual that is both the assessor and reviewer as described in Section 6.
- *ARIS*, *n*—HHS data-processing system used to capture information on constructed assets.
- *ASTM*, *n*—American Society for Testing and Materials (www.astm.org).
- *BCIS*, *n*—see www.bcis.co.uk
- *BOMA*, *n*—see www.boma.org
- *Chartered surveyor*, *n*—designation reserved for a person professionally qualified, examined, and chartered by the RICS (www.rics.org) to perform facility condition assessments.
- *Condition Index*, *n* (*CI*) —the second of four performance measures established by the Federal Real Property Council. It is defined in Section 2-2 of the HHS Facilities Program Manual.
- *Constructed asset*, *n*—buildings and structures (not land) that are required to be reported by HHS to OMB
- *de minimis*, *adj*—describes repair needs with costs below the HHS defined threshold value (\$1,000 as of January 2006).
- *Facility Condition Assessment (FCA)*, *v*—the process by which a person or entity observes a property, interviews sources, and reviews available documentation for the purpose of developing an opinion and reporting current physical condition (similar to ASTM definition of “property condition assessment”).
- *HHS*, *n*—Department of Health and Human Services.
- *JCAHO*, *n*—Joint Commission on Accreditation of Health Care Organizations
- *OMB*, *n*—United States Government Office of Management and Budget
- *OPDIV*, *n*—Operating department of Health and Human Services (*e.g.*, National Institutes of Health (NIH), Centers for Disease Control and Prevention (CDC), Indian Health Service (IHS), and Food and Drug Administration (FDA)).

- *Opinions of costs, n*—determination of costs, a preliminary budget, for a suggested repair need (similar to ASTM definition of “opinions of probable costs”)
- *NEHRP, n*—The National Earthquake Hazards Reduction Program (<http://www.nehrp.gov/>)
- *Plant Replacement Value, n (PRV)*—shall be the total cost, at current rates, for constructing existing assets to current construction standards using existing asset sizes and layouts. PRV shall not include fixtures, furnishings and equipment that are not part of the constructed fabric of the asset.
- *PML, n*—Probable Maximum Loss
- *Remaining useful life (RUL), n*—the unexpired amount of time in years that an item, component or system is estimated to function. RUL may be calculated as the EUL (in years) minus the Age (in years). RUL values should be adjusted to reflect actual conditions observed during visual assessments (See ASTM E2018-01 for EUL definition).
- *Repair need, n*— means the amount necessary to ensure that a constructed asset is restored to a condition substantially equivalent to the originally intended and designed capacity, efficiency, or capability. It is an opinion as to a course of action to remedy or repair a physical deficiency. Such an opinion may also be to conduct further research or testing for the purposes of discovery to gain a better understanding of the cause or extent of a physical deficiency (whether observed or highly probable) and the appropriate remedial or reparatory response. A suggested repair need may be preliminary and does not preclude alternate methods or schemes that might be more appropriate to remedy the physical deficiency or that may be more commensurate with HHS requirements. Also, repair needs only include physical deficiencies, not program-related deficiencies. If a physical deficiency affects the mission or operation of a facility, then it should be considered to be a repair need and the appropriate system or component should either be repaired or replaced. Repair needs that have not yet manifested into physical deficiencies that affect mission or operation, but, based on analysis of industry standard EUL/RUL data, will do so before the next scheduled visual assessment, should also be identified as a repair need. Layout alterations, additions, improvements, or any other projects that are not linked to defects are not repair needs.
- *Reviewer, n*—the individual that both exercises responsible control over the assessor and who reviews the results of the FCA prior to delivery to HHS/OPDIVs.
- *RS Means, n*—see www.rsmeans.com
- *Visual survey, v*—the assessor’s site visit of the constructed asset, consisting of non-intrusive visual observations, survey of readily accessible, easily visible components and systems of the constructed asset (similar to ASTM definition of “walk-through” survey).

APPENDIX B

Typical Assessment Elements

The following list highlights the elements typically reviewed during a facility condition assessment. A contracted assessor should provide their own formatted checklist for use during an assessment (see Section 3.3). It is not intended to be a finite list, simply a list to assist OPDIVs define the elements that should be reviewed during the assessment process.

These information points should be collected by Assessors and are used to aid the identification of repair needs and formulation of realistic opinions of costs for performing the identified repair needs.

Site Features

- Type/Material
- Age
- Approximate Quantity (Area/Length)
- Condition
- Previous Repairs

Structural Systems

- Foundation Type
- Bearing Pressures
- Foundation Wall Type
- Waterproofing & Underdrain Methods
- Grade Slab/Structural Slab Construction and Thickness
- Column Type (& Spacing)
- Elevated Floor Slab Construction
- Roof Framing/Support System
- Post-Tensioning (if present)
- Previous Repairs
- Building Loads
- Seismic Zone
- Wind Loads
- Condition
- Previous Repairs

Roof Systems

- Roof Type
- Age
- Surface Material
- *Manufacturer*
- *Substrate*
- Insulation
- Deck
- Slope
- Warranty
- Previous Repairs
- Leak History
- Roof Area
- Flashing Details
- Parapet Wall/Coping
- Drainage (Inc. # Drains)
- Overflow Protection

- Gutters & Downspouts
 - Condition
 - Previous Repairs
- Other (Check - Weathering, Cracking, Ponding, Open Seams, Blistering, Wrinkling, Missing Ballast, Holes/Tears, Fasteners, Flashing, Pitch Pockets, Walk Pads)

Building Exterior Elements

- Exterior Wall Type
- Insulation Type & Thickness
- Wall Areas (per elevation)
- Sealants Type & Spacing
- Window Type
- Glazing Type
- Window Quantity/Area (per elevation)
- Window Sealants Type
- Window Installation Date
- Leaks
- Condition
- Previous Repairs
- Other (Check- Cracking, Displacement, Weep Holes, Settlement, Trim Rot, Efflorescence, Corrosion)

Interior Finishes & Appliances

- Floor Finish Type
- Wall Finish Type
- Ceiling Finish Type
- Lighting Type
- Finish Surface Area (Quantities)
- Door Type (Inc. Hardware)
- Major Kitchen Appliances
- Major Components (*e.g.*, pools, spas, fountains, etc)
- Condition
- Previous Repairs

Fire and Life Safety

Means of Egress & Life Safety

- Use Group
- Type of Construction
- Occupant Load
- # Exits/Floor
- Exit Remoteness
- Exit Lights
- Emergency Lights
- Battery Back-up
- Max. Travel Dist
- Stairs (Width, Doors & Fire Resistance)
- Fire Door Rating
- Signage
- Penetrations
- Maintenance of Egress Areas (Obstructions)

Emergency Power System

- System Type
- Emergency Power Generator
- Generator Load Bank Tests
- UPS System
- Age of Systems
- Condition
- Previous Repairs

Fire Alarm System

- System Type
- Annunciator Panel Manufacturer & Location
- Pull Station Location and Type
- Strobes/Bells Location and Type
- Fire Extinguishers Location and Type
- Age of Systems
- Previous Fire Alarm Test Results
- Condition
- Previous Repairs

Automatic Fire Suppression System

- Sprinkler System Type
- Sprinklered Locations
- Fire Pump Type and Suitability
- Age of System
- Condition
- Previous Repairs

Standpipe System

- Wet-pipe Standpipes
- Valves & Connections
- Street Level Connections (siamese)
- Fire Pump Type and Suitability
- Age of Systems
- Condition
- Previous Repairs

Smoke Management Systems

- Type of System
- Smoke Dampers Type and Location
- Stairwell Pressurization Fans

Mechanical Systems

Common Elements (for all types of equipment):

- Manufacturer
- Model No
- Age of Systems
- Condition
- Previous Repairs

Heating Systems

- Heating Source (Steam/Hot Water/Direct Gas-Fired/Electric)
- Boiler Type (Fuel-Oil/Nat. Gas/Electric)
- Boiler Product (Steam/Hot Water)
- Boiler Capacity
- Boiler Type: (Fire Tube/Water Tube/Cast Iron/Other)
- Boiler Feed Water System
- Water Treatment
- Condensate Return System
- Heat Exchangers

Heating Water Pumps

- Type
- Motor HP

Heating Water Piping

- Material (Black Steel/Copper, Welded/Soldered/Victaulic)
- Insulation
- Risers (# of Risers & Size)

Cooling and Ventilation Systems

Condenser Water System

- Cooling Tower Type (Crossflow/Counterflow, Induced Draft/Forced Draft, # Cells)
- Nominal Capacity
- Equipment Served
- Piping Type
- Insulation
- Water Treatment

Pumps (Condenser & Chilled Water)

- Type
- Motor HP

Chilled Water System

- Chiller Type (Centrifugal/Reciprocating, Hermetic/Open, Water Cooled/Air Cooled)
- Nominal Capacity
- Refrigerant
- Expansion Tank
- Heat Exchanger

Chilled Water Piping

- Material (Black Steel/Copper, Welded/Soldered/Victaulic)
- Insulation
- Risers (# of Risers & Size)

Air Handling Units

- Typical Capacity
- Motor HP
- Coils (Chilled Water/Heating Water/Steam/Other)
- Drain Pans
- Casing
- Outside Air (Central/Per AHU/Other)

- Starter (X-Line/VFD/RV)
- System Type (Constant Volume/VAV/FPMB/Multi-zone)
- Self-Contained/Split System
- Ducts (Metal/Other)
- Insulation

Heat Pumps

- Air/Water Cooled
- Capacities

Fan Coil & Induction Units

- Capacities
- Type (2-Pipe/4-Pipe/Other)
- Controls
- Drain Pans

Fans

- Capacities
- Motor HP
- Starter (X-Line/VFD)

Exhausts

- Capacities
- Motor HP

Electrical Systems

Service Entrance

- Utility Company
- Transformer (Vault, Pad Mounted, Pole Mounted)
- Transformer ownership
- Service Characteristics (Voltage, Phase, Watts)
- Service Conductors (Busway, Underground Ducts, Aerial Drop, Copper, Aluminum, Concrete Encased, Other)
- Meter Ownership

Main Electrical Room

- NEC Clearances
- Fire Protection
- Storage/Piping in Room

Main Switchgear

- Bus & Mains Rating
- GFI Protection
- # of Distribution Sections
- # of Feeder Devices
- Feeder Breakers/Switches

Motor Control Center

- # of Sections
- # of Devices
- Bus Rating
- Type of Protective Devices (Circuit Breakers / MCP's/Fusible Switches)

- Type of Starters (Magnetic / VFD)

Distribution Panels

- Bus Ratings
- Feeder Devices (Breakers / Switches)
- # of Feeder Devices
- Types of Loads Served

Panelboards

- Overcurrent Devices (Circuit Breakers / Fusible Switches / Plug Fuses)
- # Devices
- Bus Rating

Transformers

- Type
- Ratings (Voltage, Phase, Watts)

Power Distribution

- Conduit
- Conductors (Copper / Aluminum)
- Insulation (Thermoplastic / Rubber / Cloth / Other)
- Busway (Feeder / Plug-In)

Emergency Power Systems

- Generator Type & Fuel Source (Diesel / Nat. Gas / Gasoline)
- Characteristics (Voltage, Rating)
- Tank Capacity

Security Systems

- Cameras
- Monitors
- Sequencers
- Recording Capabilities
- Electric Door Locks
- Card Readers/Keypads
- Internal Communications

Lighting Protection System

- Material (Copper / Aluminum)

Plumbing Systems

Domestic Cold Water

- Incoming Water Pipe Size & Material
- Insulation
- Booster Pumps
- Motor HP
- Controls
- Capacity
- Distribution Piping Material

Domestic Hot Water

- Water Heater (Central/Distributed)
- Fuel (Steam/Nat. Gas/Electric/Other)

- Style (Instantaneous/Remote Storage/Self-Storage)
- Heating Capacity
- Tank Capacity
- Circulating Pumps
- Motor HP
- Hot Water Piping Material

Storm Drainage

- Roof Drains
- Overflow Drains
- # of Risers
- Piping Material
- Sump Pumps
- Motor HP

Sanitary Drainage

- # of Risers
- Piping Material
- Ejector Pumps
- Motor HP

Vertical & Horizontal Transportation

- Speed
- Capacity
- Type
- Manufacturer
- Age
- Machine Room Characteristics & Equipment
- Hoistway Characteristics & Equipment
- Car Characteristics & Equipment

Accessibility

Accessible Entrance

- Location & Setting
- Parking
- Entrances

Access to Goods and Services (Horizontal Circulation)

- Interior Doors
- Corridors
- Stairs

Access to Restrooms

- Entrance Doors & Lobbies
- Signage
- Stalls
- Appliances

Elimination of Remaining Barriers

- Drinking Fountains
- Telephones
- Mail Boxes
- ATM's, etc

APPENDIX C

Typical Estimated Useful Life Data

Repair needs may not simply reflect physical deficiencies but may be required due to age and maintenance costs. When the annualized cost to maintain a building system or component exceeds its annualized replacement cost, then it has exceeded its expected useful life (EUL). In these circumstances a suitable repair need should be identified, which will usually be replacement of the system or component.

Several organizations have published standard guides for use in calculating EUL data for various building systems and components. Assessors should use these guides when identifying EUL information. Assessors should make adjustments to the standard EUL data to reflect individual conditions, such as location, exposure, levels of maintenance, etc.

Abbreviated EUL data from the following organizations is provided as follows:

System / Component (EUL in # Years)	BOMA	RS Means	BCIS	Average
EPDM Roof	15	20	25	20
Asphalt Built-up Roof	25	28	35	29
Modified Bitumen (2-ply)	20	25	20	22
Asphalt Shingles (Average)	22	20	N/A	21
Slate Roof	75	70	75	73
Curtain Wall – Glass	30	N/A	45	38
Curtain Wall – Metal	40	35	45	40
Exterior Windows (wood frame)	30	40	35	35
Exterior Windows (aluminum frame)	30	50	45	42
Vinyl Flooring	12	18	15	15
Exterior Roll-up Doors	N/A	35	25	30
Interior Doors – Hollow Core	N/A	30	35	33
Carpet (Broadloom)	5	8	15	9
Interior Paint (Walls)	5	5	N/A	5
Suspended Ceiling	25	20	25	23
Fire Alarm System	10	15	N/A	13
Sprinkler System	25	20	35	27
Air-Conditioners (Package)	15	20	15	17
Air-Handling Units (Packaged)	25	15	N/A	20
Boilers (Gas)	25	30	20	25
Furnaces	18	15	N/A	17
Unit Heaters (Electric)	10	15	N/A	13
Fans (Axial)	20	20	15	18
Fan Coil Units	20	15	N/A	18
Ductwork	30	N/A	35	33
Package Chillers (Reciprocating)	20	20	15	18
Cooling Towers (Metal)	18	15	N/A	17
Condensers (Air-Cooled)	20	15	N/A	18
Pumps (Base-Mounted)	25	20	15	20
Electric Transformers	30	30	N/A	30
Automatic Transfer Switch	25	18	N/A	22
Emergency Generator	20	25	N/A	23
Interior Light Fixtures	20	20	15	18
Elevator (Hydraulic)	15	N/A	30	23
Elevator (Traction)	20	N/A	30	25
Domestic Water Heaters	10	15	N/A	13
Exterior Pavement	30	25	25	27

APPENDIX D

FRPC Predominant Use Category Codes for Buildings and Structures

Excerpted from “Quick Guide – Predominate Use Categories and Codes”, *Real Property Inventory – Interim User Guidance for FY2005 Reporting*, Federal Real Property Council, page 33 of 65. OPDIVs and Assessors should verify values shown on these tables with current FRPC publications at the time assessments are performed.

Building Predominant Use Categories

Code	Predominant Use Category
10	Office
14	Post Office
21	Hospital
22	Prison (Government Owned only)
23	School
29	Other Institutional Uses
30	Family Housing
31	Dormitories/Barracks
41	Warehouses
50	Industrial
60	Service
72	Communications Systems
73	Navigational and Traffic Aids
74	Laboratories
80	All Other

Structure Predominant Use Categories

Code	Predominant Use Category	Valid Units of Measure
12	Airfields Pavements	Square Yards
13	Harbors and Ports	Square Yards
15	Power Development and Distribution	Each, Linear Feet
16	Reclamation and Irrigation	Each, Linear Feet
18	Flood Control and Navigation	Each, Linear Feet
40	Storage (other than buildings)	Each, Linear Feet
50	Industrial (other than buildings)	Each, Linear Feet
60	Service (other than buildings)	Each
65	Space Exploration Structures	Each
66	Parking Structures	Square Yards
70	Research and Development (other than Labs)	Each
71	Utility Systems	Each, Linear Feet, Miles
72	Communications Systems	Each, Miles
73	Navigation and Traffic Aids (other than buildings)	Each
75	Recreational (other than buildings)	Each
76	Roads and Bridges	Lane Miles, Square Yards
77	Railroads	Miles
78	Monuments and Memorials	Each
79	Miscellaneous Military Facilities	Each
82	Weapons Ranges	Each
80	All Other	Each, Lane Miles, Linear Feet, Miles, Square Yards