BEYOND
SMART CITIES
SUSTAINABLE SITES - GREEN BUILDING TECHNOLOGY
TRAINING PROGRAM
FOR GREEN BUILDING AND SUSTAINABILITY SPECIALISTS
KRISHNAJI PAWAR,LEED AP BD+C,GSAS CGP,ISO 14001:2015,GCP
GREEN BUILDING SPECIALIST CURRICULUM

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SMART CITIES
ENVIRONMENTAL SITE ASSESSMENT
PREREQUISITE
FOR GREEN BUILDING AND SUSTAINABILITY SPECIALIST
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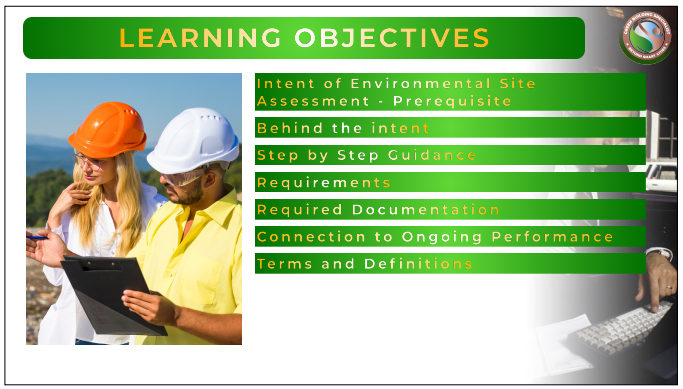

LEARNING OBJECTIVES
Intent of Environmental Site Assessment - Prerequisite
Behind the intent
Step by Step Guidance
Requirements
Required Documentation
Connection to Ongoing Performance
Terms and Definitions

SS- PR - DESIGN

ENVIRONMENTAL SITE ASSESSMENT

Intent

To protect the health of vulnerable populations by ensuring that the site is assessed for environmental contamination and that any environmental contamination has been remediated.

Requirements

Conduct a Phase I Environmental Site Assessment as described in ASTM E1527-13 (or a local equivalent) to determine whether environmental contamination exists at the site. If contamination is suspected, conduct a Phase II Environmental Site Assessment as described in ASTM E1903–11 (or a local equivalent). If a site is contaminated, remediate the site to meet local, state, or national environmental protection agency region residential (unrestricted) standards, whichever are most stringent.

Potential Technologies & Strategies

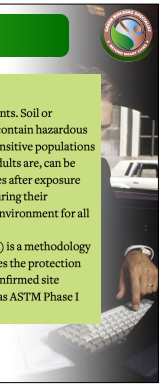
- ☑ Contract with an environmental professional to prepare and implement a remediation plan. This may include additional investigation and must be completed with the approval of environmental regulatory agencies as necessary.sediment traps and sediment basins.

Implementation

REQUIRED DOCUMENTATION

Documentation	No contamination, as confirmed by Phase I ESA (or local equivalent)	No contamination, as confirmed by Phase II ESA (or local equivalent)	Contamination, as confirmed by Phase II or III ESA (or local equivalent)
Phase I ESA or local equivalent assessment	X	X	X
Phase II or III ESA or local equivalent assessment		X	X
Description of contamination and remediation			X
Verification that site has been remediated to residential use standards			X

BEHIND THE INTENT



BEHIND THE INTENT

Many sites may contain contaminants that could harm the health and well-being of future occupants. Soil or groundwater may have been polluted by previous uses, for example, or existing structures might contain hazardous materials, such as lead. Contaminants can harm the health of future users of the site, especially sensitive populations such as children or hospital patients. Children, who are more sensitive to toxic substances than adults are, can be afflicted with learning disabilities, chronic and acute respiratory diseases, cancer, or other illnesses after exposure to toxins. People using health care facilities have greater sensitivity to environmental stressors during their illnesses and treatments. Identifying and remediating contaminated sites can help ensure a safe environment for all occupants.

The American Society for Testing and Materials (ASTM) environmental site assessment (ESA) is a methodology for investigating and identifying a site's environmental contamination. This prerequisite promotes the protection of human health by requiring an ESA (or local equivalent) and, if necessary, remediation of any confirmed site contamination. Project teams may use local assessment standards if they are at least as stringent as ASTM Phase I and II ESAs.

STEP-BY-STEP GUIDANCE

STEP 1. DETERMINE WHETHER PHASE I ESA (OR LOCAL EQUIVALENT) IS REQUIRED

- ASTM Standard E1527–05, Section 4.8, considers a Phase I ESA valid for 180 days; projects that have a valid assessment should skip to Step 3.
- If a site's Phase I ESA is more than 180 days but less than one year old, the standard requires that updates be made to certain sections.
- If a Phase I ESA is more than one year old, a new assessment is required.

STEP 2. CONDUCT PHASE I ESA (OR LOCAL EQUIVALENT)

- Contract with an environmental professional to complete the Phase I ESA.
- If a local equivalent assessment is being considered, the environmental professional must ensure that any local equivalent assessment is equivalent to ASTM E1527–05 (see *Further Explanation, Local Equivalent Assessments*).
- For projects in the U.S. that are following the All Appropriate Inquiries Final Rule, this regulation is considered consistent with ASTM E1527–05 (see *Further Explanation, Scope of the ESA Phases*).

STEP 3. DETERMINE WHETHER PHASE II ASSESSMENT IS REQUIRED

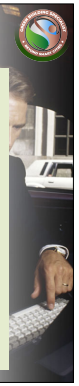
- If the Phase I (or local equivalent) report indicates that no contamination is suspected, retain the full report, with its findings and conclusions. No further action is necessary.
- If the Phase I report indicates that a "recognized environmental condition" (REC) exists, or the report recommends additional assessment activities (e.g., because of potential or historical conditions, data gaps), then a Phase II ESA (or local equivalent assessment) is required.

STEP 4. CONDUCT PHASE II ASSESSMENT (OR LOCAL EQUIVALENT)

Contract with an environmental professional to complete the Phase II ESA.

- If a local equivalent is being considered, the environmental professional must ensure that it is equivalent to ASTM E1903–11 (see *Further Explanation, Local Equivalent Assessments*).
- Projects with known contamination may wish to move directly to a Phase III ESA (or local equivalent). Although not required for LEED certification, this further assessment helps determine the scope of remediation process and is more extensive than a Phase II ESA. For the purpose of this prerequisite, a Phase III fulfills the requirement for a Phase II ESA. See *Further Explanation, Scope of the ESA Phases*.

STEP-BY-STEP GUIDANCE



STEP 5. DETERMINE WHETHER REMEDIATION IS REQUIRED

- If the Phase II (or Phase III, if the project team chooses) assessment or local equivalent indicates soil or groundwater contaminant levels that exceed regulatory criteria, or the report recommends additional action based on the qualitative or quantitative findings of the investigation, remediation may be necessary.
- An environmental regulatory agency (local or national) may also require remediation based on the findings.

STEP 6. REMEDIATE SITE

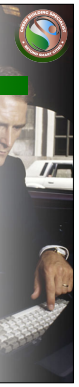
- Contract with an environmental professional to prepare and implement a remediation plan. This may include additional investigation and must be completed with the approval of environmental regulatory agencies as necessary.
- Collect documentation indicating that the site is "ready for reuse" from the environmental professional or regulatory agencies as necessary. The site must meet the residential (unrestricted) use standards for the Environmental Protection Agency (EPA) region (or local equivalent) or be otherwise suitable for the project's intended use in the project's EPA region. Proper engineering and institutional use controls, ongoing remediation, and monitoring may be acceptable, provided these activities meet the requirements set forth by the local or national environmental regulatory agency.
- EPA's residential (unrestricted) use standards represent the most rigorous level of cleanup; local equivalent standards must have a similar level of rigor. After remediation, land use must be suitable for residential, school, or hospital use.

REQUIREMENTS

Conduct a Phase I Environmental Site Assessment as described in ASTM E1527-13 (or a local equivalent) to determine whether environmental contamination exists at the site. If contamination is suspected, conduct a Phase II Environmental Site Assessment as described in ASTM E1903-11 (or a local equivalent).

If a site is contaminated, remediate the site to meet local, state, or national environmental protection agency region residential (unrestricted) standards, whichever are most stringent.

CONNECTION TO ONGOING PERFORMANCE



NONE

REQUIRED DOCUMENTATION

Documentation	No contamination, as confirmed by Phase I ESA (or local equivalent)	No contamination, as confirmed by Phase II ESA (or local equivalent)	Contamination, as confirmed by Phase II or III ESA (or local equivalent)
Phase I ESA or local equivalent assessment	X	X	X
Phase II or III ESA or local equivalent assessment		X	X
Description of contamination and remediation			X
Verification that site has been remediated to residential use standards			X

REFERENCED STANDARDS

- ASTME1527-13. Standard. Practice for Environmental Site Assessments : Phase1 Environmental Site Assessment Process
- ASTM E1903—11 Standard Practice for Environmental Site Assessments: Phase II Environmental Site Assessment Process: astm.org
- 40 CFR Part 312: Standards and Practice for All Appropriate Inquiries; Final Rule: epa.gov/brownields/aai

TERMS AND DEFINITIONS

Site assessment an evaluation of an area's above ground and subsurface characteristics, including its structures, geology, and hydrology. Site assessments typically help determine whether contamination has occurred and the extent and concentration of any release of pollutants. Remediation decisions rely on information generated during site assessments.

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