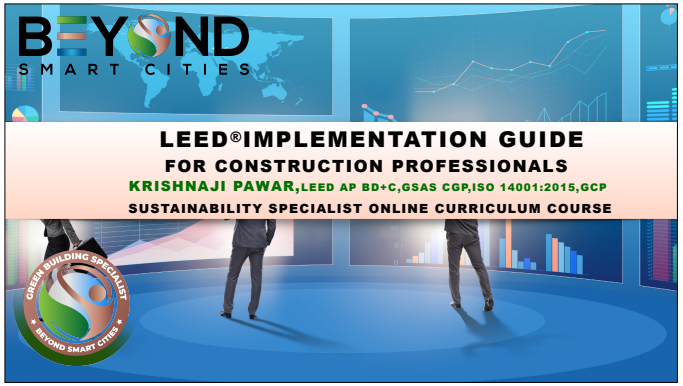
BEYOND
SMART CITIES
LEED®IMPLEMENTATION GUIDE
FOR CONSTRUCTION PROFESSIONALS
KRISHNAJI PAWAR,LEED AP BD+C,GSAS CGP,ISO 14001:2015,GCP
SUSTAINABILITY SPECIALIST ONLINE CURRICULUM COURSE
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BEYOND SMART CITIES

BEYOND
SMART CITIES
GENERAL CONTRACTORS AND LEED:CONTRACTOR'S ROLE
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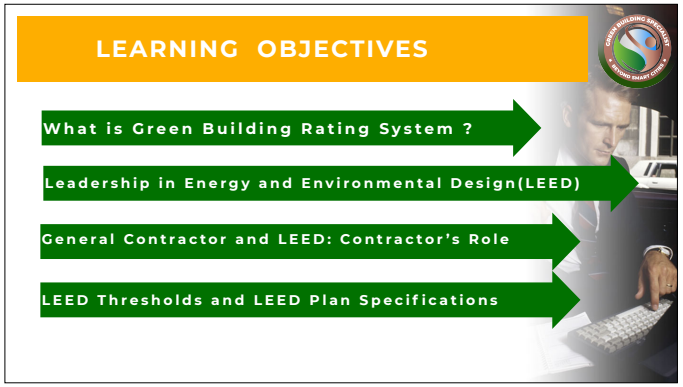

LEARNING OBJECTIVES
What is Green Building Rating System ?
Leadership in Energy and Environmental Design(LEED)
General Contractor and LEED: Contractor's Role
LEED Thresholds and LEED Plan Specifications

WHAT IS A GREEN BUILDING RATING SYSTEM?

- A Quantitative System to evaluate and measure the environmental impact of a building on the environment.
  - Site
  - Water
  - Materials
  - Energy
  - Indoor Environment
- It evaluates the "whole building"
  - Integration of systems is crucial to achieving Green
- The Most Widely Used Rating System is LEED

GREEN BUILDING RATING SYSTEMS

- Reduce energy consumption
- Reduce water consumption
- Reduce materials waste
- Reduce heat island effect
- Improve indoor air quality
- Reduce absenteeism
- Reduce Toxins in environment
- Improve productivity
- Preserve open space
- Preserve species habitat
- Improve asset value
- Increase infrastructure vitality

LEED SCORECARD

- LOCATION AND TRANSPORTATION (0PR/7C/16P)
- SUSTAINABLE SITES (1PR/6C/10P)
- WATER EFFICIENCY (3PR/4C/11P)
- ENERGY AND ATMOSPHERE (4PR/6C/33P)
- MATERIALS AND RESOURCES (1PR/5C/13P)
- INDOOR ENVIRONMENTAL QUALITY (2PR/9C/16P)
- INTEGRATIVE PROCESS(0PR/1C/1P)
- INNOVATION (0PR/2C/6P)
- REGIONAL PRIORITY (0PR/1C/4P)
- TOTAL (11 PRE REQUISITE / 44 CREDIT /110 POINT)

LOCATION AND TRANSPORTATION (0PR/7C/16P)

- LEED FOR NEIGHBOURHOOD DEVELOPMENT LOCATION
- SENSITIVE LAND PROTECTION
- HIGH PRIORITY SITE AND EQUITABLE DEVELOPMENT
- SURROUNDING DENSITY AND DIVERSE USES
- ACCESS TO QUALITY TRANSIT
- BICYCLE FACILITIES
- REDUCED PARKING FOOTPRINT
- ELECTRIC VEHICLE

PRE REQUISITE : NA

GENERAL CONTRACTORS AND LEED: LOCATION AND TRANSPORTATION

- The Location and Transportation (LT) credits reward thoughtful decisions about building location, with credits that encourage compact development, alternative transportation, and connection with amenities, such as restaurants and parks.
- These credits are all Design Credits, so contractors do not have any direct responsibilities. But they can be impacted by the High Priority Site and Equitable Development Credit if the project pursues the equity and community benefits option, which may include community hiring requirements for contractors.

SUSTAINABLE SITES (1PR/6C/10P)

- CONSTRUCTION ACTIVITY POLLUTION PREVENTION
- SITE ASSESSMENT
- PROTECT OR RESTORE HABITAT
- OPEN SPACE
- RAINWATER MANAGEMENT
- HEAT ISLAND REDUCTION
- LIGHT POLLUTION REDUCTION

PRE REQUISITE : CONSTRUCTION ACTIVITY POLLUTION PREVENTION

GENERAL CONTRACTORS AND LEED: SUSTAINABLE SITES

- The Sustainable Site category promotes responsible site design strategies that are sensitive to the environment and wildlife surrounding the building.
- Credits in this category emphasize the vital relationships among buildings and ecosystem services
- The intent is to protect ecosystems by using regionally appropriate landscaping, minimizing the building's impact on ecosystems and waterways, reducing construction-related pollution, and preserving biodiversity

WATER EFFICIENCY (3PR/4C/11P)

OUTDOOR WATER USE REDUCTION
INDOOR WATER USE REDUCTION
BUILDING-LEVEL WATER METERING
OUTDOOR WATER USE REDUCTION
INDOOR WATER USE REDUCTION
OPTIMIZE PROCESS WATER USE
WATER METERING

PRE REQUISITE : OUTDOOR WATER USE REDUCTION
INDOOR WATER USE REDUCTION
BUILDING-LEVEL WATER METERING

GENERAL CONTRACTORS AND LEED: WATER EFFICIENCY

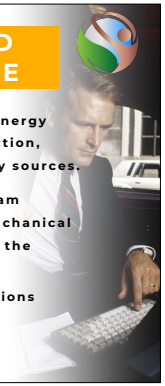
- The Water Efficiency (WE) prerequisites and credits address water holistically, looking at indoor use, outdoor use, specialized uses, and metering.
- The section is based on an "efficiency first" approach to water conservation. As a result, each prerequisite looks at water efficiency and reductions in potable water use alone.
- The WE prerequisites and credits are all Design Credits. Contractors do not have any responsibility for these credits
- With good planning the Contractor can ensure his/her work supports these credits and enables the project to meet the WE prerequisite and credit requirements.

ENERGY AND ATMOSPHERE (4PR/6C/33P)

- FUNDAMENTAL COMMISSIONING AND VERIFICATION
- MINIMUM ENERGY PERFORMANCE
- BUILDING-LEVEL ENERGY METERING
- FUNDAMENTAL REFRIGERANT MANAGEMENT
- ENHANCED COMMISSIONING
- OPTIMIZE ENERGY PERFORMANCE
- ADVANCED ENERGY METERING
- GRID HARMONIZATION
- RENEWABLE ENERGY
- ENHANCED REFRIGERANT MANAGEMENT

PRE REQUISITE : FUNDAMENTAL COMMISSIONING AND VERIFICATION
MINIMUM ENERGY PERFORMANCE
BUILDING-LEVEL ENERGY METERING
FUNDAMENTAL REFRIGERANT MANAGEMENT

GENERAL CONTRACTORS AND LEED: ENERGY & ATMOSPHERE



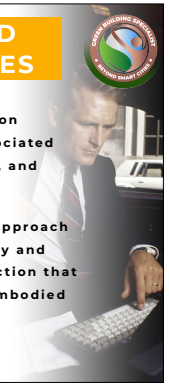
- The Energy and Atmosphere (EA) category approaches energy from a holistic perspective, addressing energy use reduction, energy-efficient design strategies, and renewable energy sources.
- Play an important role in ensuring that LEED project team members and subcontractors understand the owner's mechanical equipment requirements and energy efficiency goals for the project.
- The contractor is responsible for holding the specifications through value engineering.

MATERIALS AND RESOURCES

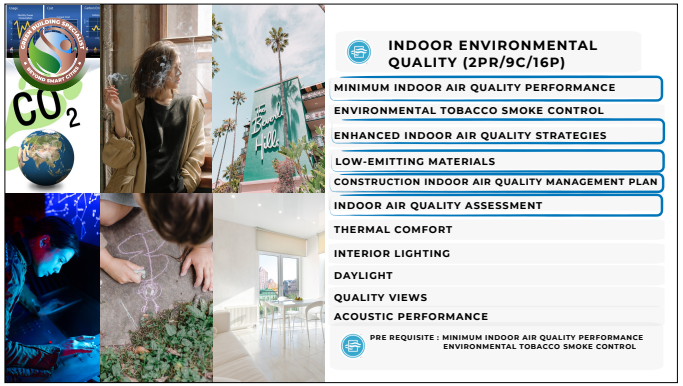
- STORAGE AND COLLECTION OF RECYCLABLES
- BUILDING LIFE-CYCLE IMPACT REDUCTION
- ENVIRONMENTAL PRODUCT DECLARATIONS
- SOURCING OF RAW MATERIALS
- MATERIAL INGREDIENTS
- CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT

PRE REQUISITE : STORAGE AND COLLECTION OF RECYCLABLES

GENERAL CONTRACTORS AND LEED: MATERIALS & RESOURCES



- The Materials & Resources (MR)credit category focuses on minimizing the embodied energy and other impacts associated with the extraction, processing, transport, maintenance, and disposal of building materials.
- The requirements are designed to support a life-cycle approach that improves performance, promotes resource efficiency and reduces waste. Each requirement identifies a specific action that fits into the larger context of a life-cycle approach to embodied impact reduction.



INDOOR ENVIRONMENTAL QUALITY (2PR/9C/16P)

- MINIMUM INDOOR AIR QUALITY PERFORMANCE
- ENVIRONMENTAL TOBACCO SMOKE CONTROL
- ENHANCED INDOOR AIR QUALITY STRATEGIES
- LOW-EMITTING MATERIALS
- CONSTRUCTION INDOOR AIR QUALITY MANAGEMENT PLAN
- INDOOR AIR QUALITY ASSESSMENT
- THERMAL COMFORT
- INTERIOR LIGHTING
- DAYLIGHT
- QUALITY VIEWS
- ACOUSTIC PERFORMANCE

PRE REQUISITE : MINIMUM INDOOR AIR QUALITY PERFORMANCE
ENVIRONMENTAL TOBACCO SMOKE CONTROL

GENERAL CONTRACTORS AND LEED: INDOOR ENVIRONMENTAL QUALITY

- The Indoor Environmental Quality (EQ) category rewards decisions made by project teams about indoor air quality and thermal, visual, and acoustic comfort.
- Green buildings with good indoor environmental quality protect the health and comfort of building occupants.High-quality indoor environments also enhance productivity, decrease absenteeism, improve the building's value, and reduce liability for building designers and owners.
- This category addresses the myriad design strategies and environmental factors—air quality, lighting quality, acoustic design, thermal comfort, safe products, and control over one's surroundings—that influence the way people learn, work, and live.

LEED SCORECARD

- LOCATION AND TRANSPORTATION (0PR/7C/16P)
- SUSTAINABLE SITES (1PR/6C/10P)
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GENERAL CONTRACTORS AND LEED: INNOVATION

- Sustainable design strategies and measures are constantly evolving and improving. New technologies are continually introduced to the marketplace and up-to-date scientific research influences building design strategies. The purpose of this LEED category is to recognize projects for innovative building features and sustainable building practices and strategies.
- Contractors can drive innovation on any project and are often LEED Accredited Professionals.
- The Contractor has a large role in helping to achieve exceptional performance, particularly in:
  - Construction and demolition waste management
  - Building product disclosure and optimization credits
  - Low-Emitting Materials

LEED SUBMITTALS

- The Contractor shall be responsible for assembling all relevant LEED submittals and associated documentation as outlined in this document and within other specification sections
- The Contractor shall revise and resubmit such documents as required to obtain approval of the Design Team.
- Submit all LEED-related documentation in hardcopy as well as soft-copy format.

Certifications,Shop drawings and Cut sheets/data sheets

Letters of confirmation from manufacturers with details of LEED related properties

Material/work spreadsheets,Cost of materials,Confirmation of the percentage of applicable materials content (e.g recycled, regional) and VOC content of chosen materials

LEED SUBMITTALS +

- ☑ LEED submittals are in addition to other submittal required by the Design Team. A dedicated copy of the submittal must be issued to check compliance with the LEED requirements
- ☑ In the event that the Contractor chooses substitute products, the Contractor must demonstrate the substitute product is compliant with LEED requirements as well the other requirements of the contract
- ☑ The submittals shall include, where requested herein or defined within the LEED submittal template: