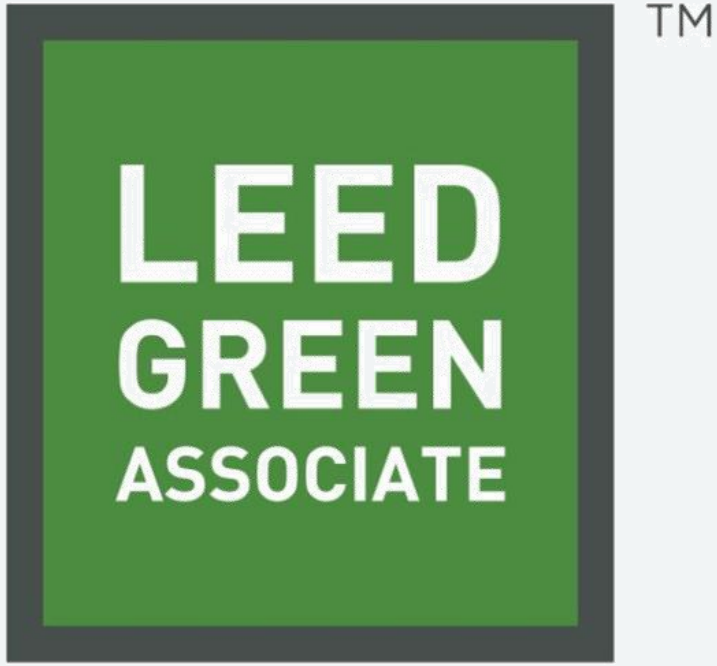
Mastering the LEED v5 green associate credential

(Key Concepts, Global Impact & Project Certification Levels)

Presented by: Mohamad Al-Hachoui


LEED
GREEN
ASSOCIATE
TM


U.S. GREEN BUILDING COUNCIL
USGBC


GBCI®



ABOUT THE PRESENTER

Mohamad Hachoui

MSc., B.Arch, PMP®, LEED® Green Associate™

Architect, PMP & FM Consultant

- 25+ years of comprehensive experience in design, construction, project management consultancy, and facility management.
- Master’s degree with distinction in **project management** from the University of Liverpool.
- Bachelor's degree in **Architecture**.
- Project Management Professional **PMP®** from **PMI** in 2012.
- Certified LEED® Green Associate from **GBCI** in 2017.
- PM consultant and trainer

LEARNING OBJECTIVES

- Understand the vision, impact areas, and structure of LEED v5
- Apply LEED v5 sustainability concepts to building projects
- Develop the knowledge and skills required to pass the LEED v5 Green Associate exam

أهداف التعلّم

- فهم رؤية LEED v5 ومجالات التأثير وهيكله
- تطبيق مفاهيم الاستدامة في LEED v5 على مشاريع المباني
- تطوير المعارف والمهارات اللازمة لاختبار LEED v5 Green Associate



COURSE OUTLINE

3 Modules

1. **LEED v5 Foundations**
   USGBC, GBCI, global impact, and key terminologies
2. **LEED v5 Framework**
   Impact areas, rating-system structure, and credit categories
3. **Credentials and Certification**
   Professional credential pathways, project certification process, and LEED Green Associate exam preparation

﴿ هُوَ أَنشَأَكُم مِّنَ الْأَرْضِ وَاسْتَعْمَرَكُمْ فِيهَا ﴾

[سورة هود: 61]

“ *We shape our buildings; thereafter they shape us* ”

نحن نشكّل مبانينا، ثم تقوم مبانينا بتشكيلنا.

Winston Churchill

INTRODUCTION

يستهلك قطاع المباني والإنشاءات نحو **32% من الطاقة عالميًا**، ويسهم بنحو **34% من انبعاثات ثاني أكسيد الكربون**، ما جعل قطاع البناء تحديًا في التغير المناخي. ومنذ **التسعينات** بدأت الجهود العالمية لتنظيم هذا القطاع عبر أنظمة تقييم موحدة للمباني الخضراء.

على إثر هذه التهديدات، انطلقت المبادرات العالمية عام **1990** بنظام **BREEAM** في المملكة المتحدة، ثم تأسس مجلس المباني الخضراء الأمريكي **U.S. Green Building Council (USGBC)** عام **1993** وأطلق نظام **LEED** عام **1998**.

وتجاوز اليوم عدد المحترفين أكثر من **205,000** محترف معتمد.

INTRODUCTION

Since its launch in 2000, LEED® has progressively transformed the global building industry.

منذ إطلاقه عام 2000، أسهم نظام LEED® تدريجيًا في إحداث تحول عالمي في قطاع المباني.

with More than **195,000 LEED projects** worldwide

مع أكثر من **195,000 مشروع** مسجل ومعتمد

& more than **2.69 billion m²** of space worldwide

وأكثر من نحو **2.7 مليار متر مربع** من المساحات حول العالم

Reference: Guide to LEED v5 BUILDING DESIGN AND CONSTRUCTION

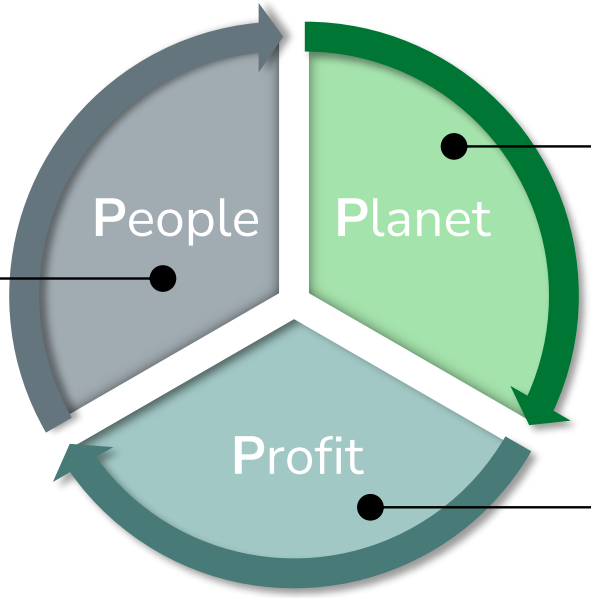
INTRODUCTION

Why Green Buildings Matter?

LEED is based on the **triple bottom line**

لماذا المباني الخضراء مهمة؟

يعتمد LEED على مفهوم **الأبعاد الثلاثة للاستدامة**



Environmental – Energy, water, emissions

البعد البيئي

Social – Health, comfort, productivity

البعد الاجتماعي

Economic – Lifecycle cost reduction

البعد الاقتصادي

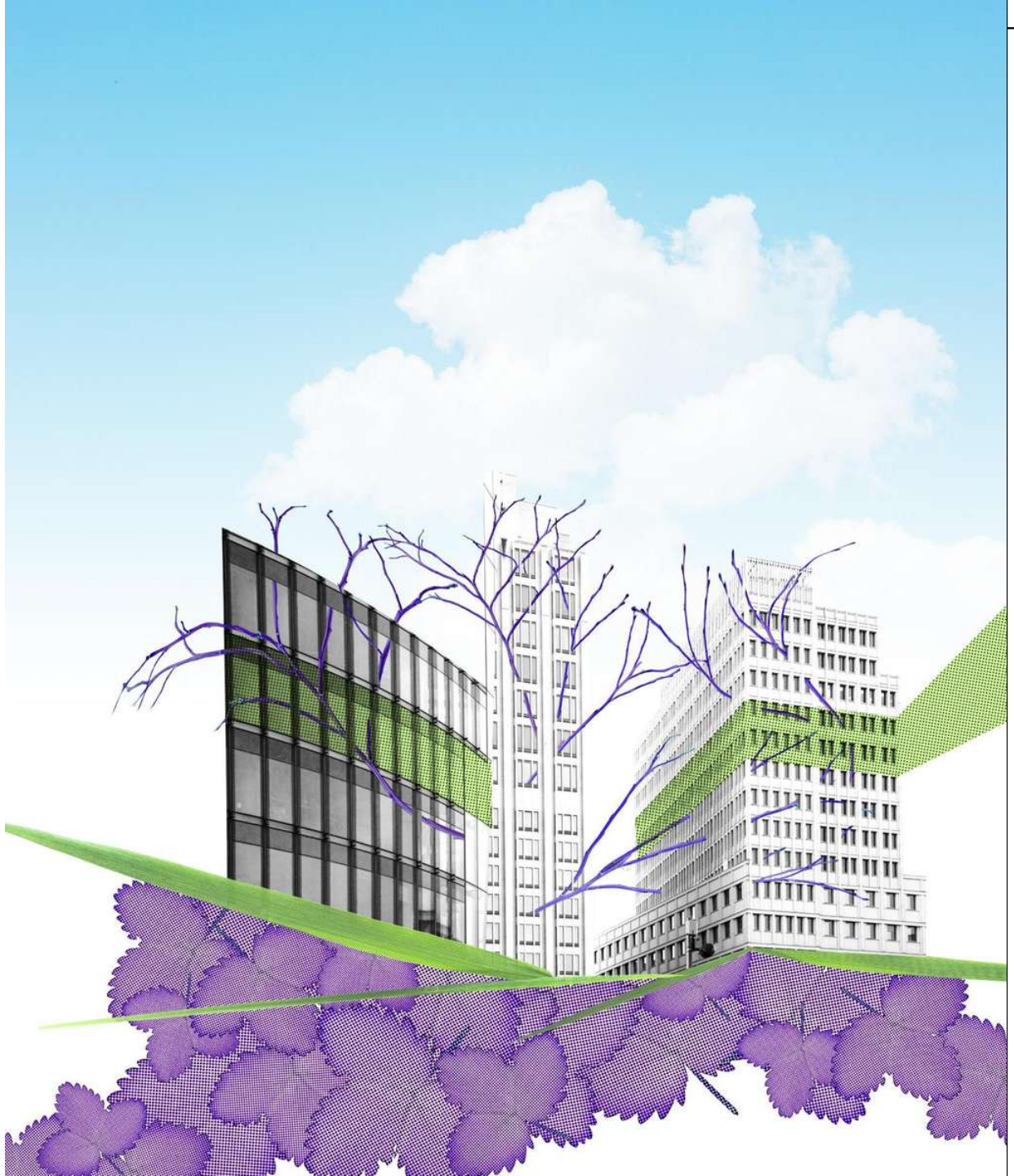
INTRODUCTION

Why Green Buildings Matter?

لماذا المباني الخضراء مهمة؟

التنمية المستدامة مفهوم عالمي تطور عبر عقود، وتُوّج في عام 2015 بأجندة الأمم المتحدة 2030 وأهداف التنمية المستدامة الـ 17.





IMPORTANCE OF LEED IN THE CONSTRUCTION AND DESIGN INDUSTRIES

Guidance for Sustainable Practices

LEED certification provides architects, engineers, and builders with clear sustainability guidelines to enhance environmental performance.

Compliance with Environmental Regulations

LEED helps projects comply with environmental laws, minimizing ecological impact and promoting responsible development.

Cost Reduction and Marketability

LEED certification contributes to lower operating costs and boosts property market value through sustainable features.

Module 1: **Generalities**

WHAT IS LEED?

ما هو نظام LEED؟

L Leadership → الريادة والقيادة في الأداء البيئي

E Energy → كفاءة استخدام الطاقة

E Environmental → حماية البيئة والاستدامة

D Design → تصميم المباني والأنظمة

Leadership in Energy and Environmental Design

الريادة في الطاقة والتصميم البيئي

WHAT IS LEED?

- Global green building rating system
- Voluntary and third-party verified
- Performance-based framework

ما هو نظام LEED؟

- نظام عالمي لتقييم المباني الخضراء
- نظام اختياري وتقييمه من جهة مستقلة
- إطار تنظيمي يعتمد على الأداء

HOW WAS LEED FOUNDED?

كيف تأسس نظام LEED؟

Origins of LEED

- Developed by the **U.S. Green Building Council (USGBC)**
- Initiated in the **late 1990s**
- First pilot version released in **1998**

Purpose

- Create a **common standard** for green buildings
- Provide **third-party verification**
- Encourage market-driven **sustainability**

WHY WAS LEED INITIATED?

ما هي أسباب إنشاء نظام LEED؟

Key Drivers

- Rising energy consumption in buildings
- Environmental impact & emissions
- Lack of measurable sustainability benchmarks

Market Needs

- Distinguish real green buildings from “greenwashing”.
- Support informed investment decisions
- Improve building performance over lifecycle

LEED PHILOSOPHY

ما هي فلسفة LEED؟

Core Principles

- ✅ Performance-based evaluation
- ✅ Holistic sustainability
- ✅ Lifecycle thinking
- ✅ Continuous improvement

What LEED is NOT

- ❌ Not a building code
- ❌ Not mandatory
- ❌ Non-technology specific

EVOLUTION OF LEED VERSIONS

تطور إصدارات LEED

L E E D

v1.0	v2.0	v3.0	v4.0	v4.1	v5.0
Pilot program برنامج تجريبي	Structured rating system نظام تقييم مضبط	Standardized 100-point scale اعتماد مقياس 100 نقطة	Focus on performance, materials, and transparency التركيز على الأداء والمواد والشفافية	Market feedback & flexibility تحسينات بناءً على ملاحظات السوق	Climate action, equity, resilience العمل المناخي والعدالة والمرونة
1998	**2000-2008**	**2009**	**2013**	**2019**	**2024-2026**

LEED Version Evolution Timeline

INTRODUCTION TO LEED AND THE US GREEN BUILDING COUNCIL (USGBC)

DEFINITIONS

تعريفات

DEFINITIONS

تعريفات

USGBC vs GBCI

USGBC =

United States Green Building Council

- ❑ USGBC is the **LEED <u>rating system developer</u> & <u>education provider</u>**.

- ❌ Does **not** administer exams
- ❌ Does **not** issue professional credentials

GBCI =

Green Business Certification Inc.

- ❑ GBCI is the **credentialing and certification body**.

- ❌ Does **not** develop LEED rating systems
- ❌ Does **not** set credit requirements

DEFINITIONS

تعريفات

USGBC vs GBCI

- USGBC develops the LEED rating systems

  تطور أنظمة تقييم LEED

- Provides education, research, and advocacy

  يقدم التعليم والدعم

- Drives market transformation toward sustainability

  يقود تحول السوق نحو الاستدامة

- Administers exams

  إدارة الامتحانات

- Provides credentials

  منح الاعتمادات

DEFINITIONS

تعريفات

USGBC's Vision

Buildings and communities will regenerate and sustain the health and vitality of all life within a generation.

USGBC's mission is to:

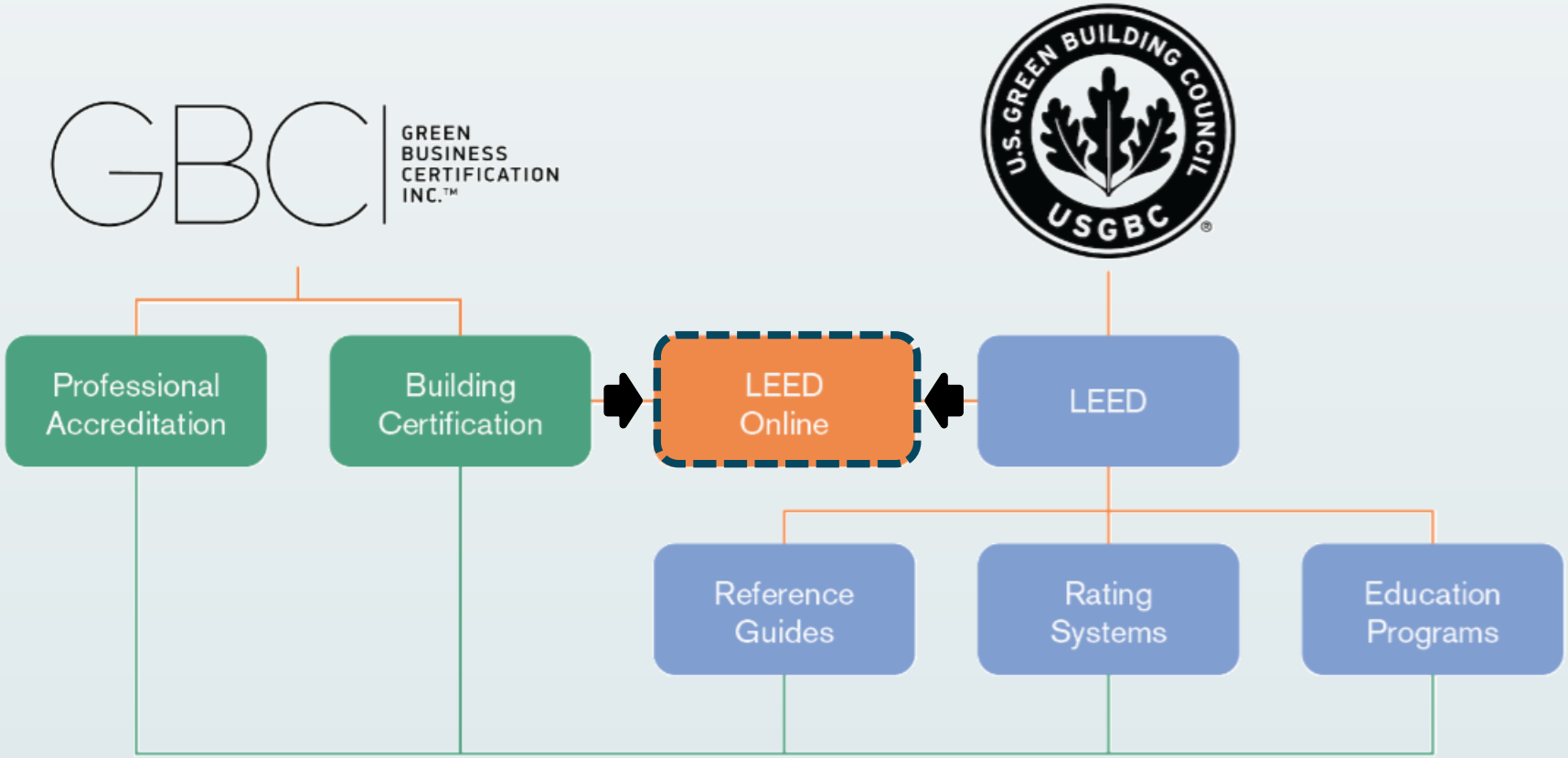
- Promote **sustainability in the built environment**
- Improve **environmental performance**
- Support **human health and well-being**

LEED GA is addressed for:

Architects, Engineers, Landscape architects, Civil engineers, Contractors, Facility managers.

DEFINITIONS

تعريفات



DEFINITIONS

تعريفات

Credentials الاعتماد المهني

1 LEED Green Associate

The most widely used green building rating system

A foundational professional credential signifying core competency in **green building principles**

2 LEED AP (with specialty)*

An advanced professional credential signifying expertise in green building and a **specific LEED rating system**

LEED AP BD+C | LEED AP ID+C | LEED AP O+M | LEED AP ND | LEED AP HOMES

DEFINITIONS

تعريفات

Credentials الاعتماد المهني

3 **LEED Fellows**



have acquired significant technical knowledge and skills

4 **LEED Green Rater**



Provides verification services for LEED residential projects

5 **LEED Green Classroom Professional**



Gain a foundational knowledge of green building and the LEED green building rating system in the context of a school setting

DEFINITIONS

تعريفات

Credential — الاعتماد المهني

A **credential** is a **formal professional recognition** granted to an individual to verify their **knowledge, competence, or qualification** in a specific field, typically earned through **education, examination, and ongoing maintenance**.

الاعتماد المهني (Credential) هو **اعتراف رسمي** يُمنح للمتخصصين لإثبات **المعرفة والكفاءة المهنية** في مجال المباني الخضراء، ويتم الحصول عليه عادةً من خلال **اجتياز اختبار معتمد** مع الالتزام بمتطلبات الاستمرار والتجديد.

Certificate — شهادة

A **certificate (certification)** is a **formal recognition awarded to a project, building, or organization** to confirm that it **meets specific standards or performance requirements**, based on an **independent review and verification process**.

الشهادة (Certification) هي **اعتماد رسمي** يُمنح **لمشروع أو مبنى أو جهة** للتأكيد على أنه **حقق متطلبات ومعايير أداء محددة**، وذلك بعد **مراجعة وتحقق مستقل**.

DEFINITIONS

تعريفات

SMACNA	ISO 14001	Water Sense (EPA)	ENERGY STAR (EPA)	EPA	ASHRAE 62.1	ASHRAE 52.2	ASHRAE 55	ASHRAE 90.1	المنظمة / المعيار
HVAC ductwork construction	Environmental management systems	Program promoting water-efficient products	Program for energy-efficient buildings and equipment	U.S. agency for environmental protection	Ventilation & indoor air quality	Air Filters	Thermal Comfort	Energy efficiency	**التعريف (EN)**
معايير تنفيذ مجاري الهواء لأنظمة التكييف	أنظمة الإدارة البيئية	برنامج لترشيد استهلاك المياه	برنامج لكفاءة الطاقة للمباني والمعدات	وكالة حماية البيئة الأمريكية	معيار التهوية وجودة الهواء الداخلي	فلاتر الهواء	التكيف الحراري	معيار كفاءة الطاقة للمباني	**التعريف (AR)**
EQ	MR	WE	EA	EA – WE	EQ	EQ	EQ	EA	**يظهر في**

GA understands them, AP applies them

DEFINITIONS

تعريفات

LEED minimum program requirements (MPR)

المتطلبات الأساسية لبرنامج LEED

- Minimum Program Requirements are a set of **baseline eligibility criteria** that every LEED project must meet in order to **register, pursue certification, and remain certified**.

- المتطلبات الأساسية لبرنامج LEED هي **شروط أهلية إلزامية** يجب على كل مشروع تحقيقها ليتمكن من **التسجيل والحصول على شهادة LEED والاستمرار فيها**.

1. **Must be in a Permanent Location on Existing Land**
   يجب أن يكون في موقع دائم على أرض قائمة

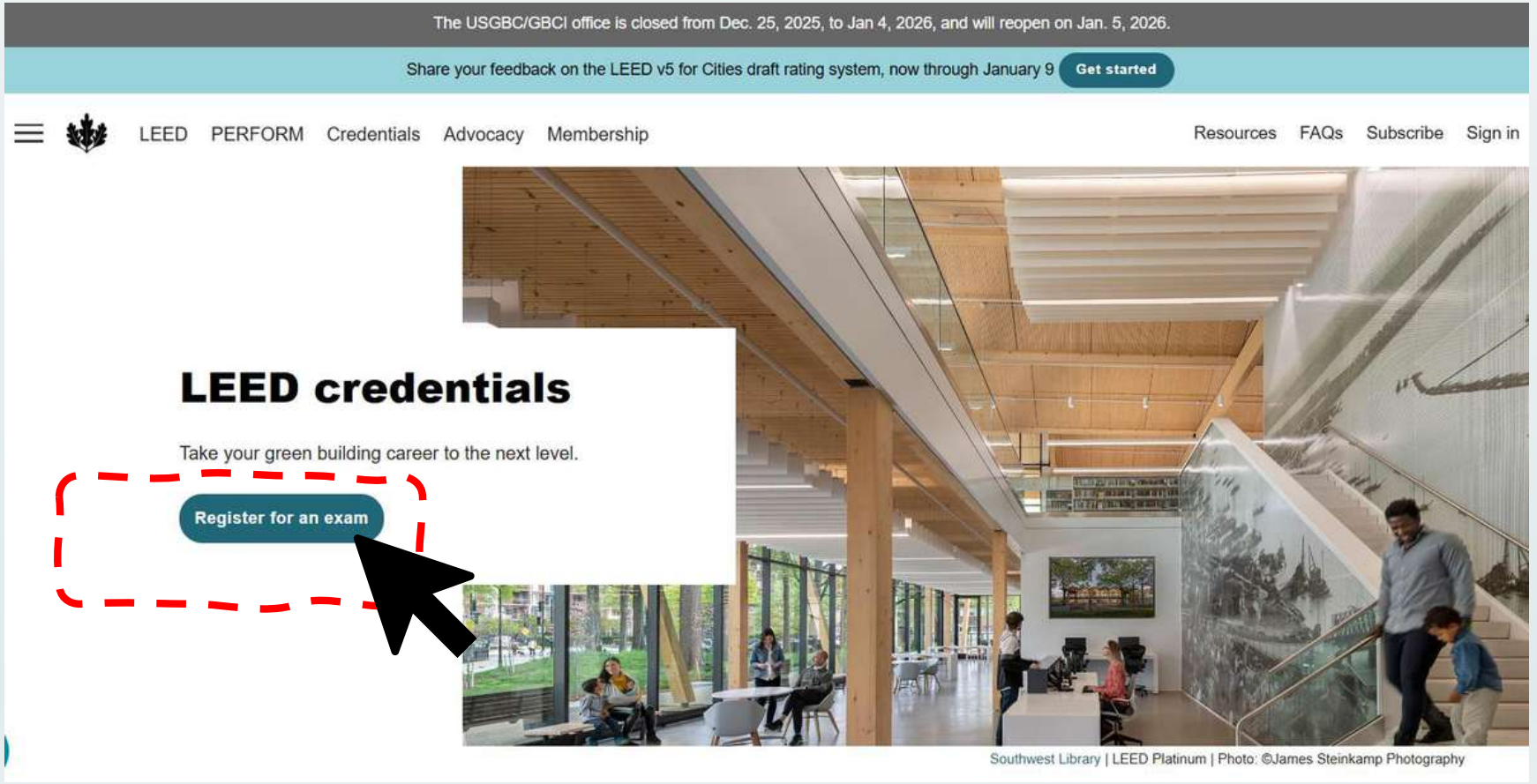
2. **Must Use Reasonable LEED Boundaries**
   يجب استخدام حدود معقولة لنظام LEED

3. **Must Comply with Project Size Requirements**
   يجب الالتزام بمتطلبات حجم المشروع

REGISTER FOR THE LEED GA EXAM

التسجيل لامتحان LEED GA

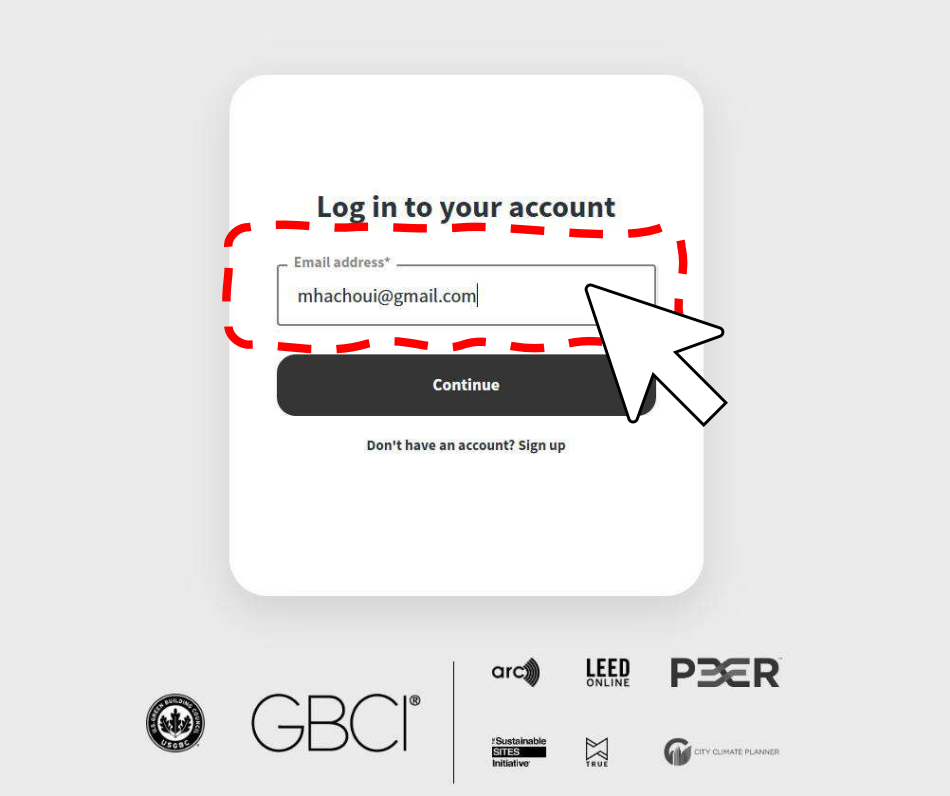
To register for the LEED GA exam, Visit: www.usgbc.org/credentials/leed-green-associate

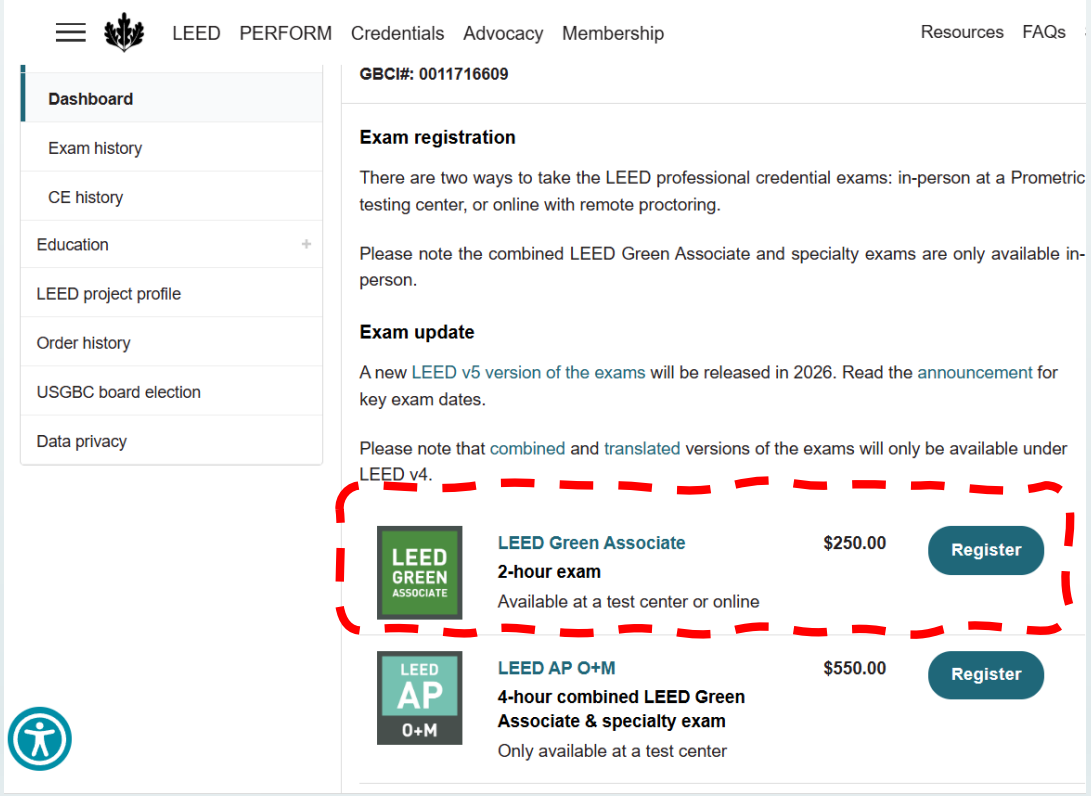


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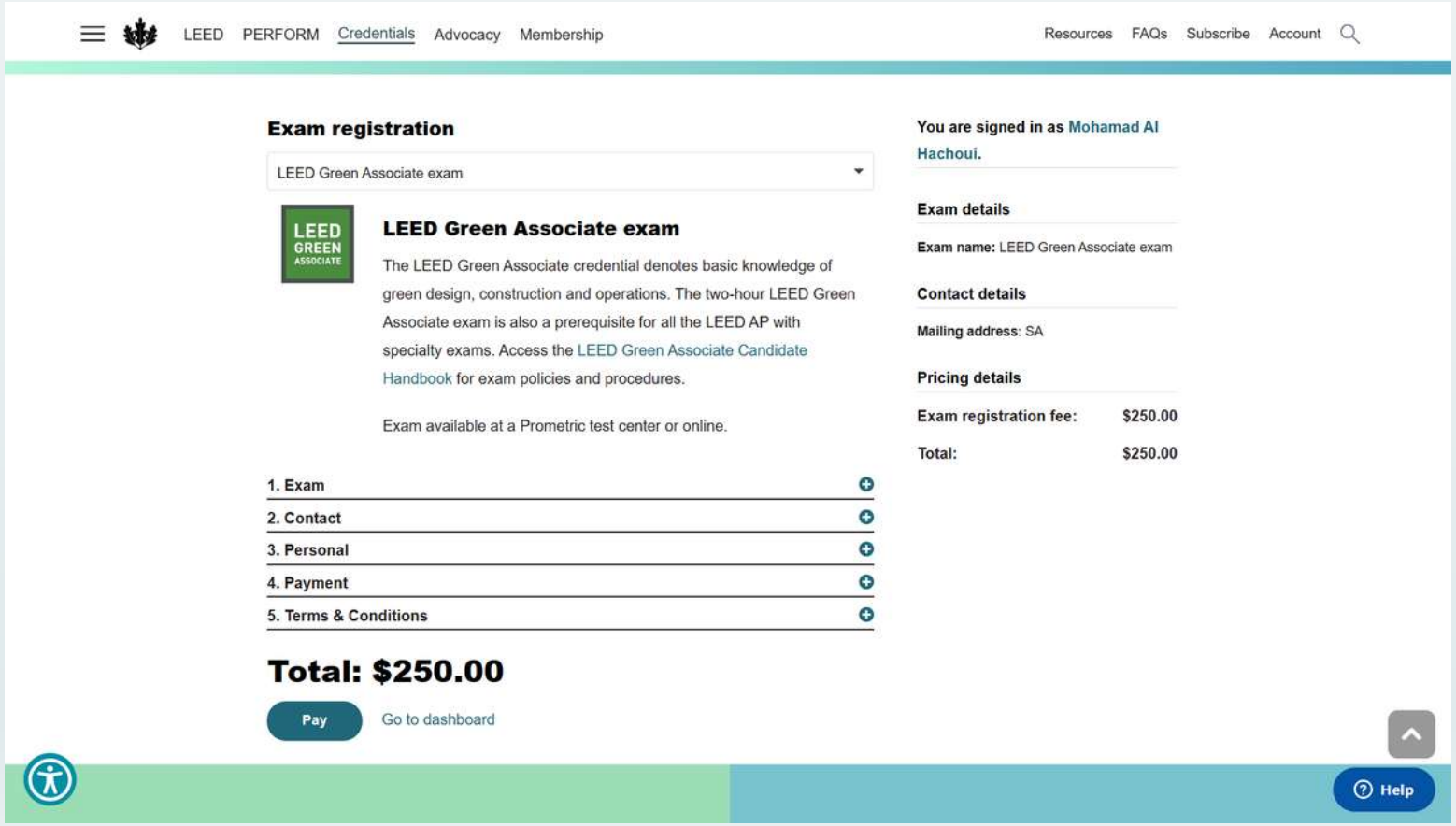




REGISTER FOR THE LEED GA EXAM

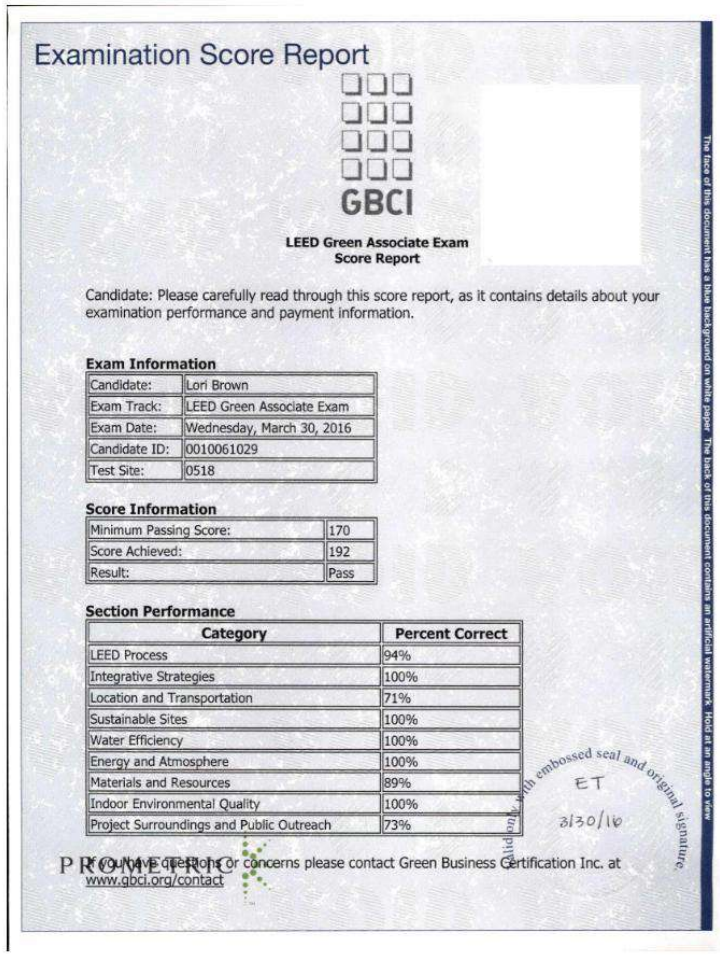
التسجيل لامتحان LEED GA

To register for the LEED GA exam, Visit: www.usgbc.org/credentials/leed-green-associate



REGISTER FOR THE LEED GA EXAM

التسجيل لامتحان LEED GA



Examination Score Report

GBCI

LEED Green Associate Exam Score Report

Candidate: Please carefully read through this score report, as it contains details about your examination performance and payment information.

Exam Information

Candidate:	Lori Brown
Exam Track:	LEED Green Associate Exam
Exam Date:	Wednesday, March 30, 2016
Candidate ID:	0010061029
Test Site:	0518

Score Information

Minimum Passing Score:	170
Score Achieved:	192
Result:	Pass

Section Performance

Category	Percent Correct
LEED Process	94%
Integrative Strategies	100%
Location and Transportation	71%
Sustainable Sites	100%
Water Efficiency	100%
Energy and Atmosphere	100%
Materials and Resources	89%
Indoor Environmental Quality	100%
Project Surroundings and Public Outreach	73%

If you have questions or concerns please contact Green Business Certification Inc. at www.gbci.org/contact

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Validation with embossed seal and original signature

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3/30/16

PROMETRIC

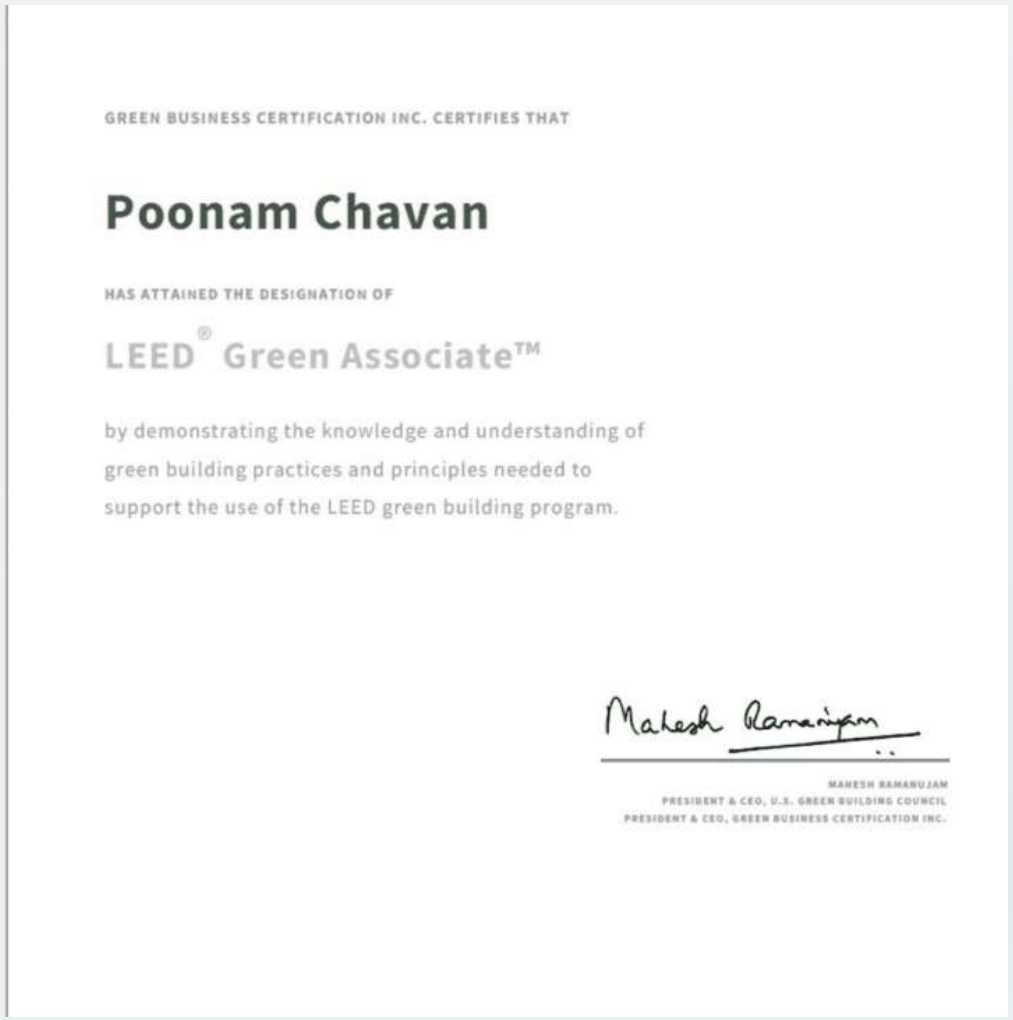


LEED GREEN ASSOCIATE

CREDENTIAL ID

ISSUED

VALID THROUGH



GREEN BUSINESS CERTIFICATION INC. CERTIFIES THAT

Poonam Chavan

HAS ATTAINED THE DESIGNATION OF

LEED® Green Associate™

by demonstrating the knowledge and understanding of green building practices and principles needed to support the use of the LEED green building program.

Mahesh Ramanujam

MAHESH RAMANUJAM
PRESIDENT & CEO, U.S. GREEN BUILDING COUNCIL
PRESIDENT & CEO, GREEN BUSINESS CERTIFICATION INC.

REGISTER FOR THE LEED GA EXAM

التسجيل لامتحان LEED GA

Next Steps

- ❑ If you're a student be sure to check that box when registering, and you test for only **$100**
- ❑ USGBC members test for **$200** and non-members can take the test for **$250**
- ❑ Pay your exam fee and save the code that you get somewhere handy
- ❑ You'll then go to www.prometric.com and use that code to book your test day, time, and location
- ❑ There are no formal education or experience requirements to sit for the LEED Green Associate exam
- ❑ **Scoring:** A passing score of 170 out of 200.

REGISTER FOR THE LEED GA EXAM

التسجيل لامتحان LEED GA

Exam Structure

Knowledge Domain	Questions
LEED Process	16
Integrative Strategies	8
Location and Transportation	7
Sustainable Sites	7
Water Efficiency	9
Energy and Atmosphere	10
Materials and Resources	9
Indoor Environmental Quality	8
Project Surroundings and Public Outreach	11
The exam contains 15 unscored “beta” questions	

REGISTER FOR THE LEED GA EXAM

التسجيل لامتحان LEED GA

- To maintain and renew the credential, all LEED professionals must earn and report continuing education (CE) hours within a **2-year cycle**
- A LEED Green Associate must earn and report 15 CE hours (3 must be LEED-specific)
- LEED APs with specialty must earn and report 30 CE hours (6 must be LEED-specific)

You have **2-hours** to take **100** multiple-choice questions.
You are tested over LEED v5 and all the LEED v5 Rating Systems

REGISTER FOR THE LEED GA EXAM

التسجيل لامتحان LEED GA

The primary language for the exam is **English**. In the case of any discrepancies between the original English content and the translated content or challenges made to the exams, the English content will be used as the basis of consideration. Translation is offered solely as an aid to non-native English speakers and is currently provided in **French**, **Spanish**, **Brazilian Portuguese**, **Arabic**, and **Chinese** for the LEED® Green Associate™, LEED® BD+C and LEED O+M exams.

REGISTER FOR THE LEED GA EXAM

التسجيل لامتحان LEED GA

Credentials	Certification
For professionals	For Buildings
الاعتماد المهني هو مؤهل يُمنح **لشخص** ويثبت معرفته أو خبرته في نظام LEED ومفاهيم المباني الخضراء.	**شهادة المشروع** هي الاعتراف الرسمي بأن **مبنى أو مشروعًا** قد استوفى متطلبات نظام LEED

CHANGES IN LEED GA EXAM

تحديثات امتحان LEED GA

يشهد نظام LEED انتقالًا من الإصدار الرابع LEED v4 إلى الإصدار الخامس LEED v5،
مع تغيّر مواعيد وآلية اختبارات الشهادات.

Exam	LEED v4 last day to test	LEED v5 beta exam (testing phase only)*	LEED v5 final exam available*
LEED Green Associate	April 26, 2026	July 2026 - September 2026	September 2026
LEED AP with Specialty (BD+C, O+M, ID+C)	June 28, 2026	November 2026 - January 2027	February 2027

CHANGES BETWEEN LEED VERSIONS

الفوارق بين إصدارات LEED

البند	LEED v4	LEED v4.1	LEED v5
سنة الإطلاق	2014	2019	2025–2026
الفلسفة العامة	مبانٍ خضراء متوازنة	تحسين الأداء القابل للقياس	مواجهة تغيّر المناخ
التركيز الأساسي	كفاءة الطاقة، المياه، المواد	الأداء الفعلي والبيانات	إزالة الكربون (Decarbonization)
مواءمة أهداف المناخ	محدودة	جزئية	**مرتبطة بأهداف 2030 و2050**
محاور التقييم	استدامة عامة	أداء ونتائج	**Climate – Health – Equity**
الجمهور المستهدف	المبتدئون والمحترفون	الممارسون	**المشاريع والمؤسسات ذات الأثر المناخي**

Module 2: **Rating systems & Credit categories**

UNDERSTANDING THE FUNDAMENTALS OF LEED

FACTS ABOUT LEED

حقائق حول نظام المباني الخضراء LEED

- LEED is the most widely used green building rating system
- LEED-certified green buildings are better-performing buildings
- LEED is designed for all building types and phases

- نظام LEED هو نظام تصنيف المباني الخضراء الأكثر استخدامًا على نطاق واسع
- المباني الخضراء الحاصلة على شهادة LEEDهي مبانٍ أفضل أداءً
- تم تصميم نظام LEED لجميع أنواع المباني ومراحلها

ROOT CAUSE IN FOCUS

CARBON MOVES TO THE CENTER

≈50%

of LEED v5 points are tied to decarbonization — the largest single shift from v4.

New baseline expectations

- ✓ **Operational carbon projection**
  Forecast emissions from the building's energy use.
- ✓ **Decarbonization plan**
  A path toward zero emissions over time.
- ✓ **Embodied carbon assessment**
  Life cycle assessment of materials and construction.
- ✓ **Refrigerant management**
  Fugitive refrigerant emissions get more weight.

Sources: Stantec (2025); Metropolis; BuildingGreen

ROOT CAUSE IN FOCUS

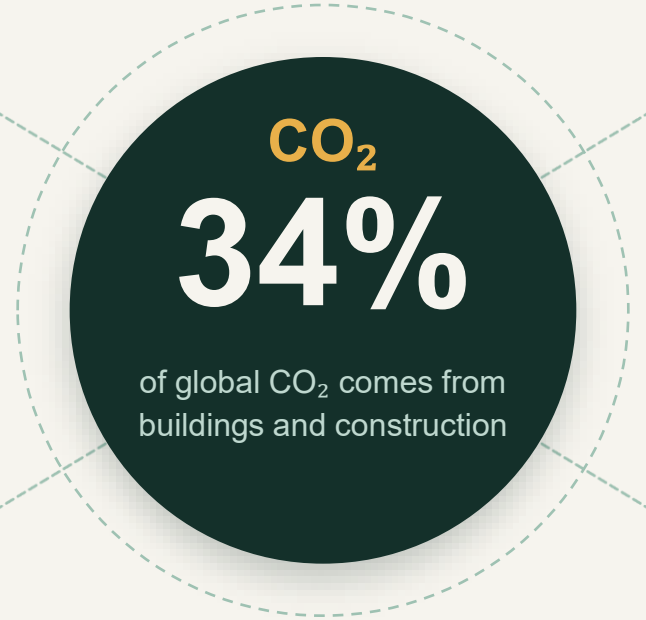
WHY CARBON SITS AT THE CENTER

Human factor — ~90%

of our time is spent indoors. Burning fuel in buildings dirties the air we breathe, and a hotter climate threatens health — cutting carbon protects people.

Power — 32%

of global energy is used by buildings. Energy per m² fell 10% from 2015 to 2023, yet emissions only plateaued — efficiency needs electrification and clean power.



Industry — 18%

of building-related CO_2 comes from making cement and steel. That embodied carbon is emitted before a building opens — so v5 asks for a life cycle assessment.

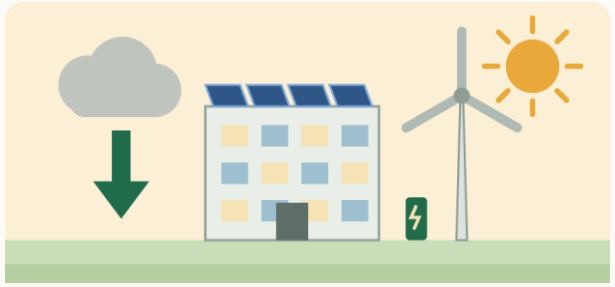
Ecosystem — 2×

global floor space by 2050. More extraction, land and heat — carbon is the one metric that links every building to climate and biodiversity.

Sources: UNEP / GlobalABC Global Status Report 2024–2025; US EPA (time indoors)

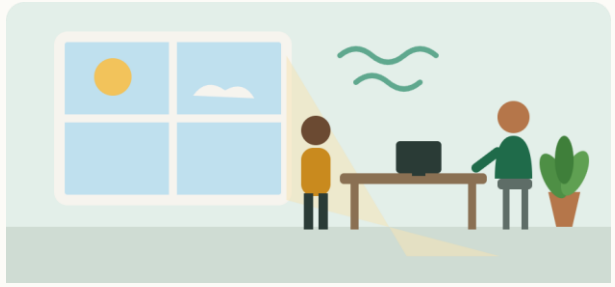
WHAT'S NEW

V5 IS ORGANIZED AROUND THREE IMPACT AREAS



Decarbonization

Cut operational and embodied carbon, electrify, and plan a path to zero emissions.



Quality of life

Health, equity and resilience for the people who use and live around buildings.



Ecological conservation & restoration

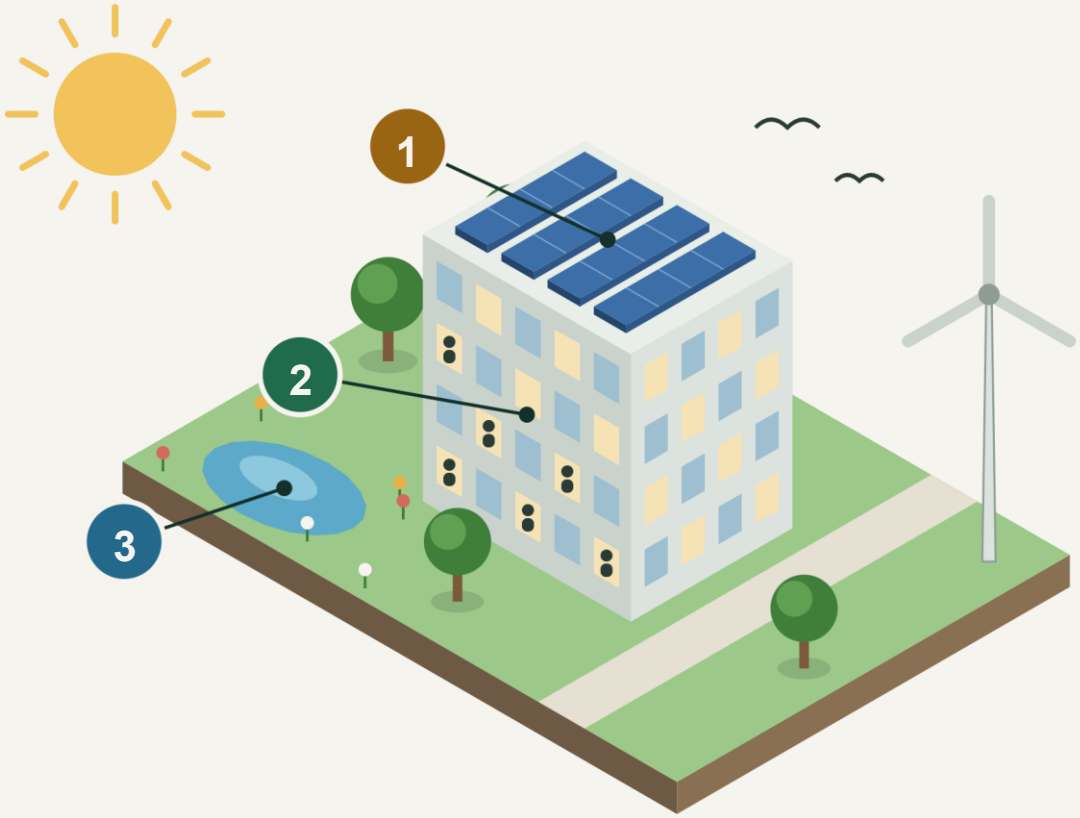
Protect and restore habitat, water and biodiversity on and around the site.

The familiar frame stays: prerequisites plus 110 points across the same credit categories — with points reallocated toward these three goals.

Sources: BuildingGreen; Metropolis; GHT Limited

WHAT'S NEW

THREE IMPACT AREAS, ONE BUILDING



1 Decarbonization

Rooftop solar and on-site wind cut operational carbon; efficient, electric systems and low-carbon materials do the rest.

2 Quality of life

Daylight, fresh air, views and comfort for occupants — and healthy, equitable access for the community.

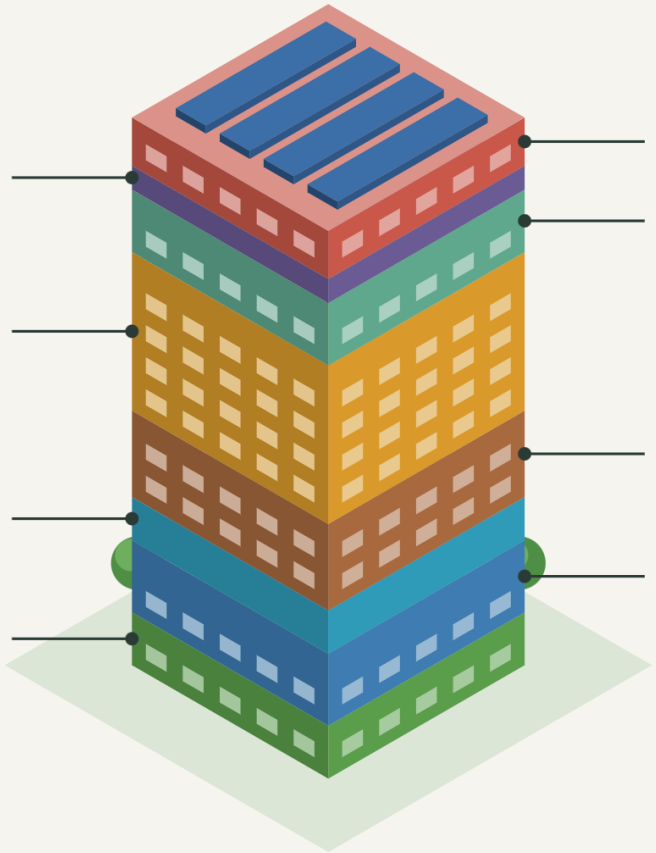
3 Ecological conservation & restoration

Trees, native planting, habitat and on-site water restore the site instead of only protecting it.

Illustration · LEED v5 impact areas

LEED V5 BD+C · NEW CONSTRUCTION

EIGHT CREDIT CATEGORIES, SIZED BY POINTS



IP · 1 pt
Integrative Process, Planning & Assessments

EA · 33 pts
Energy & Atmosphere

WE · 9 pts
Water Efficiency

SS · 11 pts
Sustainable Sites

PR · 10 pts
Project Priorities

EQ · 13 pts
Indoor Environmental Quality

MR · 18 pts
Materials & Resources

LT · 15 pts
Location & Transportation

33

of 110 points sit in Energy & Atmosphere, the largest floor of the building.

Total: 110 points across 8 categories.

Source: CaGBC, LEED v5 BD+C fact sheet (2025)

BUILDING TYPES

أنواع المباني

- ❑ **LEED BD+C** – New Construction ❑ تصميم وإنشاء (المباني الجديدة)
- ❑ **LEED ID+C** – Interior fit-out ❑ التصميم الداخلي والإنشاء للمباني
- ❑ **LEED O+M** – Existing buildings ❑ التشغيل والصيانة (المباني القائمة)
- **LEED Homes / ND / Cities** ❑ المنازل/المواقع المجاورة/المدن

- ❑ **Best rating system identification**
  - **New hospital** مستشفى جديد → **BD+C**
  - **Office fit-out** تشطيب داخلي → **ID+C**
  - **Existing office** مبنى قائم → **O+M**

LEED RATING SYSTEMS

- LEED for Building Design and Construction (**LEED BD+C**) provides a **framework** for building a holistic green building



ما هي أنظمة LEED؟

- يوفّر نظام LEED لتصميم وبناء المباني (**LEED BD+C**) إطارًا لبناء مبنى أخضر متكامل

- **LEED BD+C** applies to most project types, including:
  - Data centers
  - Healthcare
  - Hospitality
  - Retail
  - Schools
  - Warehouses and distribution centers

LEED RATING SYSTEMS

- **LEED ID+C** works as an organizational framework to design and build interior spaces. It's dedicated to all project types from office spaces to coffee shops.



ما هي أنظمة LEED؟

- يعمل نظام **LEED ID+C** كإطار تنظيمي لتصميمي الفراغات الداخلية وإنشائها. وهو مخصص لجميع أنواع المشاريع، من مساحات المكاتب إلى المقاهي.
- **LEED ID+C** applies to most project types, such as retail and hospitality
- ينطبق نظام **LEED ID+C** على معظم أنواع المشاريع مثل قطاعي التجزئة والضيافة.
- **LEED ID+C** has options to fit every project
- يوفر نظام **LEED ID+C** خيارات تناسب كل مشروع

LEED RATING SYSTEMS

ما هي أنظمة LEED؟

- **LEED O+M** certification works for existing buildings and spaces

- شهادة **LEED O+M** مناسبة للمباني والمساحات القائمة



- **LEED O+M** works for all project types from office spaces and restaurants to data centers and schools.

- يعمل نظام **LEED O+M** مع جميع أنواع المشاريع، من المساحات المكتبية والمطاعم إلى مراكز البيانات والمدارس.

- **LEED O+M** applies to most project types such as schools, retail, data centers, and hospitality.

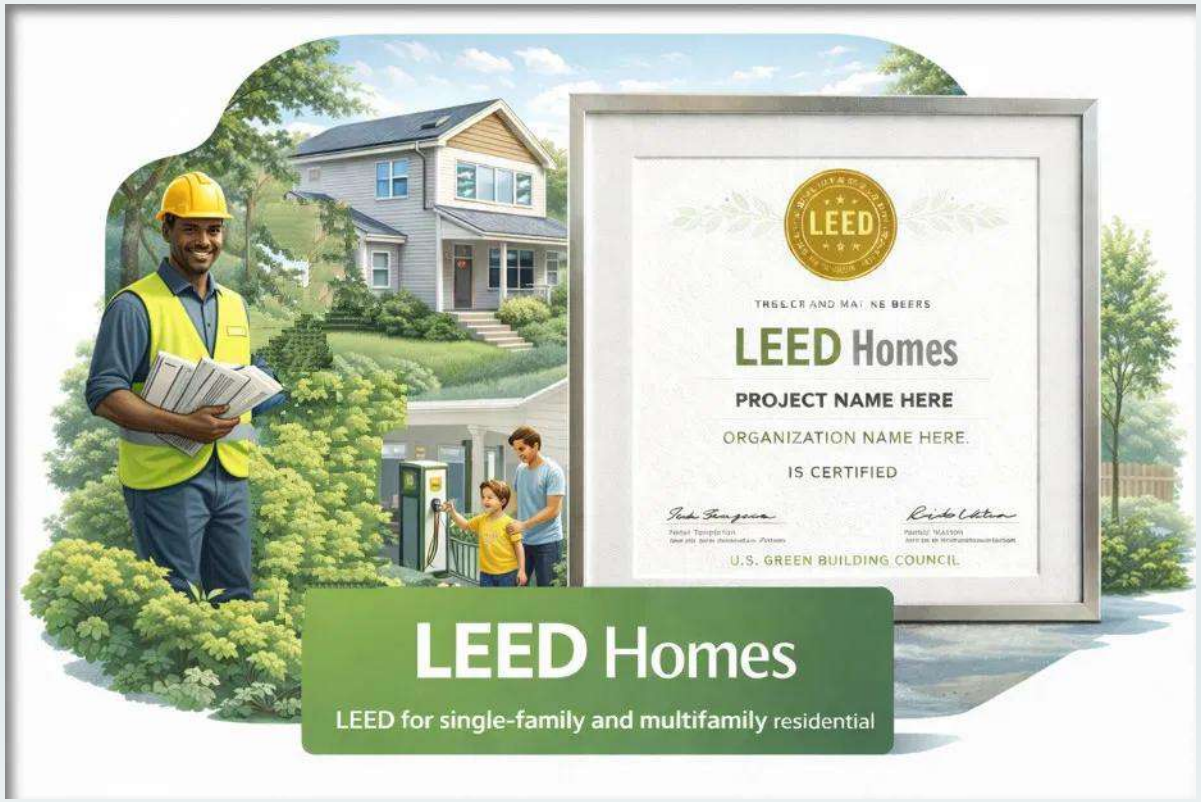
- ينطبق نظام **LEED O+M** على معظم أنواع المشاريع مثل المدارس ومتاجر التجزئة ومراكز البيانات والضيافة.

LEED RATING SYSTEMS

ما هي أنظمة LEED؟

- **Homes** are the most important places in our lives

- **المنازل** هي أهم الأماكن في حياتنا



- **LEED**-certified **green homes** use less energy and fewer resources

- تستخدم **المنازل الخضراء** الحاصلة على شهادة **LEED** طاقة أقل وموارد أقل

- **LEED**-certified **green homes** are healthier for you and your family

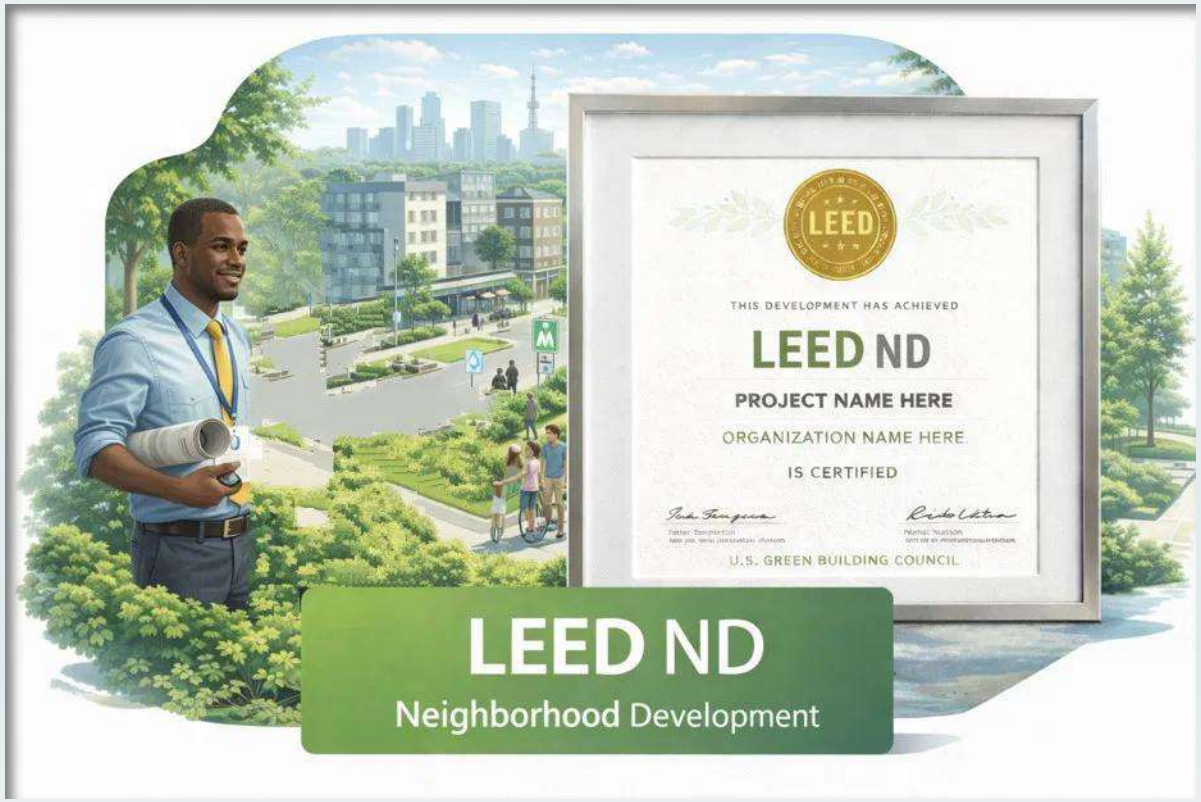
- **المنازل الخضراء** الحاصلة على شهادة **LEED** هي خيار صحي لك ولعائلتك

LEED RATING SYSTEMS

ما هي أنظمة LEED؟

- **LEED (ND)** is appropriate for new land development projects

- يُعد نظام **LEED (ND)** مناسبًا لمشاريع تطوير الأراضي الجديدة



- **LEED (ND)** is applicable for residential uses, nonresidential uses, or a mix

- ينطبق نظام **LEED (ND)** على الاستخدامات السكنية، أو الاستخدامات غير السكنية، أو مزيج منهما.

- **LEED (ND)** was engineered to inspire and help create better, more sustainable, well-connected neighborhoods

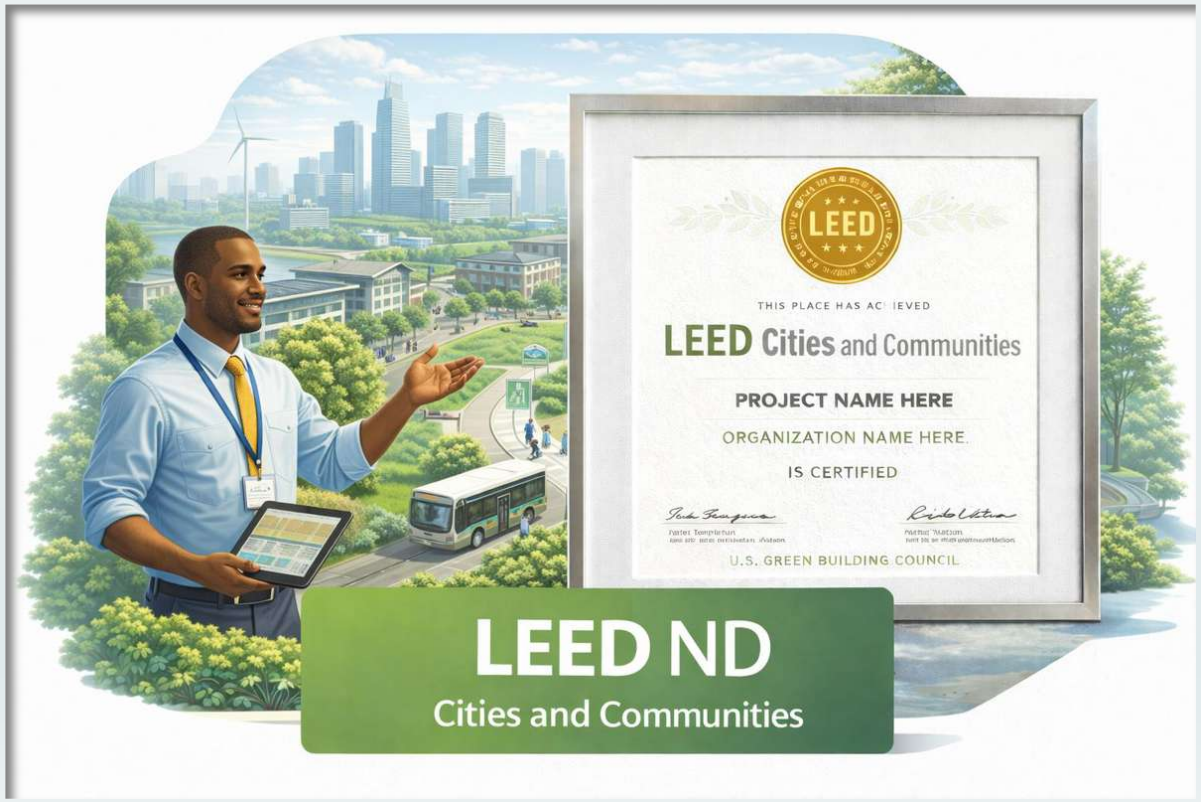
- صُممت شهادة **LEED (ND)** لإلهام ومساعدة الأحياء على أن تكون أفضل وأكثر استدامة وترابطًا.

LEED RATING SYSTEMS

ما هي أنظمة LEED؟

- **LEED for Cities** and **LEED for Communities** advance sustainable development for cities and communities

- يتجاوز برنامج **LEED للمدن والمجتمعات** نطاق المباني لتعزيز التنمية المستدامة على مستوى المدينة والمجتمع.



- **LEED for Cities and Communities** certification program is aligned with the UN Sustainable Development Goals

- يتوافق برنامج شهادة **LEED للمدن والمجتمعات** مع أهداف الأمم المتحدة للتنمية المستدامة.

LEED RATING SYSTEMS

ما هي أنظمة LEED؟

Credit الرصيد

A **credit** is an **optional LEED requirement** that a project may pursue to **earn points** toward LEED certification (A total of 110 points).

الرصيد (Credit) هو متطلب **اختياري** في نظام LEED يمكن للمشروع تحقيقه من أجل **كسب نقاط** تُضاف إلى مجموع نقاط الشهادة (من 110 نقاط).

Prerequisite المتطلب الإلزامي

A **prerequisite** is a **mandatory LEED requirement** that **must be met** for a project to achieve LEED certification and **does not earn points**.

المتطلب الإلزامي (Prerequisite) هو متطلب **إجباري** في نظام LEED يجب تحقيقه للحصول على الشهادة، **ولا يمنح أي نقاط**.

LEED RATING SYSTEMS

ما هي أنظمة LEED؟



LEED v5 Building Design + Construction: New Construction

Integrative Process, Planning & Assessments		
Prereq	Climate Resilience Assessment	Required
Prereq	Social Equity Assessment	Required
Prereq	Carbon Assessment	Required
Credit	Integrative Design Process	1
Location & Transportation		15
Credit	Sensitive Land Protection	1
Credit	Equitable Development	2
Credit	Compact and Connected Development	6
Credit	Active Travel Facilities	2
Credit	Transportation Demand Management	2
Credit	Electric Vehicles	2
Sustainable Sites		11
Prereq	Minimized Site Disturbance	Required
Prereq	Resilient Site Design	Required
Credit	Protect and Restore Biodiverse Habitat	2
Credit	Accessible Open Space	1
Credit	Rainwater Management	3
Credit	Enhanced Resilient Site Design	2
Credit	Heat Island Reduction	2
Credit	Light Pollution and Bird Collision Reduction	1
Water Efficiency		9
Prereq	Water Metering and Reporting	Required
Prereq	Minimum Water Efficiency	Required
Credit	Enhanced Water Efficiency	6
Credit	Water Reuse	2
Credit	Water Metering and Leak Detection	1
Energy & Atmosphere		33
Prereq	Operational Carbon Projection and Decarbonization Plan	Required
Prereq	Minimum Energy Efficiency	Required
Prereq	Fundamental Commissioning	Required
Prereq	Energy Metering and Reporting	Required
Prereq	Fundamental Refrigerant Management	Required
Credit	Electrification	5
Credit	Reduce Peak Thermal Loads	5
Credit	Enhanced Energy Efficiency	10
Credit	Renewable Energy	5
Credit	Enhanced and Ongoing Commissioning	4
Credit	Grid Interactive	2
Credit	Enhanced Refrigerant Management	2
Materials & Resources		18
Prereq	Planning for Zero Waste Operations	Required
Prereq	Assess Embodied Carbon	Required
Credit	Building and Materials Reuse	3
Credit	Reduce Embodied Carbon	6
Credit	Low Emitting Materials	2
Credit	Optimized Building Products	5
Credit	Construction and Demolition Waste Diversion	2
Indoor Environmental Quality		13
Prereq	Fundamental Air Quality	Required
Prereq	No Smoking or Vehicle Idling	Required
Prereq	Building Accessibility	Required
Credit	Enhanced Air Quality	1
Credit	Occupant Experience	6
Credit	Connecting with Nature	1
Credit	Enhanced Building Accessibility	1
Credit	Resilient Spaces	2
Credit	Air Quality Testing and Monitoring	2
Project Priorities & Innovation		10
Credit	Project Priorities	9
Credit	LEED Accredited Professional	1
Total	**Possible Points:**	110

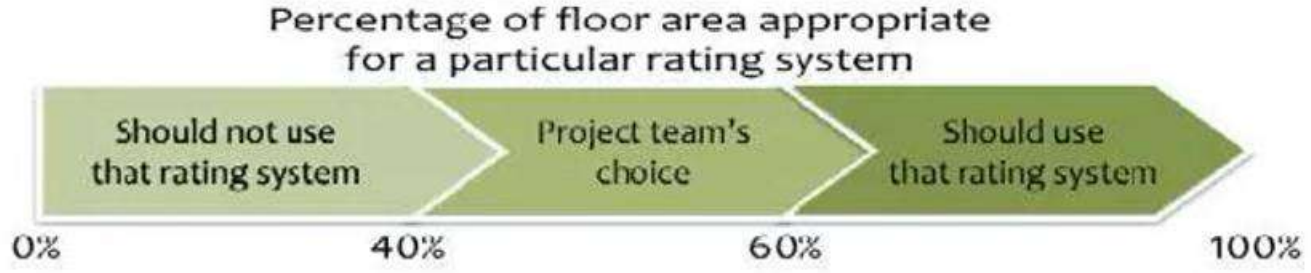
LEED RATING SYSTEMS

ما هي أنظمة LEED؟

2.3 What happens when more than one rating system is applicable for a project?

Most projects fit into a particular rating system, there may be cases where a project is applicable for more than one rating system. Following guidelines are to be used under such scenario:

- Apply 60/40 rule i.e. select the rating system, which is applicable for 60% or more the project area.
- The rating system which is most applicable for the project should be selected.



LEED RATING SYSTEMS

ما هي أنظمة LEED؟

Combination of rating systems and building types

LEED FOR Building Design and Construction	LEED BD+C: New Construction LEED BD+C: Core and Shell LEED BD+C: Schools LEED BD+C: Retail LEED BD+C: Healthcare LEED BD+C: Data Centers LEED BD+C: Hospitality LEED BD+C: Warehouses and Distribution Centers LEED BD+C: Homes LEED BD+C: Multifamily Midrise
LEED FOR Interior Design and Construction	LEED ID+C: Commercial Interiors LEED ID+C: Retail LEED ID+C: Hospitality
LEED FOR Building Operations and Maintenance	LEED O+M: Existing Buildings LEED O+M: Data Centers LEED O+M: Warehouses and Distribution Centers LEED O+M: Hospitality LEED O+M: Schools LEED O+M: Retail
LEED FOR Neighborhood Development	LEED ND: Plan LEED ND: Built Project
LEED FOR Homes Design and Construction	Homes and Multifamily Lowrise: Designed for single family homes and multifamily buildings between one and three stories. Multifamily Midrise: Designed for midrise multifamily buildings between four and eight stories.

FEATURED PROJECT

ما هي أنظمة LEED؟

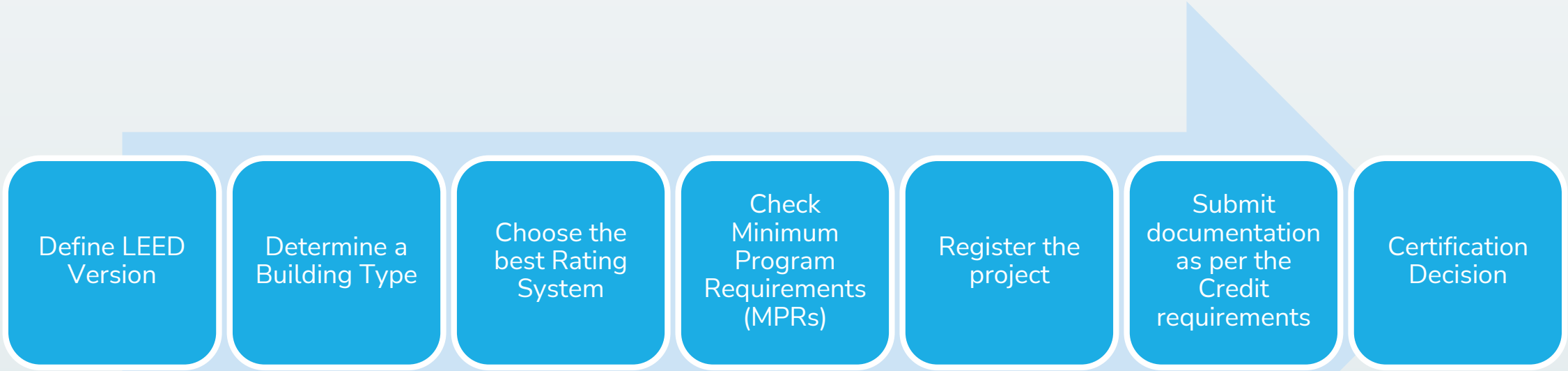
مشروع: Terra – Sustainability Pavilion (Expo 2020 Dubai)



البند	المعلومات
اسم المشروع	جناح الاستدامة – تيرا (Terra)
الموقع	دبي، الإمارات العربية المتحدة
نوع المشروع	مبنى ثقافي / معارض (Landmark Public Building)
نظام LEED	LEED BD+C
مستوى الشهادة	LEED Platinum
سنة الاعتماد	2021
جهة الاعتماد	**GBCI**

PROJECT CERTIFICATION PROCESS

خطة شهادة الاعتماد LEED



LEED v5
(المعتمد حاليًا)

- Office
- Retail
- Healthcare
- Residential
- Existing
- Interior Fit-out

- BD+C
- ID+C
- O+M
- Homes
- ND
- Cities & Communities

1. Permanent Location
2. Reasonable Boundaries
3. Comply with Project Size Requirements

- LEED Online
- Arc Platform

- Earn points

- Certified: 40–49
- Silver: 50–59
- Gold: 60–79
- Platinum: 80–110

15 min break

Refresh, and get back...

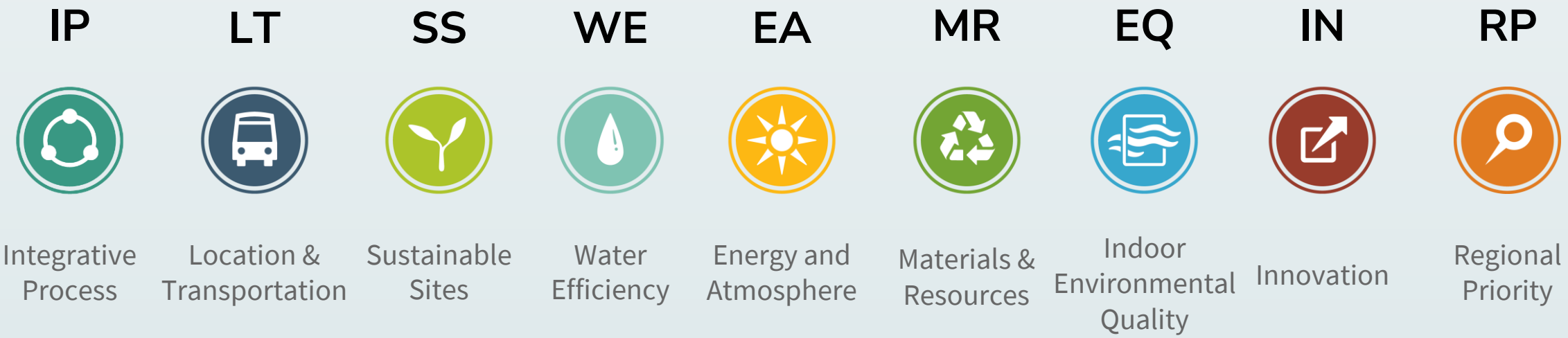
LEED CREDIT CATEGORIES (V5)

LEED CREDIT CATEGORIES

فئات تقييم LEED

LEED credit categories are thematic groups that organize LEED requirements according to **specific sustainability goals**, such as energy efficiency, water conservation, and occupant health. There are 9 categories in LEED v4.1

فئات تقييم LEED هي مجموعات موضوعية تُنظم متطلبات LEED وفق أهداف استدامة محددة مثل كفاءة الطاقة واستهلاك المياه وصحة المستخدمين. هناك 9 فئات تقييم في نظام LEED v4.1.



LEED v4.1 – Credit Categories

LEED CREDIT CATEGORIES

فئات تقييم LEED

IP	LT	SS	WE	EA	MR	EQ	PR
							
Integrative Process, Planning & Assessments	Location & Transportation	Sustainable Sites	Water Efficiency	Energy & Atmosphere	Materials & Resources	Indoor Environmental Quality	Project Priorities
1 pt	15 pts	11 pts	9 pts	33 pts	18 pts	13 pts	10 pts

New in v5: Innovation (IN) and Regional Priority (RP) merged into Project Priorities (PR), and IP became Integrative Process, Planning & Assessments. Points shown for BD+C: New Construction (110 total).

جديد في الإصدار الخامس: دُمجت فئتا الابتكار والأولوية الإقليمية في فئة أولويات المشروع.

LEED v5 – Credit Categories

LEED CREDIT CATEGORIES

فئات تقييم LEED

الفئة (Credit Category)	التسمية العربية	الرصيد (Credit)	النقاط المحتملة للفئة	متطلب أساسي (Prerequisite)
Integrative Process (IP)	المنهجية التكاملية	1	1	
Location & Transportation (LT)	الموقع ووسائل النقل	8	حتى 16	
Sustainable Sites (SS)	المواقع المستدامة	7	حتى 10	1
Water Efficiency (WE)	كفاءة المياه	7	حتى 11	3
Energy & Atmosphere (EA)	الطاقة والجو المحيط	10	حتى 33	4
Materials & Resources (MR)	المواد والموارد	6	حتى 13	1
Indoor Environmental Quality (EQ)	جودة البيئة الداخلية	11	حتى 16	2
Innovation (IN)	الابتكار	2	حتى 6	
Regional Priority (RP)	الأولوية الإقليمية	1	حتى 4	

LEED v4.1 – Credit Categories Matrix

LEED CREDIT CATEGORIES

فئات تقييم LEED

الفئة (Credit Category)	التسمية العربية	الرصيد (Credit)	النقاط المحتملة للفئة	متطلب أساسي (Prerequisite)
Integrative Process, Planning & Assessments (IP)	المنهجية التكاملية والتخطيط والتقييمات	1	حتى 1	3
Location & Transportation (LT)	الموقع ووسائل النقل	5	حتى 15	–
Sustainable Sites (SS)	المواقع المستدامة	6	حتى 11	1
Water Efficiency (WE)	كفاءة المياه	2	حتى 9	2
Energy & Atmosphere (EA)	الطاقة والجو المحيط	7	حتى 33	5
Materials & Resources (MR)	المواد والموارد	5	حتى 18	2
Indoor Environmental Quality (EQ)	جودة البيئة الداخلية	5	حتى 13	3
Project Priorities (PR)	أولويات المشروع	2	حتى 10	–
Total	**المجموع**	**33**	**110**	**16**

LEED v5 BD+C: New Construction – Credit Categories Matrix

الصفوف المظللة تتضمن متطلبات أساسية. في الإصدار الخامس دُمجت فئتا الابتكار والأولوية الإقليمية في فئة أولويات المشروع.

LEED v5

Anatomy of a LEED Credit

Every credit now also shows which of the three impact areas it serves.

1. **Intent**
   Why the credit exists — the outcome it targets.

2. **Impact area alignment** (NEW IN v5)
   Decarbonization, quality of life and/or ecological conservation & restoration.

3. **Requirements**
   Options, paths and thresholds that earn points; prerequisites are mandatory.

4. **Documentation**
   What the team submits to GBCI for review.

5. **Calculations**
   The math behind compliance, e.g. energy modelling or embodied-carbon LCA.

6. **Referenced Standards**
   External standards the credit relies on, e.g. ASHRAE 90.1-2019 for energy.

LEED CREDIT CATEGORIES

فئات تقييم LEED

Integrative Process (IP) **المنهجية التكاملية**

- Early collaboration
  التعاون المبكر
- Whole-systems thinking
  التفكير الشمولي للأنظمة
- Energy and Water Requirement analysis
  تحليل متطلبات الطاقة والمياه

IP



Integrative Process

Exam tips:

- If the question mentions *early design*, *analysis* → think **IP**.

LEED CREDIT CATEGORIES

فئات تقييم LEED

Location & Transportation (LT) **الموقع ووسائل النقل**

LT

- Access to public transport
  الوصول للنقل العام
- Reduced vehicle dependence
  تقليل الاعتماد على السيارات
- Walkability & connectivity
  سهولة المشي والترابط



Location & Transportation

Exam tips:

- LT focuses on reducing emissions from transportation, not site aesthetics
- Many exam questions confuse LT with SS — look for **mobility and access** keywords.

LEED CREDIT CATEGORIES

فئات تقييم LEED

Sustainable Sites (SS) **المواقع المستدامة**

SS

- Site protection
  حماية الموقع
- Heat island reduction
  تقليل الجزر الحرارية
- Stormwater management
  إدارة مياه الأمطار
- Light pollution control
  الحد من التلوث الضوئي



Sustainable Sites

Exam tips:

- SS addresses **what happens to the land** before, during, and after construction.
  If soil, heat, rainwater, or lighting is mentioned → think **SS**.

LEED CREDIT CATEGORIES

فئات تقييم LEED

Water Efficiency (WE) **كفاءة المياه**

WE

- Indoor water use reduction
  تقليل استهلاك المياه الداخلية
- Outdoor water efficiency
  كفاءة الري والمساحات الخارجية
- Metering & monitoring
  القياس والمراقبة



Water Efficiency

Exam tips:

- WE focuses on **reducing potable water use**.
- Do not confuse WE with EA — fixtures and irrigation are water, not energy.

LEED CREDIT CATEGORIES

فئات تقييم LEED

Energy & Atmosphere (EA) **الطاقة والجو المحيط**

EA

- Optimize energy performance
  تحسين أداء الطاقة
- Commissioning
  الاختبارات التشغيلية
- Renewable energy
  الطاقة المتجددة
- Refrigerant management
  إدارة المبرّدات

Energy and Atmosphere

Exam tips:

- EA is the most heavily weighted category in LEED.
- For LEED GA, focus on intent and benefits, not calculations or modeling details.

LEED CREDIT CATEGORIES

فئات تقييم LEED

Materials & Resources (MR) المواد والموارد

MR

- Lifecycle thinking
  التفكير في دورة الحياة
- Waste reduction
  تقليل المخلفات
- Environmental and Health Product Declarations
  شفافية مشاركة بيانات المنتج البيئية والصحية

the **3Rs waste hierarchy**





Materials & Resources

Exam tips:

- MR is about where materials come from, how they are used, and how they are disposed of.
- Recycling alone is not the core concept — lifecycle is.

LEED CREDIT CATEGORIES

فئات تقييم LEED

Indoor Environmental Quality (EQ) جودة البيئة الداخلية

EQ

- Indoor air quality
  جودة الهواء الداخلي
- Thermal comfort
  التكيف الحراري
- Daylighting & views
  الإضاءة الطبيعية
- Acoustics
  الصوتيات



Indoor Environmental Quality

Exam tips:

- EQ is about people inside the building.
- If comfort, health, or occupants are mentioned → EQ is likely the answer.

LEED CREDIT CATEGORIES

فئات تقييم LEED

Regional Priority (RP) الأولوية الإقليمية

RP

Intent

To provide an incentive for the achievement of credits that address **geographically specific environmental**, **social equity**, and **public health priorities**.



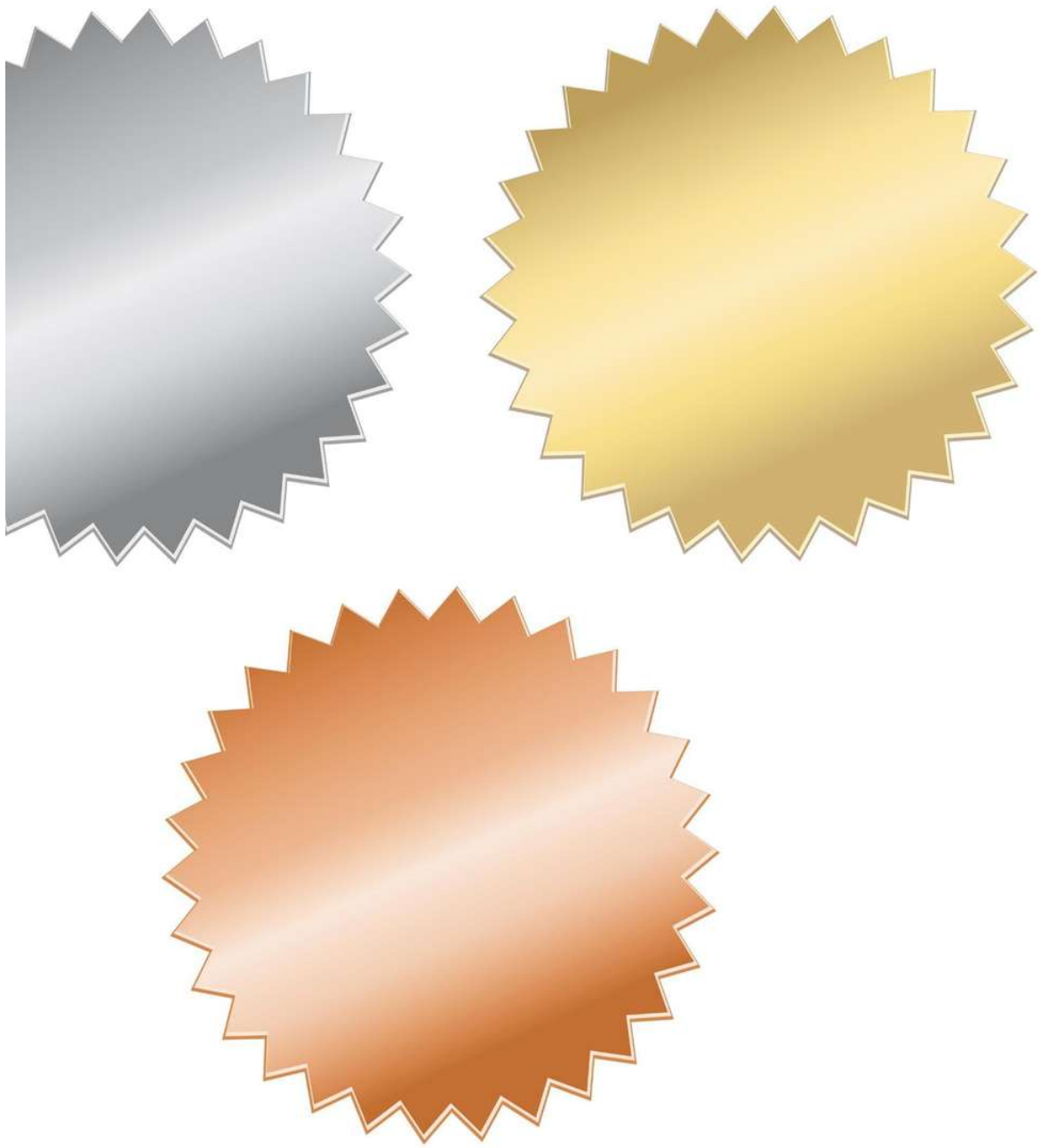
- Local environmental priorities
  أولويات بيئية محلية

Regional Priority

Exam tips:

- Regional Priority reflects local environmental needs and varies by location.

CERTIFICATION PROCESS



CERTIFICATION LEVELS: CERTIFIED, SILVER, GOLD, PLATINUM

Four Certification Levels

Projects earn certification levels: Certified, Silver, Gold, and Platinum based on points accumulated.

Points-Based System

Certification depends on points earned across multiple sustainability categories, encouraging comprehensive performance.

Platinum Level Excellence

Platinum represents the highest certification level, awarded for exceptional sustainability achievements.

LEED CERTIFICATION LEVELS

مستويات شهادة LEED

Certified: 40–49
معتمد

Silver: 50–59
فضي

Gold: 60–79
ذهبي

Platinum: 80+
بلاتيني



HOW ARE BUILDINGS CERTIFIED IN LEED?

كيف يتم اعتماد المباني في نظام LEED؟

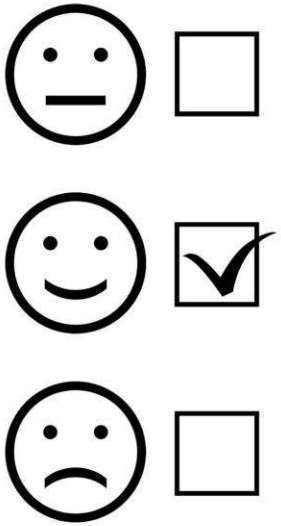
For Projects in Progress

للمشاريع قيد التنفيذ

- ❑ Access LEED tools and resources to support project teams
- ❑ Use the LEED credit library to understand requirements
- ❑ Benefit from LEED education and training courses



STEPS AND DOCUMENTATION REQUIRED FOR PROJECT CERTIFICATION





Project Registration

The project must first be registered to initiate the certification process with the responsible body.

Documentation Submission

Submit detailed documentation of sustainable strategies implemented in the project for evaluation.

Third-Party Review

An independent third party reviews the submitted documentation to ensure compliance with certification standards.

Final Certification Decision

The certification institute makes the final decision to grant or deny certification based on the review.



LEED GREEN ASSOCIATE (GA): ELIGIBILITY AND EXAM STRUCTURE

Credential Accessibility

The LEED GA credential is accessible to professionals with a basic understanding of green building concepts.

Exam Content

The exam focuses on fundamental LEED concepts and green building processes without requiring prior experience.



LEED ACCREDITED PROFESSIONAL (AP): SPECIALIZATIONS AND REQUIREMENTS

Specialty Exam Requirement

LEED AP credential requires passing a specialty exam in areas like Building Design and Construction or Operations and Maintenance.

Prerequisite GA Credential

Candidates must possess the Green Associate (GA) credential before obtaining the LEED AP specialty certification.

Demonstrated Expertise

The AP credential reflects deeper knowledge and expertise in sustainable building practices and operations.



DIFFERENCES BETWEEN GA AND AP CREDENTIALS

GA Credential Overview

GA holders possess broad understanding of LEED, ideal for supporting project roles and general knowledge.

AP Credential Expertise

AP holders have deep, specialized expertise to lead and manage LEED certification projects effectively.

Module 3: **LEED GA Exam Digest**

Exam Duration	2 hrs
Questions	100 (MCQ)
Passing score	85% (170/200)

Scenario (questions 1–3)

A developer in Riyadh is planning a new four-storey office building and registers it under LEED v5 BD+C: New Construction. The owner wants to cut carbon, keep staff healthy, and protect the desert landscape around the site.

1. The team wants to reduce the carbon released by producing the building's concrete and steel. What kind of carbon is this?

A. Operational carbon

B. Embodied carbon

C. Fugitive emissions

Answer: B. Embodied carbon comes from making, transporting and installing materials, and it's released before the building opens. Operational carbon comes from running the building, and fugitive emissions are refrigerant leaks.

Scenario (questions 1–3)

A developer in Riyadh is planning a new four-storey office building and registers it under LEED v5 BD+C: New Construction. The owner wants to cut carbon, keep staff healthy, and protect the desert landscape around the site.

2. The owner asks which credit category has the most points available for this project. What should the team say?

A. Materials and Resources

B. Location and Transportation

C. Energy and Atmosphere

Answer: C. In LEED v5 BD+C: New Construction, Energy and Atmosphere has 33 of the 110 points. Materials and Resources has 18 and Location and Transportation has 15.

Scenario (questions 1–3)

A developer in Riyadh is planning a new four-storey office building and registers it under LEED v5 BD+C: New Construction. The owner wants to cut carbon, keep staff healthy, and protect the desert landscape around the site.

3. The team plans to use native, drought-tolerant plants and to restore part of the site as natural habitat. Which LEED v5 impact area does this mainly support?

A. A. Ecological conservation and restoration

B. Decarbonization

C. Quality of life

Answer: A. Protecting and restoring habitat, native plants and water on site is the ecology goal. The other two impact areas are decarbonization and quality of life.

4. A project team has a strategy that fits a local priority but doesn't match a standard credit. In LEED v5, which category could recognize it?

A. Integrative Process, Planning and Assessments

B. Project Priorities

C. Indoor Environmental Quality

Answer: B. In v5, Project Priorities (10 points) replaces v4's separate Innovation and Regional Priority categories.

5. A LEED-certified office building wants to earn LEED Zero Waste. What must it achieve?

A. TRUE certification at the Platinum level

B. A diversion rate of at least 50% for 12 months

C. WELL certification for the building's operations

Answer: A. LEED Zero Waste is earned through TRUE Platinum. TRUE is GBCI's zero-waste program, and it requires diverting at least 90% of waste from landfill, incineration and the environment.

THANK YOU

