

# Introduction to EDGE



An innovation of IFC, a member of the World Bank Group, EDGE is a green building certification system focused on making buildings more resource-efficient. It enables developers and builders to quickly identify the most cost-effective ways to reduce energy use, water use and embodied energy in materials. EDGE empowers emerging markets to scale up resource-efficient buildings in as fast, easy and affordable way. As a global certification partner, Green Business Certification Inc. (GBCI) administers EDGE certification in [over 160 countries](#) around the world. Learn more about EDGE at [edge.gbci.org](https://edge.gbci.org).

GBCI's Introduction to EDGE course provides an overview on EDGE certification and the professional and business opportunities that EDGE offers you, including how to earn your EDGE Expert credential and how to become a GBCI EDGE Auditor.

## INTRODUCTION

≡ Introduction

≡ The Need for EDGE

## EDGE OVERVIEW

≡ **Applicability of EDGE**

≡ **EDGE Software**

≡ **EDGE Global Standard**

≡ **EDGE Certification System**

≡ **Registering Your EDGE Project**

#### PROFESSIONAL AND BUSINESS OPPORTUNITIES

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≡ **Opportunities for Architects, Engineers, and Green Building Consultants**

≡ **Earn Your EDGE Expert Credential**

≡ **Become a GBCI EDGE Auditor**

#### CONCLUSION

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≡ **EDGE is an Easy Choice**



## Introduction

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We strongly recommend  
that you use headphones  
for the best experience.

CONTINUE



## Learning Objectives

- 1 Describe the components of EDGE
- 2 Recognize how EDGE helps grow the green building market
- 3 Use the EDGE Software to design a resource efficient building
- 4 Articulate the benefits of EDGE certification
- 5 Summarize how to certify an EDGE project with GBCI
- 6 List the steps required to become an EDGE Expert and EDGE Auditor



Lesson 2 of 11

# The Need for EDGE

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# Applicability of EDGE

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## Countries

IFC's mission is to work with the private sector in developing countries to create markets that open up opportunities for all. Therefore, EDGE is available primarily for emerging markets.



- View the [full list](#) of countries where EDGE is available.

- GBCI administers EDGE certification in a subset of these countries. View a list of the [over 160 countries](#) where GBCI administers EDGE certification.

CONTINUE

## Defining a Building

For EDGE, a **building** is defined as a:

- conditioned (heated or cooled) or naturally ventilated structure
- with at least one full time equivalent occupant
- and a minimum building area of 200 m<sup>2</sup>.



[Building Four](#) of the King Hussein Business Park in Amman, Jordan. The office was awarded Final EDGE Advanced Certification by GBCI in February 2019.

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[Village la Fontaine](#) in Santo, Haiti. The housing development was awarded Final EDGE Advanced Certification by GBCI in March 2019.

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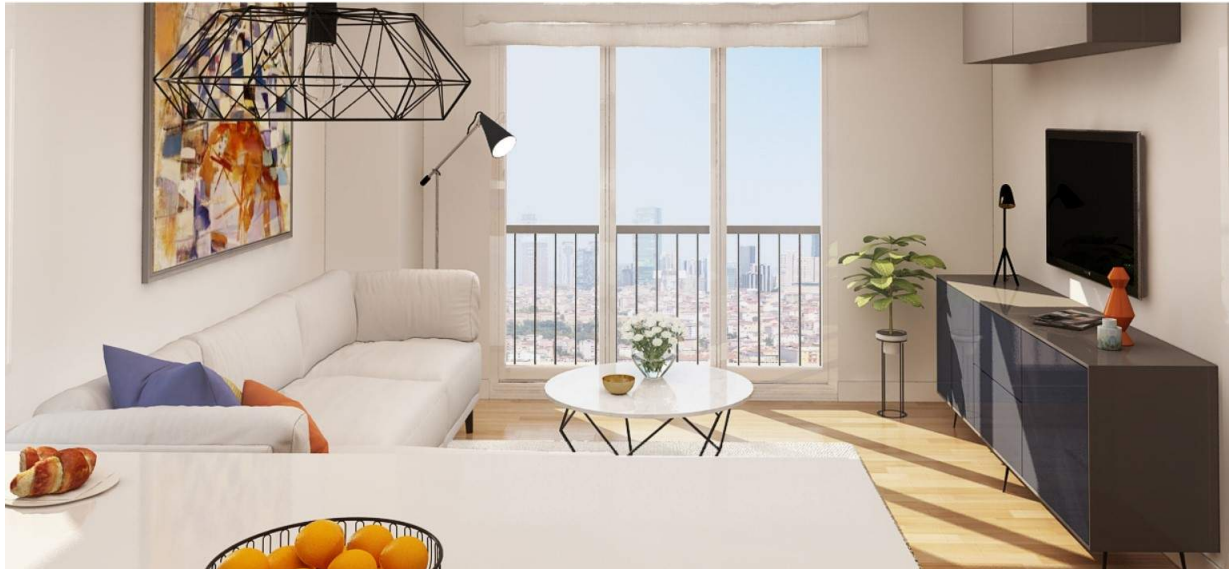
A **single home** is a detached single-family home. There is no minimum area requirement.

**i** If you aren't sure if your building qualifies for EDGE, please [contact IFC](#) as there may be a work-around solution. In some cases, IFC has approved buildings smaller than 200 m<sup>2</sup> to participate in the EDGE program.

CONTINUE

## Building Types

EDGE applies to multiple building usage types. Scroll through to see all the building types that may utilize EDGE.



**Homes** – flats/apartments or detached houses.

*Photo: [MİNT Çağlayan](#) in Istanbul, Turkey. The multifamily residential building was awarded Final EDGE Certification from GBCI in October 2018.*





**Hospitality** – hotels, resorts or serviced apartments.

Hotels assume shorter stays and business use, while Resorts assume longer stays and vacationer use. Serviced apartments are residential-style furnished apartments with included services such as maintenance, regular cleaning and laundry for the residents.

*Photo: [AC Hotel by Marriott](#) in Veracruz, Mexico. The hotel was awarded Final EDGE Certification by GBCI in January 2018.*

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**Retail** – department stores, shopping malls, supermarkets, small food retail and non-food big box retail. In addition, light industry (such as garment manufacturing) and warehouses (such as a storage facility) are included.

*Photo: [Real Plaza Puruchuco](#) in Lima, Peru. The shopping mall was awarded a Preliminary EDGE Certificate by GBCI in October 2019.*

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## Offices

Photo: [FINSA's Oficinas Santa Catarina](#) in Nuevo León, Mexico. The offices were awarded Final EDGE Certification by GBCI in February 2019.

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**Hospitals** – nursing homes, private, public and teaching hospitals, multi-specialty hospitals, clinics (outpatient), diagnostic centers, or eye and dental hospitals.

Photo: [Rainbow Children's Hospital](#) in Bengaluru, India. The hospital was awarded Final EDGE Certification by GBCI in April 2018.

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**Educational** – pre-schools, schools, universities, sport facilities or other educational facilities.

- **Pre-school** refers to informal play schools.
- **School** refers to formal schools from elementary to senior years.
- **University** refers to higher education institutions following the school years, such as colleges and university campuses.
- **Sports facilities** include stadiums and stand-alone gymnasiums.

- **Other educational facilities** may include training centers or places of worship.

Photo: [Escuela Infantil Puerto Madero](#) in Buenos Aires, Argentina. The pre-school was awarded Final EDGE Advanced Certification by GBCI in December 2019.

 IFC continues to add building types over time. You can view the most current list in the [EDGE App](#) (EDGE Software). Please [contact IFC](#) if you don't see your building type as there may be a work-around solution.

CONTINUE

## Project Types

EDGE can be applied to many different types of projects. Click to expand each project type to learn how to apply EDGE.

### Existing Buildings & Retrofits

The same baselines and standards apply to existing buildings as for new construction. Materials in existing buildings that are being retained in the building or re-used and are older than five years may be claimed as “re-used” (this applies to re-use of materials older than five years in new construction/retrofits as well).

Note that existing buildings skip their design audit (Preliminary Certificate).

## Mixed-Use Buildings

EDGE is applicable to mixed-use buildings, such as a residential tower with retail on the ground floor. If a building has more than one use and the secondary use occupies less than 10% of the floor area up to a maximum of 1,000 m<sup>2</sup>, the entire building can be certified under the primary use of the building.

## Multiple Buildings

When one project (such as a housing development) with a single owner consists of several buildings, buildings of less than 10% of the floor area of the project up to a maximum of 1,000 m<sup>2</sup>, with the same use, may be clustered together as a single building.

## Core and Shell

Core and shell projects are projects where the owner is responsible for the building exterior (“shell”) and the core facilities (“core”), but the interior areas are constructed by the tenants (“fit out”). For core and shell projects, measures such as interior lighting for which the tenants are responsible can be claimed in EDGE only if a “tenant fit-out guide” is included in the lease agreement and signed between the tenants and owners.

## Partial Buildings

A part of a building may apply for EDGE certification. For example, a store in a mall or an office in an office building can apply for EDGE certification.

## Social Housing

Social housing projects are at times provided without finished floors or bathrooms fittings in second bathrooms. For such projects, EDGE makes the following exceptions: (1) Unfinished floor areas can use the EDGE default flooring (ceramic tile), and (2) Bathrooms without fixtures can be ignored for Water measures. However, the bathrooms that do have fittings must have low-flow fixtures to claim the corresponding EDGE measures, as is normally the case.

# EDGE Software

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EDGE has three main components. The first component of EDGE is the Software.



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## SOFTWARE

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The web-based EDGE Software (EDGE App), available for free at [edgebuildings.com](https://edgebuildings.com), allows you to quickly determine the optimum combination of building design strategies for the best return on investment. The EDGE App can be used to rapidly evaluate and compare estimated costs for design strategies targeting reductions in energy use, water use, and embodied energy in materials. This overall picture of performance helps to construct a compelling business case for building green.

Click to expand each attribute to learn more about the EDGE App.



## Uses location specific baselines

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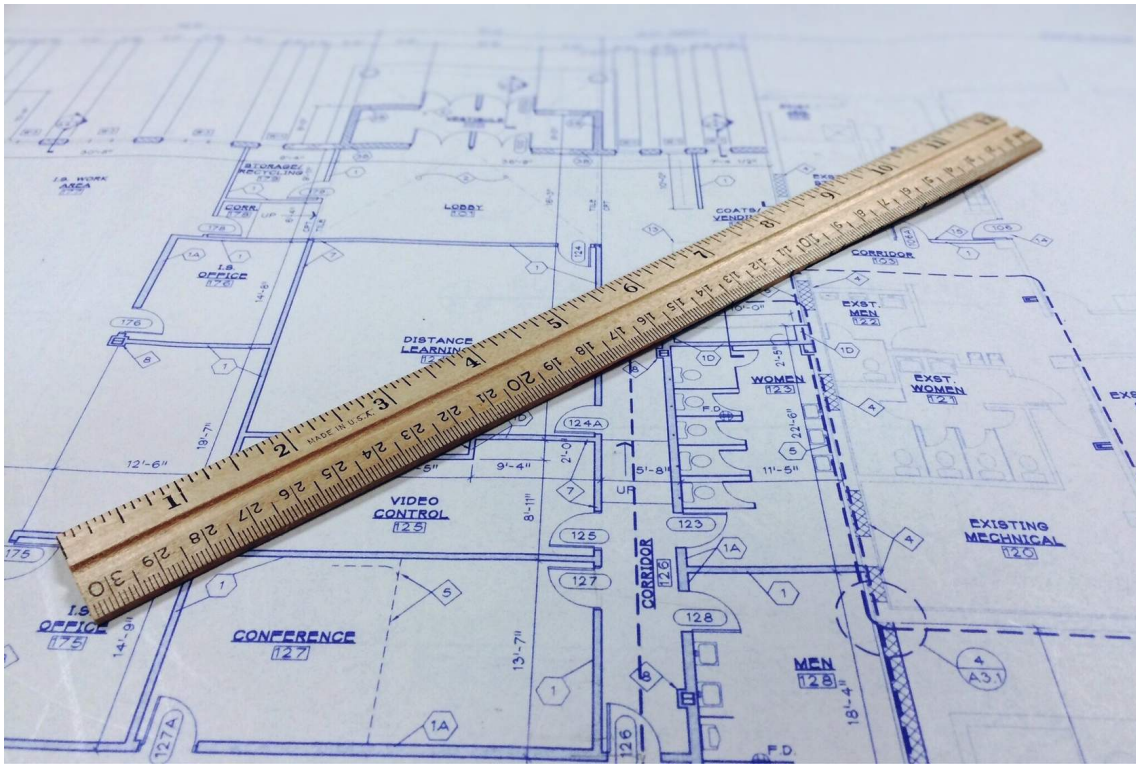
The EDGE software has contextual data for different cities, including: local codes, construction practices, utility costs and climate. Estimated savings are specific to a project location as the baseline varies according to the city selected.



## Provides design-specific results

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Behind the intuitive easy to use interface, is a sophisticated building physics engine that uses quasi-steady state simulation methodology to give design-specific results.



## Informs design and investment decisions

EDGE provides design guidance on various technical measures and also serves as an investment planning tool for building owners and developers.



CONTINUE

Let's see how simple it is to use the EDGE App!



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Try out the [EDGE App](#) for yourself!

# EDGE Global Standard

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The second component of EDGE is the Global Standard.



20%



20%



20%

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## GLOBAL STANDARD

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To achieve the EDGE Standard, a building must demonstrate (as compared to typical local practices) a 20% projected reduction in each of three areas:

1. Energy use
2. Water use
3. Embodied energy in materials

EDGE defines a global standard while contextualizing the base case to the building functions and its location. Only a handful of measures are required for better building performance that result in lower utility costs, extended equipment service life, and less pressure on natural resources.



“What is embodied energy?”

- Frequently Asked Question

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“Embodied energy is the energy required to extract and manufacture the materials required to construct and maintain a building.”

- Answer

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CONTINUE

EDGE Advanced



EDGE certified projects with 40% or more projected on-site energy savings earn "EDGE Advanced" status. Note that EDGE Advanced projects must still demonstrate at least 20% savings in projected water use and embodied energy in materials. There are no extra steps or fees required for a certified project to be recognized as EDGE Advanced.

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## *EDGE Advanced Case Study*

### **AASHIANA**




**Nairobi, Kenya | Final EDGE Certification | September 2019**

**Developer:** Madhur Ramrakha | **EDGE Expert:** Elizabeth Wangeci Chege

**EDGE Auditor:** Amrish Shah



Aashiana, which means “sanctuary” in Hindi, is a home that exudes brightness, energy, and natural beauty, serving as an oasis of tranquility for its inhabitants in Nairobi, Kenya.

<b>Size</b> 1,072 m <sup>2</sup>	 <b>51% ENERGY SAVINGS</b> Reduced window to wall ratio, reflective paint/tiles for external walls and roof, natural ventilation with operable windows and no air conditioning, heat pump for hot water generation, energy-efficient refrigerator and clothes washing machine, energy-saving lighting for internal and external spaces, lighting controls for the exterior, solar photovoltaics, and smart meters are projected to save 51 percent of the energy that a conventional home would require.
<b>Certified Units</b> 1	 <b>72% WATER SAVINGS</b> Low-flow showerheads, low-flow faucets for kitchen sinks and washbasins, dual flush water closets, a rainwater harvesting system, and recycled grey water for flushing help reduce water waste and lower utility bills.
<b>People Impacted</b> 12	 <b>64% LESS EMBODIED ENERGY IN MATERIALS</b> In-situ reinforced concrete slab for floor, asphalt shingles on timber rafters for roof, machine-cut, unpolished stone blocks for internal and external walls, parquet/woodblock finishes and ceramic tile for flooring, and re-use of existing steel frames for windows help reduce this project's impact on the environment.
<b>CO<sub>2</sub> Savings</b> 14.8 tCO <sub>2</sub> /Year	

The intention of the design was to flood the residence with natural light and allow excellent ventilation without compromising on thermal comfort. The home is full of modern conveniences but is not totally dependent on erratic grid power. Water is conserved and reused without negatively impacting the potable and non-potable uses of occupants. Materials and finishes were procured from responsible supply chains which are party to eco-labeling and/or certification standards, with the intention that the building be constructed with the least amount of embodied energy in materials as possible.





Madhur (Muddy) Ramrakha, the developer of the home, believes in taking a triple-bottom-line approach by focusing on people, the planet, and profits. Aashiana received Final EDGE Certification from GBCI in September 2019.

# EDGE Certification System

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The third component of EDGE is the Certification System.



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## CERTIFICATION SYSTEM

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Download the slides from the video.



**EDGE Certification System Slides.pdf**  
1.3 MB





### Important certification considerations

- EDGE Preliminary Certificates expire and are no longer valid 12 months after the project is practically complete or 36 months after issuance, whichever comes first. Exceptions may be granted on a case-by-case basis.
- The site audit must take place within 12 months of the project's practical completion. This means that a project consisting of multiple buildings constructed over several years will need multiple site audits (at least one for each 12-month period).

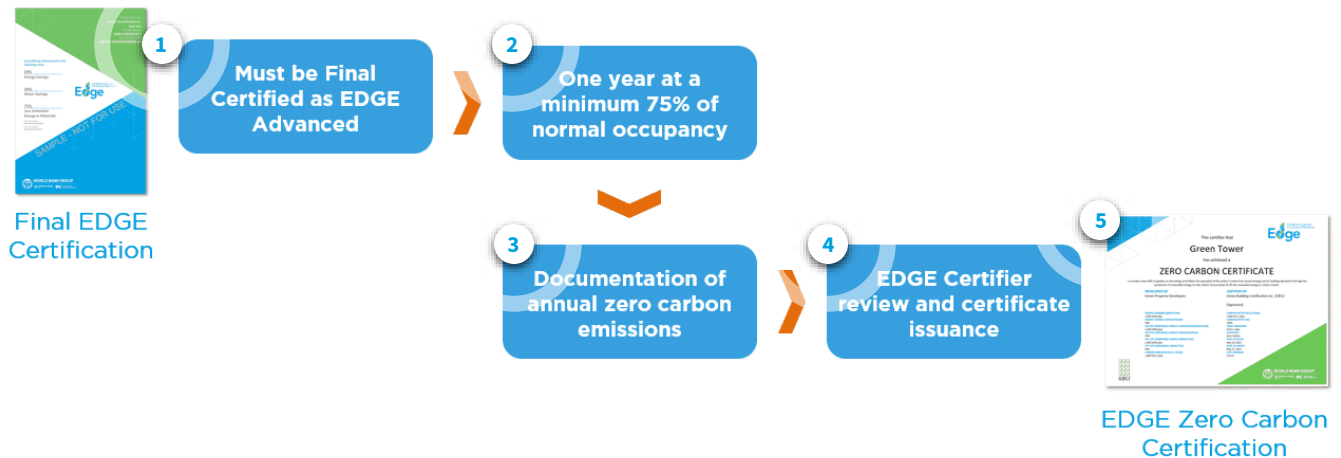
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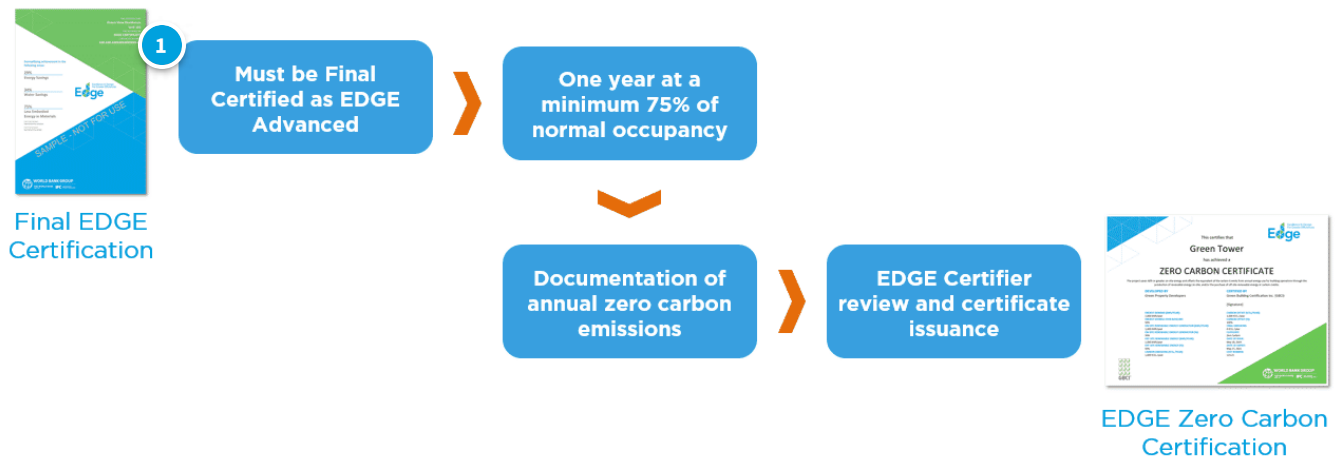
# EDGE Zero Carbon Certification

EDGE Zero Carbon Certification was introduced at the end of 2019 to support the ambitions of Architecture 2030 and the World Green Building Council (WGBC) for new buildings to be zero carbon by 2030 and all buildings to be zero carbon by 2050. The “Advancing Net Zero” initiative of the WGBC aligns with the Paris Agreement to keep rising temperatures well below 2 degrees Celsius.

All EDGE-certified projects protect natural resources and save on operational expenses. For builders with even higher aspirations, EDGE Zero Carbon is an opportunity for even more acclaim. Recognition is reflected in project studies, certificates, award submissions and more.

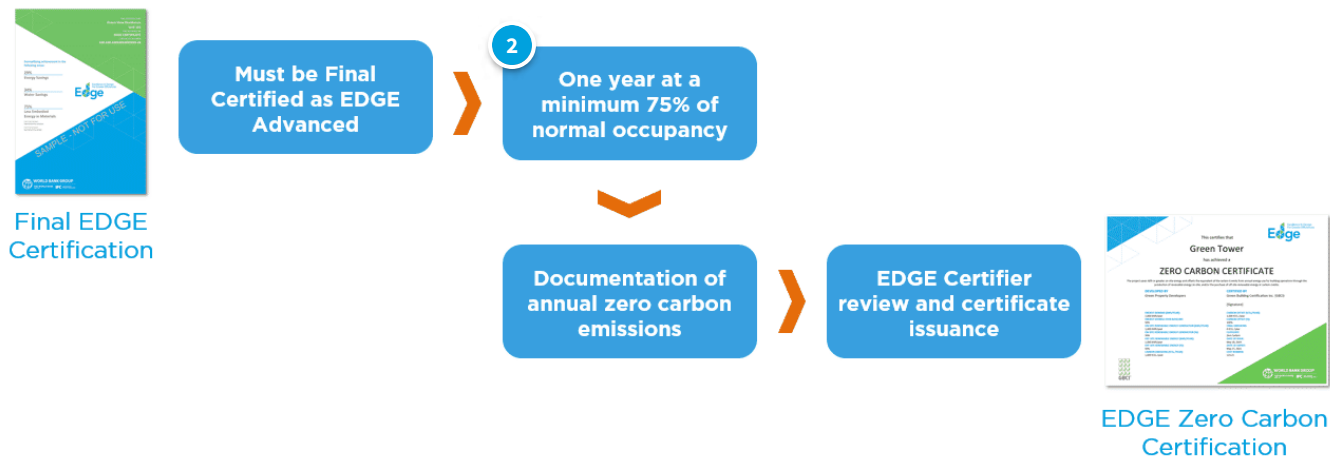
Learn more about how EDGE Zero Carbon certification works by clicking each step number in the graphic below.





### Already have earned EDGE Advanced Final Certification

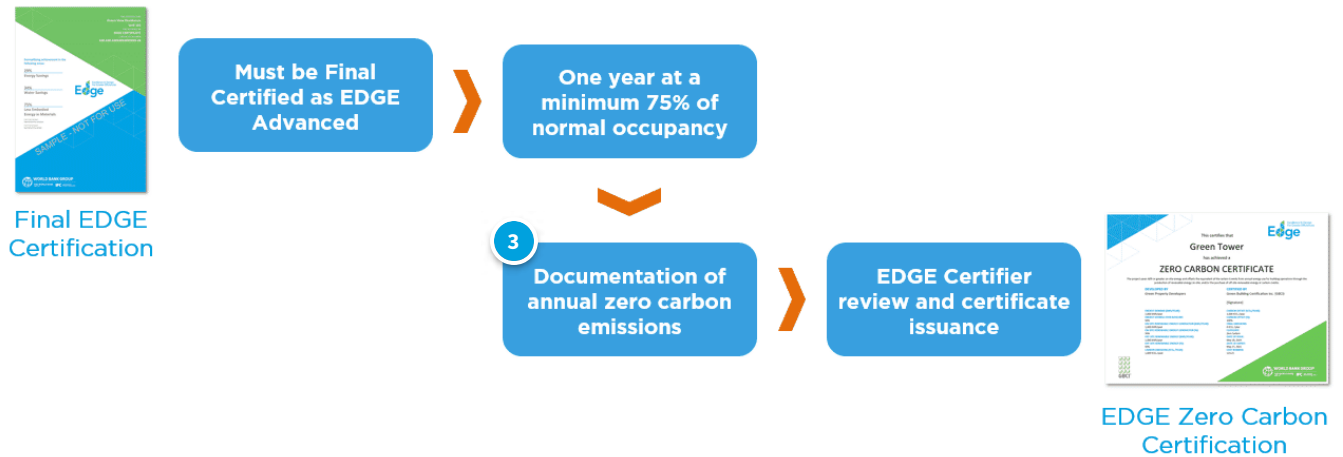
To qualify for EDGE Zero Carbon certification, the project must already have earned EDGE Advanced Final Certification (meaning it was certified once construction was complete with at least 40% predicted energy savings in addition to at least 20% predicted savings in water and embodied energy in materials).



75% Occupancy for at least one year



The building must have 75% occupancy for at least one year.



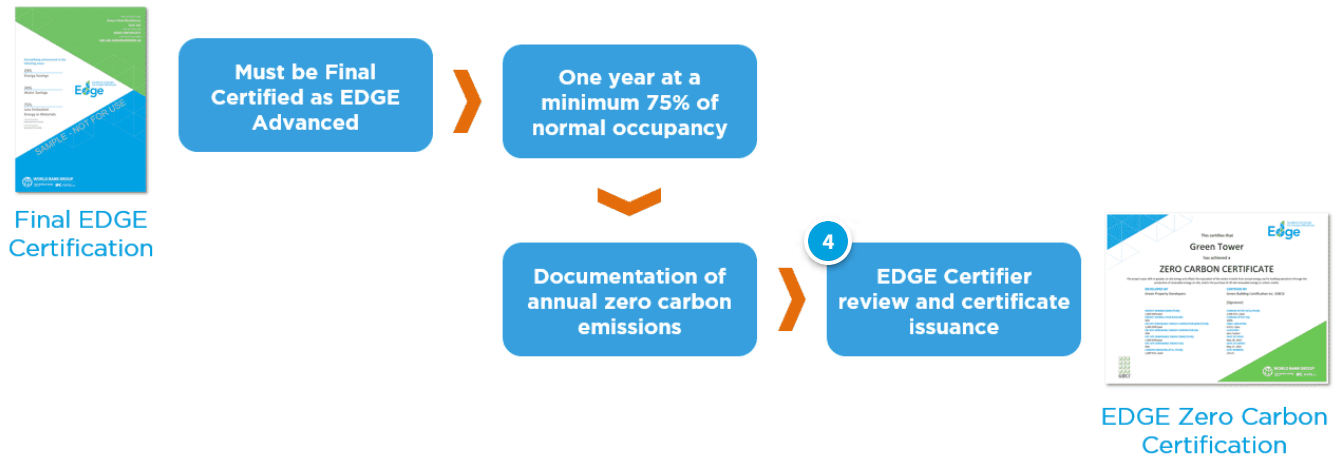
### Documentation of annual zero carbon emissions



The project must use 100% renewables on-site or off-site for energy, or have purchased carbon offsets to reach 100%. All energy usage must be accounted for, including secondary fuels such as diesel and Liquefied petroleum gas (LPG).

The following carbon offset standards have been authorized by EDGE: ClimateSEED, Community Climate Biodiversity Standard, Gold Standard, ISO 14064-2, UNFCCC Clean Development Mechanism, and Verified Carbon Standard.

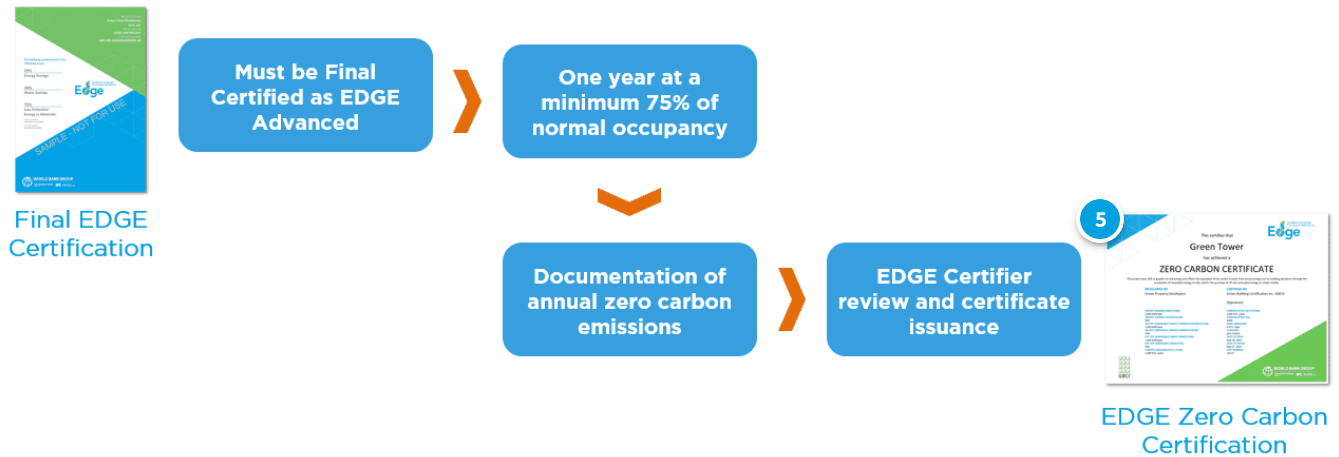




### Certifier reviews documentation and issues Zero Carbon certificate

The Certifier (e.g., GBCI) reviews documentation and issues the Zero Carbon Certificate.

There is no EDGE Auditor involved in EDGE Zero Carbon Certification process.



## EDGE Zero Carbon Certification



*Click on the certificate sample to see a larger version.*

The Zero Carbon certificate shows operational values related to energy demand, procurement of renewables or carbon offsets.

For a project that meets the EDGE Zero Carbon criteria fully on-site, including generation of on-site renewable electricity, the certificate will expire after four years.

For a project that meets the EDGE Zero Carbon criteria by purchasing off-site renewable electricity or carbon offsets, the certificate will expire after two years.

GBCI's fees for EDGE Zero Carbon certification may be found at

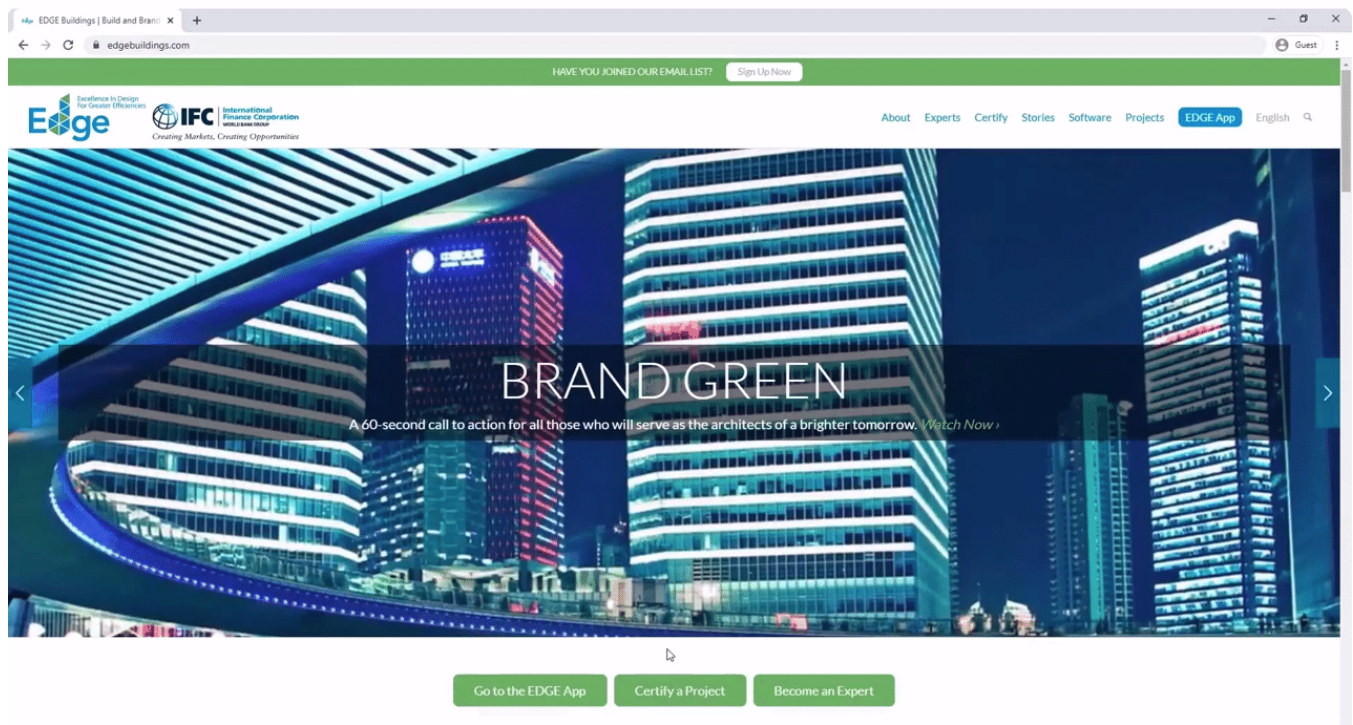
<https://edge.gbci.org/certification> under "Pursue EDGE Zero Carbon Certification" (towards

the bottom of the webpage).

You can read IFC's guide on [How to Apply for EDGE Zero Carbon Certification](#) to learn more.

# Registering Your EDGE Project

Check out the video below to watch how to start the registration process.



CONTINUE

As mentioned in the video, once you complete the registration form in the EDGE App, an email is automatically sent to GBCI (or your selected Certifier, if not GBCI). GBCI will follow up via email with your certification pricing and request:

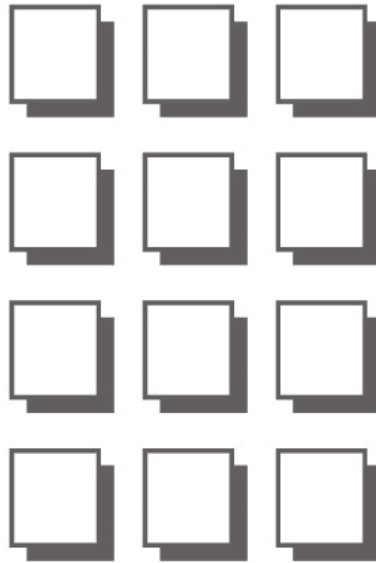
- a signed Certification Agreement

- confirmation of your billing details for the registration and certification fee invoices

By choosing to work with GBCI, you are able to select and contract with a [local EDGE Auditor](#) of your choice. The fees for EDGE Auditor services are negotiated with your chosen Auditor and are paid directly to that Auditor. This keeps Auditor fees very reasonable by minimizing travel costs and enabling you to pay in your local currency.

Your EDGE Auditor can be based anywhere as they will need to only be on-site for the site audit. GBCI encourages clients to email our [GBCI-trained EDGE Auditors](#) for competitive quotes.





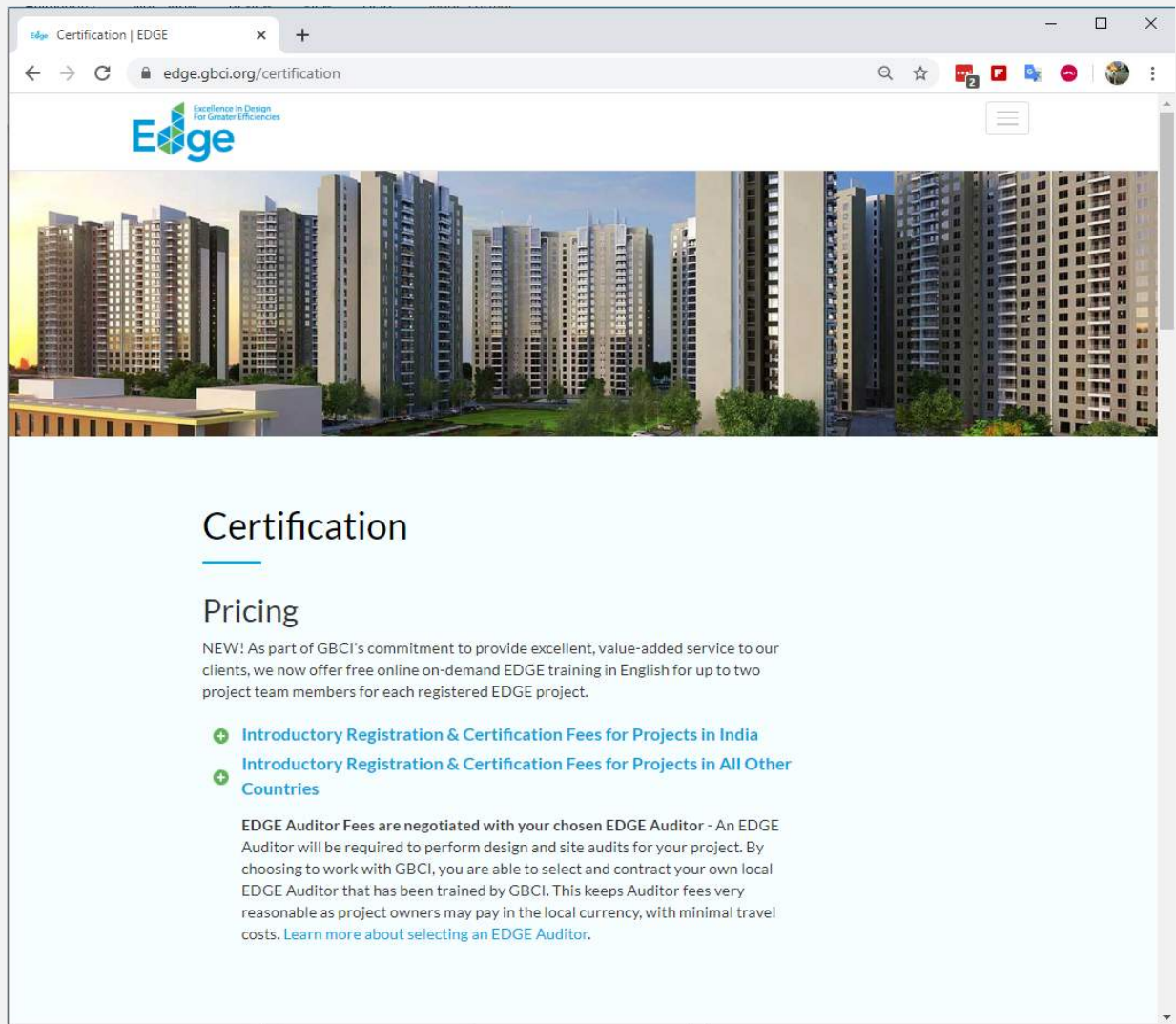
**GREEN BUSINESS™  
CERTIFICATION INC.**

## **GBCI Fees and Other Important Information**

Please visit <https://edge.gbci.org/certification> for:

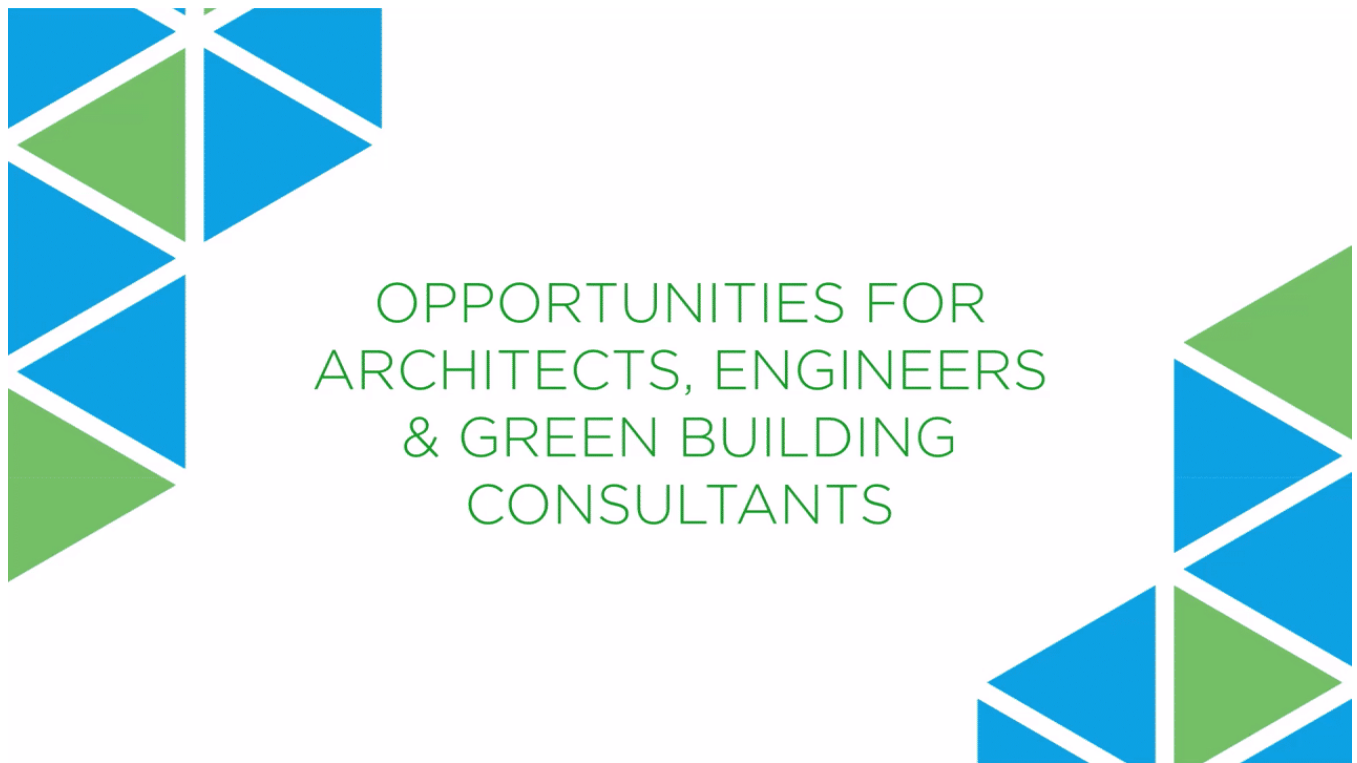
- Registration and certification fees
- Registration process
- EDGE Auditor list

- Review timelines



# Opportunities for Architects, Engineers, and Green Building Consultants

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Download the slides from the video.

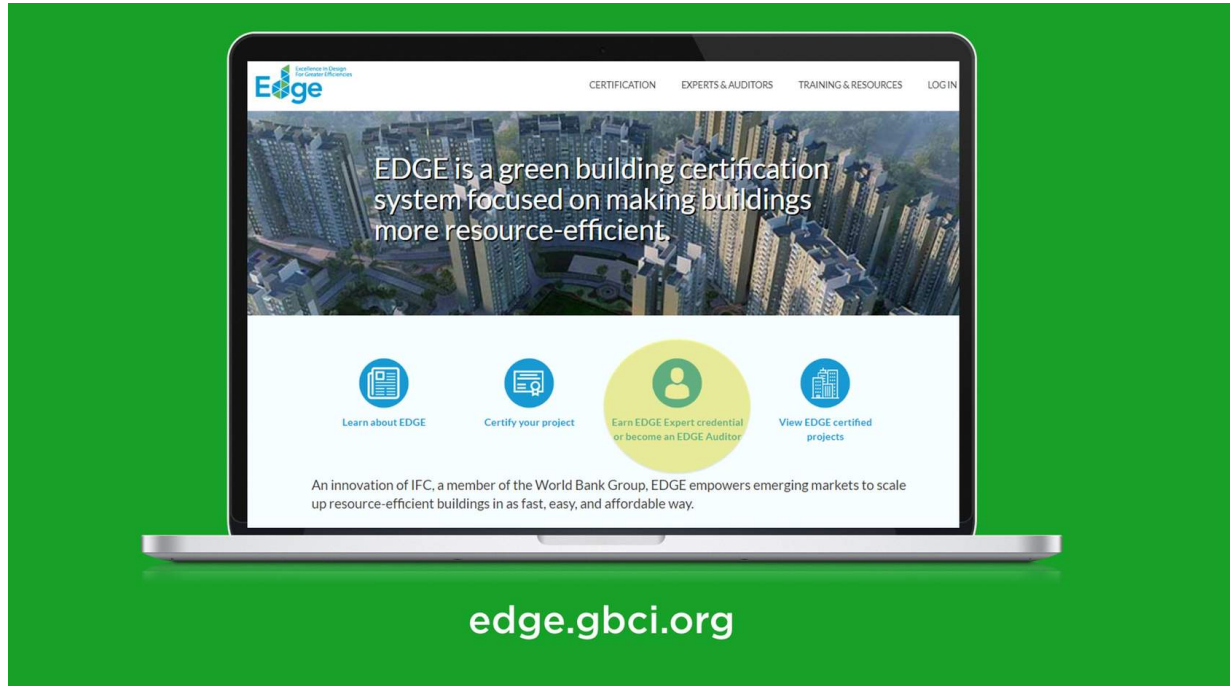


**Opportunities Slides.pdf**  
753.8 KB



CONTINUE

**So how do you earn your EDGE Expert credential or become a GBCI EDGE Auditor?** The steps are outlined on our website at [edge.gbci.org](https://edge.gbci.org). We'll briefly cover the steps next in this course.



# Earn Your EDGE Expert Credential

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EDGE Expert

Eligibility

Training

EDGE Exam

Download the slides from the video.



**EDGE Expert Credential Slides.pdf**

1013.2 KB





## CONTINUE

### EDGE Technical Workshops

View a schedule of upcoming [local workshops](#) or register for the online on-demand [English](#) or [Spanish](#) version of the workshop.

Download more information about GBCI's online on-demand workshops:



**EDGE Technical Online Workshop\_1.pdf**

463.3 KB



### The EDGE Exam

The EDGE Exam is administered by Prometric (a third-party testing service) and currently costs \$100 USD. It is administered via computer and consists of 75 multiple-choice questions with a 2.5 hour limit. All exams are closed-book. The exam is available in multiple languages.

Where can I take the EDGE Exam?

A complete list of test center locations may be found at <http://www.prometric.com/edge> by clicking on the “Locate” link. You may also

take the EDGE Exam from  
the comfort of your home or

How long do I have to take the  
EDGE Exam after I complete  
the EDGE Technical  
Workshop?

The EDGE Exam should be  
taken within 2 months of your  
completion of the EDGE  
Technical Workshop.

Can I retake the EDGE Exam if I  
do not pass the first time?

You may retake the EDGE  
Exam once more within two  
months of your first attempt.  
Retaken exams will be different  
from the original EDGE Exam.  
Each exam attempt will cost  
\$100 (paid to Prometric).

Lesson 10 of 11

# Become a GBCI EDGE Auditor

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EDGE Expert

Download the slides from the video.



**GBCI EDGE Auditor Slides.pdf**  
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## CONTINUE

The **EDGE Auditor maintenance fee** is currently \$150 (INR 10,000 for India based Auditors). The fee covers a two year period.

**GBCI's EDGE Auditor Candidate Workshop** is available online on-demand. Registration for this workshop is open by personal invitation only to EDGE Auditor candidates that hold an EDGE Expert credential whose [applications](#) have been approved. New candidates will be invited to register for the workshop after their applications have been approved.

- **Price:** \$399
- **Language:** English
- **Duration:** About 8.5 hours
- **Format:** Students must successfully complete two audit exercises as well as a short quiz after each of the 5 online modules. The Audit Final Exercise submission (mock audit exam) will be graded for quality. Only candidates with a high-quality submission will pass the workshop and become GBCI EDGE Auditors. No refunds are offered for students that do not pass the workshop.

Lesson 11 of 11

# EDGE is an Easy Choice

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Download the slides from the video.



**EDGE is an Easy Choice Slides.pdf**

1.5 MB





Please remember to return to the [course webpage](#) to complete the quiz if you would like to earn continuing education (CE) credit.