Sustainable Building Certification Toolkit

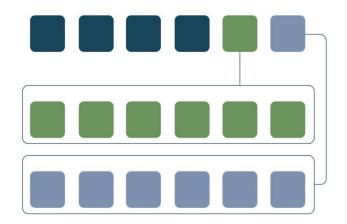# TOOLKIT STRUCTURE

PART A:

CERTIFICATION SYSTEM SELECTION GUIDANCE

This simplified guide provides two certification system choices for owners and franchisees based on their region. The recommendations are based on a comprehensive analysis of design and construction performance criteria, market recognition, code alignment, third-party review process and cost.
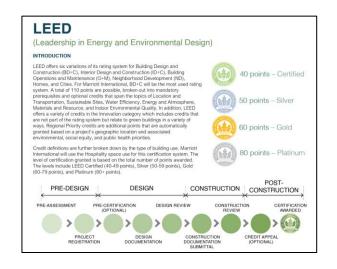
See Part A for full guidance.

PART B:

CERTIFICATION OVERVIEW DOCUMENTS

Certification Overview Documents provide a high-level overview of the structure and content of the six recommended international and holistic green building certification systems. Because Owners are not expected to be experts on such systems, this tool will provide relevant information to more easily compare and decide which system is most appropriate for certifying a particular project.

Systems are summarized by:
- Overall intention and approach
- Achievement level point thresholds
- Certification procedure
- Cost
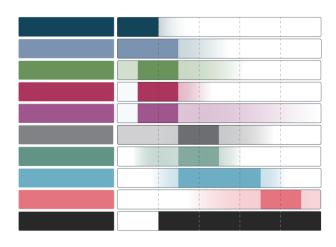- Market penetration

See Part B for overview documents.

PART C:

PROCESS MAP

The process map is a visual planning tool that tracks when specific certification-related tasks should be completed throughout the project schedule. Teams should refer to this often to make sure their certification efforts are keeping up with the pace of the project. Certain tasks will become much more difficult to perform if delayed, and so this tool will help track and maintain progress.

Some tasks have flexible boundaries for when they can be performed, reflected by a faint color gradient in the timeline.

See Part C for full Process Map.

TOOLKIT STRUCTURE

PART D:
CONSULTANT DIRECTORY

Each certification system has rigorous requirements and a unique documentation approach that will require the expertise of experienced sustainability consultants. For this reason, Atelier Ten is providing a directory of consultants on a regional and certification system basis. Some consultancies are large enough to cover multiple regions for certain systems, while more niche systems will require the expertise of more regionally-specialized consultants.

See Part D for full directory.

LOCATION SERVED	CERTIFICATION SYSTEM	EXPERT	WEBSITE	CONTACT INFORMATION
North America				
Central & South America				
Europe & Russia				
Middle East & Africa				
Asia Pacific				

PART E:
SAMPLE SCORECARDS

Certification systems typically follow a checklist approach where project teams have discretion to pursue selected requirements, reflected in a scorecard. Atelier Ten has created 'sample scorecards' to guide project teams as to which credits/points should be prioritized. This is based on credits that were determined to be directly aligned with Marriott's SBTs and Serve360 goals. Other points are left to the project team's discretion.

See Part E for Sample Scorecards.

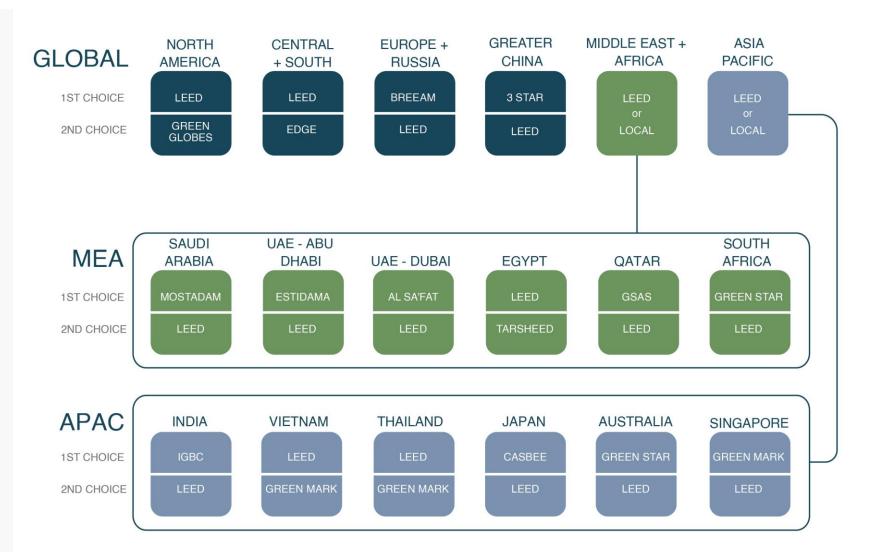| Outcome	Credit Category	#	Credit	MI Recommended	Discretionary	Max Available
Responsible	Responsible	1	Industry Development	1	0	1
	Responsible	2	Responsible Construction	1	0	1
	Responsible	3	Verification and Handover	1	0	1
	Responsible	4	Operational Waste		Minimum Expectation Only	
	Responsible	5	Responsible Procurement		1	1
	Responsible	6	Responsible Structure		5	5
	Responsible	7	Responsible Envelope		4	4
	Responsible	8	Responsible Systems		2	2
	Responsible	9	Responsible Finishes		2	2
Healthy	Healthy	10	Clean Air		2	2
	Healthy	11	Light Quality		4	4
	Healthy	12	Acoustic Comfort		2	2
	Healthy	13	Exposure to Toxins		2	2
	Healthy	14	Amenity and Comfort		2	2
	Healthy	15	Connection to Nature		2	2
Resilient	Resilient	16	Climate Change Resilience		1	1
	Resilient	17	Operations Resilience		2	2
	Resilient	18	Community Resilience		1	1
	Resilient	19	Heat Resilience	1	0	1
	Resilient	20	Grid Resilience	3	0	3
Positive	Positive	21	Upfront Carbon Emissions	3	3	6
	Positive	22	Energy Use	3	3	6
	Positive	23	Energy Source	3	3	6
	Positive	24	Other Carbon Emissions	2	2	4
	Positive	25	Water Use	3	3	6
	Positive	26	Life Cycle Impacts	2	0	2
Places	Places	27	Movement and Place	3	0	3
	Places	28	Enjoyable Places		2	2
	Places	29	Contribution to Place		2	2
	Places	30	Culture, Heritage and Identity		1	1
People	People	31	Inclusive Construction Practices		1	1
	People	32	Indigenous Inclusion		2	2
	People	33	Procurement and Workforce Inclusion		3	3
	People	34	Design for Inclusion		3	3
Nature	Nature	35	Impacts to Nature		2	2
	Nature	36	Biodiversity Enhancement		4	4
	Nature	37	Nature Connectivity		2	2
	Nature	38	Nature Stewardship		2	2
	Nature	39	Waterway Protection		4	4
Leadership	Leadership	40	Market Transformation		5	5
	Leadership	41	Leadership Challenges		"Unlimited"	

PART A:

CERTIFICATION SYSTEM SELECTION GUIDANCE

CERTIFICATION SYSTEM SELECTION GUIDANCE

INTRODUCTION

This tool helps narrow down options for the most appropriate green building certification system based on the region of development. All systems included in this tool have been vetted for their relevance to Marriott's global sustainability goals as well as the regional building industry. First and second choice systems are provided for each region.

USER GUIDE

1. Identify which region your project belongs to.
2. Evaluate the 1st and 2nd choice options in your region. In most cases, certification should be pursued with the 1st choice system, but special circumstances may make the 2nd choice system more favorable. *(If your region has "Local" indicated as a 1st or 2nd choice option, proceed to step 3).* If selecting a certification system not listed in this tool, project teams should seek approval from Marriott International.
3. Local systems may be more appropriate for a particular region or climate. Selected countries with robust and prevalent local certification systems have been listed in the diagram with their corresponding 1st and 2nd choice systems.
4. Upon final selection of certification system to be pursued, notify Marriott International of decision.

GLOBAL

	NORTH AMERICA	CENTRAL + SOUTH	EUROPE + RUSSIA	GREATER CHINA	MIDDLE EAST + AFRICA	ASIA PACIFIC
1ST CHOICE	LEED	LEED	BREEAM	3 STAR	LEED or LOCAL	LEED or LOCAL
2ND CHOICE	GREEN GLOBES	EDGE	LEED	LEED		

MEA

	SAUDI ARABIA	UAE - ABU DHABI	UAE - DUBAI	EGYPT	QATAR	SOUTH AFRICA
1ST CHOICE	MOSTADAM	ESTIDAMA	AL SA'FAT	LEED	GSAS	GREEN STAR
2ND CHOICE	LEED	LEED	LEED	TARSHEED	LEED	LEED

APAC

	INDIA	VIETNAM	THAILAND	JAPAN	AUSTRALIA	SINGAPORE
1ST CHOICE	IGBC	LEED	LEED	CASBEE	GREEN STAR	GREEN MARK
2ND CHOICE	LEED	GREEN MARK	GREEN MARK	LEED	LEED	LEED

* This diagram is not an exhaustive list of countries that have robust popular local certification systems. If your region or country does not appear in this diagram, be sure to refer to local building codes and sustainability certification systems relevant to your context.

CERTIFICATION SYSTEM SELECTION GUIDANCE

DEVELOPMENT BACKGROUND

Atelier Ten compared several green building rating systems to make recommendations for certifying Marriott International (MI)'s global pipeline of new construction hotels. They were filtered using three preliminary criteria: **third-party review, holistic requirements, and international applicability**. The certification systems included in this toolkit are the result of this study.

The shortlisted systems were compared using the following considerations:
- Shared Design and Construction Performance Criteria: Energy, Water, Waste, Human Health, Ecological Health
- Correlation to Operational Performance
- Administrative Criteria: Cost Implications, Market Recognition
- Rigor of Review
- Alignment with regional codes
- Recognition by hotel booking platforms

Local certifications, i.e., those prevalent predominantly in a single country, were also included. They offer several advantages in terms of being contextual, more feasible for project teams, easily recognized by the local markets and cost-effective. Recommendations were made for Greater China, APEC, Middle East & Africa regions where code alignment was a driver.

EVALUATION CRITERIA

① **THIRD-PARTY CERTIFIED**

Information provided by projects for certification must independently audited. Third-party verification is associated with higher accountability, rigor and performance achievement. This translates to recognition by the building industry, real estate investors, hotel booking platforms and guests alike.

② **HOLISTIC CONSIDERATIONS**

Holistic rating systems have become an industry standard for sustainability benchmarking due to their ambition and comprehensive impact. These contain three main topic areas aligned with Marriot's Climate Action Program and Serve360 Goals: GHG emissions/carbon, water, and waste.

③ **INTERNATIONAL APPLICABILITY**

While the originally shortlisted certifications had prevalence in multiple countries, the research was expanded later to include local certifications dominant in one country only.

CERTIFICATION SYSTEM COST

Certification Fees

Fees are charged by the administering bodies of the systems for running the programs and third-party reviews. They typically include registration fees (flat fee per project) and review fees, that may be broken into multiple reviews - e.g. design and construction reviews, or preliminary and final reviews. For a 23,225 m^2 project this would vary from about ~USD $7,000 to USD $28,000 as of 2023. This variation is typically not significant relative to 'hard cost' impacts, but for countries with weaker currencies than the US or EU, Western-origin systems are relatively more expensive.

Soft Costs

This includes fees charged by consultants providing services to guide project teams through the certification process and manage the submissions from early design through completion of construction. It also includes premiums charged by architects and general contractors for additional effort to assist with compiling documentation. These costs tend to vary significantly by region, time of engaging consultant, level of certification pursued, types of credits pursued, consultant experience, complexity and size of projects, and complexity of certification system pursuit.

Given this variation, hard numbers are not provided here.

- High Soft Cost: LEED, Green Star, ILFI Core
- Medium Soft Cost: BREEAM and Green Globes
- Low Soft Cost: EDGE, IGBC and other local systems

Hard Costs

Construction costs associated with sustainability strategies to achieve certifications are the most complex of the three to quantify. Hard costs tend to vary by project design, owner policies, region, contractor practices, level of certification pursued, types of credits pursued, complexity and size of projects.

The hard cost premium is typically a low single percentage point of construction budget. One study placed the construction cost premium of LEED certification at ~2% of construction budget, while another study looking at Gold and Platinum certifications placed it in a range of 7-10%.

A detailed review of the business case for green building certification is available in LOBO and on MGS.

PART B:

CERTIFICATION OVERVIEW DOCUMENTS

LEED

(Leadership in Energy and Environmental Design)

INTRODUCTION

LEED offers six rating system variations that are unique to different building applications. For Marriott International, Building Design and Construction (BD+C) will be the most used rating system. For LEED v4.1 BD+C, a total of 110 points are possible, broken out into mandatory prerequisites and optional credits that span the six credit categories of Location and Transportation, Sustainable Sites, Water Efficiency, Energy and Atmosphere, Materials and Resource, and Indoor Environmental Quality. In addition, LEED offers a variety of credits in the Innovation category which includes credits that relate to green buildings in a variety of ways. Regional Priority credits are additional points that are automatically granted based on a project's geographic location and associated environmental, social equity, and public health priorities.

Credit definitions are further broken down by the type of building use. Marriott International will use the Hospitality space use for this certification system. The level of certification granted is based on the total number of points awarded. The levels include LEED Certified (40-49 points), Silver (50-59 points), Gold (60-79 points), and Platinum (80+ points).
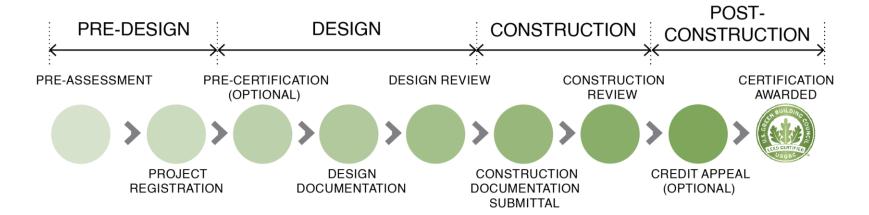
40 points – Certified

50 points – Silver

60 points – Gold

80 points – Platinum

MARKET PENETRATION

LEED is the dominant sustainability certification system in North America. As of 2019, LEED had 36,886 certified buildings in North America. Although LEED has seen considerable international uptake, 66% of certifications still take place in North America, 19% in Asia, 9% in Europe.

Along with Green Globes, LEED was also recommended by the General Services Administration for certifying federal buildings after the GSA did a broad survey for the most actionable and effective systems.

RELATIVE COST

Compared to similar green building certification systems, LEED is anticipated to have medium range soft costs. Certification fees would cost around USD $28,000 which is in the high range compared to similar green building certification systems.

RELATIVE RIGOR

LEED positions itself as an industry leading but flexible benchmarking system. Credits are often prescriptive but frequently have performance-based options within credits options. LEED has been evolving to keep the building industry environmentally accountable since 1998 with constant input from practitioners. LEED is more rigorous than most other rating systems with a couple notable exceptions, but it is still regarded as a fairly holistic and robust system.
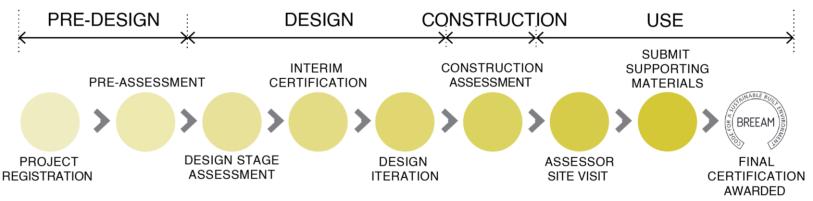
BREEAM

(Building Research Establishment Environmental Assessment Method)

INTRODUCTION

BREEAM offers many schemes including UK New Construction (NC) and International New Construction (NC), which are likely to be the most commonly used schemes for Marriott International. MI will follow requirements for the Non-Standard section of Residential Institutions which covers hotel, hostel, and guest house space use types. BREEAM has 9 major assessment categories including Management, Health and Wellbeing, Energy, Transport, Water, Materials, Waste, Land Use and Ecology, and Pollution. Additionally, up to 10 credits are available in the Innovation category for projects which pursue innovation within the construction industry that goes beyond the standard BREEAM issues and requirements.

While BREEAM remains flexible with which credits can be selected for certification, minimum standards are set in key areas such as energy, water, and waste so that focus is not diverted from these priorities. Each of the technical sections within BREEAM has an associated weighting which contributes to the overall rating. Rating is based on the percent score as follows: Pass (≥ 30%), Good (≥ 45%), Very Good (≥ 55%), Excellent (≥ 70%), and Outstanding (≥ 85%).

PASS	**1 Star** – 30%
GOOD	**2 Star** – 45%
VERY GOOD	**3 Star** – 55%
EXCELLENT	**4 Star** – 70%
OUTSTANDING	**5 Star** – 85%

MARKET PENETRATION

BREEAM is the dominant certification system in Europe, holding 80% of the market share of green building certification. As of June 2023, there are 33,501 projects certified with BREEAM in Europe. There is some uptake internationally, but BREEAM has not taken off as much as LEED. The popularity of BREEAM in Europe is in part due to the availability of custom versions which are specifically adapted to standards of different western European countries. BREEAM was developed in the UK and has a clear advantage there, but it also has a slight edge over LEED in the rest of Europe as well.

COST

Compared to similar green building certification systems, BREEAM is anticipated to have medium range soft costs. It is estimated that for a 25,000 m^2 building BREEAM certification fees would cost around USD $7,000 which is in the low range compared to similar green building certification systems.

RELATIVE RIGOR

BREEAM is about as rigorous as LEED. However, BREEAM offers unique flexibility of allowing different weightings for each of its credit categories depending on the location of the project. This functions to make certain categories more or less impactful depending on how important that topic is to the region.

PRE-DESIGN — DESIGN — CONSTRUCTION — USE

PROJECT REGISTRATION → PRE-ASSESSMENT → DESIGN STAGE ASSESSMENT → INTERIM CERTIFICATION → DESIGN ITERATION → CONSTRUCTION ASSESSMENT → ASSESSOR SITE VISIT → SUBMIT SUPPORTING MATERIALS → FINAL CERTIFICATION AWARDED
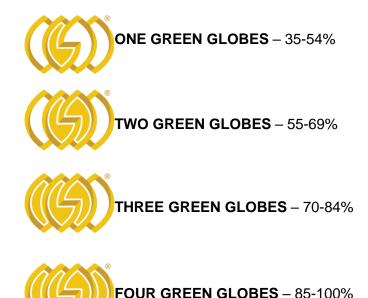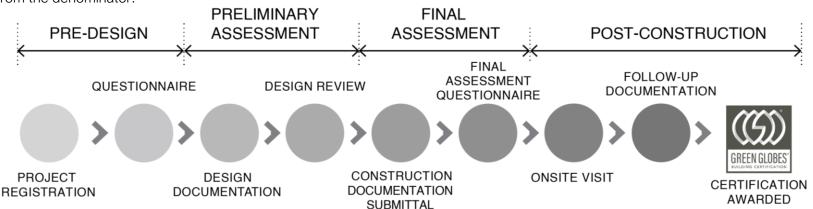
GREEN GLOBES

Green Globes

INTRODUCTION

Administered by the Green Building Initiative (GBI), Green Globes assesses a project based on performance in Project Management, Site, Energy, Water Efficiency, Materials, and Indoor Environment categories. The system acts like a questionnaire breaking out specific criteria that are rewarded points based on their inclusion in the project design. This system provides a project team with flexibility to address very specific topics in their design without the obligation of pursuing prerequisites. Although no individual credit is required, some are weighted more heavily than others based on the overall calculated impact. However, minimum expectations are likely to be included in forthcoming changes to the Green Globes standard anticipated for release roughly early 2024.

Points are distributed as follows: Project Management – 100 points, Site – 150 points, Energy – 260 points, Water Efficiency – 190 points, Materials – 150 points, Indoor Environment – 150 points. While the overall score is determined based on the percentage of points awarded, credits that are irrelevant to the project may be excluded from the denominator.

ONE GREEN GLOBES – 35-54%

TWO GREEN GLOBES – 55-69%

THREE GREEN GLOBES – 70-84%

FOUR GREEN GLOBES – 85-100%

MARKET PENETRATION

Green Globes only has notable presence in North America. It was founded as an alternative to LEED which it critiqued for being too prescriptive. LEED's inertia has caused considerable difficulty in uptake for Green Globes, but it was recommended in parallel with LEED by the General Services Administration as a suitable system for certifying federal buildings.

RELATIVE COST

Compared to similar green building certification systems, Green Globes is anticipated to have medium range soft costs. It is estimated that for a 25,000 m^2 building, Green Globes certification fees would cost around USD $17,000 which is in the medium range compared to similar green building certification systems.

RELATIVE RIGOR

While Green Globes offers flexibility around baselines and overall credit selection, final building performance is not standardized compared to similar green building certification systems. To yield best overall alignment with Marriott International sustainability goals, Owners should follow recommended credits in the Green Globes Sample Scorecard as closely as possible.

PRE-DESIGN | PRELIMINARY ASSESSMENT | FINAL ASSESSMENT | POST-CONSTRUCTION

QUESTIONNAIRE • DESIGN REVIEW • FINAL ASSESSMENT QUESTIONNAIRE • FOLLOW-UP DOCUMENTATION

PROJECT REGISTRATION • DESIGN DOCUMENTATION • CONSTRUCTION DOCUMENTATION SUBMITTAL • ONSITE VISIT • CERTIFICATION AWARDED

EDGE

(Excellence in Design for Greater Efficiencies)

INTRODUCTION

Excellence in Design for Greater Efficiencies (EDGE) is a green buildings certification system that is powered by a software application that calculates overall key performance indicators. EDGE delivers overall performance with respect to water, energy, and greenhouse gas reductions from a calculated baseline. EDGE allows the user to pick and choose which energy, water, and material efficiency measures are implemented to achieve the desired level of certification.

Efficiency measures depend on a variable baseline. EDGE defines the baseline building with respect to the space use type. The options include Homes, Hotels, Retail, Offices, and Hospitals. Marriott International should use the Hotels space use type.
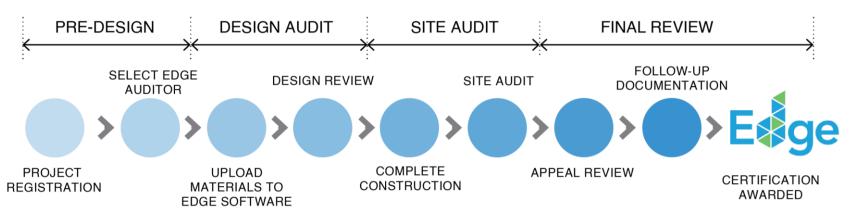
20%

Standard – 20% reduction in operational energy, embodied carbon, and water use

40%

Advanced – 20% reduction in embodied carbon and water use, 40% reduction in operational energy

100%

Zero Carbon – 20% reduction in embodied carbon and water use, 40% reduction in operational energy, 100% operational offset with on- and off-site renewables or RECs

PRE-DESIGN   DESIGN AUDIT   SITE AUDIT   FINAL REVIEW

PROJECT REGISTRATION → SELECT EDGE AUDITOR → UPLOAD MATERIALS TO EDGE SOFTWARE → DESIGN REVIEW → COMPLETE CONSTRUCTION → SITE AUDIT → APPEAL REVIEW → FOLLOW-UP DOCUMENTATION → CERTIFICATION AWARDED

MARKET PENETRATION

EDGE is available in over 160 countries; however, it is most often reserved for projects in developing countries where standards may be ambiguous, or industry may be lacking. The International Finance Corporation (IFC) developed EDGE with flexibility in mind to bring more sustainable building practices to countries where green building standards may be lacking or nonexistent.

COST

Compared to similar green building certification systems, EDGE is anticipated to have low range soft costs. It is estimated that for a 25,000 m^2 building, EDGE certification fees would cost around USD $7,000 which is in the low range compared to similar green building certification systems.

RELATIVE RIGOR

EDGE is narrowly focused on 3 main topics: operational energy, embodied energy, and water. This focused approach is well aligned with Marriott's specific sustainability goals of reducing energy, waste, and water, however such limitations also disadvantage EDGE in the broader market of green building benchmarking systems because it is not as holistic, and therefore not as rigorous. Other systems provide accountability for wellness and ecology, which often compliment the topics that EDGE focuses on. EDGE intentionally sets a lower bar than most green building certification schemes because its targeted market does not have as much experience with sustainable construction/operational practices, and so outside of emerging economies, EDGE is not recommended for certification as it can't easily guarantee achievement of Marriott's sustainability goals.
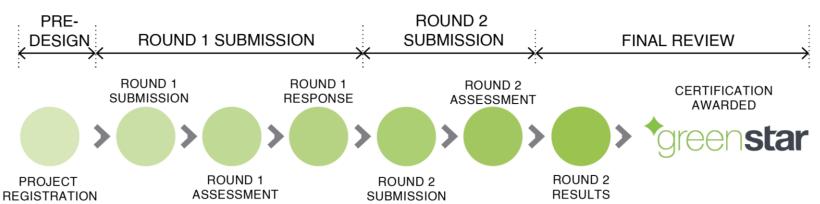
GREEN STAR

Green Star

INTRODUCTION

Administered by the Green Building Council of Australia (GBCA), Green Star certification system comes in a version for communities and a version for buildings, the latter of which should be used by Marriott International. Green Star identifies eight credit categories that are intended to represent issues that will define the next decade of the built environment: Responsible, Healthy, Resilient, Positive, Places, People, Nature, and Leadership. Credits are either mandatory for every project, optional to pursue a climate positive path, or optional for sector specific criteria. In addition, Leadership credits can be used to supplement a project's overall score when a project achieves claims of either Market Transformation or Leadership Challenges. The amount of points achievable per credit is dependent upon the overall impact defined by Green Star. Credit categories are weighted as follows: Responsible – 17%, Healthy – 15%, Resilient – 8%, Positive – 29%, Places – 7%, People – 10%, and Nature – 1%. Six calculators are used to determine a project's level of certification.

GOOD PRACTICE — **3 Star** – Min. Expectations

BEST PRACTICE — **4 Star** – 15-34 points

AUSTRALIAN EXCELLENCE — **5 Star** – 35-69 points

WORLD LEADERSHIP — **6 Star** – 70+ points

MARKET PENETRATION

Green Star originated in Australia as a system for their particular climate and culture, adding emphasis to resilience and social equity. Green Star is written in a very universal way, leading to official adoption by New Zealand and South Africa, and becoming the premier rating system in these three countries. Green Star is not widely used outside of these countries, however there is an official process for applying for applicability within greater Africa by filing a Context Report with the GBC of South Africa.

COST

Compared to similar green building certification systems, Green Star is anticipated to have high range soft costs. It is estimated that for a 25,000 m^2 building, Green Star certification fees would cost around USD $26,000 which is in the high range compared to similar green building certification systems.

RELATIVE RIGOR

Green Star is one of the most rigorous green building certification systems currently being administered. It is comparable to LEED in most credit categories with additional ones that address human health, ecology, social equity, and resilience. For this reason, certification with Green Star can be generally expected to lead to healthier places for people and the environment.

PRE-DESIGN | ROUND 1 SUBMISSION | ROUND 2 SUBMISSION | FINAL REVIEW

PROJECT REGISTRATION › ROUND 1 SUBMISSION › ROUND 1 ASSESSMENT › ROUND 1 RESPONSE › ROUND 2 SUBMISSION › ROUND 2 ASSESSMENT › ROUND 2 RESULTS › CERTIFICATION AWARDED — greenstar

IGBC

(Indian Green Building Council)

INTRODUCTION

The Indian Green Building Council has issued the IGBC Green New Building rating system (aka "IGBC") to address national environmental issues that are priorities in India. The national environmental priorities addressed by this system include water conservation, waste handling, energy efficiency, fossil fuel reduction, reduced dependency on virgin materials, and health and well-being of building occupants. IGBC references local and national standards and codes within credit language to help users more readily adopt requirements.

The system is composed of seven modules – Sustainable Architecture and Design (5 points), Site Selection and Planning (14 points), Water Conservation (18 points), Energy Efficiency (28 points), Building Materials and Resources (16 points), Indoor Environmental Quality (12 points), Innovation and Development – weighted by their respective impact. Each module has a combination of mandatory requirements and optional credits that contribute to an overall score out of 100.

BEST PRACTICES	**Certified** – 40-49 points
OUTSTANDING PERFORMANCE	**Silver** – 50-59 points
NATIONAL EXCELLENCE	**Gold** – 60-74 points
GLOBAL LEADERSHIP	**Platinum** – 75+ points
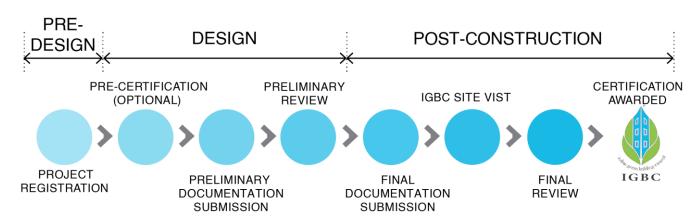
MARKET PENETRATION

IGBC has certified roughly 3,500 projects in India. Although similar in content and structure to LEED, the system is geared more towards Indian systems and standards. Therefore, IGBC tends to be used more ubiquitously than LEED. IGBC is often used for residential buildings but can readily be applied to hospitality projects as well.

COST
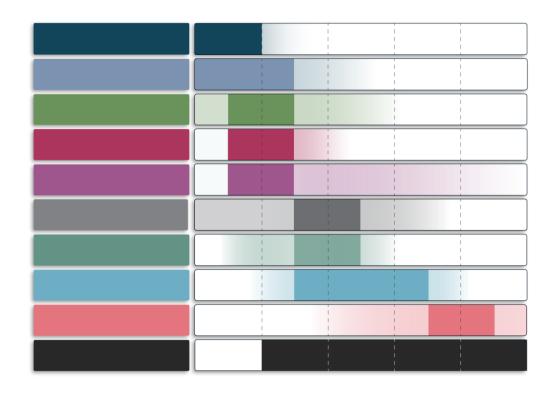
Compared to similar green building certification systems, IGBC is anticipated to have high range soft costs. It is estimated that for a 25,000 m^2 building, IGBC certification fees would cost around INR 500,000 for non-members which is in the low range compared to similar green building certification systems.

RELATIVE RIGOR

IGBC offers meaningful credits and required prerequisites across the carbon, water, and waste topics that Marriott International basis its goals on. Similar to LEED, IGBC requires minimum reduction from baseline for both indoor water use and energy use. By pursuing prerequisites and credits recommended in the IGBC Sample Scorecard, MI Owners can anticipate rigorous performance in prioritized sustainability criteria.

PRE-DESIGN | DESIGN | POST-CONSTRUCTION

PROJECT REGISTRATION → PRE-CERTIFICATION (OPTIONAL) → PRELIMINARY DOCUMENTATION SUBMISSION → PRELIMINARY REVIEW → FINAL DOCUMENTATION SUBMISSION → IGBC SITE VIST → FINAL REVIEW → CERTIFICATION AWARDED

PART C:

PROCESS MAP

MARRIOTT-FACING PROCESS MAP

Marriott INTERNATIONAL

This process map captures some of the tasks and milestones associated with green building certification in which Marriott International plays a larger role.

This includes phases both before and after building design and construction because sustainability demands a holistic and ongoing effort by the project team. Extra consideration should be put into an operational certification scheme to maintain optimal performance during the building's service life.

	PRE-DESIGN	BD&C	PRE-OCCUPANCY	OPERATIONS
KICKOFF WITH STAKEHOLDERS Owners & franchisees to conduct a feasibility study of project location. Have underwriting Session with MI HotelDev. Committee. Hold charrette to chart sustainability ambitions.	■			
BUILDING DESIGN & CONSTRUCTION Owners, franchisees, & design team to complete all tasks within the Building Design and Construction process.		■		
COMMISSION BUILDING SYSTEMS Owners & franchisees to work with CxA to ensure proper performance of building systems. CxA to develop Building Operations Manual for handover to facility manager.			■	
REPORT BUILDING PERFORMANCE TO MI Owners & franchisees to coordinate with MI to report building certification and performance metrics on energy, water, and waste consumption in MESH.			■	
MARKET SUSTAINABILITY CREDENTIALS GO Sustainability to obtain final building certification and add to appropriate channels for marketing. Verify that booking platforms recognize it for consumer searches.			■	
OPERATIONAL CERTIFICATION Owners & franchisees to consider operational green building certification schemes to help optimize and maintain ongoing building performance.				■

BUILDING CERTIFICATION PROCESS MAP

The Process Map should be reviewed as soon as a green building certification system is selected for your Marriott International development.

This tool highlights important milestones in the certification process. Each milestone takes place during a different design phase as indicated by the column headers. While the alignment between milestone and design phase is typical, there may be some variation depending on project details.

The building owner should familiarize themselves with this process, and the certification system expert who is hired by the Owner will guide the team through each step.

	CONCEPT	30% DESIGN	60% DESIGN	90% DESIGN	CONSTRUCTION
SELECT CERTIFICATION SYSTEM — Consult Certification Selection Tool to determine best certification system for needs of the specific project.	■				
ONBOARD SYSTEM EXPERT — Contact certification system consultant who will coordination project registration, documentation, and certification.	■				
MINIMUM PROGRAM REQUIREMENTS — Determine certification system's minimum program requirements. Confirm requirements are met.	■				
IDENTIFY CERTIFICATION CHAMPION — Identify certification champion to take responsibility for coordination with system expert and design team.		■			
COORDINATE OPERATIONAL COMMITMENTS — Review credits that require operational commitments such as metering, no-smoking policy, purchasing, etc. Coordinate with design team to ensure implementation.		■			
REGISTER PROJECT — Coordinate project registration with sustainability consultant and make payments as needed.			■		
DEVELOP SCORECARD — With sustainability consultant, use Sample Scorecard to identify which credits will be targeted and make changes to scorecard as necessary.			■		
INTEGRATE SUSTAINABILITY STRATEGIES — Use Sample Scorecard to drive design process and integrate strategies that will achieve certification while satisfying Marriott's primary sustainability concerns.			■		
DEVELOP DOCUMENTATION — Coordinate with design team to produce and provide the necessary design and construction documentation to the sustainability consultant.				■	
SCHEDULE CHECK-INS — Schedule periodic check-ins with sustainability consultant to assess certification progress and address any issues that may arise in the process.		■			

PART D:

CONSULTANT DIRECTORY

LOCATION SERVED	CERTIFICATION SYSTEM	EXPERT	WEBSITE	CONTACT INFORMATION
North America				
Central & South America				
Europe & Russia				
Middle East & Africa				
Asia Pacific				

CONSULTANT DIRECTORY

Following the selection of a green building certification system for your Marriott International development, it is recommended that a certification system expert is onboarded to guide the design team through the process of achieving your building certificate. When using the Consultant Directory, move from left to right selecting your project's location and targeted certification system. The Expert column lists recommendations for the associated certification system expert followed by their contact information.

Although this directory proposes vetted recommendations for certification system experts, the list is not exhaustive. If there are local or regional experts who are more feasible to work with, MI franchisees should pursue the expert that they deem is the best fit for the project's goals.
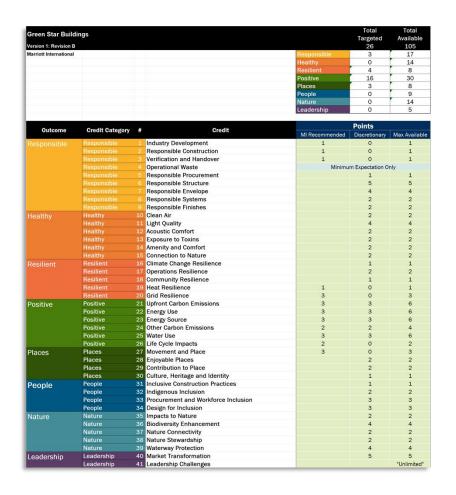
In addition, some certification systems offer their own directories of experts:

1. LEED
2. EDGE
3. BREEM
4. Green Star

LOCATION SERVED	CERTIFICATION SYSTEM	EXPERT	WEBSITE	CONTACT INFORMATION
North America	LEED	Atelier Ten	https://www.atelierten.com/studio/contact/	sanfrancisco@atelierten.com
		ARUP	https://www.arup.com/contact	
		Brightworks	https://brightworks.net/contact/	info@brightworks.net
		Stok	https://stok.com/contact/	
	GREEN GLOBES	P2Sinc	https://p2sinc.com/contact	+1(562) 497-2999
		Grumman Butkus	https://grummanbutkus.com/contact/	
		AR Green Consulting	http://www.argreenconsulting.com/contact	adhamina@argreenconsulting.com
Central & South America	LEED	Green Loop	https://green-loop.com/eng/proyectos/suggestion-box/	alopez@green-loop.com
		Bioconstrucción	https://bioconstruccion.com.mx/en/contact/	hola@bioconstruccion.com.mx
		Bioteckta	https://www.bioteckta.com/en/contact_bioteckta.html	
	EDGE	Green Loop	https://green-loop.com/eng/proyectos/suggestion-box/	alopez@green-loop.com
		Bioteckta	https://www.bioteckta.com/en/contact_bioteckta.html	
		Setri	https://www.setri.com.co/contacto	licitaciones@setri.com.com
Europe & Russia	LEED	Atelier Ten	https://www.atelierten.com/studio/contact/	london@atelierten.com
		ARUP	https://www.arup.com/contact	
		WSP	https://www.wsp.com/en-gb/contact-us/send-a-message	
	BREEAM	Atelier Ten	https://www.atelierten.com/studio/contact/	london@atelierten.com
		Eight Versa	https://eightversa.com/contact/	info@eightversa.com
		WSP	https://www.wsp.com/en-gb/contact-us/send-a-message	
Middle East & Africa	LEED	Conserve Solution	https://www.conservesolution.com/contact/	info@conservesolution.com
		Altensis	https://www.altensis.com/en/contact/	info@altensis.com
		Green Technologies	https://www.greentechno.com/contact-us/	+971 4 450 3999
		EnviroLink	https://www.envirolink.me/contact-us/	contact@envirolink.me
Asia Pacific	LEED	Bee Inc	https://bee-inc.com/contact-us/	
		Terao	https://teraoasia.com/contact/	glemoinescelles@teraoasia.com
		Atelier Ten	https://www.atelierten.com/studio/contact/	bangkok@atelierten.com
		ARUP	https://www.arup.com/contact	
	IGBC	Design2Occupancy	https://design2occupancy.com/contact	connect@design2occupancy.com
		PDA	https://www.pdamepconsultants.com/Contact-Us.html	ahmedabad@pdamepconsultants.com
		Godrej	https://www.godrej.com/godrejandboyce/branch-address	
Greater China	LEED	Bee Inc	https://bee-inc.com/contact-us/	
		Terao	https://teraoasia.com/contact/	glemoinescelles@teraoasia.com
		China Academy of Building Research	http://www.cabr-tj.com/contact/	hr@cabrtj.com
Australia	LEED	Atelier Ten	https://www.atelierten.com/studio/contact/	sydney@atelierten
		ARUP	https://www.arup.com/contact	
		WSP	https://www.wsp.com/en-gb/contact-us/send-a-message	
	Green Star	Atelier Ten	https://www.atelierten.com/studio/contact/	sydney@atelierten.com
		Bee Inc	https://bee-inc.com/contact-us/	
		WSP	https://www.wsp.com/en-gb/contact-us/send-a-message	

PART E:

SAMPLE SCORECARDS

Green Star Buildings				Total Targeted	Total Available
Version 1: Revision B				26	105
Marriott International			Responsible	3	17
			Healthy	0	14
			Resilient	4	8
			Positive	16	30
			Places	3	8
			People	0	9
			Nature	0	14
			Leadership	0	5

Outcome	Credit Category	#	Credit	Points		
				MI Recommended	Discretionary	Max Available
Responsible	Responsible	1	Industry Development	1	0	1
	Responsible	2	Responsible Construction	1	0	1
	Responsible	3	Verification and Handover	1	0	1
	Responsible	4	Operational Waste	Minimum Expectation Only		
	Responsible	5	Responsible Procurement		1	1
	Responsible	6	Responsible Structure		5	5
	Responsible	7	Responsible Envelope		4	4
	Responsible	8	Responsible Systems		2	2
	Responsible	9	Responsible Finishes		2	2
Healthy	Healthy	10	Clean Air		2	2
	Healthy	11	Light Quality		4	4
	Healthy	12	Acoustic Comfort		2	2
	Healthy	13	Exposure to Toxins		2	2
	Healthy	14	Amenity and Comfort		2	2
	Healthy	15	Connection to Nature		2	2
Resilient	Resilient	16	Climate Change Resilience		1	1
	Resilient	17	Operations Resilience		2	2
	Resilient	18	Community Resilience		1	1
	Resilient	19	Heat Resilience	1	0	1
	Resilient	20	Grid Resilience	3	0	3
Positive	Positive	21	Upfront Carbon Emissions	3	3	6
	Positive	22	Energy Use	3	3	6
	Positive	23	Energy Source	3	3	6
	Positive	24	Other Carbon Emissions	2	2	4
	Positive	25	Water Use	3	3	6
	Positive	26	Life Cycle Impacts	2	0	2
Places	Places	27	Movement and Place	3	0	3
	Places	28	Enjoyable Places		2	2
	Places	29	Contribution to Place		2	2
	Places	30	Culture, Heritage and Identity		1	1
People	People	31	Inclusive Construction Practices		1	1
	People	32	Indigenous Inclusion		2	2
	People	33	Procurement and Workforce Inclusion		3	3
	People	34	Design for Inclusion		3	3
Nature	Nature	35	Impacts to Nature		2	2
	Nature	36	Biodiversity Enhancement		4	4
	Nature	37	Nature Connectivity		2	2
	Nature	38	Nature Stewardship		2	2
	Nature	39	Waterway Protection		4	4
Leadership	Leadership	40	Market Transformation		5	5
	Leadership	41	Leadership Challenges			"Unlimited"

APPROACH TO SAMPLE SCORECARDS

INTRODUCTION

The sample scorecards (Excel sheets) included in the appendices of this document are intended to set projects on a path to certification that will achieve strategically desired sustainability outcomes. Credits that topically align with MI's SBTi and Serve360 goals, i.e., GHG emissions reduction, energy efficiency, water conservation, and operational waste management, were identified and flagged as priorities. In addition, credits relating to embodied carbon have been targeted in anticipation of future SBTi requirements and holistic carbon accounting.

Points & pathways targeted for each individual credit were assessed based on ease of implementation for owners and franchisees and should be considered a 'directional' suggestion. Considerations included cost premiums, infrastructure and equipment upgrades, and overall anticipated scope of work for the greater design team.

This preliminary assessment is geared towards helping franchisees stay focused on MI goal alignment through building certification with as little impact as possible to business as usual.

The sample scorecards and Design Standards provide a foundation for effective certification pursuit. By bringing in certification system experts, developers will be given the necessary guidance to select credits that will not only take them to a desired certification but will work best with their design, budget, and project goals. As each franchisee has unique barriers and circumstances around which they can develop their hotel, a flexible approach was taken to identifying recommended credits in the sample scorecards.

UPDATES TO CERTIFICATIONS

The certification standards that were evaluated for this study are current versions as of October 2023, and applicable to the design and construction of ground-up new construction and major renovation projects, including hospitality.

Minimum requirements and performance expectations for each certification will continue to evolve. For example, select certifications, such as LEED, BREEAM and Green Globes are making decarbonization requirements more stringent, among other changes.

PREREQUISITES

Both LEED and BREEAM have prerequisites, or credits that are *required* to be pursued for certification. For this reason and regardless of how closely these prerequisites align with Serve360 or SBTi goals, language setting up compliance with prerequisites will be integrated into the MI Design Standards.

For the remaining four certification systems, additional credits may have been included in the sample scorecards based on their alignment with LEED or BREEAM prerequisites. Although they may not directly align with MI's goals, these credits are assumed to be already addressed by language in the Design Standards and therefore readily achievable.

THE FIRST STEP TOWARDS CERTIFICATION

Sample scorecards are not intended to provide the complete pathway to any particular level of certification.

The intention of the sample scorecards is to recommend credits that align with either Serve360 or SBTi goals. Because not all credits have direct alignment with these goals, many completed sample scorecards result in overall scores that are below the minimum point threshold to achieve certification. The role of these scorecards is to clarify which credits directly support MI's corporate sustainability goals.
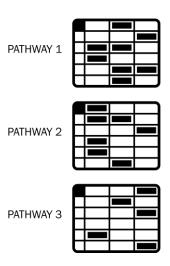
Total Owner Discretion — Strategic Credits for MI Goals — Credits for Minimum Certification Level — Total MI Prescription

APPROACH TO SHORTLISTING RECOMMENDED CREDITS

APPROACH TO SAMPLE SCORECARDS

VARIOUS PATHWAYS TO COMPLIANCE

Specific pathways to achieving compliance for recommended credits are not necessarily detailed in scorecards. Across certification systems, many credits tend to have multiple pathways to compliance. Typically, credits that have been pre-selected align with Serve360 or SBTi goals regardless of compliance pathways.

MI Design Standards released in Q1 2024 contain language that support achievement of the recommended credits through a variety of pathways.
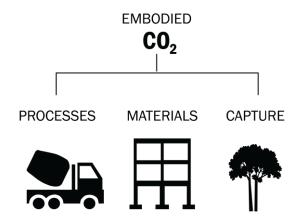
CREDIT: OPTIMIZE ENERGY

PATHWAY 1

PATHWAY 2

PATHWAY 3

INCLUDING EMBODIED CARBON CREDITS

Embodied carbon reduction is not an explicit MI sustainability goal in the Climate Action Program (CAP) at present, but credits that target this type of reduction have been included in the sample scorecards in anticipation of evolving goals and building code requirements. The CAP focuses primarily on operational carbon reductions i.e., carbon that is produced as a result of regular building operations.

The impacts of embodied carbon are well documented and are known to contribute millions of tons of carbon during a building's life cycle or 11% of global greenhouse gas emissions. Given this significance, Atelier Ten is recommending credits that focus on embodied carbon in addition to operational carbon-focused credits.

EMBODIED
CO_2

PROCESSES   MATERIALS   CAPTURE

Sample scorecards are included in Part E and are attached as Excel spreadsheets for easy modification and updates as needed. The following scorecards are included:

1. LEED

2. BREEAM

3. Green Globes

4. EDGE

5. Green Star

6. IGBC

PLEASE DIRECT QUESTIONS & FEEDBACK TO

globaldesignsustainability@marriott.com