



# UNITED ARAB EMIRATES



The past decade has witnessed the United Arab Emirates (UAE) go through mega-urban development and fast, radical growth. A consequence of that rapid growth, which has shaped the nation's cities into global destinations, is the drastic increase of energy consumption levels and carbon emissions. This decade, however, is bringing a greater shift towards the adoption of sustainability and low carbon principles in the UAE. In 2017, the country ratified the Paris Agreement to limit carbon emissions and improve environmental resilience, with the support of several federal and local strategies such as UAE Vision 2021, UAE Green Agenda 2015-2030, and UAE Energy Strategy 2050.

## EmiratesGBC Membership

### EmiratesGBC Members

Corporate Members	106
Individual Members	30

## Accredited Professionals

### LEED Accredited Professionals

LEED AP (with & without specialty)	1122
LEED Fellow	1

### LEED Green Associate

LEED Homes Green Rater	2
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### Pearl Qualified Professionals (PQP)

Buildings PQPs	1724
Communities PQPs	529

### WELL Accredited Professionals

RSB Certified Energy Auditors	93
EmiratesGBC Building Retrofit Specialists	31

EmiratesGBC Building Retrofit Specialists	23
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## Green Building Regulations and Certifications

Globally, the building and the construction sectors contribute to 39% of the energy-related emissions<sup>1</sup>. In the UAE, these emissions are speculated to be much higher due to the large cooling demand and the inefficient energy performance of the existing building stock. In light of this, adopting green building, energy efficiency, and renewable energy measures have come to stand at the forefront of the climate change mitigation battle in the UAE.

Since 2006, international green building certifications have been adopted in the UAE to advance sustainability levels for new constructions. This has inspired many Emirates to develop their own tailored green building regulations and rating schemes. Abu Dhabi led the way by mandating the Estidama Pearl Rating System. This was shortly followed by Dubai's development of the Dubai Green Building Regulations and Specifications, and later Al Safat Rating System. These regulations helped create a local market for green building materials and technologies, while increasing awareness among industry professionals about energy, water, waste, indoor environmental quality, and other green building features.

## Green Building Regulations in the UAE

Regulation	Year of Launch	Jurisdiction	Total number of Projects*
Trakhees Green Building Regulations	2008	Trakhees/Ports, Customs & Free Zone Corporation (PCFC)	GBCI Path: 75 projects In-house certification path: 55 projects
Estidama Pearl Rating System	2010	Emirate of Abu Dhabi	Design Rating: 2,457 buildings, 21,659 villas Construction Rating: 461 buildings, 9,972 villas
Dubai Green Building Regulations and Specifications	2011	Emirate of Dubai	Completed Buildings: 19,046 Completed Villas: 15,532
Barjeel Green Building Regulations	2019	Emirate of Ras Al Khaima	Building permits: 59 Villa permits: 289

Figures are true as of April 2020

\* A project may include more than one building or villa

**35.3M**  
m<sup>2</sup>

Total built up area of projects certified under Estidama

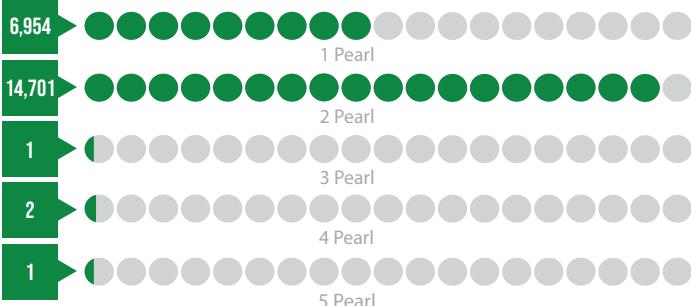
The minimum required Pearl rating in Abu Dhabi is set in accordance with the source of capital funding of the project: 1 Pearl for villa, building and community projects that are privately funded and 2 Pearl for villa and building projects that receive more than or equal to 50% capital funding through the Abu Dhabi Government.

**239.2K**  
m<sup>2</sup>

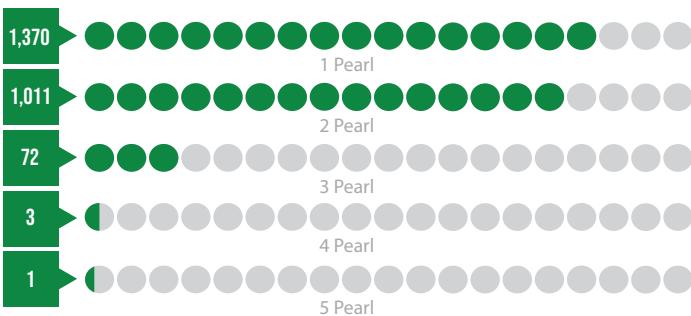
Total built up area of projects receiving permits under Barjeel

Barjeel Green Building Regulations is part of Ras al Khaimah Energy Efficiency and Renewable Energy Strategy 2040. Barjeel was first released on January 2019 with participation voluntary, and mandatory for all new construction as of January 2020 onwards.

## AS OF APRIL 2020, 63.96M M<sup>2</sup> OF BUILT UP AREA ADAPTED LOCAL GREEN BUILDING REGULATIONS OR CERTIFICATION PROGRAMS.



Total number of certified villa design projects under Estidama



Total number of certified building design projects under Estidama

Dubai Municipality applied the Green Building Regulations and Specifications (DGBRs) to government owned buildings in January 2011 and mandated it for all new buildings in Dubai starting March 2014. In Sep 2016, Dubai Municipality introduced Al Sa'fat Rating System to strengthen the sustainable built environment of the Emirate; Mohammed Bin Rashid Library is the first project executed as per Al Sa'fat Platinum requirements.

Most recently in 2019, the Emirate of Ras Al Khaimah launched its own regulations, the Barjeel Green Building Regulations. During the same year, the Ministry of Infrastructure Development mandated its Green Building Guidelines for Federal Buildings in the UAE. In addition to that, Sharjah Municipality released its first green building guidelines to be piloted in the Emirate of Sharjah.

**26.9M**  
m<sup>2</sup>

Total built up area of completed projects following DGBRs

**GLOBAL NET ZERO TARGETS**  
**2030** ALL NEW BUILDINGS MUST OPERATE AT NET ZERO CARBON  
**2050** ALL BUILDINGS MUST OPERATE AT NET ZERO CARBON

## International Certifications

Since 2006, uptake of international green building standards became increasingly common with the first UAE project receiving the Leadership in Energy and Environmental Design (LEED) certification, an internationally recognized green building certification system developed by the U.S. Green Building Council. LEED has since gained a strong presence in the UAE with 386 certified projects as of April 2020.

**5.9M**  
m<sup>2</sup>

Total built up area of certified projects under LEED



Distribution of LEED certified projects per certification level in the UAE

In addition to LEED, BREEAM, a sustainability accreditation programme by the Building Research Establishment, was adopted in some projects in the UAE with the first of three certified projects located in Sharjah.

**MORE RECENTLY, THE HEALTH AND WELLBEING OF BUILDING OCCUPANTS HAS BECOME A FOCAL POINT WITHIN THE GREEN BUILDING REALM, AND THE COVID-19 PANDEMIC HAS BROUGHT EVEN MORE ATTENTION TO HOW INDOOR ENVIRONMENTAL QUALITY IS A MAJOR FACTOR INFLUENCING WELLNESS.**

Movements are emerging that are shedding more light on how design, operations, and behaviours within the building space can be optimised to not only minimise risks to the health of the building occupants but to directly improve their health and well-being.



Total built up area of certified projects under WELL  
4K m<sup>2</sup>

The WELL standard, a performance-based system developed by International WELL Building Institute for certifying buildings based on their impact on human health and well-being, has been implemented to certify several projects in the UAE with the first project certified in 2019 and a total of three certified projects as of April 2020.

LEED has also been used in the Trakhees Ports, Customs & Free Zone Corporation (PCFC) jurisdiction along with the Trakhees in-house green building certification path.



Total built up area of certified projects under Trakhees  
2.6M m<sup>2</sup>

## Requirements to Achieve ILFI's ZC Design

<b>Energy Use Intensity for New Buildings</b>	Less than 100 kWh/m <sup>2</sup> /year
<b>Energy Use Intensity for Existing Buildings</b>	30% reduction in energy use from EmiratesGBC median values for Hotels, Malls, and Schools
<b>Renewable Energy Target</b>	100% of the operational energy must be offset by new onsite or offsite renewable energy
<b>Embodied Carbon Requirements</b>	10% embodied carbon reduction compared to baseline. Total embodied carbon emissions are less than 500 kgCO <sub>2</sub> e/m <sup>2</sup> and offset
<b>Onsite Combustion</b>	Not allowed

In 2013, Emirates Green Building Council became the exclusive UAE operator of Green Key, an international label to drive sustainability in the hospitality and tourism sector; and as of January 2020 EmiratesGBC has successfully certified 44 hotel properties. In 2019, Emirates Green Building Council partnered with the International Living Future Institute (ILFI) to offer Zero Energy (ZE) and Zero Carbon (ZC) certifications for buildings in the UAE market, with the goal of transforming the UAE built environment towards decarbonisation and the fulfilling of Dubai's goal of having the lowest carbon footprint worldwide by 2050.

## Building Retrofit Programs

Building retrofitting is important for improving energy efficiency of existing buildings that were designed before environmental consideration and consume energy that could otherwise be saved, due to less efficient building envelopes, design, and HVAC systems. Retrofitting such buildings not only contributes to a more sustainable built environment, but also to the mitigation needed to reduce the building industry's impact on the climate. Cost-effective retrofitting of existing buildings ensures a longer lifespan for the building with reduced operational and lifecycle costs and will also help in achieving the critical national and global targets of eliminating carbon emissions by 2050.

In 2019, the release of the EmiratesGBC BEA Benchmarking project report presented compelling insights on energy & water use efficiency in Dubai's schools, hotels and malls, highlighting the importance of retrofits.

## BEA Results - Energy Use in Dubai Hotels, Malls and Schools

	<b>Best Performers</b>	<b>Median</b>	<b>Worst Performers</b>
<b>Hotels</b>	< 171 kWh/m <sup>2</sup> .year	249 kWh/m <sup>2</sup> .year	> 414 kWh/m <sup>2</sup> .year
<b>Resorts</b>	< 193 kWh/m <sup>2</sup> .year	334 kWh/m <sup>2</sup> .year	> 444 kWh/m <sup>2</sup> .year
<b>Schools</b>	< 92 kWh/m <sup>2</sup> .year	134 kWh/m <sup>2</sup> .year	> 233 kWh/m <sup>2</sup> .year
<b>Malls</b>	< 378 kWh/m <sup>2</sup> .year	465 kWh/m <sup>2</sup> .year	> 580 kWh/m <sup>2</sup> .year

The UAE is taking significant steps in this direction. In Dubai, the Supreme Council of Energy has set the goal of reducing Dubai's energy demand by 30 per cent by 2030, and retrofitting existing buildings is an integral part of the strategy. Etihad ESCO was established in 2013 to create a viable performance contracting market for energy service companies (ESCOs). Along with other ESCOs, they aim to retrofit about 30,000 buildings by 2030 and generate 1.68 TWh energy savings and 5.64 IG water savings by 2030. The creation of the Etihad ESCO kicked off the energy performance contracting market in Dubai and the UAE as well as built capacity for local ESCOs in the private sector to form and finance retrofit projects.

### Retrofit Programs in the UAE

<b>Retrofit Program</b>	<b>Year of Establishment</b>	<b>Number of retrofitted projects</b>
Dubai Retrofit Program	2013	Buildings: 1,241 Villas: 6,658
Sharjah SEWA Retrofit Program	2018	Buildings: 18
RAK Building Retrofits Program	2019	Villas: 16

As of April 2020, RSB (Regulatory & Supervisory Bureau) Dubai has 31 accredited ESCOs registered in Dubai alone with many more ESCOs operating without the accreditation.

**AS OF APRIL 2020, ETIHAD ESCO ALONG WITH RSB ACCREDITED ESCOS HAVE COMPLETED RETROFITTING 1,241 BUILDINGS AND 6,658 VILLAS IN DUBAI**

In 2018, Sharjah Electricity and Water Authority launched its retrofit program which focuses on the "Top 100 consumers"

in Sharjah and aims to reduce an average of 30% energy consumption in these premises. During the same year, RAK municipality launched its Energy Efficiency and Renewables Strategy with a target to retrofit 3,000 buildings in Ras Al Khaimah by the end of 2040.

Most recently in 2020, Abu Dhabi Power Corporation has launched the Abu Dhabi Energy Services Company (ADES) which aims to facilitate the growth of the retrofit market in Abu Dhabi and supports the local energy services companies by providing greater energy efficiency opportunities in the Emirate.

To support the growth of the retrofit market in the UAE, Emirates Green Building Council commenced its Building Retrofit Training (BRT) Program in August 2017, based on the EmiratesGBC Technical Guidelines for Retrofitting Existing Buildings. In October 2018, the Advanced Level BRT Program was launched, aimed at industry professionals to provide them with information on retrofit methods to support ongoing retrofit projects and to streamline their technical capacity for more effective post-retrofit maintenance and preventive care.

### Sponsor Highlight



KEO is addressing the growth of sustainability certifications compliance and buildings' optimization in the MENA region with a strong team of DGBR, Estidama, LEED, WELL, BREEAM, GRESB and CEEQUAL accredited professionals.

KEO has extensive experience in the Emirates applying the principles of sustainability strategies and low carbon economy to high-end projects with multiple typologies that include commercial, communities, healthcare, hospitality, infrastructure, public realm, residential, education and sports; from concept all the way through to construction in a fully coordinated and streamlined process.

Informed by research and actual delivery, KEO improves the management of real-assets lifecycle, from project identification to operations.

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