

GREEN BUILDING CITY MARKET BRIEF

ABU DHABI

UNITED ARAB EMIRATES



WORLD GREEN BUILDING COUNCIL

DRIVING STRATEGIES

Under the guidance of the **Abu Dhabi Urban Planning Council (UPC)'s Plan Capital 2030**, the Abu Dhabi government has focused on sustainable urban development with a concerted emphasis on preserving the cultural heritage of the Emirate.

Along with this plan, the federal strategies, the **UAE Vision 2021** and the **Green Economy for Sustainable Development Initiative** all serve as tools to drive the progress of green buildings in Abu Dhabi.

GREEN BUILDINGS

Green Buildings Rating System

Following the launch of the Estidama framework in 2008, the UPC developed the **Estidama Pearl Rating System (PRS)** in 2010, addressing four pillars of sustainability: environmental, economic, social and cultural. The PRS is mandatory for all new buildings in Abu Dhabi Emirate. It is the first sustainability rating system in the Arab region.

The PRS awards projects at three different stages: Design, Construction and Operation. The Pearl Operational Rating System (PORS) ensures that buildings are operating efficiently and economically, while providing the occupants with the highest standards of health and comfort throughout the buildings' lifecycle.

Minimum Requirements

The Estidama Pearl Rating System (PRS) is currently mandatory for proposed new-construction villas, buildings and community projects that fall under the ownership of developers. The PRS has been integrated into the building permit process at the various municipalities such that the construction of an applicable development is only possible if a project complies with the PRS requirements. The Executive Council Order of May 2010 states all new applicable buildings must meet the 1 Pearl requirements starting in September 2010, whilst all government funded buildings must achieve minimum 2 Pearls.

SUSTAINABLE DEVELOPMENT

Education and Awareness

At the Federal level, the Ministry of Environment and Water launched its National Environmental Education & Awareness Strategy 2015-2021 to promote and spread the concept of sustainable development amongst youth, community members, industries and governmental entities.

Several other initiatives were launched by private and non-governmental entities to ensure that sustainability is addressed through school curriculums. For instance, the "Eco-Schools" award program, supported by the Environmental Center for Arab Towns (ECAT), provides schools with guidelines to actively engage their staff and students in sustainability projects.

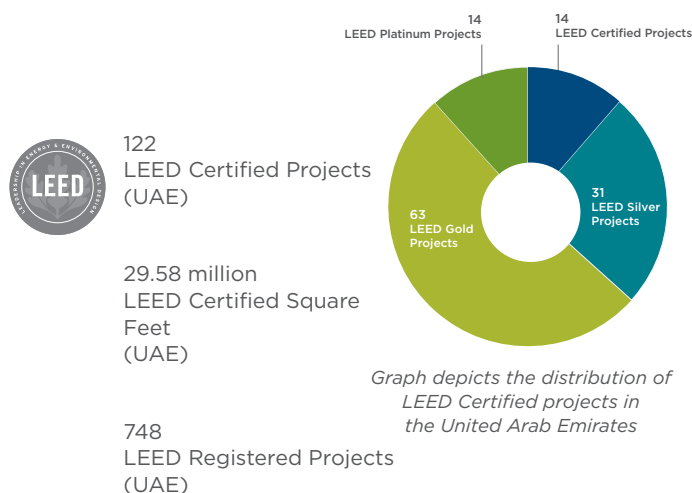
CITY DETAILS

Population (Mid of 2012)	2.33 million
Land Area (km ²)	972
Gross Domestic Product (in USD billions)	178.3
Climate Action Plan	Yes

MEMBERSHIP AND PROFESSIONALS

EGBC Members ¹ - Individuals	53
EGBC Members - Companies	157
LEED Credentialed Professionals (UAE)	1,314

PROJECT BREAKDOWN



ESTIDAMA SPOTLIGHT -- OCTOBER 2015³

- Estidama Training: Over 10,000 Attendees
- Pearl Qualified Professionals (PQPs): 1,750 PQPs
- Estidama Villa Products Database: Over 2,000 products listed from 125 Suppliers
- More than 1,000 buildings awarded a design rating
- More than 12,5000 villas awarded a design rating
- Construction Rating Audits: More than 400 conducted

Energy Efficiency

The Emirates Authority for Standardization & Metrology (ESMA) is enforcing mandatory energy efficiency requirements and labeling systems on water fixtures, lighting, electrical appliances and air conditioners. In July 2014, ESMA banned the import of inefficient incandescent lamps into the country.

Also, through its newly established Department for energy conservation and energy efficiency, the Ministry of Energy aims to establish a database and local benchmarks for various energy consuming sectors across the UAE.

Sustainable Transportation

With the aim to develop balanced, sustainable and multi-modal transportation, the Department of Transport (DoT) in Abu Dhabi increased the number of bus routes, doubled the number of family taxis and promoted carpooling by launching a carpooling website. Another project in the pipeline is Abu Dhabi's Metro which is intended to relieve traffic congestions on the highway network and provide optimal connectivity between Abu Dhabi Island, its suburbs and upcoming communities.

As part of the integrated sustainable transport system, the DoT also developed the **Walking and Cycling Master Plan (WCMP)** that promotes alternative forms of transportation. It aims to enhance mobility, promote healthy lifestyle for citizens, and ensure that land is used in a sustainable manner.

Renewable Energy

Established in 2005, the Masdar Initiative has led to the development and implementation of the majority of the renewable energy projects in Abu Dhabi. These projects include the following:

- The installed 10 MW photovoltaic plant in Masdar City,
- The PV plants installed on eleven government-owned buildings and connected to Abu Dhabi Distribution Company's network (Total capacity of more than 2 MW). This initiative is part of the rooftop programme, in collaboration with the Abu Dhabi Regulation and Supervision Bureau,
- The installed Shams 1 project, 100 MW concentrated solar power in Masdar.

Shams 1 contributed to a 449% increase in renewable energy production in Abu Dhabi in 2014.

Following the successful implementation of these projects, and in order to contribute to Abu Dhabi's target of 7% renewable energy generation by year 2020, several additional projects are under consideration, such as Noor 1, a 100 MW PV solar plant.

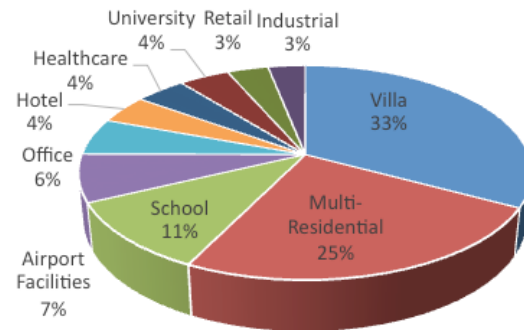
Waste Management

Tadweer, the Center of Waste Management in Abu Dhabi was established in December 2008. It implements the **Waste Management Strategy** in the Emirate to establish a full cycle integrated waste management system. Under this strategy, Tadweer developed several projects and campaigns including the upgrade of collection techniques as well as dump site investigation and rehabilitation.

In 2013, 16% and 17% of the total solid waste were recycled and composted, respectively.

Since 2002, the **Clean-Up UAE campaigns**, launched by Emirates Environmental Group, has brought together individuals, families and organizations from both public and private sectors to participate in cleaning, waste segregating and recycling campaigns.

Estidama Top 10 Building Types based on GFA



In 2014, 123,176 people participated in the Clean Up UAE campaign and diverted 94 Tons of waste from landfill.

PROJECT SPOTLIGHT:

Al Bahar Towers, Abu Dhabi

The iconic Abu Dhabi's Al Bahar Towers were the winners of the 2012 Tall Building Innovation Award from the Council on Tall Buildings and Urban Habitat. The design inspiration reaches deep into Islamic culture and utilizes a modern-day version of the *mashrabiya*, a wooden lattice screen. The screen operates as a curtain wall, opening as the sun rises and closing as it disappears, reducing solar gain by over 50%. At 27 floors and 56,000m², the towers reduce CO₂ emissions by about 1,750 tons per year solely through this façade. Through its inclusion of this innovative design feature and other sustainability measures, the Al Bahar Towers boast a LEED Silver rating.



Photograph Courtesy of Flickr Creative Common user still.epsilon

REFERENCES

1. Emirates Green Building Council Membership Figures were retrieved on 31 October 2015.
2. LEED Professionals and Project Figures were retrieved on October 21 2015.
3. Data Provided by the Abu Dhabi Urban Planning Council.