



# SELF GUIDED TOUR MANUAL



# WELCOME!

We're so glad that you've decided to visit Masdar City today. This info pack will help ensure you have the best possible experience: It shares our story and vision—that is, why we're here and what we're doing—as well as points of interest, including amazing architecture, innovative transportation options, and the best places to stop for a break or some food.



# ABOUT MASDAR CITY

The UN predicts two-thirds of the world's population will live in urban areas by 2050. Cities, as leading contributors to carbon emissions, need to adapt quickly to reduce their environmental footprint and meet international climate change targets.

Masdar City is leading this effort, acting as a "green-print" for cities of tomorrow by bringing together sustainable urban development, education, technology, business, and innovation in a unique ecosystem that is helping to adopt a new approach to urbanization, a more sustainable way of living and working, and a brighter future for everyone.

Here at Masdar City, you'll find one of the largest clusters of LEED Platinum buildings in the world. (LEED is the international standard for green building certification, and Platinum is the highest rating.) Masdar City is also a thriving free zone of more than 1,000 companies, a sustainable residential community, two generations of autonomous vehicles, and much more.

Key tenants include the International Renewable Energy Agency (IRENA), the UAE Space Agency, Siemens Energy, G42 Healthcare, the Advanced Technology Research Council, several Fortune 500 companies, and the Mohamed bin Zayed University of Artificial Intelligence.

Masdar City also hosts The Catalyst, a clean-tech investor powered by both Masdar City and bp, and the Masdar Green REIT, a real estate investment trust dedicated to investing in sustainable real estate assets currently worth nearly AED 2.8 billion.

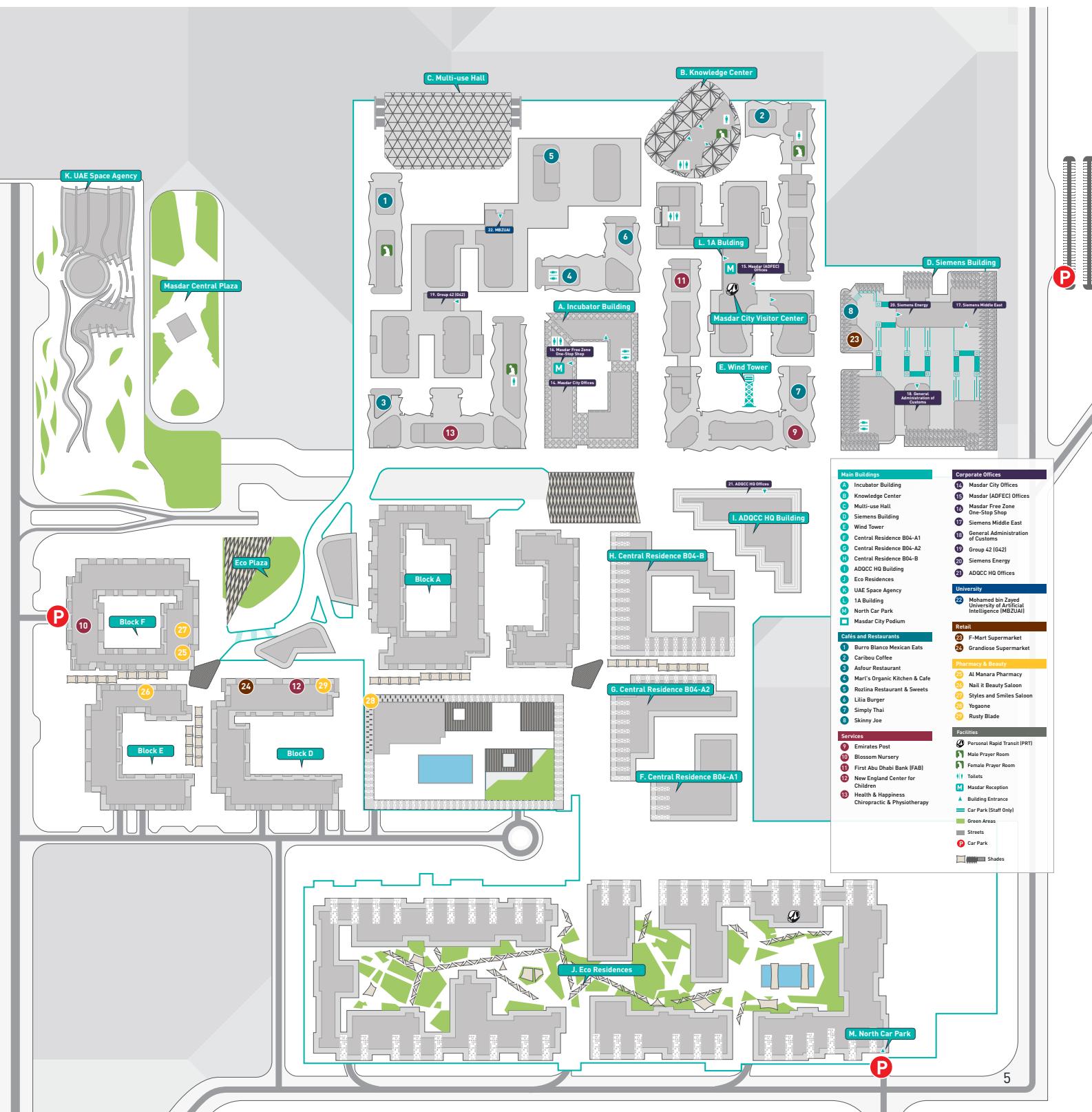


# MASDAR CITY MAP AND POINTS OF INTEREST

The map indicates suggested points of interest for your tour. There is no set path: you may walk through the alleys and courtyards as you wish.



# MASDAR CITY PODIUM MAP AND POINTS OF INTEREST



# ARRIVAL AND DEPARTURE

- If you're coming by bus or taxi, you'll be dropped off and picked up outside the Siemens Energy Building.
- If you're coming in a private vehicle, we suggest parking in Podium Parking and walk or taking an electric club car to our Visitor Center.



Masdar City Visitor Center



Siemens Energy Building



Podium Parking

# KEY AMENITIES

- Several cafes and restaurants offer a wide variety of refreshments. You'll find them marked on the map on page 5.
- Washrooms, located throughout Masdar City, are also marked on the map.
- There are benches and shaded outdoor seating areas available throughout the city so you can take a break.
- Masdar Park, Central Plaza, and Central Park are sustainable urban spaces where you can unwind. Learn more on page 5.
- My City Center at Masdar City is a sustainable shopping mall that consumes 40 percent less water and energy than conventional malls and was the first place in the UAE to eliminate the use of plastic bags.
- We offer a 10-km walking, running and bicycle path called "Al Mamsha," which starts at Masdar Park and connects to various public spaces in and around Masdar City.
- Masdar Park also includes an adventure Pump Park and sporting facilities, including ACTIVE and Yoga One.



My City Centre Masdar

# THINGS TO REMEMBER ABOUT YOUR VISIT

- Elementary and high school student groups need to be accompanied by an adult.
- Please stay within public areas. Do not enter private or restricted areas.
- The podium area is car-free. Parking is available at the Siemens Car Park and the North Car Park, both noted on the map on page 4.



Masdar City Podium

# THE MASDAR CITY STORY: A MASTER PLAN IN SUSTAINABILITY

## What is sustainability?

We use Earth's limited energy resources every day to develop, build, and power homes and offices, drive cars, use technology, and more. Living sustainably means stewarding those resources wisely and minimizing carbon emissions to help ensure that future generations can enjoy Earth's resources as much as we do.



# HOW CITIES CONTRIBUTE TO CARBON EMISSIONS AND CLIMATE CHANGE

## Heat:

Cities tend to be warmer than surrounding areas due to the heat island effect caused by the concentration of buildings, pavement, and limited green space. This leads to increased energy consumption due to the need for cooling systems such as air conditioning.

## Air pollution:

Urban areas are plagued by air pollution from fossil-fuel powered vehicles and industrial activities that release a considerable amount of pollution.

## Energy consumption:

Cities are major energy consumers. Most energy still comes from fossil fuels, which contribute to carbon emissions and climate change.

## Waste management:

Urban areas are huge water consumers and face challenges related to water scarcity and flooding—particularly here in the UAE. Climate change exacerbates these issues through altered precipitation patterns and sea-level rise.

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## Loss of green spaces:

Urbanization often leads to the loss of green spaces and natural habitats, resulting in reduced biodiversity and ecosystem services.

## Transportation:

Urban areas are hubs of transportation, relying on personal transport, most of which still relies on fossil fuels, which contribute significantly to emissions.

**Cities have a vital role to play in addressing these climate change issues—and that is exactly what Masdar City is doing.**

# SUSTAINABILITY AT MASDAR CITY

We're building an urban community that is a solution to climate change rather than a contributor through an approach to sustainability that has three interconnected pillars:

## Environmental sustainability

The ability to conserve natural resources and protect ecosystems to preserve our well-being.

## Economic sustainability

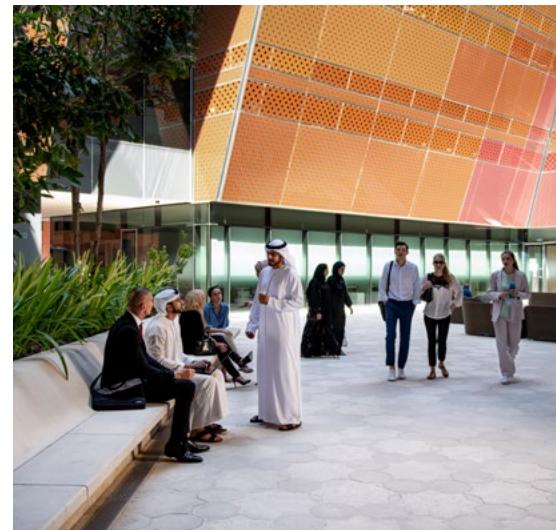
The ability to sustain economic operations so that people can have their needs met and businesses can continue to prosper.

## Social sustainability

The ability of a community, organization, or people group to continue to thrive in a sustainable manner.



Wind Tower



Incubator Building



My City Centre Masdar

# THE ROAD TO NET-ZERO

All of Masdar City's sustainability efforts are leading to our ultimate goal of achieving net-zero. Net-zero refers to the concept of achieving balance between the carbon emissions into the atmosphere and the carbon removed from it, resulting in a net increase of zero.

We are helping accelerate the UAE's journey to achieving net-zero by 2050 by investing in clean-tech and climate-tech innovation, creating energy- and water-efficient buildings and urban spaces, developing sustainable transportation methods and systems, and advocating for more climate-friendly practices across sectors. Three net-zero energy buildings (buildings that produce or offset as much energy as they consume during operations) are under construction at Masdar City right now, with more in the works. With careful planning and work with our partners, we will make net-zero energy the standard rather than the exception.



# SUSTAINABLE URBAN DESIGN

Sustainable urban design includes a number of facets, including buildings, transportation, and the public realm.

Buildings within Masdar City are mandated to achieve a minimum 3-Pearl rating under the Abu Dhabi's Estidama Pearl Building Rating System and are designed to consume at least 40 percent less water and energy than conventional buildings. Most of our buildings are Estidama 3 to 4 Pearl rated and certified LEED Platinum or Gold.

Masdar City's master plan is designed for public transit and walking. The Masdar City podium, at the core of the city, is car-free, encouraging walking and the use of other sustainable transportation.

Landscapes throughout the city are designed with regional or local materials and with as much shading as possible along footpaths. They also minimize water use. Grey water is used for much of the irrigation, and it is supplemented by other pilot technologies such as condensation capture and air-water extraction.

Look for these other sustainability features as you walk around:

- The city is oriented to the northwest to maximize wind flow and minimize solar heat gain and reflection, which makes the city feel cooler.
- Buildings are placed close together to further maximize shading, promote wind flow, and enhance the thermal comfort in the pedestrian corridors.
- Windows make up less than 40 percent of exterior wall surfaces, and various types of window shades or coverings help protect building interiors from hot, direct sunlight.
- There are sustainable green spaces throughout the city that act as community gathering places.



Mohammed Bin Zayed University of Artificial Intelligence / MBZUAI



Personal Rapid Transit (PRT)

## Green building materials

Benches and other structures around the city are made from low-carbon concrete.

Ninety percent of the aluminium used across Masdar City for sheeting, windows, and door frames is recycled, with one-eighth the carbon footprint of conventional virgin aluminium sheeting. Our timber is certified as sustainably sourced, while steel reinforcing bars are made with recycled scrap.

Masdar City and its contractors divert more than 70 percent of construction waste from the landfill by reusing and recycling steel, concrete, and timber construction waste at the onsite Material Recycling Centre (MRC).

## Research and development

Sustainability relies heavily on technological innovation. Masdar City is committed to driving innovation by bringing together education, business, and investment within our ecosystem, and providing a testing platform for projects in clean tech, renewable energy, transportation, and sustainable living.

Here are just a few examples:



CSP Sun Beam Down



Electric Storage Solution Hub



Saint Gobain Al Muntada Knowledge Space



Eco Bus



Seawater Energy and Agriculture System (SEAS) BioFuel



Eco-Villa

# TRANSPORTATION

Transportation is a vital part of any city and accounts for nearly a quarter of carbon emissions. To help address this issue, Masdar uses several sustainable transportation options.

The podium, which is car-free, features comfortable courtyards and shaded walkways to promote walking, scootering, and cycling.

The first generation of our Personal Rapid Transit system, which is autonomous, electric, on-demand, and shared, was the first of its kind worldwide. It runs underneath the podium, transporting people in driverless pods from the North Car Park to our Visitor Center. The pods are controlled from remote computer centers and use sensors and magnets to navigate. You'll see glass lenses on sidewalks on various parts of the podium – these let natural light under the podium to help minimize energy needs within the PRT stations and on the track.

Our second generation transportation system, called NAVYA, retired in 2023. It transported people on the podium in driverless blue buses that could interact with the public realm. If you or a golf cart happened to walk in front of one of these buses, it would "see" you and stop. They could also navigate around people.

For navigating areas off the podium, visitors and residents can book an electric shuttle car or use an electric bus.



Personal Rapid Transit system (PRT)

# POINTS OF INTEREST

## MASDAR CITY VISITOR CENTER

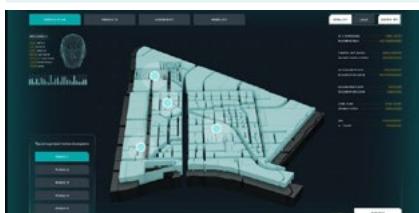


The Masdar City Visitor Center divided into seven captivating zones:



### Zone 1: The Welcome Zone

Meet Amal, our Metahuman guide, and get to know her better. Grab a sustainable journey card and customize your experience with your own information.



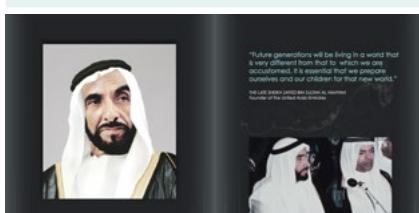
### Zone 2: Masdar City Master Plan

Explore every sustainable corner of Masdar City through our interactive master plan model. The model is fully equipped with two large screens, a touch screen, and projection mapping to provide insights into our community, buildings, and projects.



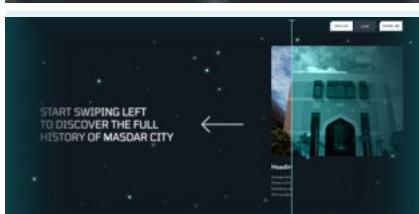
### Zone 3: Global Impact

Spin the globe and embark on a global journey to explore renewable energy projects initiated by our partners, including Masdar and the Zayed Sustainability Prize.



### Zone 4: UAE Leadership

Flip through the pages of UAE's visionary leadership with inspiring videos and pivotal moments. Dive into the UAE's national climate change plan to learn about the measures they have taken for a sustainable future.



### Zone 5: Our Journey

Swipe through time and delve into the inspiring history of Masdar City with an engaging timeline.



### Zone 6: Future Forward

Enter a highly interactive zone, where handheld physical cubes let you explore the boundless potential of a sustainable future. Discover the remarkable strides made by the UAE, Masdar City, and our partners in fields such as education and research, tech and innovation, future energies, and the UAE's Net Zero 2050 vision.



### Zone 7: Connect

Conclude your journey in our final zone. View your engagement scores, find out how to get in touch with Masdar City, and receive your digital token.

# SOLAR FARM



On the outskirts of the city, we have a 10 MW solar photovoltaic farm with 87,777 polycrystalline and thin-film modules that occupy a 22-hectare site.

At its commissioning in 2009, the plant was the largest grid-connected solar facility in the MENA region. It was set up as a pilot project to demonstrate the successful generation and integration of renewable energy sources. At more than 40 cents U.S. per kilowatt hour, solar energy was extremely expensive at that point in time. Today, the solar energy produced here is among the cheapest in the world at less than two U.S. cents per kilowatt hour.

The farm produces approximately 15,000 MWh of clean electricity annually, equivalent to taking more than 1,000 cars off the road.

We also have 1 MW worth of solar panels on rooftops throughout the city, which produce nearly 1,500 MWh of electricity a year.

# THE PODIUM



Masdar City's downtown core, an area we call the podium, is elevated seven meters above street level as part of an iconic design championed by Foster and Partners to channel the cooling desert breezes.

You'll notice that the design is a combination of modernity and tradition. The city incorporates many design features that have been used in the region for millennia to make temperatures more comfortable and minimize the need for energy-intensive cooling.

Some of these techniques are obvious, including window coverings and narrow spaces between buildings that create shade. Others are less so—for example, the northeast-southwest orientation of the city streets, which facilitates natural airflow throughout the city. You'll notice that the podium area has a wide entrance at the Siemens building followed by a pathway that narrows. This creates a "funnel" effect for wind to flow through. Thanks to all of the cooling techniques, the area feels about 5-10 degrees cooler than downtown Abu Dhabi.

# MASDAR WIND TOWER



Rising 45 metres above the plaza in which it stands, our wind tower is a modern interpretation of one of the region's most iconic traditional architectural features. Its height allows it to capture upper-level winds and direct them to the open-air public square at its base.

Sensors at the top of the steel structure are temperature-sensitive, programmed to open at a set temperature to capture the prevailing winds and divert wind into the tower. A fabric membrane carries the wind downward, and a mister cools the wind as it spreads into the courtyard, reducing the ground temperature by a few degrees. The structure is anchored in low-carbon concrete reinforced with recycled steel rebar.

# MOHAMED BIN ZAYED UNIVERSITY OF ARTIFICIAL INTELLIGENCE (MBZUAI)



The Mohamed Bin Zayed University of Artificial Intelligence (MBZUAI) includes lab and lecture buildings, a library, and a multi-use hall, which was open in 2013. Prior to this, the MBZUAI buildings housed the Masdar Institute of Science and Technology (affiliated with MIT in the U.S.). The leadership's vision was to set up a knowledge base for education and research in sustainability.

The silver-colored building are classrooms, offices, and labs. The facade of these buildings optimizes the number of glazed openings in combination with shading and thermal insulation.

The Multi-Use-Hall (indoor sports facility) features a gym and a large multipurpose room for conferences and sporting events, as well as an open-air pool on the ground floor. The unusual design choice of putting a building above an outdoor swimming pool optimizes land use and provides shade for the pool.

# MBZUAI STUDENT RESIDENCES



The student residences of the Mohamed bin Zayed University for Artificial Intelligence (MBZUAI) are some of the most distinctive buildings at Masdar City. They are known for their terracotta-colored, undulating concrete balcony walls that are reminiscent of traditional Arabic mashrabiya wooden screens: They provide shade from the sun while letting air pass through, and allow residents to look out at the street below while maintaining their privacy.

Inside the residences is a central enclosed atrium that naturally ventilates the common space for much of the year. In the evening, cool air flows from vents opened on the ground level, cooling the interior walls and flowing out through openings on top of the buildings. In warm weather, these openings are closed during the day to keep cool air in.

# KNOWLEDGE CENTER



The Knowledge Center, which houses administrative offices for MBZUAI, is one of the most iconic buildings in the city. The curved roof, which features solar panels, as well as the building's orientation, are designed to optimize solar energy. Covering the northeast section of the building's exterior roof, sustainable folded zinc cladding provides ventilated shading to parts of the building and nearby public spaces.

On the front of the building, you'll see that the windows are angled and protected by a curved wood overhang. The shape of the overhang follows the path of the sun throughout the day, keeping hot, direct sunlight from spilling into the building while also maximizing natural light and providing an amazing view of Central Park.

The sustainable timber structure isn't just beautiful—it also reduces the building's embodied carbon footprint. The Douglas Fir wood was sourced from forests certified by the Forest Stewardship Council (FSC) and the Programme for the Endorsement of Forest Certification (PEFC). Zinc was chosen as the material for the roof cladding for its lower overall environmental footprint.

# INCUBATOR BUILDING



The Incubator Building is the headquarters of Masdar City. Its distinctive, ultra-modern outer walls slope outward as they rise to reduce solar gain. Ceramic circles on the glass walls also help protect the building interior from heat while diffusing the sunlight. Higher up, the circles are bright yellow and reflective, while “cooler” colours are used towards the building’s base.

The design is built around a courtyard that provides shade and helps “lock in” cooler air.

The building recently received a LEED Gold rating for operations and maintenance.

# SIEMENS ENERGY MIDDLE EAST HQ BUILDING



The Siemens Building was Abu Dhabi’s first LEED Platinum office building. It is also rated 3 Pearls under the Estidama Pearl Rating System. It has an unmistakable exterior façade and distinctive “box within a box” design. The inner box is an airtight wall that provides maximum insulation. The outer box is comprised of a lightweight aluminium external shading system featuring fins of varying forms. These prevent excess sunlight from warming the building’s interiors while maximizing views and daylight.

Nine atriums allow natural daylight to permeate the interior office spaces, three of which draw up and expel the warm, ground-level air from the building’s plaza.

The building, which is the company’s Middle East headquarters, appears to “float” above and shade a public plaza that is shaped like a funnel to move prevailing winds underneath the building. This flushes hot air out of the surrounding public spaces using natural air-flow dynamics.

Extensive deployment of sensors, smart meters, and building management systems help monitor energy and water use.

# CENTRAL PARK



A 400-plus- meter long solar shade-way generates Central Park's external public realm power requirements and provides shade for walkers, cyclists, and food trucks. Vertical food production gardens are used to grow mint, oregano, eggplant, and other seasonal herbs. Interactive play equipment is powered by human movement, and seating areas use recycled concrete, which helps visitors keep cool. Landscaping includes desert adaptive and salt-tolerant species.

Thanks to leading technology, design, and engineering, Central Park has an Exemplar rating under the Estidama Public Realm Rating System—the first park in the region to achieve this rating. It also adheres to Estidama requirements for low water use (less than three liters per square meter per day).

# IRENA HEADQUARTERS



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# UAE SPACE AGENCY



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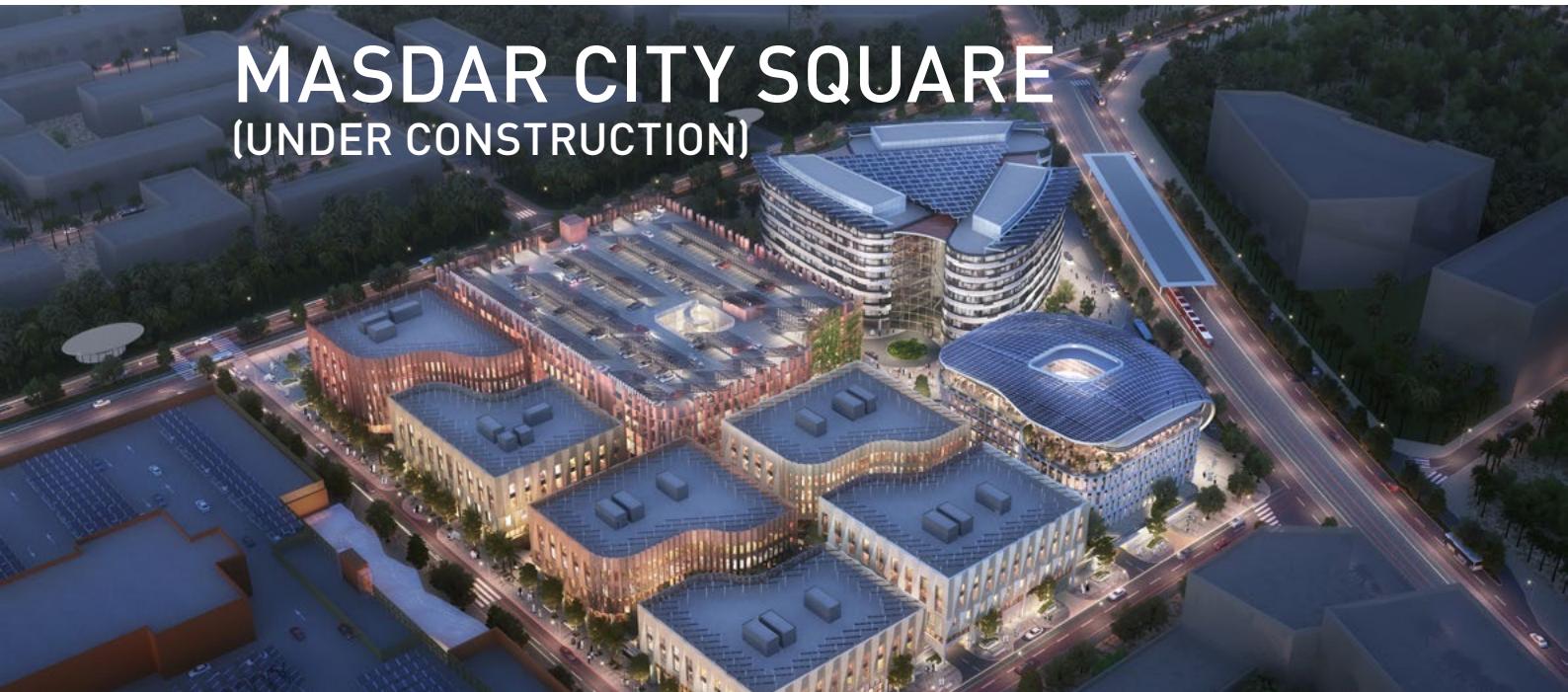
## NZ1



NZ1 is Masdar City's first net-zero energy office building. The design has been rated LEED Platinum and Estidama 4-Pearl, with on-site solar panels producing at least as much energy as the building uses over 12 months.

The building is oriented to maximize shading and breeze, with windows placed strategically to minimize direct sun while maximizing direct light. The building also uses 40 percent less water than equivalent conventional buildings through the use of low-flow fixtures, condensate capture, and low-irrigation demand landscape species.

# MASDAR CITY SQUARE (UNDER CONSTRUCTION)



Construction is in progress on Masdar City Square, which will consist of seven new office buildings, including Abu Dhabi's first net-zero energy corporate HQ building. The remaining six buildings will be Estidama 4-Pearl, LEED Platinum, and WELL Gold certified.

All the building's features will prioritize function. For example, the net-zero energy HQ building features solar panels on the roof and on a curved awning that will provide shade.

**Completion target: 2024**

# THE LINK (UNDER CONSTRUCTION)



Construction is in progress on The Link, a mixed-use development consisting of five buildings, including the region's first net-zero energy shared working and living space. The remaining five buildings will be Estidama 4-Pearl, LEED Platinum, and WELL Gold certified and feature event space, outdoor plazas, shaded courtyards, recreational and fitness facilities, and retail.

**Completion target: 2025**

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