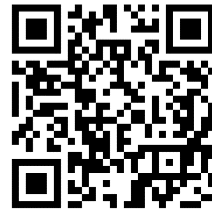


The Big Green Legacy

Sustainability Cities Case Study



[The Sustainable City Dubai](#)

For a city that regularly experiences temperatures in excess of 40 degrees for 4 to 5 months of the year, climate is a challenge. Developers must be able to cool indoor spaces. But Dubai's climate is also an opportunity, as it has the potential to generate significant amounts of solar energy.

In the compound, solar panels top almost all the buildings and car parking spaces, generating enough energy to meet most of the community's needs. South-facing facades are closed to block the sun while well-insulated windows are placed on the northern frontages. All surfaces are light-coloured to reflect the sun and reduce air-conditioning loads.

A "green spine" runs down the middle of the community providing green, lush landscapes and, more importantly, space for several greenhouses for sustainable kitchen garden plants and vegetables for local consumption. Residents are also encouraged to grow their own food in gardens next to their properties using organic practices.

The community also promotes soft mobility such as shaded walking (more than 80% of the development is car-free) and cycling. Shared electric buggies are the main mode of motorised transport within the community and a growing number of residents are choosing to benefit from on-site charging points with the purchase of electric vehicles.

Case study adapted from:

[World Bank - The Sustainable City in Dubai: from dream to reality \(2022\)](#)

Supporting images:



- | | | |
|--------------------------|--------------------------------|-------------------------------------|
| 1. Entrance | 2. Equestrian Centre | 3. School |
| 4. Juma Mosque | 5. Reception Tower | 6. Institute |
| 7. Mixed Use | 8. Staff/Student Accommodation | 9. Townhouses |
| 10. Semi-Attached Villas | 11. Bio-dome Greenhouses | 12. Organic Farm |
| 13. Constructed Wetlands | 14. Planetarium / Conservatory | 15. Resort Bungalows |
| 16. Horse Track | 17. Playgrounds | 18. Solar Shade Canopy Over Parking |
| 19. Sports Field | 20. Multi-Use Games Courts | 21. Country Club |
| 22. Utilities | | |

image source:

<https://www.outdoordesign.com.au/news-info/dubais-sustainable-city-is-first-of-its-kind/1830.htm>



[Masdar City - Abu Dhabi](#)

Masdar City today has more than 4,000 residents. The community is powered partly by on-site renewable energy and constructed using sustainable materials. Its eco-friendly buildings are designed to reduce energy and water consumption by at least 40 per cent — although some have surpassed this figure.

Despite the arid climate, Masdar City is designed for pedestrians and with narrow, shaded streets that help the city feel 5 to 10 degrees cooler than the surrounding area. Residents can take advantage of several electric transportation options, including autonomous underground vehicles and above-ground buses.

Windows are angled and shaded to minimise direct sunlight, and exterior walls are airtight, with high-quality insulation.

Case study adapted from:

[PWC: Masdar City: The eco-oasis blueprint for sustainable cities \(2023\)](#)

Supporting images:



image source:



[Sharjah Sustainable City](#)

As the first fully sustainable community in Sharjah, the city is powered by renewable energy produced from rooftop solar panels. It recycles its water and waste and produces vegetables and greens to enhance food security.

Urban farming, community gardening, and high-tech solutions such as vertical farming will be deployed to increase food production and support the UAE food security strategy. Additionally, the gardens running through the entire width of the community are made of productive landscape allowing residents to farm their own food.

The city features an extensive network of walking and cycling paths to promote an active lifestyle and clean mobility, thereby reducing emissions. It also runs a driverless shuttle to facilitate commuting within the city. On top of this, smart charging stations can also be found around the city to encourage electric vehicles.

Villas in the Sharjah Sustainable City have been strategically located to avoid direct sunlight and maximise shading. Most south-facing facades are closed to reduce heat gains. Windows, including glazing and sections, are thermally insulated to reduce heat gains and air-conditioning.

Case study adapted from:

[ConstructionWeek - Here are 5 features from Sharjah's Sustainable City \(2022\)](#)

Supporting images:



image source:

https://www.sharjahsustainablecity.ae/wpcontent/uploads/2024/05/Brochure_Desktop_May24.pdf



image source:

<https://www.sharjahsustainablecity.ae/news/sustainable-sharjah-a-life-more-suitable-for-the-future/>