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# Masdar City Demonstrates the Future of Sustainable Design

Posted on 26. Nov, 2012 by Maryruth Belsey Priebe in Articles

zero carbon city - Masdar City, Abu Dhabi



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If you've ever wondered what the future of green building designs will be, wonder no more. Masdar City in the heart of Abu Dhabi is working to become the world's first zero carbon, zero waste, sustainable city, and their efforts so far are producing some really amazing results. A project of the Abu Dhabi Future Energy Company, the plans for Masdar City include residences for 45,000 to 50,000 people, 1,500 businesses, and work for 60,000 people.



The following are some of the features that make this development so unique in the sustainable construction space:

- **Green building materials:** Impressive steps have been taken to use materials sustainably. For instance, all aluminum must be 96% recycled, all timer is from FSC- or PEFC-certified forests, only water-based paints and low-VOC chemicals are being used, green concrete with a lower carbon footprint is the norm, and most of the steel is 100% recycled.

- **Massive renewable energy projects:** Masdar City is home to the largest grid-connected photovoltaic (PV) array in the Middle East, producing 10 MW of energy. There's also 225 meters squared of roof-mounted solar thermal water systems to provide a 75% reduction in water heating energy needs, as well as smaller roof-mounted PV systems for additional renewable energy. They're also demonstrating geothermal resources of the region for providing cooling, heating, and electricity. And their entire grid will be built using smart systems for outstanding efficiency.

- **No cars:** The city is constructed on top of an interconnected mass transit and personal rapid transit (PRT) system. The system is powered by renewable energy, so no fossil fuels are burned for transportation.

- **Narrow, pedestrian streets:** Since there are no vehicles (or roads), buildings are situated closely together to create shade for keeping buildings cool and to provide wind tunnels for facilitating air movement.

- **Energy efficient buildings:** Using passive cooling designs, wind tunnels, low-energy lighting, smart home systems, and high performance building envelops, the buildings, including the residential ones, should use 55% less energy for cooling and 51% less electricity.

- **High efficiency water systems:** Micro irrigation, drought-tolerant landscaping, wastewater reprocessing (100% reuse for irrigation), and stormwater catchment systems contribute to the city's 54% lower potable water consumption.

- **Near zero-waste construction**: 96% of the construction waste generated in the building of the city will be reused or recycled in some way. Concrete is crushed to be used for roadways, plastics melted down to make furniture, and wood chipped for mulch on landscaping.

If you'd like to see some of the results of these green building designs and sustainable city concepts, check out this video on the future of cities:

You can find out more about Masdar City through Sustainability that Saves: We'll Show You How or Building the World's Most Sustainable City.

Images via Wikimedia Commons.

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We blog about green building practices to help you create energy efficient homes.