

MASDAR CITY: BEACON OF SUSTAINABILITY OR AN EXTRAVAGANT EXPERIMENT!

In 2005 the government of Abu Dhabi in the UAE decided to undertake one of the most ambitious projects of the 21st century. To build an entire city that emits absolutely no emissions and produces no waste— the Masdar City. Given all the concerns surrounding the environment, and sustainability of modern cities, visiting such a city is of great interest to anyone, let alone an Urban Planning student. Thanks to SURP's International Experience Award I had the fortune to travel to Abu Dhabi to witness the development of Masdar City first hand.

The idea of Masdar City was born out of government of Abu Dhabi's vision to transfer the city into a major global economic hub by the year 2020 through transforming the nature of Abu Dhabi's economy from a resource based economy to a knowledge based one. Masdar's goal is hence to act like a living laboratory for green technology and attract green technology firms to the city.

THE MASTER PLAN

Masdar City's master plan prepared by British architecture firm Foster & Partners is designed to minimize the need for motorized transport by utilizing mixed land uses and high density- mid rise buildings. The city's master plan puts residents within an easy walking distance to most everyday needs.

In order to minimize solar gains from the blazing Middle Eastern sun, the master plan has set the orientation of the city in the north-west direction. This maximizes shadows on sidewalks, minimizes solar heat gain on building walls; and allows nigh time cool breezes from the adjacent desert to flow through the city's sidewalks.



Masdar City is made of mixed use mid-rise buildings with ground level dedicated to commercial use. This puts residents within a walking distance of everyday shopping needs.

TRANSPORTATION

The city utilizes a unique and innovative public transportation system to transport residents if there ever arises a need to travel to a far destination. A network of self-driven electric powered cars connects people from every corner of the city. This transportation mode known as Personal Rapid Transit (PRT) is designed such that every resident lives within a 5 minutes walking distance to public transport. The energy required to power the PRT comes from renewable sources—namely solar. Masdar City does not have a street network for private vehicles.

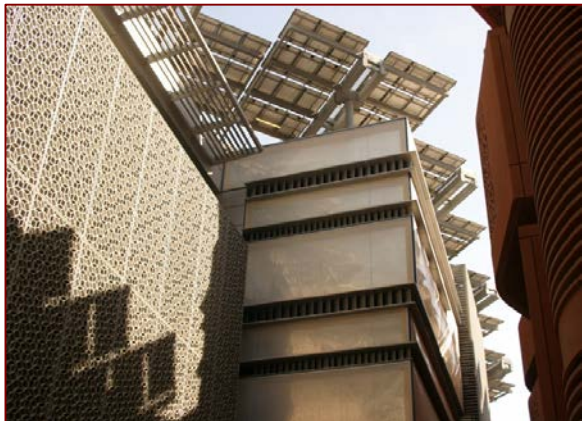


Masdar City PRT Station

ENERGY

Masdar's energy comes entirely from renewable sources. There are solar panels on top of every building providing about thirty percent of each building's energy needs. The remaining comes from a solar power plant located just outside of the city.

A Japanese green energy firm is undertaking an experimental project called the *Beamdown* project to harvest the power of the sun in a more efficient manner than conventional solar panels. In this method, dozens of mirrors reflect the sunlight into a single spot on a water tank causing water to boil. A steam turbine then generates electricity from the steam generated by the boiling water.



At Masdar, every roof is covered by solar panels, which provide about thirty percent of each building's electricity needs.

WASTE

Masdar is planning to completely eliminate waste by recycling recyclable products, composting bio-products, and by turning non-recyclable products into energy through a waste-to-energy plant. In Phase 1, the target is to divert fifty percent of all waste from landfill. In later phases this will increase to a hundred percent.

MY TAKE

I admire the Government of Abu Dhabi's leap of faith to undertake this massive project for a good cause. I believe that the Masdar Initiative will contribute tremendously to the advancement of green technology and sustainable urban development. However, I have some criticisms concerning the implementation methodology adopted by the Government of Abu Dhabi to execute this project.

There is no doubt that implementing a project of this scale and nature requires significant contribution from local government; however, in this particular case I believe the Government of Abu Dhabi has played too big of a role. The whole Masdar project is financed and owned by the Abu Dhabi government. Once completed, Abu Dhabi will begin to lease space out to private and commercial tenants. Local governments around the world are unlikely to have the financial capacity or the constitutional authority to single-handedly undertake a project of this scale. Therefore, Abu Dhabi's government should have resorted to municipal planning tools such as zoning and property tax benefits to encourage the development of Masdar through private sector investment. This method would have likely slowed down development, and added additional challenges but would have provided valuable lessons in case similar projects were to be implemented elsewhere. It is important to learn how to build sustainable cities, but it is equally important to learn how to build them in a financially sound and realistic manner.

To check out my videos from Masdar please visit www.surpinmasdar.tk