

International Experience Award: Masdar City, United Arab Emirates

Introduction: In April 2016, I traveled to Masdar City to research about the success and challenges of the city, to understand how planners can increase sustainable development through Planning and Urban Design. I chose to study Masdar City for its innovations in the field of Arcology (architecture + ecology). It is a concept, a vision of architectural and planning principles for densely populated habitats. Masdar is designed and planned for zero-carbon, zero-waste, car-free city by Fosters and Partners, Architects and Planners from Britain. Masdar City is a sustainable mixed-use development designed to be friendly for pedestrians and cyclists. It will be the latest of a small number of highly planned, specialized, research and technology-intensive municipalities.



Visited Masdar City in April 2016 to evaluate the world's most sustainable city.



Masdar City Fosters and Partners, Architects and Planners from Britain.

plantations, allowing the community to be entirely energy self-sufficient. Approximately 80 percent of the water used is recycled. The Masdar Institute of Science and Technology (MIST) is located at the heart of the Masdar City. It is graduate-level research university which focuses on alternative energy, environmental sustainability, and clean technology. Some of the key buildings in Masdar City are Siemens Middle East HQ, IRENA HQ, Incubator Building, the Knowledge Center. The headquarters of International Renewable Agency is located in the Masdar City.

Planning Principles and Urban Design:

The vision is to make the city energy efficient. The water system is one of the

Travel Destination: Situated in Abu Dhabi, Masdar City spreads over an area of 6 square kilometers. The projected population of this city is 40,000 residents and 50,000 commuters by 2025. Masdar City initiated and began the journey of developing world's most viable city in 2008. Once the construction is completed, it will be the first modern community in the world to operate without using fossil fuel vehicles at street level. With a maximum distance of 200 meters to the nearest rapid transport link and amenities, the city is designed to encourage walking with its shaded streets and courtyards that offer an attractive pedestrian environment, sheltered from climatic extremes. The land surrounding the city contains the wind and photovoltaic farms, research fields and



Terracotta walls decorated with arbesque patterns



The temperature in the streets is generally 15 to 20 °C (27 to 36 °F) cooler than the surrounding

techniques have been developed using recycled aluminum and low carbon cement. Masdar is using recycled materials with high thermal mass to construct the city. Energy efficient buildings cut down on the amount of resources needed to heat and cool facilities. Raise energy productivity, lower energy utilization, escalate the flow of wind and diminish the solar gains are some of the fundamental principles of Masdar City.

Critical Analysis: There are certain doubts on the sustainability of the project. The amount of energy and water required for the project is huge. Another issue about the city is that is built up with the money that comes up through the oil industries that pollute the environment, is difficult to be considered as sustainable. In nearby Dubai and Abu Dhabi City, extravagant projects ranging from indoor ski slopes, artificial islands, and lavish hotels are built with money from oil and gas production. Masdar will be the world's most sustainable city, but it will be surrounded by some of the world's most unsustainable developments. The effectiveness of scaling down the greenhouse gas emission is questioned as UAE ranks second highest in greenhouse gasses because of their oil and gas trade. It seems highly difficult to reduce the greenhouse gas emissions due to the increasing populations in the rest of the country unless they all lead by the example of Masdar City.

Conclusion: There are certain drawbacks, but the city is heading in a right direction through its plan. It can help the other cities through its innovative technologies. If they are successful in bringing out a change through the new technologies and prove that they are profitable, then the technologies can be utilized in other parts of the world and can help make the world a more viable place.

most important parts of Masdar city's sustainability plan. Planners have developed ways to reuse and recycle water to reduce the consumption of water. Grey water system is the only source for irrigation. Masdar city has obliged to reduce the severity of any impact on plants and animal. To seize the predominating winds and make the place cooler the city incorporates ancient Arabic architectural techniques infused with modern building technologies. The buildings in Masdar City are designed in such a way that it has reduced 40 percent of energy and water demands. Eco-friendly construction



At one of the public square is a contemporary re-interpretation of the traditional Arabic wind tower, which has been designed to bring cooling breezes down to ground level.