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Abu Dhabi Starts 3D Modelling Project

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Leaders in Abu Dhabi announced yesterday that the city is developing a 3D digital model of the city to help them cope with challenges from planning to defense.

The Abu Dhabi City Municipality is in charge of the development of Abu Dhabi, which is one of seven emirates in the United Arab Emirates. The municipality announced a plan to work on the 3D digital model with public bodies including the Department of Municipal Affairs and the Abu Dhabi Planning Council. The aim is to use the model to improve planning, design and development, and help the city realize its Plan Abu Dhabi 2030 redevelopment strategy.

Abu Dhabi's leaders say a new 3D model will help them better assess the impact of new developments (Source: slleong via Flickr)

Using digital technology to map cities in 3D isn't new. From the computer game SimCity to the initiatives by companies including Google and Apple to map cities around the world, we can already see how fictional and existing cities are being mapped in 3D.

The use of 3D digital models in building design and urban planning isn't new, either. Planners and developers already use 3D digital technology to show the impact of new development on cities. Even so, the Abu Dhabi project sounds ambitious: Indian firm Rolta is working with Abu Dhabi and will map an area of 5,000 sq km that includes tens of thousands of buildings.

And the aims for the model are even more ambitious, as set out in the official press release:

- **Urban planning:** The city wants to use the 3D model to look at the impact of new schemes, and assess their impact on issues like culture and heritage. It also wants to use the data to help assess the condition of buildings and plan refurbishments.

- **Telecoms planning:** It wants to use the data to identify routes for telecoms lines.

- **Civil defense:** The city wants to use the model to help plan the locations of CCTV cameras and other security measures. It also says that the model could help it to manage city risks and crises; and to coordinate rescue operations in emergencies.

- **Air traffic safety:** This model could help airlines keep passengers and civilians safe.

- **Health and education:** The city says that using this 3D model to plan infrastructure could also lead to benefits in the health and education of Abu Dhabi's citizens.

Khalfan Sultan Al Nuaimi, acting executive director of town planning at Abu Dhabi City Municipality, said that this 3D digital model would help the city to tackle developmental, environmental, social, and economic problems; he said it is important for such a fast-growing city. The project is expected to cost the city $25 million, which is small change for this oil-rich state.

The first phase of the mapping starts this month involving rendering the dimensions of the city's existing buildings, and will run until June 2014. The second phase, from June 2014 to December 2015, involves adding the external images of the buildings to those renderings.

The municipality says that the project will also involve mapping the insides of thousands of buildings.

I can't substantiate Abu Dhabi's claim that this is the biggest 3D mapping project ever undertaken by a city, but the scope certainly seems mind-boggling. I can see how it would be useful for visualizing new developments and making planning decisions.

But I also find it difficult to believe that this map will achieve all the aims that the city claims it will. I have not seen any evidence that it will include big data that shows how people use the city, which would help the emergency services and disciplines such as transport planning, and I don't understand how it would be able to accurately represent the condition of existing buildings for maintenance purposes. That will be tough to achieve even with constant updates.

The new 3D map should be a useful tool, but it can be no substitute for seeing the city in action firsthand.