

On hearing mention of Dubai, most of us envision celebrated and extravagant lifestyles featuring piles of gold and private jets, lavish spreads of wealth, and unfathomable luxury, prominently on display for all to envy. This city, the most populated within the entire United Arab Emirates, is of course also a mega-hub for global business dealings—all of which translates to a love for the highest of the high-tech—much of which takes place in beautifully appointed offices and surroundings. And their latest architectural feat, while perhaps not the biggest or most glamorous, is definitely going to wow you with a glimpse into the future of construction—at least for Dubai.

While the concept of 3D printed buildings may not sound so far-fetched for the future at all as the technology has been earmarked for great potential in construction and architecture, many may be surprised to hear that Dubai is indeed home to the first 3D printed and fully functional office building, just inaugurated today in Dubai by His Highness Shaikh Mohammad Bin Rashid Al Maktoum, Vice-President and Prime Minister of the UAE and Ruler of Dubai. This building represents part of the first major initiative of the Dubai 3D Printing Strategy in the UAE, which we've been reporting on repeatedly since plans were initially announced and outlined.

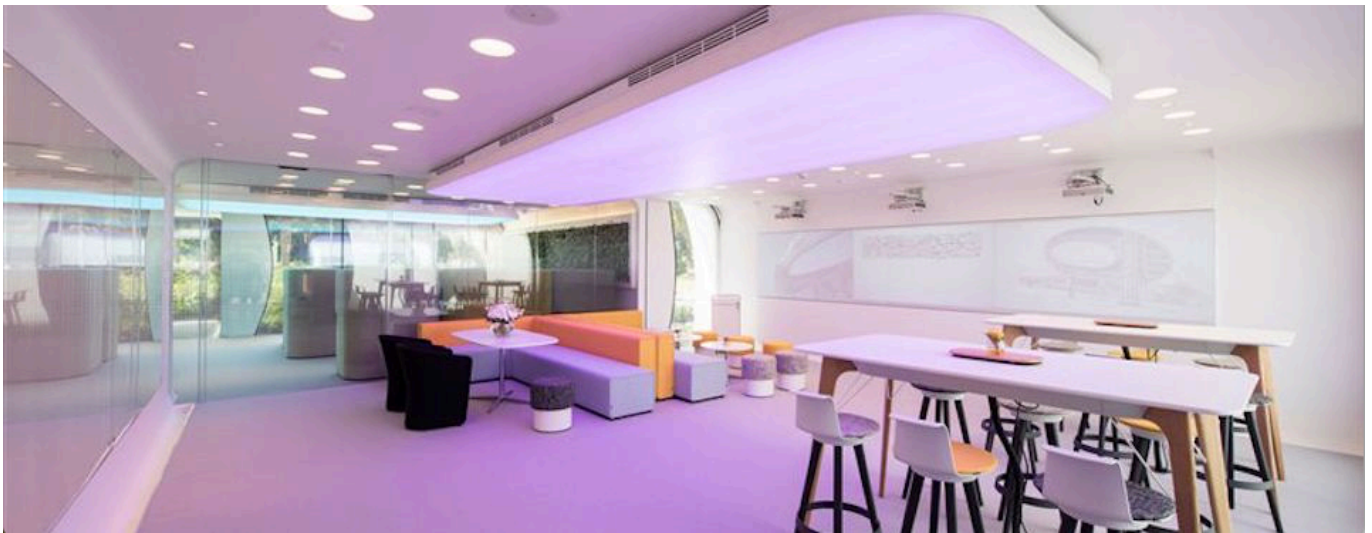
“We announce today the opening of the first 3D-printed office in the world, after less than a month of launching the Dubai 3D printing strategy which showcases a modern model of construction,” said Shaikh Mohammad. “This is an experience we present to the world on implementing future technology in our lives, and it represents a new milestone for the UAE as a global leader in strategic achievements.”

In only 17 days the building was 3D printed. One top and bottom unit were fabricated, showing off an incredible feat in new office trends. The Emirates Towers premises will house this temporary office of the Dubai Future Foundation which has all the usual conveniences integrated into the design such as electricity, water, telecommunications and air-conditioning.

Meant to act as a testimony not just to Dubai's superiority, but also to 3D printing and all of its benefits, this office is to be 2,000 square feet with space to allow teams to meet and work, as well as offering room for meetings with consultants and industry experts from around the globe. The design, also offering sufficient space for a variety of exhibitions and workshops, is primarily meant to offer an atmosphere that is happy, healthy, and allows those working there to thrive in their environment.

The offices, including all interior furniture, detailing, and structural components, were fabricated using a 3D printer measuring 20 feet high, 120 feet long and 40 feet wide, and

included an automated robot arm—something we are beginning to see integrated into this technology more and more on larger and smaller scales, with 3D Systems Figure 4 technology coming straight to mind.



Materials for this building construction included a mixture of special reinforced concrete, glass fiber reinforced gypsum, and fiber reinforced plastic—all tested in both the UK and China for reliability. The team also built in an arc shape for additional safety and structural integrity.

The UAE National Innovation Committee as well as Sheikh Mohammad Bin Rashid Al Maktoum, UAE Vice-President and Prime Minister and Ruler of Dubai were behind the project, which they see as offering an exemplification of 3D printing and the ways it can improve efficiency for everyone, as well as further developing the economy of Dubai, in keeping with the country's 3D Printing Strategy, focusing on three main sectors: construction, medical products, and consumer products.

"This project reflects the vision of our leadership here in Dubai. We are keen to use the latest technologies to simplify people's lives and to serve them better. This project is part of our overall innovation strategy to create new designs and new solutions in education, healthcare and cities. Our goal is to increase the happiness and wellbeing of our residents and to pioneer new solutions for the world," said Mohammed Al Gergawi, Chairman of the UAE National Innovation Committee.

It's estimated that with this new technology being used in construction, the following benefits are offered:

1. Production time is reduced by 50 to 70 percent
2. Labor cost is reduced by 50 to 80 percent
3. Construction waste is reduced by 30 to 60 percent

“We implement what we plan, and we pursue actions, not theories. The rapidly changing world requires us to accelerate our pace of development for history does not recognize our plans but our achievements,” said Shaikh Mohammad, regarding this very historical office.

“We see this project as a case study that will benefit regulators as well as research and development centres at the regional and international levels on real application of 3D printing technology. We are documenting this experience and building on it to take advantage of the most important lessons, which will serve as reference points to take this technology to new levels.”

While this incredible architectural and construction innovation is on display and being used in Dubai, it may be easy to forget also how helpful 3D printing in combination with construction projects should prove to be in the future for a wide range of projects in developing nations, offering self-sustainability for building housing and businesses. Hopefully this set of offices will serve as a role model for a host of new buildings that allow for affordability, portability when desired, and an exciting new trend in architecture altogether.

The 3D printed building was opened in the presence of Shaikh Hamdan Bin Mohammad Bin Rashid Al Maktoum, Crown Prince of Dubai, Shaikh Maktoum Bin Mohammad Bin Rashid Al Maktoum, Deputy Ruler of Dubai, and Shaikh Ahmad Bin Mohammad Bin Rashid Al Maktoum, Chairman of the Mohammad Bin Rashid Al Maktoum Foundation, as well as Mohammad Abdullah Al Gergawi, Minister of Cabinet Affairs and The Future, Obaid Humaid Al Tayer, Minister of State for Financial Affairs, and a number of senior officials. Discuss further in the Dubai 3D Printed Office forum thread over at 3DPB.com.



Sources:

<https://3dprint.com/126426/3d-printed-museum-office/>

<http://mediaoffice.ae/en/media-center/news/23/5/2016/3d-printed-office-building.aspx>