

3D printing research centre has mega plans

NTU facility exploring printing of huge building materials like concrete blocks

By DAVID EE

THREE-DIMENSIONAL printing is getting closer and closer to home. One day, you could be living in a block of flats made out of printed materials.

Nanyang Technological University (NTU) is working towards such visions at its new \$30 million 3D printing research centre, launched on campus yesterday.

It is studying how to create printers that can print mega-sized construction materials such as prefabricated concrete blocks and beams.

Making this a reality could boost productivity in the construction sector, said Senior Minister of State for Trade and Industry Lee Yi Shyan, speaking at the centre's opening.

The sector, which relies on migrant workers for much of its manpower, has often been cited for its low productivity.

"One day, it will be possible to print building components, especially difficult structures and

beams," said Mr Lee, who is also Senior Minister of State for National Development. "Then, you can save a lot of manpower."

Researchers overseas are already testing ways to print an entire house in less than a day, he noted.

The new NTU Additive Manufacturing Centre, which is partially funded by the Economic Development Board, will also research the printing of human tissue and organs, and biomedical implants such as scaffolds to regrow bone.

It has already signed an agreement with a major American health-care firm to do this, said the centre's director, Professor Chua Chee Kai.

He added that there is "tremendous interest" from other sectors.

Five organisations have already signed research agreements with the centre, including Keppel Offshore & Marine, electrical components firm Molex and DSO National Laboratories.

It has also signed a \$5 million deal with leading 3D printer manu-



NTU president Bertil Andersson (left) and Professor Chua Chee Kai (right), the director of the new 3D printing research centre, offering a token of appreciation to Senior Minister of State Lee Yi Shyan, in the form of a 3D-printed replica of Marina Bay Sands and a figurine representing Mr Lee. PHOTOS: LIM YAOHUI FOR THE STRAITS TIMES



Items made by selective laser melting of steel, cobalt chrome and titanium alloys for biomedical implants at the new NTU Additive Manufacturing Centre.

facturer SLM Solutions. Together they will jointly develop new composite materials and printing techniques for the aerospace, automotive, marine and offshore industries here.

Mr Lee said that he has asked the centre to hold roadshows to interest more companies.

"Undoubtedly, 3D printing will be one of the key technologies Singapore must embrace as a part of the future of manufacturing and construction," he said. "It's better for us to be ahead of the curve, (rather) than be a follower."

Last February, the Government announced that it would put \$500 million over five years into developing future manufacturing technologies – in particular 3D printing and robotics.

✉ davidee@sph.com.sg