Architects at Suntem 3D studio pay tribute to Santiago Calatrava by 3D printing the emblematic Turning Torso building.

ABOUT Suntem3D

Since they were students, the architects of Suntem 3D fell in love with the work of the architect Santiago Calatrava. They have always admired his ability to create strong and coherent concepts transposed into an elegant blending of architecture into structure.

That is why they decided to 3D print the Turning Torso building as a tribute to this great architect.

COMPANY
Suntem3D
https://www.suntem3d.ro/

INDUSTRY
Architecture, Arts, Construction, Interior Design

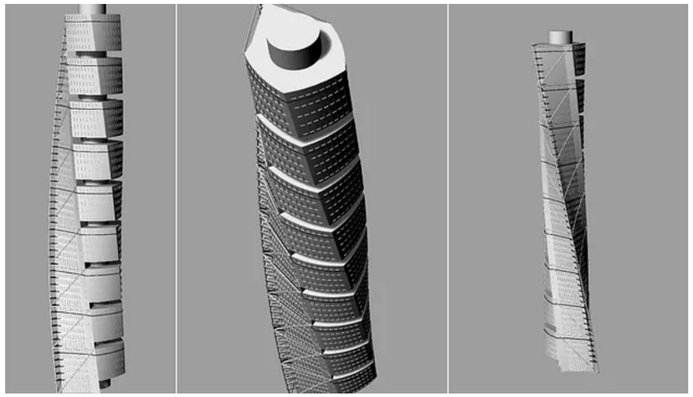
APPLICATION
Prototyping: Mock-Ups, Design Validation and Visual Aids

BCN3D

CHALLENGE

In 1999, architect Santiago Calatrava was invited to develop a mixed-use residential tower in the port area of Malmö, Sweden, as an important part of the Malmö Western port transformation program. The project was conceived as a vertical sculptural element that symbolizes the human body in motion.
The shape of the building is composed of nine units (each containing five floors), rotated to each other, and located around the central core, generating a spiral motion.

Turning Torso (190 meters) is the tallest residential building in Sweden and the second tallest residential building in Europe.
The architects of Suntem3D decided to replicate the Turning Torso with the idea of recreating textures and finishes as real as possible.



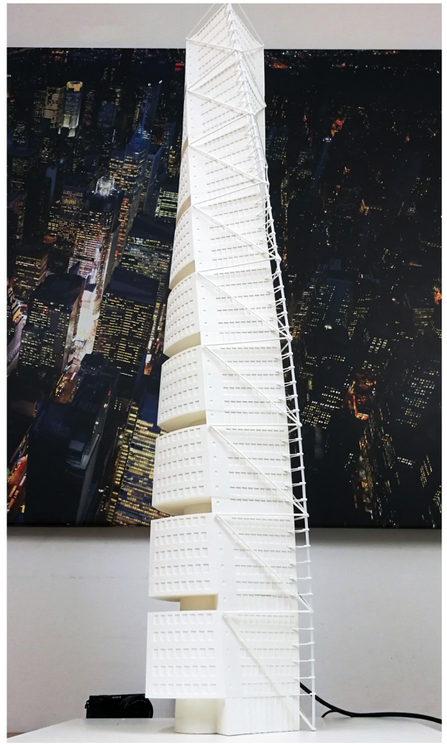
SOLUTION

In order to carry out their idea, the architects decided to use 3D printing technology. First of all, the Suntem 3D team had to design the digital model using Rhinoceros software. By using 3D printing they would be able to print the complex shapes and geometries that the Turning Torso has. Furthermore, there is no need to make models by hand. Once modeled on the computer, they started printing the pieces with their BCN3D printers.

RESULT

It is easier for architects when they can visualize their designs physically and not on a screen. It is also very easy to just touch the model and figure out what it looks like from all angles.

After 137 hours of 3D printing, they made their goal a reality: to have a physical model of the building. The mock-up was manufactured with a scale of 1/135 and measures 1 meter and 40 centimeters. The mock-up was printed in PLA, ideal for those models and prototypes that need a good surface quality and aesthetic detail. Also, is the perfect material for printing parts that contain overhangs, complex geometries and intricate curves. PLA is the best choice for building affordable models that need good surface quality for customer presentations, to help them better understand and visualize the product.



COSTS

The architects were able to not only reduce the time of creation of the model but the cost associated with it. If they had assembled the model by hand, they would have taken much longer and, moreover, they would have spent much more time in its construction.
In comparison with traditional hand making, using 3D printing allows architects to manufacture cost-effective and quick models. In fact, what makes a big difference is the reduction in production time and not in the cost of the materials used for creating the mock-up.

	HAND MAKING	BCN3D PRINTERS
COSTS *(labor, materials and service fee)*	3500€	100€
MOCK-UP LEAD TIME	4 weeks	1 week

BCN3D

About BCN3D technologies
BCN3D Technologies is one of the leading manufacturers of desktop FFF 3D printers worldwide. Based in Barcelona, the activity of BCN3D began in 2012 and its aim is to help innovators and creatives to change the world, by offering them the best possible experience to materialize their unique ideas.

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