

Complete Forbidden City printed on the Creatr 3D printer

With the final piece being added to the floorplan by Ms. Cathelijne Broers, CEO of De Nieuwe Kerk in Amsterdam, the 3D printed Forbidden City is completed. All 980 buildings, temples, houses, and gates are 3D printed on a scale of 1:300. The Forbidden City project is part of the Ming Exhibition and is the first printed city of the world!



Ms. Cathelijne Broers adding the final building to the floor plan.

How the idea came to life

From October 5th 2013 until February 2nd 2014, Dutch museum De Nieuwe Kerk, opens its doors for the Ming exhibition. Marlies Kleiterp, head of exhibitions, explained how the idea of 3D printing the Forbidden City came to life. *“To be honest it was a spontaneous idea to make the exhibition interactive, and it was related to architecture. Unfortunately we could not bring the Forbidden City 1:1 to Amsterdam. But how would we be able to realize this then? While brainstorming we thought of making a large floor plan, followed by an enlarged photo that visitors could walk through, and then came to this beautiful idea.”*

3D modeling the Forbidden City

Lucas Janssen, engineer at Leapfrog 3D printers, designed most buildings. He prepared the exhibition: *“We carefully studied the city and the basic architecture and we decided on which scale to print, which came down to a scale of 1:300. The next step was to determine which features make the*

palaces unique, like the roofs 'curling' up on the side and the pillars: we wanted to make sure those characteristics came back in our modeling. Colors are also important, especially taken the symbolics behind the colors in Chinese culture: The Forbidden City consists of a lot of reds and golds: red is the color symbolizing happiness, gold was the color of the emperor. In the last stage we studied every single building and modeled 30 basic drawings with which we can print the entire city". With the final piece added to the floor plan today, the 3D Forbidden City is a fact.

Milestones in the Forbidden City project

The project of 3D printing the Forbidden City is highlighted by milestones in the construction. Leapfrog 3D Printers made the temples available for 'adoption', meaning architectural firms could donate 1 or 2 hours of their time to 3D model the buildings. A beautiful example was the Hall of Supreme Harmony. This is the largest building and center piece in the Forbidden City. As this project is a great example of what benefits 3D printing can offer architects, Leapfrog 3D printers organized a special information afternoon. The afternoon included a presentation, guided tour through the Ming exhibition and a Q&A with the team to discuss the developments concerning 3D printing and the needs for the architectural sector.

After the exhibition

After the exhibition the city will be transferred to the Nanjing museum, in Nanjing, China. There it will be given a permanent place among the art collection.

Your own Forbidden City

Not only is the Forbidden City 3D printed, it is also possible to bring a 'piece of the city' home. Leapfrog 3D Printers placed the STL files on the forum free to download. Everyone with a 3D printer can print their own Forbidden City temples, homes and walls.

About Leapfrog 3D Printers

Leapfrog 3D Printers is a producer of plug and play and affordable 3D printers situated in Alphen aan den Rijn, The Netherlands. We aim to continuously bring the most advanced techniques in 3D printing available and affordable to a broad audience. Our customers are at the heart of our business: we learn from their experiences and help them to uncover the applications for 3D printing suited for their business. We share the knowledge we gain through publications as well as through our business consulting services in which we analyze the value chain of a business to see where desktop 3D printing can add value for them.

For more information and pictures please visit the website: <https://www.lpfrg.com/info/the-forbidden-city/>

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