Miniaturization with maximum complexity - architectural models at scale

The Frauenkirche in Dresden (Germany) is a landmark of the city. Built in the 18th century and destroyed during the Second World War, it was faithfully rebuilt almost 60 years later. This memorial against war became a symbol of peace and reconciliation.
A miniature model of the building carries this message out into the world and at the same time illustrates the high precision of micro laser sintering.

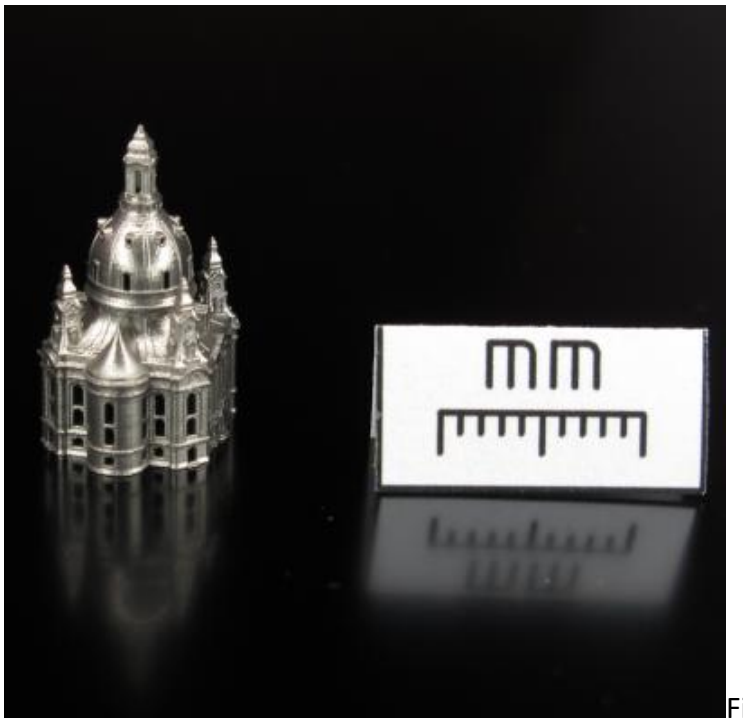

Fig. 1: Profile view of the church

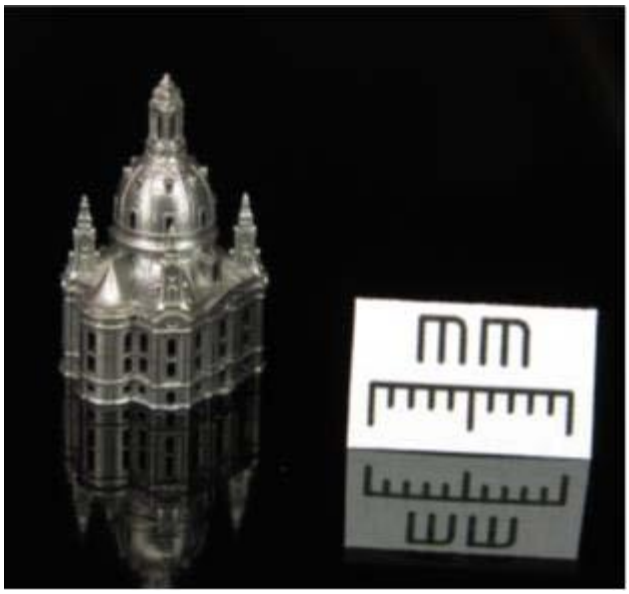

Fig. 2: Comparison 10mm scale

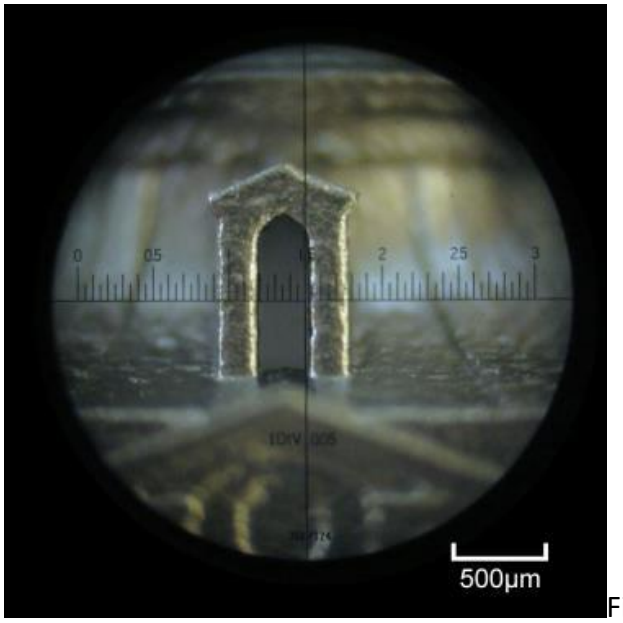

Fig. 3: Microscope view of the window frame

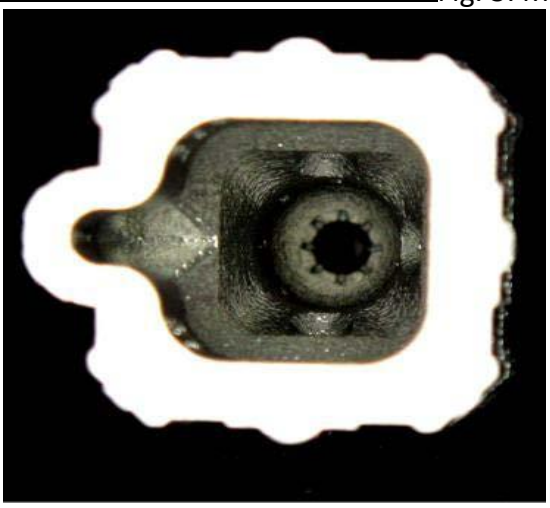
Fig. 4: View from below

The exterior shape of Dresden's Frauenkirche largely corresponds to a process-adapted design for additive manufacturing. Minor adjustments were only made to the window frames of the dome - the original shapes were replaced by window arches.

Despite a model height of just 16.6 mm and a scale of 1:6100, the miniaturized church is exceptionally detailed. The use of metal gives the filigree model unexpected stability. The gloss level of the surface has been increased by post-treatment.

The Micro Laser Sintering systems from 3D MicroPrint GmbH enable the economical production of single pieces and individualized series models with impressive micro-detailing. The component shown was produced on a DMP50 GP Micro Laser Sintering system developed by 3D MicroPrint GmbH.