

# Marie Boltenstern

## DESIGN STRATEGIES FOR DIRECT PRECIOUS METAL 3D PRINTING



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Computational design and fabrication methods allow for realization of design typologies and products at a groundbreaking level of complexity and customization. Design typologies can be developed and optimized through direct interaction between design and files for the fabrication of the physical model. Within the range of projects the opportunities, boundaries and constraints of the tools are investigated using the method of direct precious metal printing. Further the scalability of the methods is tested. Starting from a strictly system-based design approach, the potentials of randomness and mistakes in the system are investigated.

The applied system-based design approach has been analyzed throughout the past projects, always resulting in the independence of scale, materiality and function during the developmental phase of a project. This independence though does not mean that these factors can be neglected. They are essential in setting up the project's constraints. Experience shows that the clearer the limits are set, the more freedom is created to develop a strong design outcome. Throughout, the developed design typologies are inspired by natural growth strategies, driven by functional requirements equally as by machine potentials. ....