Laser Treated Glass Art Installation at Land Registry
Ravensburg, Germany

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The state owned building of the Land Registry in Ravensburg, South Germany, got a new glass façade in front of the staircase. The artistic design, which is inspired by a crumpled piece of paper, is realized by laser treatment and digital printing with ceramic enamels. It is integrated in nine panels of insulating glass.

Keywords: Art, Design, Digital Printing, Laser Treatment

1. Building and function
In 2008, a fundamental reform of the land registry system was decided upon in the region of Baden-Württemberg, southern Germany: out of more than 660 smaller offices, a total of 13 centralized units were set up within 10 years. In addition, the conversion from analog to digital archiving was virtually completed during this period. Due to its structure, the state-owned building erected in the 1950s in the city of Ravensburg was ideally suited for the accommodation of the "new" land registry. After a planning and construction period of around five years the retrofit was inaugurated in September 2017. The artistic design of the 9m x 5m glass façade in front of the staircase was the winning design from an art competition sponsored by "Baden-Württemberg asset and construction".

Fig.1 Land Registry in Ravensburg, Southern Germany

2. Design and realization
Despite the onset of the digital era, Land registries are still connoted with the analog storage medium paper. Considerations on the process of digitalization and my personal appreciation of paper were determining aspects in the design process. They are reflected in the artistic concept.
A crumpled piece of paper, which looks like a view from above onto a topographically varied landscape, covers the entire glass surface. In order to make the reproduction of paper on glass true to detail, a digital process has to be set in motion. The draft was prepared as a file with appropriate resolution and framework so that it can be faithfully transferred to the individual windowpanes by laser treatment. A carbon dioxide laser with 10650 nm wavelength was working with 64mm² per sec. which meant that the time to laser a single panel (size 1.75 x 2.92 m) took around 22 hours. In addition, to define the dark areas, a translucent gray-blue layer of ceramic enamel paint was digitally applied on the underlying layer. It was burned with 630°C within the process of toughening. The laser-treated and printed panels (soda-lime-silica glass) are part of an insulating glazing, consisting of 8 mm tempered glass at the outer side and a 6mm tempered glass with Low-e coating at the inner side. The $U_g$ value amounts to 1.1. The nine panels are fixed by a post-beam construction.
The design is located on the outer surface of the window creating a subtle satin-like look that conveys the aspect of longevity and reliability. Three coloured circles positioned at the upper edge of the glass create the formal connection to the round windows in the basement. They refer to different qualities of landscape: soil, water and vegetation. This reduced colour scheme sufficiently connects the building with the changing colours of the tree that stands directly in front of it. The triad of architecture, art and vegetation creates a calm presence and positions the land registry office clearly in the existing urban context.
Fig. 8 glass façade by night