VEILING
by Matthias Kohler
Architectural facades assume life when they are not just considered articulated surfaces, but when the material depth of the surface construction is activated. Regardless of the tools utilized, traditional or digital, we must consider how facades are made and find elegant ways to build. Digital fabrication allows us to conceive and control intricate constructions with a fine level of detail. Computer programming plays a special role, allowing us to enrich material constructions with a digital logic. The culture of logic (whose tradition began long before the advent of the computer) and the cultures of construction and craft merge. A new order of materiality, which we refer to as Digital Materiality, evolves. Design data is directly woven into material constructions: data meets material, computer programming meets construction, and architectural design meets craft in the conceptually most explicit way. At this level we are tuning inherent qualities of material processes to broaden their aesthetic and functional vocabulary. We proactively seek to invent constructive details and appreciate fabrication methods that foster surprising, sensual and meaningful expressions.

Gantenbein Vineyard Facade

The Gantenbein Vineyard was already under construction when the project architects, Bearth & Deplazes, invited us to design the façade for the new grape fermentation hall. The building’s concrete frame is conceived as a basket holding oversized grapes. To design the façade, we parametrically programmed grapes to fall into a virtual basket in digitally simulated gravity until they were closely packed. We transferred the four-sided spatial image data and translated the physical rotation to individual bricks. As a result, the walls’ sensual softness dissolves into the materiality of the stonework. The façade appears as a solidified dynamic form. Robotic production methods enabled us to
precisely lay and glue each of the 20,000 bricks according to programmed parameters, at the desired angle and exact prescribed intervals. Depending on the angle on which they are set, the individual bricks each reflect light differently and thus take on varying degrees of lightness. Similarly to pixels on a computer screen, their macro-organization creates a distinctive image and communicates the identity of the vineyard. In contrast to a two-dimensional screen, however, there is a dramatic play between plasticity, depth and color, depending on position and the angle of the sun.

In addition to its visual intricacy, the masonry functions as temperature buffer and filters sunlight for the processing of grapes behind. The bricks are offset so that moderate amounts of diffuse daylight enter the hall through the gaps between the bricks. The penetrating daylight creates a mild, yet luminous atmosphere. In order to make the pattern discernible from the interior, we laid the bricks so that the gap at full deflection was nearly closed. This produced a maximum contrast between the open and closed joints and allowed the light to poetically model the interior walls. Looking towards the light, the design becomes manifest in its modulation through the open gaps. It is superimposed on the image of the landscape that glimmers through at different levels of definition according to the perceived contrast.
Private House, Riedikon, Switzerland

The design for the private house reinterprets the typology of nearby gable-roof barns through its distinctive geometry, loft spaces and the materialization of its façade. The private house maintains the gabled form of a traditional barn set within the Swiss landscape. However, from a distance, the building does not reveal its open interior character at first glance. The deep screen of vertical pine veils all sides and creates an introverted, almost abstract appearance that blends into the surrounding context of vernacular buildings. When seen from an angle, the slats perceptually collapse into a continuous, vertically articulated, wooden surface. The effect shifts from subtle to dramatic depending on the view towards the façade. The thinning of the façade hints at the open character of the spaces inside the house without telling the whole story.

Experienced from the inside, the external wood screen provides a sense of intimacy that contrasts with the loft-like spaces. A warm light, filtered through the pine wood slats, illuminates the exposed concrete walls and ceilings. Close up, paddle-shaped slats in series create a visual impression of an
elliptic lens that opens to focused views in the surrounding nature preserve - a window within the window opens as one moves through the spaces. Additionally, the cross section of the slats skews up to forty-five degrees, a manipulation that provides asymmetrical views to the side of each window. The view to one side is open - the slats become fine strings towards the window’s center. The view to the other side remains protected as it closes at a tight angle. This asymmetry allows optimally balanced views, privacy and lighting on every side of the house. The wood screen becomes a poetic instrument, shifting atmospheres within the spaces through an intricate play of light and shadow during the day and night. As a delicate membrane between the inside and outside, the façade encourages exploration of the phenomenological richness it creates.

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