Embedded Sensations: Material, Technology and the Scales of Perception

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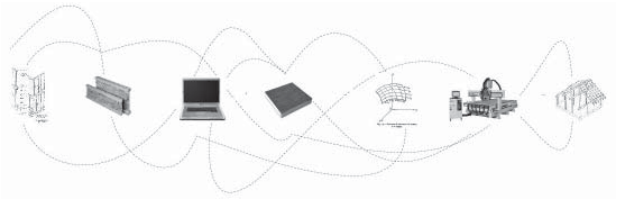

Figure 1. Operational Diagram

THE PROCESS

Architecture is a communicative medium; a language in which meaning is transmitted through the physicality of objects in space. Our physical and sensory experiences are carefully manipulated by the placement or displacement of objects through the use of materials, textures, colors and less tangible media such as light and shadow. The awareness of our relationship to objects and of our existence within the spaces we occupy is essential in developing a "consciousness of perception".[1]

Architecture engages and unifies our foregrounds, middle grounds and distances, collapsing them through a perspectival view into details, materials, and space. Our perception is grounded in the complex relationship between the physical and the experiential, or between the subjective and the objective. Often, the physicality of space and experiential phenomenon result from a semi-ordered, unpredictable, overlapping of perceptions and their subsequent emotive response. Individual perception is uniquely translated through an acute interpretation of scale, proximity, perspective, material properties, transitions or connections and form. At times however, this complicated discussion of individual perception of objects or space may be reduced to simply the analysis of a surface texture. Either way, it is through the interface of surface that architecture reveals the complexity of intention to the occupant. One begins to acquire, interpret, select, and organize this sensory information and designate it within the physical realm (the objective) or the perceptual realm (the subjective) collapsing each onto the other in a Rubin-like Vase/Profile illusion. The spontaneous reversal that one observes activates the dynamic nature of our subtle perceptual processes.

The design process itself thereby becomes an act of choreography between the subject and object. Its purpose is to result in something which stimulates our perception and heightens our phenomenal experiences while expressing meaning; and to do so through a response to the particulars of site, program, materials and methods. The design process has been forced shift from the traditional linear process to a "topological one" in which the initial actions are deliberate and precise but remain flexible enough to morph into parallel modes of exploration. It is here where consciousness is found; somewhere in the collision between the physical realities of materials and methods and the physiological affects of sensuality and perception.

The complex 'manipulations of' and 'interactions between' the processes of design and the processes of fabrication/assembly lie at the center of **re**form's recent work. As an academically oriented research and design collaborative we seek to (as seamlessly as possible) integrate the worlds of academia and practice through a unique, methodological approach to a diverse cross section of project types, scales, budgets, etc... Through each project however, our focus seems to inevitably return to the production of a specific effect (or series of effects) through a complex manipulation of spaces, surfaces and materials.

THE PROJECT

reform was retained by an international design firm to conceptualize a successful way of anchoring a new steel and glass office tower to its site in a developing area of Northeast Washington, DC. Initial conversations focused around a large, existing, stone, retaining wall that slashed diagonally across the property, separating the street from the busy train yards beyond. While it would be impossible to view the stone wall from inside the building, it was questioned whether the wall might be brought into the lobby through some form of abstracted translation. Fabricating the new wall from wood, it was decided, afforded the possibility of conceptually connecting the two walls on multiple levels while adding some much needed warmth to the otherwise cool material palate of the lobby.

The conceptual approach to establishing a successful dialogue between the old and new walls (thereby

establishing the desired connection to place) was achieved through in depth material research and analysis. In the beginning, the research focused on generating a complete understanding of the similarities and differences between various types of stone and wood at multiple scales. We looked at several conditions such as: the growth patterns of trees, the process (and resulting aesthetic) of cutting/quarrying stone, the extensive variations that can occur within an individual tree or rock, the patterns that derive from the aggregation of stone or wood, etc...

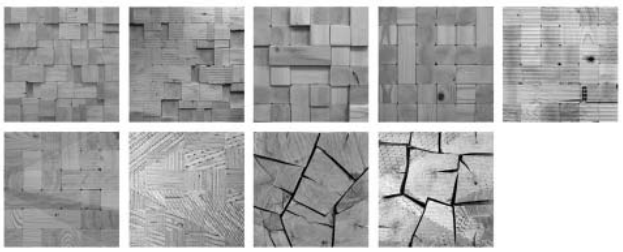

Figure 2. Prototypes

THE MANIPULATION OF SPACE

Due to their inherent properties, both stone and wood can be manipulated to be performative on several levels. Our desire was to provide the observer with a unique reading of the wall upon each encounter. The method of connecting the old and new walls would unfold through a process of individual perception. From a distance, the existing stone wall appears flat and monolithic. From this vantage point, the most prominent features are the water stains which have developed through years of exposure and weathering. As one moves closer to the wall, its features appear to change. The texture of the wall becomes more prevalent. The wall from this vantage point is less static, as the individual pieces of stone and grout lines become more apparent. From here the wall reads more as a randomized pattern of aggregated units than as a monolithic surface. Within an arm's reach of the wall, one's perception changes yet again. The pattern of aggregation disappears in favor of the rich colors and textures of the chiseled surface of the stone. While moving along the wall at this distance, it seems to beg the observer to run his/her hand over the rough surface.

The new wood wall produces an extremely similar affect through quite different material manipulations. Beginning with 4x4 Douglas fir

Figure 3. Elevations

blocks as units that are aggregated into large (3'-0" x 6'-6") panels, the basic assembly of the two walls can be read conceptually as one and the same. The resulting intricate surface is grounded deeply in the desire to codify complex material properties through various perceptual (scale) shifts as well as traces of the fabrication/assembly process. Every element of the new wall has been carefully considered as a means of dramatically changing one's reading of the surface based on his/her proximity to it, the direction of their approach, the speed of their passage through the space, and the natural and/or artificial lighting conditions. Even the changing seasons are anticipated to impact the perception of the wall due to the expansion and contraction of the panels themselves.

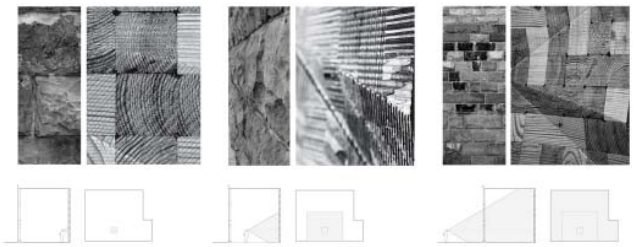

Figure 4. Scalar Perceptions

THE MANIPULATION OF SURFACE

> *"While the common mantra is that architects design space the reality is that architects make (draw) surfaces."*[2]

Michelle Addington's statement was an important foundation for our conceptualization of the new wall as it reveals the latent potential in the development of surfaces. Certainly the use

of fabrication technologies has connected architects more directly with the media in which they operate. While the modernist architect may have considered the act of making to be beyond their scope as a designer, we understand the act of making as an integral part of the design process. More specifically, affect is achieved through the complex manipulation of each element of the surface.

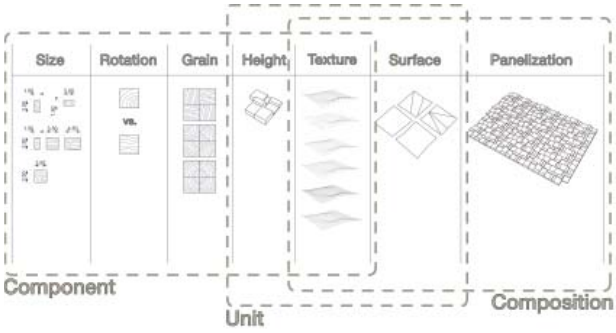

Figure 5. Surface Manipulation Matrix

We developed a number of studies based on the ability of the CNC mill to manipulate the surface(s) of the wood wall. Out of these initial studies, essentially three categories of manipulations emerged: tooling patterns (the revealing of the path of the tool created by the removal of material from the surface), surface patterns (a large scale manipulation of the surface used to generate a logical or predictive field condition across the surface and directly related to the surface itself - intuitive) and surface variation (a large scale manipulation of the surface without a predictive or logical means of relating to the surface itself - counter intuitive).

CAUSE AND AFFECT

The intricate assemblage of the final wall reads as the original stone wall transplanted and reproduced through the lens of material and technological abstraction. The techniques used to produce a relatively simple surface evoke a complex response in one's primal awareness of their physical and sensorial presence of the occupied space. The production of Affect cannot be reduced to a single interaction, but can only be produced through an overtly complex reading of space as an unconscious overlay of memory, mood, perception and the resulting translation.

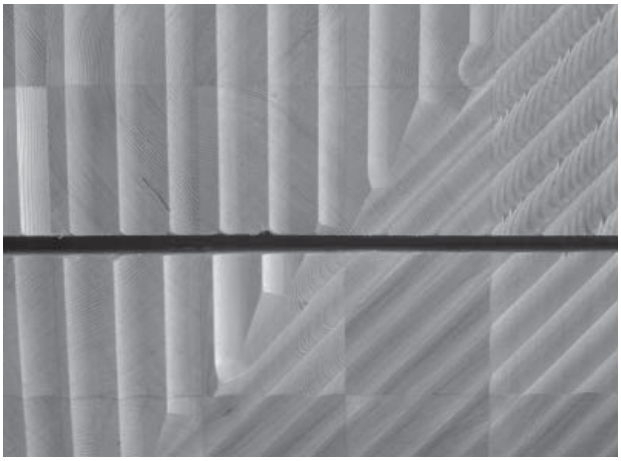

Figure 6. Detail – Reveal Between Panels

While one may reduce the task of the architect to that of surface maker, the fact that architects now have the potential to actively participate in the making of surfaces has opened the door to a multitude of yet unexplored possibilities. A measure of success for such a project is easily determined based upon the number of people who approach the wall to interact with it, moving around it, eventually succumbing to their desire to run their hand along its textured surface.

Figure 7. Tryptich – Final Mock-Up

ENDNOTES

1. Holl, Steven, 'Questions of Perception: Phenomenology of Architecture', *A+U, Architecture and Urbanism*, July 1994.

2. Addington, Michelle and Daniel Schodek, *Smart Materials and Technologies for the Architecture and Design Professions,* Architectural Press: Oxford, 2005, p. 5.