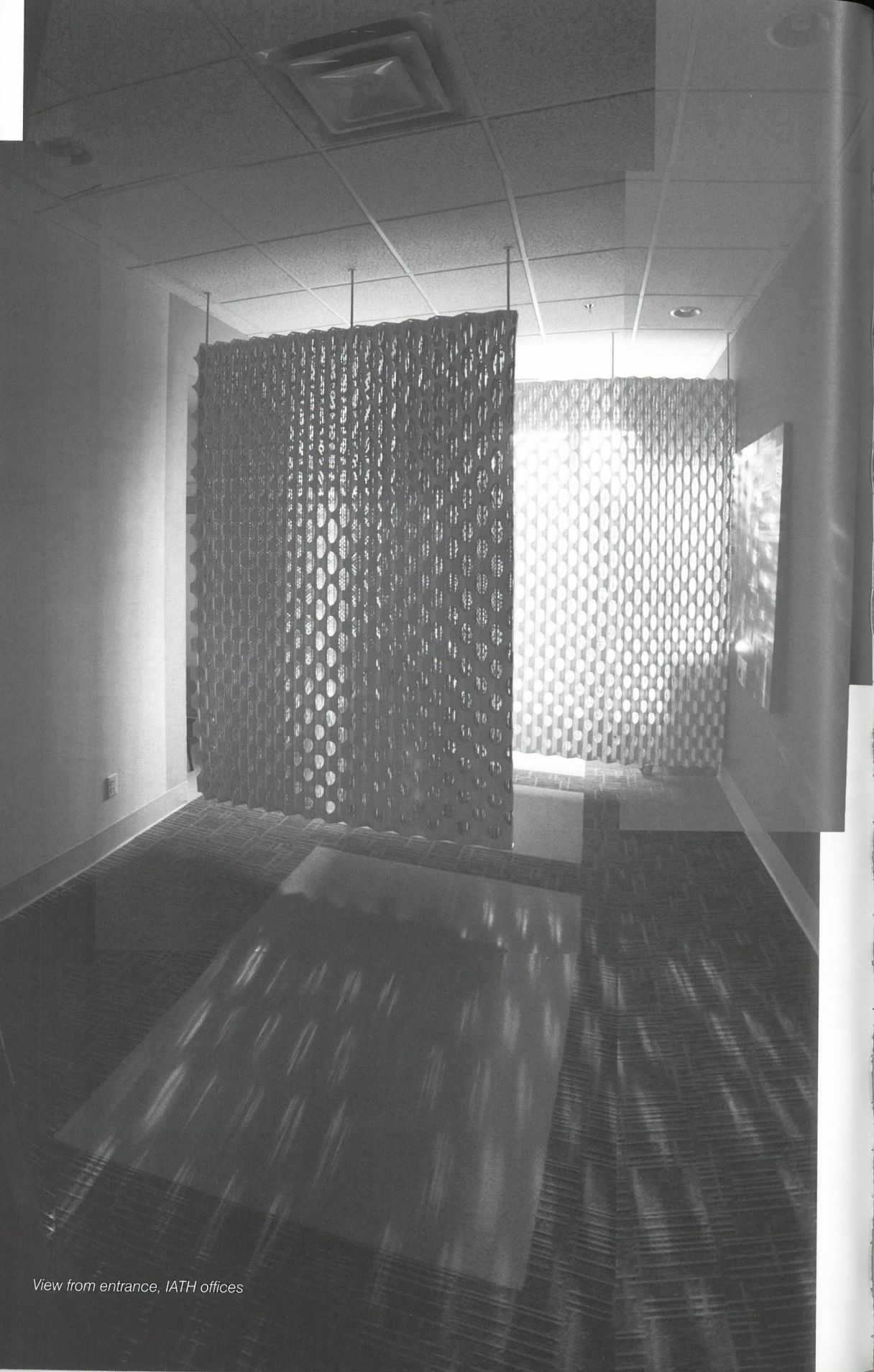




lunch

volume 4
margin



View from entrance, IATH offices

[DE]MATERIALIZED [DE]LIGHT:

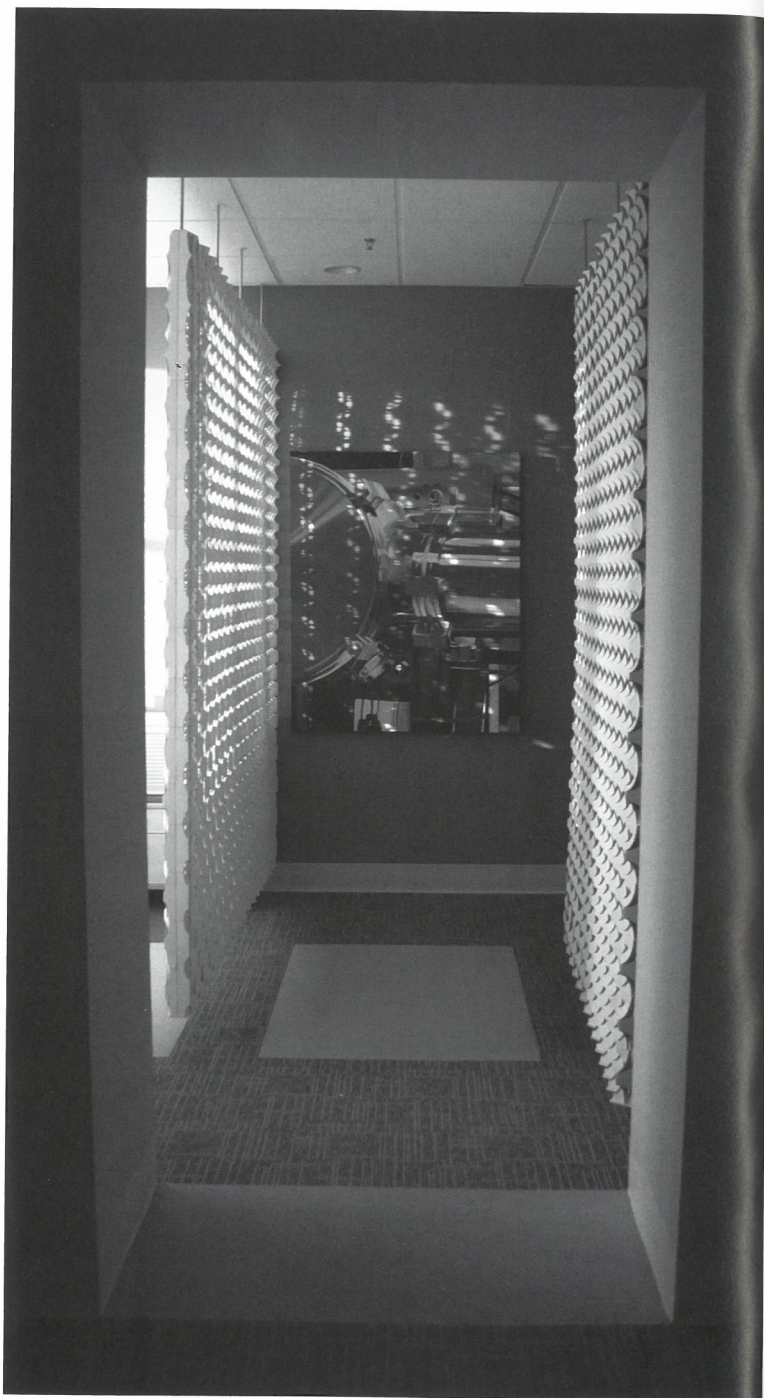
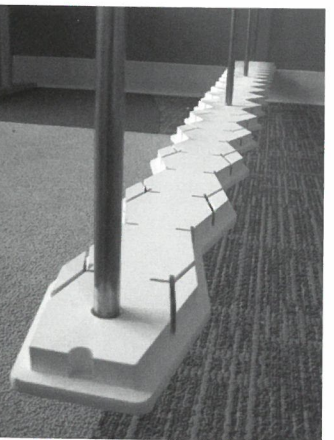
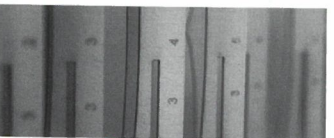
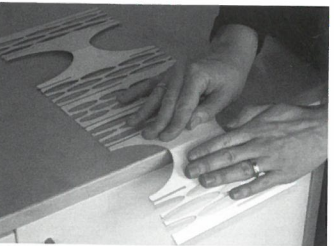
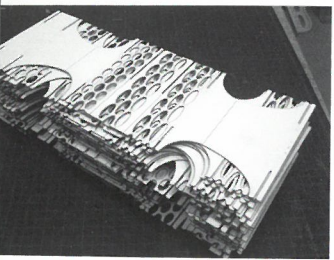
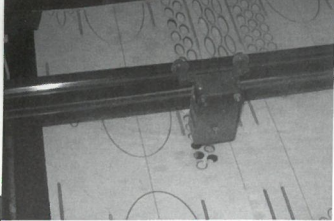
MANUFACTURING PHENOMENA

Jeff Ponitz
Lecturer

ODE TO A COFFEE SLEEVE

Like most objects destined for quick disposal, the coffee sleeve's existence seems predicated more on commodity than delight: it is designed to put just enough space between one's hand and a scalding cup of coffee, for a matter of minutes before being discarded. While we rarely think of commercial packaging like a coffee sleeve as a designed object, it is remarkable for its efficiency and utility: it is mass-produced cheaply with a minimum of material and assembled simply; recyclable, and made of recycled material; ships flat and expands to create a volumetric enclosure; and adjusts to accommodate a range of conditions (*tall, grande, venti*, and everything in between). These minutiae go largely unnoticed, but for those who have felt the soothing sensation of a comfortably warm cup of coffee in their hand, there is a tactile delight stemming from the commodity of the coffee sleeve—derived from the sleeve not as an object, but as an energy threshold that captures and redistributes heat to create micro-environmental comfort. The successful design of this experience is dependent upon an understanding of the phenomena at hand (“*Careful, the beverage you're about to enjoy is extremely hot*”) as well as an understanding of material properties and processes (cardboard is non-conductive, lightweight, and easy to cut and fold) that can be exploited to control that phenomena.

A semi-permanent installation at the offices of The Institute for Advanced Technology in the Humanities (IATH) provided an opportunity to explore these synergies between manufacturing and phenomenology at an architectural scale. IATH wished to subdivide its existing reception space to create a new work space and form a permeable threshold between the reception space and existing offices, bringing daylight into the reception space and allowing staff to notice visitors. A pair of offset screens were fabricated and installed to selectively filter light, sound, views, and circulation at this threshold while giving IATH a public face as an environment of technical and creative research.

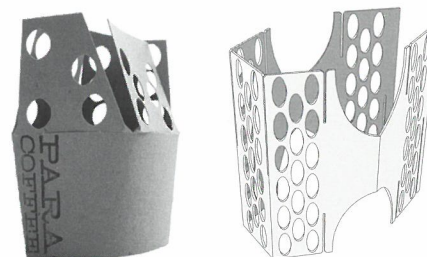


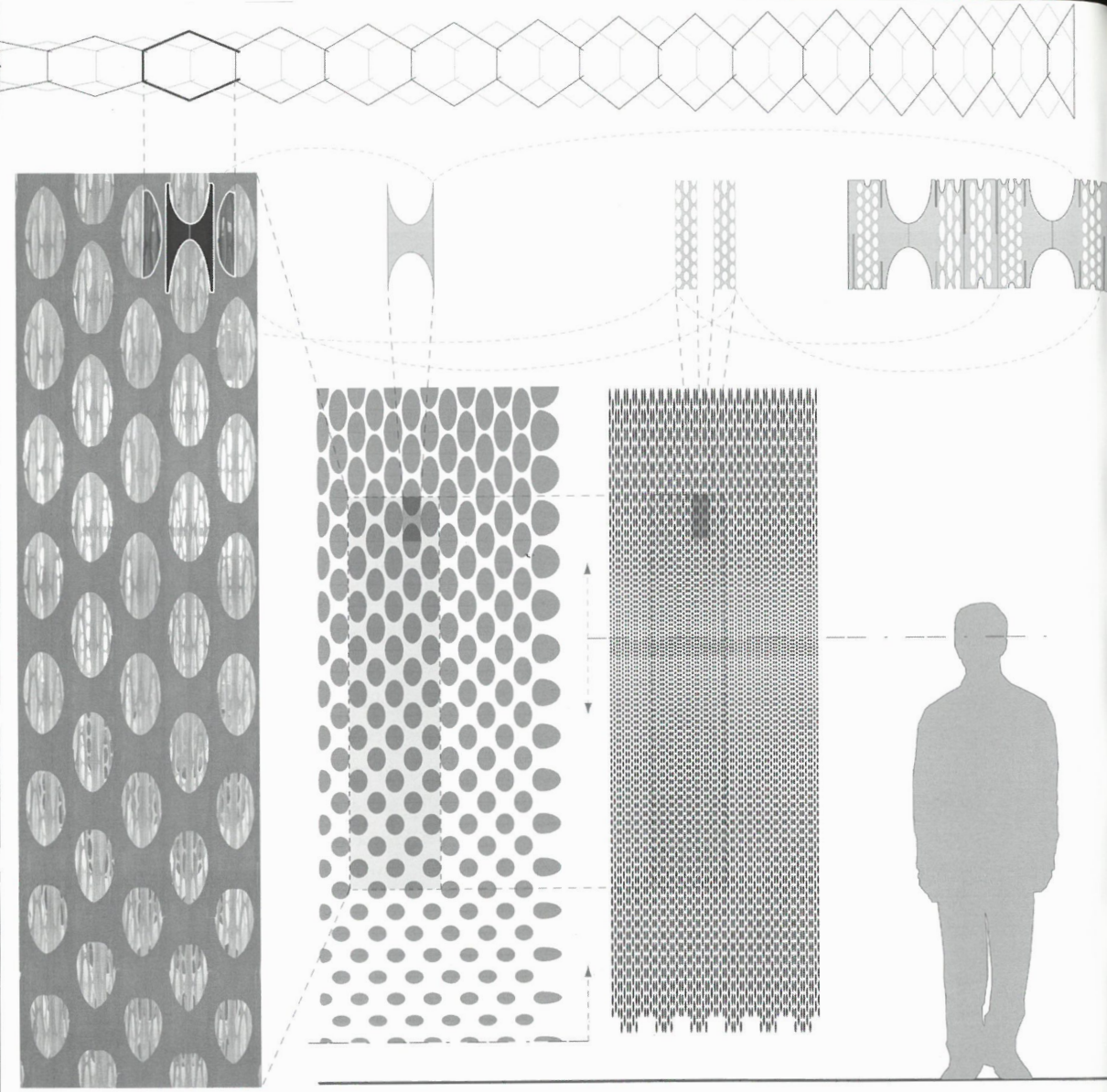
View from corridor, IATH offices

MANUFACTURING

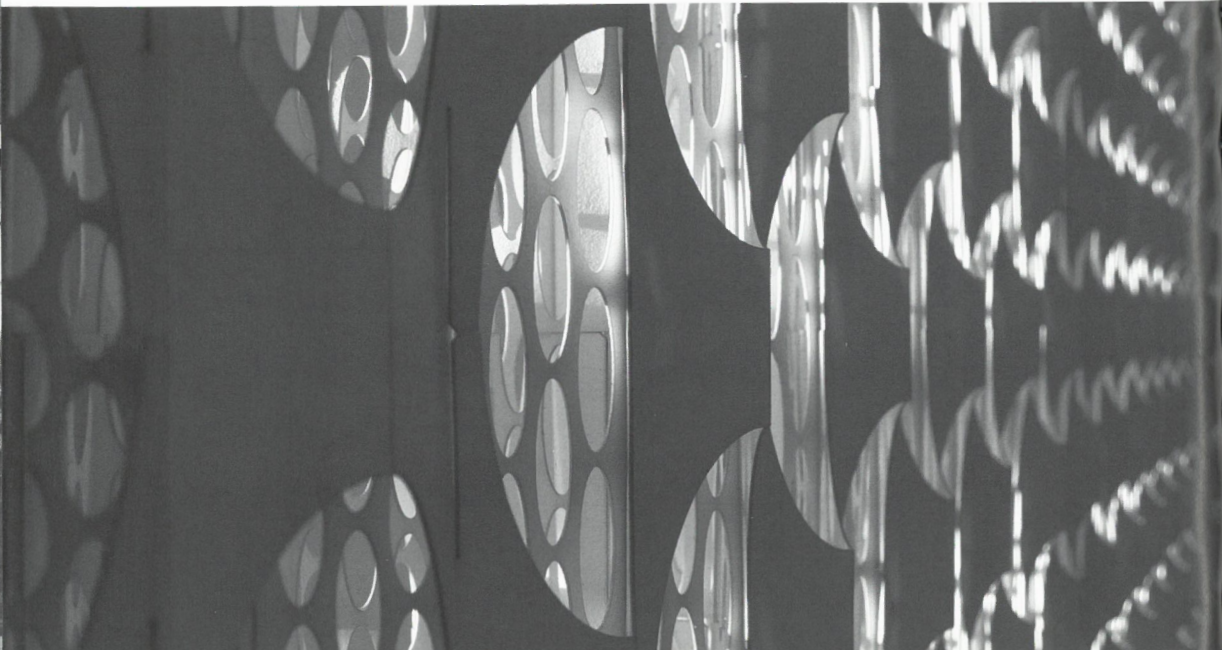
To maximize phenomenal performance with a minimum of material, a modular assembly system was developed for the screens through a series of full-scale mockups. The basic module is not unlike a coffee sleeve, cut and folded to create a volumetric enclosure. Size constraints of the material sheet and the laser cutter bed determine the size of the module, utilizing 96% of each sheet. Assembled without adhesives or fasteners in offset courses, similar to brickwork, each course is enmeshed with those above and below to create a structurally redundant network of paper and to form three interstitial cavities. These cavities are accessed by openings within each module that serve multiple functions: large apertures allow light into and through the outer cavities and reduce the overall weight of the assembly, while smaller perforations control light within the central cavity and obscure views to create privacy. The variable sizes of these apertures and perforations control larger field conditions for the front and back of each screen. Each field operates by its own logic, reacting to structural, environmental, or programmatic requirements: a perforation field may compress at eye level for a standing visitor and expand at eye level for a sitting office worker to give simultaneous privacy and visibility; an aperture field expands towards the top of the screen to reduce weight and maximize daylight.

After assembly, the entire screen can collapse and expand like an accordion, affecting its depth and visual density; this flexibility enhances control over the geometry and performance of the screen, but compromises its lateral stability. A suspended, trapeze-like framework of CNC-routed plates and stainless steel rods compresses the screen into a structurally rigid assembly, and establishes a geometry that thickens where necessary to obscure the desks behind it.



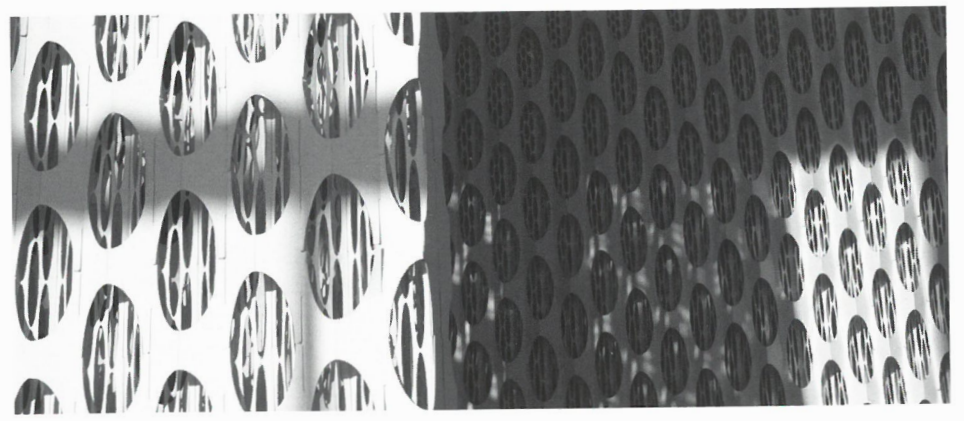


Performance control fields: *Aperture field : structure, light* *Perforation field : privacy, light*



PHENOMENA

The IATH reception screens rely upon commodities of material, fabrication, and assembly to create functional objects that separate public from private, screen views, and direct circulation. These commodities also create instruments that capture and transmit light—energy thresholds that are activated by time and movement. They record and amplify the movement of the sun over the course of a day or year, untouched by sunlight in the summer but wholly saturated on a winter morning. They dematerialize and rematerialize to differentiate experiences of entrance and exit, and visitor and occupant. At some point, the screen becomes constructed not of paper, but of light, sound, and the other energies collected within it—in this moment, the functional becomes phenomenal. Architects are constantly faced with the challenge of designing the immaterial using material means—we are in the business of creating moments and movements, but rely upon sticks and stones to make it happen. Like the sensation of holding a warm cup of coffee, these moments of synergy between the material and immaterial are what gives us delight in a place.



View from work space