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Edges of Multiplicity: A Discussion of the Contemporary Urban Edge

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Abstract
At the beginning of the twenty-first century, we inhabit a world in which relationships between time and space have been turned upside down and we can no longer rely on traditional concepts of place to establish our identities. Buying a watch on ebay that is made in Denmark, sold in India, paid for with funds from a bank in New York, and then shipped to Chicago exemplifies the common contemporary condition in which we simultaneously inhabit several locations separated by thousands of miles. Time and space have been compressed and, as architects, we can choose to either react by nostalgically reasserting traditional ideas of boundary and place or by attempting to create new types that embrace and embody the qualities of our contemporary condition.1 This paper will present two examples of urban buildings that follow the latter route and explain how their strategies reveal a new definition of urban place.

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At the beginning of the twenty-first century, we inhabit a world in which relationships between time and space have been turned upside down and we can no longer rely on traditional concepts of place to establish our identities. Buying a watch on ebay that is made in Denmark, sold in India, paid for with funds from a bank in New York, and then shipped to Chicago exemplifies the common contemporary condition in which we simultaneously inhabit several locations separated by thousands of miles. Time and space have been compressed and, as architects, we can choose to either react by nostalgically reasserting traditional ideas of boundary and place or by attempting to create new types that embrace and embody the qualities of our contemporary condition.[1] This paper will present two examples of urban buildings that follow the latter route and explain how their strategies reveal a new definition of urban place.

The traditional idea of place has been defined, at least in the Western world, by the act of separating and bounding elements to create locations of distinct identity.[2] Early animal pen fences, as described by Semper, represent some of the first articulations of civilization and primary architectural elements in that they use the enclosure or wall to separate a controlled area from the wild beyond.[3] In addition to its literal use in protecting domesticated animals, such a fence also creates a precinct of civilized agricultural domestication that is opposed to the wilderness, is defined by the boundary of the fence, and establishes a place of control and ownership. This generates a hierarchy of privilege between interior and exterior in that the more limited the access through the enclosure, the greater the level of control and separation and thus the more privileged the position of the interior. This creates the traditional "place" that is defined by a clear boundary and controlled, coherent characteristics.[4]

This concept is rooted in the binary dualism inherent in Western architecture and revealed by the importance given to the geometry, form, and immutability of buildings in contrast to the fluid, changing conditions of nature and site. Pairings such as culture-nature and man-nature exemplify this type of relationship and serve to separate human beings from other life and from the ecosystems of this planet by suggesting that humans have control over rather than participation in the life of the planet. This leads to the treatment of natural resources and systems as commodities to be exploited for the benefit of urban, industrial society and creates a social dynamic based on hierarchically organized categories.[5]

Until the mid-nineteenth century, building walls were typically solid, opaque, and often load-bearing.[6] The materiality of these walls protected the interior from wind and rain, insulated against heat and cold, and provided protection from undesirables. In the nineteenth century, the development of the steel frame led to fundamental changes in building form and construction. Since walls were no longer primary structural elements, they could be lighter and more open. Modern architecture like that of the Bauhaus used large expanses of glass to create "a space of evenly distributed brightness," suggesting a condition of complete equality and

interconnection made possible by industrialization and mechanization. It hoped to create conditions of health, hygiene, and universality not merely in terms of physical form but in terms of social reality as well.[7]

On a conceptual and phenomenological level, however, Modernism retained the binary structure of its predecessors. While large expanses of glass do allow greater visual access between interior and exterior, these expanses are typically sealed without openings and are universally applied to all facades of a building regardless of orientation. By prioritizing vision over other senses, Modernism treats nature and site as either a backdrop for the built form or as an object to be observed. In either case, the external world is passive and objectified. Technically speaking, curtain wall design has until recently been (and to a large extent in the U.S. continues to be) driven by the desire to separate the interior mechanically conditioned space from the exterior environment. By ignoring the variety of lighting and ventilation conditions created by orientation, the Modern building demands a mechanical system that must utilize great amounts of energy to maintain a uniform internal environment and thus relies heavily upon the exploitation of natural resources. A Continuing Education article in a recent issue of Architectural Record said that "(the building envelope's) main function is to control all loadings due to separation of the two environments, the flow of mass and flow of energy." [8] The Modern building thus maintains the hierarchy of the controlled, protected interior over the uncontrolled, dangerous, and exploitable exterior. As landscape architect Ann Spirn put it, "Most contemporary architecture, with its sealed windows, emphasis on façade, and ignorance of landscape divorces us both from the intimate processes of living and from nature, our fundamental habitat."[9]

Fig. 1. Enterprise Center, Jacksonville, FL – a typical contemporary building with a typical enclosure system.

During the last decades of the twentieth and beginning of the twenty-first centuries, increasing numbers of buildings are being designed with exterior walls that create ambiguous, hybrid conditions that redefine the wall as a connector rather than a separator and thus begin to break down the long-standing binary relationship between interior and exterior. A relatively early example of this type of building is the Cartier Foundation in Paris by Jean Nouvel. This building uses the materiality of glass and an integrated relationship between building and landscape to create new kinds of urban relationships.

Fig. 2. View of the Cartier Foundation and neighbors along Boulevard Raspail.

Located on an historic site on a typical mid-sized Parisian boulevard, the Cartier Foundation simultaneously respects and undermines the tradition of the urban street edge. The boundary between sidewalk and site interior, previously articulated by a typical masonry wall, is now defined by a six-story free-standing, frameless glass wall that is flush with the adjacent buildings. The placement of this wall maintains the continuity of the urban street edge created by the facades of the surrounding buildings while its materiality simultaneously undermines this boundary by allowing the spaces of the garden and the street to intermingle. The other primary building walls, parallel to the street edge, are also glass with minimal steel structure. The glass surfaces change constantly with the time of day, weather and season, and point-of-view of the observer, at times virtually opaque and reflective while at other times completely transparent, allowing views of the trees that inhabit the spaces between the walls. The layering of glass surfaces multiply the reflections, transparencies, and spatial interpenetrations that can be experienced from both the inside and outside of the building as well as between the building and the landscape.

Fig. 3. Entrance to the Cartier Foundation on Boulevard Raspail.

The juxtaposition of highly fabricated steel and glass building elements with the organic forms of trees and the busy urbanity of the Paris street does not create a sense of contrast or opposition. Rather, the layering of building and landscape elements in combination with the material properties of glass, notably reflection and transparency, generate a condition where the street edge is simultaneously defined and ambiguous. The building takes on the characteristics of phenomenal transparency that are inherent in vegetal spatiality in the layering, flickering qualities reminiscent of the view through a tree canopy.[10] Because of the construction and configuration of its walls, the Cartier Foundation is thus not a clearly defined object in the landscape but part of the landscape itself.

The shifting sensibility of the Cartier Foundation characterizes what social geographer Doreen Massey calls "progressive place."[11] This alternative to the traditional concept of place is defined by process rather than stasis and therefore cannot rely on clear boundaries for its identity. Rather than gaining identity through its distinction from what is outside, its character comes from how it is linked to places beyond. The simultaneous layering of the reflections of the buildings across the street, the view of the trees in the garden behind and in front of the glass building walls, and one's own reflection in the glass street wall create this sense of place where one inhabits several locations simultaneously and experiences a variety of conditions as inherently interrelated. The intermingling of vegetation and building further serves to dissolve the distinction between site and building and, in so doing, breaks down the boundaries between city and landscape and between the humanmade and the natural.

A more recent and one of the few American examples of an urban building that utilizes this kind of layered, non-binary edge condition is the Caltrans Headquarters located at 100 Main Street in downtown Los Angeles, designed by Morphosis and completed in 2004. Just as the Cartier Foundation makes use of the typical urban structure of Paris, Caltrans embraces the dispersed, car-oriented urban condition of Los Angeles. The building's spatial sequences, materiality, and green technology create conditions of overlap and interconnection.

From the street, the building is approached via an exterior corner plaza that becomes gradually more enclosed as one approaches the building entrance. It leads diagonally across the site to an exterior "urban lobby" surrounded by a neon sculpture that extends into the plaza. This urban lobby reaches back into the mass of the building, enclosed on three sides by the neon-covered walls and roofed by the building mass. It causes the focus of the complex to be a partly interior, partly exterior space that is publicly accessible and constantly changing. By bringing the public into the very heart of a civic building, rendering ambiguous the transition from public to private, and blurring the distinction between interior and exterior, it creates a place defined by relationship and interconnection rather than definition and separation.

Fig. 4. Caltrans Headquarters

Three sides of the main Caltrans building mass are wrapped in a perforated aluminum scrim. On the side adjacent to the plaza, the lower portion of the scrim bends out, away from the building mass and, through a series of folds, becomes the horizontal surface of the canopy. It also extends to create the address graphics that enclose the southwest corner of the plaza. By using the perforated aluminum for all of these elements, continuity is maintained between diverse elements and the material's semi-transparency allows for glimpses between and through the various elements that further interconnect them. The density of the panel perforations also varies, causing the levels of opacity and transparency to change according to lighting and point-of-view, creating a building whose interior is open and transparent while from the exterior it is constantly shifting, a building whose "fundamental property is that of transformation." [12]

The skin of the building is also a multi-layered zone that facilitates interconnection between interior and exterior. Between the internal curtain wall and the external building skin is a zone that increases the overall energy efficiency of the building by 20% and allows occupants to open and close windows as desired. On the southern façade, the outer skin is made of photovoltaic panels that adjust to the angle of the sun while the other facades are wrapped in the aluminum scrim. The perforated panels of the metal scrim open and close mechanically in response to conditions of outside temperature and sunlight and create a constantly varying façade. It is significant that the "green" technology of the double-skinned facade coincides with the phenomena of

ambiguity and variability generated by the cladding's material qualities. Variability is a critical aspect of the intelligent skin as a part of green design in that such a skin must respond to time of day, season, varying occupancies, and changing accommodation strategies. It furthermore adapts to a building system the biological characteristics of human or animal skin as constantly changing in response to environment.[13] Both the environmental and phenomenological aspects of the Caltrans skin create an interconnection between exterior and interior by breaking down the impenetrability of the exterior wall and turning it into a zone of transition rather than a distinct line of boundary. The binary pairing of architecture and culture with landscape and nature is furthermore broken down by the association of biological processes with building technology in the interest of preserving resources, a concept in itself derived from an interest in integrating human beings with the larger world and environment.

"Set into its context, (the building skin) characterizes the face of a city." [14] Cities have often been described as places that are "open and in flux" and therefore characterized by fear, chaos, and a lack of control but this negative definition is based on a concept of place as something that is clearly defined through differentiation from other places on the basis of its coherent, homogenous, unchanging nature.[15] Today's cities are characterized by multiperspectivism, an infinite number of perspectives that are valid because of their differences, and the seemingly contradictory simultaneous erasure of boundaries wherein the local becomes universal and differences dissolve while they are being strengthened. This urban condition suggests the both/and condition of transparency described by Colin Rowe and Robert Slutzky as "a simultaneous perception of different spatial locations" and the ability to "interpenetrate without an optical destruction of each other" that is not typical of the clearly defined but rather of the clearly ambiguous.[16] As such, it breaks down the traditional idea of place as defined by coherence and stasis and moves toward the dynamic concept of "progressive" place in that it relies on the overlap and ambiguity of relationships rather than the distinctness of coherent identities.

Urban buildings wrapped in layered, ambiguous, constantly transforming skins such as the Cartier Foundation and the Caltrans Headquarters create urban conditions defined by process that gain character through interconnection rather than separation. This challenges the binary condition that requires differentiation and opposition in that it relies on experiences of transition and betweeness. In the binary condition, the separation of interior and exterior create a hierarchy in which interior is privileged and exterior becomes an undesirable "other." "If we think of continuums or hybrids – of spaces in between – instead of opposing dualities, we do not have 'others.' If we do not have 'others,' we do not inherently value one term over another." [17] In a world where difference is valued as a quality of community and change is a foundation for stability, we must develop ways of creating places that foster and nourish these concepts, places that embody the conceptual structures that we embrace. The examples presented here suggest strategies for configuring the materiality of our built environment that reflect the potential for a "more open, secular, and plural design culture" [18] that does not need to prioritize some people over others or human beings over the rest of the world.

Endnotes

[1] Doreen Massey, *Space, Place, and Gender* (Minneapolis: University of Minnesota Press, 1994), 146-7, 152. Massey states that the Post-modern era is characterized by what Marx described as the "annihilation of space by time" and "time-space compression" where our abilities to move and communicate instantaneously across great distances destroy the traditional idea of spaces as static, defined locations separated by distance defined through movement across time.

[2] Denis Cosgrove, "Liminal Geometry and Elemental Landscape: Construction and Representation," in *Recovering Landscape*, ed. James Corner (New York: Princeton Architectural Press, 1999), 104-6.

[3] Gottfried Semper, *The Four Elements of Architecture and Other Writings*, trans. Harry Francis Mallgrave and Wolfgang Herrmann (New York: Cambridge University Press, 1989), 103-4; Christian Schittich, ed., *in Detail: Building Skins: Concepts, Layers, Materials* (Basel, Boston, Berlin: Birkhauser, 2001),10.

[4] Massey, *Space, Place, and Gender*, 152.

[5] Stanislaus Fung, "Mutuality and the Cultures of Landscape Architecture," in *Recovering* Landscape, ed. James Corner (New York: Princeton Architectural Press, 1999),146; Elizabeth K. Meyer, "The Expanded Field of Landscape Architecture," in *Ecological Design and Planning*, eds. George F. Thompson and Frederick R. Steiner (New York: John Wiley and Sons, Inc., 1997), 46-7.

[6] There are of course numerous exceptions to this, notably Japanese and Bedouin building traditions, but I refer here to the European tradition because it is culturally dominant in the West in shaping not only our buildings but the conceptual definitions that they imply. This is underscored by the fact that designers often look to non-European cultures for inspiration when trying to move beyond accepted design methods and materials.

[7] Ludwig Karl Hilberseimer in Terence Riley, *Light Construction* (New York: Museum of Modern Art, 1995), 10; Colin Rowe and Fred Koetter, *Collage* City (Cambridge, Massachusetts: The MIT Press, 1978), 62-4. Rowe and Koetter how Modernism attempted to bring both physically and socially healthier conditions to the urban environment by reversing the traditional figure-ground diagram, as in Le Corbusier's plan for Saint-Die. While in the traditional city the piazza is the figure on the poched ground of the buildings and in the Modern city the tower is the figure on the open ground of the green park, both diagrams rely on a binary relationship where the distinction between figure and ground is clear and the ground becomes the backdrop for the objectness of the figure.

[8] "Air Barriers: Increasing Building Performance, Decreasing Energy Costs," *Architectural Record* (January 2006).

[9] Ann Whinston Spirn,"Architecture in the Landscape: Toward a Unified Vision," *Landscape Architecture* 80 (August 1990): 39.

[10] Meyer, "The Expanded Field," 58-9.

[11] Massey, *Space, Place, and Gender*,155-6.

[12] Ibid., 82.

[13] Michael Wigginton and Jude Harris, *Intelligent Skins* (Oxford and Woburn, Massachusetts: Butterworth-Heineman, 2002), 23, 30, 43.

[14] Schittich, *Building Skins*, 9.

[15] Massey, *Space, Place, and Gender*, 171.

[16] Colin Rowe and Robert Slutzky, "Transparency: Literal and Phenomenal," in *The Mathematics of the Ideal Villa and Other Essays*, Colin Rowe (Cambridge, Mass. and London: The MIT Press, 1976), 161.

[17] Meyer, "The Expanded Field," 50.

[18] Cosgrove, "Liminal Geometry and Elemental Landscape," 104.