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Spatial complexity and urbanism at Yale

There are many places around Yale's campus that feel distinctly urban—that is, they *feel* as if they could be found in the midst of a city. The arrangement of exterior shapes creates spatially complex landscapes, similar to ones that are generated in the streets, the public parks, and the interchanges in cities. The surfaces of the cubes, rectangles, and cylinders that comprise Yale meet in unexpected ways, creating stunning vistas and thrilling spaces through which to move. Spatial complexity does not always imply urbanism, but certain types of spatial complexity imply certain types of urbanism. Through an analysis of three generations of architecture at Yale—gothic revival, modernism, and postmodernism—along with four respective colleges—Berkeley, Morse and Stiles, and Benjamin Franklin—we can observe distinct types of spatial complexity and their corresponding urbanism, each encoding information about its era: Berkeley invokes the language of dense rural villages, exuding naturalism and serenity; Morse and Stiles employ long-distance interactions between sites to impose an urbanism rooted in spatial rationalization; Franklin contains unexpected architectural features that declare an urbanism of disorder, creating a sense of character for a space that would normally be devoid of personality.

In all three colleges, the feeling of urbanism can be attributed to the intricate manipulation of space for both visual and visceral effect. By carefully constructing lines, planes, and surfaces, the architects of these colleges—James Gamble Rogers for Berkeley, Eero Saarinen for Morse and Stiles, and Robert A.M. Stern for Franklin—created interplays of light and shadow that trigger an excited response from our perceptual system. In “The Perception of the Architect's Space,” Ross Thorne describes how configurations of space elicit visceral reactions from observers:

If complexity is important, it may be that it is not the complexity of an individual object, but rather, the complexity of the total visual environment, impinging on the peripheral visual system with its imprecise recording of detail, such that in order to explore any aspect in detail, foveal vision is called into play—the head turns, the eyes move about etc. This might explain why most observers find more interesting the meandering streets of old cities—their varying widths, angles, slopes, flights of steps, and the ‘imperfections’ of the conglomerate buildings which border them—than the straight flat stretches of equidistant, modern suburban bungalows.¹

In this excerpt, Thorne explains how asymmetric configurations of space are appealing to the human eye due to the psychology of our visual systems. Later on, he discusses how a person moving through an elaborate three-dimensional arrangement of masses would also experience excitement, especially if the person moves through interior and exterior spaces. Robert Venturi similarly discusses the effect of complex spaces in his essay “The Campidoglio: A Case Study.”

Drastic in effect was the substitution during Mussolini’s era of big boulevards and unenclosed spaces of monumental parks for the intricate small-scale neighborhoods composing the original setting. The complex formerly afforded views tantalizingly interrupted with rich, unaffected architectural foregrounds.²

Venturi draws attention to the urban quality of tight and “intricate” space, as opposed to the un-urban quality of open spaces and monumentalism. To both Thorne and Venturi, the feeling of urbanism is associated with a visual stimulation that elicits an emotional response. While urbanism is most often felt at the scale of the city, architects can create local urban spaces, or urban *moments*, by designing smaller scale spaces that are complex and visually stimulating when viewed from certain angles or when moved through along certain paths. This is the effect primarily used in the residential colleges at Yale. Taken as a whole, the campus of Yale is an assemblage of disjoint styles. However, its component colleges contain so many architectural moments that the observer walking across campus feels a continuous feeling of urbanism (albeit different types of urbanism), which in turn creates a strong sense of campus cohesion.

¹ Cantor, *A Short Course in Architectural Psychology*, 50.

² Venturi, Bergart, Bickford, and Scott Brown, *A View from the Campidoglio*, 11-12.

Berkeley College and Bass Library

As part of the underground Bass Library, at Yale University in New Haven, there are two sunken courtyards that serve as the library's sole source of light. The courtyards are symmetric, each surrounded on three sides by glass which separates the interior of the library from the open-air courtyard. The fourth side of the courtyards contains a door to the library and a set of stairs leading to an iron gate through which one can see a dimly lit passageway. In the northern courtyard, from the vantage point of the windows opposite that fourth wall, the buildings of Berkeley college rise noticeably in the background. On the left-hand side we see a stone cube, rising a few meters above the top of the courtyard, with its sharp convex corner aligning perfectly with the courtyard's concave corner. Attached to the side of the cube and set back a few feet from the edge of the courtyard, there is a small wall under the shadow of a tree. Beyond that, we see in the background the roof of Berkeley's north court and, in the foreground, a stone pillar, supporting a wrought iron gate.³

Taken out of place, this scene could easily be attributed to an old French city, high up in the mountains where the steep topography has forced buildings to be cascaded dramatically, one on top of the other. In other words, the massing of the Berkeley college, when viewed from the courtyard of Bass Library, inspires a strong sense of density. This density implies, in turn, that the built-space of Berkeley is exciting to move through. In fact, many of the gothic colleges at Yale create dense sequences of light and space, often integrating natural elements such as trees and bushes into the scene so as to create a feeling of exploration in someone passing through. These complicated arrangements of masses leave the observer with a mild sense of fear and excitement, wondering what dark and mysterious space lies just around the corner. In one sense, this is a rural type of urbanism: Yale's gothic colleges evoke the same feeling as towns that are heavily integrated with dense and complex natural surroundings.

³ Foldy-Porto, *Figure 1*.

Morse and Stiles Colleges

There are two spatially-complex architectural moments in Morse and Stiles that are of particular interest to this paper, both of which come in the form of long-distance visual connections between Morse and Stiles and other buildings on campus. The first can be seen by an observer standing in front of Payne Whitney gymnasium who is looking southeast towards the walkway that runs between Morse and Stiles. From that vantage point, Harkness tower, which is a quarter of a mile away, is framed perfectly by the sandstone-colored, windowless walls of the two colleges.⁴ The second moment concerns the framing of Payne Whitney by the towers of Morse and Stiles, and it can be seen by someone standing in front of Maison Mathis, on the southwest side of Broadway. Even though the three towers are all of different heights, they appear of uniform size from this particular viewpoint due to their arrangement in three-dimensional space.⁵

Both of these long-distance connections impose a rationalization on Yale's campus. Saarinen planned the location of the towers of Morse and Stiles in such a way that, when viewed from specific locations, they engaged with existing buildings on campus. To the observer of these moments, space appears to shrink as two buildings that are not normally in conversation—Morse and Stiles and Harkness/Payne Whitney—suddenly enter into an elegant dance, whereby they frame and complement one another. This process works to draw the campus closer together; it provides a clear and rational sense of organization for disparate campus structures and it produces a feeling of deep satisfaction in the observer. This level of consideration to plan is reminiscent of the “city-beautiful” plans developed at the turn of the century, as well as some of the later modernist plans for cities during the urban renewal period (for example, Paul Rudolph's ambitious “City Corridor” plan for lower Manhattan)⁶. By creating a moment of rationalization on Yale's campus, Saarinen suggests an urbanism of rationality and

⁴ Foldy-Porto, *Figure 2*.

⁵ Foldy-Porto, *Figure 3*.

⁶ Rohan, *The Architecture of Paul Rudolph*, 152.

monumentalism, reminding the observer of the majesty and might of the mass-reorganization of space going on elsewhere in the country during his time, such as the then-newly developed interstate system.

Benjamin Franklin College

Due to the sloping of its site, the courtyards of Franklin college sit at a higher elevation than the bike path which borders the college to the south. Nevertheless, one of the smaller courtyards is connected to the bike path via an unlit passageway that leads under the mass of the building. To move through this passageway is a daunting task: one must pass through a squat square archway before descending a dark staircase; the ceiling projects straight out from the arch, dropping sharply above the bottom of the staircase. To people walking down the stairs, this appears as an abrupt wall—the ceiling soars above their heads while they descend before dropping rapidly to meet them as they reach the bottom of the stairs. Finally, the ceiling stays level with users as they walk through the remainder of the tunnel towards an iron gate.⁷ The dramatic effect of the ceiling would make moving through this passageway thrilling enough on its own, but the experience is heightened by the presence of a window, jutting out from the interior of the passageway right before the ceiling drops. The window is out of place in several ways: it is entirely inside the tunnel, containing only a narrow exterior view (towards the entrance of the passageway); it is at eye level with a person starting to descend the staircase, such that one would be staring face-to-face with anyone looking out the window; and its placement is completely uncharacteristic of the collegiate gothic style.

The spatial experience created by this window—albeit at a much smaller scale than the experiences of Berkeley and Morse and Stiles—evokes an urbanism of irony and disorder. The window makes the observer stop and chuckle (a hallmark of postmodernism); it confronts observers, making them question their own preconceived notions about order, symmetry, and the function of windows. It forces them to imagine the experience of looking out the window into the passageway, at people passing

⁷ Foldy-Porto, *Figure 4*.

through. All of these thoughts would be had by someone walking through a chaotic urban environment—by placing the window in such an unexpected location, Stern recalls an architectural jumble that is characteristic of old buildings that have been updated haphazardly and inconsistently over time. Such is the case in many older cities, where iterations of buildings were put up without forethought or planning. The urbanism that Stern’s window placement gives rise to is natural and charming, reminding people of the parts of cities that are quirky, unique, and oft-described as having “character.”

The term “urbanism” is difficult to treat consistently: it is a field of study, a way of life, and, as it is predominantly used in this paper, a feeling. It is a very general feeling that can be characterized by excitement, visual stimulation, curiosity, fascination, and, in some spaces, claustrophobia. It is not a coincidence, therefore, that urbanism is associated with cities: a person walking around any city of merit would feel all of the above feelings and more. In some cases, “spatial complexity” and “urbanism” can be used interchangeably, but in actuality the former is the generator of the latter. The architect produces complex spaces and in turn those spaces creates feelings of urbanism in their inhabitants. But the architect is never alone in the production of space because they must always design in relation to other buildings, especially in cities and other dense environments. Therefore, evoking urbanism is a skill that is acquired only by those who take a careful consideration to site planning and who are particularly attune to the emotional effects of arrangements in space.

Spaces like Yale that are constructed by such skilled architects— Rogers, Saarinen, and Stern, to name a few—are able to attain the rare and much-sought-after quality of cohesion. It is these architects’ attention to the preexisting site as well as their own aptitude for spatial design that allows Yale to flow as a continuous urban landscape to this day, even though the campus has been constructed over several centuries. A walk from Louis Kahn’s University Art Gallery to Phillip Johnson’s Kline Biology Tower takes observers through centuries of architecture and countless styles, blinding light and the darkest shadows, intimate corners and monumental plazas. To visitors of Yale, this strong sense of urbanism and campus cohesion renders their experience one of continuous awe and elation.

Bibliography

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Appendix



Figure 1: Berkeley North Court as viewed from Bass Library.



Figure 2: Harkness Tower framed by Morse (left) and Stiles (right).



Figure 3: Payne Whitney framed by the towers of Morse (right) and Stiles (left).



Figure 4: A passageway in Franklin College containing an unexpected window.