

Chainmaking: A Note on Ornament, Intelligence, and Building

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Abstract For the past fifteen-odd years, I've investigated the mutual influences of thinking and making, and their impact on design and learning. This article reflects on the traditional role of architectural ornament in equipping a mind with metaphors for wisdom and methods for learning. It then considers the reappearance of an ancient memory technique as an organizational metaphor in the design of a new, forward-looking university building, as foreshadowing to the companion article "Chainbuilding."

Keywords Memory · Forgetting · Chains · Ornament · Architecture · Identity

Part One: Then

The power of architecture and what is called 'the built environment' is that few see it for what it is: a form of education.

—David Orr (2006), *Design on the Edge*, 7

Can it be that the memory is not present to itself in its own right but only by means of an image of itself?

—Augustine (1961), *Confessions*, 10.15

When I was very young, probably seven or eight, I invented a game for myself. While falling asleep, I would allow my mind to drift, and at a certain point attempt to reel my thoughts back in, retracing the sequence of improbable connections. I don't quite recall whether the game was intended to make me drowsy or to keep me awake: sometimes I fell asleep while retracing my steps, at others I became obsessed with recapturing an elusive synaptic leap or was carried away by the endless possibilities...

Little did I know that I was playing a variation on a very old memory game, the pedagogical exercise of *concatenation*, or chainmaking. As a metaphor for mnemonic training, the chain by its interlocking design calls to mind an accumulation of associations

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in the order of attachment—one is reminded of Truman Capote’s parlor game of “daisy chains,” or John Guare’s notion of “six degrees of separation.” With discipline and experience, these chains lengthen and expand, since they are not only topical but also temporal, forming a lineage of authoritative commentaries at one’s mental fingertips. Thereby, one is able to retrace a genealogy of an idea, image, or phrase through interpretive tropes and authors to its origins and, most importantly, attach one’s own interpretations. Not surprisingly, chainmaking was a basic intellectual provision where legal deliberation and political debate were integral to public engagement, as in the Greek agora, Roman forum, and Venetian Senate.

Mnemonic chainmaking has also been fundamental to forging personal identity, with verbal and visual figures providing ideal raw materials. Through etymological foraging, various significances of a word could be gathered and unleashed as an imaginative force of interpretation. Treatises such as Isidore of Seville’s *Etymologiae* explored the visual and aural subtleties of language as inventive byways for thought. Whether visualized as letters and words orthographically transposed to the page of the mind or humorously sounded out as puns and onomatopoeia, language has been phenomenologically conducive to memorization. For Isidore, Hugh of St. Victor, and Thomas Aquinas, texts were dictated, digested, and transcribed aloud, so kinship between such terms as *Babel* (the tower) and *babble* (the confused language that precipitated the fall of the Tower of Babel) was not only self-evident, it was tantamount to historical truth. By such etymological conflation, Hugh transformed the ancient image of the *arca*, a chest containing books and personal belongings, into an *arca sapientia*, a container of wisdom built into the memory. Like a Matryoshka doll, Hugh’s mental image of an arca contained properties of a storage chest, an apothecary’s shop, the Ark of the Covenant, the Ark of Noah, and a walled city, equipping a student with a model of extended techniques for mnemonic meditation (Kirkbride 2008, Chapter 4 ¶61).

Often, this process of self-edification was fueled by images that were *digestible*, to facilitate internalization of the exterior world during meditation. The ancient pedagogical trope of “eating the book,” for instance, offers a prime example of concatenation. Even now, when we use such gustatory terms as *digest* and *ruminare* to describe the thought process, we are plying a history of links, even if unwittingly (Fig. 1).¹

An even more fitting example of the catena is offered by the *catena aurea*, or Golden Chain. Over time this image has accumulated numerous associations, signifying for Homer the rays of the sun and appearing in the works of Plato, Plotinus, Macrobius, Marsilio Ficino, and Paul of Middleburg as reference to the interlocking movements and influences of the celestial bodies. As a vital link in this tradition, Thomas Aquinas compiled the *Catena aurea* in 1263, from interpretations of the Gospels he had composed and committed to memory during his peregrinations (Fig. 2).

Like other memory arts, chainmaking uses material objects and processes to prepare (*ornare*) the mind’s capacity and agility. Until well into the Renaissance, memory was popularly imagined as a container of experience and a mechanism for its reconstitution.

¹ For example, we find in Ezekiel 3:1: “Son of man, eat what is given to you; eat this scroll, then go and speak to the House of Israel.” In his commentary on Ezekiel, St. Jerome notes: “eating the book is the starting-point of reading and of basic history. When, by diligent meditation, we store away the book of the Lord in our memorial treasury, our belly is filled spiritually and our guts are satisfied.” Jerome’s colleague, St. Augustine, also describes the ruminative character of the memory: “No one can pretend that the memory does not belong to the mind. We might say that the memory is a sort of stomach for the mind, and that joy or sadness are like sweet or bitter food.” (Kirkbride 2008, Chapter 4 ¶58: <http://www.gutenberg-e.org/kirkbride/>)

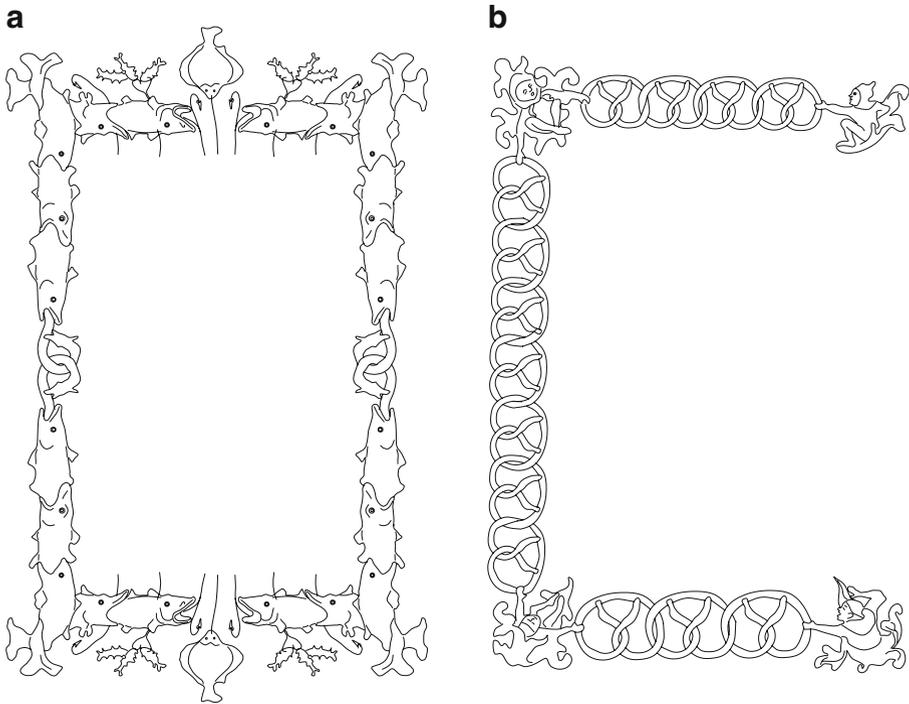


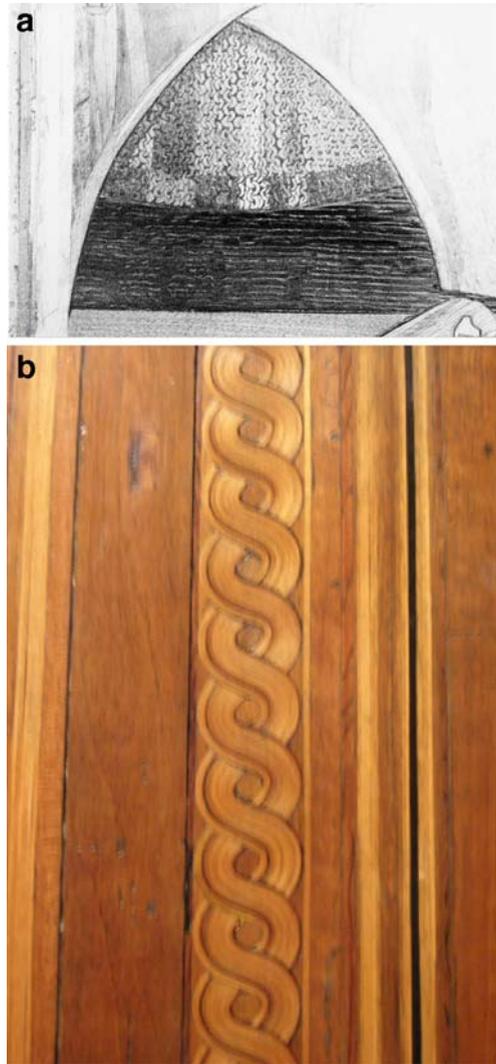
Fig. 1 Like hooks, images and words could call up multiple associations, as represented by the marginalia of fish within fish (a) and the en-linked pretzels (b) depicted in *The Hours of Catherine of Cleves*. Both images re-drawn by Amelia Amelia.

This storage place was typically ornamented with such associative imagery as beehives, birdcages, and chains, to help organize and preserve experience, keeping it close at hand. On the battlefield and in diplomacy, a well-furnished memory demonstrated one's skill at crafting thought. "You were trained to furnish the rooms of the mind," Mary Carruthers observes, "because you cannot think if you do not have something to think with" (Carruthers 1999, p. 11). Subsequently, the perception that we *make* our own thoughts, from any and all available materials, has gradually given way to the more passive notion that thoughts are things we simply *have*.

Pedagogically, the craft of thought has used the visible processes and products of material fabrication as media to explain and train the invisible workings of the mind. Due to their capacity to discipline natural ability (*ingenium*), the mechanical arts have offered models for cultivating mental talent and, thereby, ethical character. Mastery of an art, material or mental, was perceived to cultivate prudence, since accumulation of experience enhances foresight and refined judgment. As a result, writers such as Hugh of St. Victor seized on the arts—liberal *and* mechanical—as guides to wisdom, praising the products of human reason for their infinite variety (Fig. 3).

The deep association between architecture and memory stems from a fundamental awareness that in order to preserve the *stuff* of memory for future recollection, it must first be collected and stored in a manner that enables the mind's eye to compose and recombine the materials of experience at will, as a given situation demands. Buildings (and with experience, cities) provide spatial matrices that facilitate the memory: by constructing this

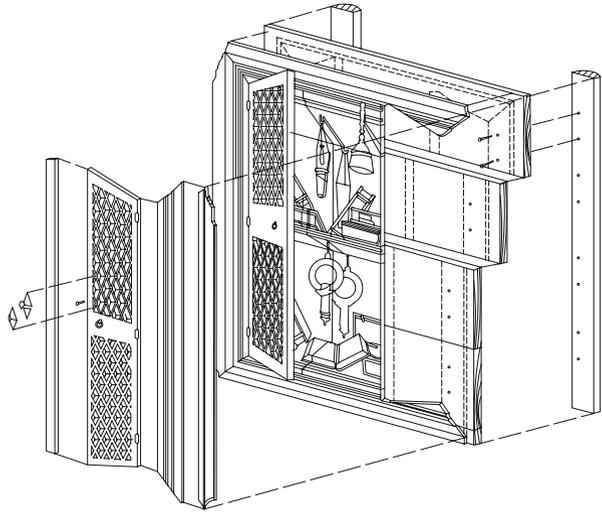
Fig. 2 In the Urbino studiolo, Federico da Montefeltro's chainmail (a) is included in a visual trope representing the material wisdom of everyday experience. The cabinet surrounds of the Gubbio studiolo (b), also fabricated for Montefeltro, offer evidence of the "golden chain," which for renaissance humanists represented a link between heaven and earth, micro- and macrocosmos, and ancient scholars and themselves. While the memory arts are embedded in the operative metaphors of contemporary knowledge technologies – *chains*, *hyperlinks*, *threads* – the materiality of these metaphors and their deep histories is largely overlooked, if not forgotten. Photos by author.



matrix, or model, of the mind's workings *within the mind itself*, one edifies oneself as the container of the universe of one's experience.

Consequently, architecture has provided a legacy of educators with a concrete organizational model for learning, furnishing mnemonic armatures that help the mind render knowledge and experience accessible and comprehensible. But it is not only as a physical entity that architecture supports memory training: the *process* of constructing buildings has served as a foundational medium and mediator of human knowledge. Due to the range of its mental and material procedures, architecture has been historically positioned "between" the liberal and mechanical arts, twin modes of wisdom often characterized as theory and practice. By its auspicious capacity to embody these twins, architecture has offered a ductile medium for conveying ideas between the imagination and the built environment. Moreover, by offering containment through the choreography of figurative skills, verbal and visual, architecture furnishes the mind with metaphoric vessels and

Fig. 3 Works of inlay, such as those included in the Renaissance *studioli* of Federico da Montefeltro, are assembled from layers of geometric puzzle-pieces formed according to their precise locations in a larger scheme, a process that demands careful planning and execution. When fitted together, they embody an intellectual tradition of splitting ideas into categorical parts and compositional units for reassembly. Drawn by Amelia Amelia after Daniel Kershaw.



mechanisms by which to preserve and interpret the materials of experience. Architectural mnemonics are thus a vein of the memory arts in which cognitive skills are exercised as a process of building personal and communal identity.

Just as neither Rome nor cathedrals were built in a day, personal edification—the act of *ornamenting one's mind*—was considered incremental and deliberate, occupying the span of one's life. As a result, traditional meanings (or more precisely, the *uses*) of ornamental “style” in personal manners and design may appear unfamiliar to our backward glance. Renaissance humanists of the late fifteenth century believed personal habits to influence social relations and, by extension, the urbane fabric of buildings and the city. “Style” in quattrocento architecture was not evaluated by such historicizing categories as *baroque*, *modernist*, or *postmodern*; rather, architectural ornament offered provisions for thought, supplying the imagination with rhetorical figures of expression. While ancient Greeks were mindful of *kairos* (occasion), Romans were keenly aware of *decorum*, by which the figures and ornaments of an oration were tuned to a specific audience in a selected setting for a particular occasion. Sensitivity to *kairos* and *decorum* reflected two complementary objectives: to possess a copiously stocked memory and to convey its store to an audience in a fitting manner. Like the clothing of the body, clothing of thoughts and buildings were evaluated according to appropriateness. The accumulation of knowledge and experience were to be matched, it was believed, by an ability to express oneself in a manner befitting audience and occasion.

Exercise of the memory was not purely intellectual but an emotional, whole-body experience, integrating the sensible and intelligible. Architecture provided, physically and metaphorically, a model conducive to this integration. Entrance into thought was equally physical and mental, opening a channel between the corporeal senses and the eye of the mind. The spatial character of architectural mnemonics—that one would “perambulate” cloisters and palaces in the mind, composing narratives with the ornaments and images arrayed therein—reflects a phenomenological dimension to thought that may be quite foreign to a modern-day observer.

In the late fifteenth century, for example, the humanist archaeology of classical texts and architectural ruins nourished the imagination with examples of public and private spaces by which to “enter into thought.” Along with the contemplative eddies in the

medieval cathedral, and intimate domestic settings modeled after the ancient Roman *exedra* and *cubiculum*—described by Vitruvius and Pliny and unearthed in the Roman forum in the 1470s—these carefully mediated spaces provided prosthetic armatures for thought. Their spatial arrangements and ornament prepared the mind with visual tropes that literally *fed* the imagination with materials for cogitation, literally and figuratively *moving* observers.

Part Two: Now

Is it possible to imagine contemporary learning environments that provide memorable places and provisions to enter into thought? While plans remain preliminary, a genetic code of intriguing learning spaces has taken shape for a new building at The New School, at the intersection of Fifth Avenue and Fourteenth Street in New York City.² Consciously or not, the legacy of concatenation is evident in the schematic design, envisioned by the architects to include a series of interweaving “thematic chains.” This mnemonic metaphor is particularly apt, given the desire of the university to reshape its communal identity through the building. By its interlocking nature, the chain offered the designers and stakeholders an example of innovative problem-solving. Former Provost Benjamin Lee noted (2007, September 7):

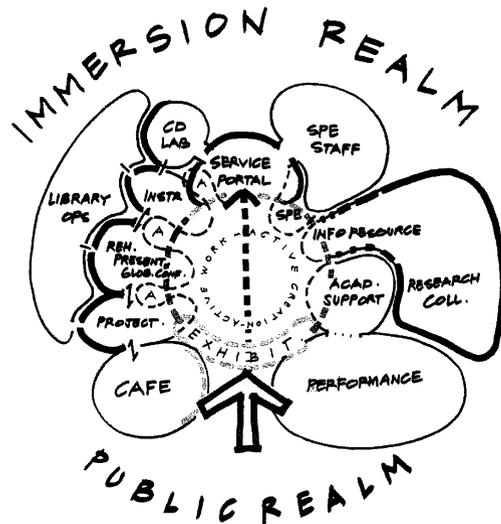
The programming and design of the new building mirror the pedagogic space we are developing to launch The new New School... [S]tudents will study in a process rich environment in which projects organize knowledge, studio methodology is interwoven with seminar and service learning, and lectures from leading international scholars serve to frame the challenges of our time... The new New School will be a holding environment for pedagogical innovation that will not only transform the New School, but also be a model for higher education in a globalizing world.

Elsewhere in this journal in a companion article entitled “Chainbuilding,” which includes images of the project, Dr. Shannon Mattern and I examine the implications of this metaphor, considering how such a building might serve as mediator within a university among its internal, surrounding and global communities. It is illuminating, for example, that an ancient metaphor enabled architects and future users to express contemporary concerns and digest the “wicked problem” that the planning process has presented, since the university structures traditionally necessary to implement a new pedagogical vision *do not yet exist* (Fig. 4).

The multicursal narratives coalescing for the building offer enticing glimpses of the horizon of academic infrastructure and media, and their potential impact—structural, pedagogic and symbolic—on the university and its communities. The ubiquity of media suggests intriguing opportunities for collaborative experimentation and interactivity within the building. The potential integration of built and virtual environments offers a tantalizing dream to current faculty members and students: the combination of digital and analog cues in the building—for wayfinding and as pedagogical expressions—holds special promise. While “Chainbuilding” considers several of these wayfinding cues in the proposed new

² Due to the prevailing economic downturn in 2008, plans for this project have been scaled back and delayed. Nonetheless, the ideas generated during the design process, particularly the organizational metaphor of “thematic chains,” remain highly relevant for the building that will eventually occupy the site at Fifth Avenue and Fourteenth Street, and for more integrated university-wide facility and academic planning initiatives.

Fig. 4 In Spring 2007, Geoffrey Freeman, project designer from the library design consultant Shepley Bullfinch Richardson & Abbott (SBRA), provided a brain-like schematic diagram of a new university library for The New School that would support “active creation.” This particular image was strikingly akin to a late Renaissance diagram of the mind, conceived by Robert Fludd, which I had presented to colleagues in the University Faculty Senate in Fall 2006 as a metaphor of our faculties working in concert to percolate ideas connecting academic and space planning issues. Diagram by Geoffrey Freeman.



building, the remainder of this paper considers how internal and external ornament might link the new building to the existing university fabric, physically and symbolically, to provide a powerful learning resource.

I begin with the existing *internal* ornamentation of the university. Comprising over 1,800 works dispersed throughout campus facilities, The New School Art Collection is a remarkable assemblage of twentieth century conceptual art, including works by Mel Bochner, Claes Oldenberg, Bruce Nauman, Martin Puryear and murals by Kara Walker, Sol Lewitt, and Brian Tolle. Established in 1960, the collection “embodies the legacy of The New School’s historic involvement with the avant-garde in the arts...with an emphasis on works that endeavor to explore the aesthetic and cultural concerns of our times” (The New School 2007). This legacy is most emblematically represented in the Orozco Room, where ideals of action balanced with contemplation, practice undivorced from theory, are visible in the five murals painted by José Clemente Orozco in 1930, adorning the university brain-space where key organs of the university, including the University Faculty Senate, convene and deliberate. Featuring themes of oppression, revolution, and the brotherhood of humankind, the Orozco Room manifests the mission of the New School, founded in 1919, “to create a place where global peace and justice were more than theoretical ideals,” and “to foster engaged world citizenship” (The New School 2007).

Displayed throughout the corridors and offices of university facilities, the New School Art Collection has fueled the annual Art Collection Writing Award, honoring New School students “for the best critical and creative writing inspired by works in the university’s art collection,” and the Vera List Center for Art and Politics, which sponsors exhibits, public programs, and annual publications about the collection “...to enhance the university’s educational mission by bringing together scholars and students, the people of New York, and national and international audiences in an exploration of new possibilities for civic engagement.”³

³ Vera List Center website, hosted by the New School at www.newschool.edu/vlc/default.aspx

Despite these institutionalized initiatives and the ubiquity of the collection, Susan Weller, a Parsons Instructor of the freshman Lab Studio and a Parsons representative in the University Faculty Senate, has noted “a majority of [Parsons undergraduate] students are not aware of the [New School] art collection and its relationship to the Mission Statement of the University.” To remedy this, Weller gave her freshman students an assignment to study works in the collection, after which they observed that the collection “was a significant resource to learn not only about art but specifically art [that] engages social and political conditions and issues from the 1930s to the present. As a result,” Weller reflects, “they began to think about the development of their design and art practices within a broader context... As a result of their engagement with the collection, the curators, and the Vera List Center for the Study of Art and Politics, students expressed a strong sense of pride and respect for the institution, its history and its mission and a greater sense of purpose in their academic and creative development” (Weller 2007). Since the collection is openly distributed across the buildings of the university, it may seem ironic that Weller’s students proposed that the collection “be more accessible for study within their studio course”; however, one might imagine the pedagogical benefits to a gallery devoted to featuring works from the collection, and/or a database of digitized images of the collection that could be readily displayed at monitors across the university, or accessed online near to and far from campus. Whether materialized in a physical gallery or multimedia displays, these are features that a new building could easily incorporate in its planning and “ornamental” program.

The potential role of *external* ornament in a new building, especially one for The New School, is a more complex, even paradoxical, matter. At a university-wide discussion of the project in late 2007, one faculty member expressed a desire for aesthetic consistency for the new building with other iconic New School buildings; namely, the flagship structure on 12th Street, designed by Joseph Urban in 1929–1931 and described by New York City’s Landmarks Preservation Commission as “the first example of the principles and techniques of the International Style in New York” (*Landmarks Preservation Commission Report 1 1997*). The faculty member’s call for an ornamental echo of this landmark building is on one level sensible, particularly with respect to fortifying visual identity (branding) for a community among communities. What such an echo would *look like* is worth pondering, since one of the defining characteristics of the International Style is the *deletion* of ornament.

A 2004 article in *The New York Times* describes how the Urban building stands out from its red-brick neighbors: “the seven-story chunky black structure is a dark, beetling mass, despite horizontal stripes of white brick” (Gray 2004). Otherwise, there is little external décor. While the primary construction material, brick, is consistent with the neighboring rowhouses, the primary ornament is the *color* of the brick. Thus, what distinguishes this iconic building is not its ornament, but the lack thereof, an intriguing statement given the Landmarks Commission’s observation that university leaders had “desired a building whose architecture would reflect the institution’s progressive philosophy” (*Landmarks Preservation Commission Report 1 1997*). It is telling that the university’s first president, Alvin Johnson, had asked Urban to create a building that could “function in the present and if possible to forecast the future” (*Landmarks Preservation Commission Report 2 1997*). Reflecting on the historic relationship between memory and architectural ornament, how would a building with next to no external ornament speak to future users and citizens? Did the architect and client envision a future without memory? Or less memory? Or new memories? Perhaps all of the above.

Although modernist architecture is often explained with respect to technologically centered aesthetics—Le Corbusier’s “house as a machine for living in”—overlooked are the deeper

rhetorical ramifications. In the early years of the twentieth century, nationalism proudly flavored the ornamental flourishes of products displayed in world expositions, as countries sought to brand their merchandise in expanding global markets. When such competing nationalist agendas merely resulted in further war, accompanied by extreme religious and intellectual persecution, it was a logical step to strip away the traditional prosthetics of memory to envision alternatives. In the 1940s, following two devastating world wars, Walter Gropius and Marcel Breuer, two German émigré architects teaching in Harvard's Graduate School of Design, dispensed with the university's ornamental plaster casts amid their search for a new modular architectonic language (Kirkbride 2005, p. 136).

And yet, if memory and its decorum were so disposable, why did such leading modernist writers and social thinkers as Walter Benjamin and Siegfried Kracauer—central figures in the intellectual genetics of The New School—*focus* on memory in the city? Mark Crinson has highlighted this paradox: while modernism in philosophy, psychology, and the social sciences centered on personal and cultural memory, “modernism in architecture often seemed to erase memory from the city” (Crinson 2005). If architecture nourishes the memory, is it possible to remember too much? Is it necessary to remember everything? Can architecture enable healthy forgetting? What would such architecture smell and feel and sound like? Would it minimize experiential texture?

From time to time, I've tried to imagine what it would be like to dream in a place with no ornament. If thoughts are birds, as Socrates and many others have held, where would they perch? If a place was devoid of memorable images, sounds, and multisensorial experiences, would it resemble Pruitt-Igoe, then *and* now?

What interests this author most about the faculty members' request is the implicit desire to remember and reify, through architecture, an institutional identity that was cast precisely by stripping away traditional materials of memory. Perhaps a severe exterior, boldly contrasting with its immediate surroundings yet providing transparency to its inner workings, was most fitting for an institution whose intellectual history centers on radical democracy and the legacy of a “university in exile.” The *new* New School, however, represents the interlinking of eight schools with independent and dynamic origins. To what extent can the university draw upon the richness of physical and mental ornaments across its integrated facilities and faculties, to sustain the diverse identities of its academic divisions while offering a coherent model of the future? And how adaptable is this model?

What kind of building, then, would most appropriately represent The *new* New School? One that remembers all too well? One whose forgetfulness is written on its sleeve? Or one that is mindful of the past while forecasting the future? In the face of uncertainty, now as in the past, works of art and architecture embody enduring lessons in prudence, especially when it is lacking. Executed well, as a process and as a physical entity, a new building at The New School would equip its communities with an invaluable mental and ethical armature. Such a building is worth dreaming about.

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