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ARCHITECTURAL METAMORPHOSIS: SPACE, MATTER,
AND MEDIA FROM THE 1970S TO THE SECOND DIGITAL TURN
JAVIER FERNÁNDEZ CONTRERAS

There has been a clear shift within architecture from construction to media [...] that has generated a whole series of new figures within and outside the discipline: the architect as curator, editor, investigator, filmmaker, performer, writer, policymaker, fashion designer, radio host, photographer, technologist, chef, etc. Our discipline is expanding rapidly.
—Ippolito Pestellini¹

Something has shifted. Over the last few decades, a growing number of architectural practices have started to bypass the discipline's relationship with its traditional epistemes, disrupting all categories from the Vitruvian *Firmitas, Utilitas, Venustas* in the classical period to Sullivan's *Form Follows Function* in the modern era. What is at stake is the very definition of architecture in the twenty-first century and the questioning of any linear dependence with its traditional cumulative medium, such as physical matter since its inception, Euclidean geometry in the classical era, printed plans and scale models since the Renaissance, photographic and multimedia imagery since modernity, and 3D and data modeling since the 1990s.

Architecture has historically had an entangled yet troubled relationship with the idea of metamorphosis. References to glossaries of transience such as change, evolution, adaptation, or metamorphosis are almost absent in traditional architectural theory. Vitruvius did not write about it,² even though these ideas were already common currency in Aristotelian philosophy and in Ovid's poetry. The same applies to the writings of Palladio, J.N.L. Durand, or Le Corbusier, who, despite his obsession with the

mobility of vessels and cars, always proposed architectural types whose program and associated tectonics did not necessarily evolve over time.³ This might be partly related to architecture's obsession with geometry, proportions, and built form until modernity. Proportions were fixed textually, as a set of instructions, in the classical era, and since the Renaissance, in discrete mathematics through the institutionalization of books and architectural drawings.⁴

It was not until the aftermath of World War II and its associated crisis of confidence in the rationalism and functionalism of early twentieth-century modernism that the alternative experimental architectural groups of the 1960s emerged, namely the Metabolists in Japan, Archigram in Britain, Archizoom and Superstudio in Italy, performing one of the most radical paradigm shifts in the discipline with the progressive incorporation of the idea of flexibility into the architectural episteme. Mobilizing ideas on the plug-in, the capsule, and the potential instantaneity of the city, these groups proposed forms of architecture that celebrated mobility and displacement, but, more importantly, which could be updated as technology moved forward at the users' will. That architecture could be flexible and changeable through its own mobility and technical performance was largely explored by other architects such as Cedric Price in the 1960s, mainly through unbuilt proposals like the Fun Palace and the Potteries Thinkbelt. Yet it was the competition for the Centre Pompidou in Paris, which was won by Richard Rogers and Renzo Piano in 1971, that confirmed these aspirations with an entirely different strategy, i.e., that of total indifference towards function by,



Gordon Matta Clark, *Conical Intersect 4* (Documentation of the action "Conical Intersect" made in 1975 in Paris, France), 1975, printed 1977. Whitney Museum of American Art, New York; gift of Harold Berg

according to critic Alan Colquhoun, "interpreting the art center as a culture supermarket, not attributing any specific or plastic form to the various departments precisely described in the specifications of the competition."⁵

That architectural form could be dissociated from any programmatic constraints, and by extension from any constraints of context and urban morphology—which the Pompidou clearly contests in its scale and tectonics—implemented a change in the architect as mediator, with a capacity to build up relationships between form, matter, space, and media aside of any linear correspondence. Within this paradigm shift, architecture started to incorporate a multiplicity of images, identities, and bodies to its episteme, marking the transition from medium-specific (associated with gravity, matter, and function) to the post-medium era over the past fifty years, a period in which architecture has become a gateway to parallel media-related practices, i.e., curatorial, critical, film, video game, coding, and other design activities, progressively dissociating its dependence from the physical.

The 1970s and the Post-Medium

Whether it calls itself installation art or institutional critique, the international spread of the mixed-media installation has become ubiquitous. Triumphantly declaring that we now inhabit a post-medium

age, the post-medium condition of this form traces its lineage, of course, not so much to Joseph Kosuth as to Marcel Broodthaers.—Rosalind Krauss⁶

Reflection on the post-medium in architecture takes as historic precedent the revolution that occurred in the arts world in the 1970s. After the 1960s, modernist claims for the autonomy of art combined with the specificity of the medium were abandoned in favor of hybrid forms and techniques. In the 1970s, art critic Rosalind Krauss explored the transition from art as a medium-specific domain to the post-medium condition, as the relationship between the materiality of the works and their categorization in a specific genre began to be questioned. The shift observed was a symptom, according to Krauss, of postmodernity, as she would later explain in relation to the work of artist Marcel Broodthaers in her 2000 book *A Voyage on the North Sea: Art in the Age of the Post-Medium*.

That Broodthaers was an artist mobilizing his discourse through space installations matters significantly for the capacity of space to actively merge artistic and curatorial practices, instead of just being a neutral background. From 1968 to 1975 Broodthaers produced



Marcel Broodthaers, *Museum of Modern Art Department of Eagles*, 1968. Installation view

room-pieces that reworked the very idea of the museum. Commenting on the project of the *Musée d'Art Moderne, Département des Aigles*, a four-year project that started in 1968 and dissociated exhibited content from exhibition captions (by means of multiple tags with the label "Fig." irrespective of their figuration), Krauss

1 Léa-Catherine Szacka, *Biennials/Triennials. Conversations on the Geography of Itinerant Display* (New York: Columbia University Press, 2019), 61.

2 References to the idea of change in Vitruvius' *De Architectura* mainly refer to meteorological and atmospheric conditions related to the position of the sun, the seasons, and the weather. As such, they do not imply the evolution of architecture itself over time.

3 With the exception of projects like the Museum for Unlimited Growth (1939) or the Venice Hospital (1964)—the latter was influenced by the evolutionary thinking of the mat-building type and other ideas from Team 10.

4 Mario Carpo, "Building with Geometry, Drawing with Numbers," in *When Is the Digital in Architecture?*, Andrew Goodhouse (ed.) (Montreal, Quebec: Canadian Centre for Architecture, 2017).

5 Alan Colquhoun, "Plateau Beaubourg," *Architectural Design* No. 2 (1977).

6 Rosalind Krauss, *A Voyage on the North Sea: Art in the Age of the Post-Medium* (New York: Thames and Hudson, 1999), 20.



Paolo Portoghesi, photograph of Josef Paul Kleihues' facade for Strada Novissima, 1980
MAXXI Museo nazionale delle arti del XXI secolo, Roma. MAXXI Architettura Collection. Paolo Portoghesi Archive

coins the term “eagle principle,” “which simultaneously implodes the idea of an aesthetic medium and turns everything equally into a ‘ready-made’ that collapses the difference between the aesthetic and the commodified.”⁷ Reflecting upon its consequences, she adds, “twenty-five years later, all over the world, in every biennial and at every art fair, the eagle principle functions as the new Academy.”⁸ In this sense, the elaborations of philosopher Félix Guattari on the post-(mass) media era of the 1990s⁹ or of theorists Lev Manovich and Peter Weibel on the post-media aesthetics¹⁰ in the 2000s must be understood as critical extensions of this paradigm shift with a larger emphasis on the digital turn whose historical process has only increased the intersections between art, film, and design in recent years.

In architecture, it is no coincidence that the 1970s saw the emergence of new entanglements between matter, space, and media. That

architecture could mobilize discourse through its own display became clear with three iconic phenomena: the 1976 IUAS exhibition *Idea as Model* (a new way to understand architectural scale and objecthood); the discussions leading to the celebration of the first Venice Architecture Biennial in 1980 (a new way to display and curate space); and the emergence of new architecture museums, namely the Canadian Center for Architecture in 1979, and the numerous peers that followed in the 1980s (a new way to understand architecture as an intellectual and cultural construct).¹¹

In the first case, the 1976 *Idea as Model* exhibition at the Institute for Architecture and Urban Studies in New York intensified the discourse concerning the role of the model in

architectural theory and practice. The exhibition book, which included Christian Hubert’s seminal article, “The Ruins of Representation,”¹² broached issues such as the relationship between the representative condition and the objecthood of models, their dependence and potential autonomy from full-scale architecture, and the detachment from the human body and sense of visual inhabitation in scale models, anticipating a debate that has become more recurrent and relevant in recent decades. In the case of the 1980 Venice Biennale, with its reverence to the past in the apogee of postmodernism, the exhibition performed a significant shift in representing architectural matter with a different matter. In the Strada Novissima, leading architects were invited to display their work behind facades that were designed for the occasion, exploring the relationship between history and their own practice, built mainly in painted wood and plaster. Of course, this had been done for centuries in theater sets and for decades in cinema decors or in theme parks. But the shift here was significant, because the Strada Novissima called for a return to a certain canon by mediating, and ultimately faking, the material canon itself. As for architecture museums, their rise in popularity in the 1970s and 1980s has been commonly associated, according to critic Triin Ojari, with “the spread of postmodernism, where architecture became increasingly valued as an intellectual project and architectural drawings gained the status as independent artistic media.”¹³ Architecture therefore entered the 1980s with the idea of programmatic stability and matter authenticity progressively distorted—and in some cases substituted—by a multiplicity of mediums and media.

The 1980s: Architecture, Image, and Change

Such a center is the scaled replica of one of the more infamous early experiments in “virtual” reality—AMG’s Aspen Movie Map of 1978. One of the first fully

interactive digital environments, the map was both a way to navigate space and the outcome of a new epistemology that correlated emerging notions of computation and cognitive science with design.
—Orit Halpern¹⁴

The virtualization of architecture, implemented by the growing agency and autonomy of architectural media with regards to physical built form, was confirmed at the end of the 1970s with a more radical shift that started to take place with the digital turn. The “Aspen Movie Map,” one of the first hypermedia interactive environments, was developed at MIT in 1978 as a first test in which the large-scale built form began to be articulated and gradually informed by a digital copy of itself. It enabled users to take a virtual tour of the city of Aspen and is often cited as the predecessor of first person-shooter video games, military simulation, and Google Earth.¹⁵

It is interesting to note that photography itself was starting to question its own capacity to incorporate time to the medium. Artist David Hockney started to make photographic collages and polaroid joiners in the 1980s, the former by montaging images on top of each other according to the pivoting of the camera, the latter by respecting the white frame of polaroid pictures to create grid-like compositions.¹⁶



David Hockney, *Sunday Morning, Mayflower Hotel, N.Y.*, 1983
Photocolage (chromogenic prints), 116 × 184.5 cm
Art Institute of Chicago, The Mary and Leigh Block Endowment Fund

7 Krauss 1999, 20.
8 Krauss 1999, 20.
9 Félix Guattari, “Vers une ère post-média,” *Terminal* No. 51 (1990), 43.
10 Lev Manovich, “Post-media aesthetics,” in Marsha Kinder and Tara McPherson (eds.), *Transmedia Frictions, the Digital, the Arts, and the Humanities* (Oakland: University of California Press, 2001), 34–44.

11 “In the late 1970s and early 1980s, as interest in architectural history intensified, there was a veritable boom of new architecture museums intent on occupying that intersection. While institutions like Sir John Soane’s Museum (1813) in London or the Museum of Modern Art (MoMA) Department of Architecture and Design (1932) in New York were already well-established, the ranks of architecture museums were limited at best. The 1980s surge in architecture museums changed that, with the foundation of several prominent institutions, like the Canadian Centre for Architecture (CCA, 1979) in Montreal, the Institut Français d’Architecture (IFA, 1981) in Paris, the Deutsches Architektur Museum (DAM, 1985) in Frankfurt, and the Nederlands Architectuurinstituut (NAi, 1988) in Rotterdam.” Sergio Figueredo, “Architecture Museums: between Critical and Popular,” *Volume* No. 56 (2015), 126–130.

12 Christian Hubert, “The Ruins of Representation,” in Kenneth Frampton and Silvia Kolbowski (eds.), *Idea as Model* (New York: Rizzoli, 1981), 16–25.
13 Triin Ojari, “Between Arena and Archive: The Museum of Estonian Architecture,” *OASE* No. 99. *The Architecture Museum Effect* (2017), 108–118.

14 Orit Halpern, “Architecture as Machine: The Smart City Deconstructed,” in Andrew Goodhouse (ed.), *When Is the Digital in Architecture?* (Montreal, Quebec: Canadian Centre for Architecture; London: Sternberg Press, 2017), 121–176.
15 Ibid.
16 David Hockney, *On Photography. Conversations with Paul Joyce* (New York: Harmony Books, 1988).

Most of them would take him hours, because of the accumulation of multiple clicks and analog assemblage. They fascinated architect Enric Miralles, who first saw them in an exhibition in Barcelona in 1985 and obsessively used them as a method to portray and reflect upon time in architecture.¹⁷

That architecture could produce changing, variable, mutable images, and that these images could be anticipated and even calculated, or perform different realities, became particularly relevant in the work of other architects in the 1980s. These comprise both the pioneers of the “first digital turn,” a generation of architectural practices that would progressively transform architecture from the computer screen, such as Frank Gehry or Peter Eisenman,¹⁸ and the material architects of the 1980s, such as Peter Zumthor and Herzog & de Meuron, who suggested that architecture could embody, perform, and even accelerate time in its own matter. In the former, digitality produced endless morphological variations, mainly enabled through digitization and interaction with physical models. In the latter, texture and patina mobilized the interaction with atmospheric conditions and accelerated the ruination, or material performativity, of architectural surfaces.

In this sense, it is possible to understand Toyo Ito’s project for the Tower of the Winds and NOX’s project for the Water Pavilion as extensions merging the digital and the material performativity of architecture. Respectively developed in the 1980s and the 1990s, Ito’s project was part of a larger series of proposals exploring how architecture could change according to atmospheric conditions and circadian rhythm, whereas in the case of NOX, water was the material that was literally activated by the combined performance of visitors and digitality. In both cases, one could talk of “mediated matter,” as it was the articulation of physical matter and digital media that produced a new idea of architectural tectonics. And yet, by the mid 1990s, another mediation, that of the combined action of time and human agency began

to gain ground, anticipating the contemporary interest in the collective practices of everyday life. The publication in 1994 of *How Buildings Learn*, a book in which buildings were presented through comparisons in pairs of images, examined both historic and modern architecture by looking at the modifications introduced by users—quite often to the chagrin of architects—by force of technological advancements, programmatic changes, aesthetic culture, or simply the passing of time.¹⁹ That the author, Stewart Brand, mainly known for his *Whole Earth Catalog*, was far more interested in processes and collective appropriation than results, was very telling of a change of attitude in which architecture could start to be associated with a multiplicity of changing, varying images, with users at the center.

The 2000s: Post-Occupancy and the Everyday in the Second Digital Turn

With this issue we try to (re)present four recent buildings in a fresh, complex way. We didn’t insist on the buildings’ qualities, but monitored their effects on their respective hosts and users. There are no “critics”—usually, best friends in drag—no intimidation. We have assembled myriad anonymous voices and collected snapshots. We documented how (our) buildings take their place in a primordial sea of influences and predecessors on which their existence depends and to whose existence they try to contribute. We looked through the eyes of tourists and artists, trusted others to record. Away from the triumphalist or miserabilist glare of the media, we wanted to see what happens in the absence of the author, to represent the realities we were complicit in creating, post-occupancy, as facts, not feats.—Rem Koolhaas²⁰

In 2006, architect Rem Koolhaas introduced the idea of “post-occupancy” to architectural criticism in a special issue guest edited by

AMO/OMA for the journal *Domus*, entitled *Domus d’Autore*. Originally a term reserved for the performance evaluation of buildings involving user feedback, “post-occupancy” looked at four OMA public buildings (Casa da Musica in Oporto, the Seattle Library, the Dutch Embassy in Berlin, and the McCormick-Tribune Center in Chicago) through the broader media and cultural context within which they operate, empowering the critical experience of users. Long before the Instagram era, the issue was key in the articulation—or consolidation—of a radical shift in the point of view through which architecture is regarded, portrayed, and circulated, from the eye of the specialist to that of society at large, giving it new agency in architectural discourse.

This revolution in architectural visual narration was confirmed in 2008 by the nearly simultaneous release of Bêka & Lemoine’s film *Koolhaas Houselife*, a Tatti-like documentary about one of Koolhaas’s most iconic projects; and the new journal *Apartamento*, subtly subtitled “an everyday life interiors magazine.” The film places Guadalupe Acedo, the cleaner of the House in Bordeaux, as the real protagonist of her own professional life, illustrating the mismatches between the beauty of the pristine published photographs and the daily maintenance. If Acedo put the focus on other voices and viewpoints that have been historically obliterated in architectural media, *Apartamento* stripped architectural photography from traditional conditions of order, pristineness, symmetry, frontality, and verticality to celebrate the disorder of interior spaces pictured at the same time as spontaneous conversations with their owners—usually cult designers and artists. As opposed to traditional architectural media, in Bêka & Lemoine’s films and in *Apartamento*, the interiors are never set or emptied, just pictured with their inhabitants and contingencies. Both events celebrate the everyday and have opened architecture as a practice of collective appropriation and multiple narration.

These references hark back to the interest in popular culture and the vernacular of the 1970s, namely Venturi & Scott Brown, but with one important difference: the Venturis and their acolytes sought to substitute architecture’s heroic individualistic narrative with



Pages from *Apartamento* magazine, Issue #8



Ila Bêka & Louise Lemoine, *Koolhaas Houselife*, France, 2008. 58', video still. Courtesy the artists

that of massive anonymity. Post-occupancy, however, produces individual-centered narratives as portraits—seldomly anonymous—of the architectural everyday. In this sense, the contemporary emphasis on the non-human condition could be understood as an extension of this decentralization of a lifeless, architecturally monolithic discourse. In 2013, architect Andrés Jaque explained the reconstruction of Mies van der Rohe and Lilly Reich’s Barcelona Pavilion from the perspective of the cat living in the basement, responsible for killing mice and the sole inhabitant of a space that the original project did not have, i.e., the basement where all technical equipment for cleaning and water purification is located. In Mies’ project, the pool’s water was cleaned through water lilies.²¹ Likewise, in 2019 the Twelfth São Paulo International Architecture Biennale, entitled *Todo dia/Everyday*, focused on practices and forms of vernacularism which stripped architecture from grand narratives and put the spotlight on the users: in the associated

17 Enrique Granell, “Una maleta llena de arquitectura,” in Josep M. Rovira (ed.), *Enric Miralles 1972–2000* (Barcelona: Fundació Caja de Arquitectos, 2011), 38–58.

18 Peter Eisenman and Greg Lynn, *Archaeology of the Digital* (Montréal, Quebec: Canadian Centre for Architecture, 2013).

19 Stewart Brand, *How Buildings Learn* (London: Penguin Books, 1995).

20 Rem Koolhaas and Kayoko Ota (eds.), *Post-Occupancy* (Milan: Domus, 2006).

21 André Jaque, “Mies as Rendered Society,” in *Mies Y La Gata Niebla. Ensayos Sobre Arquitectura Y Cosmopolítica* (Barcelona: Puente Editores, 2019), 73–112.

publication, *Everyday Matters*, most essays focus on the anonymous practices of maintenance, cleaning, repairing, resourcing, or networking, carried out by people who engage daily with architecture, often suffering, reshaping, contesting, and hacking its premises.²²

This emphasis on the popular vernacular is entangled with a parallel digital disruption. In 2017 historian Mario Carpo introduced the expression “second digital turn” to address the impact of big data—the increasing availability of data at progressively cheap cost since the 2000s—on the architectural episteme.²³ According to the author, “the first digital turn in architecture changed our ways of making; the second changes our ways of thinking.”²⁴ In the era of small data, things to archive and phenomena to observe were discretized so that categories could be classified and scientific experiments conducted. This traverses the history of human thinking from the creation of the alphabet (the most efficient code to compress all available phonemes) to the arborescence of scientific knowledge (sequential entry gates to categories), to the first digital era, still based on text code as a digital economy of means. However, in the era of big data, all available information is registered as raw material, eliminating the need to choose and categorize at the time of archiving and the centrality of the chooser, i.e., the architect, the scientist, or the curator.²⁵

This transforms architectural archiving, but more importantly the categorization and ontology of what architecture ultimately is, both in historic and prospective terms. In 2011, the Canadian Center for Architecture initiated *Archeology of the Digital* by archiving architecture projects produced in the 1980s and 1990s using digital tools that explored new directions for architectural research and practice. In 2015, Het Nieuwe Instituut acquired the first part of MVRDV’s archive, namely a copy of the office hard drive with materials from the practice’s first 400 projects complementary to its physical archive. Similarly, in 2014 the Flanders

Architecture Institute started a pilot project on the archive of Martine de Maesenneer Architecten and is currently prospectively archiving the work of firms whose cultural appreciation is expected to last.²⁶ A crucial shift has therefore taken place in historic terms. In oceans of data, a chair has the same geography as a person, they both boil down to digital addresses. The distinction between things and organisms no longer exists, they both become “subject.” Immersed in virtuality, things become emancipated. The aesthetics of simulation are less interesting than that which simulation conceals, i.e., data and the way it is used.

For architecture, this means that all technologically enabled actors participate in a process of collective design. On social networks, the role of the curator has taken precedence over that of the creator. Icons are assembled



MVRDV’s hard drive at
Het Nieuwe Instituut, Rotterdam, 2015

without worrying about originality, style, or the pieces themselves. In a photo, a copy is not necessarily recognized. Collective practice wins over professionals. This copy-paste phenomenon reveals a confluence of architecture with respect to other disciplines beyond digitality. Musicians have been sampling, mixing, and editing for a long time. In fashion design, Virgil Abloh, a trained architect, began his career reinterpreting deadstock from Ralph Lauren and other brands. After founding Off White in 2013 as “the gray area between black and white as the color off-white,”²⁷ he enacted the famous rule of 3% editing from which

he could affix his signature to iconic designs, namely sneakers, believing that the discipline was a site in which to operate sampling/editorial operations.²⁸ He therefore made it the raw material for his own creations: a revolution in the fashion world that resembles what we see today in space design, especially among amateurs. Individuals operate small edits, each at their own level, and add new points of intersection. Here, the concept of the original is wrong. The zero-point implied by originality does not exist, innovation starts at intermediate stages.

The institutionalization of social media over the last two decades has exponentially

multiplied the availability of architectural narrations. The image, text, or sound of any building lies in its density and digital atomization, a network of interactions or, more precisely, a cloud of data. This implies understanding architecture as a relational construct, not only in its interpretation but also in its design process. New mechanism of analysis and categorization follow, operating a paradigm shift from an emphasis on individualistic results towards an interest in design as a collective process of continuous editing, always in the making amidst a multiplicity of spaces, bodies and media enmeshed in everyday life.



Virgil Abloh’s Off-White × Air Jordan 1 customized for Nike, 2017
Twitter: @virgilabloh

22 Vanessa Grossman and Ciro Miguel, *Everyday Matters: Contemporary Approaches to Architecture* (Berlin: Ruby Press, 2022).

23 Mario Carpo, *The Second Digital Turn. Design Beyond Intelligence* (Cambridge, MA: MIT Press, 2017).

24 Ibid., book description, back cover.

25 Carpo 2017, “Don’t Sort: Search,” 23–33.

26 Bernard Colenbrander, “Inside the Black Box,” *OASE* No. 99. *The Architecture Museum Effect* (2017): 108–118.

27 Steff Yotka, “A Brief History of Virgil Abloh’s Meteoric Rise,” *VOGUE*, March 28, 2018, <https://www.vogue.com.au/fashion/news/virgil-abloh-biography-and-career-timeline/news-story/50f34f4c213d17fcc7911557e0f1d763>.

28 Virgil Abloh, *Nike. ICONS* (Köln: Taschen, 2022).