

# The Nine-Square Grid

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## *The Surviving Image of an Architecture without Content*

### Keywords

– nine-square grid; architectural education; lateness; studio pedagogy; Colin Rowe; John Hejduk

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*Directly influenced by Colin Rowe's essay "Mathematics of the Ideal Villa" (1947) and the Warburgian art historical tradition, John Hejduk's nine-square grid studio exercise had an ambiguous relation to the instrumentality of architectural history. When the nine-square grid exercise was copied in many architecture schools around the world as a first-year studio project, initiating the novice student in the realm of architectural composition, the pedagogical interpretation of its relation to architectural history varied. This paper questions the relational model of architectural history to practice in the nine-square grid exercise, and subsequently investigates the reuse and reinterpretation of the*

*exercise at the Versailles school and at Ghent University in the 1980s. It proposes a reading of the survival and return of this diagrammatic figure in studio pedagogy and villa architecture in the late twentieth century by reckoning with the history of its self-referentiality and the temporality of lateness.*

- 1 John E. Hancock, ed., *History in, of, and for Architecture: Papers from a Symposium "History in Architectural Education,"* Cincinnati, Ohio, May 30 and 31, 1980 (Ohio: University of Cincinnati School of Architecture, 1981).
- 2 Colin Rowe, *The Mathematics of the Ideal Villa and Other Essays* (London: MIT Press, 1976), 16.
- 3 John Hejduk, "The Nine-Square Problem," in *Education of an Architect: A Point of View, An Exhibition by the Cooper Union School of Art and Architecture at the Museum of Modern Art New York November 1971* (New York: MOMA, 1971), 7.

An important question in the late 1970s was to what extent history can serve as a toolbox for architectural design, as illustrated by a symposium held in Cincinnati in 1980 called "History in Architectural Education."<sup>1</sup> At that symposium, John E. Hancock noted how contextualism, the new historicism, and the loss of faith in modernism's anti-historical stance had radically changed the way architects and their students viewed the instrumentality of architectural history. He distinguished three directions from among the diverse approaches: a comeback of history in architecture, with Robert Venturi's *Complexity and Contradiction* (1966); a flourishing of the history of architecture — Manfredo Tafuri's *Theories and History of Architecture* (1968) is an evident candidate; and history for architecture. The latter type he described as an educational experience for future architects, mentioning Vincent Scully, Colin Rowe, and Bruno Zevi, but also a number of people contributing to the conference, such as Christian Norberg-Schulz.

A notable example of history for architecture with a direct impact on design pedagogy is Rowe's essay "The Mathematics of the Ideal Villa" (1947), which directly informed John Hejduk's development of the problem of the nine-square grid studio exercise.<sup>2</sup> First at the University of Texas School of Architecture between 1954 and 1956 and then, beginning in 1964, at the Cooper Union School of Art and Architecture in New York, Hejduk introduced first-year students to architectural composition through the problem of the nine-square grid. The studio assignment served as a pedagogical tool that forced students to become familiar with the fundamental elements of architecture through drawing: "Grid, frame, post, beam, panel, centre, periphery, field, edge, line, plane, volume, extension, compression, tension, shear, etc."<sup>3</sup>

The nine-square grid is a transhistorical figure that has persisted as a generative mechanism since the villas of Palladio and that, beginning in the 1970s, began to be recuperated and copied as Hejduk's nine-square grid exercise in many architecture schools over the world. The use of this grid is found in the architecture of Claude-Nicolas Ledoux, Jean-Nicolas-Louis Durand, Le Corbusier, Louis Kahn, Frank Lloyd Wright, the New York Five, Oswald Ungers, and Bruno Reichlin, and more recently, Tuñón Arquitectos, Office KGDVS, and Pezo von Ellrichshausen. This paper aims to explore the mechanics of the afterlife and the return of the nine-square grid since its resurrection at the University of Texas. Through this Warburgian lens, it questions the extent to which this ahistorical toolbox of history forced architects, willingly or unwillingly, to have a conversation with history and come to terms with the question of how contemporary architecture is living the temporality of history.

### **Colin Rowe's Palladinized Miesianism**

Although Rowe did not invent or even teach the nine-square grid exercise at the University of Texas School of Architecture, he did play a crucial

- 4 Caroline van Eck, "The Warburg Institute and Architectural History," *Common Knowledge* 18, no. 1 (2011): 131–145. The influence of Rowe and Wittkower and the German Gestalt theory on the nine-square grid has also been pointed out by Timothy Love and Alexander Caragone. Timothy Love, "Kits-of-Parts Conceptualism: Abstracting Architecture in the American Academy," *Harvard Design Magazine*, no. 19 (2003), <http://www.harvarddesignmagazine.org/issues/19/kit-of-parts-conceptualism-abstracting-architecture-in-the-american-academy>.
- 5 Rowe, *The Mathematics of the Ideal Villa*, 4.
- 6 *Ibid.*, 16.
- 7 Anthony Vidler, "Reckoning with Art History. Colin Rowe's Critical Vision," in Emmanuel Petit, ed., *Reckoning with Colin Rowe: Ten Architects Take Position* (New York and London: Routledge, 2015), 42.

role in connecting the scheme to the German art historical tradition of iconographic analysis and the study of the transformation of classical form, which had not been part of the discipline of architectural history before World War II.<sup>4</sup> In his 1947 essay, "The Mathematics of the Ideal Villa," Rowe famously compared the Villa Garches of Le Corbusier with Palladio's Villa Malcontenta. By means of a modular grid diagram of three rows and an a horizontal spatial ratio of 2 : 1 : 2 : 1 : 2, consonant with the musical proportions of an ABABA rhythm, he observed how the Villa Garches and the "plan paralysé" of the Villa Malcontenta both exhibit and conceal "an alternating rhythm of double and single spatial intervals; and each house, read from front to back, displays a comparable tripartite distribution of lines of support."<sup>5</sup> Rowe's juxtaposition of the analytic diagrams hinted at the broader argument that modernism's ahistorical newness was nothing but a final phase in the historical continuity of a classicist project of the Renaissance.

Rowe never claimed that this speculative approach to architectural history adhered to any particular school of thought. But he did acknowledge, in a 1973 addendum to the essay, that his criticism of "approximate configurations" that "proceeds to identify differences [...] according to the logic (or compulsion) of specific analytical (or stylistic) strategies, is presumably Wölfflinian in origin."<sup>6</sup> Rowe's comparative method, recently characterized by Anthony Vidler as "Rowe's tendentiousness, his *retardaire* social posture," is in part the result of his resistance to being "pinned down as to method or school"; he cultivated an anti-cult about the originality of his work implicitly by "neglecting to footnote his source."<sup>7</sup> His comparative method is not only much indebted to Heinrich Wölfflin's use of twin parallel projectors; its formal analysis of a project through visual means also adheres closely to that of his tutor, Rudolf Wittkower, at the Warburg Institute in London. Between 1945 and 1947, Rowe wrote his master's thesis there on Inigo Jones, under Wittkower. Wittkower himself had joined the Warburg Institute in 1934 — at the time, directed by Fritz Saxl, who began after Aby Warburg's death in 1929 — the year after the institute had moved from Hamburg to London.

The key to comprehending the abstract nine-square scheme as an icon lies in the panels of the *Bilderatlas Mnemosyne* at the Warburg library. In a series of 63 panels Warburg retraced in the 1920s the pathos or emotional charge across centuries of certain gestures or themes in visual reproductions of cultural imagery. Similarly, in *Architectural Principles in the Age of Humanism*, Wittkower outlined a cosmological order that he detected in the mathematical proportions of Renaissance churches. He treated these proportional figures as icons imbued with meaning that could be decoded through the insights of gestalt psychology. Rowe's formal visual analysis of a project, his revealing of harmonic similarities between modern and renaissance buildings, is what, despite its hermetic nineteenth-century character, made it so accessible for architectural practitioners:

- 8 Rowe, *The Mathematics of the Ideal Villa*, 16.
- 9 Christian F. Otto, "Orientation and Invention: Teaching the History of Architecture at Cornell," in *The History of History in American Schools of Architecture 1865–1975* (Princeton: Wright and Parks, 1990).
- 10 John Hejduk, "Armadillos," in John Hejduk, *John Hejduk: 7 Houses* (New York: The Institute for Architecture and Urban Studies 1980), 7.

[It] might still possess the merit of appealing primarily to what is visible and of, thereby, making the minimum of pretences to erudition and the least possible number of references outside itself. It might, in other words, possess the merits of accessibility — for those who are willing to accept the fatigue.<sup>8</sup>

Rowe's gestalt-psychological rereading of the Palladian villa as a modernist building transcended time and culture only to transfer, in terms of zeitgeist, the Warburgian moment of choice to the present.

Behind the complex tripartite structure that Rowe deduced from the proportional realignment, the diagram instilled a hope for an "untimely" neoclassical revival of a Palladinized Miesianism. After his studies at the Warburg Institute in London, and after having tutored at Liverpool University, when James Stirling was there, Rowe arrived at the University of Texas, in Austin, in the fall of 1953. It was to this town, in the American Southwest, that he exported his projective scheme of architectural history, which was to become epitomized as the nine-square grid exercise: a tripling of Le Corbusier's Maison Domino to fit the basic *parti* of Palladio's villas.

At Austin, Rowe taught the junior year, or third year, studio in the academic year of 1955–56. Christian Otto has recounted how during Rowe's studio teaching there, and also later at Cornell (1963–1989), Rowe took or sent students to the library to look up similar schemes in Palladio's *Quattro Libri* and other references works; he thus directed their design work through reworking and drawing on historic precedents, aspiring to write history through architectural design.<sup>9</sup>

### John Hejduk's Deferred Action

In 1954, the First Texas School, as it became known, and with it, a new pedagogical tradition, was born out of an intense collaboration between Rowe and four others of its members. Just after his arrival in Austin, Rowe, along with Bernhard Hoesli, drafted a note for a curriculum reform driven by a reworking of historic precedents. In the spring of 1954, the director of the School of Architecture, Harwell Hamilton Harris, approved the reformed curriculum. At the same time, he also hired two artists, Robert Slutzky and Lee Hirsche, who had studied at Yale under the Bauhaus painter Josef Albers. Hoesli called upon Hejduk in September 1954 to join forces. Hejduk had studied at Cooper Union, the University of Cincinnati, and Harvard (where Marcel Breuer still was at that time), and had just returned from a year studying in Rome through a Fulbright scholarship. When Hejduk arrived, he went to the library, where he met "a guy smoking his pipe, you know puffing away looking at books, and the librarian introduced me. I remember that. He had first come from California and had been down there a year, and that was Colin Rowe."<sup>10</sup>

- 11 Alexander Caragonne, *The Texas Rangers: Notes from an Architectural Underground* (Cambridge: MIT Press, 1995), 325.
- 12 Colin Rowe and Robert Slutzky, "Transparency: Literal and Phenomenal," *Perspecta* 8 (1963): 45–54. DOI: <http://dx.doi.org/10.2307/1566901>
- 13 Colin Rowe, "Program vs. Paradigm," *Cornell Journal of Architecture*, 2 (1983): 9–19.
- 14 Caragonne, *The Texas Rangers*, 190.
- 15 John Hejduk, "The Nine-Square Problem," in *Education of an Architect: A Point of View, The Cooper Union School of Art and Architecture 1964–1971* (New York: The Monacelli Press, 1999), 23.

Collaboration between Hejduk, Rowe, Hoesli, and Slutzky was intense, as Slutzky recounts: "It was like living in a Carthusian monastery in the south of France. We all worked together... John, Colin, Bernard and I would meet every evening and discuss the ideas which had been generated during the day."<sup>11</sup> Together, they developed methods and assignments to acquaint students with the idea of phenomenal transparency, figure – ground relationships, methods of the analysis of architectural precedents, and particular drawing techniques and treatment of colour. Rowe and Slutzky also began working on the articles about literal and phenomenal transparency.<sup>12</sup> Hejduk also began to write the lesser known essay "Out of Time into Space." Both essays deal with the stratification of space in purist and neo-plasticist painting and its translation into Le Corbusier's architecture. The bringing together of a cubist interpretation of gestalt perception theory with modern and premodern architecture formed the linchpin for the new programme at Austin. Also in 1954, Rowe and Hejduk began their research on the various spatial qualities of compression and expansion of the town square in Lockhart, Texas, which later resulted in Rowe's sketch, "Plan without Program" of Austin. The sketch followed a nine-square grid layout formed by four avenues and a central square — a clear indication that an analogous reflection on the scheme was made at an urban scale.<sup>13</sup>

According to the biographer of the Texas School, Alexander Caragonne, it was Hejduk, Slutzky, and Hirsche "who came upon a solution to the problem of an appropriate strategy for the teaching of simple architectural problems in a manner that Hoesli could applaud." Returning to their own training model at Yale, Hirsche and Slutzky translated the gestalt psychology approach to painting into a three-dimensional design problem: a grid of nine equal cubes, three by three, to set out spatial relationships of "sparsity and density, tension and compression, the kinetics of geometric configuration, and Gestaltic enclosure."<sup>14</sup> It was Hejduk who thought through all the architectural specifics implied here, interpreting the verticals on this three-dimensional canvas as posts, the horizontals as beams; this all came to be known as the nine-square grid exercise. Soon he started to investigate independently the question of how the construction of the frame and the details of the joints were to be conceived for building in the real world, which led to the Texas Houses.

The nine-square problem was proposed as a teaching device by which to discover and understand the fundamental elements of architecture; to learn to draw and understand the meaning of a plan, an elevation, a section, and an axonometric view; and to learn to use the model and drawings as working tools interactively to research a design a problem — that is, by switching continuously between drawing and model during the design process.<sup>15</sup> The only trace of the nine-square grid that remained in their assignment of the nine-square problem, as reproduced

## THE NINE SQUARE PROBLEM

Build a model at  $\frac{1}{4}'' = 1'-0$  scale of the following: make a 30 / 60 isometric drawing in pencil on tracing vellum of the following: The constructed model and the drawing will be the basic working tools for the research and study of the 9 Square problem.

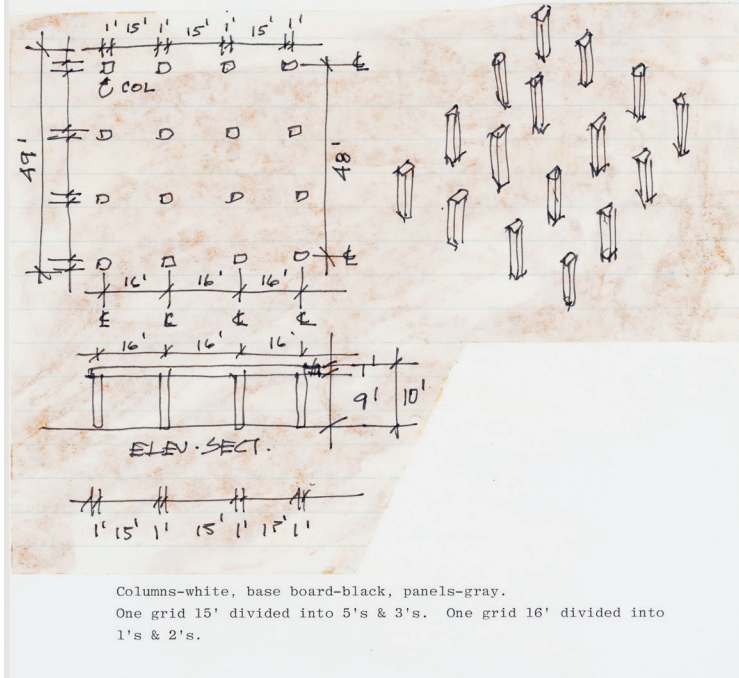


fig. 1 John Hejduk, *The Nine-Square Problem*: conceptual drawing with notes (between 1963 and 1985). John Hejduk fonds, Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal  
© CCA

16 John Hejduk, *Mask of Medusa: works, 1947-1983* (New York : Rizzoli International Publications, 1985), 35.

in Hejduk's *The Mask of Medusa*, is in the request that the student fabricate a 49-inch-square black base board, with a grid of sixteen white columns spaced sixteen inches from each other (figure 1).<sup>16</sup> Through a series of sixteen exercises, students are to enrich their vocabulary and compositional syntax by building models with grey colour panels, first 'full panels' that corresponded with the distance between two columns ( $15' \times 9'$ ), then 'half panels' ( $7.5' \times 9'$ ), then also curved panels (the radius of which corresponded to length of full or half panel). Various ways to position these panels were explored first through orthogonal compositions, then by orienting them 30, 45, 60 or degrees to each other. Gradually complexity was added by adding volumes as elements into the mix, allowing various combinations of them with full, half and curved panels, and various orientations. Finally, the structure was extended to two levels, with stairs and ramps to connect both levels. In the 'cube exercise' the structure had three levels, turning the frame into a cube.



- 17 Caragonne, *The Texas Rangers*, 203.
- 18 *Education of an Architect: A Point of View, The Cooper Union School of Art and Architecture 1964–1971* (New York: The Monacelli Press, 1999), 123.
- 19 Raphael Moneo, “The Work of John Hejduk or the Passion to Teach: Architectural Education at Cooper Union,” *Lotus International*, no. 27 (1980): 65–85.
- 20 John Hejduk, *The Mask of Medusa* (New York: Rizzoli, 1985), 34.

The first “element” to be learned in the series of the nine-square grid exercises is the technique and codes of drawing a plan and a section and the building of a model of the archetypical frame-like object that corresponds to the plan. All subsequent exercises become a compositional battle with this fixed, symmetrical, and centred object that is to result not in a house nor in a space that is to be embodied by a viewer. At the start, the student is not allowed to defend design decisions on the basis of how bodily movement is projected into the interior space (which was reserved for later studio assignments with a given functional programme). Instead, it is the mobility, interaction, and complementarity between viewpoints that is of interest. While the mobile, rotating viewpoint of the working model from outside is the privileged instrument for designing the object, the student is able to reveal or demonstrate a particular spatial design intention through the basic techniques of a properly drawn plan, section, and axonometry. Already in this first exercise, when the student draws a “plan” for the first time, that plan is revealed to be a section that is cut horizontally through the model, just as the section or façade dissects the model in a three-dimensional continuum in a different orientation.

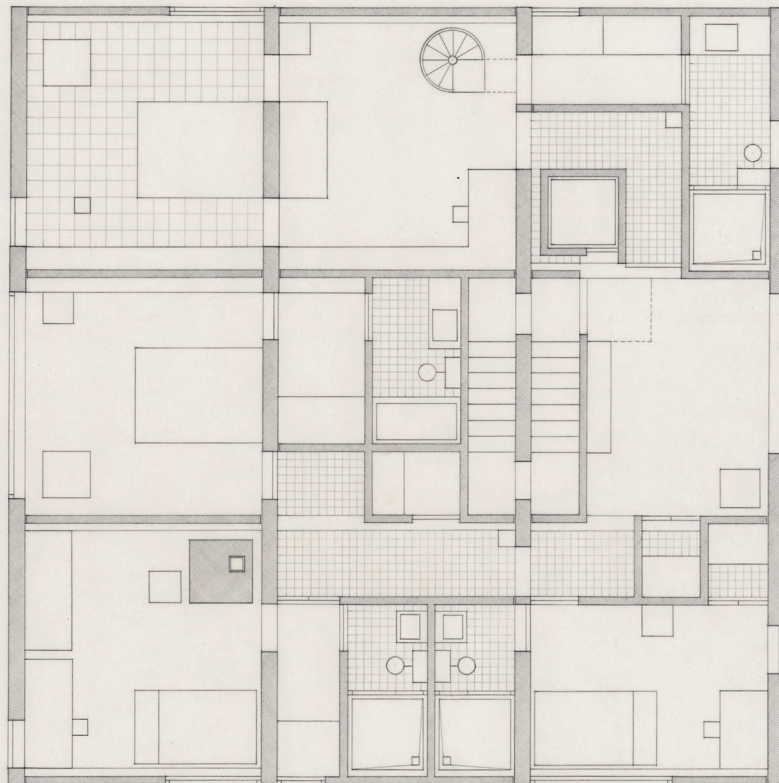
Although the “architectural object” in the nine-square grid exercise is on a 1:1 scale, it is not identical to the model but is rather defined through an interaction between pictorial and sculptural approaches, between frontality and plasticity. This tension also informed one of the studio problems that Hoesli and Hejduk introduced to the third-year students in 1954: how to interpret an abstraction of a plan as a section and to then conceive plans for a new building from it.<sup>17</sup> This tension also became explicit in the 0 degree axonometries made from the explorations of the cube problem that resulted in drawings that played on the blurring between pictorial flatness and spatial depth. Kenneth A. Schiano’s thesis project is a clear example of merging frontality with three-dimensional space, therefore overcoming the traditional conical perspective.<sup>18</sup> As Raphael Moneo states, with these explorations Hejduk and his students went beyond the cubists’ achievements, “in its effort to represent the image of the object from the object.”<sup>19</sup> The cubist way of transferring space onto the surface and denying depth is continued in the line drawings of the architectural object that exist only in the reality of the two-dimensional plans or three-dimensional axonometries. The drawing shows what the architecture *as a singular object* is, not how the spectator *is supposed to* see it. There is no privileged point of view.

At the same time as he taught the nine-square grid problem that Hejduk commenced in 1954, he took the problem himself further in the Texas House series by exploring what was implied if this three dimensional canvas was effectively to be built in the real world (figure 2). Hejduk recounts how he tried through the Texas Houses to turn the abstract nine-square grid into methodologically conceived construction, and get “Italy out of the system [...] getting rid of the classicizing aspect.”<sup>20</sup> The series sets

fig. 2 *John Hejduk, Plan for Texas House 7*  
(1953-1963). John Hejduk fonds Collection  
Centre Canadien d'Architecture/Canadian  
Centre for Architecture, Montréal  
© CCA







21 Ibid., 36.

22 Hal Foster, "What's Neo about the Neo-Avant-Garde?" *October*, no. 70 (1994): 5–32.

23 Stan Allen, "Nothing but Architecture," in K. Michael Hays, ed., *Hejduk's Chronotope* (New York: Princeton Architectural Press, 1996): 83.

a clash between Italian form and Piet Mondrian's *Boogie Woogie* paintings, between the modernist and classicising world, taking on Ludwig Mies van der Rohe and Fernand Léger to "exorcize the Italian thing." Hejduk continued this exorcism in his next projects, first the exorcism of Le Corbusier, for whom he developed a profound hate, in the Diamond Houses series, and then of Juan Gris and Léger in the Wall Houses. The exorcisms proceeded first through an absorption by "going through the books, a thousand times [...] like blotting paper," the intent being "to know history in order to dispense with it. It is an intentional absorbing of all those past things, zooming it, compressing it."<sup>21</sup>

In Hejduk's 7 Houses, the architectural project takes the form of a series; the project becomes a set of operations that presume a temporality that defers establishing an end point. It is this logic that Peter Eisenman, in his House Series from the 1970s, pushed to an extreme. In 1980, Hejduk's Texas houses were published by the Institute for Architecture and Urban Studies, headed by Eisenman, who wrote the main essay for the publication. By doing so, Eisenman acknowledged how in his own House Series of the 1970s he had extended Hejduk's work on the "language of architecture" and accelerated the latter's "chronotope" through a complex series of syntactical operations, engaging with the post-structuralist theories of Noam Chomsky, Jacques Derrida, and Gilles Deleuze. But if Eisenman drove the temporality of repetition to a point of collapse, Hejduk's compressed time is one of lateness; his sense was that the only way to move on was to work his way backwards in time. It is worth recalling that the nine-square grid exercise was invented when the great masters of modernism, such as Frank Lloyd Wright, Le Corbusier, and Mies, were in their seventies or eighties, well before Carl Jencks' declaration of the "death of modernism." The *Nachträglichkeit*, or deferred action — to borrow Hal Foster's use of Freud's characterization of the temporality of the neo-avant-garde — revises past events, takes up where the masters had left their exploration, and makes things happen as if they were happening for the first time.<sup>22</sup> As such the project's temporality becomes a sort of waiting room defined by what Giorgio Agamben terms a "Messianic time": an intensified "time of the end" which the avant-garde had mistaken for "the end of time."

Hejduk's work operates within what I would call a "Miessianic time," or "the time that time takes to come to an end" with Mies and the other great masters, but now *without* the great expectation that masters bring about change. "The late modernist," Stan Allen says of Hejduk, "must simultaneously negotiate both his or her own 'lateness' and the recent death of the modernist theoretical project."<sup>23</sup> To play on Agamben's book *The Man without Content*, the nine-square grid is an architecture for architects. It produces architectural subjectivity without content. It is an empty box in which to play nihilistically with the leftovers, enhanced by

- 24 Giorgio Agamben, *The Man without Content* (Stanford: Stanford University Press, 1999); Idem., *The Time That Remains: A Commentary on the Letter to the Romans*, trans. P. Dailey (Stanford: Stanford University Press, 2005; first published in Italian in 2000).
- 25 John Hejduk in 1981, as quoted in Caragonne, *The Texas Rangers*, 334.

the museological viewpoint of aesthetic judgement of the means rather than the content of aesthetic creation.<sup>24</sup>

In this “Miessianic” space-time, the triple domino structure of the nine-square grid provided, like a boxing ring, a training ground in which to force the student to engage in a fight with the centre and symmetry, such as can be found in Palladian villas and Byzantine churches. The given concentric composition of the Palladinized version of the Corbusian free plan drove the student towards a peripheric cubist or constructivist mode of composition. But the challenge lay in going beyond the pivot-like, balanced, and contrapuntal asymmetrical peripheric compositions of Mies, Wright, and Le Corbusier, and reintegrating a centrifugal and centripetal play between structure and space. The real battle of the neo-avant-garde that the nine-square grid staged was the confrontation with the leftovers, not in the least by again letting the ghost of Palladio enter the modernist peripheric compositions. In other words, this neo-avantgarde (and Hejduk’s students) had to address the anxiety of reintroducing centralization, the re-appearance of the Platonic geometry of the box and its perimeter as is found in the late work of Mies (when he returned to his earlier Schinkelesque phase), and the merging again, in the free plan of the wall as a free-standing element, with the skeleton structure, and the reintroduction of moments of tension when the vertical again dominates the horizontal.

### **The Diaspora of the Nine-Square Grid**

With the diaspora of the pedagogy of the First Texas School after 1956, the afterlife of the nine-square grid scheme began, becoming integrated into a long lineage of houses and pedagogies elsewhere in the US and abroad. Rowe, Hejduk, Slutzky, Hirsche, and Rubin continued to develop the Texas pedagogy of “knowing through drawing,” each in their own way at other schools. Rowe taught briefly at Cambridge and Cooper Union, eventually settling at Cornell, where other former Texas staff members, Werner Seligman, John Shaw, and Lee Hodgen — the core of the Second Texas School (1956–1958) — began to cultivate the term Texas Rangers in the 1960s (a nickname Rowe never accepted). Of Cornell, Hejduk said, “After the Texas thing reached Cornell, it just dried up. It became academic. They took Corb, analyzed him to death, and they squeezed all the juice out of him... The warm Texas breeze hit the chill of Ithaca and then rained itself out.”<sup>25</sup> At the “Académie Corbu” of Cornell, with Ungers appointed chairman of the architecture department in 1968 and Rowe working towards the publication of *Collage City*, published in 1978, the Texas pedagogy embraced an urban dimension. Cooper Union willingly avoided any substitution of architecture with planning, sociology, psychology, or anthropology, and polemically turned inwards to affirm the possibility of a self-referential architecture. Because of its reluctance to apply the

- 26 Colin Rowe and Kenneth Frampton, *Five Architects: Eisenman, Graves, Gwathmey, Hejduk, Meier* (New York: Wittenborn, 1972).
- 27 Ada Louise Huxtable, "Cooper Union Projects Vary Architecture Show," *The New York Times*, 13 (November 1971), reproduced in *Education of an Architect*, 10.
- 28 Bernhard Hoesli, *Architektur lehren: Bernhard Hoesli at the Department of Architecture at the ETH Zurich* (Zurich: ETH Zurich gta, 1989).
- 29 Colin Rowe, *John Hejduk Aldo Rossi Ausstellung, Architekturabt der ETH Zürich*, 3–14 December 1973 (Exhibition catalogue A17) (Zürich: Architekturabteilung, 1973). With thanks to Lyna Bourouiba for this lead.

"problem-solving" model for architecture, it sought innovation from an engagement with the internal history of the discipline.

From 1964 to 1971, Hejduk and later Slutzky continued working with students at Cooper Union on the nine-square grid and related spatial explorations, which resulted in the 1971 exhibition at the Museum of Modern Art, *Education of an Architect: A Point of View*. The catalogue and exhibition *Education of an Architect* presented the incredibly productive neo-avant-garde exploration of the unfulfilled architectural potential of modernism's plastic and spatial language as deliberately "out of sequence" with the social rhetoric and anti-architecture movement of the 1960s. That exhibition, together with the exhibition *Five Architects*, also at the MOMA the year after, formed an end to the underground phase of modernist lateness.<sup>26</sup> At the same time as Robert Venturi and John Rauch's exhibition at the Whitney Museum, only thirty blocks away, the MOMA exhibition of 1971 opposed Scully's exhortation "for a reconciliation with the existing world." Ada Louise Huxtable hinted at this by signalling that "the hazard of the method is that a program can turn into a formalistic straitjacket."<sup>27</sup>

In 1959, Hoesli went to teach at the ETH Zürich, where he directed the Grundkurs until 1981, exploring the concept "continuous space" that was shared by Le Corbusier, Mies, and Wright.<sup>28</sup> Although Hoesli did not teach the nine-square grid, his "space within space" exercise, for example, began from Le Corbusier's description of the ground as a "horizontal wall" to make a design in which there was no above or below, nor front or back, and suggested a cube in which spaces were to be organized, much like a three-dimensional grid. In the postmodern period that Hoesli described as "the eclectic situation (1969–1978)," he opposed the tendency to use historical inheritance as "a self-service store," stimulating instead self-discovery as one's "birthright," the "ability to choose," and above all *conceptualization* or the articulation of qualities throughout a design process as a "necessity for survival." In this context, the exhibition at the ETH Zürich in 1973 comparing the work of Hejduk with that of Aldo Rossi (who taught at the ETH between 1972 and 1975) marks the return of type as a geometrical abstraction and model of historic precedent, a return that also came to haunt the Texas pedagogy and thus also the type of the Palladian villa in the nine-square grid that Rowe had already clearly identified.<sup>29</sup>

Other members moved on to other schools in North America and Europe, as illustrated in Caragonne's family tree diagrams, including Oregon, Cambridge, Syracuse, Carleton, and McGill. Since the widely disseminated publication of the catalogue of the MOMA show in 1971 (and its reprints), the nine-square grid exercise was copied in architecture schools all over the world independently of personal connections. The two examples that follow demonstrate two different directions in which the temporality, the art historical tradition, and architectural referentiality associated with it were taken.



- 30 Anne-Marie Châtelet, Rémi Rouyer, Jacques Sautereau, *L'espace du jeu architectural: Mélanges offerts à Jean Castex* (Versailles: Editions Recherches Ecole nationale supérieure d'architecture de Versailles, 2007), 10.
- 31 Henri Bresler, Anne-Marie Châtelet, David Mangin, Patrick Sabatier, *Les neuf cases de l'architecture* (Rapport de recherche) 314/85, Ministère de l'urbanisme, du logement et des transports / Secrétariat de la recherche architecturale (SRA) (Versailles : Ecole nationale supérieure d'architecture de Versailles and LADRHAUS, 1985), 7.
- 32 Ibid., 7.

### Returns to the Typical in the Afterlife

In the academic year 1981–82, at the School of Architecture and Urbanism of Versailles, Jean Castex, Patrick Céleste, David Mangin, and Philippe Panerai proposed that the first-year students develop a project for “a house” based on the “square of nine sections,” or “le carré à neuf cases.” Their teaching aimed to “dedramatize projection and provide the opportunity to acquire a certain ease in composition and representation of space; a familiarity with the manipulation of spatial schemas.”<sup>30</sup> Historical research of architecture was done by assembling the genealogy of nine-square plans of villas, from Palladio to the New York Five, schematically redrawn and analysed by Anne-Marie Châtelet (figure 3). Henri Bresler concluded that this lineage means that the use of the nine-square plan “can no longer be innocent and belongs to the field of reference, even more, it has often the value of a manifest as is shown in the first houses of Wright or Le Corbusier, or as it is used today in projects as symbolic as the folies in the Parc de la Villette.”<sup>31</sup> Bresler carried his typological research further at the Saint-Etienne School of Architecture near Lyon in 1985, distinguishing three phases of the nine-square plan’s continued reappearance through history: Palladianism; the eighteenth century, with Jean-François de Neufforge, Ledoux and Durand; and the twentieth century, from Le Corbusier to the New York Five.<sup>32</sup>

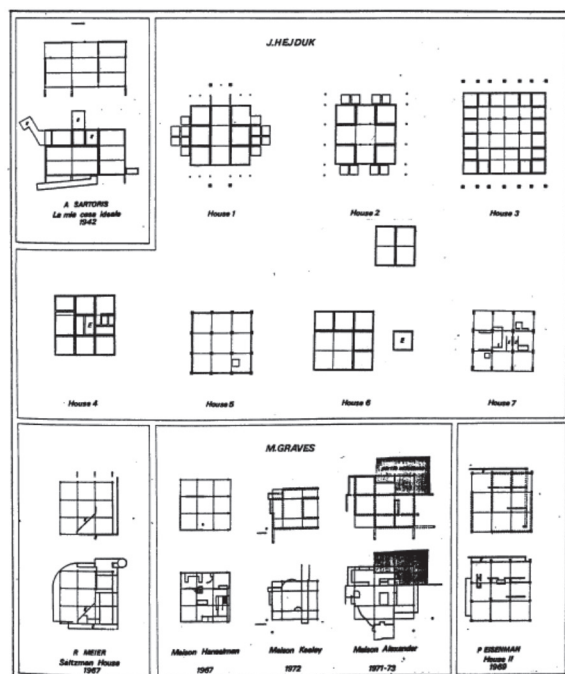


fig. 3 Schematic drawings by Anne-Marie Châtelet under the direction of Henri Bresler, as included in: Henri Bresler, Anne-Marie Châtelet, David Mangin, Patrick Sabatier. *Les neuf cases de l'architecture* (Versailles : Ecole nationale supérieure d'architecture de Versailles / LADRHAUS, 1985), 101.



- 33 Châtelet, *L'espace du jeu architectural*.
- 34 Telephone interview with Henri Bresler, 1 October 2020
- 35 Dirk De Meyer, ed., *Hetzelfde Anders* (Wetteren: Cultura, 1990). According to bob van Reeth, it was in a restaurant in Antwerp after the final studio crits in 1987 with Erik Balliu and Johan Baele that Charles Vermeersch would have explained his plans for the first time to found a new architecture school in Ghent. Roundtable debate between Stéphane Beel, Xaveer De Geyter, Willem-Jan Neutelings, bOb Van Reeth, moderated by Maarten Delbeke, 2 April 2014, UFO Auditorium, Ghent. Recording of final debate of Jokerweek, "Hetzelfde Anders," Ghent University. With special thanks to Pierre Putman.

The modernist battle with the classical Palladian scheme turned, in the Versailles exercise, into a frame of mind that allowed the recovery of the grammar of the *parti* and axuality, and a rhetoric of typical form by which appropriate architectural expression could be applied to a given programme, which aligned well with the resurgence of interest in typology and the compositional methods in the aftermath of the 1975 MOMA exhibition 'The Architecture of the École des Beaux-Arts'. Beginning in 1973, the school in Versailles where both Panerai and Castex taught initiated comparative research on the morphology of the city and historical research of building types adopting the methodology developed at the Istituto Universitario di Architettura di Venezia (IUAV) by Carlo Aymonino and Aldo Rossi.<sup>33</sup> Regular intellectual exchanges and travel between the Versailles and the Venice school took place.<sup>34</sup> The Versailles version of the nine-square grid assignment introduced the novice student to a neo-rationalist typological system of composition, replacing a temporality of lateness by one that I would call a synchronic contraction of anteriority. A virtual collection of references is presumed to constitute a memory machine that is put to work by the architect's imagination so that they may see and merge analogies, through abstraction and recombination. The tradition of inventory of typological knowledge of Quatremère de Quincy, Jean-Nicholas-Louis Durand, and Julien-David Le Roy, which had been discarded within the Bauhaus tradition, is here again moved to the centre of a pre-taxonomized transformative reasoning of the particular through the universal. The structure of the grid becomes a generic diagram underlying typo-morphological reasoning, with the city as beginning and end point, conflating historical and contextual continuity in the post-war era.

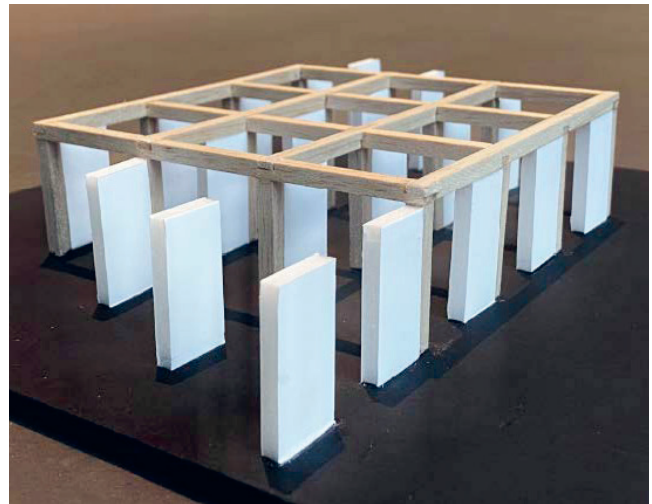
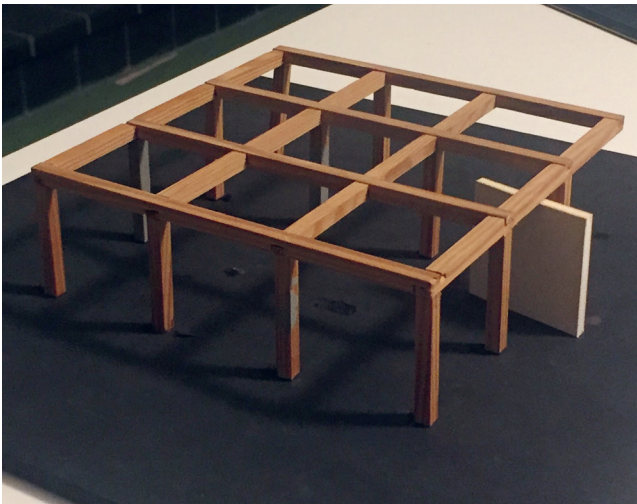
At Ghent University, a new architecture school was created in 1988 by Charles Vermeersch within the Faculty of Applied Engineering. Here also the nine-square grid problem was taught as a way to initiate first-year students in architectural design.<sup>35</sup> That year — seven years after the Versailles experiment — was also the year when Mark Wigley and Philip Johnson's *Deconstructivist Architecture* show took place at the MOMA. Adopting the nine-square grid when it was already more than thirty years old was untimely in its notorious absence of material, urban, and social concerns, and reaffirmed the possibility of a neo-avant-garde revision of the modernist language. The architect bob van Reeth, who had studied the 1971 catalogue of Cooper Union's work, gave shape to the programme under the slogan "the same, but different" ("hetzelfde, anders"), indicating a continued belief in the urgency "to search, to continue to search for the other" *ab initio*. Although he firmly believed that the final goal of architecture was building, the assignment bought time for students to explore the universal freedom of the architectural language by imposing on them the constraints of the incontestable alien body of the nine-square frame ("negenvierkantrooster"). The exercise was taught for a decade at

Ghent, despite Van Reeth's departure to the Henry Van de Velde Institute in Antwerp, where he taught the last year's studio with Christian Kieckens. With Van Reeth's move to Antwerp, the nine-square grid was also taught in Antwerp in the first-year studio in the early 1990s, to prepare the "next generation."

Interestingly, in Ghent the dimensions of the model changed from a grid structure of nine units, measuring 16 feet by 16 feet and 10 feet high, to a cubic structure made of balsa wood with one unit measuring 4.5 by 4.5 centimetres and also 4.5 centimetres in height, echoing the dimensions of Tschumi's cubic folies for the Parc de la Villette competition of 1982 (figure 4). The restrictive lack of freedom of the grid gave much more freedom, according to van Reeth, than starting from scratch, because it forced students to learn how to turn constraints into advantages, to formulate self-imposed limits and rules for oneself as a basis for decision-making. Furthermore, the exercise explored the themes "open and closed" by means of orthogonality (figure 5), "rest and movement" with curved panels, "order and chaos" with panels rotated at 30, 45, or 60 degrees, "centre and periphery" by means of volumes, and finally free composition (figure 6). Adding scale and function to the mix, the next exercise consisted of the creation by means of the three-dimensional nine-square grid, of a sculpture pavilion with a roof and a perimeter wall that was to be pierced to create an entrance (figure 7). The cube problem was also explored in the second year, as a way to train students in a critical and witty mindset of outplaying the rules set as a design context.

fig. 4 Iwan Strauven, basic frame of the model with modified proportions of nine-square grid exercise, UGent, 1993.

fig. 5 Reconstruction of the thematic exercise 'open-closed' UGent at ULB 2020 by Jade Lemeret.



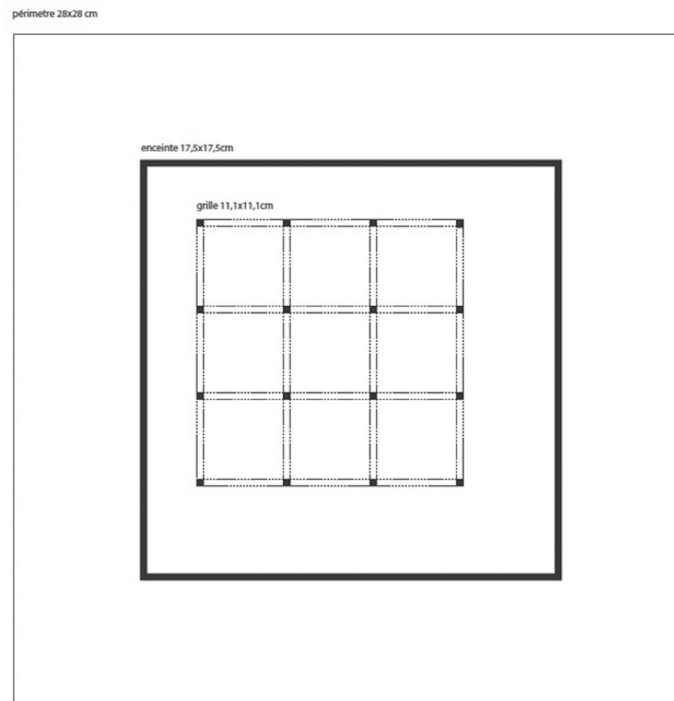
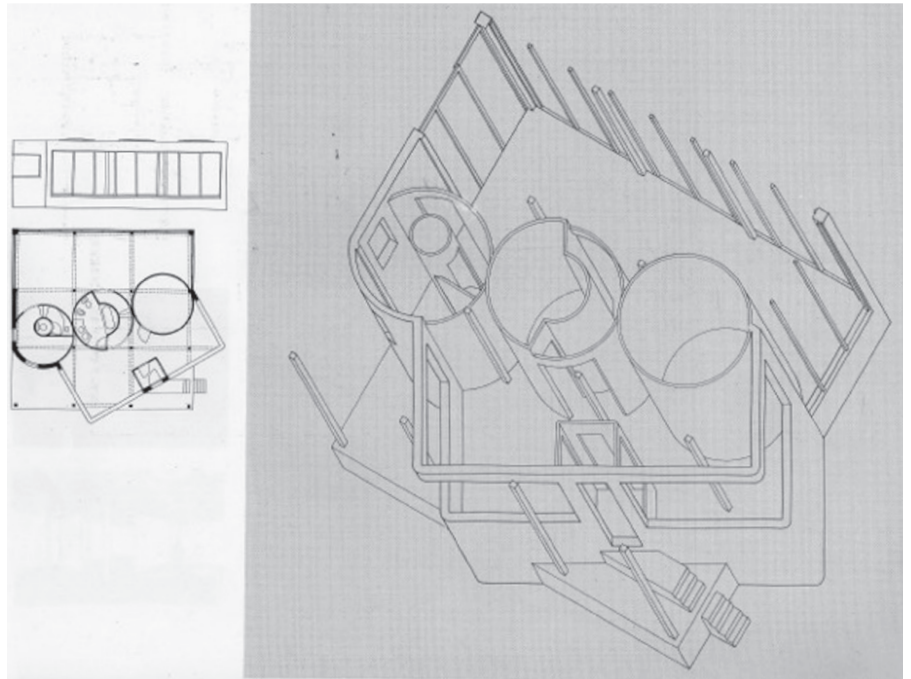


fig. 6 Maarten Delbeke, “Student Exercise  
“Negenvierkantrooster”, UGent  
1989,” in Dirk De Meyer, ed., *Hetzelfde  
Anders* (Wetteren: Cultura, 1990), 38.

fig. 7 Schema of the three elements of the pavilion  
exercise: black base, nine-square grid-frame,  
and perimeter wall. Drawing by Clarisse  
d’Hoffschmidt.

### Rebirth of the Nine-Square Grid as Icon

With the Villa Buggenhout (2012), David Van Severen and Kersten Geers took the intellectual exercise of outplaying the rules of that nine-square grid exercise of the sculpture pavilion with a perimeter wall, which they both completed at Ghent University, to the level of actual construction and detailing — much as Hejduk had done before them. Between his graduation in 2000 from Ghent University and this early commission of the Villa Buggenhout, Geers worked for Maxwan Architects and then for Neutelings Riedijk Architects (until 2007). In 2002, he and his fellow graduate David Van Severen founded Office KGDVS. Willem-Jan Neutelings recounts how he welcomed the graduates from the Ghent school in his office, particularly for their subversive way of thinking that was well-aligned with the OMA dynamic in Rotterdam. Maarten Delbeke confirms how second- and third-year students moved away from the formalist approach implied by the grid and toward a critical, discursive, and reflective approach to the project that was inspired by history classes in a Tafurian conception of operativity. According to Van Reeth, “there were quite a few students who finished their studies or left the programme with a feeling of frustration, because the approach was too intellectual, with too much emphasis on concepts.”<sup>36</sup> This particular conceptual approach of architectural form is nevertheless what makes the Villa Buggenhout by Office KGDVS one of the most notable examples of the nine-square grid houses of the last decade. Inhabited by an architect who, like Geers and Van Severen, completed the nine-square grid exercise at Ghent, the house is an architectural manifesto of how architecture is defined by neither its content nor its programme, but rather its fundamental elements, such as the fixed size of a room to which life is forced to adapt: the bathroom, kitchen, and living room are all the same size; there are no corridors, only a circular staircase inserted in the middle square of the plan. The panels of the exterior façade are all of glass, set on rails. The detailing of the windows is such that they appear as if they were a panel in cardboard. The modernist leitmotif of the free-standing wall is turned into a sliding window that can be pushed aside, transforming the interior of the kitchen completely into an outdoor space. Moreover, the position of the fence enclosing the garden does not correspond with the actual perimeter of the plot. The “perimeter” is turned into a literal object with political implications, a diffuse zone or wildland that reveals the limit as limit by blurring it. Their minimalism is not the architecture of absence, as in Shigeru Ban’s Nine-Square Grid House, where the materiality of the sliding walls can disappear to turn the house into an extremely flexible and empty theatre set covered by a free-floating Miesian roof. Rather, as in Sol LeWitt’s cubes, order in the Villa Buggenhout is a material thickness imposed on the void, but this order is first of all conceptual: the self-imposed rule of the frame.

It is this conceptual minimalism that differentiates the Villa Buggenhout from other similar nine-square grid houses, such as

- 37 G. Borasi, *Besides, History: Go Hasegawa, Kersten Geers, David Van Severen* (Montreal: Centre Canadien d'Architecture and London: Koenig Books, 2018), 9.
- 38 Kersten Geers, "The Model as a Plan: A Monument to Scientific Error," *OASE*, no. 84 Models. The Idea, the Representation and the Visionary (2011): 63. <https://www.oasejournal.nl/en/Issues/84/TheModelAsAPlan>
- 39 Victoire Chancel is researching this intermediality in the work of Office KGDVS in the context of her PhD at the ULB: "L'architecture du projet: Un diagnostic épistémologique du projet architectural à l'heure de la gestion de projet."

Pezo von Ellrichshausen's Solo House (2013) and Guna House (2014). Like Durand's *Maison à neuf cases*, these villas all consist of identical rooms of roughly four by four metres. They return to an archetypal language of architecture that does not seek any expression but articulates the type as an inexhaustible source of variation for the arrangement of building elements. Pezo von Ellrichshausen's Casa Meri and Eric Lapierre's house for a collector are more radical: here the articulation of the difference between servant and served spaces has disappeared. The toilet, bathroom, storage room, and circulation spaces have the same status as a living room or bedroom. Heating and water infrastructure are inserted in the same way that furniture in the rooms is inserted. While the Villa Buggenhout and the Stone House (2015) by Tuñón Arquitectos both have the spiral staircase in the middle room, the *poché* in the Villa Buggenhout has been stripped to the bare minimum of the wall.

Giovanni Borasi recently remarked how Office KGDVS's way of talking to history operates through "the fundamental tools of architecture (plans, sections, perspectives, models) [...] [T]hey use these tools to look for references."<sup>37</sup> In the plan of the Villa Buggenhout, the nine-square grid as a type is a reference stripped bare to its essence, made literal; it exposes the type in plan as a historically interesting constraint. Hejduk's attitude of an "architect without content" is assumed through a post-Koolhaasian lens, putting programme to the side and taking the disconnection between form and life as a starting point — as evoked in their studio teaching under the title 'Architecture without Content'. Geers quotes Hejduk in his conception of the plan:

I think [plans] are architecture in a state of sleep. [...] The plan returns architecture to a state of timeliness. The plan has no need for clothes or ornamentation; it carries with it an inevitability. The plan is sacred and inviolate. [...] [I]t occurs to me that, throughout the history of architecture, plans have changed the least.<sup>38</sup>

Hejduk's solution, according to Geers, for an architecture "not being perverted by reality" is to turn the model in the final project, to abort the confrontation with reality, and to turn it back into the plan as a new starting point. Similarly, the reality of the Villa Buggenhout is that it is built on a site but its architecture remains situated in a parallel universe of abstraction. The Greenbergian model of architectural autonomy is split into multiple realities and temporalities of disciplinary autonomy that are inter-medial. Like the site and non-sites of Robert Smithson, the project enters reality, yet the model of its architecture puts the building in a discursive conversation with architectural history. Just as Hejduk's project is a continued series, their project is situated in a time that, like it is for conceptual artists, is inter-medial: both object, image and discursive text.<sup>39</sup>

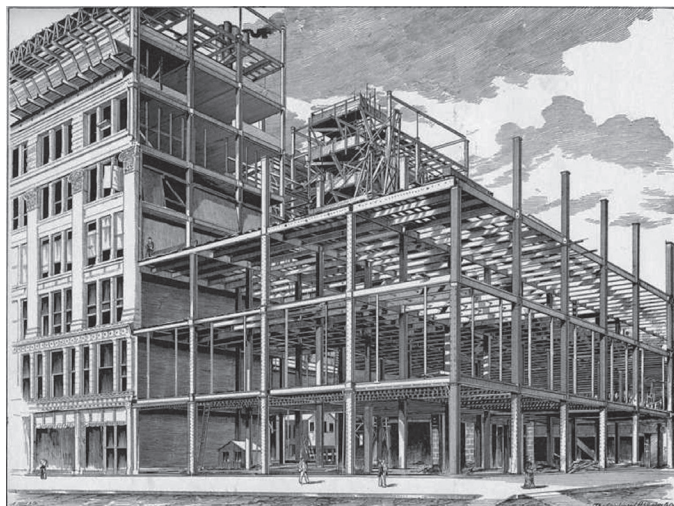


### Conclusion: The Survival of an Icon

“What we have here is not so much a structure as an icon,” Rowe said of the Chicago Frame as incarnated in Le Corbusier’s drawing of the Domino House.<sup>40</sup> The iconographic content that the recurrent motif of the Chicago building frame came to possess after the International Style, after Mies and the Chicago School, has only become more charged, to the point where it has become architecture itself, he says (figure 8). At a time when the atlases of Instagram and Pinterest become both the point of departure and the endpoint for the architectural project in today’s architectural culture — a space in which nine-square grids, originals, copies, and “followers” of supraorders are flattened out — these words sound prophetic. The same observation could be made of the nine-square grid after Hejduk: the disposition to accept it as a dogma is to oblige oneself to come to terms with its history *for* architecture.

Since 1954 the nine-square grid has become an essential figure in both studio language and art historical language. To address the iconographic content of the nine-square grid in architecture is to reaffirm the autonomy of architecture again, knowingly or unknowingly, to re-examine the political limits of the language of perceptive formal analysis, and to foreground differences that matter in its rearticulations and reconfigurations. Unlike the generative typological diagrams in the tradition of Durand, the nine-square grid emerges only like a surviving Warburgian icon, without content if it happens to be rightly out of time, reworking the communicative language *after* the arts. The umpteenth return of its iconographic formula matters to the extent that its ancient or antique reappearance disturbs the time of the discipline, our sense of the contemporary and its flux of imagery.

fig. 8 The Chicago Frame steel skeleton as used in the Fair Store (1892–1986) under construction, source: Chicago Public Library <https://www.chipublib.org/blogs/post/technology-that-changed-chicago-skeleton-construction/> (last accessed 28 April 2021), and reproduced in Colin Rowe, ‘Chicago Frame’, in: *Mathematics of the Ideal Villa*, pp.110–111.



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