

# THE AESTHETICS OF BLURRED BOUNDARIES

FROM WÖLFFLIN'S BAROQUE TO GIEDION'S  
INTERPENETRATION

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## ABSTRACT

This article shows how Sigfried Giedion's understanding of modern architecture is in part inflected by Heinrich Wölfflin's conception of the Baroque. *Durchdringung*, or interpenetration, is a key concept Giedion used to capture the spatial qualities inherent to modern constructions, the boundaries of which are blurred, not unlike Wölfflin's Baroque forms. Crucial to this analysis is Giedion's oft-neglected dissertation *Spätbarocker und romantischer Klassizismus*, which brings out the connection to Wölfflin and carries the seeds of Giedion's later historiography. In the following pages, the two seemingly different conceptions – Giedion's modern architecture and Wölfflin's Baroque – are linked through their underlying aesthetics to suggest a continuity in one specific concept rooted in Wölfflin's art history: the notion of blurred boundaries.

## KEYWORDS

Baroque; Modern architecture; Historiography; Interpenetration; *Durchdringung*; Sigfried Giedion; Heinrich Wölfflin.

Schließlich besteht ja das Ding nur durch seine Grenzen  
und damit durch einen gewissermaßen feindseligen Akt  
gegen seine Umgebung.

Robert Musil, *Der Mann ohne Eigenschaften*

## I. Durchdringung – Interpenetration

In Sigfried Giedion's writings of the 1920s, *Durchdringung*, or interpenetration, emerged as a diagnostic device and key feature of his criticism of modern architecture.<sup>1</sup> Primarily used to describe the essential property of modern architectural space, Giedion's application of the term is complex, encapsulating a spatial experience pivotal to certain structures – mainly the skeletal iron constructions of the nineteenth century and the houses of the modern movement – and also entailing social aspects and notions of interdisciplinarity.<sup>2</sup> More broadly, the concept was used throughout the 1920s to come to terms with modern society's profound transformations, but throughout Giedion's writings it is the spatial meaning that prevails.<sup>3</sup>

First mentioned in “Das neue Haus” (“The New House”), one of Giedion's earliest writings on Le Corbusier from 1926, the Swiss art historian and architecture critic employs the term to capture the essence of the Maison La Roche, and that of modern architecture more generally: “In a word, the meaning of the new architecture is penetration! Penetration from without to within, from within to without, from above to below” [Fig. 1].<sup>4</sup> This new spirit was rooted in the works of Frank Lloyd Wright, whose open floor plans carried the seed of modern architecture “by fusing the central room of the house more closely with the others”.<sup>5</sup> Where hard walls once partitioned interior space, smooth transitions became the norm. Some three decades later, Le Corbusier went beyond this preliminary compositional strategy, connecting rooms in three dimensions and “welding the floor levels together”.<sup>6</sup> Here interpenetration

1

Both *penetration* and *interpenetration* have been used in English translations. For the sake of clarity, I will refer to interpenetration.

2

Hilde Heynen elaborates on this last aspect in a chapter on Giedion: Hilde Heynen, *Architecture and Modernity. A Critique*, Cambridge, MA 1999, 29–42: “Siegfried Giedion: A Programmatic View of Modernity”.

3

For a general discussion on the term see Walter Prigge, *Durchdringung*, in: *Ernst May und das Neue Frankfurt 1925–1930*, Berlin 1986, 65–71.

4

Siegfried Giedion, *Das neue Haus*, in: *Das Kunstblatt* 10, 1926, 153–157, here 155. Cited from the English translation: Sigfried Giedion, *The New House*, in: *Le Corbusier in Perspective*, Englewood Cliffs, NJ 1974, 32–34, here 33.

5

Ibid.

6

Ibid.



LE CORBUSIER: HAUS LAROCHE, AUTEUIL

## Das neue Haus

Bemerkungen zu Le Corbusiers (P. Jeannerets) Haus Laroche  
in Auteuil. 1925.

*Das Niveau:* Man kann ganz allgemein heute bereits Fabriken bauen, keineswegs aber Häuser. Vorab aus zwei Gründen: das Haus ist mit Tradition und Vorurteil überlastet, beides bewirkt eine gewisse Hemmung der architektonischen Gestaltungskraft, vom Widerstand der Bewohner ganz abgesehen. Dann aber ist der technische und gesellschaftliche Zustand, für den der wirklich gültige Architekt heute schafft, noch gar nicht erreicht. So kann man heute das architektonische Genie wieder an der Größe seiner Visionskraft erkennen, die beflügelt sein muß wie je, um aus exakten Materialien das neue menschliche Gehäuse vorzuzeichnen.

Der technische Zustand ist noch nicht erreicht, da es — mit Ausnahme etwa für die englischen Eisenhäuser — noch keine Häuserfabriken gibt, mit deren Fenster-, Türen-, Wandtypen der Architekt arbeiten könnte: Alle zukünftige Produktion hat das Kennzeichen, daß sie standardisiert werden kann.

Der gesellschaftliche Zustand ist noch nicht erreicht, da der heutige Auftraggeber, die reiche Bürgerschicht, noch durchaus auf kompliziert-individuelle Bedürfnisse (und ihre Folge: reichliche Einrichtung, möglichst abgestufte Raumfolgen) eingestellt ist, was gerade dem Willen zukünftiger Architektur nach Typisierung und Vereinfachung entgegensteht.

153

[Fig. 1]

Sigfried Giedion, Das neue Haus, in: *Das Kunstblatt* 10/4, 1926, 153.

describes a spatial quality in which the walls of individual cells are dispersed, and formerly separated rooms begin to flow into each other. With Le Corbusier, rooms are connected both horizontally and vertically. Perhaps surprisingly, Giedion not only aligns the way Le Corbusier arranged the walls of the La Roche house with Wright's architecture, but also with "some Baroque chapels".<sup>7</sup> Thus the roots of what constitutes the quality of modern architecture, interpenetration, are found in the Baroque, a bridging which seems significant since previous scholarship tended to discuss the term as a concept pertaining to the modern movement alone.

While Giedion first mentions the term interpenetration in this article, he already put contemporary architecture into a Baroque context three years earlier. On 15 August 1923, the Bauhaus launched a public exhibition animated by theater performances and numerous lectures, the so-called *Bauhauswoche*, an event that proved groundbreaking for the young art historian. At his parents' urging Giedion had initially studied mechanical engineering in Vienna but soon switched to art history, commencing in Zurich in 1915 before migrating one semester later to Munich, where Heinrich Wölfflin was teaching. Having just published his dissertation *Spätbarocker und Romantischer Klassizismus* in 1922, Giedion's visit to Weimar turned out to be formative and triggered his reorientation from art history to architecture criticism.<sup>8</sup>

What brought him to Weimar was his desire to connect with Germany's emerging designers, and he found there some relief from academic life, aptly put on record in his diary: "once again one breathed free air."<sup>9</sup> As Giedion wrote in his report on the *Bauhauswoche*, the works on display originated from a "cubistic phantasy".<sup>10</sup>

What corroborated this reading was the fact that the lecture Gropius presented entailed virtually no interior views, not to mention any architectural plans. A pupil of Wölfflin, Giedion wrote his account with a preference for the oppositional method of his mentor's formalism.<sup>11</sup> Unlike Baroque architecture, which derives from space, "from cavities" ("*aus der Aushöhlung*"), "the modern structure

<sup>7</sup>  
Ibid.

<sup>8</sup>  
Sigfried Giedion, *Spätbarocker und romantischer Klassizismus*, Munich 1922.

<sup>9</sup>  
Transcribed diary entry of Giedion, dating from September 19, 1923, gta Archiv / ETH Zürich, Sigfried Giedion, 43B-1-3.

<sup>10</sup>  
Sigfried Giedion, Bauhaus und Bauhauswoche zu Weimar, in: *Das Werk* 10/9, 1923, 232–234, here 234. My translation.

<sup>11</sup>  
This German tradition in art history to antithetically contrast successive periods in fact influenced some of the most important books on modern architecture published in the interwar period. See the first chapter in Panayotis Tournikiotis, *The Historiography of Modern Architecture*, Cambridge, MA 1999.

was born from a crystal, from a solid, from a sum of crystals".<sup>12</sup> It was therefore not spatial. Giedion was still undecided in how to apply his art historical training to contemporary issues, evinced by his treatment of the Baroque as an antithesis to Gropius's architecture. If Gropius presented neither floor plans nor interior views in his lecture, Giedion's verdict must have rested on the presentation of exterior views, which tend to foreground the corporeal aspects of a building.

In 1923, the architecture of Gropius is unlike that of the Baroque: it is not spatial but instead born from a solid. In 1926, the walls of Le Corbusier produce spatial effects like those of Baroque chapels. Between these two texts, Giedion recalibrated his attitude towards contemporary structures and changed the ways in which he tapped into his doctoral work: it was precisely because he found both to be spatial that the Baroque could henceforth serve as a model for modern architecture.<sup>13</sup> And modern architecture was characterized by interpenetration.

## II. From Interpenetration to Space-Time

The term resurfaces in variations in his subsequent texts, from his first architectural monograph *Bauen in Frankreich* (1928),<sup>14</sup> a programmatic book that aligns the architecture of Le Corbusier and others with nineteenth-century iron constructions, to *Befreites Wohnen* (1929),<sup>15</sup> a small picture book on modern housing, to his most important text book *Space, Time and Architecture* (1941),<sup>16</sup> in which space-time gradually overrides interpenetration, without, however, replacing it entirely.<sup>17</sup> Therein Walter Gropius and Le Corbusier are the first architects discussed in detail in a chapter on art, architecture, and construction. In a lyrical paragraph Giedion admires

<sup>12</sup>

Giedion, *Bauhaus und Bauhauswoche zu Weimar*, 234. My translation.

<sup>13</sup>

For a more recent discussion on how the Baroque resurfaced in the discourse of modern architecture see Eeva-Liisa Pelkonen, Reading Aalto through the Baroque, in: *AA Files* 65, 2013, 50–53.

<sup>14</sup>

Sigfried Giedion, *Bauen in Frankreich, Bauen in Eisen, Bauen in Eisenbeton*, Leipzig 1928. Cited throughout from the English translation, Sigfried Giedion, *Building in France, Building in Iron, Building in Ferroconcrete*. Texts & Documents, ed. by Sokratis Georgiadis, trans. by J. Duncon Berry, Santa Monica, CA 1995.

<sup>15</sup>

Sigfried Giedion, *Befreites Wohnen*, Zurich 1929. Cited from the English translation: Sigfried Giedion, *Befreites Wohnen – Liberated Dwelling*, ed. by Reto Geiser, trans. by Reto Geiser and Rachel Julia Engler, Facsimile Edition, Zurich 2018.

<sup>16</sup>

Cited throughout from Sigfried Giedion, *Space, Time and Architecture*, Cambridge, MA 1959.

<sup>17</sup>

Heynen notes this shift in terminology, and also discusses its ramifications. See Heynen, *Architecture*, 41.

the Bauhaus at Dessau, designed by Gropius, as “the only large building of its date which was so complete a crystallization of the new space conception”.<sup>18</sup> For Giedion it postulated a peripatetic subject equipped with a modern eye able to recognize the building’s tectonic qualities, which derived from its skeletal concrete frame and virtually floating slabs. As a result, the building was post-perspectival, resisting classification into symbolic forms.<sup>19</sup> Of course, the renowned glass curtain continuously folding around the corner does not go unnoticed; what mattered for Giedion, however, was the intricate “arrangement of cubes” and the hovering appearance given to them. If the strong presence of glass was state-of-the-art, “the really important function of the Bauhaus was fulfilled by it as a unit”, achieved by combining a series of otherwise separated functions through modern construction.<sup>20</sup>

Defying a central organization, Gropius arranged the building blocks according to their program – education, production, leisure, residential – and gave each block a different expression: the dormitory building features balconies reflecting the domestic program inside; the workshop’s curtain wall has industrialist qualities, the vocational school can be identified by its horizontal ribbon windows similar to those of contemporary offices. Seen from above, these individual parts are still discernible, but begin to form a coherent whole, one in which a continuous roof brings together the school and the workshop while separating the cafeteria and the dormitory [Fig. 2]. Enthusing over this spatial composition, Giedion observes that “[t]hese cubes are juxtaposed and interrelated. Indeed, they interpenetrate each other so subtly and intimately that the boundaries of the various volumes cannot be sharply picked out.”<sup>21</sup> Escaping the analytic eye, these blurry boundaries are the product of nested volumes. The resultant space can only be comprehended if one walks around and through the building; the temporal aspect in space-time suggests motion.

What Gropius resolved programmatically by creating a spatial unity of different functions, Le Corbusier achieved spatially by connecting inside and outside. A telling example is found in the famous Villa Savoye, a structure no longer self-contained as it extends into its surroundings [Fig. 3]. To his readers, Giedion describes the villa as a post-perspectival object, defying cognition in a traditional sense:

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Giedion, *Space*, 493.

19

Cf. Erwin Panofsky, *Die Perspektive als “symbolische” Form*, in: *Aufsätze zu Grundfragen der Kunstwissenschaft*, ed. by Hariolf Oberer and Egon Verheyen, Berlin 1980, 99–167. For an English translation, see Erwin Panofsky, *Perspective as Symbolic Form*, ed. by Christopher S. Wood, New York 1997.

20

Giedion, *Space*, 492.

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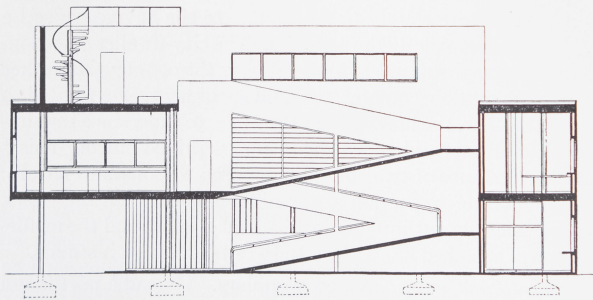
*Ibid.*, 493.







234. LE CORBUSIER and P. JEANNERET, Villa Savoye at Poissy, 1928-30.



235. LE CORBUSIER and P. JEANNERET, Villa Savoye, 1928-30. *Cross section. The hollowing out of the house from above and from below is accomplished with astonishing sureness.*

438

[Fig. 3]

Sigfried Giedion, *Space, Time and Architecture*, Cambridge, MA 1948, 438, Universitätsbibliothek Technische Universität Berlin, AK-10 130 L/4.

It is impossible to comprehend the Savoie [sic] house by a view from a single point; quite literally, it is a construction in space-time. The body of the house has been hollowed out in every direction: from above and below, within and without. A cross section at any point shows inner and outer space penetrating each other inextricably.<sup>22</sup>

Here, space-time derives from interpenetrating volumes perceived by a moving subject. This paragraph is emblematic for the spatial quality Giedion identifies in modern architecture – it is cinematic rather than photographic, too complex for a single view point to capture the essential characteristics of its space.<sup>23</sup> For this reason, in the case of the Villa Savoye, the cross section as an abstract representation has to serve as an expedient. A cross section demands an architecturally trained eye; it is the product of a vertical plane cutting through a structure with all sliced elements rendered in bold lines or solid hatches. Objects located in front of or behind the cutting plane remain unaffected by the cut, so that those in front of the viewer appear with thinner lines gradually receding into the background. Recognizing inextricable penetration “at any point” of the section between interior and exterior assumes contours heavily blurred or entirely missing.

One has to take Giedion’s polemic with a grain of salt: a consequence of his claim would be to even abolish the facade, since in section it also creates a thin line. The archetypical diagram of such radical interpenetration between inside and outside was of course Le Corbusier’s ferroconcrete skeleton of the Maison Dom-Ino, which was a principle more than it was a house [Fig. 4]. Indeed, in the subsequent paragraph, Giedion confirms this line of thought, but not without resorting to Borromini, who

had been on the verge of achieving the interpenetration of inner and outer space in some of his late baroque churches. This interpenetration was first realised in our period, through the methods of modern engineering, with the Eiffel Tower of 1889. Now, in the late twenties, it had become possible to achieve it in dwelling. This possibility was latent in the skeleton system of construction, but the skeleton had to be used as Le Corbusier uses it: in the service of a new conception of space.<sup>24</sup>

Fifteen years after his first essay on Le Corbusier, Giedion once again associates his architecture with Baroque churches whose

<sup>22</sup>

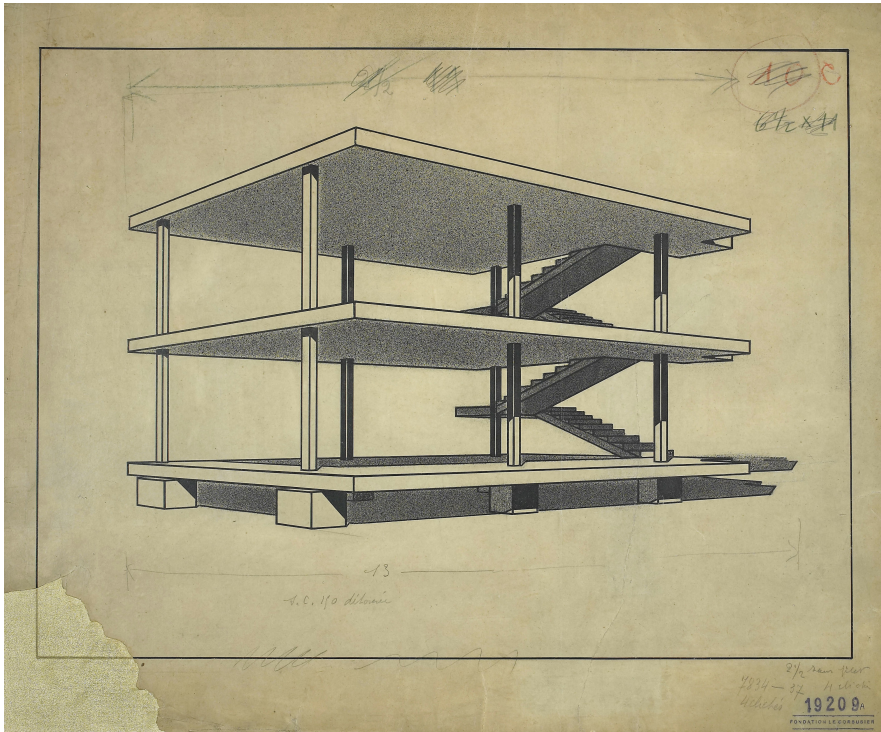
Ibid., 518.

<sup>23</sup>

Cf. Georgiadis, Introduction, in: Giedion, *Building in France*, 43.

<sup>24</sup>

Giedion, *Space*, 519.



**[Fig. 4]**  
Le Corbusier, Maison Dom-ino © F.L.C./ VG Bild-Kunst, Bonn 2022 (Creative Commons license terms for re-use do not apply to this picture and further permission may be required from the right holder).

spatial configuration almost attained the kind of quality so characteristic of tensile iron structures. As an intermediary, these nineteenth-century constructions connect the two architectures – Baroque and modernist – although at first glance they appear by no stretch of the imagination related to Borromini’s churches.<sup>25</sup> For Giedion, however, they share a common sense of space: interpenetration. The spatial attributes were imbedded in the architectural object itself, and could only be activated by the moving observer.

It is true that photography plays an essential role in Giedion’s books, and visual material was even a prerequisite for him to write.<sup>26</sup> The visual and textual narratives often go hand in hand; in the case of *Bauen in Frankreich*, they even form two modes of engaging the book, as Giedion confesses on the first page. But it is also true, that the static representation of a photograph is incommensurable with the actual experience of modern architectural space, as Giedion himself avowed on various occasions. In *Bauen in Frankreich* the reader learns with regard to Le Corbusier’s workers’ houses at Pessac that “photography does not capture them clearly [...] only film can make the new architecture intelligible”.<sup>27</sup> And in his small picture book *Befreites Wohnen*, interpenetration is used in the caption of a photograph Giedion has taken of the 1922 roof terrace of the Queen Alexandra Sanatorium in Davos, to explicitly point out that “the photograph far from reproduces the charm that arises from the interpenetration of landscape, the point of view (which hovers above the ground), and architectural firm framing” [Fig. 5].<sup>28</sup> Finally, in *Space, Time and Architecture*, he writes “the eye cannot sum up” the Dessau Bauhaus “at one view; it is necessary to go around it on all sides”.<sup>29</sup> Clearly Giedion is faced with a conundrum of trying to reproduce with words and images what only the moving eye is able to register.

Eve Blau has argued that Giedion’s conception of modern architecture was shaped by this espousal of “camera-generated

25

Georgiadis observed an aesthetic incommensurability between skeletal engineering structures and modernist houses. Georgiadis, Introduction, 42.

26

For a recent discussion on the role of photography and Giedion’s visual thinking, see the two chapters in Reto Geiser, *Giedion and America. Repositioning the History of Modern Architecture*, Zurich 2018, 72–129. The topic is also addressed in Werner Oechslin and Gregor Harbusch (eds.), *Sigfried Giedion und die Fotografie. Bildinszenierungen der Moderne*, Zurich 2010.

27

Giedion, *Building in France*, 176. For the German original see Giedion, *Bauen*, 92.

28

Giedion, *Liberated Dwelling*, 87. For the German original see Giedion, *Befreites Wohnen*, 65.

29

Giedion, *Space*, 493.



Foto S.-G.

**65** **Liegehalle.** Nachträglich auf das Dach der Volkshelstätte gesetzt (von Gabarell). Die Photographie kann nicht entfernt den Reiz wiedergeben, der aus dem Durchdringen von Landschaft, Standpunkt (schweben über dem Boden), und architektonisch fester Rahmung entsteht.

[Fig. 5]

Sigfried Giedion, *Befreites Wohnen*, Zurich 1929, 65, Universitätsbibliothek Technische Universität Berlin, 8A472.

images”,<sup>30</sup> and Detlef Mertins has discussed it in the context of transparency.<sup>31</sup> I would, however, suggest that the Baroque as a model for modernity had a far more significant impact on his conception of modern architectural space. Interpenetration is not simply an important term of the period, in Giedion’s mindset, it designates a particular boundary condition which is the basis for his reading of modern space.

### III. From French Iron Constructions to Le Corbusier

While interpenetration appears in his small pamphlet *Befreites Wohnen*, nowhere does it loom larger than in *Bauen in Frankreich*. Proposed by Le Corbusier, the book puts forth a new genealogy of modern ferroconcrete architecture, the origins of which are to be found in anonymous iron constructions built in France in the nineteenth century. The book is organized in two parts: the first discusses iron construction, the second ferroconcrete. Although new construction techniques had long been evolved, early nineteenth-century society was unprepared for their systematic implementation and anxiously encased the advancements in structural engineering behind stifling settings of stone. *Bauen in Frankreich* offers an alternative history: an unofficial vernacular of French iron constructions – outside the province of architectural history – which brought innovation and undermined the dominance of historicism.<sup>32</sup> The connection Giedion sought between anonymous engineering and known architecture (and eventually between Gustave Eiffel and Le Corbusier), was aesthetically grounded in a “new constructional interpenetration of a building”, a relationship central to an understanding of evolutionary history in which the dormant tradition of iron constructions could be laid open in the present ferroconcrete productions.<sup>33</sup> Just like the houses of Le Corbusier, these constructions – the Eiffel Tower or the Pont Transbordeur, a former transporter bridge spanning the industrial harbor of Marseille – were characterized by interpenetration.

The bridge has a prominent position: the book’s jacket, designed by László Moholy-Nagy, features one of Giedion’s own photographs of the Pont Transbordeur printed in negative, thus

<sup>30</sup>

Eve Blau, Transparency and the Irreconcilable Contradictions of Modernity, in: *Praxis* 9, 2007, 50–59. The article discusses the role of photography and film in particular in avant-garde circles of the 1920s, including Giedion and László Moholy-Nagy.

<sup>31</sup>

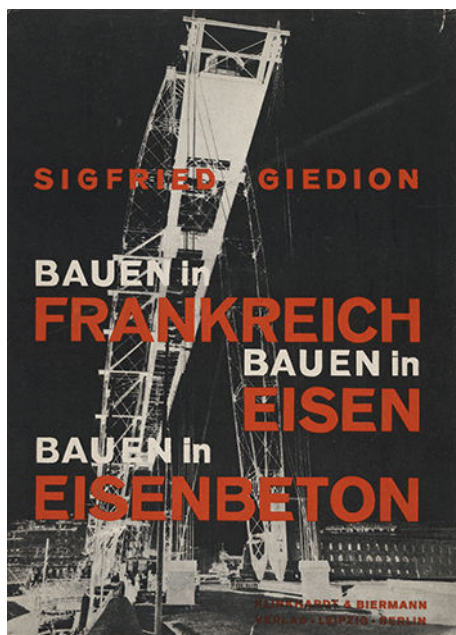
Detlef Mertins, Transparencies yet to Come. Sigfried Giedion and the Prehistory of Architectural Modernity (Dissertation, Princeton, School of Architecture of Princeton University), Princeton, NJ 1996.

<sup>32</sup>

For further discussion on the role of iron constructions in architectural debates see the extensive introduction by Georgiadis in Giedion, *Building in France*, 1–78.

<sup>33</sup>

Giedion, *Building in France*, 157.



[Fig. 6]

László Moholy-Nagy, dust jacket, *Bauen in Frankreich, Bauen in Eisen, Bauen in Eisenbeton* by Sigfried Giedion, 1928, New York, Museum of Modern Art (MoMA), Letterpress 10 1/2 × 7 5/8 in. (26.7 × 19.4 cm), Jan Tschichold Collection, Gift of Philip Johnson 753.1999  
© 2022. Digital image, The Museum of Modern Art, New York/Scala, Florence.

reinforcing the figure-ground relationship in which a dark black sky foregrounds the bright structure, whose iron framework incorporates the surroundings. The cover touts the shift from historicizing architecture to radical engineering [Fig. 6].<sup>34</sup> The first plate in the book is also dedicated to this structure, which appears to be intricately woven into the image of the city, “but its interplay with the city is neither ‘spatial’ nor ‘plastic’”, the caption reads. “It engenders floating relations and interpenetrations. The boundaries of architecture are blurred” [Fig. 7].<sup>35</sup> If in the paragraph on the Bauhaus the boundaries of individual volumes appear blurry, here it is those of an entire construction, perhaps of a whole discipline.<sup>36</sup> With its iron net and suspended mobile ferry the bridge framed all things urban, from ships to masts to houses, so as to fuse these objects dynamically. In a way, this was an aesthetic experience so radical that Giedion did not wish to see it fully implemented into housing: “Yet it remains embryonic in each design of the new architecture: there is only a great, indivisible space in which relations and interpenetrations, rather than boundaries, reign.”<sup>37</sup> Here, too, it is important to highlight the antithetical relationship between interpenetration and boundaries: the former only exists without the latter. “By their design,” Giedion avers, “all buildings today are as open as possible. They blur their arbitrary boundaries. Seek connection and interpenetration.”<sup>38</sup>

The spatial quality of the transporter bridge was perhaps only matched at that time by the power of the Eiffel Tower. Climbing its open-lattice structure and re-enacting a scene from French director René Clair’s *Paris Qui Dort* (1925), in which some of the only Parisian citizens who remained unaffected by the freezing rays of a mad scientist enjoy a high-altitude picnic inside, would also have enabled one to “confront the basic aesthetic experience of today’s building”.<sup>39</sup> Walter Benjamin remarked that the first to enjoy these new views onto the city were the workers and engineers involved

<sup>34</sup>

These presentations complicate the role of photography. Eve Blau suggests that some of Giedion’s images, such as those of the Eiffel Tower, share features of Moholy-Nagy’s photography (distorted angles, unusual cropping, the lack of reference points). Yet others, including the one on the cover, show the structure in its totality, clearly framed, and without a mandate to cultivate abstract seeing. The cover image is an eye-level shot of the whole structure captured with a wide-angle lens. Likewise, the first figure resembles a postcard showing the entire bridge from a distance, foregrounding its embeddedness into the harbor.

If Giedion’s text is indispensable, the images are conducive to clarification.

<sup>35</sup>

Giedion, *Building in France*, 90.

<sup>36</sup>

The original German is equally ambiguous: “Die Grenzen der Architektur verwischen sich” clearly refers to the bridge, but it could just as well imply the discipline.

<sup>37</sup>

Giedion, *Building in France*, 91.

<sup>38</sup>

Ibid.

<sup>39</sup>

Ibid.





**Abb. 1. PONT TRANSBORDEUR (1905) und HAFEN von MARSEILLE**

Über dem Wasser schwebende Fähre, die mit Seilen an dem hochgelegenen Steg beweglich aufgehängt, den Verkehr der beiden Hafenseiten vermittelt. Dieser Bau ist nicht als „Maschine“ zu verteuern. Er kann nicht aus dem Stadtbild fortgeleugnet werden, dessen phantastische Krönung er bedeutet. Aber sein Zusammenwirken mit der Stadt ist weder „räumlich“ noch „plastisch“ faßbar. Es entstehen schwebende Beziehungen und Durchdringungen. Die Grenzen der Architektur verwischen sich.

## ARCHITEKTUR

Der Begriff Architektur ist mit dem Material Stein verbunden. Schwere und Monumentalität liegen im Wesen dieses Materials, ebenso wie die klare Trennung von tragenden und getragenen Teilen.

Die großen Abmessungen, die das Material Stein erfordert, sind für uns heute noch blutmäßig mit jedem Bau verbunden. Es ist durchaus verständlich, daß die ersten Bauten in elastischem Material mit ihren ganz ungewohnt geringen Abmessungen in den Zeitgenossen immer wieder die Beunruhigung hervorriefen, die Gebäude könnten zusammenstürzen.

Architektur ist mit dem Begriff „Monumentalität“ verbunden. Wo die neuen Baustoffe — Eisen und Eisenbeton — die Form von Schwere und „Monumentalität“ annehmen, sind sie ihrem Sinn nach mißbraucht.

Es scheint uns fraglich, ob der beschränkte Begriff „Architektur“ überhaupt bestehen bleiben wird.

Wir könnten kaum Auskunft über die Frage geben: Was gehört zur Architektur? Wo beginnt sie, wo endet sie?

Die Gebiete durchdringen sich: Die Wände umstehen nicht mehr starr die Straße. Die Straße wird in einen Bewegungsstrom umgewandelt. Gleise und Zug bilden mit dem Bahnhof eine einzige Größe. Das Schweben der Aufzüge in gläsernen Schächten gehört zu ihrem Wesen, wie die isolierende Füllung zwischen den Trägern. Die Antenne

6

[Fig. 7]

Sigfried Giedion, *Bauen in Frankreich, Bauen in Eisen, Bauen in Eisenbeton*, Leipzig 1928, 6, Yale University Library, Jad61 A8 928Gb.

in the construction process.<sup>40</sup> Whereas the boundaries of the Pont Transbordeur had begun to dissolve, the Eiffel Tower was seen as bathed in air [Fig. 8].<sup>41</sup> If the former drew in the surrounding cityscape, the mass of the latter was virtually absent, leaving behind a skeleton from which all the meat had been nibbled. This metaphoric flesh was replaced by air, a new formative material, which, drawn into the framework was now able to engulf structures and visitors alike. For Giedion web-like iron constructions brought about suspended relations; they triggered a spatial paradigm shift; and they gave rise to an aesthetics of blurred boundaries.<sup>42</sup>

Despite their apparent dissimilarities, cast-iron and steel structures and those made of reinforced concrete shared the same attitude towards construction, a kinship that allowed Giedion to draw connections not obvious at first glance.<sup>43</sup> And they were both tied to programmatic claims: aligned with perceptions from within the weightless wrought-iron latticework of the Eiffel Tower, the domestic spaces of the 1920s were asked to mirror these new spatial qualities [Fig. 9]. Of vital importance for the contemporary house was its ability to float and to incorporate the “air cubes” that were all around – not simply queuing in front of the main entrance. No one had more ably incorporated these new principles than Le Corbusier:

[...] the cubes of air that spill over into his apartment houses (the first of these buildings, which are essentially villas set on top of one another, is to be built in Frankfurt), the garden on the roofs and sides. Cubes of air within, cubes of air without. Cubes of air down to the very smallest units at Pessac and the individual cells of a cité universitaire. Maximum of air, minimum of walls!<sup>44</sup>

<sup>40</sup>

See convolute N1a,1 in: Walter Benjamin, *Das Passagen-Werk*, ed. by Rolf Tiedemann, 2 vols., vol. 1, Frankfurt a. M. 1983, 572. Benjamin included a number of excerpts of *Bauen in Frankreich* in his notes on iron construction and especially those that deal with epistemology. Benjamin's reception of Giedion's book has been discussed extensively in the work of Detlef Mertins, beginning with his dissertation *Transparencies yet to Come* to several articles, most of which are included in *Modernity Unbound*, Architecture Words 7, London 2011. Benjamin had received a copy of *Bauen in Frankreich* from the publisher and wrote an enthusiastic letter to Giedion after reading the first paragraphs. The letter, to which Giedion never replied, is reprinted in Georgiadis, Introduction, 53.

<sup>41</sup>

The Pont Transbordeur in turn is captured in Moholy-Nagy's short film *Impressionen vom alten marseiller hafen, vieux port*, 1929.

<sup>42</sup>

For Benjamin's reception of it see especially convolute F in *Das Passagen-Werk*. For further discussion see Detlef Mertins, Walter Benjamin's "Tectonic" Unconscious, in: *ANY. Architecture New York* 14, 1996, 22–35.

<sup>43</sup>

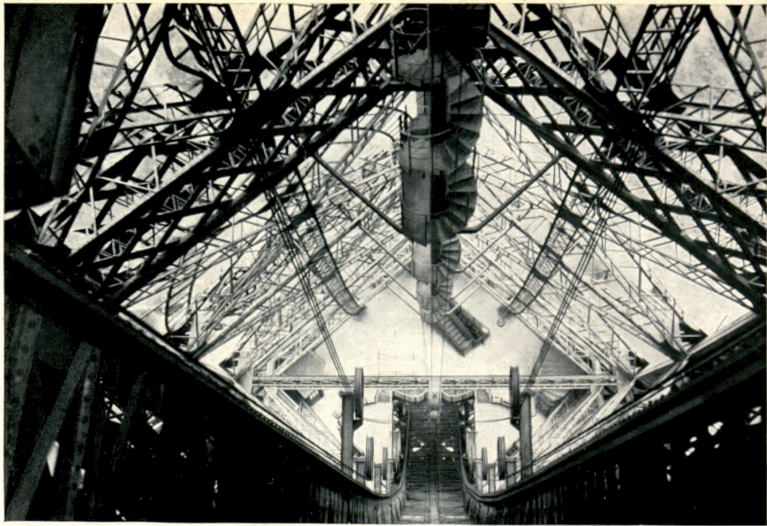
This was no fresh approach. Albert Erich Brinckmann had already alluded to the foundational works of engineering constructions in his publication *Plastik und Raum als Grundformen künstlerischer Gestaltung*, Munich 1922.

<sup>44</sup>

Giedion, *Building in France*, 168.



[Fig. 8]  
Willem van de Poll, Pont Transbordeur, 1935, photograph. Photo: [Wikimedia Commons](#)  
(09.12.22).



**Abb. 57. EIFFELTURM 1889**

Blick von der zweiten Plattform auf die erste. Die Aufnahme im Aufzugsschacht gemacht. Rechts und links die Kurven der Aufzugsschienen, die ins Erdgeschoß durchstoßen.

Mag man den Eiffelturm auch als Manifest ansehen: Die gelungene Realisierung eines Baus von 300 m Höhe gab wohl den entscheidenden Anstoß zu den hohen Stahlskelettbauten.

Unterirdisch geht die Entwicklung weiter: Amerika. — Die Frage, wer den ersten Wolkenkratzer errichtet hat, ist augenblicklich noch umstritten. Wir wissen nur, zur Zeit des Eiffelturms begannen in Chicago — anscheinend gleichzeitig — eine ganze Anzahl von Architekten die ersten elf- oder zwölfstockwerk hohen Häuser mit stählernem Skelett.<sup>1)</sup>

In Paris selbst wird — ganz abgesehen von Warenhäusern — im folgenden Jahrzehnt eine Reihe bescheidener Skelettbauten mit eisernen Fassaden errichtet.

Man hat sogar einen ganzen Platz mit eiserner Grundlage gemacht. Es handelt sich um die Place de l'Europe, die großzügige Überführung des breiten Schienennetzes vom Bahnhof St. Lazare. (Ingenieur: Julien). Mit einem halben Dutzend Zufahrtsstraßen.

<sup>1)</sup> „Who designed the first Steelskyscraper?“ in „The Western Architect“, Chicago 1923. Vol. 32. pag. 125. — Es wird erwähnt, daß es sich um die Architekten: Root, Adler und Sullivan, Jenny, Holabird und Roche in Chicago und um L. Gilbert (elfstockwerkhohe Tower-Building) in New York handelt.

This is Giedion the visionary, rejoicing in architecture's dematerialization, its poetic elasticity. As a matter of fact, *Bauen in Frankreich* is replete with references to air. If construction played the role of the unconscious in the nineteenth century, it had finally broken free to form a holistic system of architecture predicated on air, a system "resistant to closure", as Detlef Mertins put it.<sup>45</sup>

The cloud, as one might expect, is Giedion's ultimate metaphor for Le Corbusier's houses – the blurring of boundaries writ large. An airy substance with no contour, this almost immaterial mass of particles escapes geometric definition, and despite scientific attempts to classify them, their silhouettes are constantly in flux. Because the edges of Le Corbusier's houses blur, "[n]ot only in photos but also in reality", they induce "the feeling of walking in clouds", like snowy landscapes under certain light. Such metaphors make palpable what Giedion describes in more theoretical terms as "the dematerialization of solid demarcation",<sup>46</sup> or elsewhere as the "mariage des contours".<sup>47</sup> A poem Giedion wrote in 1917 foreshadows qualities he would only subsequently attribute to modern construction. The first line of *Zürichsee* – a rhapsodic description of a landscape in Switzerland – offers subtle clues and might proclaim the whole of Giedion's aesthetics:

Wo die Luft Kanten zeichnet  
und Hügel zum See fallen  
wo hinter Apfelbäumen  
Berge stehn.

Where the air draws borders  
and hills descend toward the lake  
where behind apple trees  
mountains stand.<sup>48</sup>

The lack of solid demarcation, volumes of air spilling into houses, the interpenetration of inside and outside, borders drawn by air, these are in fact all expressions of a similar spatial experience. That something so ordinary as air can become the material of modern construction only reveals the absence of boundaries and closure. Clues for the ideas Giedion promoted in books like *Bauen in Frankreich* or *Space, Time and Architecture* can often be found in his pre-

<sup>45</sup>

Mertins, *Transparencies*, 36.

<sup>46</sup>

Giedion, *Building in France*, 169.

<sup>47</sup>

In Giedion's *Space, Time and Architecture*, the "mariage des contours" designates the same sensation, 521. The concept was put forward by Amédée Ozenfant and Le Corbusier (then still Charles-Edouard Jeanneret) in their 1918 manifesto *Après le Cubisme*.

<sup>48</sup>

Ulrich Stucky, *Hommage à Giedion. Profile seiner Persönlichkeit*, Basel 1971, 95. My translation.

vious writings that do not address modern architecture per se. In another instance where he fervently portrays Le Corbusier's houses by virtue of interpenetration, he harks back to his work on neoclassicism. One of the most crucial paragraphs in *Bauen in Frankreich*, similarly dazzling and poetic, suggests that

the new architecture shatters the original conceptual polarity: space or plasticity. The new situation can no longer be understood with these old terms. Corbusier's houses are neither spatial nor plastic: air flows through them! Air becomes a constituent factor! Neither space nor plastic form counts, only RELATION and INTERPENETRATION! There is only a single, indivisible space. The shells fall away between interior and exterior.<sup>49</sup>

Just as the Pont Transbordeur was able to overcome the dialectics of spatial and plastic interplay with the city, Le Corbusier's houses resolve the opposition between spatial and plastic form through interpenetration. This constellation remains meaningless unless put into context with *Spätbarocker und romantischer Klassizismus* in which the spatial and the plastic characterize the main differences between late-Baroque and romantic-classicist architecture around 1800.<sup>50</sup> An examination of his thesis will show, however, not only a close affinity between the ways in which Giedion understood Baroque and modern space, but also the extent to which this reading is indebted to Wölfflin's thinking.

#### IV. Late-Baroque Neoclassicism

Published the year before his first visit to the Bauhaus, Giedion's dissertation on neoclassicism was written under Wölfflin's supervision. In it he explored the end of the Baroque, pinpointing the moment it morphed into neoclassicism, which had, as Hans Curjel remembered decades later, become a "particularly virulent" problem at that time.<sup>51</sup> A close friend and fellow student of Giedion, Curjel noted the overarching value entailed in the term:

Yes, neoclassicism; I've always told you that in Munich, that's still an unknown problem [...]. The use of language

<sup>49</sup>

Giedion, *Building in France*, 169.

<sup>50</sup>

Werner Oechslin sees no bridge at all between the dissertation and *Bauen in Frankreich*, arguing that Giedion made connections to his early work only decades later. Werner Oechslin, *Fragen zu Sigfried Giedions kunsthistorischen Prämissen*, in: *Sigfried Giedion. Der Entwurf einer modernen Tradition* (exh. cat. Zurich, Museum für Gestaltung), ed. by Verena Rentsch, Zurich 1989, 191–205.

<sup>51</sup>

Stucky, *Hommage*, 92.

had a subtle instinct when coining the word neoclassicism: it turned the movement into an -ism, that is something programmatic.<sup>52</sup>

Ultimately, Giedion's studies on the subject continued for six years, culminating in the publication of his thesis. Curjel made occasional inquiries and on September 21, 1917 casually asked: "How's your neoclassicism?"<sup>53</sup> A virtual documentary of neoclassicist architecture around 1800, *Spätbarocker und romantischer Klassizismus* is a rigorous exposé of the Baroque and romantic mentalities of the era and was to a large extent informed by Wölfflin's methods.<sup>54</sup> Its greatest feat might be that it achieved requisite clarity in a maze of terms: ranging from classicist to neoclassicist, Baroque to romantic. It also promoted short-sighted opinions to the status of fact.

Giedion offers a systematic history of architecture in Europe after 1750, but as much as the book is "one of the seminal works on European neoclassicism" at the time,<sup>55</sup> it sidesteps a direct confrontation with the idea of style, as Giedion considers the architecture in the following decades as having its own *Färbung*, or tinge, thus allowing its possible affiliation with the Baroque and romanticism.<sup>56</sup> The fading late-Baroque era folds gradually into the incipient expressions of romantic-classicist architecture, a transition enabled by neoclassicism and its ability to disguise the underlying styles.<sup>57</sup>

A condensation of the book might state the following: the closed individual forms of romantic classicism superseded the open, unify-

52

Letter from Curjel to Giedion, probably 1916, gta Archiv / ETH Zürich, Sigfried Giedion, 43-K-1916. My translation.

53

Letter from Curjel to Giedion, gta Archiv / ETH Zürich, Sigfried Giedion, 43-K-1917-09-21. My translation.

54

The book never appeared in translation and remains rather unknown to the English-speaking world. Henry-Russell Hitchcock makes an exception, dedicating the first footnote of his *Architecture. Nineteenth and Twentieth Centuries*, New Haven, CT 1987, to Giedion's dissertation. Another reference can be found in Henry-Russell Hitchcock and H. W. Janson, *Reviewed Work. Space, Time and Architecture* by Sigfried Giedion, in: *Parnassus* 13/5, 1941, 179–180. It is also mentioned in Georges Teyssot, Emil Kaufmann and the Architecture of Reason. *Klassizismus and 'Revolutionary Architecture'*, Christian Hubert (trans.) in: *Oppositions* 13, 1978, 47–74. An analytical discussion on the book is included in Sokratis Georgiadis, *Sigfried Giedion. Eine intellektuelle Biographie*, Zurich 1989. Translated as Sokratis Georgiadis, *Sigfried Giedion. An Intellectual Biography*, Edinburgh 1993.

55

Stanislaus von Moos, Sigfried Giedion zum Gedenken, in: *Schweizerische Bauzeitung* 86, 1968.

56

Giedion, *Klassizismus*, 9. Giedion was critical about style from early on, subsequently approaching modern architecture as a new space conception and not in terms of style. See Reto Geiser, *Transatlantische Wechselwirkungen*, afterword to Sigfried Giedion, *Raum, Zeit, Architektur. Die Entstehung einer neuen Tradition*, Basel 2015, iii–iv.

57

Had Wölfflin established the Baroque as an autonomous style independent of the preceding Renaissance, Giedion saw neoclassicism merely as a transitional phenomenon, pulling together the loose ends of late-Baroque and romantic-classicist attitudes.

ing forms of the late-Baroque period and predominated throughout the nineteenth century.<sup>58</sup> While late-Baroque architecture is *spatial* allowing for relations between inside and outside, romantic classicism is *plastic* and reinforces the individual, closed volume.<sup>59</sup> This dialectic serves as a backdrop for the portrayal of Le Corbusier's houses in *Bauen in Frankreich*. What is striking is Giedion's extreme sensitivity – to the point of frustration – to the perceived isolation of romantic buildings. It is as if the space conception in his neoclassicism is predicated upon a split between solid and void, body and space. In a myopic conclusion obviously difficult to vindicate, he concludes that “romanticism does not see space, but only admits bodies (*den Körper*)”.<sup>60</sup> By contrast, a handwritten manuscript illustrates the cosmic dimension of Baroque space whose key characteristic Giedion underlines with ink: “For all its inseparable unity, Baroque space is only part of a cosmos, like a continuous composition that demands connection on all sides: Baroque space is open!”<sup>61</sup> Owing to the logic of inversion, romantic-classicist spaces prompted Giedion to assert that “the individual form, the walls, the ceiling, the skylight, the separation from the surroundings, inside and out, all these phenomena say the same thing: romantic-classicist space is enclosed.”<sup>62</sup>

Space as a concept had not yet entered the discourse of architecture by 1800.<sup>63</sup> The avenue Giedion chose to get out of this quandary led him to analyze neoclassicism on the basis of representations, a medium exposing an underlying spatial paradigm.<sup>64</sup> Instead

58

The stylistic oppositions are charted in Georgiadis, Sigfried Giedion, 23–28.

59

The danger, as often with simplifying oppositions, is to pigeonhole objects of analysis, and to overlook everything that falls in between.

60

Giedion, *Klassizismus*, 87. My translation.

61

Undated manuscript, gta Archiv / ETH Zürich, Sigfried Giedion, 43-T-2. “Bei aller untrennbaren Einheit ist der Barocke Raum nur Teil eines Cosmos, gleich einer kontinuierlichen Gestaltung, die Bindung nach allen Seiten verlangt: der Barocke Raum ist offen!” My translation. In the published version it is no longer just a formation weaving evenly in all directions, but rather space itself that is fed from all sides. Cf. Giedion, *Klassizismus*, 93.

62

Giedion, *Klassizismus*, 94. My translation.

63

See Adrian Forty, *Words and Buildings. A Vocabulary of Modern Architecture*, London 2000, 256. An extensive reconstruction of the principal ideas of space can be found in Harry Francis Mallgrave and Eleftherios Ikonou (eds.), *Empathy, Form, and Space. Problems in German Aesthetics 1873–1893*, Santa Monica, CA 1994.

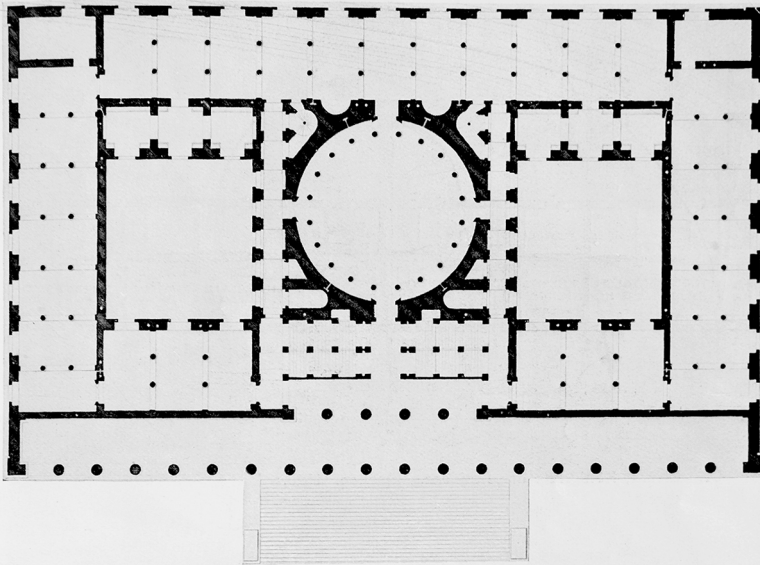
64

That different conceptions of space informed the principal periods in architectural history remained a life-long interest forming the main focus of Giedion's final book, *Architecture and the Phenomena of Transition. The Three Space Conceptions in Architecture*, Cambridge, MA 1971. This understanding likely derived from Wölfflin who saw a particular mode of seeing tied to the various styles. See, for instance, Heinrich Wölfflin, *Drei Münchner Vorlesungen Heinrich Wölfflins*, ed. by Hans Körner and Manja Wilkens, Passau 2016, 296. A related assertion is made by Erwin Panofsky in his seminal essay *Die Perspektive als “symbolische” Form*.

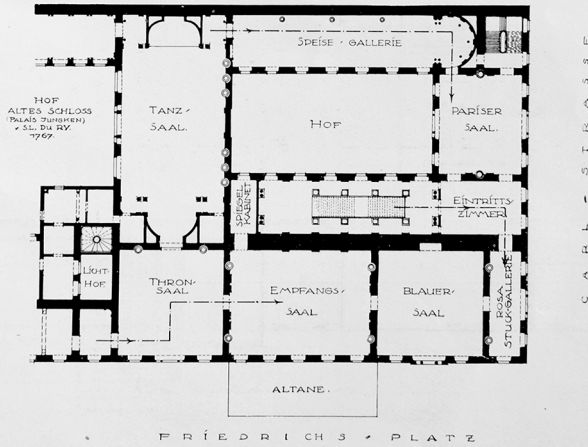




[Fig. 10]  
Unknown photographer, Karl Friedrich Schinkel, Palais Redern, around 1900. Photo:  
[Wikimedia Commons](#) (09.12.22).



92. Schinkel, Altes Museum. 1823. Ansicht, Abb. 46.



93. Bromeis, Stadt-(Rotes-)Schloß, Kassel  
1821

233

[Fig. 11]

Sigfried Giedion, *Spätbarocker und romantischer Klassizismus*, Munich 1922, 233, Yale University Library, Jad65 A6 922G.

of the homogenizing central perspective of the Renaissance that governed late-Baroque culture, romantic classicism allegedly presented architecture through two-point perspective [Fig. 10]. While in central perspective the open shoe box ensues, essentially disembodied late-Baroque structures by foregrounding their stage-like nature, the reputed prevalence of two-point perspective betrays the plastic character of romantic-classicist structures. “Romanticism [...]”, according to Giedion, “will endeavor to represent an architectural structure in such a way that first its plastic side comes into its own. This applies both inside and out. The representation therefore takes its position across the corner.”<sup>65</sup>

By analogy floor plans were also subject to substantial changes. Typical of the spatial relationship of part to whole within the floor plan was a central space nested inside a romantic-classicist structure. The distinction is to be found in the location of the main hall, which no longer strives for an absolute union with the outside. Here, Giedion refers to Karl Friedrich Schinkel’s Altes Museum in Berlin, built between 1823 and 1830 [Fig. 11]. The central rotunda not only referenced the Pantheon, it also formed a self-contained entity within the museum – a circular space not interlaced with its surroundings, but one which can be easily “scraped out” (“*wie herausschälbar er ist*”).<sup>66</sup> With “armor-like” (“*panzerartig*”) walls and no windows, the rotunda repels all adjacent rooms. A sequence of circumferential rooms leaves the central space unaffected; it also disengages from the exterior, thereby “eternally revolving around itself”.<sup>67</sup> Giedion’s analysis relies on hyperbole: the rotunda is described as windowless, its oculus notwithstanding, and despite the row of Corinthian columns, the walls form a suit of armor.<sup>68</sup>

In tune with romantic views expounded in German idealism – Giedion quotes Karl Wilhelm Friedrich Schlegel beyond the title page – the corresponding architecture put equal emphasis on individualism. Unlike the perceived disintegration of late-Baroque structures into cosmic vastness, the central space in romantic-classicist designs was in repose and firmly anchored. Schinkel’s rotunda thus stood for the individual.<sup>69</sup> Clearly aware of the self-positing “I” understood in Johann Gottlieb Fichte’s system as “I-hood” (“*Ichheit*”), Giedion laments the deterioration of the idea in the concept’s

<sup>65</sup>

Giedion, *Klassizismus*, 87. My translation.

<sup>66</sup>

*Ibid.*, 147.

<sup>67</sup>

*Ibid.*

<sup>68</sup>

For all that, the museum is of course finely calibrated, particularly with regard to its immediate surroundings as seen from the famous vestibule. On Schinkel’s drawing of this urban relationship see Kurt Forster, *Schinkel. A Meander through his Life and Work*, Boston, MA/Berlin 2018, 157–158.

<sup>69</sup>

*Ibid.*, 91–92.

misappropriation by Schlegel and other romantics.<sup>70</sup> In the end, however, the specific shifts befalling the philosophical debates in the wake of transcendental idealism remained negligible for Giedion and what mattered instead was individuality as such.

But when did romanticism evolve? If its origins in Germany can be located in philosophers' works by the likes of Fichte, Schelling, and the Schlegel brothers, it is Friedrich Gilly's monument for Frederick the Great (1797) which, for Giedion, ushered in romantic classicism in architecture [Fig. 12].<sup>71</sup> Against a recommendation to the Berlin academy calling for the common landscape garden element of a round temple, Gilly proposed a cubic volume germane to the implementation of architectural individuality.<sup>72</sup> For this new paradigm to come to fruition, architecture had to become independent of its surroundings by eschewing any dominant structure in close proximity, a strategy Fritz Neumeier called a "desire for detachment".<sup>73</sup>

The central space in the late-Baroque period was something else entirely. Giedion's enthusiasm erupts in the correlating paragraphs depicting the main hall as "the brain of the entire complex", a rhetorical twist that makes it the *spatial* and not the *geometrical* center.<sup>74</sup> Thus liberated within the matrix, it can push towards the perimeter, bulge outward, and develop intense relationships between inside and outside [Fig. 13]. Here, the professed power of Baroque architecture lies in its ability to unify, to suggest the interdependence of individual parts, and to establish a "complete entity" subordinating all parts.<sup>75</sup> If Fichte and Schlegel offered distant frameworks to balance Giedion's romanticist architecture, it was the German universalist Gottfried Wilhelm Leibniz who delivered the complex notion of reciprocity to an understanding of Baroque architecture. In his short treatise *La Monadologie*, published in 1714, Leibniz discusses how simple substances, the monads, assume positions relative to others according to a pre-established harmony.

70

The lapse occurred in transposing Fichte's general, pure egoity, to a personal ego, that is, to individuality. Giedion refers to Fichte's *Ichheit* on page 13. The passage he has in mind reads as follows: "Der Trieb nach Selbstständigkeit ist Trieb der Ichheit, er hat nur sie zum Zwecke; das Ich allein soll das Subject der Selbstständigkeit seyn. Nun liegt es in der Ichheit, wie wir gesehen haben, allerdings, daß jedes Ich Individuum sey; aber nur Individuum überhaupt, nicht das bestimmte Individuum A oder B oder C u.s.f." Johann Gottlieb Fichte, *Das System der Sittenlehre nach den Principien der Wissenschaftslehre*, Jena/Leipzig 1789, 307.

71

Giedion, *Klassizismus*, 10.

72

*Ibid.*, 106.

73

Friedrich Gilly, *Friedrich Gilly. Essays on Architecture, 1796–1799*, Santa Monica, CA 1994, 41.

74

Giedion, *Klassizismus*, 89. My translation.

75

*Ibid.*, 12.

While earlier handwritten manuscripts make mention of Leibniz,<sup>76</sup> *Spätbarocker und romantischer Klassizismus* makes a fleeting reference to section 56 of *The Monadology*, an ode to what might be implied by *ecology* today:

Now this interlinkage or accommodation of all created things to each other, and of each to all the others, brings it about that each simple substance has relations that express all the others, and is in consequence a perpetual living mirror of the whole universe.<sup>77</sup>

In likening the Leibnizian cosmos to the great Baroque complex, Giedion not only infuses its architecture with philosophy, he also aligns it with the universe at large.<sup>78</sup> This architecture was accomplished by a mode of composition active on all levels, across different scales: from the arrangement of individual rooms to the vertical organization of the exterior wall, from the location of the main room to the composition of exterior spaces. Giedion's analysis of late-Baroque architecture registers in nuance and subtle deviation.

A political theme also asserts itself. If, as Emil Kaufmann put it, "one part dominates all the others and nevertheless all the parts form a whole",<sup>79</sup> a complex weave of different players forms a Baroque community no longer visible in romantic-classicist architecture with its isolated, pavilion-like compositions. Giedion's sympathy for Baroque space has its counterpart in an early essay titled "Gegen das Ich" ("Against the Self") from 1918.<sup>80</sup> Written in impassioned prose, it criticizes the social disintegration incited by an increased presence of modern individuals, and the soaring singularization of modern society stemming from nineteenth-century

76

"Der Raum im Barocken Komplexen [sic] geht es wie im leibnizschen Kosmos immer wieder tritt man in neue Welten, die für sich ein Ganzes bilden, aber ihre eigentliche Geltung erst in der Abhängigkeit vom Ganzen finden. Man tritt vom Garten in das Schloss vom Schloss wieder in die Unendlichkeit einer Allee oder in den Leib einer Stadt." Undated manuscript, gta Archiv / ETH Zürich, Sigfried Giedion, 43-T-2.

77

Nicholas Rescher, *G.W. Leibniz's Monadology. An Edition for Students*, Pittsburgh, PA 1991, 198.

78

Giedion, *Klassizismus*, 89. Cf. Gottfried Wilhelm Leibniz, *La Monadologie*, ed. by Théophile Desdouts, Paris 1884, 20.

79

Anthony Vidler, *Histories of the Immediate Present*, Cambridge, MA 2008, 30. This phrase is a translation of one of Kaufmann's attempts to define the difference between Baroque and neoclassicist architectural structures. Cf. Emil Kaufmann, *Von Ledoux bis Le Corbusier. Ursprung und Entwicklung der autonomen Architektur*, Vienna/Leipzig 1933, 19.

80

Stucky, *Hommage*, 11–12. Originally published as Sigfried Giedion, *Gegen das Ich*, in: *Das Junge Deutschland* 8/9, 1918.

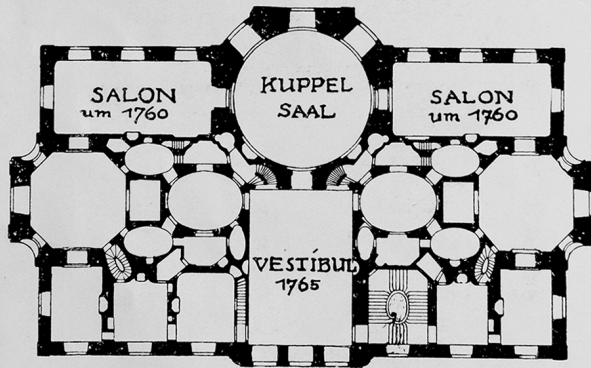


[Fig. 12]  
Friedrich Gilly, Entwurf zu einem Denkmal für Friedrich den Großen auf dem Leipziger Platz in Berlin, 1796–1797, Gouache und Feder in Schwarz über konstruierender Vorzeichnung mit Bleistift und Zirkel, auf Papier (Vergé), 62.0 × 135.2 cm, Berlin, Kupferstichkabinett © Kupferstichkabinett, Staatliche Museen zu Berlin / Fotograf unbekannt.



Ludwigskirche 1829 Staatsbibliothek 1832 Universität 1855

86. Ludwigstraße gegen Süden (Gemälde von J. Adam, 1844).



87. Nic. de Pigage  
Schloß Benrath. 1756—69

industrialization. This atomization was “the disease of a century”.<sup>81</sup> Already in 1918, he witnessed the disintegration of the self, and in an opening passage that combines a critical perspective on individualization and an ardent desire for solidarity, he writes:

We stand where the desire is no longer to see the figure [Gestalt] splintered into folds, but bound in the great curve. There, where the figure does not remain lonely in space, detached and divided from all others, but where the curve rolls away and carries her along into the great concatenation.<sup>82</sup>

Broaching the issue of community, Giedion’s youthful prose reads as a thinly veiled poetics of space. He called for nothing less than a paradigm shift away from the self towards infinity.<sup>83</sup> The dissolution of the individual, the spatial foundation of continuity, the persistent emphasis on openness and oneness, the spatial relations between inside and outside, are all in Giedion’s understanding of late-Baroque architecture, harbingers of what was soon to be subsumed under the term interpenetration. If in *Spätbarocker und romantischer Klassizismus* “unimagined spatial bonds arise” between interior and exterior space, in *Space, Time and Architecture* the Villa Savoye and the Bauhaus at Dessau differ from previous architecture due to the interpenetration of inner and outer space.<sup>84</sup> And so it appears that his conception of modern space was prompted by the iron and steel constructions of the nineteenth century, and perhaps by avant-garde photography, but it was also informed by the studies of late-Baroque architecture conducted during his time with Wölfflin. Key to this legacy is a particular understanding of form, the contour lines of which must be blurred, unstable, or invisible in order to engender interpenetration and the juxtaposition of volumes.

81

Stucky, *Hommage*, 11. My translation. For more on the social implications see Hildegard Hogen, *Die Modernisierung des Ich. Individualitätskonzepte bei Siegfried Kracauer, Robert Musil und Elias Canetti*, Würzburg 2000, 41.

82

Stucky, *Hommage*, 11: “Wir stehen dort, wo der Wunsch ist, die Gestalt nicht mehr in Falten zersplittert zu sehen, sondern gebunden in die große Kurve. Dort, wo die Gestalt nicht einsam im Raum bleibt, losgelöst und entzweit von allen andern, sondern die Kurve darüber wegröllt und sie mitreißt in die große Verkettung!” My translation.

83

Ibid.

84

Giedion, *Klassizismus*, 89.



## V. Painterly Aesthetics in Wölfflin's Baroque

Wölfflin first posited the destruction of the contour line in his 1888 habilitation theses *Renaissance und Barock*.<sup>85</sup> He argued in a violently oppositional mode that the severe Renaissance degenerated into a free and painterly Baroque, and for several years grappled with the problem of stylistic change.<sup>86</sup> To locate the underlying forces and their origins, he introduced a method of formal analysis outside the confines of positivist art history, no longer clinging to biographical facts, patronage, or empirical investigation.<sup>87</sup> Wölfflin's method was instead based on contrasting elements intrinsic to works of art. These "*a priori* categories", as Frederic Schwartz called them, "seemed to make the study of visual artefacts a science".<sup>88</sup> In *Renaissance und Barock*, the terms *painterly* and *linear* drew a distinction between clearly outlined figures and those painted with blurred brushstrokes coalescing on a canvas.<sup>89</sup> Similar observations could be made with works of architecture.<sup>90</sup> Composed of discrete elements in the classical tradition, Renaissance works of art produce linear effects whereas Baroque forms absorb the individual elements into an overwhelming mass. In Wölfflin's own words: "The contour is fundamentally annihilated, an indistinct and gradually fading boundary area takes the place of closed, steady lines, the masses cannot be confined by hard edges, but dissolve."<sup>91</sup> Compare this essential characteristic of Baroque form with the "dematerialization of solid demarcation" Giedion found in Le Corbusier's Pessac

85

Heinrich Wölfflin, *Renaissance und Barock. Eine Untersuchung über Wesen und Entstehung des Barockstils in Italien*, Munich 1888, 18. Published in English as Heinrich Wölfflin, *Renaissance and Baroque*, trans. by Kathrin Simon, Ithaca, NY 1964.

86

In the end, he gave no definitive explanation. Cf. Frederic J. Schwartz, *Blind Spots*, New Haven, CT 2005, 23.

87

See Wölfflin, *Renaissance und Barock*, 3. For a discussion on how Wölfflin's formalism related to positivist approaches see Daniel Adler, The Formalist's Compromise. Wölfflin and Psychology, in: Mitchell B. Frank and Daniel Adler (eds.), *German Art History and Scientific Thought. Beyond Formalism*, Farnham 2012, 73–96.

88

Schwartz, *Blind Spots*, 2.

89

August Schmarsow likewise affiliated the painterly with the idea of spatial unity, a path I cannot follow here. See especially the first two volumes of his *Beiträge zur Ästhetik der bildenden Künste*, Leipzig 1896–1899.

90

Wölfflin proceeded from painting to architecture, arriving at three-dimensional buildings only after laying out the book's major terms in relation to paintings.

91

Wölfflin, *Renaissance*, 31. Original translation altered. For the German see Wölfflin, *Renaissance und Barock*, 18.

houses, or the objects framed by the Pont Transbordeur, which “lose their delimited form”.<sup>92</sup>

Today perhaps one would be hard-pressed to make a case for Wölfflin’s exaggeration, but there is no doubt a tendency in Baroque architecture to blend the surfaces of different elements [Fig. 14], and it is these smooth transitions that he called painterly and observed that they give Baroque forms an “illusion of movement”.<sup>93</sup> Although Wölfflin guards against a simplified reading of the style as merely painterly from early on, it is this partial definition that comes under fire from his contemporaries.<sup>94</sup> Curjel, the Swiss art historian, mentions Wölfflin’s “unscrupulous” usage of the term, referring also to the Berlin art historian and pupil of Wölfflin, Adolf Erich Brinckmann, who repudiates the potential application of the term to architecture.<sup>95</sup> Even recent discussions tend to stress this description.<sup>96</sup> Giedion, well aware of this insufficiency, jotted into his notebook: “‘Baroque architecture [is] painterly and this is the style’s key feature!’ is being attacked by W. as unsatisfactory.”<sup>97</sup> Despite its analytic limitation, to a considerable extent I believe this aesthetics to be the site where Giedion’s training in art history and his long-standing observation of the modern movement met. The painterly was one of the predominant aesthetic concepts in German-speaking art history around the turn of the twentieth century; in fact, it turned into a much broader phenomenon, percolating through artistic circles as much as the popular world of museums.<sup>98</sup> But what are its implications for architecture?

92

Giedion, *Building in France*, 91.

93

Wölfflin, *Renaissance*, 30. For Zeynep Çelik Alexander this illusionary movement directly corresponds to that of “the eye in space”. The painterly Baroque with its irregular forms provokes the eye to move erratically, thus inducing a particular kind of experience: as opposed to the orderly, cognitive experience offered by Renaissance forms it is immediate and corporeal. Zeynep Çelik Alexander, *Kinaesthetic Knowing. Aesthetics, Epistemology, Modern Design*, Chicago, IL 2017, 67.

94

Wölfflin, *Renaissance und Barock*, 23.

95

Extract from a letter written by Curjel to Giedion, probably 1916, gta Archiv / ETH Zürich, Sigfried Giedion, 43-K-1916: “Mit Brinckm. [sic] komme ich ziemlich viel zusammen. Er ist ein ungemein anregender Mensch, mit dem es immer Streit gibt. Er leugnet z.B. durchaus die Möglichkeit des Begriffs ‘malerisch’ für die Architektur, wie ihn (übrigens sein Lehrer) Wölfflin in den vieldiskutierten Grundbegriffen skrupellos benützt. Wie stehen Sie dazu?”

96

Andrew Leach, John Macarthur, and Maarten Delbeke (eds.), *The Baroque in Architectural Culture, 1880–1980*, Farnham, Surrey 2015, 48.

97

The handwriting in German reads: “Im Barock [ist?] die Architektur malerisch und dies ist das eigentliche Charakteristikum des Stiles!” wird von W. angegriffen als nicht ausreichend.” gta Archiv / ETH Zürich, Sigfried Giedion, 43-T-14-10.

98

Daniel Adler shows how the origins of the painterly aesthetic in the revival of Baroque art around the turn of the twentieth century can be traced back to Rembrandt’s influence on artistic elites based in Munich in the second half of the nineteenth century. See Painterly Politics. Wölfflin, Formalism and German Academic Culture, 1885–1915, in: *Art History* 27/3, 2004, 431–56.

nicht mehr scharf von einander ab, sondern einer geht in den andern über. *Der rechte Winkel wird ganz vermieden*<sup>1)</sup>.

Ich stelle zur Vergleichung zwei bramantische Profile (Abb. 6,

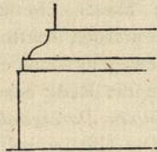


Abb. 6a.

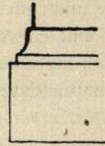


Abb. 6b.

Profile von der Cancelleria.

› Cancelleria, Sockel des Erdgeschosses, a, und Sockel der Pilaster des ersten Geschosses, b.) neben zwei spätere (Abb. 7, 8). Man

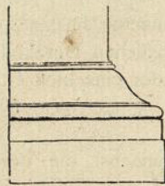


Abb. 7.

Profil vom Konservatorenpalast.

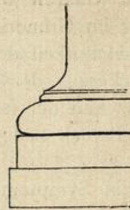


Abb. 8.

Profil von Porta di S. Spirito.

wird den exacten, scharf trennenden und das Kleinste noch durchführenden Geschmack der Renaissance nicht verkennen. Dagegen im beginnenden Barock das sichtliche Bestreben, Alles weich, flüssig zu machen.

Die Abneigung gegen das harte Absetzen im rechten Winkel ist so gross, dass man sich nicht scheut, eine tectonische Fläche unten in einer starken Rundung auslaufen zu lassen. Das erste Beispiel: der Sockel von Porta di S. Spirito, A. da Sangallo (Abb. 8); dann Sockel der hinteren Theile von S. Peter, Michel-

<sup>1)</sup> So verletzt die Schroffheit, mit der in Florenz die Sparrendächer über die Mauer vorspringen, das römische Gefühl auf's Empfindlichste.

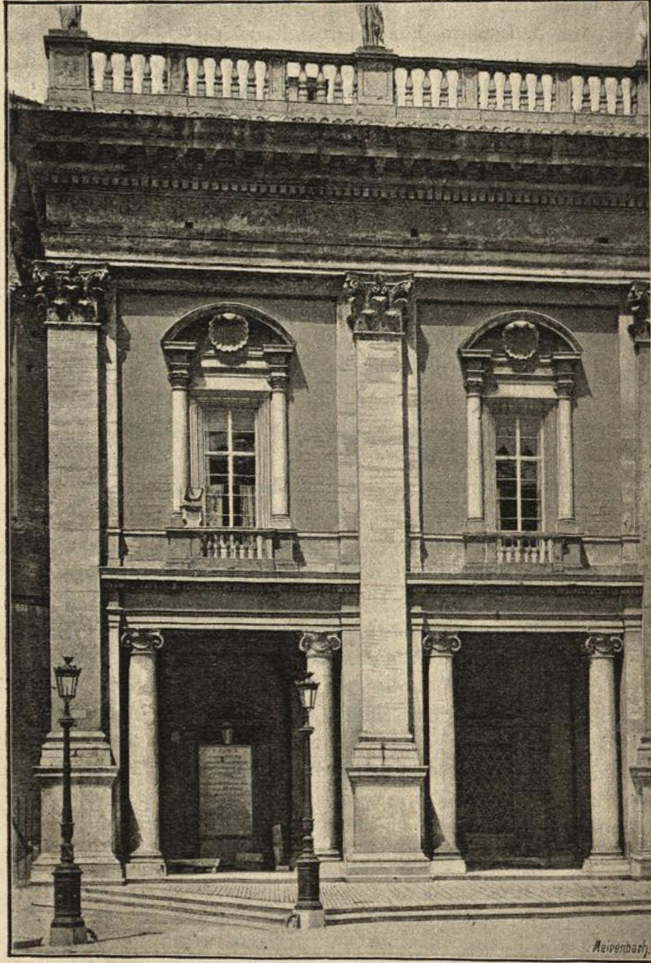


Abb. 3.  
Konservatorenpalast.

Wölfflin, Renaissance und Barock.

3

[Fig. 15]  
Heinrich Wölfflin, *Renaissance und Barock*, Munich 1888, 33, Universitätsbibliothek Heidelberg, C 6406-5.

If a painterly object is one “that yields an image”, Baroque architecture in the Roman tradition fulfills this condition with its lively interplay of light and shadow.<sup>99</sup> Visual coherency ensues, replacing the granular, heterogeneous richness essential to Renaissance works.<sup>100</sup> In addition to the blurring of outlines, values such as “movement” and “mass” (*Massenhaftigkeit*) – seemingly irreconcilable at first – add to the definition of Baroque form [Fig. 15].<sup>101</sup> With quasi-Dionysian force, the “unsatisfied”, “restless” Baroque enthralls with the “power of affect”, “excitement”, “ecstasy”, and “exhilaration”.<sup>102</sup> At the same time, Baroque form increasingly surrenders to gravity; it becomes “wide” and “heavy” and ultimately begins “to suffer under the weight of its load”.<sup>103</sup> What lies behind the evolution from the Renaissance to the Baroque is a fundamentally different understanding of matter: the “brittle, hard substances” of the Renaissance suddenly become “soft and juicy”.<sup>104</sup> These views date from 1888. To Wölfflin’s way of thinking the Baroque was dynamic and manifested neither cemented belief nor deadlocked patterns; instead, his ideas changed as much as his approaches did.<sup>105</sup>

Owing in part to his political leanings, in part to the nature of Baroque works, Wölfflin’s language often evokes a sense of community, but it is also impetuous, from time to time extreme. Most often it allows for the co-existence of oppositions, but bellicose confrontation can rapidly flare up. “As its final consequence,” he observes, “the painterly style must completely destroy plastic form.”<sup>106</sup> In 1913, Wölfflin published an article on the painterly principle, in which the term becomes more elastic due to its gradual divorce

99

Wölfflin, *Renaissance und Barock*, 15.

100

Ibid., 26.

101

Ibid.

102

Ibid., 24–25.

103

Ibid., 30.

104

Ibid., 32–34.

105

Still in 1888, one can sense the presence of his dissertation, the *Prolegomena zu einer Psychologie der Architektur*, and his interest in emphatic connections to corporeal entities outside the human body. Only if external entities have corporeal qualities can they be apprehended by human perception. For a study on Wölfflin’s early intellectual influences, his formalism in light of *Empfindung*, and the changing role theory played in his writings, see Mark Jarzombek, *De-Scribing the Language of Looking. Wölfflin and the History of Aesthetic Experientialism*, in: *Assemblage* 23, 1994, 28–69. See also Mallgrave and Ikononou, Introduction.

106

Wölfflin, *Renaissance and Baroque*, 34.

from the Baroque.<sup>107</sup> It can now be applied to any style's late period and be accomplished in increments instead of completely annihilating an outline. There is no need to "frazzle [*ausfransen*]" the form in order to wipe out its silhouette" – all it takes is a muted expression, or "a more complex formation" making the form elusive to the human eye.<sup>108</sup> The painterly made plain the unstable appearance of certain forms, and conformed to human vision: to the constant jittering of our eyes, which are themselves never stable.

The fewer outlines there are, the more the mass of a building comes to the fore. In architecture what most clearly defines the painterly principle is abundance brought forth by an increase of lines.<sup>109</sup> Thus Wölfflin contends "the more there is, the harder it is for forms to assert their impression as individual elements, and the moment comes, when the eye capitulates and only sees the overall torrent [*Gesamtschwall*]." <sup>110</sup> He did not consider modernist architecture. The idea of excess, the experience of perceptual flooding, is a far cry from modern structures such as Le Corbusier's.<sup>111</sup> That a visitor to the Villa Savoye could be overpowered by a profusion of lines or visual opulence simply strains credulity. And indeed, as Wölfflin notes, "[u]npainterly are the straight line and the flat surface".<sup>112</sup>

How then is it possible for the painterly to resurface in modern architectural discourse? If it came to serve as an aesthetic device for Giedion's criticism, some of its qualities must have been transcribed into a different register, even if for him painting was the incentive for architecture.<sup>113</sup> Before long, abundance of form and mass fell secondary to a new sense of space which Giedion saw as an entanglement of inside and outside. It was no longer architecture's individual elements that were seen as either smooth or linear, supple or crisp, but different realms that began to conflate by virtue of modern construction: juxtaposed volumes and the blurring of inside and out.

Before this transformation became possible, however, Wölfflin's attitude towards the Baroque first had to change: it evolved

<sup>107</sup>

Heinrich Wölfflin, Ueber den Begriff des Malerischen, in: *Logos. Internationale Zeitschrift für Philosophie der Kultur* 4/1, 1913, 1–8.

<sup>108</sup>

Ibid., 2. My translation.

<sup>109</sup>

Ibid., 6.

<sup>110</sup>

Ibid., 6. My translation.

<sup>111</sup>

Stucky, *Hommage*, 46–47.

<sup>112</sup>

Wölfflin, *Renaissance and Baroque*, 32.

<sup>113</sup>

In *Space, Time and Architecture*, for instance, we learn that one of Picasso's collages anticipated the spatial qualities of the Bauhaus Dessau building.

from openly dismissive to more reflective, from an art of decline in *Renaissance und Barock* to a harbinger of the modern state in his groundbreaking *Kunstgeschichtliche Grundbegriffe (Principles of Art History)* (1915).<sup>114</sup> Evonne Levy has pointed out that negative sentiments increasingly subsided, making way for positive values after the turn of the century.<sup>115</sup> When Giedion began to attend Wölfflin's lectures in 1915, the same year the *Principles* were published, the Baroque had reached a role-model status for modernity: with virtues of inclusiveness and liveliness, infinity and unity, it had paved the way for Giedion's historiography of modern architecture.

## VI. The Breathing Baroque Form

First presented as a lecture, Wölfflin wrote his *Principles* in the wake of World War One with the aim of giving universal valence to his formal analysis, an approach described today as “antinationalist”.<sup>116</sup> An updated framework casts the painterly alongside nine other categories ranked in five groups of polar opposites. Relying on oppositions, these terms – linear and painterly, plane and recession, closed form and open form, multiplicity and unity, clearness and unclearness – seem broad enough to offer an armature for virtually every work of art. Illustrated with but twelve photographs of architecture, the *Principles* opens with a chapter on the linear and the painterly discussed across four different media: drawing, painting, and sculpture, followed by architecture. Here, Wölfflin defines the Baroque as at once conclusive and baffling:

In the tectonic arts as with the other arts, there should no longer be anything that solidifies into tangible lines and planes; as with the other arts, the impression of permanence should be superseded by the impression of transformation; as with the other arts, form should *breathe* [emphasis added].

<sup>114</sup>

Heinrich Wölfflin, *Kunstgeschichtliche Grundbegriffe. Das Problem der Stilentwicklung in der neueren Kunst*, Munich 1915. Cited throughout from the new English edition, Heinrich Wölfflin, *Principles of Art History. The Problem of the Development of Style in Early Modern Art*, ed. by Evonne Levy and Tristan Weddigen, trans. by Jonathan Blower, Santa Monica, CA 2015. For a recent discussion on Wölfflin's formulas, see the chapter “1910–1920” in Christopher S. Wood, *A History of Art History*, Princeton, NJ 2019.

<sup>115</sup>

Evonne Levy, *Baroque and the Political Language of Formalism (1845–1945)*. Burckhardt, Wölfflin, Gurlitt, Brinckmann, Sedlmayr, Basel 2015, 132. By the time *Grundbegriffe* was published, this negative reading gave way for a more positive reading of the Baroque. See Wölfflin, *Principles*, 12. Daniel Adler is in accord with Levy. See Adler, *Painterly Politics*, 438.

<sup>116</sup>

Levy, *Baroque*, 99. In a chapter on Wölfflin, Levy shows how the art historian's language reveals his changing social and political thoughts. First gesturing towards the state in Bismarck's Germany, due to its massiveness, the Baroque gradually took on different values, such as collectivism, but also figured as the root of modernity.

That, if we ignore the various modes of expression, is the basic idea of the baroque.<sup>117</sup>

In an effort to distinguish a style that arose as a scholarly field only in the late 1880s, Wölfflin finally portrays the Baroque by its ability to live, to transform, and to breathe, regardless of different appearances.<sup>118</sup> After years of studies, he attempts to circumstantiate its transformative qualities on the basis of human perception: if forms in architecture remain firm and steady, in certain cases the immediate formal impression can be overridden by optical effects evoking a sense of movement. Then, Wölfflin expounds, “corporeal reality [...] is replaced by optical appearance”.<sup>119</sup> What lends a breathing quality to tectonic forms is precisely the ever-changing nature of their appearance, an optical instability provoked by blurred boundaries [Fig. 16]. Yet inasmuch as buildings rarely ever move, Baroque forms for Wölfflin do not actually breathe. Breathing as a universal metaphor captures the nature of Baroque architecture in ways unaffected by the various local idioms found in different countries and across time.<sup>120</sup>

## VII. Paul Frankl’s Interpenetration

Hilde Heynen has noted that Moholy-Nagy, too, has used the term *Durchdringung* in *Von Material bis Architektur* (1929), published one year after *Bauen in Frankreich*.<sup>121</sup> Aside from the fact that the idea had already surfaced in Giedion’s 1926 article on Le Corbusier, and apart from the strong affinity with some of the essential characteristics of Baroque form, I want to suggest another possible point of intersection. Borrowed from spatial geometry, it could have been Paul Frankl who supplied the concept, even if it remained on the

<sup>117</sup>

Wölfflin, *Principles*, 147.

<sup>118</sup>

Wölfflin first discussed the relationship between architecture and breathing in his dissertation, *Prolegomena zu einer Psychologie der Architektur*, Munich 1886. Harry Francis Mallgrave observes how Wölfflin’s understanding of psychology was first informed by physiognomy, and later by culture and collectivism. Harry Francis Mallgrave, *Gottfried Semper. Architect of the Nineteenth Century. A Personal and Intellectual Biography*, New Haven, CT 1996, 367–368.

<sup>119</sup>

Wölfflin, *Principles*, 147.

<sup>120</sup>

Cf. *ibid.*, 149.

<sup>121</sup>

Heynen, *Architecture*, 33. This almost parallel appearance has also been noted by Andreas Haus, in ‘Durchspültsein von Luft’ Sigfried Giedions Architektur fotografie jenseits von ‘Neuer Sachlichkeit’ und ‘Neuem Sehen’, in: *Sigfried Giedion und die Fotografie*, Zurich 2010, 80.

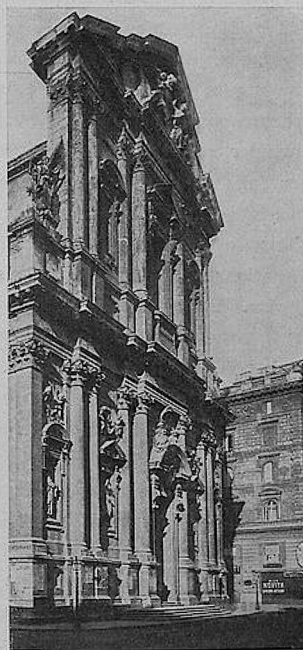


## I. DAS LINEARE UND DAS MALERISCHE

gleich einzelnen Wellen derart in das Gesamtgewoge übergeführt, daß sie darin vollständig untergeht. Ein Prinzip, das dem der strengen Architektur direkt zuwiderläuft. Man kann absehen von den besonderen dynamischen Mitteln, die hier zugunsten der starken Bewegung aufgeboten sind — das Vortreten der Mitte, die Häufung der Kraftlinien, die Brechung von Gesimsen und Giebeln —, als unterscheidendes Merkmal gegenüber aller Renaissance bleibt immer übrig, wie die Formen ineinander spielen, so daß unabhängig vom einzelnen Wandfeld, unabhängig von den besonderen füllenden, rahmenden, gliedernden Formen ein Bewegungsschauspiel entsteht, das rein optischer Art ist. Man stelle sich vor, wie viel von dem wesentlichen Eindruck dieser Fassade in einer Zeichnung mit bloßen Pinselstüpfen aufgefangen werden könnte und wie umgekehrt alle klassische Architektur die bestmögliche Wiedergabe von Proportion und Linie verlangt.

Die Verkürzung tut ein übriges. Der malerische Bewegungseffekt wird um so leichteres Spiel haben, wenn die Flächenproportionen sich verschieben und der Körper als Erscheinungsform von seiner wirklichen Form sich scheidet. Barockfassaden gegenüber fühlt man sich immer aufgefordert, den Standpunkt seitlich zu nehmen. Indessen ist hier nochmals daran zu erinnern, daß jede Epoche ihr Maß in sich selbst trägt und daß nicht alle Ansichten zu allen Zeiten erlaubt sind. Wir sind immer gern geneigt, die Dinge noch malerischer zu nehmen als sie gemeint sind, ja das ausgesprochen Zeichnerische, wenn es irgend geht, ins Malerische hinüberzudrängen. Man kann eine Fassade wie den Otto-Heinrichsbau des Heidelberger Schlosses auf das Flimmernde hin sehen, aber es ist zweifellos, daß für seine Erbauer diese Möglichkeit keine Bedeutung gehabt hat.

Mit dem Begriff der Verkürzung haben wir das Problem der perspektivischen Ansicht angeschnitten. Es spielt in der malerischen Architektur — wie gesagt — eine



Rom, S. Andrea della Valle

77

[Fig. 16]

Heinrich Wölfflin, *Kunstgeschichtliche Grundbegriffe*, Munich 1915, 77, Universitätsbibliothek Heidelberg, C 4865-8A.

margins of his own studies.<sup>122</sup> As a student Giedion took a seminar with Frankl, a trained architect in Wölfflin's orbit; he also provided important ideas for the analysis of Baroque architecture.<sup>123</sup>

In 1914 Frankl published his habilitation treatise *Die Entwicklungsphasen der neueren Baukunst*, a critique of and direct response to *Renaissance und Barock*.<sup>124</sup> Indebted to Wölfflin's formalism, Frankl set out to overcome the shortcomings of previous studies by examining architectural forms spanning 1420 to 1900.<sup>125</sup> He adopted the popular oppositional structure of the Renaissance and the Baroque, but then applied lenses more attuned to architecture: space, corporality, light, and function.<sup>126</sup> Instead of following in the footsteps of Wölfflin (and August Schmarsow), whose one-sided conclusions were too focused on a comparison with painting, and whose global system for all the fine arts proved too rigid, Frankl claims to have defined his terms from within architecture. In his preface he made a case for what he called *neuere Baukunst*, or "modern art of building" (with reference to Jacob Burckhardt), effectively overturning the vague stylistic periods of Renaissance, Baroque, Rococo, and Neoclassicism.<sup>127</sup> In so doing, Frankl could focus directly on morphological consistencies, discrepancies, and the making of architectural forms, but he also established a new classification of four historic phases marked by specific spatial strategies. Essentially, however, there were only two: spatial addition and division. Regardless of function, buildings of the first two phases were only driven by these polar opposites.

As an advancement of the second phase characterized by spatial subdivision, Frankl introduced *Durchdringung* as a new principle in his first chapter on "spatial form" (*Raumform*).

The principle of creating a space by the interpenetration of two spatial forms is adopted from the second phase. An example is St. Nikolaus in Murnau, 1717, where a circle and

<sup>122</sup>

It is unclear where Frankl picked it up, but as an architect he certainly had to learn descriptive geometry. For a turn-of-the-twentieth-century discussion on *Durchdringung* see Johann Julius Baumann, *Die Lehren von Raum, Zeit und Mathematik in der neuen Philosophie*, 2 vols., vol. 2, Berlin 1896, 526f.

<sup>123</sup>

Stucky, Hommage, 92.

<sup>124</sup>

Paul Frankl, *Die Entwicklungsphasen der neueren Baukunst*, Leipzig 1914. Translated as Paul Frankl, *Principles of Architectural History. The Four Phases of Architectural Style, 1420–1900*, trans. by James F. O'Gorman, Cambridge, MA 1968.

<sup>125</sup>

In the German preface to his *Principles of Architectural History*, he criticizes Wölfflin's approach, but also takes it as a springboard for his own investigations. Paul Frankl, *Entwicklungsphasen*, preface V–VI.

<sup>126</sup>

In the preface, he also credits Jacob Burckhardt and Alois Riegl, as well as Heinrich von Geymüller, but to trace their impact exceeds the scope of this study.

<sup>127</sup>

Frankl, *Entwicklungsphasen*, 22.

the circumscribing square occur simultaneously, without the triangular spaces in the corners appearing as pendentives. Another example is Günzburg, 1737, where an ellipse within a rectangle is suggested at ground level but is only clearly developed in the space overhead.<sup>128</sup>

If these instances are purely geometric, Frankl's own invocation of interpenetration is at times more redolent of the painterly's overflowing tendencies. But note the *simultaneous* occurrence of circle and square, the shift from spatial to temporal thinking that later became so key to Giedion's space-time concept.

Discussing compositional strategies in the case of Italian palazzo facades, Frankl investigates the correlation between horizontal and vertical elements. While in Palladian villas the shaft of a column sits directly on the balustrade without further mediation, the Palazzo Uguccioni in Florence (1550) saw the implementation of columns with reverse effects [Fig. 17]. Here, "the base extends into the field of the windows", a scenario in which "the thrusting [*Durchstoßen*] of horizontal layers by vertical forces" is "actually a special case for interpenetration", and, in even more general terms, "of the fusion of originally isolated entities into a unit".<sup>129</sup> Clearly akin to Wölfflin's painterly principle, the tendency of blending together different elements is here transformed into another linguistic register: interpenetration.

## VIII. Conclusion

At first, Giedion hesitated over sending a copy of *Bauen in Frankreich* to Wölfflin, and when he did, his former teacher asked in a letter: "Don't you think that secret lines lead from [*Renaissance und Barock*] to [*Bauen in Frankreich*]?"<sup>130</sup> Whatever else they are, the vestiges of *Renaissance und Barock* come through not as a dialectics of style but as an aesthetics of blurred boundaries. This is why the Pont Transbordeur draws in all its surroundings, and cubes of air flow through the Pessac estate. There is, then, a confluence here of Giedion's space conception, which he essentially derived from his studies of Baroque architecture, and the structural nature of reinforced concrete as epitomized by Le Corbusier's diagram of the Maison Dom-Ino. If the former was spatial and sought strong relationships between inside and outside, the latter gave rise to the "eternally-open house",<sup>131</sup> which

<sup>128</sup>

Frankl, *Principles*, 69. Cf. Frankl, *Entwicklungsphasen*, 81.

<sup>129</sup>

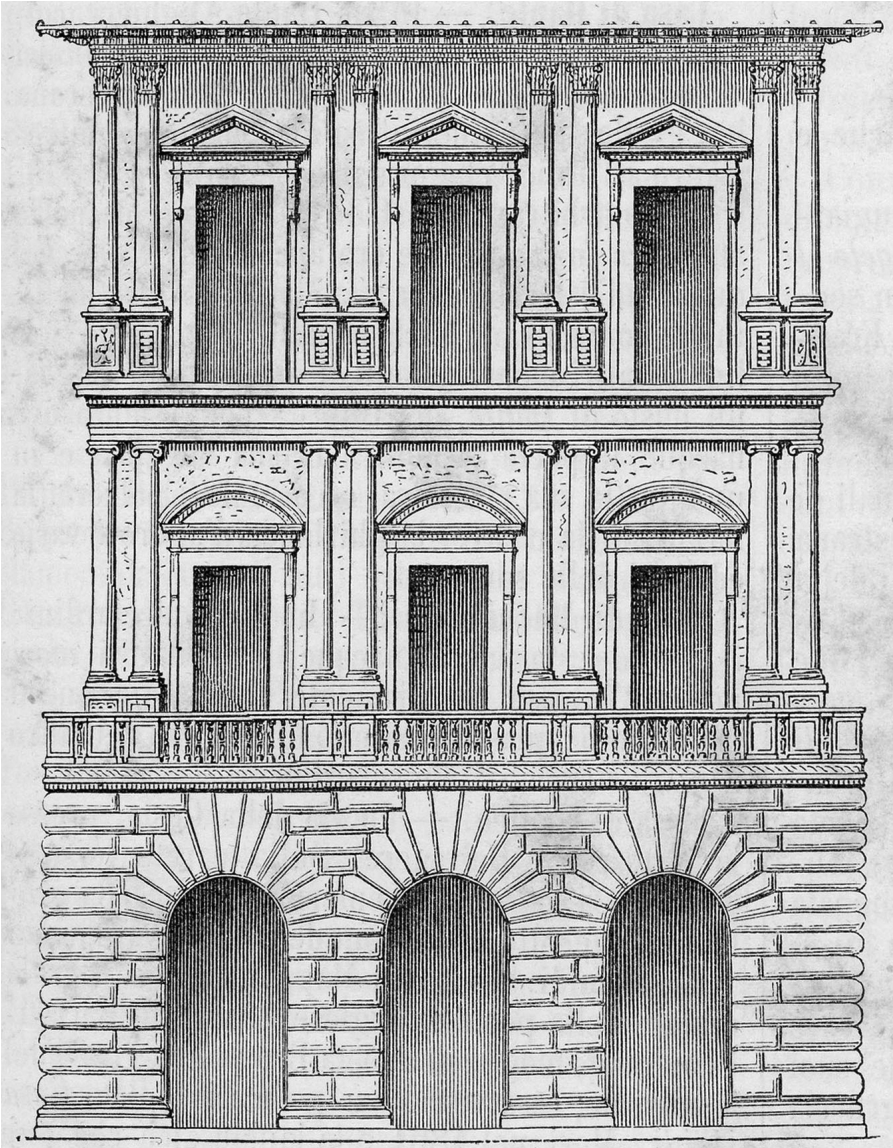
Frankl, *Principles*, 121. In fact, the English translation reads "the interruption of horizontal layers". Cf. Frankl, *Entwicklungsphasen*, 111.

<sup>130</sup>

Georgiadis, *Introduction*, 77.

<sup>131</sup>

Giedion, *Building in France*, 168.



[Fig. 17]  
Firenze Palazzo Uguccioni, in: Strafforello Gustavo, La patria, geografia dell'Italia. Provincia di Firenze, Torino: UTET 1894, 187, Fig. 69, woodcut. Photo: [Wikimedia Commons](#) (08.12.22).

Giedion connected to the spatial qualities of the transporter bridge in Marseille. Inducing relation and interpenetration, this bridge ushered in a new era in which modern architecture's boundaries began to blur.

In this article we have looked for the roots of this phenomenon in Wölfflin's system, in which the opposition between the Renaissance and the Baroque provided an armature for Giedion's view on modern architecture. Few direct clues in Giedion's writings reveal the importance of Baroque architecture – Baroque chapels in “Das Neue Haus”, Borromini in *Space, Time and Architecture*, and of course his dissertation – and the significance of nineteenth-century iron constructions as precursors for modern architecture prevails in his narrative. Yet, the textual analysis of this article brings out the intellectual connection to Wölfflin and his ideas about the Baroque: the painterly liberates Baroque forms from their isolation just as interpenetration blurs the boundaries of modern structures. No longer bound and isolated, these structures become deeply interrelated, as in the case of the Bauhaus Dessau, or deeply entangled with their surroundings, as with the Pont Transbordeur or the Villa Savoye. These are perceived effects and ideas, interpretations more than objective facts, and they align Giedion's historiography with an important strand of art history in the German tradition, namely Wölfflin's influential concept of Baroque form that informed one of the most important conceptions of space in modern architecture.

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