Re-covering Mies van der Rohe's Weissenhof: The Ultimate Surface

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Conveying an image of anonymous modernity to the public, Ludwig Mies van der Rohe focused on the exterior surface of his own apartment block for the 1927 *Weissenhof* housing exhibition in Stuttgart. Privileging external imagery over internal innovation, Mies' main facade advertised standardization and rationalization versus flexibility and creativity within the apartment units. Rather than display a new type of housing, Mies relied on a traditional Berlin apartment template, recycling it beneath a new thin skin. In relation to his previous glass skyscraper projects, Mies exhibited what Theo van Doesburg termed "the ultimate surface."

Ludwig Mies van der Rohe, overseeing the 1927 *Weissenhof* housing exhibition in Stuttgart, focused on his own apartment block as a didactic constructed manifesto over its function as an innovative solution to the housing problem. Less significant were the programmatic, denotative functions of Mies' building than were its connotative communicative strategies for efficiently professing a modern architecture. By carefully orchestrating a series of architectural, promotional, media, and apodictical events, Mies critically positioned himself within both the official and avant-garde conditions of *Weissenhof* and modernity itself.

Mies served as first vice-president of the *Deutscher Werkbund*, originator of the *Weissenhof* exhibition. He also directed the *Weissenhof* housing estate and the indoor exhibition hall, selected the participating architects for the exhibition of housing, regulated the appearance of the buildings, served as site designer of the overall housing plan, was architect of the largest housing block on the site, designed the Plate-Glass Hall with Lilly Reich, and authored several statements on the overall exhibition and his own housing block. Unable not to adopt a critical position as the simultaneous holder of these multiple roles (a fundamental job description of an architect), Mies interwove them into a cohesive modern project centered on his own apartment block. (Figure 1.)

As simultaneous author, narrator, protagonist, and supporting character, Mies' work at *Weissenhof* engaged several seemingly disparate agendas. As director, curator, and site architect, he methodically controlled the appearance of the housing units while allowing for limited freedom of expression, and he balanced regional German housing issues with an initial proposal for a genuine international architecture. Within the design for his own housing block can be found a series of issues for a projected modernism: "rationalization and typification" with flexibility and creativity, exterior expression of the new with a traditional interior typology, the individual house with *Zeilenbau* housing, the temporary demonstration of how one should live with a permanent housing commission, a specific architectural solution and a speculative generic building, and a steel cage structure with what the contemporary Dutch artist, architect, writer, and critic Theo van Doesburg, in his critique of the building, termed "the ultimate surface."[1]

In Mies' policy statement for the *Weissenhof* exhibition, published in its catalogue, he conveyed the fundamental disparity between architectural rationalization and freedom:

> I thought it necessary, in spite of such current slogans as "rationalization" and "typification," to respond to the challenge posed in Stuttgart by raising tasks out of an atmosphere of the unilateral and the doctrinaire. I have attempted to illuminate the problem comprehensively and have, for that reason, invited the respective representatives of the modern movement to take up positions in regard to the housing problem. In order to permit each one as much freedom as possible to execute his ideas, I have set neither guidelines nor given programmatic orientation.[2]

Although he wrote of allowing freedom of expression, Mies regulated the exterior appearance of the *Weissenhof* buildings and strictly limited the participants, similar to Henry-Russell Hitchcock's and Philip Johnson's selection of representatives of their modern movement for *The International Style* exhibition and book, which would take place five years later.[3] Mies' gathering of like-minded architects and his formal regulations for uniform appearance provided both inspiration and a series of collectibles for Hitchcock's and Johnson's International Style campaign. In 1947, Johnson commented on Mies' program for the *Weissenhof Siedlung*:

> Mies' selection of these men [Gropius, Le Corbusier, Oud] . . . shows his unusual ability as a critic. The *Weissenhof Siedlung* proved to be the most important group of buildings in the history of modern architecture. They demonstrated conclusively that the various architectural elements of the early post-war years had merged into a single stream. A new international order had been born.[4]

Johnson continues in his text to merge Mies' overseeing program at *Weissenhof* with his own International Style characteristics. Johnson's appropriation of Mies' policy (and his description of Mies as a critic) problematizes and illuminates Mies' agenda and projects it temporally forward

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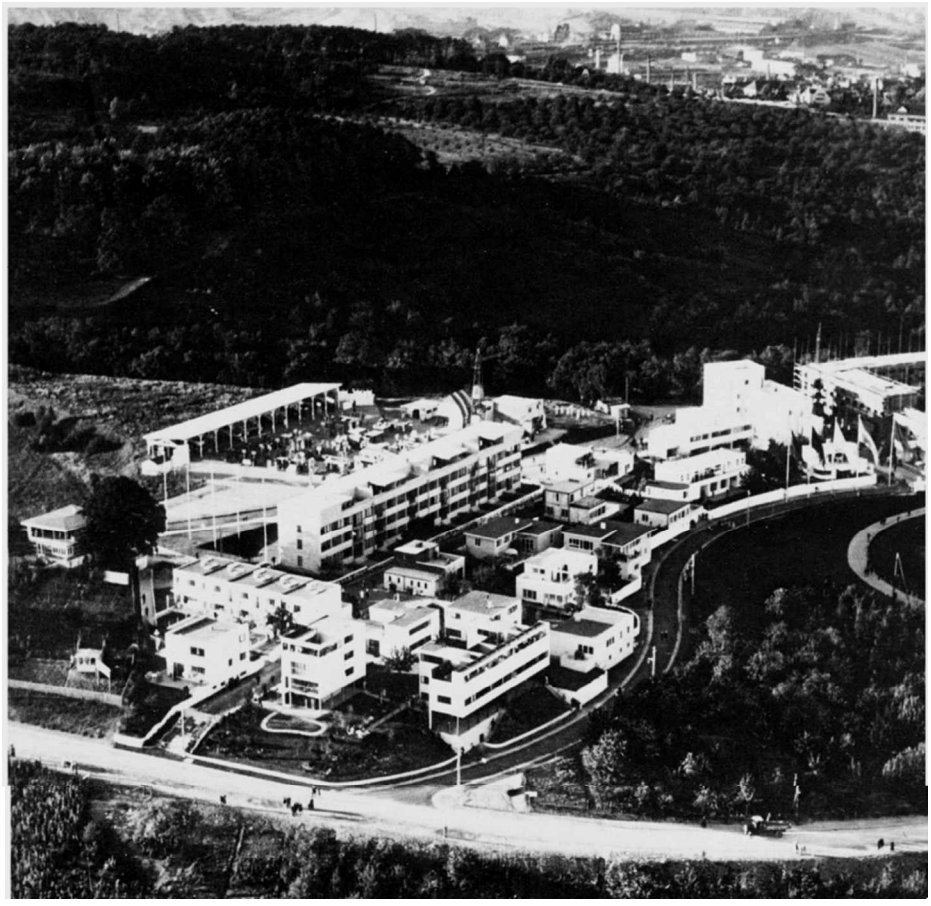
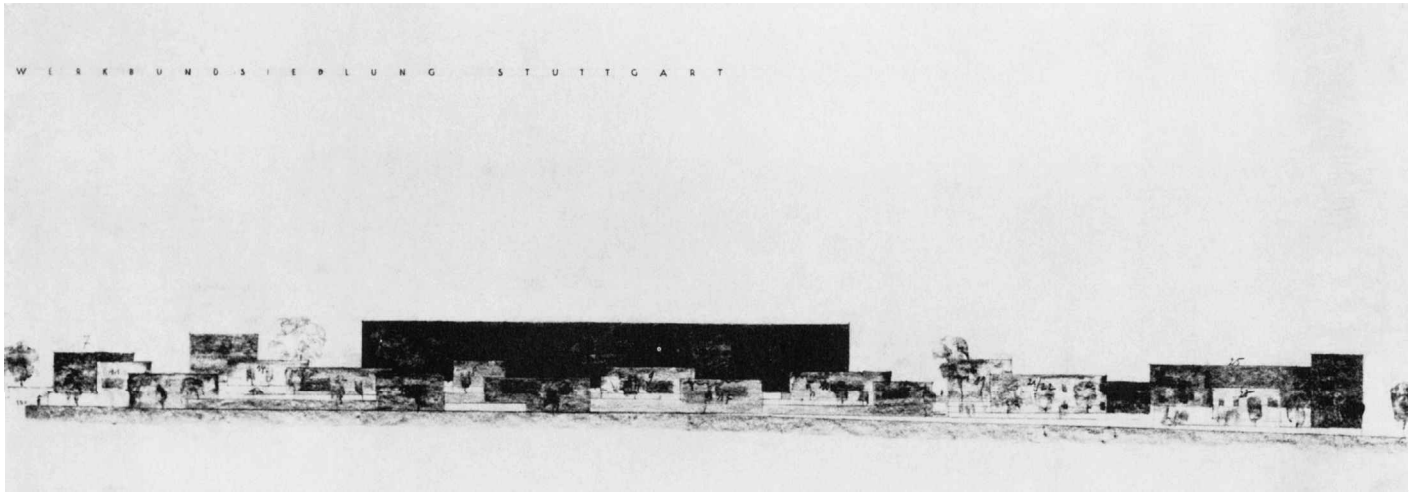


1. Aerial view of *Weissenhof Siedlung* showing the east facade of Mies' building. (Arthur Drexler, ed., *The Mies van der Rohe Archive, The Museum of Modern Art*, vol. 1 (New York: Garland Architectural Archives, 1986))

and spatially across the Atlantic to New York. Mies' focus on the exterior image of the *Weissenhof* buildings, especially his own, provided the visual paradigm for the International Style as we know it. Overall cultural aspects of international modernism played a greater role at *Weissenhof* than did inventive housing solutions.

In assembling the *Weissenhof* participants, Mies argued for international architects such as J.J.P. Oud and Le Corbusier over the objections of the local Stuttgart *Werkbund* committee that, beyond wanting only German architects to build for the exhibition, lobbied for as many Stuttgart architects as possible. Mies exercised final approval of site positioning, general layout, flat roofs, and exterior color, restricted to "an off-white."[5] Although Mies' block was initially left unfinished and after the exhibition was painted in a light rose color, Manfredo Tafuri and Francesco Dal Co have characterized *Weissenhof* as "an ashen and glacial waxworks museum."[6] The thin wax carapace, we will see, becomes the essential component for understanding Mies' *Weissenhof*. Mies clearly attempted to strictly regulate the exterior presentation of all the buildings, emphasizing exhibited imagery over innovative spatial housing solutions. He would develop his own housing block, with emphasis on the word *block* as spaceless form exhibiting exterior surface, in a similar manner.

Mies' initial site scheme from 1925, with its sinuous curves conforming to the hill's topography, demonstrated his desire for an urban-oriented unity among the participants, rather than as varied expressions of individuality. Because of its location overlooking the city, this synthetic design appeared to be carved out of the hillside rather than assembled as a collection of similar blocks. Successive schemes resulted in visually connected yet physically separated buildings, retaining their shared appearance alongside their articulation as individual entities. Overseeing the smaller housing units just below, Mies consistently placed his own housing block at the high point of the site, dominating the entire exhibition. His building grew larger in successive site plans, hierarchically presiding over the assembly with its massive 235-foot-long east facade, depicted in one preliminary elevation as an ominous black monolith. (Figure 2.) In his review of *Weissenhof* for the journal *i 10,* Kurt Schwitters wrote, "Mies' building is big, the biggest in the whole development."[7] Jürgen Joedicke and Christian Plath have noted, "Mies van der Rohe's stretched out housing block on the street 'Am Weissenhof' made up the 'optical halt' toward the northwest and was conceived as 'city crown' as he called it."[8] Karin Kirsch has described Mies' building as, "a structure of several sto-



2. Ludwig Mies van der Rohe, *Weissenhof Siedlung*, preliminary east elevation. (Arthur Drexler, ed., *The Mies van der Rohe Archive, The Museum of Modern Art,* vol. 1 (New York: Garland Architectural Archives, 1986))

ries, at the highest point of the development, which seems to be holding the smaller buildings together."[9]

In the design of his own housing block, as in his supervision of the other fifteen participating architects, Mies separated the conditions for typification and rationalization from those for flexibility and creativity. Describing the ideas behind his own apartment house, Mies stated, "Economic reasons today necessitate rationalization and typification in the construction of apartment buildings. The increasing differentiation of our housing needs, however, demands *on the other side* an ever greater freedom of usage."[10] Mies projected both sides of this argument by polarizing, quite literally, the outside and the inside, his *other side*, of the apartment block. The issue of typification was broadcast on the exterior, where the public would see the east facade of Mies' block as a backdrop to the rest of the buildings. Mies standardized the exterior elements of his building in accordance with his dictum for all the exhibition participants to use flat roofs, no ornamentation, and no color. More specifically, he standardized his building into two-unit blocks, and utilized one typical wood-frame window and one typical wood-frame door throughout. The component parts, including railings and downspouts, and the overall external appearance, were standardized in accordance with the German idea of *Typisierung* (the formation of a repeatable type). Peter Behrens' designs for products such as fans, irons, and lighting fixtures for the *AEG* were exhibited and produced in a similar manner—typified for the mass public primarily through the exterior appearance of the shell or covering of the object. Or, as Mies stated in a 1926 lecture, "The exterior shell of things, the crystallization of life processes remains standing . . . and exerts its influence long after its kernel has been hollowed out."[11] Although it was to be assumed that the internal product functioned efficiently, the exterior surface was the primary attraction to the consumer public. In the forum of a public exhibition, the visual exterior presentation of the architecture (the integument concealing the inner living spaces) provided the monumental overall image. Mies capitalized on this promotional situation in his design at *Weissenhof*.

On the inside of the building, accessible to the public during the exhibition, Mies countered the standardized architectural elements with flexible apartment designs created by several architects and interior designers of his choosing, including Lilly Reich and Adolf Meyer. (See Figure 3a.) With the previously mentioned standardized windows and doors, Mies fixed stairs, kitchen and bathroom plumbing lines, and linoleum floors as standardized components. After exploring many of his own apartment design schemes, Mies had constructed only three of the twenty-four

apartments and furnished only two of the three, leaving the remaining twenty-one for other designers.[12] Mies left one apartment unfurnished and without partitions to better demonstrate the idea of flexibility with "movable walls." In one of Mies' constructed apartments, he utilized one-meter-wide plywood partitions supported by screws and nickel shoes connecting to the ceiling and the floor for these movable walls.[13] His demonstration of flexibility through changeable partitions did not provide an instantaneous transformation of the rooms, as in the sliding and folding panels in Gerrit Rietveld's Schröder House of 1923, in which partitions could be moved at will, or as in Mart Stam's sliding entry partition in his *Weissenhof* apartment block. Mies intended the arrangement of partitions to be "flexible" in terms of the potential to rearrange partitions to comply with different living situations. As (perhaps exaggeratedly) described by Sigfried Giedion, "The inner walls can be disposed according to the liking of the tenants, in whatever manner they choose."[14]

The asymmetrical placement of the party walls in relation to the stairs allowed for a great degree of flexibility in planning the units as well. Mies' preliminary designs for the housing units placed the party walls symmetrically around the stairs, limiting the variations to the norm he provided. Mies' dialogue between typification and flexibility was specifically fragmented by allowing other architects to partition and furnish the apartments. As a reinforcing undercurrent to this oppositional structure, a chart of information about each building at *Weissenhof* noted the projected ideal occupants for Mies' apartments to be families headed by a railroad employee (*Eisenbahnassistent*) or a salesman (*Kaufmann*), suggesting issues of typification, or by an academic (*Akademiker*), suggesting flexibility.[15] By labeling the prospective occupants in this way, a key debate of the *Weissenhof* exhibition and modernism itself is subtly revealed.

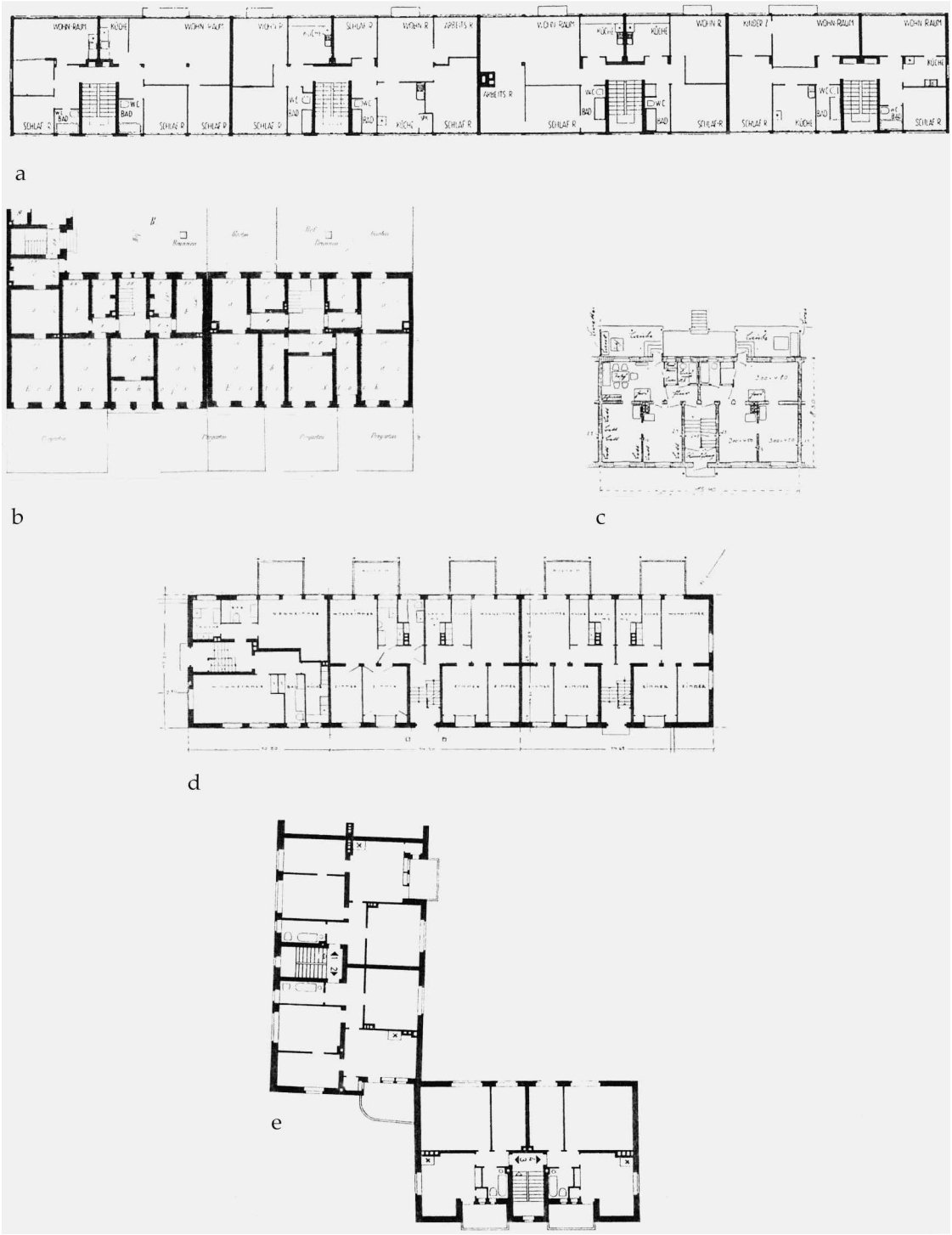
In contrast to the innovative spatial configurations of most of the other *Weissenhof* housing blocks, such as those by J.J.P. Oud, Mart Stam, Le Corbusier, and Hans Scharoun, Mies established his apartment unit shell on a prototypical, German, housing plan template dating back at least seventy-five years. (Figure 3.) The flexibility and creativity that Mies demonstrated in his interior apartments was actually grounded in a German paradigm. Mies provided a shell based on two living units with established plumbing and heating lines oriented asymmetrically around a central stair. This standard German housing plan, termed *Zweispännertyp* (two-span type), was typically arranged symmetrically around a central stair, was two rooms deep, and repeated as a module in the long direction. These standard plans were often built by housing corporations with their exterior elevations designed by architects.[16]

A published (and constructed) housing project for Berlin from 1849 suggests a bearing wall paradigm for Mies' layout in his published plans.[17] (Figure 3b.) Its organization and basic dimensions (10.7 by 15.8 meters) of a typical "block" form a guide for Mies' units at *Weissenhof.* Mies' two typical housing shells are narrower and longer (9.0 by 16.2 meters and 9.0 by 18.6 meters) than the 1849 example, and, because each has its stair placed within it asymmetrically, four different unit sizes are possible. Because of their steel construction, the walls of Mies' units are thinner, shedding the masonry weight of their predecessor. The walls of the 1849 plan are fixed and aligned along a central axis perpendicular to the end walls. While retaining their overall organization and typology, Mies opened up and reconfigured standard plans such as this one.

Heinrich Tessenow, who declined Mies' invitation to build an apartment house at *Weissenhof*, designed and published a Berlin housing unit in 1913, which also resembles Mies' *Weissenhof Siedlung.* (Figure 3c.) This plan (8.5 by 15.4 meters) symmetrically displaces two sleeping or living rooms, a kitchen/eating room, a bathroom, and a hall around the central stair. Another housing project by Tessenow, designed in 1928 for a site in Berlin, also shares the same *Zweispännertyp* configuration as Mies' *Weissenhof* units. (Figure 3d.) Although they are similar in plan, the exterior appearance of Tessenow's building has no resemblance to Mies', as evident in its sloped roofs, small recessed windows, exterior ornament, and color in the traditional *Heimatstil* manner. Several more projects by Tessenow, Bruno Taut, and other German architects, used at least until 1957, reinforce this basic German housing type, combining similar plans with a variety of facades.

Mies employed the historical plan-type as a horizontal template for his building while developing his construction system and facade surface as a modern innovation. By fundamentally allowing the traditional *Zweispännertyp* to define his housing plans, Mies articulated the separation of plan and elevation by wrapping an innovative skin around the apartment units. He later would recast and reconfigure these unit plans in combination with a newly innovative, transparent, steel-exposing facade at his 860 Lake Shore Drive apartments in Chicago (1948–1951). Mies' design for 860 Lake Shore Drive spins together the linear *Weissenhof* scheme like a snake kissing its tail.

As a prototype for his *Weissenhof Siedlung*, Mies also referenced his own previous apartment block in Berlin, the *Afrikanischestrasse* housing from 1925–1926. (Figure 3e.) Mies transformed this urban *Zweispännertyp*



3. Comparative German housing plans (reproduced at the same scale).
a) Ludwig Mies van der Rohe, *Weissenhof* apartment building, second floor, 1926–1927. (Arthur Drexler, ed., *The Mies van der Rohe Archive, The Museum of Modern Art,* vol. 1 (New York: Garland Architectural Archives, 1986))
b) Berlin apartment building, 1849. (D. Rentschler and W. Schirmer, *Berlin und seine Bauten*, Teil IV, Band B (Berlin: 1974))
c) Heinrich Tessenow, Berlin apartment building, 1913 (Gerda Wangerin and Gerhard Weiss, *Heinrich Tessenow* (Essen: Bacht, 1976))
d) Heinrich Tessenow, Berlin apartment building, 1928. (Wangerin and Weiss, *Heinrich Tessenow*)
e) Ludwig Mies van der Rohe, *Afrikanischestrasse* apartment building, 1925–1926. (Rentschler and Schirmer, *Berlin und seine Bauten*)

scheme into his extra-urban project on the periphery of Stuttgart. Like the previously mentioned housing schemes, it contains a longitudinal interior bearing wall and symmetrical apartments centered on the stair in each 11.3-by-19.6-meter block. Mies straightened the U-shaped, four-block Berlin scheme, preserving its basic apartment unit arrangement, flat roof, plaster skin, rhythmic horizontal fenestration, and lack of ornamentation. He used a steel cage structural system at *Weissenhof*, rather than the bearing wall system of *Afrikanischestrasse*. The horizontal, but truly punched, windows at *Afrikanischestrasse* evolved into near-ribbon windows at *Weissenhof*. In the development of a new and innovative type of housing, Mies relied directly on a basic German housing prototype and took advantage of his own housing scheme in Berlin as a hedgehog-like evolution rather than a fox-like revolution.

With the adoption of the *Zweispännertyp* system, Mies also followed the German *Zeilenbau* housing formula introduced by Otto Haesler in 1923.[18] On the exhibition grounds at Stuttgart, Mies presented a portion of what could be projected as an extensively repetitive *Zeilenbau* estate, similar to the parallel rows of standardized housing units being developed in Germany at the time. Mies reiterated the basic *Zeilenbau* configuration of three to four stories, flat roof, *Sachlich* syntax, and paired apartments on central stairs. Following typical *Zeilenbau* alignment, Mies placed his long block in a north-south orientation, exposing the living units to a balanced quality of light from the east and the west. The minimally fenestrated end facades indicate the potential extension of the building to the north and south, dependent on the dimensions of the site. Mies' housing block, similar to housing blocks such as Ernst May's *Praunheim* development outside of Frankfurt (1926–1927), exhibits in its exterior imagery a visual alliance with other contemporary German housing solutions.[19]

Although Mies emphasized the modular expandability of his apartment building, he also articulated its four units as independent entities. Mies' building was described in the official program as House 1, House 2, House 3, and House 4, indicating its modular character while separating it into four individual segments. Like automobiles arrayed along an assembly line, Mies suggested the Fordism of his units with four basic types, each available in various interior models and colors with a package of options. Standardization joined flexibility for the benefit of the consumer and exhibition-goer.

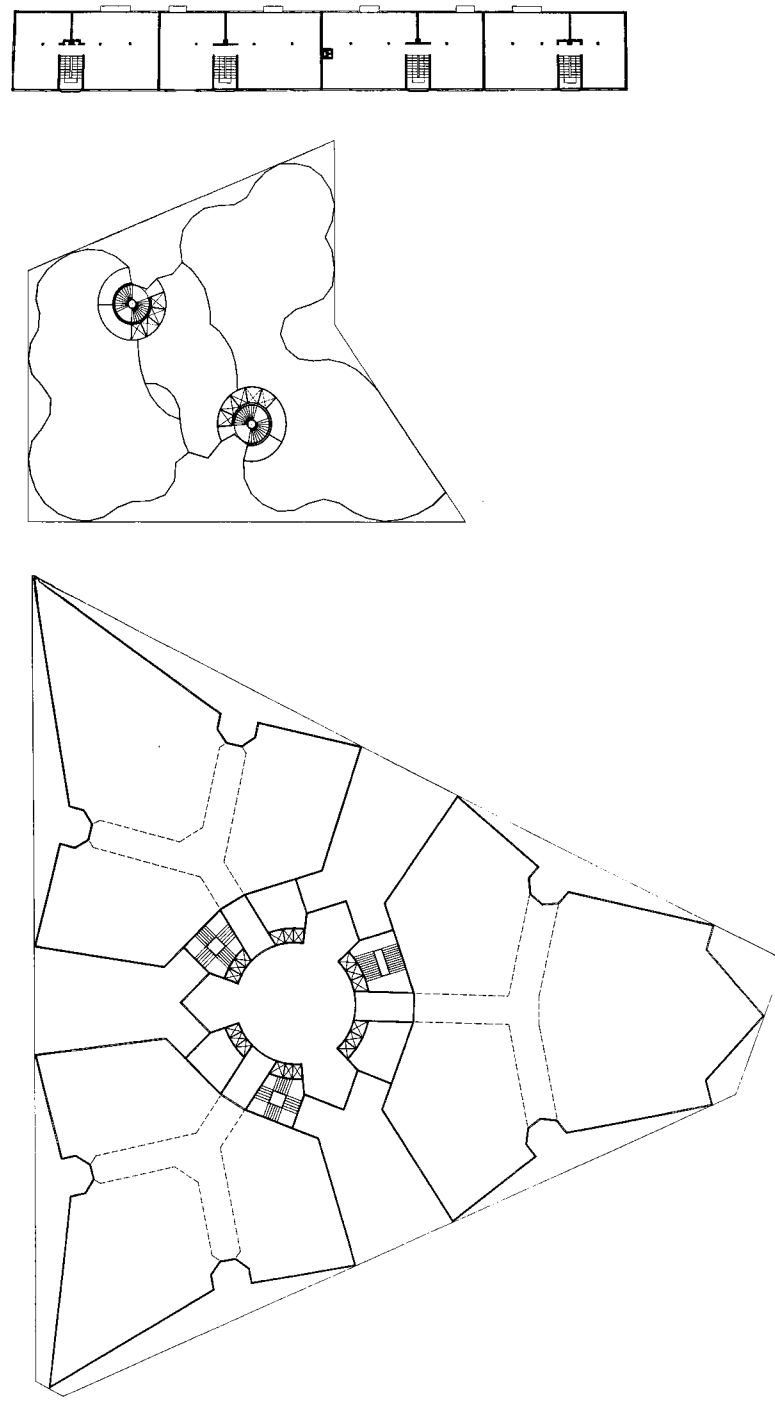
In relation to conceptions of both house and housing (individual part and overall whole), an end "house," detached from its *Zeilenbau* configuration, could function independently as a freestanding structure. A hypothetically detached end "house" resembles Le Corbusier's Villa de Monzie at Garches from 1926–1928. Although Villa de Monzie is larger (12.25 by 20.0 meters) than Mies' building unit, each cubic block building has three stories, a partially open roof terrace, light exterior stucco facades, ribbon-type windows, projecting balconies, and varying free-plan floors. The main stair at Garches is in a similar position as the stair at House 1 of Mies' *Weissenhof Siedlung*. The end facades of Villa de Monzie, like the corresponding end facades of Mies' *Weissenhof Siedlung*, contain minimal windows, equally suggesting their potential expansions to larger housing units. Although Le Corbusier first demonstrated his famous "five points of a new architecture" in his two residential buildings at *Weissenhof*, the convergence of his grounded Villa de Monzie (a house that references housing) with an end portion of Mies' block (housing that references the house) provides a link in terms of modularity, standardization, and a common demonstration of the exterior imagery of modern architecture in 1927.

Mies took advantage of the temporary condition of the exhibition and its public exposure to didactically convey another aspect of modernity. The contemporary German housing crisis took on secondary significance to advertising the new or the modern, in and of itself, to the international public. Mies described the purpose of the *Weissenhof* exhibition as, "to set out in a new direction, because it is clear to me that a new dwelling has consequences beyond its four walls."[20] The dominating backdrop of Mies' block acted as a billboard advertising rationalization and typification to the public. The exhibition visitor could penetrate the enormous east wall to examine the counterissues of flexibility and creativity within. Rather than disengaging public and private domains, the building's east billboard wall marked the threshold between the public exterior and the public interior during the time of the exhibition. This wall operated like an undecorated shed version of Robert Venturi's National Football Hall of Fame *bill-ding-board* (1967), described by Venturi as "a building *and* a billboard" where "the message dominates the space."[21] Mies presents a modern monumentality scaled to the significance of the exhibition. Promoting the campaign for *Neues Bauen* (new building) on the exterior was interdependent with the interior program for *die Gebrauchswohnung* (the practical dwelling). Mies' troped wall, simultaneously conveying association and estrangement between the interior and exterior functions it divided, became almost dysfunctional after the exhibition closed, when the public was no longer permitted to experience the flexible interior in relation to the typified exterior. Its connotative function no longer directly

engaged a mass audience, although its exterior imagery has been disseminated for many years through photographs in books, periodicals, advertisements, and exhibitions.

Beyond creating a specific housing complex, Mies produced a speculative architectural manifesto focused upon exterior standardization and interior flexibility. Describing the objective character of modernity over desires of the individual, Mies wrote in 1924, "the fundamental anonymous character of our time is apparent."[22] Whereas the building facades emphasize this anonymous unity, the interiors were left open for other architects and designers to develop, as in a typical speculative office building. The condition of the open living unit clearly portrayed Mies' "anonymous character." The spaces were almost too open; many of the commissioned interior architects complained about the inordinate amount of light entering the space, that the ceilings were too high, the columns were prohibitive, and that the window divisions made it difficult to place partitions.[23] Mies' open generic shell, lacking interior specificity, necessitated creativity and flexibility. Just after World War II, his housing block was converted to a children's hospital, demonstrating further its generic, adaptable character.

In its privileging of generic surfaces and space, Mies' *Weissenhof Siedlung* operates like his canonical glass skyscraper projects. His floor plans for both the *Friedrichstrasse* Skyscraper (1919–1921) and the Glass Skyscraper (1922) indicate only the inordinately thin perimeter walls and the fixed elements of lobby, elevators, and stairs. (Figure 4.) The interior spaces would have been fitted out to function successfully as offices or commercial spaces, by Mies or by other architects or interior designers. In Bruno Taut's magazine *Frühlicht*, Mies wrote of the *Friedrichstrasse* skyscraper, "The



4. Ludwig Mies van der Rohe: *Weissenhof* apartment building open plan (top), Glass Skyscraper plan (middle), *Friedrichstrasse* Skyscraper plan (bottom) (reproduced at the same scale). (Arthur Drexler, ed., *The Mies van der Rohe Archive, The Museum of Modern Art,* vol. 1 (New York: Garland Architectural Archives, 1986))

5. Ludwig Mies van der Rohe, *Weissenhof* apartment building, east facade. (Philip Johnson, *Mies van der Rohe* (New York: The Museum of Modern Art, 1947))

only fixed points in the whole plan are the stair and elevator shafts. All other subdivisions are to be adapted to individual requirements and constructed in glass."[24] In the glass skyscrapers and at *Weissenhof*, the exterior surfaces of the buildings dominate the interior non-spaces. The significance of each project resides in its taught, smooth surface condition and open interior. The nonpartitioned open plan of Mies' *Weissenhof Siedlung*, its fundamental state, operates in essence as an extension of his paradigmatic glass skyscraper projects—more appropriately classified as public rather than residential architecture.

The steel cage structure that Mies employed here for the first time in his career binds together interior and exterior, house and housing, speculative living units and the ultimate surface.[25] The cage, the iconic skeleton discussed by Colin Rowe in his essay "Chicago Frame," is the structure for Mies' building, both physically and in terms of *Gestaltung* (forming).[26] It resides internally within the floors, walls, and roof of the building, modulating plan and elevation, or, as Rowe has described the frame as co-opted by the International Style, "an autonomous structure perforates a freely abstracted space, acting as its punctuation rather than its defining form."[27] Mies' steel cage at *Weissenhof* becomes the traditional German *Fachwerk* skeleton, with masonry, in this case standard bricks turned sideways, or glass infill set between the framing members. The steel frame, while suppressed within the thinness of the wall, is subtly revealed as the pink-white stucco surface. Its linear trace can be read where the windows are not. Mies had written in 1923 that the "steel web" was the "basis of all artistic design."[28] Mies permitted the pentimento of the steel cage to barely read through the thin plastered walls. The steel skeleton is revealed most prominently as thin a-material strips barely interrupting the almost-ribbon windows. (Figure 5.) The narrow vertical gaps suspend the continuous horizontal windows just enough to call attention to themselves while revealing the trace of the steel they conceal. Alison and Peter Smithson have described the structure-skin relationship in Mies' *Weissenhof Siedlung*, stating, "the vertical mullions are modulating, marking not mastering."[29] The vertical stucco strips, actually not mullions but coplanar parts of the overall stucco facade, read as linear indicators of the subsurface steel, rather than divisions in the wall that break it up into modular components. Mies utilized the steel cage surface image as well to subtly articulate multiple local symmetries in the facade, allowing it to read both monolithically and in smaller components. Acting as both a structural and compositional device, the steel-backed lines inscribed on the facade serve as a structural elevational drawing and as an intricate, formal, modulating surface.

The barely finished surfaces, both inside and out, could hardly contain the steel structure within—the same structural cage that would later break out of its enclosure in Mies' buildings at the Illinois Institute of Technology. The artist, architect, *De Stijl* polemicist, and critic Theo van Doesburg focused on the thin veil of epidermis on Mies' block in his review of the *Weissenhof* exhibition. Van Doesburg concentrated on what he called "the ultimate surface," stat-

ing that, especially in the context of an exhibition, the surface, in relation to the structure it covers, is important for people and directly influences the morale of the viewer. Van Doesburg wrote, "The ultimate surface is in itself the result of the construction. The latter exposes itself in the ultimate surface. Bad construction leads to bad surface. Good construction produces a sound surface with tension."[30]

Van Doesburg, whose art and architectural work centered on line and plane, here articulates the primary message of Mies: communication of a modern *Sachlich* ideal through the surface tension (*Gespanntheit*) of the tightly stretched wrapper enveloping the steel cage. Van Doesburg also pointed out the interior ceiling surface of an apartment unit, attenuated by the floor-to-ceiling doors, writing, "The traditional space between ceiling and doors was abandoned."[31] Mies' thin a-material surfaces were the primary elements to convey his program of nonspatial, taut volume, influential to Hitchcock and Johnson in their campaign to further this agenda as the International Style.[32] Even the horizontal "ultimate surface," the flat roofs ("platter roofed" according to Kurt Schwitters) that Mies stipulated for all the buildings at *Weissenhof*, acted as tautly stretched membranes.[33] Like an alert body poised at attention, the formation of the skeleton beneath the skin (Van Doesburg's "good construction" producing "a sound surface") results in a tense, articulated cladding that delicately reveals the armature that supports it.

Most significantly though, Mies articulated the surface most visible to the exhibition public, the dominating east wall (with its open top level's fragilely floating thin planes), to be read like the *westwork* of a great Gothic cathedral. Describing the "heroic" attributes of Mies' architecture, Alison and Peter Smithson wrote in 1967,

> Before Mies van der Rohe left Germany he had established a kind of modeshift in the discipline of architecture: not that it is always clear. . . . It began to be real in his architecture on the street facade at the apartments of the *Weissenhofsiedlung* (1927). . . . Two separate but reciprocal themes emerge: an almost autonomous repetitive neutralizing skin; and an open-space-structured building.[34]

Mies' "neutralizing skin" at *Weissenhof* has more recently been characterized as "a thin white facade" and "a very shallow space."[35] Barely concealing its forming skeleton, the stretched pale skin, like that of a tuberculosis patient or someone who has undergone a facelift, endures as the received image from which analytical and influential diagnoses have been made. What the "ultimate surface" conceals, reveals, or represents is dialectically engaged with the building facade itself. As a transitional building in his career and as a facade-driven modernist exposition, Mies' *Weissenhof Siedlung* was uncomfortable (or tense) in its own skin.

Mies' attention given to surface over space also provided the focus for his Plate-Glass Exhibit, designed with Lilly Reich for the product display exhibition at the *Gewerbehalleplatz* in central Stuttgart, in association with the *Weissenhof* housing estate. The transparent, mirrored, and frosted glass panels of this exhibit, placed in counterpoise to opaque plywood panels (also used in one of Mies' *Weissenhof Siedlung* interior apartments) emphasized material as surface within an existing shell. Mies and Reich furnished it like a residence and used linoleum on the floors, as in the *Weissenhof Siedlung*. Again, space became a byproduct resulting from the manipulation of surfaces (a series of interior glass facades) in the forum of the exhibition. The Plate-Glass Exhibit can be seen as an inversion (a turning inside out) of Mies' two glass skyscraper projects in relation to the "ultimate surface" of his *Weissenhof Siedlung*. The fixed exterior facades of the glass skyscrapers became the fixed interior walls of the Plate-Glass Exhibit, each a fundamentally nonspatial entity favoring surface articulation. Mies continued his privileging of the articulation of surface over the production of space, especially in the vertical surface, the "ultimate surface," as the generator and focus of his architecture, regardless of building scale, function, status as temporary or permanent, project or building, or all of the above as at *Weissenhof*. Innovation in housing took a backseat to the technological and modernist presentation of surface treatment for a mass audience. Mies wrote, "Exhibitions are instruments of economic and cultural work. They must be handled with care."[36]

Colin Rowe has characterized Mies' Glass Skyscraper project as "not only the project for an office building but also the advertisement for a cause."[37] Inverting Rowe's statement in terms of Mies' *Weissenhof Siedlung*, his phrase becomes, "not only the advertisement for a cause, but also the project for an apartment building." Legible on the facade as an advertisement for modernity itself, in all its ideological and formal guises, Mies' *Weissenhof Siedlung* also happened to function as a residence. Describing the modernist German avant-garde in general, Sigfried Giedion, the relentless chronicler of the development of modernity, perhaps best portrayed *Weissenhof*'s cause in his *Space Time and Architecture*: "The *Weissenhof* Housing Settlement . . . which the *Werkbund* had entrusted to Mies van der

Rohe, is perhaps the clearest indication of the change that had taken place within the all-too-thin layer of the elite."[38]

Acknowledgments

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Notes

1. Theo van Doesburg, "Stuttgart Weissenhof 1927: Die Wohnung," in *Het Beouwbedrijf,* 1927, in Theo van Doesburg, *On European Architecture*, C. Loeb and A. Loeb, trans. (Basel: Birkhauser, 1986), p. 167.

2. Ludwig Mies van der Rohe, "Forward," in *Bau und Wohnung* (Stuttgart, 1927), in Fritz Neumeyer, *The Artless Word: Mies van der Rohe on the Building Art* (Cambridge, MA: The MIT Press, 1991), p. 259.

3. Henry-Russell Hitchcock and Philip Johnson, *The International Style* (New York: W.W. Norton and Co., 1932) and the accompanying exhibition at the Museum of Modern Art and other locations, 1932–1934.

4. Philip Johnson, *Mies van der Rohe* (New York: The Museum of Modern Art, 1947), p. 42.

5. Letter by Mies van der Rohe, 1927, in Richard Pommer and Christian Otto, *Weissenhofsiedlung 1927 and the Modern Movement in Architecture* (Chicago: The University of Chicago Press, 1991), p. 59.

6. Karin Kirsch writes that Mies' building was not ready for the exhibition and was not painted during it, exposing its off-white plaster. See Karin Kirsch, *The Weissenhofsiedlung* (New York: Rizzoli, 1989), p. 54 and endnote 163, p. 212. She writes that when renovated it was painted pink, "the conclusion of the specialists who analyzed the wall surfaces." See Kirsch, *The Weissenhofsiedlung,* p. 76. The restored walls are described as "pale-red" in a brief news item titled "Insulation against the passage of time: Stuttgart restores a landmark of architectural Modernism," *Architectural Record* 10/86 (1986): 61. Thomas Fisher, in an article on restoring the *Weissenhofsiedlung*, states that the stucco was replaced on Mies' building "finished to match the building's original cream-color walls and brown roof terrace." See Fisher, "P/A Technics Low Cost, High Design," *Progressive Architecture* 10/88 (1988): 100, and Manfredo Tafuri and Francesco Dal Co, *Modern Architecture* (New York: Rizzoli, 1979), p. 132.

7. Kurt Schwitters, "Stuttgart, 'The Dwelling,' Werkbund Exhibition," *i* 10, 10 (1927): 345–348; Suzanne Frank, trans., *Oppositions* 7 (winter 1976): 82.

8. Jürgen Joedicke and Christian Plath, *The Weissenhof Colony* (Stuttgart: Karl Krämer Verlag, 1984), p. 76.

9. Kirsch, *The Weissenhofsiedlung,* p. 47.

10. Mies van der Rohe, "Concerning my Block," in *Bau und Wohnung* (1927), in Neumeyer, *The Artless Word,* p. 259.

11. Mies van der Rohe, from lecture manuscript dated March 17, 1926, in Neumeyer, *The Artless Word,* p. 252.

12. See Arthur Drexler, ed., *The Mies van der Rohe Archive, The Museum of Modern Art* (New York: Garland Architectural Archives, vol. 1, 1986), pp. 230–237, 244–255.

13. Kirsch, *The Weissenhofsiedlung,* p. 63.

14. Sigfried Giedion, *Space Time and Architecture,* 5th ed. (Cambridge, MA: Harvard University Press, 1967), p. 598.

15. Joedicke and Plath, *The Weissenhof Colony,* p. 58.

16. See Ronald Wiedenhoeft, *Berlin's Housing Revolution: German Reform in the 1920s* (Ann Arbor, MI: UMI Research Press, 1985).

17. See D. Rentschler and W. Schirmer, *Berlin und seine Bauten*, Teil IV, Band B (Berlin: 1974), p. 208.

18. See Kenneth Frampton, *Modern Architecture* (London: Thames and Hudson, 1992), p. 136.

19. See D.W. Dreysse, *May–Siedlungen* (Frankfurt am Main: Verlag Dieter Fricke GmbH, 1987), pp. 7–12.

20. Mies van der Rohe, Werkbundtagung Mannheim (Sept. 1927), in Pommer and Otto, *Weissenhof 1927,* p. 109.

21. Robert Venturi, "National Football Hall of Fame," *Architectural Forum* (April 1968): 74–79.

22. Mies van der Rohe, "Baukunst und Zeitwille!" *Der Querschnitt* 4 (1924), in Pommer and Otto, *Weissenhof 1927,* p. 110.

23. See Hermann Muthesius's review of the housing exhibition in *Berliner Tagblatt* (1927), in Kirsch, *The Weissenhofsiedlung*, Appendix D, p. 199. See also pp. 55–76.

24. Mies van der Rohe, *Frühlicht*, 3 (1921), in Kirsch, *The Weissenhofsiedlung,* p. 47.

25. Mies' first use of steel was recorded initially in Alfred H. Barr, Jr., Henry-Russell Hitchcock, Jr., Philip Johnson, and Lewis Mumford, *Modern Architects* (New York: W.W. Norton and Co., 1932), p. 115.

26. Colin Rowe, "Chicago Frame," in *The Mathematics of the Ideal Villa and Other Essays* (Cambridge, MA: The MIT Press, 1976), pp. 89–109. First published in *Architectural Review* (1956).

27. Ibid., p. 99.

28. Mies van der Rohe, "Bürohaus," *G*, 3 (1923); in Pommer and Otto, *Weissenhof 1927,* p. 110.

29. Alison and Peter Smithson, *The Heroic Period of Modern Architecture* (New York: Rizzoli, 1981), p. 13.

30. "Stuttgart *Weissenhof* 1927: Die Wohnung," p. 167.

31. Ibid., p. 169.

32. Hitchcock and Johnson, *The International Style*. The caption for the photograph of Mies' Apartment House at the *Weissenhof Siedlung* reads "Supports between windows treated as part of the wall surface. Despite severe regularity of construction there is great variety in the planning of the individual apartments." Hitchcock and Johnson, *The International Style,* p. 181. (Concerning specific authorship of *The International Style*, Philip Johnson told me in an interview in 1988, "Russell wrote the text and I wrote the captions.")

33. See "Stuttgart, "The Dwelling,' Werkbund Exhibition," p. 80.

34. Smithson, *The Heroic Period of Modern Architecture,* p. 13. Here the Smithsons describe the "street facade," which corresponds to the west elevation. Although the east and west facades are similar (the east facade is open at the top for the laundry areas), I refer in this paper to the east facade (or the garden facade) because of its orientation to the other *Weissenhof* structures as a backdrop to them and because of the didactic demonstration of the steel system at the open upper level.

35. Mark Wigley, *White Walls, Designer Dresses* (Cambridge, MA: The MIT Press, 1995), p. 303.

36. Mies van der Rohe, "On the Theme: Exhibitions," in *Die Form*, 3/4 (1928): 21, in Neumeyer, *The Artless Word,* p. 304.

37. Rowe, "Chicago Frame," p. 106.

38. Giedion, *Space Time and Architecture,* p. 595.