



The *Verseidag* Silk Factory in Krefeld. Architectural History and Restoration of a much-neglected Mies van der Rohe Project

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Although the buildings for the *Verseidag* silk factory, in Krefeld, Germany, are the only factory buildings that Mies van der Rohe ever planned and built (1931-38), many open questions remain about the history and development of the site. The paper presents new research results on the architectural history and materiality of the site that are derived from detailed documentation on site and analysis of newly available archive material. The scientific results and the acquired knowledge directly influence the current restoration of the buildings, in which the key characteristics designed by Mies van der Rohe are preserved and restored.

The Buildings for United Silk Weaving Mills Krefeld — Vereinigte Seidenwebereien AG

The buildings that belong to the so-called “Mies van der Rohe Business Park” today are directly connected with the industrial and economic history of the West German city of Krefeld. Originally, they were built for the *Vereinigte Seidenwebereien Aktiengesellschaft* – in short *VerSeidAG* – which translates to United Silk Weaving Mills Incorporated. Hermann Lange and Josef Esters founded the company in 1920 by joining several silk factories in the Rhineland and Thuringia regions of Germany. The aim was to reach a stronger market position against powerful national and international competitors. In the following years, *Verseidag* became the largest producer of necktie and silk fabrics.

The architect Mies van der Rohe was consulted several times for the design and planning of the company’s buildings. His most intense work started in 1930 and concentrated on the design of the office and storage building called *HE*-building (“*HE*” is an abbreviation for *Herrenfutterstoffe*, which is “lining fabric”). The functional cubic building with a flat roof and white stucco and dark rectangular windows dominates the overall image of the site (essay cover). Its evenly distributed window bays are ordered into symmetrical groups of 1-2-3-2-1 by the positions of the rainwater downpipes¹. The design of the main staircase received special attention by the architect. Its walls are constructed of exposed clinker brick, just like the base running around all exterior walls of the *Verseidag* buildings.

The *HE* building was built together with a dyeing plant, which was also designed by Mies van der Rohe. The unusually tall saw-tooth roofs of the plant with their north facing glazed surfaces ensure a maximum amount of daylight in the production areas. The two very differently shaped white buildings were connected with a recessed delivery ramp clad in dark brick, in order to clarify and underline their

formal coexistence. The dark ramp area also serves to hide the glazed double pitched roof of a low connecting hallway between the two buildings. It provides an open connection between the ground floor areas of the *HE*-building and the dyeing plant. In the back of the building, this connection is hidden behind a projecting secondary stairwell.

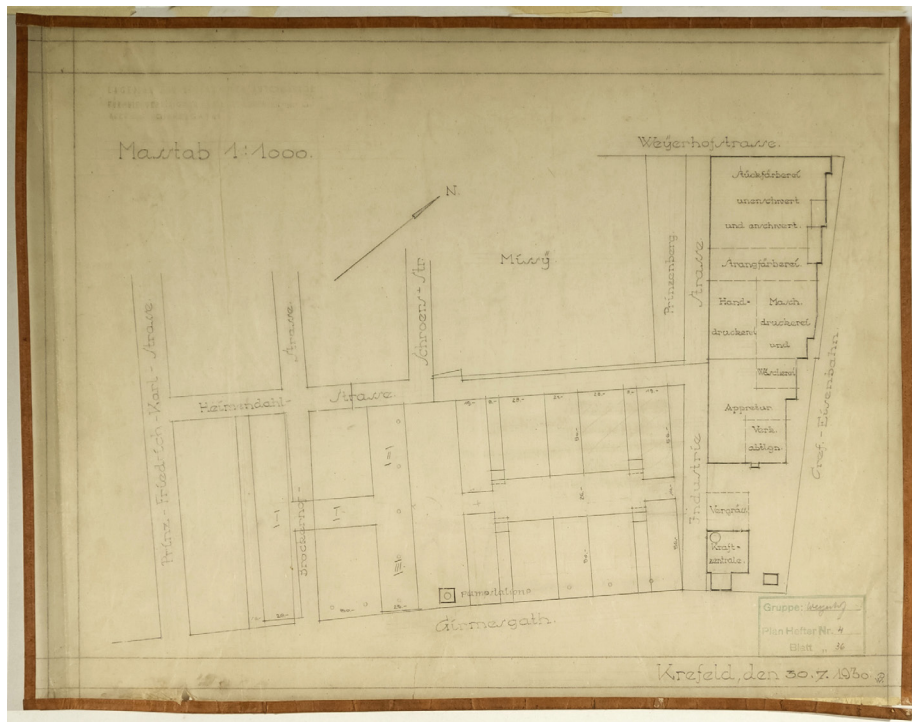
Mies van der Rohe developed a set of common formal characteristics and details for the two buildings. Both rest on a visible brick base of five courses. The stucco above this base was applied flush with the brick surface. Large dark window openings were cut into the bright surfaces, allowing for even more daylight in the production areas. By carefully detailing these features, Mies van der Rohe created a common language for the strongly differing building shapes.

The architect created fundamental principles for this building, which he regarded as essentials for an industrial building: the articulated shape, few spatial partitions, and the creation of light-flooded, clearly arranged, and ideally column-free spaces. The conditions and necessities of functions led to the essential appearance of the buildings, derived from the recognition of the problem, and its seemingly inevitable solution.

Several indications point to Mies van der Rohe’s involvement in the design of further *Verseidag* buildings, such as the power house and the film printing plant. Furthermore, his atelier worked on a design for the company’s administration building on a nearby empty plot between 1938 and 1939. The imminent outbreak of the WWII however stopped this project.

Research in *Verseidag*

The *Verseidag* silk plant remained the only industrial building that Mies van der Rohe ever designed. In spite of this unique feature, the historical development and the authorship of the individual buildings is surprisingly obscure.



01 Site plan for the Verseydag buildings, pencil on tracing paper, 30 July 1930. © Verseydag Archive. Reproduction: RWTH Aachen.

Scientific research is limited to a handful of articles². Based on these valuable contributions, current new research shifted to on-site work in order to clarify open questions about the historic development and architectural relevance of the site.

The factory shut down in 2009. Successively, the buildings are cleared, restored and reused by the new owner of the site³. A team of students and scientists of RWTH Aachen University, THM Giessen and TH Köln, Universities of Applied Sciences, accompanies this process. With an architectural and constructional point of view and under the scientific guidance of the two authors of this essay, the methods of building archaeology are applied: Precise survey and documentation work is carried out on site, in order to record and understand the current state of the building with all its historic layers.

The on-going slow process of reuse and renting of the spaces facilitates a detailed observation of the preserved original material in measured survey, drawing and photographic documentation. Those traces of history that only show on the building itself, are being read together with the students. Their deciphering adds an important and entirely new research layer to the analysis of written and graphic archival material. The results are not only arguments and indications for a new understanding of the site's architectural history, but also for concepts of restoration approaches and decisions, which can be scientifically supervised in this way.

The observations from the on-site work on the building are supported by the inspection and analysis of historic archival material. The documents in the Mies van der Rohe Archives in the Museum of Modern Art New York gives remarkable insight into the working methods of the

Berlin atelier of Mies van der Rohe. On the other side, the extensive archives of Verseydag's own architectural department was rediscovered, and its evaluation initiated⁴. The relevance of this material became more and more apparent in the course of work. By jointly analyzing the archival material from both sides, the dialogic collaboration of the two protagonists became evident. Furthermore, those buildings on site that were not credited to the authorship of Mies van der Rohe yet, could be investigated in detail for the first time. Their architectural appearance shows at least a strong reception of the architectural features invented by Mies van der Rohe, and sometimes raises the question of his authorship anew. Fundamentally, they are important examples of the continuity of modernistic ideas and concepts of New Objectivity after 1933 in industrial architecture, while many of these principles were ideologically and politically suppressed in the public dialogue about architecture⁵.

A Masterplan and its Implementation

The blueprint of a site plan with early sketches preserved in the Mies van der Rohe Archives is considered to be one of the first documents of Mies van der Rohe's engagement with the planned buildings for Verseydag⁶. Accordingly, the original of this plan that was found in the Verseydag Archives in Krefeld recently⁷, shows the urban layout of the factory buildings that were intended at the time of the consultation with Mies van der Rohe (figure 01). The company had purchased the three hectares of land in order to build a new silk factory. The plan of 30 July 1930 was drawn in pencil on tracing paper, and shows not only the existing structures on site in thick lines, but also those

buildings that were to be erected in the following years. The *HE*-building and dyeing plant that were built in the following months after plans had been drawn by the office of Mies van der Rohe can be identified as the northern quarter of a larger general plan. Correspondingly, this section was part of a considerably larger factory, which was never completed but only extended partly in the following years. In strict symmetry, the multi-storey *HE*-building and the attached saw-tooth roof dyeing plant are not only mirrored southwards once, but doubled again eastwards towards the *Girmesgath* street. The overall plan would have resulted in four tall buildings in the shape of the *HE*-building, with two rows of saw tooth roof halls between them, creating a long courtyard in their middle.

This symmetrical arrangement of buildings can be identified in Mies van der Rohe's first perspective sketches of the project, too. One sketch shows the second *HE*-building in the south⁸, while the silhouette of the third one in the northeast is visible on another sketch⁹. Clearly, the large-scale master plan with its remarkable double symmetry was not only an initial intention of the factory owners, but also absorbed by Mies van der Rohe into his schemes.

The first step in the realization of this scheme is the initial construction phase in the first half of the year 1931. The structures that were erected in this first phase include the two-storey *HE*-building and the annexed factory hall with its initial four bays of shed roofs. To satisfy the large need for water in a dyeing plant, *Verseidag* requested a voluminous water tank during the construction of the plant. After long, written discussions, it was placed in the fifth bay of the plant (figure 02). The intense design and planning consultancy of the Mies van der Rohe atelier in the first

construction phase is documented in numerous letters in the Archives in New York.

Research to date acted on the assumption that both the *HE*-building and the dyeing plant were erected in only two construction stages in 1931 and 1935. The analysis of the built evidence however raised doubts in this interpretation during documentation. In alignment with the historic plan material from Krefeld that was indexed in the meantime, a more detailed and complex picture of the evolution of the site may be drawn:

During the year 1933, the dyeing plant was extended twice during operation. First, four more bays of shed roofs were erected, together with a second frontal water tank. Finally, another three bays were added and resulted in 11 shed roofs. While the façade and roof construction details of the first phase were kept and used, the façade design including the position of windows and doors was realized with a noticeable decrease in discipline. Quality losses like these become apparent from the moment of continued construction and later on for example in the sporadically used element of the air ventilation shafts in the façade.

Two additional floors were added on the *HE*-building in 1935, adding up to the four stories that are preserved today (figure 03). A large amount of plan material, static calculations and building applications were found in the company's archives. They clearly show that even a fifth floor was planned, as it is also drawn in Mies van der Rohe's first sketches.

Questions of Preservation

After decades of adaptations, alterations and additions, the *Verseidag* buildings have been preserved with a large



02 Mies van der Rohe, *HE*-building and dyeing plant, Krefeld, Germany. Shortly after construction, ca. 1931. © Krefeld City Archives.

amount of original material. But the current and upcoming restorations are not the first ones on the buildings. About one decade before the shut-down of the factory, and approximately concurrent with the inscription of the complex in the monument list in 1999, the former owners of the factory applied for the modernization of the HE-building, including the insulation and resealing of the roofs, restoration of the stucco façades, and restoration work in the stairwells and the two upper floors. The works were carefully supervised by the monument departments, who praised the architects for being in line with accepted conservation practise and the owners for their willingness to compromise later on¹⁰.

With the new research insights regarding the architecture of *Verseidag*, the restoration of the first five bays of the dyeing plant façade has been scientifically supervised since 2013 (figure 08). Research results and material investigations about the stucco, the brick base and the windows had a direct impact on the restoration decisions. This process is still ongoing, and those results presented here only give a first impression of the hand-in-hand work of owner, architects, departments and the authors. After some activity, had already been carried out without scientific comment, the decisions are now overseen with increasing intensity today.

Windows

A long and detailed correspondence between Mies van der Rohe atelier and the *Verseidag* about the design and planning of the steel windows is preserved in the Mies van der Rohe Archives in New York. The manufacturer that was finally commissioned was *Fenestra Critall*, a company that was recommended by Mies van der Rohe and who had already delivered windows for numerous modernist masterpieces like Walter Gropius's Fagus factory, his Bauhaus Dessau and others. After war damage in the upper stories, some windows were replaced by reproductions of equal profile

after the war. Unfortunately, almost all the windows of the HE-building were then replaced in the 1970s by models with severely broader box section profiles¹¹. At least, five of the original filigree windows were intentionally kept on the north side of the building on the ground floor. They were restored in the course of the 1999 works and are preserved in their original position today.

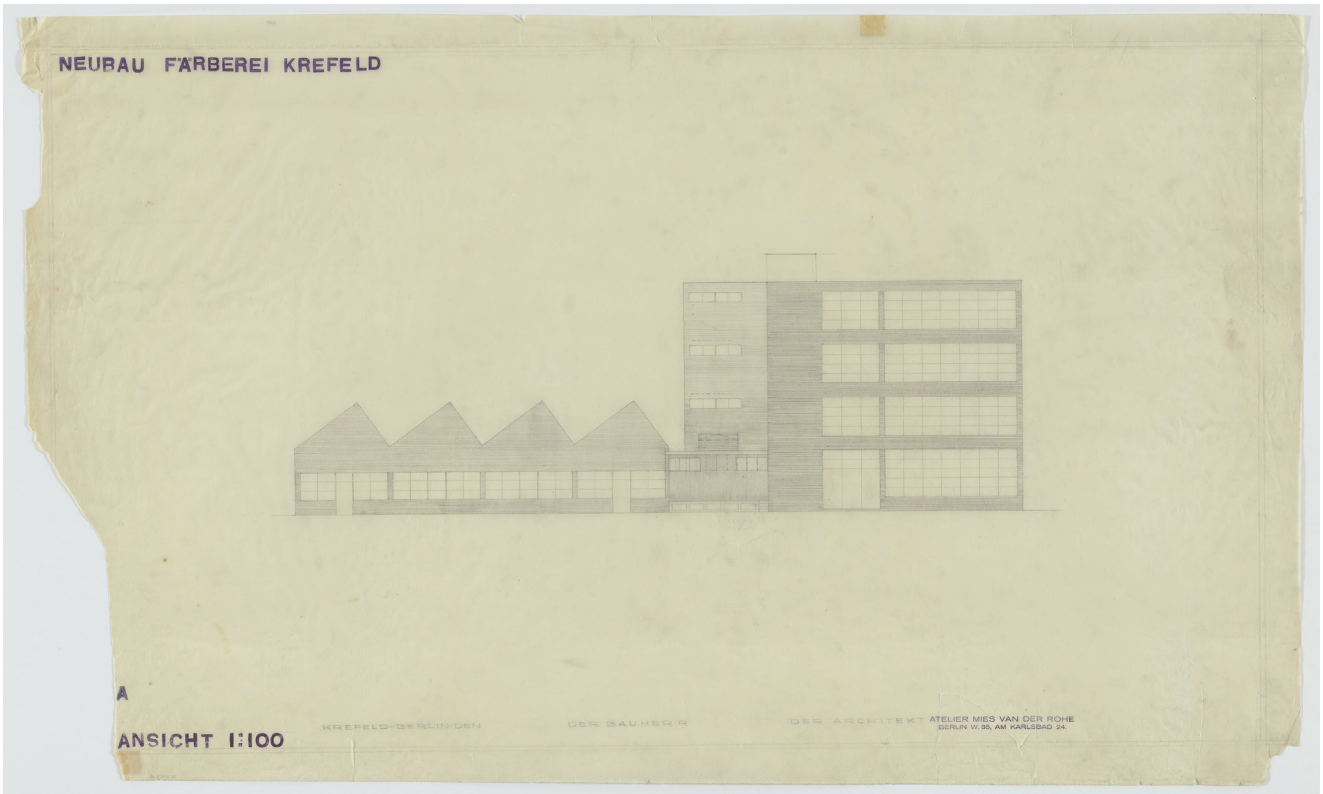
In the current research, new information could be retrieved about the original coloring of the window frames. On historic photos of the exterior, a dark paint color is clearly visible, and concurs with all restorations and today's tone. A recently uncovered photo showing the interior of the former worker's canteen around 1936, however, clearly shows that the window frames were painted white on the inside (figure 11). Such bi-colored window frames are not unusual, and can be found in the Lange and Esters villas for example. A restorer's expert assessment was ordered to investigate the original windows and to follow these hints.

On the five preserved original windows of the HE-building, no original stratigraphic sequence of paint could be investigated, because the windows had been sandblasted, re-primed and painted in the 1999 restoration. In the recent restoration of the front façade of the dyeing plant, large portions of the original window frames were kept and partially repaired and re-glazed. However, the treatment of the metal was similar, and left no traces of original color either. Luckily, through survey and research, one remaining original window on the dyeing plant rear façade, with full historic paint stratigraphy, could be found, which was hidden between silk factory machinery. This window was investigated and the hints from the historic photos were proven¹². The same results could be found on the basement windows, which have not been restored at all yet. The results show that the *Verseidag* windows were primed with iron oxide, and painted in a dark grey on the outside¹³ and off-white on the inside (figure 05).

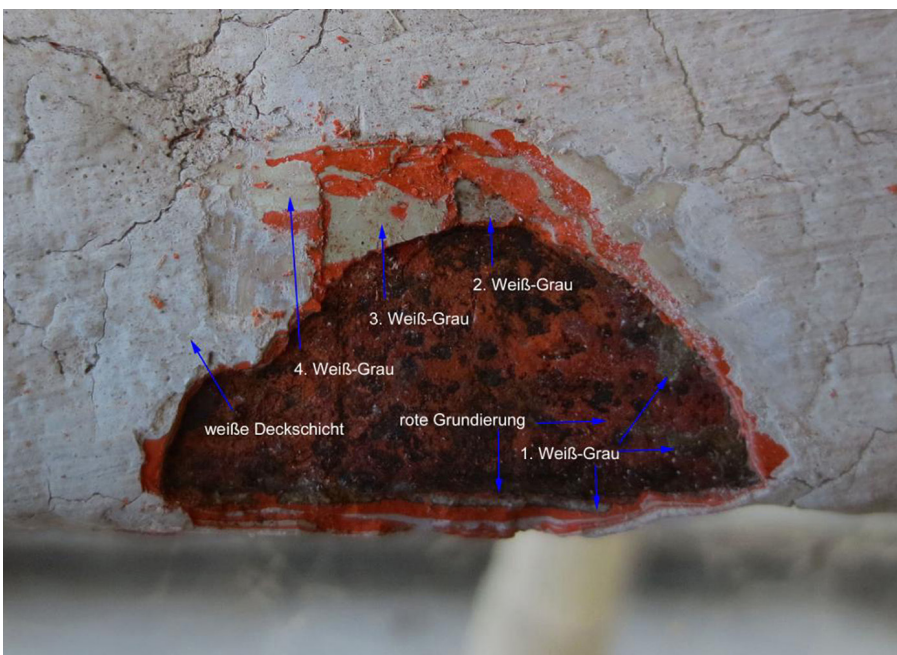


03 Mies van der Rohe, *Verseidag* buildings, Krefeld, Germany, 1930-1938. Seen from North, ca. 1936. © Krefeld City Archives, n. 28321.

- 04 Mies van der Rohe, Ludwig (1886-1969): United Silk-Weaving Mills Factory Building (Verseidag), Krefeld, Germany, East elevation, 1931-1935. New York, Museum of Modern Art (MoMA). Pencil on tracing paper, 22 3/4 x 37 1/2" (57.8 x 95.3 cm). Mies van der Rohe Archive, gift of the architect. Acc. no.: MR.89. © 2017. Digital image Mies van der Rohe/Gift of the Arch./MoMA/Scala.



- 05 Mies van der Rohe, HE-building, Krefeld, Germany, 1930-1938. Conservator's uncovering of original color strata on a preserved dyeing plant window with an illustration of the different paint layers. © S. Conrad, *LVR Amt für Denkmalpflege im Rheinland*, 2015.



- 06 Mies van der Rohe, HE-building, Krefeld, Germany, 1930-1938. Section of preserved original stucco surface on the north-western side of the HE-building. © Daniel Lohmann, 2015.



Stucco

The restoration strategy of the dyeing plant façade required material investigations not only on the windows, but also regarding the consistency of the original stucco. The assessments prior to the 1999 restoration could not give reliable results, due to the bad state of preservation and the fact that no original surface texture was preserved on the building¹⁴. Recently, obsolete additional buildings on the rear façade of the dyeing plant were demolished in order to recover the 1931 building shape. Along the points of contact of the supporting structure of a hall directly behind the building, almost unaffected surfaces of original stucco could be found and analyzed on both the surfaces of HE-building and dyeing plant (figure 06)¹⁵. The material properties, color and surface treatment of the stucco was investigated and documented by a professional restorer of the regional authorities¹⁶.

The “normal Terranova-stucco” that Mies van der Rohe proposed in the *Verseidag* correspondence¹⁷, turned out to be a coarse, two layered plaster for facing. The finishing coat consists of a highly hydraulic white cement mortar with white and grey quartz aggregates of up to 5 mm. The surface was not painted, but bush-hammered. Fresh fractures reveal the original off-white color of the stucco, with a slight glimmer of the quartz.

Brick Base

Before the 1999 HE-building restoration, the client wanted a thermal insulation composite system on the external walls, which would have severely altered the appearance of the building and its proportions. Luckily, the architects and restorers could find an appropriate alternative with internal insulation. In this way, one of the key characteristics of the *Verseidag* buildings was preserved: the external wall stucco was applied flush with the brick base, which consists of five layers of exposed dark bricks in cross bond with anthracite colored joints. The detail that was specifically drawn by the office of Mies van der Rohe¹⁸ shows that the hidden settlement joints within the wall were widened by an extra 2 cm, in order to jut out from the wall surface above. In the next working step the stucco was applied flush with the base surface.

Through the course of time, this characteristic detail was severely altered on the façade of the dyeing plant. On the one hand, large sections of the façade had turned into freely perforated and modified internal walls behind later additions (figure 08). On the other hand, a thin layer of facing bricks in a simple stretcher bond was applied to the wall surfaces up to the windowsills only about four years after the initial construction (figure 10). The reason for this action is unknown, but it may be assumed that it was to prevent stains on the white surfaces. Through analysis of historic photographs however, the measures can be dated to the time between 1934 and 1936 (figures 02 and 03). In the recent restoration, the partners were facing a complex decision: preservation and repair of the thin facing bricks, that had also been severely damaged over time? Or removal of this layer, and a restoration of the preserved brick base behind? The decision was taken in favor of the second op-

tion, due to the uncovering of the preserved base with flush stucco on the north-eastern end of the façade. The main argument that was put forward was the relevance of the creative will of Mies van der Rohe for the initial monument protection of the buildings¹⁹. The heterogeneous situation of the façade was thoroughly documented, and the thin facing bricks were carefully removed and stored. During this removal, however, the situation unveiled that the heads of almost all of the original base bricks had been chipped off, in order to reach a better adhesion of the mortar for the thin facing bricks (figure 10). The amount of retained thin bricks would not have been enough to restore the whole surface underneath the window sills, and no satisfactory replacement material could be found, despite intense efforts by the architects and construction supervisors involved. According to the decision to restore the original Mies van der Rohe appearance of the façade, the saved thin bricks were used to complete the heads of the chipped base bricks, and the original cross bond appearance was restored (figure 09). In this way, the appearance of the building as it was originally intended by Mies van der Rohe, and as it existed at least between 1931 and 1934, was restored using original material.

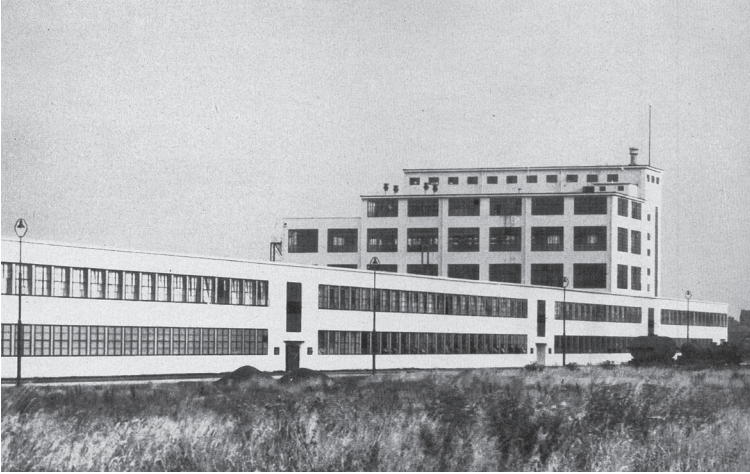
Architectural History

From the point of view of architectural history, it was an unusual and remarkable decision to clad a silk factory in white stucco instead of the dark lower Rhineland bricks that were usually chosen for industrial buildings. This choice was not clear from the project's start, as we can see from the correspondence with Mies van der Rohe's office: Shortly before the first preserved letter from January 1931, the decision was taken to use stucco instead of exposed bricks: “(...) now that the building will be plastered [*verputzt*], it is necessary to reach clarity about the way how the measurements in our plans to scale 1:100 must be understood”²⁰. Still, all the measurements in Mies van der Rohe's plans were not related to a plastered building, but to the German *Reichsformat*, a historic masonry measurement system not in use anymore today.

The new findings about the change of the façade cladding helps to analyze early elevation drawings preserved in the Mies van der Rohe Archives in New York. The HE-building, dyeing plant and a connecting hallway are drawn with a peculiar horizontal hatching²¹ – clearly a representation of the masonry's bed joints (figure 04). The reason for the plan change towards a plastered building – unhatched in plan – is unknown. The decision was facilitated however by the fact that the façade was largely exempt from its load bearing function by the steel skeleton construction of the building. Comparable changes in façade cladding are known on the one hand for the houses for *Verseidag*'s chairmen Hermann Lange and Josef Esters, which were intended to be plastered in early project stages, and on the other hand for the Tugendhat house in Brünn, which was originally planned in exposed brick, but clad in white stucco later on²².

Following Christiane Lange, the series of commissions to Mies van der Rohe, some of them jointly with Lilly Reich,

07 Ferdinand Flakowski, British Bemberg artificial silk factory, Doncaster, England, 1930. Seen from northwest, 1931. © *Baugilde*, n. 16, 1933, 775.



08 Mies van der Rohe, *HE*-building, Krefeld, Germany, 1930-1938. State of the dyeing plant façade before restoration. © Norbert Hanenberg, 2012.



09 Mies van der Rohe, *HE*-building, Krefeld, Germany, 1930-1938. Dyeing plant façade, preserved state next to restored part. © Daniel Lohmann, 2016.



10 Mies van der Rohe, *HE*-building, Krefeld, Germany, 1930-1938. Window parapet of the dyeing plant façade, detail showing the thin facing bricks on top of the chipped off brick base. © Daniel Lohmann, 2015.

can be regarded as a strategic decision by the German silk industry. They intended to free themselves from a bad image – especially in opposition to their French competitors²³. The electrical company AEG in Berlin had led the way: after the nomination of Peter Behrens as the artistic director of the company in 1907, epochal buildings and products emerged, which changed the public image of industrial products and architecture, and illustrated the impact of design on them. Architectural history has recognized the fact that clients and architects had strategically planned with the “advertising character of industrial architecture for companies” since the early 1920s at the latest²⁴. Quite possibly, the preference for a nobler façade material for the *Verseidag* factory can be understood in this context, too. Seemingly, the factory decided together with Mies van der Rohe to give up on the dirty image of a brick factory and instead for a glimmering white stucco façade as a representation of the noble cloth that was produced and refined behind these walls. Early photographs taken shortly after the completion distinctly show the alien appearance of the factory in the dirty lower Rhineland landscape. Furthermore, those buildings still housing “dirtier” processes such as the power plant opposite the HE-building, were still clad in exposed brick walls.

Almost simultaneously with the initial construction phase of the *Verseidag* buildings, the German artificial silk company J. P. Bemberg from Wuppertal built the British Bemberg silk factory in Doncaster, England²⁵. The man responsible for the architectural design was the company’s chief architect Ferdinand Flakowski from Berlin. Just like in the Krefeld buildings, the two structures of a multi-storied main building and the low production plant were set in an architectural relation. Both volumes were plastered in white and perforated with dark window rectangles. But in contrast to the *Verseidag*, the saw tooth roof of the plant was hidden entirely behind a double storey building, whereas Mies van der Rohe literally staged the prominently raised gables in the façade design. The overall image of the Doncaster buildings may serve as a comparative example for the architectural means for creating a “clean image” of a silk factory²⁶. However, when comparing the details in the different buildings, the artistic discipline of Mies van der Rohe becomes apparent.

The large windows were placed into the white volumes like cleanly cut perforations, and allow for a maximum of natural daylight in the buildings. The white paint on the inner window frames strongly underlines this concept. Apparently, the architecture served to maximize the light in the factory environment, according to the ideal of healthy and humane working conditions in the interwar period. Whatever intentions stood behind these principles, they are indicators of Mies van der Rohe’s strong creative will and discipline, and were implemented in the purest form in the first construction stage of 1931. He provided an artistic language for the appearance of the buildings that were erected later and partly without his consultancy, which show an increasing weakening of the principles and do not reach the initial clarity. In any case, Mies van der Rohes “hand-

writing” still gives distinction to the site today, serves as an identity for the resident companies in a similar way that it was originally intended, and became an important basis for restoration decisions recently.

Notes

- 1 Wolf Tegethoff, “*Industriearchitektur und Neues Bauen*. Mies van der Rohes *Verseidag-Fabrik* in Krefeld”, *Archithese*, vol. 13, 1983, 37.
- 2 Karl Otto Lufkens, “Die *Verseidag-Bauten* von Mies van der Rohe (1933 bis 1937). Ein Dokument der Architektur des XX. Jahrhunderts”, *Die Heimat* 48/1977, Krefeld, 1977; Wolf Tegethoff, *op. cit.*; Christiane Lange, *Ludwig Mies van der Rohe. Architektur für die Seidenindustrie*, Nicolai Verlag, Berlin, 2011, 146–161; Carsten Krohn, *Mies van der Rohe. Das gebaute Werk*, Birkhäuser Verlag, Basel, 2014, 89–93. The Mies van der Rohe Archive in the Museum of Modern Art keeps 229 drawings of the HE-building and the dyeing plant, and further drawings of a planned administration building. See the commented catalogue at Arthur Drexler (ed.), *The Mies van der Rohe Archive. An Illustrated Catalogue of the Mies van der Rohe Drawings in The Museum of Modern Art*, vol. 1–6, Garland Publisher, New York/London, 1986–1990 (1986, vol. 4, 2–61, 498–512; Drexler 1990, vol. 6, 137–184, 201–208); List of protected monuments of the city of Krefeld, No. 840, 30. July 1999.
- 3 Grundstücksgesellschaft *Girmesgath*, Director: Reiner Leendertz. Architect: Georg von Houwald.
- 4 *Verseidag* Archive, Krefeld.
- 5 Winfried Nerdinger, “*Baubaus-Architekten im Dritten Reich*”, in *Baubaus-Moderne im Nationalsozialismus. Zwischen Anbiederung und Verfolgung*. München, Prestel, 1993, 169–175. Cf. esp. BLÜMM, Anke, “*Entartete Baukunst*”? Zum Umgang mit dem Neuen Bauen 1933–1945, München, Paderborn, 2013.
- 6 Mies van der Rohe Archive, Plan n. 9.157; Christiane Lange, *op. cit.*, 147.
- 7 *Verseidag* Archive, Plan n. LP.023.
- 8 Mies van der Rohe Archive, Plan n. 9.192.
- 9 Mies van der Rohe Archivs, Plan n. 9.183.
- 10 Architect: Karl-Heinrich Eick; Helmut Köhren-Jansen, “*Die Instandsetzung der Bauten von Ludwig Mies van der Rohe*”, *Denkmalpflege im Rheinland* 18, n. 1, 2001, 22; GEUDER, Thomas, “*Sanierung der Verseidag-Gebäude in Krefeld*”, *[ark]*, n. 1, 2005, 21–33. For further assessment of the conservation work see Bleul/ Hesselmann, *Die VerseidAG in Krefeld, Seminararbeit RWTH Aachen*. Lehrgebiet Denkmalpflege, 2009. Edited version (W. Buschmann) at <http://www.rheinische-industriekultur.de/objekte/Krefeld/Verseidag/verseidag.html>.
- 11 Köhren-Jansen, *op. cit.*, 23.
- 12 Expert’s report of 18 September 2015, Restorer Susanne Conrad, *LVR Amt für Denkmalpflege im Rheinland*.
- 13 A note about the chosen color tone by the Atelier Mies van der Rohe from the “*Baumann-Farbtonkarte*” is given in the correspondence: Mies van der Rohe Archives, correspondence, Folder 6, Letter 25, July 1931, Mies van der Rohe to *Verseidag*.
- 14 Expert’s report of 26 June 2000, Restorer Horst Hahn, *LVR Amt für Denkmalpflege im Rheinland, Restaurierungswerkstatt II*, In Köhren-Jansen, *op. cit.*; for the chosen method see Geuder, *op. cit.*
- 15 Expert’s report of 7 August 2016, architects Norbert Hanenberg and Daniel Lohmann; *Fakultät für Architektur der RWTH Aachen*.
- 16 Expert’s report of 31 August 2016, Restorer Sigrun Heinen, *LVR Amt für Denkmalpflege im Rheinland*.
- 17 Mies van der Rohe Archive, Correspondence, Folder 4, Letter of 13 April 1931, *Verseidag* to Mies van der Rohe.
- 18 Arthur Drexler (ed.), *op. cit.*, vol. 6, 183. n. 9.62, 9.162.
- 19 List of protected monuments of the city of Krefeld, n. 840, 30. July 1999: “Für die Erhaltung und Nutzung liegen künstlerische und wissenschaftliche Gründe vor, da die Gebäude als Teil des Werkes eines bedeutenden Architekten für die Kunstgeschichte der klassischen Moderne einen beachtlichen Stellenwert haben”.
- 20 Mies van der Rohe Archive, correspondence, Folder 1, Letter of 10 January 1931, Mies van der Rohe to *Verseidag*. In the previous letter, the same issue was raised by *Verseidag*: “Wir bitten Sie, die Fassade, die jetzt in Putz ausgeführt werden soll, daraufhin nochmals durchzudenken”. Correspondence, Folder 1, Letter of 8 January 1931, *Verseidag* to Mies van der Rohe.
- 21 Those elevations numbered plain and with an additional “A” show the hatching. Starting with the set of plans numbered “B”, no more hatching was drawn. See Mies van der Rohe Archive, Plan n. 9.70



11 Mies van der Rohe, HE-building, Krefeld, Germany, 1930–1938. Workers canteen in the ground floor, ca. 1936. © Krefeld City Archives.

- (“22”), and 9.88 (“22 A”) for a hatching. In contrast: see n. 9.86 (“22 B”) without a hatching. Further with hatching: 9.89, 9.56, 9.58; Plan n. 9.93 apparently shows a study in plan of a plastered HE-building and a brick dyeing plant, underlining the theory of “clean” and “dirty” images of administration and production buildings.
- 22 Wolf Tegethoff, *op. cit.*, 104.
- 23 Christiane Lange, “Die deutsche Seidenindustrie als Auftraggeber der Moderne”, in Plüm, Kerstin (ed.), *Mies van der Rohe im Diskurs. Innovationen – Haltungen – Werke. Aktuelle Positionen*, Bielefeld, Transcript-Verl, 2013, 122–136.
- 24 Ingrid Ostermann, *Fabrikbau und Moderne: in Deutschland und den Niederlanden der 1920er und 30er Jahre*, Berlin, Gebr. Mann Verlag, 2010, 45–47.
- 25 Joan S. Skinner, *Form and Fancy: Factories and Factory Buildings by Wallis, Gilbert & Partners, 1916–1939*, Liverpool University Press, Liverpool, 1997, 232–236. First publication in English in: *The Architect & Building News*, n. 25, September 1931; in German: *Baugilde*, vol. 16, 1933, 775. For J.P. Bemberg in Wuppertal see Reiner Rhefus, “Die Wuppertaler Textilindustrie und ihre Baudenkmale”, in Walter Buschmann (ed.), *Industriekultur. Düsseldorf und das Bergische Land*, Essen, Klartext Verlag, 2016, 216, 234. The Doncaster buildings were demolished in 2000.
- 26 Initially, economic reasons were given for the choice of the white stucco. See *Baugilde*, vol. 16, 1933, 775. But the cleanliness and especially the client’s requests are given reasons for the appearance in “Germanic Modern”: Skinner 1997, 234.

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