Monika Wagner

Surface Matters: ‘True’ and ‘False’ Gloss in Architecture

Abstract: In my contribution I examine the interaction of two different materials, marble and glass, taking the example of a famous building of the so-called ‘classical modernism’, Mies van der Rohe’s Barcelona Pavilion of 1929. The gloss of traditional marble was associated with the pomp, splendour and representation of the old regimes and was rejected by representatives of ‘Neues Bauen’. In Modernism it appeared as a false lustre. In contrast, the gloss of modern, industrially produced crystal glass, the large-scale use of which was accompanied by new building methods, was charged with the utopianism of a democratic society. This contribution shows what the combination of conflicting concepts of gloss was able to achieve in a specific historical constellation. True gloss and false gloss were less a question of the polished materials than of the socio-political semantics ascribed to them.

The examination of a single avant-garde building from the 20th century in the context of a book on Roman archaeology might seem rather strange. However, an iconic building such as Mies van der Rohe’s Barcelona Pavilion may serve as a model for studying the formation of material semantics. The pavilion, in which nothing was exhibited, was created for the World Fair in 1929. As an exhibit in and of itself, the pavilion programmatically staged the glossy surfaces of two completely different materials: marble and glass. In order to reconstruct the contemporary significance of these materials, I will examine their provenance and manufacturing, as well as their traditional uses; I will look also at their contemporary contexts, and analyse the importance of gloss as a social equaliser in the 1920s. By taking these steps I will explore the reception and semantic ascriptions of the famous building and take a brief look at its later life. But first I would like to make a few remarks regarding material, surface and gloss.

Material: To begin with, I do not consider materials to have intrinsic meaning. Rather, every material possesses certain potential, which stems from its properties – hardness or softness, heaviness or lightness, flexibility or rigidity, to name but a few examples – and it is these properties that make the material suitable for particular purposes. But sometimes this potential is ignored. Even the functionality or suitability of a material’s properties might not be the deciding factor in its usage. Marble, for example, is by no means best suited for statues, though it has been used for precisely this purpose for thousands of years. Translating bronze statues into marble often required an extra physical support, since the material is not sufficiently resilient to create stable standing figures. But strangely enough, this has not led to aesthetic criticism. Apparently other characteristics of the marble – its good workability, its shine when polished, its translucent qualities or colour – were more relevant for far-reaching aesthetic ascriptions, so that marble became the most famous material used for sculptures.

Material as a general category of analysis has been neglected for a long time in the humanities on account of the privileging of form¹. Although the long-standing opposition of form and material is often dismissed as outdated today, its *longue durée* still has an impact². However, today’s materials are probably more at odds with ubiquitous reproduction techniques, which translate their physical qualities into sheer visibility, while their somatic properties – their tactility, smell or temperature – fall by the wayside.

1 Panofsky [1924] 1985.

2 Wagner 2013, 38–67.

As new synthetic materials were developed during the process of industrialisation, ‘truth to material’ was postulated³. The idea was connected with issues of style and served to seal off the new, castable materials which, like vulcanised rubber, the ‘monkey among useful materials’⁴, could take on any possible shape or colour. New questions arose in the 1960s, when contemporary artists programmatically neglected form in favour of material. Many of them focused on the effects of gravity, worked with predominantly flexible materials and staged their materials’ agency⁵. It was precisely during this period that the architectural historian Günter Bandmann published two inspiring articles on what he termed the ‘Ikonologie des Materials’ (iconology of materials), neither of which received much attention before the 1980s⁶. Since then, the usage and semantics of individual materials has emerged as a topic in art history and cultural history, and their transformations, interactions and respective signification have been intensely investigated in various disciplines⁷. Moreover, material as a category – unlike style – has provided a link for transcultural studies.

Surfaces were considered negligible and superficial for an even longer period. Although Gottfried Semper made surface a subject of the practical arts, it gained little attention before the advent of postmodernism. The subject of surface has only recently emerged, especially in cultural and architectural theory⁸. Surfaces seemed superficial in relation to something like the essence or core of an object. Nevertheless, surfaces have central communicative functions. Through surfaces we relate to the world. As John Ruskin put it in his ‘Stones of Venice’, surfaces store knowledge about nature and mankind⁹. Like materials, surfaces also communicate aesthetic codes that regulate social inclusion and exclusion. They create atmospheres and indicate what Erving Goffman called the ‘sense of one’s place’¹⁰.

Gloss (or shine) is neither a material nor a surface. Gloss is ephemeral, unstable and fluctuating¹¹. It detaches itself from physical things, although it remains bound to their surfaces. The agency of gloss depends on light¹². With light, it changes the appearance of the materials, embedding them in their temporal and spatial contexts. Gloss is an instantaneous phenomenon oscillating between the eye of the beholder and a reflecting surface. Although water surfaces or the moist leaves of plants shine under light, most shiny surfaces are not simply the result of natural properties of materials or objects. Timber, stones and even most metals do not shine by themselves, but rather their shine is produced by smoothing and polishing. Such shiny surfaces store labour, which often increases the value of the object in question. In the case of Jeff Koons’ controversial sculptures, to mention one extreme example, the polishing of the stainless steel to a high gloss surface takes up to 10,000 hours of skilled craftsmanship¹³.

Cleaning: Glossy surfaces need care; gloss calls for constant renewal. Only under these conditions is gloss, as Walter Grasskamp put it so graphically in his ‘Anatomy of Gloss’, a ‘promise of social interaction’¹⁴ with things.

These factors – materials, surfaces, gloss and its maintenance – are reflected in Jeff Wall’s lightbox transparency entitled ‘Morning Cleaning, Mies van der Rohe, Barcelona’, from 1999. The artwork (Fig. 1) presents a photographic slide of the reconstruction of Mies van der Rohe’s iconic

³ In the German discourse the term ‘Materialgerechtigkeit’ (material justice) was used: see Rottau 2012.

⁴ Semper [1860] 1977, 112.

⁵ Rübel 2012.

⁶ Bandmann 1969, 5–100; Bandmann 1971, 129–157.

⁷ See Kemp 1975; Lyotard 1984; Gumbrecht – Pfeiffer 1988; Raff 1994; Didi-Huberman 1999, 1–29; Ingold 2007; Wagner 2013; Wagner et al. 2016, with comprehensive literature.

⁸ Leatherbarrow – Mostafavi 2002; von Arburg 2008; Bruno 2014; Wagner 2018; Rathe 2020.

⁹ Ruskin 1904, 38 f.

¹⁰ Goffman 1951, 297.

¹¹ See Grüner 2014, 446–448 on gloss in Vitruvius. I owe the reference to Barry 2020 to Annette Haug.

¹² On the light in the Barcelona Pavilion, see Quetglas 2001.

¹³ Wagner 2019, 178 f.

¹⁴ Grasskamp 2012, 39–42.

Barcelona Pavilion, which was completed in 1986. With the window cleaner at his daily work in the pavilion's central space, 'Morning Cleaning' reveals a working process normally completely excluded from the genre of architectural photography¹⁵. Wall's picture highlights the difference between the clear transparency and soapy glass of the windows, so that transparency is made visible and at the same time raised to a central feature. In any case, the work of the window cleaner, which erases itself if successful, is essential to maintaining the shine and transparency of the surfaces. Thus, Wall's photograph emphasises the conditions under which Mies van der Rohe's 'built manifesto'¹⁶, and modern glass architecture in general, are to be viewed.

Fig. 1: Jeff Wall: 'Morning Cleaning, Mies van der Rohe, Barcelona 1999', lightbox transparency.

Materials for Mies van der Rohe's Barcelona Pavilion

Originally constructed to do nothing more than represent Germany at the Barcelona World Fair in 1929, the flat-roofed pavilion was erected on an open plan. Transparent, partly tinted, and frosted glass panels in combination with polished marble walls, bright travertine floors and two water basins offered a fluid interplay of reflections and refractions between interior and exterior spaces (Fig. 2). The combination of traditional marble and modern plate glass surfaces was extremely unusual for a modern architect in the Weimar Republic. However, the materials, so completely different in appearance, production, usage and semantics, are united by the sheen of their surfaces.

While the ubiquitous Roman travertine floor and the plateau for the pavilion did not attract much attention, the huge marble walls were considered spectacular features (Fig. 3). In the *Werkbund-magazine* 'Die Form', Justus Bier's review underlined Mies van der Rohe's material regime, pointing out that the preciousness of the selected marbles increased from the exterior to the interior of the building. The dark green marble wall in the water courtyard 'is the simplest, which is surpassed inside by a more noble one [...] of verde antique. The most precious wall is placed inside: a

¹⁵ Wagner 2013a, 193–219; Dobbe 2017.

¹⁶ Wagner 2013, 196.

Fig. 2: Mies van der Rohe: Barcelona Pavilion, 1929.

Fig. 3: Mies van der Rohe: Barcelona Pavilion, 1929.

wall of honey-yellow onyx dorée, with a wonderfully animated veining, the only marble block of this type and size found in Europe'¹⁷. In fact, Mies, who was the son of a stonemason, had carefully selected the different kinds of marble: the dark green lively-veined marble came from the French Alps, the verde antique from the Greek island of Tinos, and the honey-coloured onyx dorée from the Atlas Mountains in Morocco¹⁸. As the architect later recalled, after searching for some time, he discovered the huge block of onyx during the winter of 1928 in the warehouse of a Hamburg importer¹⁹. The fact that the onyx was first transported all the way from North Africa to Hamburg before it went back to the Mediterranean area indicates a well-developed transport system and a flourishing trade network.

Due to the time constraints under which the Barcelona Pavilion was being constructed, it was pointless to look for a marble block in a quarry. Mies van der Rohe knew that 'you cannot move marble in from the quarry in winter because it is still wet inside and would easily freeze and break into pieces'²⁰. In order to determine the colour of the marble, which is difficult to predict in an unprocessed state, Mies had a piece cut off and polished on site before he bought the extremely precious block²¹.

In the Barcelona Pavilion the onyx was not used for cladding a masonry wall. In accordance with the steel construction of the building the slabs were mounted full-height on a metal frame²². Originally the honey-coloured and partially semi-transparent veins of the free-standing onyx wall were not arranged ornamentally, as in the reconstruction. Rather, they produced irregular cloudlike shapes, much like a gigantic abstract painting. The difference between the two designs shows how much the reconstruction of surfaces made from natural materials can vary, even in cases like this, where the stones have the same origin.

Marble in Modernity

Marble is rarely found in the modern architecture of the early 20th century. Due to its history of use, marble was associated with the pomp of the old regimes' architecture of power and the overloaded historicism of the new industrial barons. This was exactly what 'Neues Bauen' in the young

¹⁷ Bier 1929, 424 (all translations from German by author).

¹⁸ Pavel 2006, 24.

¹⁹ Carter 1999, 23.

²⁰ Carter 1999, 23.

²¹ Krohn 2014, 76.

²² The height of the building was twice that of the onyx block: see Tegethoff 1981, 76; Pavel 2006, 24.

democratic nations aimed to overcome. However, an important forerunner for the use of marble in a modern building can be found in the work of the Austrian architect Adolf Loos. Loos created unusual spaces with interesting material combinations even before the First World War, when Austria and Hungary still formed a dual monarchy. His most significant work is the famous Looshaus in Vienna, completed in 1912. The façade of the building's residential and commercial floors is distinguished by a radical split-level surface (Fig. 4). While the upper floors display a completely unadorned white plaster surface, lacking the stucco ornaments so typical for Vienna, the basement and mezzanine are elaborately clad with cipollino marble. The architect emphasised that he had travelled all the way to Euboea and managed to get the ancient quarry of the 'most beautiful and splendid of all marble types' reopened for the first time 'since the fall of Rome'²³. With the cipollino marble he ennobled the elegant fashion shop located on the ground floor and the related tailoring shop on the mezzanine, the latter being the very epitome of the ephemeral and transient. Cladding a commercial shop front with cipollino marble, a material highly esteemed since antiquity, and combining it with the completely flat plaster façade provoked a public scandal in imperial Vienna²⁴.

Throughout its long history of use, marble has repeatedly been judged as a luxury material when employed in private houses, and complaints about this phenomenon appear as far back as Republican Rome²⁵. In his *Naturalis historia*, Pliny the Elder blamed 'the art of cutting marble into slabs'²⁶ for the decadent use of the material in public. Cladding allowed the upgrading of low-ranking brick or clay buildings, so that the shiny marble surfaces made an inappropriate claim in the social system, as Pliny feared. He thus transferred the hierarchical order of the materials onto the order of society. The special reputation of marble was recognised up to the 17th and 18th centuries, when architects and art theorists such as André Felibien or Marc-Antoine Laugier emphasised the importance of marble for 'maisons des princes et nos églises'²⁷. As late as the mid-19th century, Friedrich Theodor Vischer (as a professed democrat) demanded that marble be reserved for the highest tasks of architecture²⁸.

Over time, the cladding of a building with stone slabs became a widespread phenomenon, which was seen on the one hand as an 'upgrade', and on the other as fraud and imitation. In keeping with Semper's 'principle of clothing' (Prinzip der Bekleidung), which Loos also advocated, a marble veneer was considered 'appropriate to the material' (materialgerecht) – to use the much-discussed term from around 1900 – only as long as the cladding was made evident. On the façade of the Looshaus, the architect clearly marked the cipollino as a veneer by demonstrating that he did not use the stone as a load-bearing material (Fig. 5). This is expressed by the horizontal steel beam positioned over the four columns, which marks the modern construction of the building and indicates that the solid cipollino columns are functionally unnecessary. This is likewise indicated by the vertical veining of the marble. As a sedimentary material that develops in stratified layers, marble can only be loaded when laid horizontally. In the Looshaus, the cipollino veneer and the purely symbolic character of the marble columns thus served as a 'visible mask' for a commercial fashion salon.

The urban context made the provocative nature of the façade all the more obvious: Loos' building is located directly opposite the baroque Habsburg residence, with its enormous granite basement, stone ornamentation and inserted niche-figures. On the upper floors of the Looshaus, where apartments are located, the simplicity of the façade emphasises the modesty of bourgeois privacy

²³ Loos 1910, as quoted in Explora 2017, 19. In fact, the quarry had been reopened in late 19th century.

²⁴ Rukschcio – Schachel 1987, 152–157.

²⁵ Wallace-Hadrill 2008, 356–440; Lapatin 2015, 321–342. For further discussion of the issue of 'marble luxury', see Haug – Hielscher, Barker and Beck, this volume.

²⁶ Plin. HN 36, 52.

²⁷ Laugier 1755, 101.

²⁸ Vischer 1852, 212.

Fig. 4: Adolf Loos:
House at Michael-
erplatz, Vienna,
1910–1912.

Fig. 5: Adolf Loos:
Marble columns
of the House at
Michaelerplatz,
Vienna, 1910–1912.

according to the architect's notorious dogma that 'ornament is a crime'²⁹. The natural ornaments in the cipollino marble, however, communicate the claim that bourgeois commerce should be publicly represented. Similar to the criticism in Republican Rome – although for different reasons – here too marble was considered socially inappropriate. It seemed a 'false gloss' that was considered publicly disrespectful to the social order of the Habsburg Empire.

Modern Glass

In the Barcelona Pavilion the prestigious marble walls were embedded in shiny glass panels. While the marble and onyx slabs were the result of thorough, and delicate, traditional craftsmanship, the production of the plate glass was both industrialised and highly standardised. Glass was the future material par excellence in the building industry of the 1920s³⁰. In the Barcelona Pavilion the different degrees of transparency and the various colours of the glass panels created changing effects, as a critic in the *Cahiers d'Art* noted: 'some of the glass planes are of sombre and neutral tint, reflecting people and other objects, and what you see through the glass mingles with what you see reflected on it [...] you immediately feel the shock of, I dare say, metaphysical architecture'³¹. The glossy surfaces together with the two reflecting water basins, the chrome-plated steel girders and the chrome frames of the glass panels created a complex fusion of transparency and reflection that seemed to 'dematerialise' the building (Fig. 6), a term that was among the catchwords of the time³².

Within the physical world, glass came close to the ideal of a 'kind of immaterial matter', a notion which Georg Friedrich Hegel once reserved for light³³. The horizontal strip windows prevalent in the new architecture made buildings appear to float. Together with the reflections and refractions of the smooth surfaces, the architecture of 'Neues Bauen' seemed to the Swiss critic Sigfried Giedion to be a dematerialisation of the consolidated (*Entmaterialisierung des Festgefüigten*)³⁴. Max Eisler saw the buildings 'dissolving into uncertain light effects'³⁵. In 1920, Adolf Behne exclaimed with expressionistic emphasis that 'no material overcomes matter as much as glass [...] glass appears to be extra-human'³⁶. Behne's bold phrasing allowed associative charging with both spiritual and technological visions, and this is precisely what made glass one of the most commonly discussed materials of the 1920s. Others considered the subject in a manner that was more 'down to earth' than Behne. The architect and Bauhaus director Walter Gropius noted that 'although known for centuries [...] only the technical age with the help of modern fabrication processes brings glass from the stage of a "poetic utopia" into reality'³⁷. In fact, the concepts of the 'Neues Bauen' architects were linked directly to (and inspired by) the possibility of manufacturing large, hitherto impossible panels of perfectly streak-free crystal glass³⁸. While Semper, who referred to Pliny as the classical authority on material issues, had praised the 'infinite flexibility of glass'³⁹, in the 1920s the consistent quality of huge quantities of large-sized glass sheets was also of interest. In 1921, Mies van der Rohe himself designed the first high-rise building with a glass curtain wall in Berlin (Fig. 7).

²⁹ Loos [1908] 1962, 276.

³⁰ Waschke 2020, 92–102.

³¹ Rubio Tuduri in Carter 1999, 24; for the theoretical context of Tuduri's remarks, see Neumeyer 1986, 23 f. No colour photography of the original pavilion exists.

³² Wagner 2018.

³³ Hegel [1942] 1985, 15.

³⁴ Giedion 1928, 85.

³⁵ Eisler 1928, 209 f.

³⁶ Behne 1963, 14.

³⁷ Gropius 1926, 159.

³⁸ Dziewior 2005, 15–17; Waschke 2020, 92–102.

³⁹ Semper [1860] 1977.

Fig. 6: Mies van der Rohe: Barcelona Pavilion, 1929.

Fig. 7: Mies van der Rohe: Design for a glass skyscraper in Berlin, photomontage, 1921.

Although – or perhaps because – it was never built, the concept of the glass building approximated a visually dematerialised architecture. As the first industrially produced and machine-polished building material, crystal glass promised a hygienic life with light, air and sun. Transparency and shine emerged as the vision of a brighter world.

The Hungarian artist and Bauhaus teacher László Moholy-Nagy even tried to pictorially visualise the sensation of ‘dematerialised’ architecture. For the last picture of his book ‘From Material to Architecture’, which appeared in the same year that the Barcelona Pavilion was built, he chose Jan Kaman’s photograph of two superimposed negatives of buildings with their architectural structures interacting (Fig. 8). Moholy-Nagy described this permeation of architectural spaces as a vision that future generations might realise⁴⁰.

The interaction of real and virtual spaces, already created in the glass room at the Stuttgart Werkbund Exhibition in 1927 that Mies van der Rohe had designed together with his long-time collaborator Lilly Reich, was a prelude to what was achieved in the Barcelona Pavilion. In one of the designs for the building, the envisioned permeation of the glossy and partly transparent surfaces comes to the fore, allowing physical materials and illusionary effects to intertwine indissolubly (Fig. 9). For the visitor, walking through the pavilion was to become an immersive encounter with the interacting surfaces displaying their agency⁴¹.

Gloss in the 1920s

When Mies van der Rohe built the Barcelona Pavilion, shiny surfaces in general had acquired an important social function. The splendour of the ‘Golden Twenties’ owed nothing to traditional

⁴⁰ Moholy-Nagy [1929] 1968, 236.

⁴¹ In a letter to Lilly Reich, a ministry official reports that people ran into the glass wall and two persons even fell into the water basin: see Dziewior 2005, 69.

Fig. 8: Jan Kamman: 'Architektur', two superimposed negatives, 1929.

Fig. 9: Mies van der Rohe: Drawing for glass and marble refractions in the Barcelona Pavilion.

material hierarchies, which gold had dominated since antiquity. In the utopian splendour of modern democratic society, the radiant surfaces of new synthetic materials (e. g., Cellon, Bakelite, Ebonite and so on) and cheap galvanised metals outshone the gold of churches and courtyards. The new materials promised the participation of all social classes in the shine⁴². Accordingly, shine permeated every area of daily life: from pomade for fashionable hairstyles, to shiny shampoo, shoeshine and floor polish, from car paint to artificial silk, not to mention all the new appliances with their shiny metallic surfaces like electric vacuum cleaners, hairdryers and toasters. Gloss was impregnated with the pledge of social progress for all⁴³.

⁴² Wagner 2021.

⁴³ Maffei – Fisher 2013, 233 f.

Fig. 10: Advertisement for artificial silk, 1920s.

The driving force behind the contemporary euphoria for gloss was the cool aesthetic of the machine. The object of highest desire was the lacquered and metal-armoured car, with no trace of manual labour visible upon its surface. Its immaculate shine was the manifestation of the traceless mechanofacture in an age of ‘machine aesthetics’⁴⁴. The automobile seemed to have produced itself. Its surface perfection was a forecast of great things to come, namely the new technology of automation. Gloss was its aesthetic vehicle.

However, too much gloss could be unfavourably revealing, as Irmgard Keun’s novel ‘The Artificial Silk Girl’ (1932) shows⁴⁵. The glitter of artificial silk (Fig. 10) was the embodiment of petty bourgeois glamour and a sign of the social climber unable to afford the more decent ‘pure silk’. Although the shiny new material was conceived as a contribution to the vanquishing of old class divisions, its gloss was regarded as ‘false’ in comparison to the true sheen of pure silk. However, the distinction between true and false gloss collapsed in the face of semi-transparent artificial silk stockings, which conquered western markets in the blink of an eye.

It is within this historical constellation that the glossy surfaces of polished marble and the shiny glass panels of Mies van der Rohe’s Barcelona Pavilion reveal their significance. ‘Gloss for all’ was the socio-economic agenda of the Weimar Republic. Ten years after Germany’s defeat in World War I, the German pavilion at the Barcelona World Fair demonstrated the availability of even the most expensive materials from faraway places thanks to flourishing trade and increased economic capacities. At the same time, the pavilion presented the country’s industrial aspirations. It

⁴⁴ Moholy-Nagy [1929] 1968, 13.

⁴⁵ Keun [1932] 2017.

Fig. 11: Mies van der Rohe: Barcelona Pavilion, 1929.

was precisely the combination of industrially produced crystal glass with the precious marbles that reconciled the technical modernity of steel-framed construction with the traditional claim to representation. Continuity and fundamental renewal worked perfectly as an expression of the Weimar Republic, which aimed to balance the social classes. As the German High Commissioner Georg von Schnitzler remarked in his inaugural speech, 'We wanted to show here what we can do, what we are, what we feel and see today. We want nothing but clarity, simplicity, sincerity'⁴⁶.

Jeff Wall's 'Morning Cleaning Mies van der Rohe, Barcelona' from 1999 is concerned instead with the later life of the Barcelona Pavilion. The differences between the reconstruction and the original building are most obvious in the pattern on the onyx wall. But the new pavilion also depends on shine and transparency, both of which require constant labour. The focus in Jeff Wall's picture is less on the materials themselves than on the manual work of maintaining their gloss. Wall's photograph shows that the utopian sheen promised by the 1920s cannot arise by itself. It is neither there by nature, nor is it guaranteed by automatic production. Rather, shine must be constantly recreated through perpetual work. In 1929, Walter Benjamin noted that modern glass-iron architecture is strangely resistant to the traces of use⁴⁷. He had the inhabitants and the gradual wear and tear of their habitations in mind, but hardly thought of the dirt left behind by the temporary visitors to the Barcelona World Fair, which deprived the surfaces of their fascinating shine and transparency. In the reconstructed Barcelona Pavilion, the shine is daily re-produced through painstaking removal of all traces of touch. In 'Morning Cleaning' this hidden work becomes visible as an indispensable act that provides the conditions for the perception of the glossy and transparent surfaces that define the pavilion and its numerous relatives.

Mies van der Rohe's Barcelona Pavilion exemplifies the manner in which the aesthetics and semantics of a traditional material can be transferred into a new context. By programmatically inserting marble, which has communicated the splendour of emperors and empires from antiquity onwards, into the transparency of modernity, Mies van der Rohe made the material a signifier for democracy in the 1920s. The precious, freestanding onyx wall is, so to speak, encased in transparency. The material and its traditional semantics are framed by industrially produced glass, which was imbued with futuristic promises at the time of its creation. The vitrification provides a stage for the marble, as if it were a fascinating work of art (Fig. 11). In this way marble, which was bound to authoritarian regimes by its use-history, was rediscovered for the modern age, and in the shine of the glass and marble surfaces these contrasts were reconciled.

⁴⁶ von Schnitzler 1929, 582.

⁴⁷ Benjamin 1980, 217.

Monika Wagner

Universität Hamburg
Kunstgeschichtliches Seminar
Edmund-Siemers-Allee 1
20146 Hamburg – Germany
monika.wagner@uni-hamburg.de

Illustration Credits

- Fig. 1: After Wagner 2018, 159 Fig. 92.
Fig. 2: After Pavel 2006, 21 Fig. 2; c VG Bild-Kunst, Bonn 2021.
Fig. 3: After Pavel 2006, 32 Fig. 11; c VG Bild-Kunst, Bonn 2021.
Fig. 4: After Munch 2005, 35 Fig. 3.
Fig. 5: After Rukschcio – Schachel 1987, 158 Fig. 155.
Fig. 6: After Tegethoff 1981, Fig. 10; c VG Bild-Kunst, Bonn 2021.
Fig. 7: After Scheer 2000, 163, right.
Fig. 8: After Moholy-Nagy [1929] 1968, 236 Fig. 209; c VG Bild-Kunst, Bonn 2021.
Fig. 9: After Pavel 2006, 27 Fig. 5.
Fig. 10: After Wagner 2021, Pl. 2.
Fig. 11: After Tegethoff 1981, Fig. 10, 1; c VG Bild-Kunst, Bonn 2021.

Bibliography

Primary Sources

Plin. HN 36–37 Pliny: Natural History, Volume X, Books 36–37, transl. by D. E. Eichholz (Cambridge, MA 1962)

Secondary Literature

- von Arburg 2008: H.-G. von Arburg, Alles Fassade. ‚Oberfläche‘ in der deutschsprachigen Architektur- und Literaturästhetik 1770–1870 (Munich 2008)
Bandmann 1969: G. Bandmann, Bemerkungen zu einer Ikonologie des Materials, Städel-Jahrbuch 2, 1969, 75–100
Bandmann 1971: G. Bandmann, Der Wandel der Materialbedeutung in der Kunsttheorie des 19. Jahrhunderts, in: H. Koopmann – J. A. Schmoll, called Eisenwerth (eds.), Beiträge zur Theorie der Künste im 19. Jh. I (Frankfurt a. M. 1971) 129–157
Barry 2020: F. Barry, Painting in Stone. Architecture and the Poetics of Marble from Antiquity to the Enlightenment (New Haven 2020)
Behne 1963: A. Behne, Glasarchitektur, in: U. Conrads (ed.), Bruno Taut 1920–1922. Frühlicht. Eine Folge für die Verwirklichung des neuen Baugedankens (Berlin 1963) 12–16
Benjamin 1980: W. Benjamin, Erfahrung und Armut, in: R. Tiedemann – H. Schweppenhäuser (eds.), Gesammelte Schriften II, 1 (Frankfurt a. M. 1980) 213–219
Bier 1929: J. Bier, Mies van der Rohe Reichspavillon in Barcelona. Die Form, Zeitschrift für gestaltende Arbeit 4, 1929, 423 f.
Bruno 2014: G. Bruno, Surfaces. Matters of Aesthetics, Materiality, and Media (Chicago 2013)
Carter 1999: P. Carter, Mies van der Rohe at Work? (London 1999)
Didi-Huberman 1999: G. Didi-Huberman, Die Ordnung des Materials. Plastizität, Unbehagen, Nachleben, Vorträge aus dem Warburg-Haus 3 (Berlin 1999) 1–29
Dobbe 2017: M. Dobbe, This is so Contemporary? Konzepte von Moderne und Zeitgenossenschaft bei Jeff Wall, <<https://ojs.ub.rub.de/index.php/KUZ/article/download/796/752/>> (11.09.2020)
Dziewior 2005: Y. Dziewior, Mies van der Rohe. Blick durch den Spiegel (Cologne 2005)
Eisler 1928: M. Eisler, Architekt Ernst Wiesner, Brünn. Moderne Bauformen, Monatshefte für Architektur und Raumkunst 27, 6, 1928, 209–223

- Explora 2017: Explora. Marmor macht Architektur. Ein Baumaterial mit Geschichte, <<https://www.explora.ethz.ch/>> (30.06.2017)
- Giedion 1928: S. Giedion, *Bauen in Frankreich* (Leipzig 1928)
- Goffman 1951: E. Goffman, *Symbols of Class Status*, *British Journal of Sociology* 2, 4, 1951, 294–304
- Grasskamp 2012: W. Grasskamp, *An Anatomy of Gloss. The Art of the Surface*, in: J. Koons (ed.), *The Sculptor. Exhibition Catalogue Liebieghaus Frankfurt a. M.* (Ostfildern 2012) 45–49
- Gropius 1926: W. Gropius, *Glasbau*, *Deutsche Bauzeitung* 23, 1926, 159–162
- Grüner 2014: A. Grüner, *Licht und Oberfläche bei Vitruv*, in: E. Emmerling – St. Correll – A. Grüner – R. Kilian (eds.), *Firmitas et Splendor. Vitruv und die Techniken des Wanddekors* (Munich 2014) 415–463
- Gumbrecht – Pfeiffer 1988: H. U. Gumbrecht – K. L. Pfeiffer (eds.), *Materialität der Kommunikation* (Frankfurt a. M. 1988)
- Hegel [1942] 1985: G. W. F. Hegel, *Ästhetik 2* [1942] (Berlin 1985)
- Ingold 2007: T. Ingold, *Materials Against Materiality*, *Archaeological Dialogues* 14, 1, 2007, 1–16
- Kemp 1975: W. Kemp, *Material in der bildenden Kunst. Zu einem ungelösten Problem in der Kunstgeschichte*, *Prisma. Zeitschrift der Gesamthochschule Kassel* 9, 1975, 25–34
- Keun [1932] 2017: I. Keun, *Das kunstseidene Mädchen* [1932] (Berlin 1932)
- Krohn 2014: C. Krohn, *Mies van der Rohe. Das gebaute Werk* (Basel 2014)
- Lapatin 2015: C. Lapatin, *Luxury Arts*, in: B. E. Borg (ed.), *A Companion to Roman Art* (Chichester 2015) 321–343
- Laugier 1755: M.-A. Laugier, *Essai sur l'architecture* (Paris 1755)
- Leatherbarrow – Mostafavi 2002: D. Leatherbarrow – M. Mostafavi, *Surface Architecture* (Cambridge, MA 2002)
- Loos [1908] 1962: A. Loos, *Ornament und Verbrechen* (1908), in: F. Glück (ed.), *Adolf Loos. Sämtliche Schriften in zwei Bänden I* (Munich 1962) 276–288
- Lyotard 1984: J. F. Lyotard (ed.), *Les Immatériaux. Exhibition Catalogue Centre G. Pompidou* (Paris 1984)
- Maffei – Fisher 2013: N. P. Maffei – T. Fisher, *Historicizing Shininess in Design. Finding Meaning in an Unstable Phenomenon*, *Journal of Design History* 26, 3, 2013, 231–240
- Moholy-Nagy [1929] 1968: L. Moholy-Nagy, *Von Material zu Architektur* [1929] (Mainz 1968)
- Munch 2005: A. V. Munch, *Der stillose Stil. Adolf Loos* (Munich 2005)
- Neumeyer 1986: F. Neumeyer, *Mies van der Rohe. Das kunstlose Wort. Gedanken zur Baukunst* (Berlin 1986)
- Panofsky [1924] 1985: E. Panofsky, *Idea. Ein Beitrag zur Begriffsgeschichte der älteren Kunsttheorie* [1924] (Berlin 1985)
- Pavel 2006: T. Pavel, *'Result: Best Completion' – Mies van der Rohe and Kolbe in the Barcelona Pavilion*, in: U. Berger – T. Pawel (eds.), *Barcelona Pavilion* (Berlin 2006) 18–33
- Quetglas 2001: J. Quetglas, *Der gläserne Schrecken. Mies van der Rohes Pavillon in Barcelona* (Basel 2001)
- Raff 1994: T. Raff, *Die Sprache der Materialien. Anleitung zu einer Ikonologie der Werkstoffe* (Munich 1994)
- Rathe 2020: C. Rathe, *Philosophie der Oberfläche. Medien- und kulturwissenschaftliche Perspektiven auf Äußerlichkeiten und ihre tiefere Bedeutung* (Bielefeld 2020)
- Rottau 2012: N. Rottau, *Materialgerechtigkeit. Ästhetik im 19. Jahrhundert* (Berlin 2012)
- Rübel 2012: D. Rübel, *Plastizität. Eine Kunstgeschichte des Veränderlichen* (Munich 2012)
- Rukschcio – Schachel 1987: B. Rukschcio – R. L. Schachel, *Adolf Loos. Leben und Werk* (Salzburg 1987)
- Ruskin 1904: J. Ruskin, *Stones of Venice*, in: E. T. Cook – A. Wedderburn (eds.), *The Works of John Ruskin XI* (London 1904)
- Scheer 2000: T. Scheer (ed.), *Stadt der Architektur. Architektur der Stadt. Exhibition Catalogue Berlin* (Berlin 2000)
- von Schnitzler 1929: L. von Schnitzler, *Die Weltausstellung in Barcelona 1929, Der Querschnitt* 9, 8, 1929, 582–584
- Semper [1860] 1977: G. Semper, *Der Stil in den technischen und tektonischen Künsten oder praktische Ästhetik I* [1860] (Mittenwald 1977)
- Tegethoff 1981: W. Tegethoff, *Mies van der Rohe. Die Villen und Landhausprojekte* (Essen 1981)
- Vischer 1852: F. T. Vischer, *Ästhetik oder Wissenschaft des Schönen III. Die Baukunst* (Stuttgart 1852)
- Wagner 2013: M. Wagner, *Das Material der Kunst. Eine andere Geschichte der Moderne* ²(Munich 2013)
- Wagner 2013a: A. Wagner, *Duschen mit Mies. Zu Jeff Walls Morning Cleaning*, in: K. Plüm (ed.), *Mies van der Rohe im Diskurs* (Bielefeld 2013) 193–219
- Wagner 2018: M. Wagner, *Marmor und Asphalt. Soziale Oberflächen im Berlin des 20. Jahrhunderts* (Berlin 2018)
- Wagner 2019: M. Wagner, *Handarbeit und Maschinenästhetik. Oberflächen als Arbeitsspeicher bei Gormley und Koons*, in: V. Borsò – A. Hülsen-Esch (eds.), *Materielle Mediationen im französisch-deutschen Dialog, Materialität und Produktion 2* (Berlin 2019) 165–182
- Wagner 2021: M. Wagner, *Gloss for all. Shiny Cars and Bemberg Silk in the 1920s*, in: Ä. Söll – A. Krause-Wahl – P. Löffler (eds.), *Materials, Practices and Politics of Shine in Modern Art and Popular Culture* (London 2021)

- Wagner et al. 2016: M. Wagner – D. Rübel – S. Hackenschmidt (eds.), Lexikon des künstlerischen Materials. Werkstoffe der modernen Kunst von Abfall bis Zinn ²(Munich 2016)
- Wallace-Hadrill 2008: A. Wallace-Hadrill, Rome's Cultural Revolution (New York 2008)
- Waschke 2020: C. Waschke, Lichte Wechselspiele zwischen Fotografie und Neuem Bauen. Transparenz und Reflexion (Berlin 2020)