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SYMBOLIC TRANSPARENCY
GLASS IN THE REPRESENTATIVE CORPORATE ARCHITECTURE OF THE 20TH CENTURY

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Abstract

There is no question that glass played a decisive role in shaping architectural development in the 20th century. In architectural history, the material has mainly been related to the modern dictum of 'light, air, sun' and thus been explained in terms of its function. In addition, however, glass often had symbolic connotations and was intended to convey certain messages. The focus of this essay is on representative corporate architecture, in which glass was specifically used in the context of modern curtain walls to visually communicate a certain image.
Already the legendary glass pavilion designed by Bruno Taut for the Werkbund exhibition in Cologne (1914) was originally intended as a promotional object for the glass industry. In post-war corporate buildings, glass was then deliberately used within the framework of advertising architecture to symbolize certain (ostensible) characteristics of companies, such as transparency, progressiveness, cleanliness, etc. The buildings of the architectural firm Skidmore, Owings & Merrill (SOM) in New York, such as the Lever Brothers skyscraper (1952), the branch of the Manufacturer Trust on Fifth Avenue (1954) or the headquarters of the Chase Manhattan Bank (1961), were particularly trend-setting. Subsequently, a modern glass iconology developed that adapted to later requirements such as energy efficiency (since around 1990) and which is still valid today. In other cases, glass became an aesthetic end in itself from the 1970s onwards. A prime example is the Deutsche Bank Towers in Frankfurt am Main (1984), which are completely encased in glass, but whose mirroring counteracts the symbolic transparency usually sought in bank advertising and nevertheless (or perhaps precisely because of this) became a symbol of Frankfurt's financial industry par excellence. In this regard, this essay also addresses the renovation of the Towers' mirror glass façade in the context of corporate identity about ten years ago. It concludes with a look at the RWE headquarters in Essen (1997), which set new standards in terms of the transparency of a glass skyscraper—literally and figuratively.

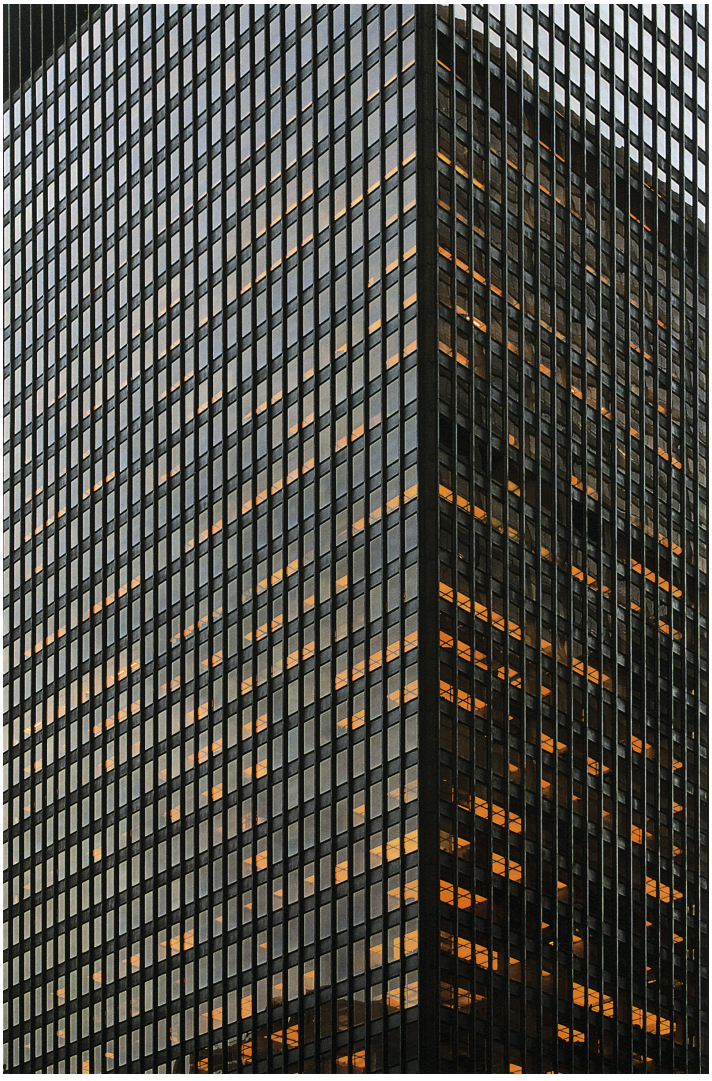
Keywords

Corporate architecture, visual communication, skyscraper, curtain wall, transparency, glass iconology

Glass has had a decisive influence on the architecture of the 20th century. Mies van der Rohe's visionary competition design for a high-rise building in Berlin's Friedrichstrasse (1922), in which an office building was to be completely covered with a glass façade for the first time, served as a model and inspiration for generations of architects

1 Design for a high-rise building on Friedrichstrasse, Berlin, Germany, photomontage, 1921, Mies van der Rohe.

(Fig. 1).[1] The desire for 'light, air and sun' subsequently made glass a leading material in the modern architecture movement. It is less well known that glass sometimes had symbolic connotations beyond pure functionalism and that the material iconology had a notable influence on the spread and popularity of glass in 20th-century architecture. Representative buildings of large companies, in which glass was specifically used to communicate a certain image visually, played a significant role in this development.[2] Even the legendary glass pavilion designed by Bruno Taut (1880–1938) for the 1914 Werkbund exhibition in Cologne, which is considered one of the key buildings in the architectural history of the early 20th century owing to its artistically sophisticated and architecturally innovative use of the material, was created primarily as an 'advertising pavilion for the glass industry'.[3] In the post-war period, visions of glass skyscrapers



2 Seagram Building, New York, USA, 1954–1958, Mies van der Rohe.

finally became reality. Once again it was Mies van der Rohe (1886–1969) who wrote modern architectural history with the headquarters for the Seagram Company in New York, completed in 1958 (Fig. 2).[4] Although celebrated as a milestone of functionalism with a light curtain wall of steel and glass, the extravagant bronze tone of the glazing was often symbolically related to the whisky manufacturer's products.

A New Kind of *Ganzglas-Haus* ('all-glass house')[5]

The incunabulum of the modern glass skyscraper, however, had been created six years earlier on the opposite side of the street: the US architectural firm Skidmore, Owings & Merill (SOM, 1936–today), with Gordon Bunshaft (1909–1990) as lead designer,

3 Lever House, New York, USA, 1950–1952, Skidmore, Owings & Merill (SOM)/Gordon Bunshaft.

designed prestigious administrative headquarters on Park Avenue for the detergent and soap manufacturer Lever Brothers (Fig. 3).[6] The curtain wall of Lever House consists almost entirely of glass, an essential difference from the curtain wall of the Seagram Building where a steel grid co-determines the façade in equal measure: blunt strips of dark grey steel panels divide the curtain wall horizontally, while the steel mullions on the outside structure it both vertically and stagger it in depth. In contrast, the curtain wall of Lever House appears as an all-glass façade with an almost smooth and consistently reflective surface. This is because glass panes were also placed in front of the opaque storey ceilings and parapets while at the same time the stainless steel profiles of the mullions stand out only slightly, thus structuring the façade in a graphic manner.[7] In addition, the blue-green tint of the thermal insulation glazing contributes to the façade being perceived as a two-dimensional glass skin.

Admired in the press as a novel *Ganzglas-Haus*, Lever House attracted much international attention when it was completed in 1952.[8] What is striking about the contemporary reporting is that special attention was paid to the cleanliness of the façade and that this aspect was always associated with the Lever Brothers' business. In *Bauwelt*, for example, we read: 'So here in New York, for a clean soap manufacturer's building, a "paradise has been created" for window cleaners.'[9] And a contemporary advertisement said: 'Its 24 stories of stainless steel and blue-green glass stand as a gleaming symbol of the cleanliness that motivates the business. Mastery over dirt and grime perpetuates this symbol.'[10] The shiny glass façade of the Lever House was thus understood as a symbol of cleanliness, a value that had a very positive connotation in the 1950s, and thus had an advertising effect for the products of Lever Brothers.[11] This strategy of communicative use of material was described as *markenanalog* ('brand-analogous') by the author.[12] The use of brand-analogous characteristics can be continuously found in corporate architecture and was a popular strategy in the post-war period to use architecture medially within the framework of modern guiding principles.[13]

Transparency instead of Solidity: A Paradigm Shift in Banking Iconography

With the 1954 branch of the Manufacturers Trust on Fifth Avenue in New York, SOM and Gordon Bunshaft not only created another incunabulum of modern glass architecture, but also initiated a paradigm shift in architectural banking iconography (Fig. 4).[14] Louis Skidmore (1897–1962), co-founder of SOM, formulated the moral claim that was implemented with the radically modern architecture: 'We had an idea that it was time to get the banks out of mausoleums. [...] We're trying to make the bank more human.'[15]

In the 19th century, a firm architectural iconography had become established in the financial sector, which in Central Europe was oriented towards Italian Renaissance palazzi and Baroque aristocratic palaces and remained valid until the 1930s.[16] The iconological guiding material of this historicist bank architecture was natural stone, which, as solid ashlar masonry on the façade, was intended to convey security and solidity, whereas exclusive marble fittings in the interior signalled liquidity and prosperity.[17] This opulent and solid bank architecture of the turn of the century, oriented towards feudal buildings, was increasingly understood after the Second World War as a symbol of a banking system that had come under criticism and was perceived as conservative, elitist, and secretive. In the post-war period, banks therefore sought an extensive image change, with a view to expanding their business sector, which would relate them to qualities such as transparency, progressiveness and proximity to customers.[18]

In this sense, Gordon Bunshaft's design for the branch on Fifth Avenue opposed the stone bank palazzo with an antithetical counter-design made of glass, which had a radically modern effect and literally translated openness and transparency into architecture. For this, SOM constructed a curtain wall with floor-to-ceiling glazing that

4 Former Manufacturers Trust Company Building, New York, USA, 1953–1954, Skidmore, Owings & Merill (SOM)/Gordon Bunshaft.

measured an imposing 22' × 9' 8" (6.70 × 2.95 m) on the second floor.[19] These were the largest plate glass panes ever installed in a building at that time.[20] Unlike Lever House with its shiny, reflective glass skin, the façade of the Manufacturers Trust was intended to appear as permeable as possible. Instead of tinted thermal-insulation glass, SOM therefore used mainly clear glass for the branch building, with only the storey ceilings concealed by opaque wired glass with a grey tint. In addition, the clear glass panes were largely freed from reflections by ingenious lighting in the interior.[21] The *Architectural Forum* saw the Manufacturers Trust branch as 'the first big building truly to fulfill architects' immaculate drafting board idea of glass as an invisible material.'[22] The highlight of the transparency was the publicly visible safe, whose impressive steel door, specially designed by the renowned industrial designer Henry Dreyfuss (1904–1972), was presented as if in a shop window, only a few metres behind the glass façade, and became a promotionally effective attraction for passers-by on Fifth Avenue.[23]

Glass as an Iconological Guiding Material in Financial Business

With the construction of a high-rise building for the Chase Manhattan Bank in New York in 1956–1961, SOM and Gordon Bunshaft transferred the architectural language of the

5 One Chase Manhattan Plaza, former headquarters of the Chase Manhattan Bank, New York, USA, 1957–1964, Skidmore, Owings & Merill (SOM)/ Gordon Bunshaft.

International Style to the representative headquarters of a leading major bank (Fig. 5). In the late 1950s, Chase Manhattan developed a corporate design that was trend-setting in the financial sector, and which was intended to give the bank a friendly, customer-oriented and open appearance.[24] This included, for example, the style-defining logo of geometric shapes by Ivan Chermayeff (1932–2017), which was introduced, not coincidentally, in 1961, the same year that the new headquarters in Manhattan's financial district were completed.[25] With their clear and reduced formal language, the logo and

the high-rise follow the same modern principles. The radical change in architectural appearance can be seen when comparison is made with the headquarters of the Federal Reserve Bank of the State of New York opposite, which was built in 1924 following the traditional banking iconography in the style of a Renaissance palazzo with massive stone ashlars.

Consequently, the new bank architecture defined itself in contrasts: light frame constructions made of concrete, steel and glass instead of massive structures made of stone, and the functional aesthetics of the International Style instead of the historicist images of early modern palace architecture. This fundamental image change affected the entire Western financial world in the 1960s and early 1970s. The modern high-rise replaced the historicist palazzo as the standard of representative architecture in the financial sector. Instead of permanence, safety, and solidity, the buildings were intended to express progressiveness, openness, and transparency. Glass took the place of marble as the iconological guiding material. In this way, a new banking iconography ultimately emerged. The modern architectural language, with which one explicitly wanted to distinguish oneself from the old norm in the 1950s, had long since been elevated to the new norm by the 1970s. The symbolic connotation of glass in post-war bank buildings remained prevalent and was used in public corporate communication, but in many cases it also became the formal normality.

Mirror Glass as the Postmodern Antithesis of Transparency

An outstanding example of corporate headquarters in which glass became an iconographic and aesthetic end in itself is the Deutsche Bank headquarters in Frankfurt am Main, built between 1978 and 1984 (Fig. 6).[26] The twin towers on the Taunusanlage, popularly known as 'Soll und Haben' ('debt and credit'), designed by the architectural firm ABB Hanig, Scheid, Schmidt (1961[?]–2004), are covered with a uniform skin of mirror glass that hides the inner structure, thus contradicting the modern dictum that the construction must be readable on the building.[27] In fact, the façade of the Deutsche Bank Towers is not a curtain wall at all, because the twin towers were not built as a frame construction, but in the so-called concrete-tube construction system with solid concrete outer walls that contain conventional windows. However, the mirrored glass panels sit flush with the actual window panes as a shell in front of the concrete wall, creating the impression of a homogeneous glass skin in which the times of day and weather conditions are reflected, as are the neighbouring buildings.

Mirror glass façades were an innovative postmodern trend for high-rise office buildings at the end of the 1970s that came to Europe from the USA. That is why in 1979 a Deutsche Bank delegation led by Hilmar Kopper (1935–2021), who later became Chief Executive Officer, went on a week-long trip through the United States to study role models[28]: the John Hancock Tower (1976) in Boston by I. M. Pei (1917–2019) and Pennzoil Place (1975) in Houston by Philip Johnson (1906–2005). Pennzoil Place not only has clear formal references—it is a set of mirrored twin towers over a trapezoidal floor

6 Deutsche Bank headquarters ('Soll und Haben'), Frankfurt am Main 1978–1984, ABB Hanig, Scheid, Schmidt.

plan—but was also institutionally linked to Deutsche Bank, which had acquired a majority stake in the property in 1976.[29] The decision-makers at Deutsche Bank probably liked the fact that the reference buildings for the new headquarters were not to be found in Frankfurt but in the USA, as this manifested the international claims of the globally operating bank. ABB architects developed the US models further by designing prismatic structures, the facetting of whose surface enhances the mirror effect of the façade: depending on perspective and exposure, the various facets of the surface

exhibit different reflections and levels of brightness. The extraordinary mirror glass façades have certainly contributed to the fact that the twin towers of the Deutsche Bank are very present in the media. In newspapers, television, and the internet, not only news about Deutsche Bank, but also about the Frankfurt financial centre or even the German credit system in general is illustrated with images of the mirror-glass towers. Due to this high media presence, Deutsche Bank's twin towers are among the best-known corporate headquarters in Germany.

During the fundamental refurbishment of 'Soll und Haben' in 2007–2010, the company was fully aware of the high profile and media impact of the headquarters:

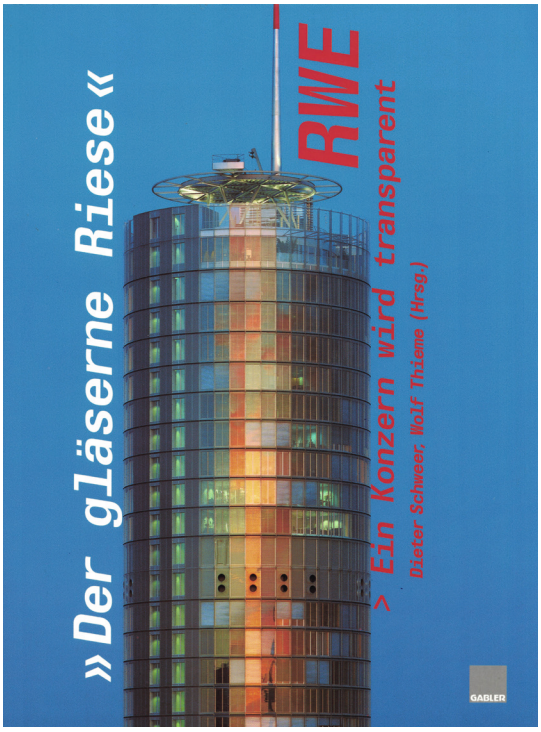
'At Deutsche Bank it was absolutely clear that we wanted to preserve the house in its formal expression and with its significance for the bank's corporate identity. The Deutsche Bank Towers are a trademark of our bank, they are a prominent building in the Frankfurt skyline and are often shown in the media as an image for the financial market.'[30]

Although the façade was completely replaced in order to significantly reduce energy loss, efforts were made not to change the external appearance of the twin towers. The energy loss through the outer shell could be significantly reduced by increasing the thermal insulation between the glass panels and the concrete wall, and replacing the fixed glazing with triple-pane windows that can be opened in gaps for natural ventilation.[31] The project's challenge of finding glass panes that had the same colour tones and degrees of reflection as the originals was obviously mastered.

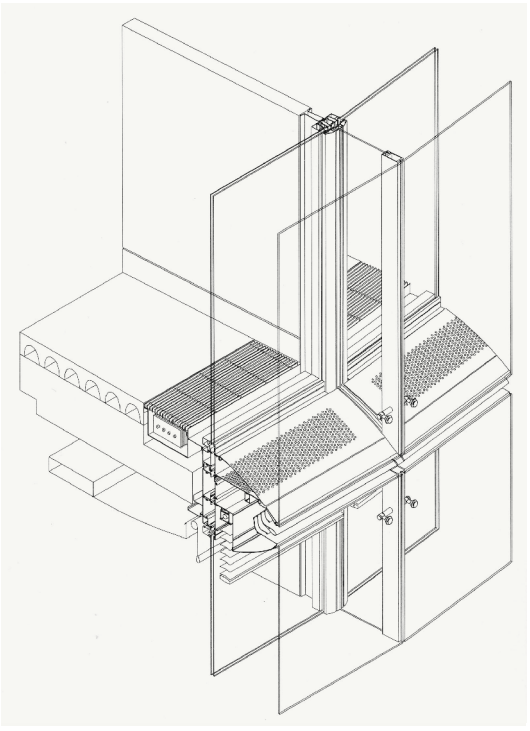
Maximum Transparency as a Symbolic and an Aesthetic Concept

While mirror glass façades were particularly popular for buildings in the financial world in the 1980s, they largely remained a postmodern fad of that decade and clear glass and transparency celebrated a comeback in the 1990s. Of course, the symbolic use of glass as a material was not limited to the banking sector. Being an energy company involved in nuclear power and open-cast lignite mining, RWE was critically perceived by the public in the 1970s and 1980s as a secretive and non-transparent company which, owing to its historically close ties with municipal politics, had an image of cronyism.[32] As a result, the old company headquarters in Essen were referred to ambivalently in common parlance as the 'Wattikan'.[33]

RWE's plans for new headquarters in Essen in connection with a strategic realignment of the corporation at the beginning of the 1990s were also intended to symbolize a new corporate culture (Fig. 7).[34] In order to achieve the greatest possible transparency, the team led by architect Christoph Ingenhoven (*1960) worked with specialist firm Gartner to develop an innovative façade concept based on two separate shells for energy reasons (Fig. 8).[35] The inner shell consists of room-height double glazing in conventional mullion construction; the outer shell of point-fixed single glazing. In this way, the external clamping profiles of traditional mullion façades could be avoided and the vertical articulation reduced to elastic butt joints. In addition, the engineers devel-



7 Former RWE headquarters in Essen, Germany, 1994–1997, Ingenhoven Overdiek und Partner, on the cover of the anniversary publication *Der gläserne Riese* ('The Glass Giant').



8 Detail of the isometric section of the façade of the former RWE headquarters in Essen, Germany.

oped a multifunctional connecting profile that tapers outwards from the storey ceilings so that the outer panes could be larger than the inner ones. In this way, it was also possible to reduce the horizontal ceiling stripes that show up in conventional curtain walls. In addition to the office floors, other areas such as the lift tower, emergency stairwell and technical floor were also completely covered with the glass skin. The fact that even opaque wall surfaces were clad with clear glass proves that functional reasons were not the primary consideration for the RWE Tower, but that transparency as an aesthetic and symbolic concept bore precedence.

The symbolic analogy of a transparent skyscraper and a transparent company was clearly communicated by the representatives of RWE AG. On the occasion of the handover of the keys in 1997, Chief Executive Officer Dr Dietmar Kuhnt (*1937) stated:

'This new house is more than just an externally attractive and functional administration building. It is a widely visible symbol of the attitude of a company that is consciously holding on to its traditional location. [...] Our house visually conveys a philosophy of transparency and openness. We set this sign quite deliberately.'[36]

Indeed, with its extraordinarily high proportion of clear glass in the façade, the RWE high-rise set new standards in terms of architectural transparency. Christoph Ingenhoven's office called the RWE Tower 'the first implementation of the complete trans-

parency of a high-rise building'[37], explicitly referring to Mies van der Rohe's design for the high-rise in Friedrichstrasse in Berlin. And so a circle closes here.

Conclusion

The architectural use of glass in the 20th century was essentially shaped by representative corporate buildings. If glass became a leading material of modernism on account of its translucency, iconological aspects of the material also played a noteworthy role in the spread and development of glass in architecture. The trend was set by representative buildings of large companies, for which glass served as a communicative means of shaping their image or constructing a corporate identity. In this context, glass symbolized qualities such as progressiveness, technical competence or, as in the case of the epoch-making Lever House, cleanliness. For the most part, glass is intended to symbolize openness and transparency. In the post-war period, glass became the iconographic material of choice for an entire industry in the financial sector. To understand these buildings, the symbolic meaning of the material must always be taken into account.

1 On the competition entry, see Bergdoll 2009.
2 On architecture as a medium of communication for major corporations, see Horn 2022a.
3 'Reklamepavillon der Glasindustrie', Thiekötter et al. 1993, 10.
4 On the Seagram Building, see Lambert 2013; Scott 2011.
5 Bauwelt 1952, 768. All translations are provided by the author if not stated otherwise.
6 On the Lever House, see Architectural Forum 1952; Architectural Record 1952; SOM 1962.
7 Tinted wired glass was used there (ibid.).
8 Bauwelt 1952, 768; see the bibliography under Gretes 1988.
9 'Hier in New York nun, dem Bau eines reinlichen Seifenfabrikaten, hat man also den Fensterputzern ein ‚Paradies geschaffen'', Bauwelt 1952, 769.
10 *Architectural Record* 1952.
11 'Thus was modern architecture´s obsession with hygiene converted into publicity for a soap manufacturer'; Martin 2003, 148.
12 Horn 2022a, chapter 3.2.
13 Ibid.
14 On the building, see Architectural Forum 1954; Architectural Record 1954; SOM 1962, 42–47.
15 *Time* 1953.
16 Regarding the architectural iconography of banks, see Horn 2022b; about bank architecture in the UK, see Booker 1990.
17 This was a contemporary demand, see for example Kick 1902, 149–150.
18 Horn 2022a, chapter 3.4.
19 Architectural Record 1954, 154.
20 Ibid.
21 Ibid., 104.
22 Ibid.
23 Ibid., 151.
24 Chase Manhattan was considered a prime example of corporate design at the time, see for example Pilditch 1970, 67–68.
25 Chermayeff/Geismar/Geissbuhler 2000.

26 Horn 2022a, chapter 2.4.
27 The name of the firm ABB derives from the first letters of its founders' names: Otto Apel, Hansgeorg Beckert, and Gilbert Becker. In 1981, senior staff members Walter Hanig, Heinz Scheid, and Johannes Schmidt took over the office.
28 Plan from Kurt Huppert for the USA trip, dated 12.9.1979; Letter from Bernhard Leitner to Kurt Huppert, dated 10.10.1979, concerning the course of the USA trip, both HIDB V40/88.
29 New York Times 1978.
30 'In der Deutschen Bank war absolut klar, dass wir das Haus in seinem formalen Ausdruck und mit seiner Bedeutung für die Corporate Identity der Bank erhalten wollen. Die Deutsche Bank Türme sind ein Markenzeichen unseres Hauses, sie sind ein markantes Gebäude in der Frankfurter Skyline und werden in den Medien gern als Bild für den Finanzmarkt gezeigt.' Holger Hagge, 'Global Head of Building and Workplace Development of the Deutsche Bank AG', *DBZ* 2011, 32.
31 On the renovation details, see DBZ 2011; Detail 2011.
32 Until 1998, municipalities that held shares in RWE had a special right that secured them a voting majority, even if they no longer held the majority of the capital; see Heck 1998, 265–66.
33 This is a play on words from 'watt' and 'Vatican'.
34 Horn 2022a, chapter 2.6.
35 About façade details, see Behr/Gartner/Heussler 2000.
36 'Dieses neue Haus ist mehr als nur ein äußerlich reizvolles und funktionsfähiges Verwaltungsgebäude. Es ist ein weithin sichtbares Symbol für die Haltung eines Unternehmens, das bewußt an seinem traditionellen Standort festhält. [...] Schon optisch vermittelt unser Haus eine Philosophie der Transparenz und Offenheit. Dieses Zeichen setzen wir ganz bewusst.'; manuscript of speech given by Dr Dietmar Kuhnt, Chief Executive Officer of RWE AG, on the occasion of the handover of the keys on 13 March 1997 (HK RWE).
37 '[...] zum ersten Mal die Umsetzung der vollständigen Transparenz eines Hochhauses.' Fax from Ingenhoven Overdiek und Partner, dated 30 August 1994, signed A. Nagel, to Mr Encke regarding 'Keywords for the speech at the laying of the foundation stone' (HK RWE).

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