



1. Control room at the Klingenberg power station, Walter Klingenberg and Werner Issel, 1925–1927.  
Photo: “ETZ – Elektrotechnische Zeitschrift” 1928, No. 1, p. 16

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# The glow of the metropolis

## Electricity, architecture, and the senses. Berlin 1924–1933

**Filip Burno**

Academy of Fine Arts in Warsaw

### Constellations

On the occasion of the “Berlin im Licht” (Berlin in the Light) festival, which ran from 13 to 16 October 1928, the Deutsche Luft Hansa offered night flights over the German capital. Through portholes, passengers could observe the street grid and the city’s main buildings – the illuminated Reichstag, the Victory Column, the edifices of the Museum Island, the bright streak of Unter den Linden, the neon-lit Kurfürstendamm area; they could also see the constellations of garden suburbs and new avant-garde housing estates<sup>1</sup>.



<sup>1</sup> *Berlin im Licht*, “Licht und Lampe” 1928, No. 17, p. 312.



<sup>2</sup> Detailed festival programme: *Festprogramm und Organisation der Arbeitsgemeinschaft "Berlin im Licht"*, Berlin 1928, *passim*.

<sup>3</sup> W. L., *Berlin im Licht*, "Die Form" 1928, No. 12.

<sup>4</sup> D. Neumann, *Lichtarchitektur and the Avant-Garde*, [in:] *Architecture of the Night: The Illuminated Building*, Ed. *idem*, Munich 2002, p. 37.

<sup>5</sup> G. Schmidt, *Prag im Licht*, "Licht und Lampe" 1929, p. 1241.

<sup>6</sup> M. Stadler, *Vom guten sehen bei künstlicher Beleuchtung. Lichttechnische Aufklärung um 1930*, [in:] *Erkenne Dich selbst! Strategien der Sichtbarmachung des Körpers im 20. Jahrhundert*, Ed. S. Niekolow, Köln 2015, pp. 297-298.

<sup>7</sup> S. Kracauer (*Die Mainbeleuchtung*, [in:] *Frankfurter Turmhäuser: Ausgewählte Feuilletons 1906-30*, Ed. A. Volk, Zürich 1997, pp. 61-65) described the excitement of the audience when the lights on the cathedral in Frankfurt am Main was switched on; the crowd, in patriotic elation, began to sing the national anthem.

"Berlin im Licht", a festival termed a "national event" in the press, was organised by a committee comprising artists, architects and entrepreneurs. The spectacular display of modern illumination was intended to promote the city. The *Magistrat*, with Mayor Gustav Böss at the head, was intent on creating an image of Berlin as the "heart of Europe"<sup>2</sup>. The celebration was accompanied by numerous events: street demonstrations of the latest electrotechnical achievements, exhibitions of the development of electrification in the city and even a night-time motorboat race on the Spree<sup>3</sup>. The city was decorated with many installations, such as the *Lichtbaldachin* on Friedrichstrasse. The symbol of the festival was the "Lichtturm", the Osram Tower on the Siegesallee decorated with the neon slogan "*Licht ist leben*". On the occasion of the "Berlin electricity festival", revue programmes were created with motifs of neon signs, transmission lines and glowing shop windows<sup>4</sup>.

For the passengers of the aforementioned night-time tour flights, the Radio Tower (Funkturn), built in the city's western suburbs, may have been a point of reference in the skyline of night-illuminated Berlin. At the top of the 138-metre-high steel structure, which was lit at night and designed by Heinrich Sträumer, floodlights were placed, sending beams of light into the sky. The electric show observed from the perspective of a passer-by, admired from an aeroplane, immortalised in photographs and movies, was one of the most important ingredients shaping the atmosphere of a European Americanised metropolis.

### Laboratory of modernity

The "Berlin im Licht" festival was not, perhaps apart from the scale of the project itself, a unique event; similar "electricity festivals" were held throughout Europe in the late 1920s and early 1930s, notably, for example, illumination shows in: Prague (October 1928) and Amsterdam (October 1929)<sup>5</sup>. Such events were often organised in the Weimar Republic, such as the "Frankfurter Lichtfest", which took place in Frankfurt am Main in December 1927, or the equally impressive event "Hamburg im Licht" in 1931<sup>6</sup>. The open-air shows were intended to promote cities and the region (illuminated public buildings and monuments), to advertise local trade and industry (special advertising kiosks). The purpose of these festivals, sometimes accompanied by "light and sound" performances, was to create a strong impression<sup>7</sup>.

The Berlin im Licht festival was intended to reinforce the image of Berlin as the European hub of accelerated modernisation, the most important centre of the project to reconstruct post-war Europe along the lines of American progressivism. Sándor Márai, the Hungarian writer, who in the early 1920s was one of the many foreigners



2. “Luminous signs” in the night-time Berlin of the late 1920s. Photo: *Licht und Beleuchtung: Lichttechnische Fragen unter Berücksichtigung der Bedürfnisse der Architektur*, Ed. W. Lotz, Berlin 1928, p. 43

creating Berlin’s cultural mosaic, characterised the German capital of that time as “one big laboratory”<sup>8</sup>. Around 1930, a decade after the creation of “Greater Berlin”, i.e. the enlargement of the city’s area from 66 km<sup>2</sup> to 878 km<sup>2</sup>, the capital of the Weimar Republic had more than four million inhabitants. It was one of the largest urban centres in the world. In 1929, the journalist and art critic Max Osborn, analysing the history of Berlin’s development since German unification (1871), proclaimed the culmination of the city’s process of “moving towards becoming a world metropolis”<sup>9</sup>.

Berlin had already begun to transform itself into a major modern city in the Wilhelminian era, from the turn of the 20th c., but it was not until the second half of the 1920s that this process accelerated. This was also, among other things, the result of the Dawes Plan, which aimed to calm the political and economic situation; this project also included support for the electrification of German cities<sup>10</sup>. Berlin of ca. 1924–1933 was a city of strong social contrasts, a place of political rallies, exciting sporting events, and criminal scandals stirring the mass imagination<sup>11</sup>. It was a metropolis living in the hectic rhythm of dance troupes like the Tiller Girls or jazz bands like the Weintraub Syncopators. After nightfall, Berlin’s spectacle of consumption, entertainment and power struggles was played out in an electric glow. The capital’s power stations provided the electricity needed to illuminate modern office buildings, mass entertainment complexes and large department stores, such as the famous Karstadt (Philipp Schäfer, 1927–1929), which soon after its completion became a symbol of the phenomenon of Americanisation (*Amerikanisierung*) of the German capital.

Berlin’s power plants powered streetlights, neon signs, shop window lighting systems, floodlights used in revues, Erwin Pisca-



<sup>8</sup> See S. Márai, *Wyznania patrycjusza*, Transl. T. Worowska, 2nd Ed., Warszawa 2005, p. 314.: “the city was so hungry, hungry for joie de vivre, a style, new forms of expression. I liked its spleen and enormous dimensions”.

<sup>9</sup> M. Osborn, *Berlin 1870–1929. Der Aufstieg zur Weltstadt*, Berlin 1994, pp. 224 ff (the text was written in 1929).

<sup>10</sup> See L. Scarpa, *Martin Wagner und Berlin: Architektur und Städtebau in der Weimarer Republik*, Wiesbaden 1986, p. 113.

<sup>11</sup> Of the more recent German studies, it is worth mentioning: M. Bienert: M. Bienert, E. L. Buchholz, *Die Zwanziger Jahre in Berlin: ein Wegweiser durch die Stadt*, Berlin 2006.



<sup>12</sup> See *idem*, *Die Erste Ampel am Potsdamerplatz*, [in:] *idem*, *Die Zwanziger Jahre in Berlin...*, pp. 42–43. The development of road infrastructure and traffic lights in Berlin is discussed by: J. **Gympe**, *Tempo! Berliner Verkehrsgeschichte*, Berlin 2015. By 1930, Berlin was already lighted by 15,000 street lamps. On the development of Berlin's lighting system in the interwar period, see H. **Liman**, *Mehr Licht: Geschichte der Berliner Strassenbeleuchtung*, Berlin 2000; S. **Röck**, *Die Berliner Strassenbeleuchtung in der Weimarer Republik*, [in:] *Versorgung und Entsorgung der Moderne. Infrastrukturen der 1920er und 1930er Jahre*, Ed. W. **Porombka**, H. **Reif**, E. **Schütz**, Frankfurt am Main 2011.

<sup>13</sup> For a discussion on skyscrapers for Berlin, see, for example, the 1928 article: M. **Wagner**, W. **Hegemann**, H. **Mendelssohn**, *Should Berlin Build Skyscrapers?*, [in:] *Metropolis Berlin: 1880–1940*, Ed. I. **Boyd Whyte**, D. **Frisby**, Berkeley 2012, pp. 344–346.

<sup>14</sup> The extension of the power grid was initially supported by specialists from the United States and later by electrical engineers trained at the Technical University in Charlottenburg. See Th. P. **Hughes**, *Networks of Power: Electrification in Western Society, 1880–1930*, Baltimore 1993, p. 175.

<sup>15</sup> See *ibidem*, pp. 183–184, 197.

<sup>16</sup> Founded in 1883 under the name Deutsche Edison-Gesellschaft für angewandte Elektrizität, the company became a giant in electrical engineering in less than three decades. In 1911, the AEG supplied 31% of Germany's electricity (Siemens only 6%). See *ibidem*, pp. 176–180. From the 1880s, the AEG organised the electrification of the capital with the BEW (Berliner Elektrizitätswerke) company. The symbol of the group's power was the Berlin headquarters on Friedrich-Karl-Ufer with its illuminated facade (Alfred Messel, 1905–1906). See S. **Anderson**, *Peter Behrens and a New Architecture for the Twentieth Century*, Cambridge [Massachusetts] 2000, p. 298.

<sup>17</sup> In 1913, the German Empire was already a powerhouse in the production of turbines, electric motors, transformers; Germany's share of the world's production of electrotechnical equipment at that time was as high as 35%. By comparison, the share of the United States was 29%. See Th. **Dame**, *Elektropolis Berlin. Industriemetropole und urbanes Labor*, [in:] *Elektropolis Berlin. Architektur- und Denkmalführer*, Ed. *idem*, Berlin 2014, p. 21.

<sup>18</sup> See S. **Anderson**, *op. cit.*, pp. 102–103. The largest Berlin "factory towns" (Fabrikstadt) of the electrical engineering indus-

tor's shows and Nazi party rallies in the Sportpalast. Electricity set the trams, underground and commuter rail in motion; it controlled vehicular traffic in the city (traffic lights and traffic control towers) [Fig. 2]<sup>12</sup>.

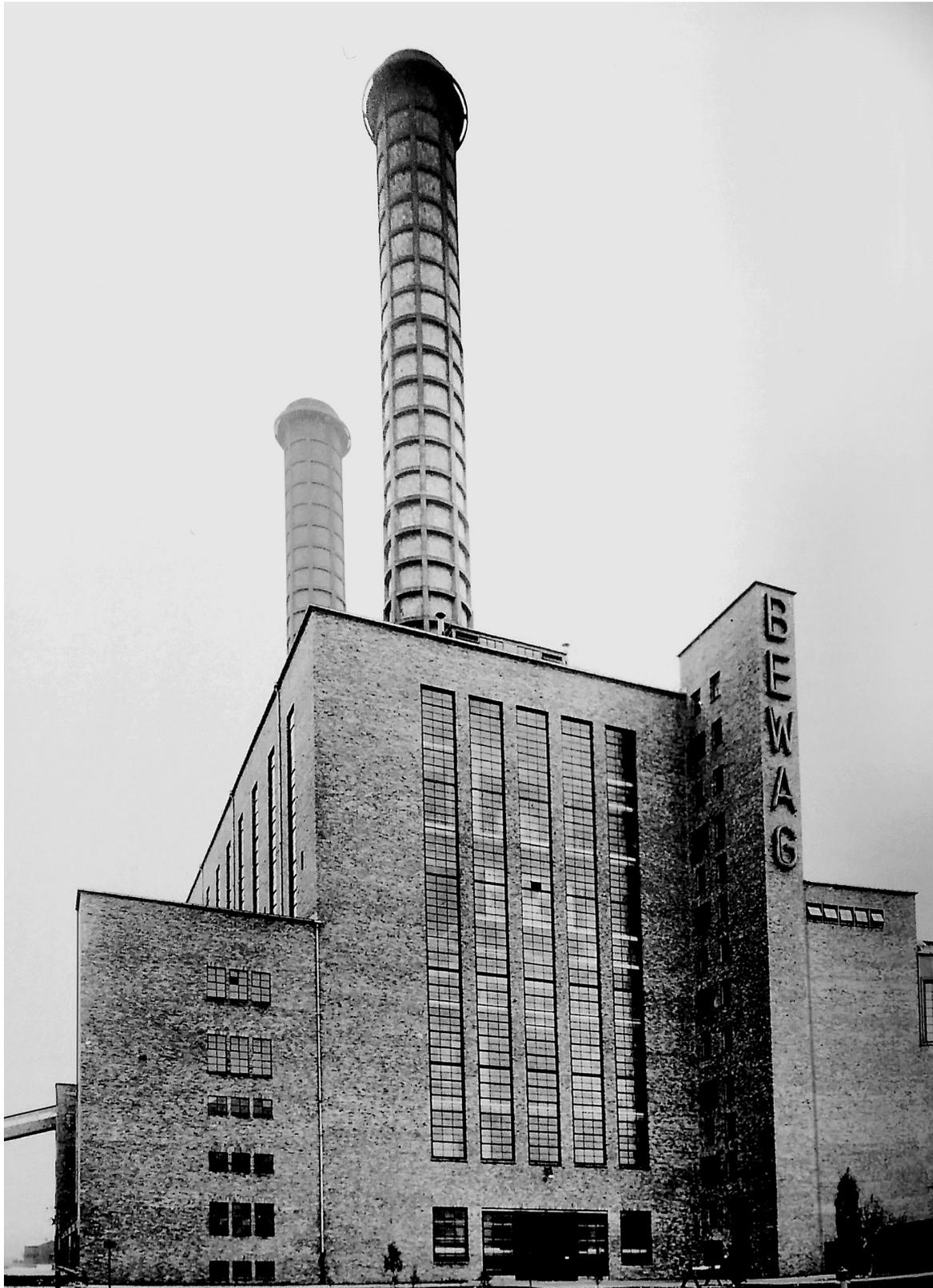
In order for this complex machinery to function smoothly, for the plan for the accelerated Americanisation of the capital to come to fruition and for the dream of a global metropolis with skyscrapers to become a reality, the power grid had to be extended<sup>13</sup>.

## Stadt der Elektrizität

Already before the World War I, Berlin had a modern multi-phase power system consisting of central substations, facilities for changing the grid voltage and infrastructure for distributing electricity<sup>14</sup>. In 1914 there were six power stations in Berlin, three large ones – the Moabit, Oberspree, Rummelsburg – and several smaller ones, including the Schiffbauerdamm Mauerstrasse, Spandauer. Their total capacity before the World War I began to approach 200,000 kW (by comparison, in 1895 it was only 9,900 kW). This system powered not only the city, but also an area within a 30 km radius. Electrification, industrialisation and telephonisation were accompanied by the development of the public transport network. Electric trams appeared on Berlin's streets as early as 1881, and in 1902 the first underground line was put into service<sup>15</sup>.

The industrialisation of Germany after the Unification was based primarily on the expansion of the steel and chemical industries, a process that was supported by the development of the railway network and, from the late 19th c., by electrification. It was electricity that was to fuel the modernisation of the German Empire. Electricity began to be identified with the vitality and aspirations of the young state. At the beginning of the 20th c., Berlin was one of the most important centres of the electrical engineering industry in the world; factories of corporations such as Siemens & Halske, Bergmann and, above all, the AEG (Allgemeine Elektrizitäts-Gesellschaft) were established there<sup>16</sup>. Emil Rathenau, the long-time director of the AEG, was a proponent of building Germany's world power on the basis of the electrical engineering industry (*elektrotechnischen Weltmacht*)<sup>17</sup>. At the turn of the 20th c., extensive factory complexes of electrotechnical concerns were being built on the outskirts of Berlin. One of the largest was the AEG plant in Gesundbrunnen, which had been under construction since 1894 and employed 14,000 workers<sup>18</sup>.

In the second half of the 1920s, after a period of post-war recession and political turmoil, the modernisation of older power stations such as the Charlottenburg (designed by Wilhelm Dohme, Alfred Schönburg), Moabit and Rummelsburg (designed by Hans Heinrich Müller, Felix Thümen) began. The symbols of the new phase of Ber-



3. The Kraftwerk Berlin West, Walter Dohme, Georg Tratt, 1929-1932, photo in private collection

4. Hans Heinrich Müller, Feliks Thümen, transformer substation on Mauerstraße 78, 1927–1928. Photo: F. Burno



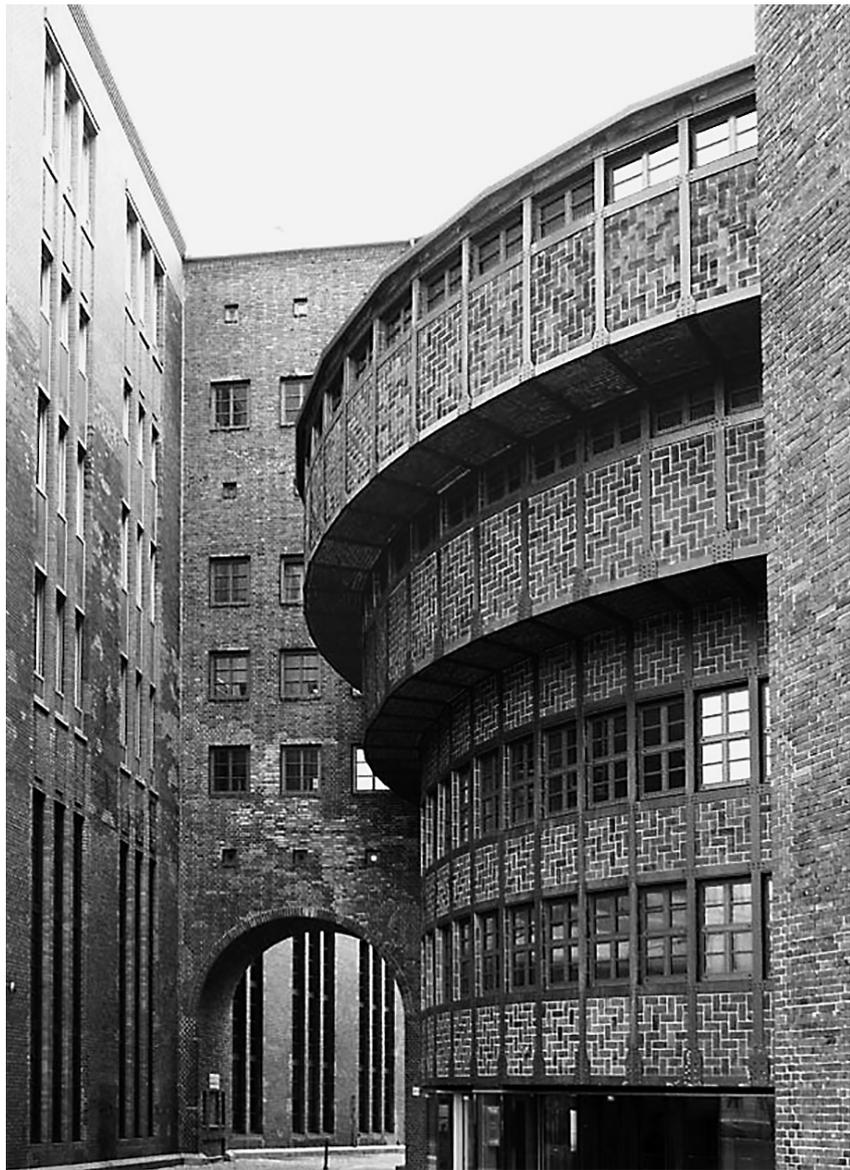
try were: Siemensstadt in the western part of the city (Siemensstadt included factory complexes on Spreegelände, Nonnendammallee and Gartenfeld), the AEG wire and cable factories on Wilhelminenhofstrasse (built from 1897 to a design by Paul Tropp, expanded in 1920–1940 by Ernst Ziesel and Paul Sellmann), the Bergmann and AG Osram plants on Groniger Strasse. See C. Hain, various sections, [in:] *Elektropolis...*, pp. 95–117.

<sup>19</sup> *Ibidem*, pp. 234–237.

<sup>20</sup> Catalogue in: *ibidem*, pp. 266–267.

<sup>21</sup> See P. Kahlfeldt, *Die Logik der Form: Berliner Backsteinbauten von Hans Heinrich Müller*, Berlin 2004, p. 140–143. Müller and Thümen were also the authors of the substations: the Humboldt on Sonnenburger Strasse, the Kottbusser Ufer on Paul-Lincke-Ufer, the Wilhelmsruh on Kopenhagener Strasse, the Wittenau on Brettenbachstrasse, the Scharnhorst on Sellerstrasse. See *ibidem*, pp. 65 ff.

<sup>22</sup> Before the World War I, with the political support of some politicians (above all Friedrich Naumann) and major industrialists such as Ernst Werner von Siemens and Emil Rathenau, Germany sought to create a “new industrial culture” (*neue Industriekultur*), based on rationalisation (*Rationalisierung*) of mass production (*Massenfabrikation*) and high product quality. Factories became an important architectural theme. The best-known examples of simplified, classicising forms in German industrial architecture around 1910 are the famous works of Peter Behrens, who served as the AEG’s art consultant from 1907: the hall of the AEG Turbine Factory in the Moabit district from 1909 and the new buildings of the AEG factory in Gesundbrunnen from 1908–1913. The most striking building in the “Stadt der Elektrizität” (City of Electricity) was the famous Small Engine Factory with its nearly 200-metre-long façade on Voltasstrasse rhythmised by semi-columns in great order. The Berlin power stations of Neukölln (Reinhold Kiehl), Steglitz (Hans Heinrich Müller), Wilmersdorf (Hans Liepe, Paul Stanke) are also good examples of the giving of monumental, simple forms to industrial buildings in German architecture around 1910; descriptions in: R. Haesecke-Diesing, *Kraftwerk Neuköln*, [in:] *Elektropolis...*; T. Kühn, *Kraftwerk Steglitz*, [in:] *Elektropolis...*



lin’s electrification, carried out largely thanks to the aforementioned American loans, as well as the cooperation of the municipal authorities with electrical engineering concerns, were two new power plants with a total capacity of more than half a million kilowatts: the Klingenberg (Walter Klingenberg and Werner Issel, 1925–1927) [Fig. 1] and the Kraftwerk West (Walter Dohme, Georg Tratt, 1929–1932).

The first of these, built in the eastern part of the city on Köpenicker Chaussee, consisted, among other things, of a monumental switchgear building with towering forms of vertical circulation paths and an 11-storey high-rise office building slenderised by lesenes. The second of these power stations, the Kraftwerk West, built near Siemensstadt on Otternbuchstrasse, was similar in form to London’s

“Cathedral of Electricity”, Battersea Power Station (Giles Gilbert Scott, Leonard Pearce, 1929–1935) [Fig. 3]<sup>19</sup>.

The city’s electricity generation and transmission system, created by specialists from the BEWAG (Berliner Städtische Elektrizitätswerke AG) company established in November 1923, consisted, in addition to the power stations, of substations (*Umspannwerk*)<sup>20</sup>. Of them 12 were built between 1924–1928 to the design of BEWAG architects Müller and Thümen. Among the most interesting is the transformer substation on Mauerstrasse in Berlin-Mitte. The complex of factory buildings, recently refurbished and converted into offices and concert halls (“E-Werk”), forms a compact ensemble of two tall buildings and a striking connector with stepped forms, embedded in the dense inner city development [Fig. 4]<sup>21</sup>.

Müller and Thümen’s constructions can be seen as the culmination of the search for a suitable architectural form for the power station –from the Rohbau style of the late 19th and early 20th c. (e.g. Schiffbauerdamm, August Söder, 1889–1990), to the modernist “cathedrals of work” (Kathedralen der Arbeit) erected around 1908–1914 with monumental, mainly classicising forms<sup>22</sup>. In the power station and substation buildings from ca. 1924–1933, as in the German sacred architecture of the “Liturgical Reform” circle, the use of massive volumes and the simplification of Romanesque and Gothic forms prevailed<sup>23</sup>. Inspiration from American skyscrapers is also evident (the Klingenberg power station mentioned above provides a good example). The architects, above all the aforementioned H. H. Müller and F. Thümen, operated with large expanses of brick façades punctuated by narrow openings, were keen to use pointed-arch gate passages and heavily modernised forms of the Burg style.

In the early 1930s, Berlin had one of the most modern city power systems in the world [Fig. 5]<sup>24</sup>.

This was the result of investments made by the BEWAG, above all new power stations, such as the aforementioned Kraftwerk Klingenberg complex – a model automated “energy factory” for the metropolis created by AEG specialists<sup>25</sup>. An important part of Berlin’s modernised electrical infrastructure was also a network of almost 50 substations, supplemented by 2,000 smaller transformer stations<sup>26</sup>. This enabled the development of street lighting, the extension of the underground (U-Bahn) and the so-called “Great Electrification” (“Grosse Elektrifizierung”) of the S-Bahn urban railway between 1924 and 1933<sup>27</sup>. Around 1930, the electrically-powered metropolis-machine predicted by authors of science fiction novels, in which full automation would rule, seemed close to becoming a reality in New York. Among European cities, this vision seemed to be materialising only in Berlin<sup>28</sup>. The electropolis of the World of Tomorrow was just over the horizon.



<sup>23</sup> Surprisingly, the forms, so eagerly used in office buildings, of “brick expressionism” (*Backsteinexpressionismus*) were rarely applied, one of the few examples being the Gleichrichter-Werk Zehlendorf (Müller and Thümen, 1928–1929). In Berlin’s electrical infrastructure architecture we find surprisingly few examples of functionalism (many more were built in Frankfurt am Main), it is worth mentioning the Elektro Thermis Verwaltungsgebäude (Otto Bartning, Ernst Neufert) with its façade composition based on the contrast of brick façades and white inter-window strips. See *ibidem*, pp. 148–149.

<sup>24</sup> At this time, Berlin was second only to Chicago in terms of the city’s power system. Diagrams of the electrification of Berlin from 1890–1914 and 1918–1925 in: **Deutscher Metallarbeiter-Verband**, *Die deutsche Elektrizitätsversorgung*, Stuttgart 1927; **A. Steinhäuser**, **L. Steinhäuser**, *Deutsches Elektrizitäts-Recht*, München 1928.

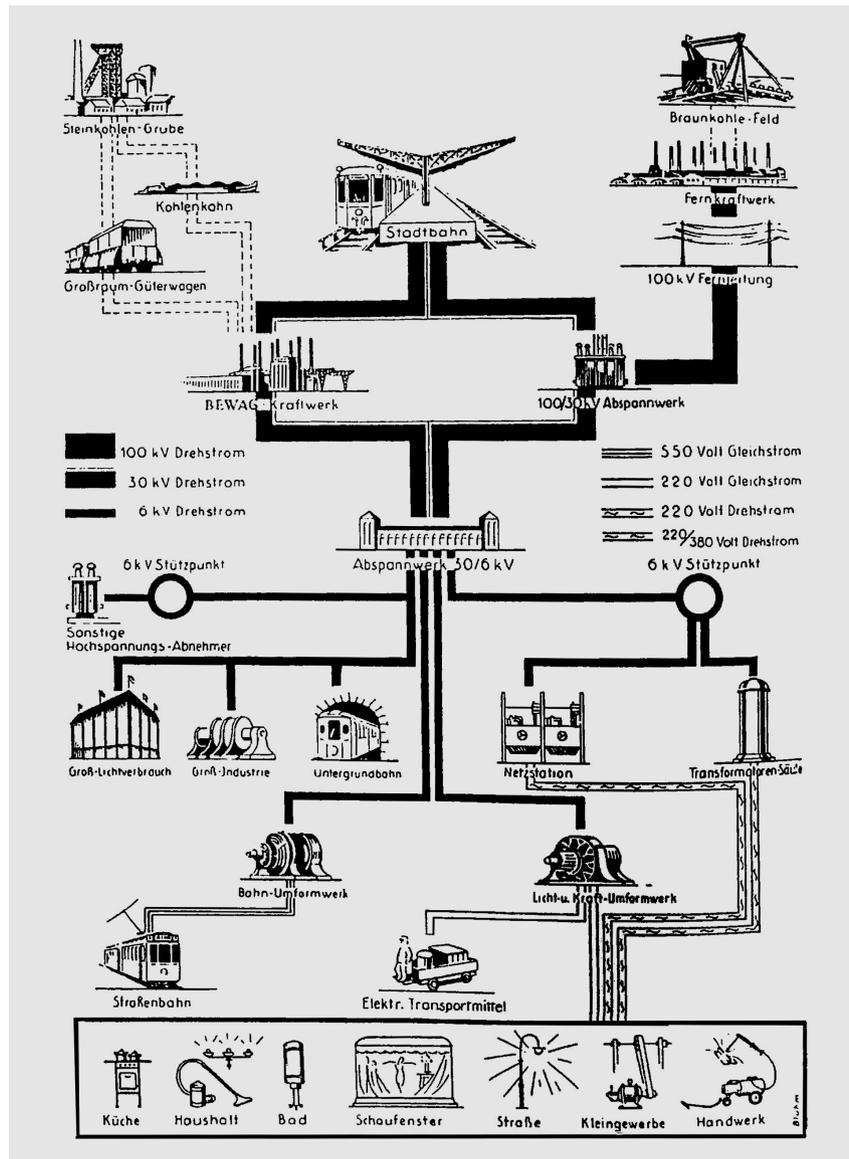
<sup>25</sup> In professional magazines, the Klingenberg was presented as an example of a new, efficient “work culture” (*Arbeitskultur*), see for example **R. Tröger**, *Das Großkraftwerk Klingenberg*, “Zeitschrift des Vereins Deutscher Ingenieure” 1927, No. 53, p. 1837; technical description of the power station (with technical drawings) in: **F. Münzinger**, *Weiteres vom Großkraftwerk Klingenberg in Berlin-Rummelsburg*, “ETZ – Elektrotechnische Zeitschrift” 1928, No. 1.

<sup>26</sup> **I. Oberhollenzer**, *Öffentliche Elektrizitätsversorgung*, [in:] *Elektropolis...*, p. 214.

<sup>27</sup> The electrification of the S-Bahn was accompanied by the construction of transformer stations (*Umformwerk*). These took various forms, i.e. interesting functionalist pavilions were designed by Alfred Grenander (e.g. on Hermannstrasse and at Alexanderplatz): **C. Hain**, *Umformwerk Hermannplatz*, [in:] *Elektropolis...*; **eadem**, *Umformwerk Bastianstrasse*, [in:] *Elektropolis...*; **eadem**, *Umformwerk und Verwaltungsgebäude Alexanderplatz*, [in:] *Elektropolis...*

<sup>28</sup> A good example is **O. von Hanstein’s** book *Elektropolis. Die Stadt der technischen Wunder* (4th Ed., Stuttgart 1928). See **Th. Dame**, *op. cit.*, p. 23.

5. Berlin power supply diagram, late 1920s. Photo from: A. Steinhauser, L. Steinhauser, *Deutsches Elektrizitäts-Recht*, München 1928, p. unn.



### Attack on lassitude

The municipal authorities supported the electrification of Berlin. For politicians from the SPD and its factions, spreading access to electricity was part of their ambitious social agenda. Increasing the capacity of Berlin’s power stations and extending the transmission networks served the social project. The fascination with America among much of the Weimar Republic’s cultural elite was accompanied by criticism of a social and economic model that generated, according to critics of *laissez-faire* varieties, striking social contrasts. Energy policy (*Energiepolitik*) was thus to be linked to social policy (*Sozialpolitik*). A pressing issue was the lack of affordable housing

available to manual workers. Meanwhile, in the 1920s as many as 10% of German workers lived in Berlin. Left-wing politicians and Neues Bauen architects alike often criticised tenement houses; in this milieu, the call for hygienic blocks of flats and rationally planned housing estates, built according to the slogan “*Licht, Luft und Sonne*” (Light, Air and Sun), was frequently formulated<sup>29</sup>. In the outskirts of the capital, once the land was developed and the electricity and water and sewage infrastructure was in place, it was possible to build housing estates in a block system. Between 1924 and 1929, as many as 135,000 new flats were delivered<sup>30</sup>. These were mostly designs by radical modernists, including Walter Gropius (Haselhorst, Siemensstadt) and Bruno Taut (Hufeisensiedlung, Onkels Tom Hütte). The expansion of the grid meant cheaper electricity. In 1914, less than 7% of Berlin households had access to electricity, in 1922 this figure was still 11%, but five years later it was already 50% (in 1933 76%)<sup>31</sup>. Access to cheap electricity was an important part of *die neue Wohnkultur* (the new culture of home furnishing), in which interior design and equipment designs were adapted to the requirements of the “age of electricity”, e.g. numerous sockets in modular kitchens, lightweight furniture to facilitate dusting with vacuum cleaners<sup>32</sup>.

The modernisation of Berlin’s energy infrastructure also contributed to the development of the entertainment industry. In the second half of the 1920s, metropolitan attractions were no longer available only to the middle class, but also to manual workers. Their working hours were reduced from 50 hours a week in 1925 to 41 hours in 1932<sup>33</sup>. The democratisation of leisure time was accompanied by the expansion of entertainment venues, above all cinemas. Modern cinema theatres had already been built in the German capital before the World War I, e.g. the Marmorhaus (Hugo Pál, 1912–1913), the Ufa-Pavillon on Nollendorfpfatz (Oskar Kaufman, 1912). However, it was not until the 1920s that lavishly illuminated “cinema palaces” (*Filmpaläste*) began to be erected. By the early 1930s, as many as 33 Berlin cinemas were categorised as *Grosskinos* (over 1,000 seats), screening the biggest Hollywood hits as well as super productions from the UFA film studio (Universum Film Aktiengesellschaft). Cinema theatres were built not only in the city centre; the Roxy-Palast was erected on Hauptstrasse in the Schöneberg Friedenau district (Martin Punitzer, 1929), the Gloria-Lichtspiele cinema was built in Bielefeld (1927) [Fig. 6]<sup>34</sup>.

Berlin’s cinemas were distinguished by carefully designed lighting effects (see Section 5 of the article), not only neon signs and spotlights, but also electric decorations prepared on the occasion of movie premieres. In 1928, on the occasion of the premiere of Richard Eichberg’s *The Girl from the Revue*, half of the façade of the Ufa-Palast am Zoo (Fritz Wilms, 1927) was taken up by a *Bewegungsplakat* (“moving poster”) with the rhythmically moving legs of the Tiller Girls dancers. One of the specialists creating striking settings



<sup>29</sup> See S. Hake, *Topographies of Class: Modern Architecture and Mass Society in Weimar Berlin*, Ann Arbor [Michigan] 2008, pp. 30–31.

<sup>30</sup> See E. D. Weitz, *Weimar Germany: Promise and Tragedy*, Princeton 2007, pp. 176–177.

<sup>31</sup> See T. P. Hughes, *op. cit.*, pp. 189–190.

<sup>32</sup> The relationship of electrification to *die neue Wohnkultur* is discussed in: L. Scarpa, *op. cit.*, pp. 76 ff. For example, in E. Meyer’s 1926 book *Der neue Haushalt*, the use of electrical appliances was promoted. It is also worth mentioning that the *Reformküche* campaign was supported by the BEWAG. See L. Scarpa, *op. cit.*, p. 126.

<sup>33</sup> See J. Ward, *Weimar Surfaces: Urban Visual Culture in 1920s Germany*, Berkeley 2001, p. 34.

<sup>34</sup> However, the largest cinema in the Weimar Republic was built not in Berlin, but in Hamburg (the Ufa-Palast opened in 1929). For more on Berlin’s striking “cinema palaces” see P. Boeger, *Architektur der Lichtspieltheater in Berlin. Bauten und Projekte 1919–1930*, Berlin 1993, *passim*. For archive photos of Berlin cinemas see, for example Ph. M. Shand, *Modern Theaters and Cinemas*, London 1930; P. Zucker, G. O. Stindt, *Lichtspielhäuser. Tonfilmtheater*, Berlin 1931.



<sup>35</sup> Of Feld's projects, it is worth mentioning the silver painting and illumination of the façade of the Ufa-Pavillon cinema at Nollendorfplatz for the premiere of *Metropolis* (January 1927). The premiere of the adventure film *Chang* at the Ufa-Palast am Zoo was glorified by a huge tiger head with neon green eyes and red fangs placed on the façade. On the occasion of the first showing of *F.P.1 Doesn't Answer* (dir. Karl Hartl, 1923), the façade of this cinema was transformed into an airplane hangar, *Spy* (dir. Fritz Lang, 1928) was advertised with a giant eye from which a searchlight beam was emitted. See K. Kreimeier, *The Ufa Story: A History of Germany's Greatest Film Company, 1918-1945*, Berkeley 1999, pp. 114-117.

<sup>36</sup> Z. Freud, *Poza zasadą przyjemności*, 6th Ed., Rev., Transl. J. Prokopiuk, Warszawa 2005, p. 29.

<sup>37</sup> F. Hessel, *Sztuka spacerowania*, Transl. S. Lisiecka, "Literatura na Świecie" 2001, No. 8/9: *Berlin*, p. 158. S. Kracauer (*Ulice*, Transl. K. Wierzbicka, "Literatura na Świecie" 2001, No. 8/9: *Berlin*, pp. 315-316). also wrote about this phenomenon: "When one crosses Friedrichstrasse, walking towards the railway station, it is common to see the mighty locomotive of a transit train overhead [...]. Does the locomotive arouse the interest of the crowd? No one raises their eyes towards it. Cafes, shop windows, women, food vending machines, newspaper headlines, illuminated advertisements, policemen, omnibuses, pictures from variétés, beggars - all these ground level impressions occupy the passer-by too strongly to really see the phenomenon on the horizon".

<sup>38</sup> S. Kracauer, *Ulice...*, p. 320.

<sup>39</sup> See D. Reinhardt, *Von der Reklame zum Marketing. Geschichte der Wirtschaftswerbung in Deutschland*, Berlin 1993, pp. 315-317; R. Birkefeld, M. Jung, "Abends aber ist am schönsten in diesen Straßen". *Die Inszenierung des elektrischen Lichts im Stadtraum der Zwanziger Jahre*, [in:] *Die Stadt, der Lärm und das Licht. Die Veränderung des öffentlichen Raumes durch Motorisierung und Elektrifizierung*, Ed. iidem, Seelze 1994.

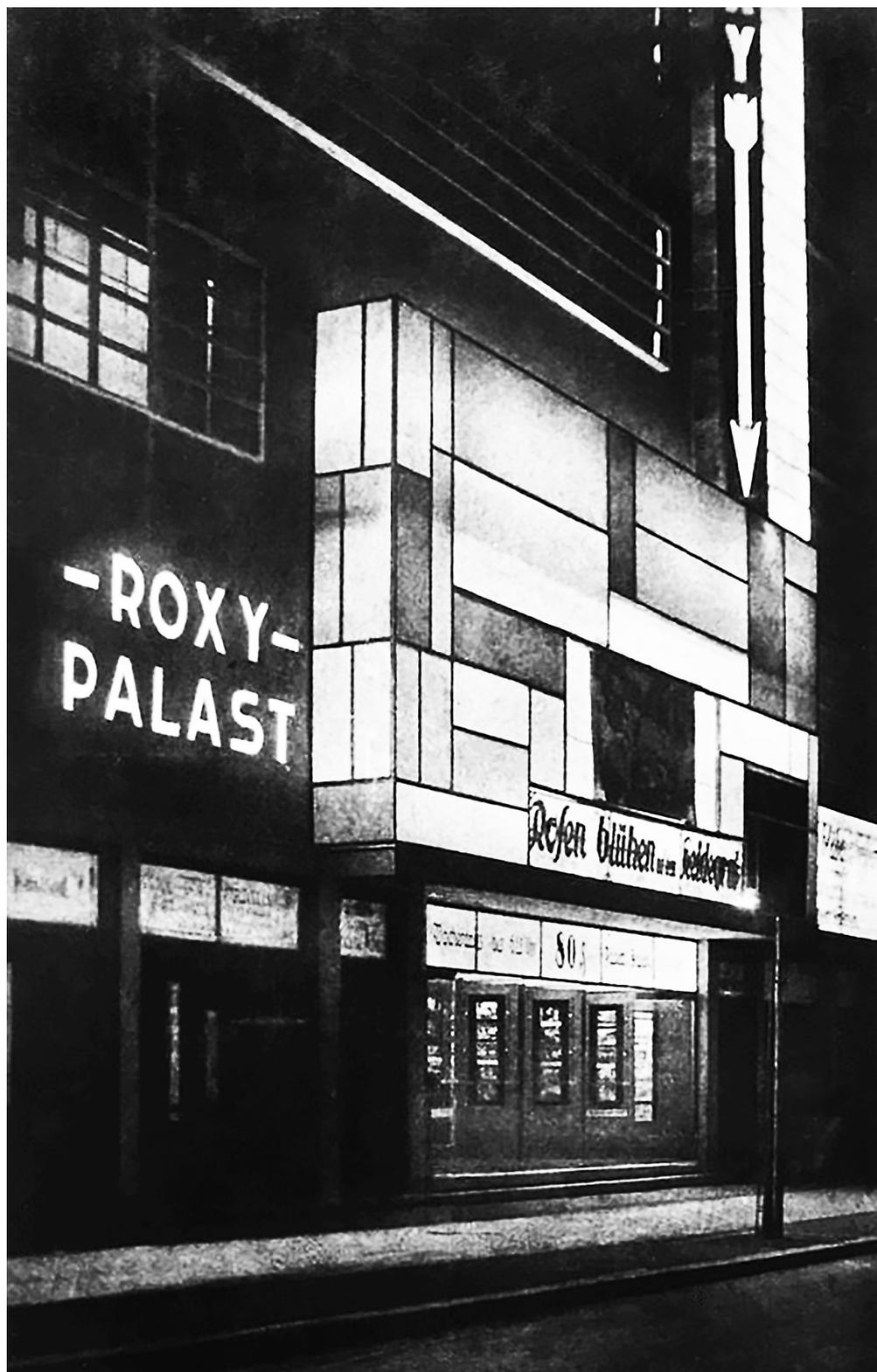
for premieres was Rudi Feld, who had been the artistic director of the Ufa label since 1926. On the occasion of the first showing of Fritz Lang's *Woman in the Moon*, in October 1929, Feld designed a rocket taking off from a three-dimensional model of a city of skyscrapers on the façade of the Ufa Palast am Zoo; in its background, 1,000 light bulbs formed a starry sky<sup>35</sup>.

Among European cities in the 1920s, it was in Berlin that the phenomenon of intense sensory exposure could be observed most clearly. The German capital attacked the senses, the simultaneous perception of stimuli was very intense. The organisers of amusement parks, revues and sporting events, but also the advertising commissioning business owners, were anxious to break through the shield protecting the metropolitan inhabitant from too intense impressions, through what Sigmund Freud called *Reizschutz*<sup>36</sup>. "No newspaper is read with such interest as the luminous, moving inscriptions gliding over advertising surfaces along the roofs", wrote Franz Hessel in *The Art of Walking*<sup>37</sup>. Siegfried Kracauer described the peculiar glow of evening and night Berlin:

Glass pillars of light up to the height of a house, the colourful, exaggeratedly bright planes of cinema placards, and behind the mirrored panes of glass, twisted, glittering pipes - all of these together undertake an attack on lassitude [...]. It all shrieks, drums and honks at the crowd with maddening brutality<sup>38</sup>.

For Kracauer, this frenetic spectacle of the metropolis was an expression of the city's vitality, the "lust for life", the "will to exploit and entertain" of its inhabitants. Berlin "bombarded" the senses (*Stimmungs Kanonaden*), creating a modern total work of art (*Gesamtkunstwerk der Effekte*); light advertisements were an essential part of it.

Moving electric signs had already appeared in Berlin before the World War I, a good example being the "Kupferberg" advertisement from 1912 with bubbles hovering over a glass. However, it was not until the second half of the 1920s, thanks to the aforementioned drop in electricity prices, that the production of neon signs and luminous kinetic advertising developed rapidly<sup>39</sup>. Striking neon decorations were also created in Germany outside of Berlin, but it was the capital that deserved the title of "electric metropolis". Berlin's primacy was not only due to its population, its status as the capital city, the attitude of the municipal authorities also had an impact. In many German urban centres, the development of night-time electric advertising illuminations was blocked by conservation groups out of concern for monuments and the cultural landscape. Some cities began to ban excessively bright outdoor advertising (*Aussenreklame*), as well as intensive luminous advertising (*Lichtwerbung*). Restrictions mainly applied to historic buildings and even entire old town complexes,



6. Roxy-Palast cinema on Hauptstraße 78, Martin Punitzer, 1929; postcard in the collection of F. Burno



<sup>40</sup> J. Ward, *op. cit.*, s. 135.

<sup>41</sup> See *ibidem*, p. 102. The debate was discussed in the journal "Licht und Lampe". See for example G. Schmidt, *Das Wiederwachen der Lichtreklame*, "Licht und Lampe" 1923, No. 12.

<sup>42</sup> See J. Ward Lungstrum, *The Display Window: Designs and Desires of Weimar Consumerism*, "New German Critique" 1999, No. 76, p. 135.

<sup>43</sup> Between 1921 and 1924, Hans Luckhardt experimented with lighting and advertising systems in which he combined kinetic and sound effects. See M. Schirren, *Die Brüder Luckhardt und der architektonische Expressionismus - Ideologisches, Experimentelles und Monumentales*, [in:] *Brüder Luckhardt und Alfons Anker. Berliner Architekten der Moderne*, Berlin 1990, pp. 42 ff.

<sup>44</sup> During the "Berlin im Licht" festival, a neon ladder was mounted on the KaDeWe department store in the Schöneberg district, with a mannequin climbing up it. See J. Ward, *op. cit.*, p. 117.

<sup>45</sup> H. Berghoff, *Marketing im 20. Jahrhundert Absatzinstrument - Managementphilosophie - universelle Sozialtechnik*, [in:] *Marketinggeschichte: Die Genese einer modernen Sozialtechnik*, Ed. *idem*, Frankfurt am Main 2007, p. 41.

e.g. in Dresden and Munich neon signs were already banned before the World War I, and in the 1920s their use was restricted. Special commissions (*Baupflegekommissionen*) watched over the preservation of historic character, as well as the *Heimatschutz* movement for the protection of the "national landscape", influential especially in southern Germany; its members were opposed to the "slavish imitation of American models"<sup>40</sup>. Meanwhile, in Berlin in the second half of the 1920s, such bans were no longer in force. A proponent of measures leading to the development of illuminated advertising in the city was Martin Wagner, who had been acting as the city's urban planning consultant since 1926. After a period of wartime blackout and restrictions introduced in 1921 for economic reasons (illuminated signboards could only be placed on the ground floor), Berlin lit up with colourful neon signs. In 1929, the city was illuminated by 3,000 illuminated advertisements of various kinds consuming almost 110 million kWh per year<sup>41</sup>.

The idea of an "advertising city" (*Reklamestadt*), a metropolis filled with visually attractive commercial signs, was also promoted by advertising sector associations. By the end of the 1920s, there were 15 of these in Germany, including the Deutscher Reklame-Verband. The development of German outdoor advertising, including illuminated advertisements, was described in the pages of magazines such as Seidels Reklame, Die Auslage and finally Reklamekunst, which, significantly, changed its name to Die Propaganda in 1927. Apart from national companies, Berlin was home to representative offices of international advertising agencies. The importance of the German capital as a European advertising centre can be seen from the organisation of the World Advertising Congress in this city in 1929<sup>42</sup>. Berlin's sign-makers competed for ingenious solutions that were intended to have a strong impact on passers-by, to stick in their memory<sup>43</sup>. They designed according to the slogan of the Zeiss lighting system of 1927: "*Mehr Licht - mehr Käufer*"; the more light, the more varied and original the composition, the more customers. Therefore, kinetic luminous advertising became increasingly popular, such as the *Tricklichtreklame* of the Persil company in 1927, consisting of 4,000 coloured light bulbs, showing the five phases of washing a shirt and the inscription "*Persil bleibt Persil*" appearing at the end<sup>44</sup>. German advertising agencies used American marketing strategies, ranging from language saturated with military metaphors ("advertising campaign", "conquest of the market") to relying on the psychology of perception. Even before the World War I, scholars working on the "psychology of business", including Hugo Münsterberg in his 1912 work *Psychologie und Wirtschaftsleben*, recommended the use of psychotechnics (*Psychotechnik*) in marketing<sup>45</sup>. In the 1920s, the texts of Edward Bernays, an American advertising theorist of German origin (nephew of Sigmund Freud), were very popular, also among politicians from the Communist and Nazi parties. Bernays combined

psychoanalysis with Gustave Le Bon's crowd psychology in his works, including *Propaganda* of 1928<sup>46</sup>. The creators of advertising campaigns were keen to draw on studies in the field of perceptual psychology (*Wahrnehmungspsychologie*), and were also interested in the results of research on metropolitan attentiveness (*Aufmerksamkeitsprinzip*); works by Mia Klein (e.g. *Die Reklame des Warenhauses*, 1931), among others, were used<sup>47</sup>. Of particular interest to us are Karl Marbe's texts, especially the 1927 study *Psychologie der Werbung*, which devotes much space to "electrical stimulation". Marbe wrote about neon signs contrasting with their surroundings and having a strong effect on the viewer<sup>48</sup>. In 1930, Friedrich Huth emphasised in "Schaufenster-Kunst und Technik" that illuminated advertisements should be a "total event" (*Totalereignis*) for passers-by, they must surround the viewer; their task is not only to attract attention ("acting like a magnet"), to catch the eye (*Blickangwerbung*), but also to cause emotional involvement in the viewer by creating a feeling of pleasure and at the same time desire for the product (*Lustgefühl*)<sup>49</sup>.

For Bruno Taut, viewing luminous advertising was part of active participation in metropolitan life, an opportunity to "plug into the current of metropolitan life"<sup>50</sup>. This included the enjoyment of metropolitan attractions (*Großstadt Wunder*), including the most accessible ones, such as admiring the striking narrative luminous advertisements in the centre, but also a fleeting glance at the usual neon signs, illuminated advertising poles (*Schaukasten*) or "advertising columns" (*Lifftaßsäulen*). An inhabitant of Berlin in the late 1920s and early 1930s could stop and involuntarily perceive advertising messages at the illuminated advertising media placed on clock towers (*Normaluhren*), telephone booths (*Telefonsäule*) and bus stops (*Haltensäule*)<sup>51</sup>. The most common urban visual attraction, however, was the large display windows. Large storefronts shielded from the street by a sheet of rolled glass were introduced in the United States in the 1880s, while in Germany they appeared fairly quickly, as early as 1900 in the Tietz department store on Leipziger Strasse in Berlin, striking display windows designed by Bernard Sehring. After the World War I, there were already a number of specialists in the field of shop window design (*Schaufensterdekorateur*) in the city<sup>52</sup>. In the second half of the 1920s, under pressure from the municipal authorities, the owners of luxury shops, department stores began to attach particular importance to the eye-catching and aesthetically pleasing appearance of their shop windows. It was recognised, under the influence of Werkbund and Bauhaus designers, that inner-city display windows should be in keeping with the spirit of the times – in a period of fascination with technology, they must be characterised by simplicity. By the end of the 1920s, an increasing number of such modern designs were being implemented in Berlin, using the effect of glossy nickel-plated forms and milky white glass, based on geometrised forms framed by a stainless steel window frame (marketed by



<sup>46</sup> In October 1929, on the 50th anniversary of Edison's invention of the light bulb, Barnays made Light's Golden Jubilee. See *ibidem*, pp. 49–51.

<sup>47</sup> See U. Spiekermann, "Der Konsument muß erobert werden!". *Agrar- und Handelsmarketing während der 1920er und 1930er Jahre*, [in:] *Marketinggeschichte...*, p. 139.

<sup>48</sup> G. Silberer, G. Mau, *Anfänge und Geschichte der Werbewirkungsforschung*, [in:] *Marketinggeschichte...*, pp. 132–133.

<sup>49</sup> F. Huth, *Lichtreklame*, "Schaufenster-Kunst und Technik" 1930, No. 12, p. 29. During the aforementioned Berlin Advertising Exhibition in 1929, the problem of the perception of shop windows not only by passers-by, but also by transport and car passengers, was discussed. The decoration should have taken into account the gaze in motion ("eine wandernde Schaufensterdekoration"). See *Das neue Schaufenster auf der Reklameschau Berlin 1929*, "Schaufenster-Kunst und -Technik" 1929, No. 1, p. 7.

<sup>50</sup> B. Taut, *Die Reklame als Schmuck des Straßenbildes*, "Freie Presse" 1922, No. of 18 February; quoted after: J. Ward, *op. cit.*, p. 95.

<sup>51</sup> To this must be added gas stations, tourist information kiosks, temporary pavilions. See J. Ward, *op. cit.*, pp. 93, 112. Berlin's spectacle of light was attempted to be depicted: in photographs by Martin Hürlimann, among others; in prints by Karl Rössing (e.g. *Die Erleuchtung*, 1928); in poetry by George A. Goldschlag (e.g. in his poem *Die Stadt*, 1931). Images of night-time Berlin can also be found in films of the period, such as Karl Gruman's *Die Strasse* from 1923 or *Asphalt* from 1929, a picture directed by Joe May (Joseph Otto Mandel) with set design by Erich Kettelhut, created in an atelier in Babelsberg (the entire street was recreated with shop windows, signs, neon signs and even a specially designed façade of a modern cinema. See F. Guerin, *A Culture of Light: Cinema and Technology in 1920s Germany*, Minneapolis-London 2005, pp. 154 ff.

<sup>52</sup> German window designers initially drew on the work of the *étalagistes* of Parisian *grand magasins*, somewhat later on the work of American window trimmers. By the 1920s, however, they had developed their own recognisable style, based largely on expressionist or functionalist aesthetics. See N. Schleif, *Schaufenster Kunst. Berlin und New York*, Köln 2004, pp. 63–78 (Chapter: *In der Höhle des Löwen. Paradigmen deutscher Schaufenstergestaltung*).



<sup>53</sup> See J. Ward Lungstrum, *op. cit.*, pp. 134–135.

<sup>54</sup> C. Reade, *Mendelssohn to Mendelsohn: Visual Case Studies of Jewish Life in Berlin*, Oxford 2007, p. 191.

<sup>55</sup> At the beginning of 1927, a special office (Zentrale der Deutschen Schaufenster-Lichtwerbung) was founded to popularise modern shopfront lighting. Articles on the subject were published in periodicals including “Architektur und Schaufenster”, “Das Schaufenster”, “Neue Dekoration”, “Schaufenster-Kunst und -Technik”, “Farbe und Form”, as well as in the most popular trade magazine, “Die Auslage”. See J. Ward Lungstrum, *op. cit.*, pp. 124–126.

<sup>56</sup> Such display windows were designed, among others, by the stage designer F. Kiesler, who regarded store-fronts as a modern form of communication. He discusses the issue, citing mainly Berlin examples in his book *Contemporary Art Applied to the Store and Its Display* (New York 1930, pp. 72–73).

<sup>57</sup> See M. Stadler, *op. cit.*, pp. 298–300.

<sup>58</sup> Scheerbart used the term “Lichtarchitektur” as early as 1906 in his book *Münchhausen und Clarissa*. At the time, he was inspired by the illuminations of world exhibitions and the glass domes of the Parisian department store La Samaritaine. His vision of “glass architecture” combined with luminous effects was developed a few years later; in 1911 he wrote: “All we can say about the illuminated nights that glass architecture will give us is that they are indescribable. Think of the spotlights on the tops of all the glass towers and on the aircraft; think of those spotlights across the colour scale... And add factories with light shining through their coloured windows. And now think of the great palaces and cathedrals all made of glass [...]” (P. Scheerbart, *Glassarchitektur & Glashausbriefe*, München 1986, p. 91; quoted after: D. Neumann, *op. cit.*, p. 36). In his 1913 science fiction novel *Lesabéndio*, Scheerbart described a gigantic, “star-reaching” glass structure reinforced with a special iron alloy. The Tower of Light (Lichtturm), glowing at night, was to be the greatest achievement of the inhabitants of the planet Pallas. In 1914, in *Glassarchitektur*, Scheerbart postulated the erection of a permanent exhibition building with a great hall illuminated from below. See J. Ward, *op. cit.*, s. 64.

the Krupp-Nirosta) and illuminated at night in such a way as to bring out the modern character of the composition<sup>53</sup>. Their authors were sometimes well-known architects, such as Paul Mählberg or Erich Mendelsohn, who as early as 1924 created a functionalist setting for the Herpich fur trader’s shop on Leipziger Strasse<sup>54</sup>.

In 1925, the competition “Einst und Jetzt” (Yesterday and Today) was launched to select model decorations for display windows. The largest department stores in the capital took part. The works submitted were predominantly narrative compositions (*Szenenschaufenster*) using stage and film effects<sup>55</sup>. Soon, new electrical attractions appeared in the nocturnal streetscape of Berlin – glowing and flickering shop-windows-screens. The effect was achieved with overhead projectors or even, as was done in the Tietz department store in 1927, through the use of cinema projectors<sup>56</sup>.

### “Towards a total architecture of light”

One of the key topics of debate within the architectural community of the Weimar Republic was the role of electric light in architecture. From May to October 1926, the exhibition “Gesundheit, soziale Fürsorge und Leibesübungen” (Health, Welfare, Physical Education) was held in Düsseldorf. In texts discussing the event, we can often find descriptions of the use of electric light in the interiors of the pavilions, above all in the planetarium by Wilhelm Kreis. Attention was also drawn to the eye-catching night-time illumination of the exhibition grounds. The monumental pavilions with their brick façades were losing their tectonic effect and the whole “GeSoLei” complex was turning into an electric spectacle. The lighting designer was engineer Joachim Teichmüller, head of Germany’s first light technology institute at the University of Karlsruhe, initiator and organiser of most of the “Festivals of Electricity” in Germany mentioned in the Section 1 of this article<sup>57</sup>. Teichmüller popularised the term “architecture of light” (*Lichtarchitektur*), already introduced into the architectural debate before the World War I by Bruno Taut and Paul Scheerbart<sup>58</sup>. In the 1920s, electric light became an essential component of architectural composition. The influence of *Lichtarchitektur* theory can be seen in many post-war Berlin implementations. Suffice is to mention the Grosses Schauspielhaus by Hans Poelzig, which opened in November 1919. In these interiors, electric light, an essential element of the architectural composition, served to sacralise the space intended for Max Reinhardt’s performances. In the second half of the 1920s, the role of electricity in shaping the architectural composition increased, but it already served primarily to reinforce the impression of purposefulness (*Zweckmässigkeit*) in the viewer. Expressionist effects were superseded by the emphasis placed by lighting on the functionalist character of the buildings, appropriate to the “age

of machinery” and Americanisation. Electric light was supposed to expose smooth façades at night, devoid of “stylishness”, which was related to the fascination with surface (Oberfläche) as described by Janet Ward, common among German avant-garde architects, which was highlighted in architecture with smooth plasterwork, sheets of milky white glass, shiny chrome railings. The “culture of façades” (*Fassadenkultur*) was to be replaced by a “hygienic gloss” (*hygienischen Glanz*)<sup>59</sup>. In 1928, Walter Riezler, a critic of architecture associated with the Werkbund, analysed big-city culture in Germany in his essay “Light and Architecture”, the symbol of which was the street with its shop windows, its intense traffic, its current of passers-by – a “vivid, dynamic force”, perceived even more strongly after dusk, in an aura of cold, electric lamplight and coloured neon signs. Riezler writes that modern illuminated advertisements with geometrised forms should help to create spatial order in the nocturnal cityscape<sup>60</sup>. This is a fairly common view among architecture critics sympathetic to the avant-garde. Criticism of the façades of the “Wilhelminian era” was accompanied by calls for the modernisation of Berlin tenements. In the second half of the 1920s, the cleaning of the façades of rental houses became increasingly common. This phenomenon was even noticed by popular magazines; the “Berliner Illustrierte Zeitung” wrote about “rejuvenated façades” and compared them to fashionable boyish haircuts (*Bubikopf*)<sup>61</sup>. Franz Hessel, in his essay *Flâneur in Berlin*, notes that when a residential building “needs renovation, young architects give it, so to speak, a haircut à la garsonne, removing unnecessary curls and twists and giving the façade a straight legible line”<sup>62</sup>. Hans Eckstein referred to the clearing of ornaments from the main façades of tenements as “ornamentiert mit ornamentlosen Flächen” (decorating with smooth surfaces)<sup>63</sup>. The action to modernise the tenements, preceded by a debate in the pages of professional periodicals and advocated, among others, by the already mentioned Walter Riezler, but also by Adolf Behne, who in 1925 declared: “No more façades!”, was supported by the municipal authorities<sup>64</sup>. In the late 1920s and early 1930s, “Die Form” and *Licht und Beleuchtung* reported on many such modernisations, often designed by leading avant-garde architects, a good example being the 1925–1927 modernisation by the Luckhardt brothers and Alfons Anker of the form of a 19th c. town-house in Tauentzienstrasse 3, in which the architects introduced strip windows with light bulbs hidden behind metal slats between them. Functionalist simplicity was sometimes combined with streamline modern effects, for example in the new façade of the Tietz Department Store on Chausseestrasse (Johann Emil Schaudt, 1929–1930)<sup>65</sup>. The clearing of façades was seen as a sign of the “birth of a world metropolis”<sup>66</sup>.

The modern character of the renovated façades was often emphasised by electric advertisements. They made the German capital appear even more modern after sunset<sup>67</sup>. In the second half of



<sup>59</sup> J. Ward, *op. cit.*, *passim*.

<sup>60</sup> W. Riezler, *Licht und Architektur*, [in:] *Licht und Beleuchtung*, Ed. W. Lotz, Berlin 1928, pp. 42–43.

<sup>61</sup> *Ibidem*, p. 43.

<sup>62</sup> F. Hessel, *Flâneur...*, p. 185. S. Márai (Niemiecki karnawał, [in:] *idem*, *W podróż*, Transl. T. Worowska, Warszawa 2011, p. 183) wrote about Berlin in 1933: “The city has beautified, it is elegant. This beauty is artificial, I would say cosmetic. The ornate façades of the old houses have been painted smooth, their “pragmatic” simplicity thus obscuring the clumsy frontages of the town-houses of the early part of the century, their wrinkles covered with grey plaster powder, their neon lights painted blue and red. It reminds me of rejuvenation methods. The city wants to live at all costs, to remain young and beautiful”.

<sup>63</sup> H. Eckstein, *Neue Wohnbauten. Ein Querschnitt durch die Wohnarchitektur in Deutschland*, München 1932; quoted after: J. Ward, *op. cit.*, p. 70.

<sup>64</sup> A. Behne, *Der moderne Zweckbau*, München 1925, p. 12.

<sup>65</sup> H. Häring (*Lichtreklame und Architektur*, “Architektur und Schaufenster” 1927, No. 8) was an advocate of restoring the façades of historic townhouses and business premises, as well as placing advertisements to modernise eclectic frontages.

<sup>66</sup> M. Osborn, A. Donath, F. M. Feldhaus, *Berlins Aufstieg zur Weltstadt*, Berlin 1929, pp. 212–213. The authors criticise the clearing of only the commercial ground floor or the first two floors (*ibidem*).

<sup>67</sup> It was pointed out by F. Hessel (*Flâneur...*, p. 185): “The flashing and disappearing, wandering and returning light advertisements change the depth, height and contours of the buildings again. This is very beneficial, especially in those parts of the Kurfürstendamm where, from the worst times of private building, many nightmarish protrusions, horrible spreads and projections still remain, which are only slowly beginning to recede, those terrible teething, bay windows and superstructures of the ulcer houses, as we used to call them, disappearing behind the architecture of the advertisements”.



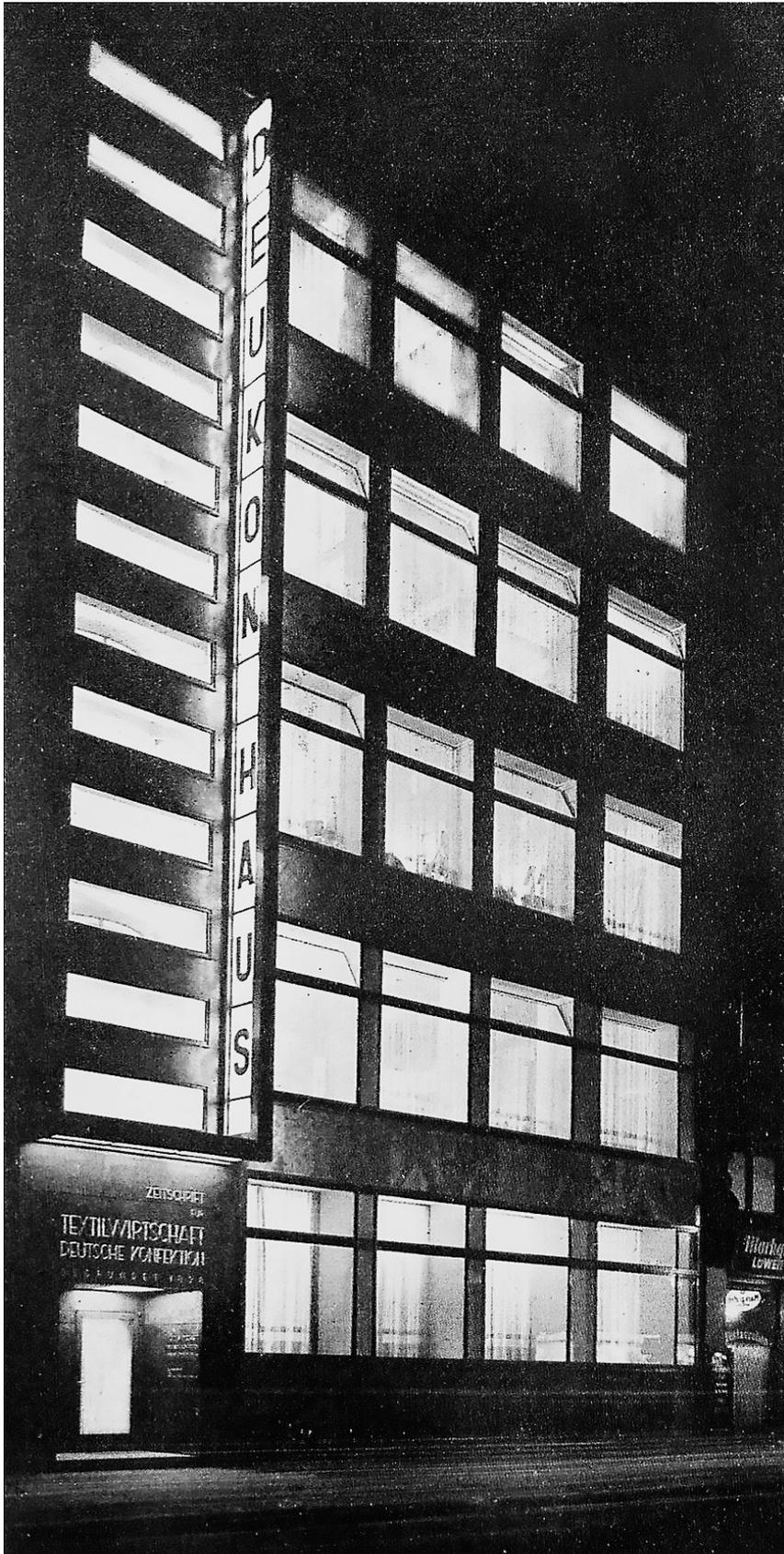
<sup>68</sup> See D. Neumann, *op. cit.*, p. 42.

<sup>69</sup> See *ibidem*, pp. 42–43.

<sup>70</sup> E. May, *Städtebau und Lichtreklame*, [w:] *Licht und Beleuchtung...*, pp. 44–47; W. Riezler, *op. cit.*, pp. 42–43. The architect and also lighting designer Richard Döcker was the author of the composition of the Hermann Luz lighting shop. The advertising designs of this architect are discussed by F. Mehlaui-Wiebkling (*Richard Döcker: Ein Architekt im Aufbruch zur Moderne*, Braunschweig–Wiesbaden 2013, pp. 187–189).

the 1920s, many German artists made pilgrimages to the centre of modernity – New York – in search of inspiration. It is worth mentioning Fritz Lang’s 1924 trip that inspired the film director to create *Metropolis*<sup>68</sup>. The fascination with America, including the night-time skyline of New York, was accompanied by a strong criticism of the visual chaos prevailing in the American metropolis. Martin Wagner, who visited the city in 1927, denounced the tiresome feast of colours of neon lights and the facades of illuminated buildings. Two years later, Wassili Luckhardt drew attention to the fairness of the electric illuminations of the buildings, which, according to the architect, looked like “fairytale castles of Valhalla”. In 1924, Erich Mendelsohn reported on his stay in the United States in the pages of the widely read magazine *Berliner Tageblatt* (the texts were published two years later in the book *Amerika. Bilderbuch eines Architekten*). In the captions under the photographs, admiration for New York’s nocturnes predominates, but there is also criticism of the chaotic placement of “shouting” advertisements on the façades<sup>69</sup>. In 1928, the Deutscher Werkbund published a collection of essays by authors associated with the organisation. The publication *Licht und Beleuchtung* (Light and Illumination) contains, inter alia, texts by Ernst May and Walter Riezler, who made a clear distinction between the experiences of American lightning designers and German advertising designers. According to May and Riezler, American designers of neon signs and lighting systems are driven by commercial considerations to create a dazzling, kaleidoscopic spectacle in urban space. According to them, the creation of the “night face” of architecture should not be based on the illumination of the top parts of a building, as is popular in the United States (high-rise buildings appearing to residents “like ghosts against the night sky”), but on the inclusion of lighting effects throughout the architectural composition, which after dark can create a completely new, original and yet simple composition. This can be achieved, May and Riezler emphasised, through the ingenious arrangement of large, preferably strip windows and display windows (the architects looked to the work of Erich Mendelsohn as a model). The next step was to be a facade consisting almost entirely of glass and illuminated panels, for which they pointed to the “Luz” lighting shop in Stuttgart as a source of inspiration<sup>70</sup>.

The avant-garde artists of the Neues Bauen emphasised that modernist façade forms, especially their night views, could arouse the mass public’s interest in contemporary art. The skilful use of neon signs, e.g. consisting of luminous lines running the full height of the façades, combined with modern lettering, was intended to create spatial order, but also to promote a new typography. Lajos Kassák commented on the social function of advertising design, while Alfred Gellhorn called for the cooperation of architects, painters and engineers in the creation of lighting as a means of shaping a proper nocturnal cityscape in accordance with the principles of *die gute*



7. Head office of the Deukonhaus textile factory at Markgrafenstraße 48, Erich Mendelsohn, 1928. Photo: "Die Form" 1928, p. 43



8. Hans Poelzig, Capitol Cinema, 1927–1928. Photo from: *Licht und Beleuchtung. Lichttechnische Fragen unter Berücksichtigung der Bedürfnisse der Architektur*, Ed. W. Lotz, Berlin 1928, p. 53

*Form*<sup>71</sup>. Many German modernists in the 1920s regarded the thoughtful use of lighting as an essential complement to architecture. Flat, geometric façades were particularly well suited for luminous advertising (*lichtreklamefähig*). However, the luminous advertising had to be integrated into a design of a building, forming a coherent whole. Riezler emphasised that such luminous compositions could even enliven dry functionalist façades<sup>72</sup>. Of the German architects, apart from the aforementioned Erich Mendelsohn, the role of electric light in architecture was of most interest to Hugo Häring, who wrote about the need to include the “night-time image” in designs. This view was to be even more important than the daytime appearance<sup>73</sup>. In 1927 Häring predicted that within a few years the “night face” of a building would become increasingly important<sup>74</sup>. Häring’s opinion was not an isolated one. In the debate on the role of lighting in architecture, there were more and more calls, formulated by Ernst May, Ludwig Hilberseimer, Marcel Breuer or Arthur Korn, among others, for *Lichtreklame* to be replaced by *Lichtarchitektur*.

“It would be difficult to find a new construction technology or a new building material offering so many visual possibilities and yet so many challenges as light”, wrote the “*Bauwelt*” in 1930<sup>75</sup>. The treatment of electric light as a “material”, as important as glass, iron or reinforced concrete, was not only appearing among German avant-garde architects at this time. In 1929, Theo van Doesburg postulated the creation of an “architecture of light” in which a building must be complemented by light effects (including kinetic forms). This type of architectural-spatial composition was intended as a response to the challenge posed to architects by the cinema at the time<sup>76</sup>. Erich Mendelsohn’s projects, above all his department stores for the Schocken concern in Nuremberg, Stuttgart and Chemnitz, were regarded, not only in Germany, as models for the skilful use of lighting. As the architect himself wrote, the luminous strips of windows could, at night, convey the effect of a “layering of mass in space”, show the energy hidden in the architectural body, express the movement of the building (in Stuttgart, this function was played by the glazed tower at the corner of Hirsch- and Eberhardstrasse)<sup>77</sup>. “*Die Form*” praised the Deukonhaus, Mendelsohn’s 1928 building, in which electric light was supposed to bring out the logic of the interior disposition to which the façade was subordinated [Fig. 7]<sup>78</sup>.

The integration of architecture and lighting was most fully achieved in the late 1920s and early 1930s in Berlin’s cinemas, the impressive *Filmpaläste* already mentioned in the article, such as the Titania Palast in the Steglitz district on Schloßstrasse (Ernst Schöffler, Carlo Schloenbach, Carl Jacobi, 1927–1928) with lighting designed by Ernst Hölscher<sup>79</sup>. In the “Lichtburg” cinema (Rudolf Fränkel, 1929), erected in the working-class Wedding district, 15 tall windows piercing the overhanging and rounded part of the building formed a luminous colonnade; the “electric palace” effect was enhanced by a red



<sup>71</sup> See D. Neumann, *op. cit.*, p. 37.

<sup>72</sup> W. Riezler, *Umgestaltung der Fassaden*, “*Die Form*” 1927, No. 2.

<sup>73</sup> J. Ward, *op. cit.*, pp. 111 ff.

<sup>74</sup> H. Häring, *op. cit.*, pp. 5–8.

<sup>75</sup> *Das Licht in der Baukunst*, “*Bauwelt*” 1930, No. 1, p. 3.

<sup>76</sup> T. van Doesburg, *Film als reine Gestaltung*, “*Die Form*” 1929, No.10, p. 248. It was in the Netherlands that a building was constructed that became a model example of *Lichtarchitektur* for German architects. The headquarters of the socialist cooperative “Volharding” (Perseverance), built in 1927–1928 in The Hague on the Grote Markt to a design by Jan Willem Eduard Buijs and Joan B. Lürsen, was distinguished by a striking night view created in collaboration with Osram. In this building, architecture was integrated with lighting. The panels between the windows were filled with milky white glass (after dark, the light showed inscriptions – slogans promoting the cooperative movement and its values). The interior lighting penetrated to the outside through the glass bricks placed in the vertical circulation paths and window openings of the first floor. The office building is crowned by an illuminated mast, further marking the building’s presence in the night landscape of The Hague. In 1933, the lighting was switched off for economic reasons. See Ch. Rehorst, *Jan Buijs and De Volharding, The Hague, Holland*, “*Journal of the Society of Architectural Historians*” 1985, No. 2.

<sup>77</sup> R. Stephan, “*Towar jest najważniejszy – jego zachwalaniu służą wszystkie zabiegi budowlane*”. *Domy towarowe w Berlinie, Wrocławiu, Chemnitz, Duisburgu, Norymburze, Oslo i Stuttgarcie (1924–1932)*, [in:] Erich Mendelsohn. *Dynamika i funkcja. Zrealizowane wizje kosmopolitycznego architekta*, Ed. eadem, Wrocław 2001, p. 82.

<sup>78</sup> *Das Deukonhaus von Erich Mendelsohn*, “*Die Form*” 1928, No. 2.

<sup>79</sup> K. Beckham, *Titania Palast*, [in:] *Elekropolis...*, pp. 60–61. German modern “cinema palaces” have influenced English architecture (e.g. the 1930 New Victoria in London) and French architecture. In 1931–1932, the “Gaumont Palace” was built in Paris, near Place de Clichy, with 6,000 seats in the auditorium. The cinema was designed by Henri Belloc, but the authors of the lighting system (including the “light cascade” on the main façade) were Les Etablissements Paz e Silva. See A. Soulier, *Les Installations électriques du plus grand cinema du monde “Le Gaumont Palace”, “L’industrie électrique”* 1931, No. 939.



<sup>80</sup> Description of lighting in: **G. Schmidt**, *The Castle of Light: A New Large Cinema Theatre in Berlin*, “Illuminating Engineer” 1931, No. 24, p. 70. More on the architect’s implementations in the interwar period see **G. Brown-Manrique**, *Rudolf Fränkel and Neues Bauen. Work in Germany, Romania and the United Kingdom*, Tübingen 2009.

<sup>81</sup> See **W. Schivelbusch**, *Licht, Schein und Wahn: Auftritte der elektrischen Beleuchtung im 20. Jahrhundert*, Berlin 1992, p. 53.

<sup>82</sup> **K. James**, “Zadnych stiukowych tortów dla Patiomkina i Scapa Flow”. *Architektura wielkomiejska w Berlinie – kompleks WOGA i kino “Uniuersum”*, [in:] *Erich Mendelsohn...*, pp. 105–106.

<sup>83</sup> **W. C. Behrendt**, *Der Sieg des Neuen Baustils*, Stuttgart 1927, pp. 47–48; quoted after: **W. Oechslin**, *Light Architecture: A New Term’s Genesis*, [in:] *Architecture of the Night...*, pp. 31–32.

<sup>84</sup> **J. Teichmüller**, *Lichtarchitektur*, “Licht und Lampe” 1927, No. 13/14, p. 421.

<sup>85</sup> The “Uniuersum” cinema was part of the WOGA residential and entertainment complex. See **L.**, *Ein Lichtspielgebäude*, “Die Form” 1929, No. 4.

<sup>86</sup> **K. James**, *op. cit.*, pp. 105–106.

<sup>87</sup> **M. Wagner**, *Zivilisation, Kultur, Kunst, “Wohnungswirtschaft”* 1926, No. 21, p. 165. **E. Friedell** (*Prolog vor dem Film*, [in:] *Kino-Debatte. Texte zum Verhältnis von Literatur und Film, 1909–1929*, Ed. **A. Kaes**, Tübingen 1978, p. 43; quoted after: **Th. Dame**, *op. cit.*, p. 39) in 1912 described Berlin as “a magnificent machine, a huge electric motor” (“eine wundervolle Maschine, ein riesiger Elektromotor”).

neon sign and three sheaves from a battery of spotlights on the roof<sup>80</sup>. In Hans Poelzig’s Capitol and Babylon cinemas (1926–1929), on the other hand, electric light was a factor in the creation of space (*raumschaffend*) [Fig. 8]<sup>81</sup>.

This phenomenon was well described by Kathleen James-Chakraborty:

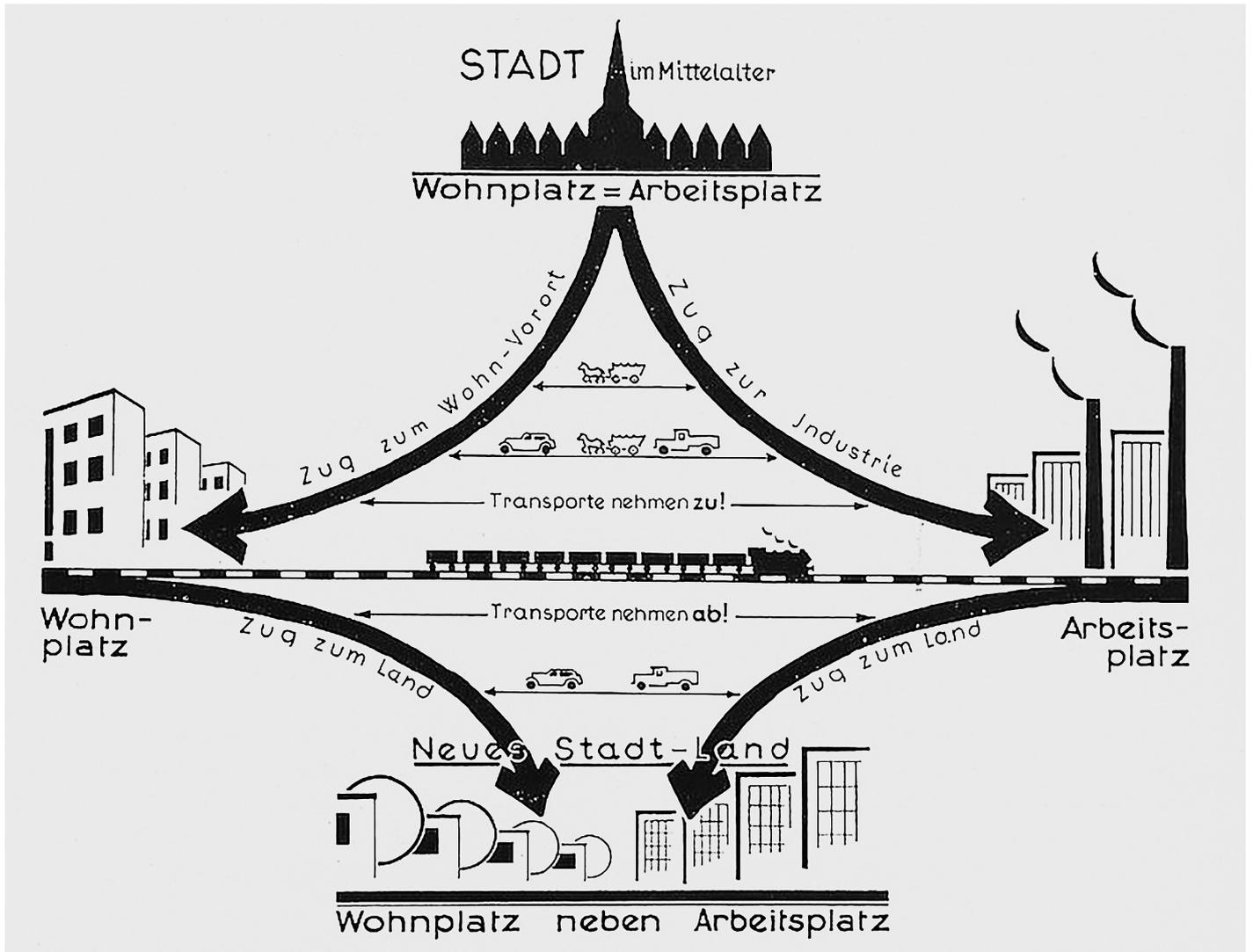
From the time Hans Poelzig’s Grosses Schauspielhaus opened in 1919 until the completion of Rudolf Fränkel’s Lichtburg cinema in 1930, Berlin witnessed the transformation of entertainment-related architecture to attract new mass audiences. Architects – above all Poelzig – inspired by the idea of creating a new democratic language of forms, exciting enough to lure crowds of spectators, replaced eclectic ornaments with new, magnificent lighting effects<sup>82</sup>.

About the potential of artificial light in the arrangement of interiors, also in emphasising their “spatiality”, Walter Curt Behrendt wrote in 1927 in his book *Sieg des neuen Baustils*<sup>83</sup>. In the same year, Teichmüller stressed that: “by lighting and illumination we also create form”<sup>84</sup>. One of the best examples of this was the Uniuersum-Filmpalast cinema, erected in 1927–1928 on Lehniner Platz in the Kurfürstendamm district. In this striking cinema theatre by Erich Mendelsohn, designed to screen sound films from the “Ufa” label, lighting, such as recessed glass panels or frosted glass lampshades in the ceiling, was an essential part of the architectural composition. The light in the box office pavilion, the two-storey atrium with a gallery and in the auditorium for 1,800 people was intended to create the effect of a gradual transition to another world, another dimension, isolated from the troubled reality<sup>85</sup>. James-Chakraborty writes:

Streams of light, advertisements and even the shape of the “Universe” cinema attracted the attention of passers-by at night, while inside, a whole palette of colour and lighting effects heightened the film’s charm<sup>86</sup>.

Around 1930, the need not only for *Lichtarchitektur*, but also for an “urbanism of light” was increasingly mentioned in the professional press. The German functionalists treated cities as a technical problem to be solved by a team of experts. Martin Wagner pointed out that the “City Machine” (*Stadt-Maschine*), must function like a well-functioning engine<sup>87</sup>. Wagner, like many Neues Bauen architects, was a proponent of managing the metropolis using modern tools [Fig. 9].

However, the steering of the city’s development by a staff of specialists was to involve not only urban planning, functional zoning, linking the city to the region, but also exercising control over the visual sphere of the metropolis, in Berlin’s case reinforcing the image of a city of lights, a European centre of modernity and at the same time a field of experimentation for the avant-garde. Nocturnal illumi-



9. Diagram of a "functional city". Photo from: "Die Neue Stadt" 1932-1933, No. 8, p. 177



10. Peter Behrens, The Berolinahaus on Alexanderplatz, 1929–1932, postcard in private collection



<sup>88</sup> W. Randt, *Stadtbild und Lichtarchitektur*, "Das Licht" 1932, No. 6, p. 129. The creation of such developments, forming a "night-time image of the city", was recommended by Ernst May, the city architect of Frankfurt am Main. See J. Ward, *op. cit.*, p. 115.

<sup>89</sup> H. Pfeffer, *Im Anfang war das Licht*, "Spannung. Die AEG Umschau" 1928, No. 1; quoted after: D. Neumann, *op. cit.*, p. 39.

<sup>90</sup> *Ibidem*.

nation could help with this. Walter Randt wrote about the possibility of designing compositions of night-time street views, unification, and the visual bonding of entire frontages by luminous advertisements and neon signs<sup>88</sup>. In 1928, architect Hans Pfeffer, discussing the issue in the pages of a magazine published by the AEG, concluded: "We can already see the beginning of a course towards a brilliant future: towards a total architecture of light"<sup>89</sup>. What Pfeffer had in mind was the design not only of individual buildings, but of entire sections of buildings, such as street frontages and squares, in which the negative composition of abstract forms of the light window strips would be integrated into the overall composition of luminous advertising<sup>90</sup>. *Lichtarchitektur* would form a unity with *Lichtreklame*. Martin Wagner was following these guidelines when he launched a competition

in 1928 for the new development of Alexanderplatz. Several of the designs submitted included night views of the square, for example in Emil Schaudt's board, who exposed the light reflections of the cars on the wet asphalt, the glow of the streetlights, the carefully designed neon signs at the underground entrances, and the bright stripes of the commercial ground floors<sup>91</sup>. These projects remained on paper; building "night frontages" with light has only succeeded in a few Berlin developments. Two twin seven-storey buildings, the Alexanderhaus and the Berolinahaus at Alexanderplatz (Peter Behrens, 1929–1932), are good examples [Fig. 10].

The edifices built with American capital had commercial and entertainment functions (shops on the ground floor, restaurants on the first floor accentuated by high windows) and office functions (upper floors)<sup>92</sup>. Behrens took great care in designing the lighting system, both in the interior (concealed light sources in the lobby, geometrised lamps in the offices) and on the exterior – the façade facing the street (formerly Königstrasse, now Alexanderplatz) is punctuated by two glazed bay windows, two luminous columns forming a striking gateway to the city from the west, on the side of the railway station.

In the second half of the 19th c., Paris was called the "City of Lights" because of its extensive gas lighting system. In the 1920s, this expression began to be used for Berlin. In 1931, Amédée Ozenfant called the German metropolis the "paradise of electricity"<sup>93</sup>. In 1932, the New York Times praised Berlin as "the best-lit city in Europe"<sup>94</sup>. A year later, Nazi propaganda neon lights were lit up.

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#### Słowa kluczowe

Berlin, elektryfikacja, Republika Weimarska, modernizacja, architektura i technologia, reklama

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#### Keywords

Berlin, electrification, Weimar Republic, modernisation, architecture and technology, advertising

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<sup>91</sup> Similar visualisations were submitted by the Luckhardt brothers. See *ibidem*.

<sup>92</sup> See **S. Anderson**, *op. cit.*, p. 248.

<sup>93</sup> **J. Ward**, *op. cit.*, p. 102.

<sup>94</sup> **M. Adams**, *In their Lights the Cities are revealed*, "New York Times" 1932, No. of 11 December, p. 15; quoted after: **D. Neumann**, *Berlin*, [in:] *Cities of Light: Two Centuries of Urban Illumination*, Ed. **S. Isenstadt, M. Maile Petty, D. Neumann**, New York 2015, p. 69.

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**Filip Burno, PhD, [filip.burno@asp.waw.pl](mailto:filip.burno@asp.waw.pl), ORCID: 0000-0002-0561-8358**

He is an architectural historian, assistant professor at the Department of Visual Culture Management at the Academy of Fine Arts in Warsaw, specialises in the history of 19th- and 20th c. architecture, deals with power relations and urbanisation processes, issues of creating a politics of memory, and the production of space as a result of modernisation processes in the first half of the 20th century. Major publications: *Świątynie nowego państwa. Kościoły rzymskokatolickie II Rzeczypospolitej* (Temples of the new state. Roman Catholic Churches of the Second Polish Republic, 2012), *Spektakl i modernizacja. Miasta włoskie w okresie faszyzmu, 1922–1945* (Spectacle and modernisation. Italian cities during fascism, 1922–1945, 2016).

**Summary****FILIP BURNO (Academy of Fine Arts in Warsaw) / The glow of the metropolis. Electricity, architecture, and the senses. Berlin 1924-1933**

The subject of the article is the relationship of the electrification of Berlin to the modernisation of the lighting system, the expansion of the public transport network, the social programme based on the construction of new housing estates, the development of luminous advertising and shop window decoration in the city, and finally the growing popularity of “light architecture”, examples of which were above all the impressive grand cinemas and department stores. The capital of the Weimar Republic, a metropolis of more than 4 million inhabitants, was regarded as the most Americanised city in Europe at the end of the 1920s. After the suppression of inflation in 1924, a period known as the “Golden Twenties” began in Berlin. The city became one of the most important cultural centres. American advertising companies had their headquarters there, and modern office buildings were erected in the city for German industrial concerns. Numerous nightclubs and cabarets were active in Berlin. The city was an arena for political battles, criminal scandals and exciting sporting events.

Berlin – the centre of accelerated modernisation in post-war Europe – was powered by electricity, energy generated by power stations built before the World War I, but also by a modern power system consisting of new “electricity factories” such as the Klingenberg and Kraftwerk West and a network of substations, as many as 12 of which were designed by Heinrich Müller and Felix Thümen.

The article discusses both the municipal government’s policy of supporting electrification (through American loans and cooperation with electrical engineering concerns) and the architecture of the power stations and substations mentioned. The increased capacity of Berlin’s power plants contributed to the growth of the entertainment and advertising industry. In 1929, 3,000 luminous advertisements of various kinds illuminated the city. Berlin’s advertising sign makers outdid themselves with ingenious solutions to make a strong impact on passers-by. The most common urban visual attraction was the huge, carefully invited display windows.

In the 1920s, the role of electricity in shaping architectural composition increased. Illuminated advertisements began to appear on the façades of modernised town-houses, emphasising the modern, functionalist character of the buildings. Neon signs were often integrated into the form of the façade, forming a coherent whole. In Berlin’s avant-garde architectural milieu at the time, a call was often made for the creation of an “architecture of light”, the inclusion in the entire architectural composition of lighting effects that could create a completely new, original and at the same time simple composition after dark. Strip windows, neon signs, tall shop windows – all of these could shape the night-time image of a building. Electric light became a complement to architecture and even, as in the works of Hans Poelzig and Erich Mendelsohn, a “material” as important as reinforced concrete and iron. The last part of the article is devoted to the changes that took place in the electrical spectacle of Berlin after the Nazis came to power.