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OPPOSITIONS

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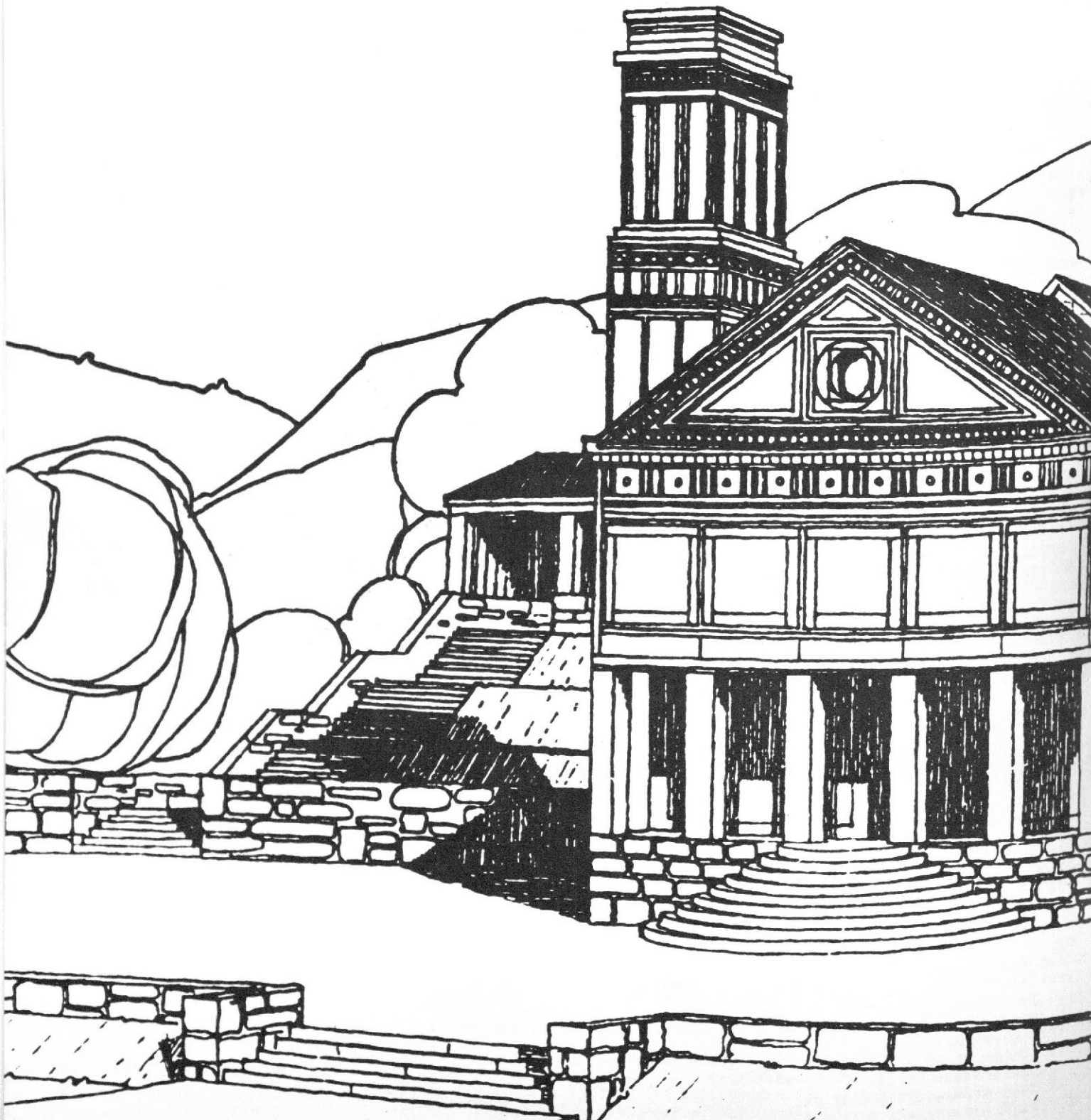
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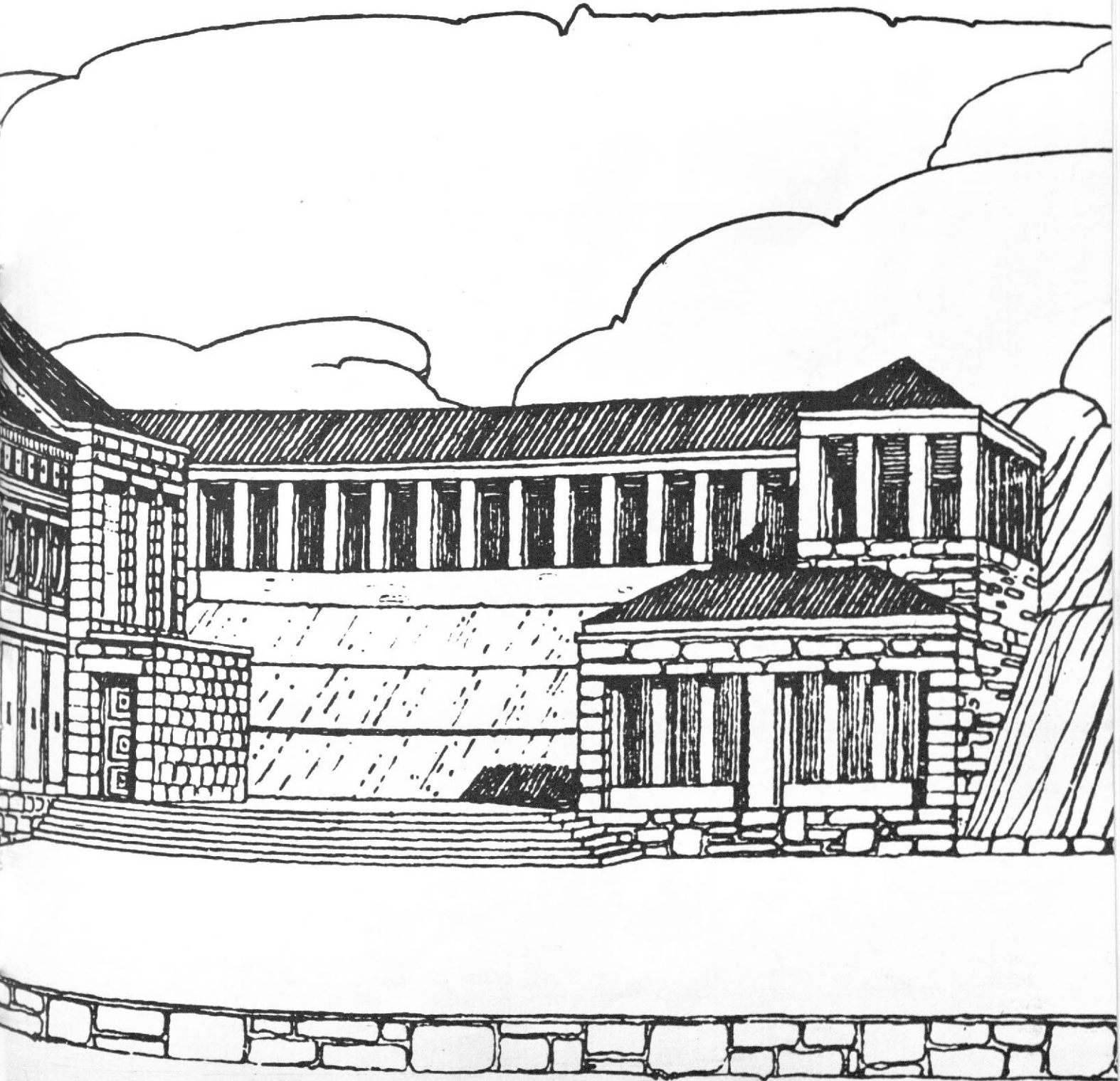
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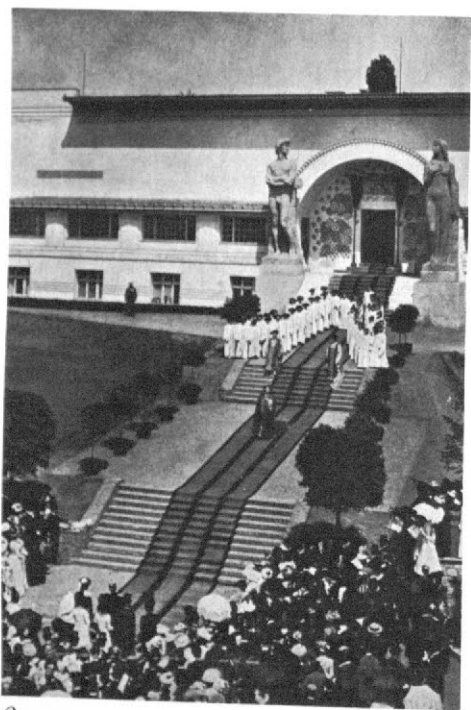
Modern Architecture and Industry:
Peter Behrens and the Cultural Policy of Historical Determinism

Stanford Anderson

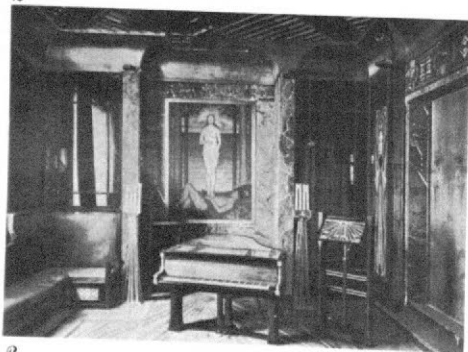


1 (frontispiece) Crematorium, Hagen in Westfalia. Design and presentation drawing by Peter Behrens (1906); only the central building was built.

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2 Künstler-Kolonie, Darmstadt. Opening ceremony (1901); Peter Behrens's production of Georg Fuchs's "Das Zeichen" ("The Sign"—a symbolic crystal), performed for the Grossherzog Ernst Ludwig and his guests before the Ernst-Ludwig-Haus (the studio building for the artists of the colony) designed by Joseph Olbrich.

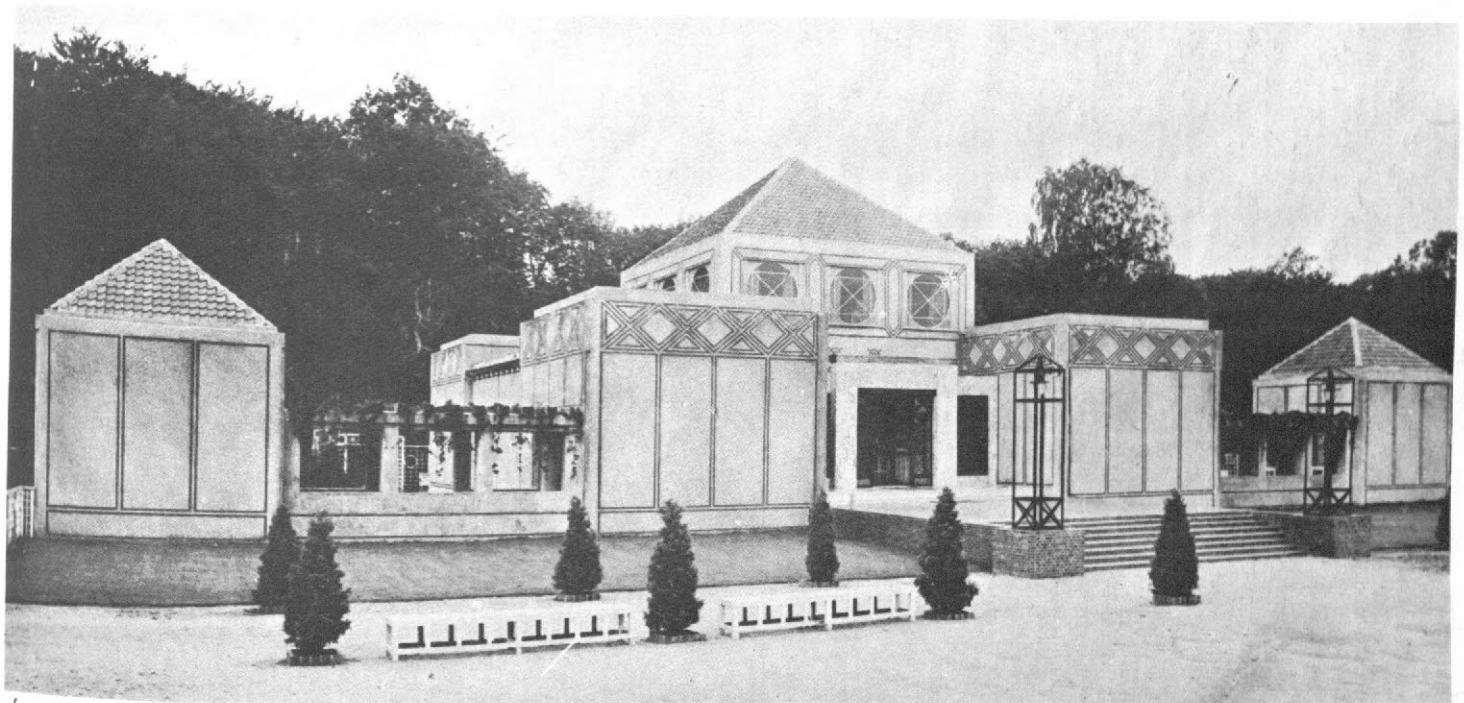
Modern industry ruptured ancient relationships among makers, products, and users—disjunctures, owing to the division of labor, between workers and the objects produced; a correlative standardization of the products; and an increasing emphasis on fashion and obsolescence as stimulants to consumption. The Great Exhibition of 1851 in the Crystal Palace in London assembled the machines and products of modern industry in a prefabricated iron and glass building before a popular audience—building and audience themselves being representatives of the same change in productive means.¹ 1851 occasioned major reassessments of the condition of culture and society in relation to the new productive system and the environment it produced. Although such evaluations need not have hinged on a rejection or even a radical critique of mass production, the immediate consequences of industrialization were sufficiently open to criticism as to lend strong support to the Arts and Crafts movement which, under the leadership of William Morris, attempted to reintroduce craftsmanship as the primary means of cultural production.

It has often been noted that Morris himself was finally forced to realize the inherent impossibility of relying on craft production, with its assumption of integrating work, production, and society, as the basis for achieving a healthy and equitable social order. It also became clear that the course of industrial production could not be reversed without drastic consequences for a population that had been reorganized to suit the processes of industrialization. In the end, Morris and his associates were only able to produce high quality craft objects, for the most part at luxury prices, within a world dominated by the processes of mass production. At best their work could be valued for achieving an appropriate relation between the character of a product and the process that had produced it. While this relation might serve as an ideal to be achieved under other modes of production, the Arts and Crafts program did not provide the key to an alternative organization of production and society.

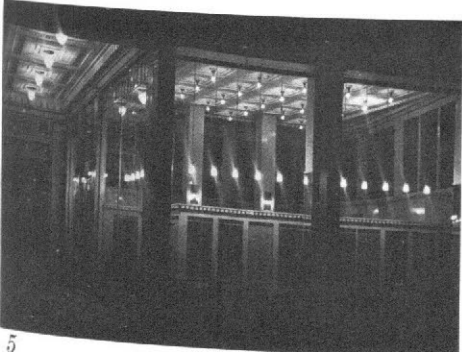
Where the mid-century Arts and Crafts movement pitted handicraft production and the myth of a pre-industrial, organic social harmony against modern technique and the

3 *Künstler-Kolonie, Darmstadt. The music room of Peter Behrens's own house, the setting for the domestic and everyday counterpart of the ceremony of Fig. 2, by Peter Behrens (1900–1901).*

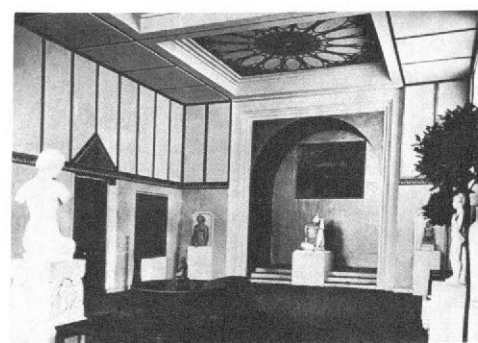
4 *Northwest German Art Exhibition, Oldenburg (1905). Exhibition pavilions by Peter Behrens.*



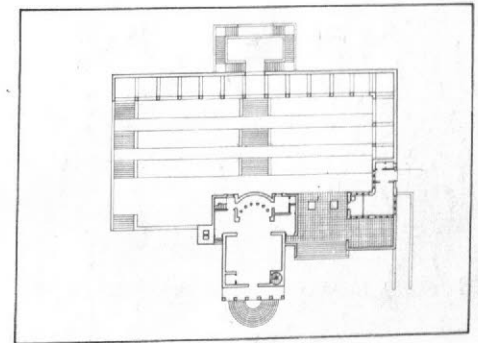
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5 *Wallpaper shop of Josef Klein, Hagen. Peter Behrens (1906–1907). An effective use of artificial light as a complement to Behrens's "art of space" near the end of his Düsseldorf period and as he had already begun associations with the AEG.*

6 *and its choice of works and installation by Peter Behrens. The axial piece is a plaster cast of Maillol's *Mediterranée* then in the collection of Harry Graf Kessler.*

7 *Crematorium, Hagen in Westfalia. Plan of the main level based on a drawing in the Bauordnungsamt, Hagen, dated May 1912.*

6 *International Art Exhibit, Mannheim (1907). Exhibition room*

8 *Machine house for water turbines and the AEG transformer building for long-distance power transmission to Frankfurt, Lauffen (1891).*

9 *Electrotechnical Exhibition, Frankfurt am Main (1891). Artificial waterfall activated by AEG pumps driven by electricity transmitted from Lauffen.*

56 consequent social crises of the Industrial Revolution, the artistic movements of the late nineteenth century, soon to be known as Art Nouveau, proposed the ideal of a holistic, Nietzschean artistic culture to be set against the advance of a positivist scientific civilization (fig. 2). The new controversial position stemmed from the critique of art and culture rather than from craft production. It confronted not the productive basis of modern civilization but certain characteristics of that civilization and the extension of those characteristics to intellectual, cultural, and spiritual realms. While the formation of the Art Nouveau took place outside the realm of industry, the Art Nouveau artists themselves were not programmatically opposed to the use of industrial methods. Henry van de Velde, one of the chief spokesmen of the movement, often argued for the mutual support of art and industry. However, the resistance of these artists to a fragmented, analytic, positivist science ("Wissenschaft") and their difficulty in imagining either science or technology without these characteristics, exposed the Art Nouveau to rapid dissolution as a result of its divorce from any productive base.

Similarly Peter Behrens, as a member of the Darmstadt Artists' Colony, established around 1900 a typically Art Nouveau and explicitly Nietzschean program for a holistic culture that would be generated by the will of an elite (figs. 2, 3). Yet Behrens's late emergence within Art Nouveau facilitated his shift toward other positions—both theoretical and formal. From 1903 to 1907 Behrens was director of the School of Arts and Crafts at Düsseldorf, a position which he used to establish his first coherent concept of architecture. Relying on the insights of the art historian August Schmarsow, Behrens argued that architecture was the art of defining space, which he proposed to achieve with sparse geometrical forms, while allowing sculpture, the art of volume or spatial occupation, to provide its plastic counterpart (figs. 1, 4-7).

In 1907, Peter Behrens left his academic post in Düsseldorf to become the artistic consultant to a large corporation in the electrical industry, the Allgemeine Elektrizitäts-Gesellschaft (AEG) in Berlin. Behrens came to control almost every visual manifestation of this corporation, including its

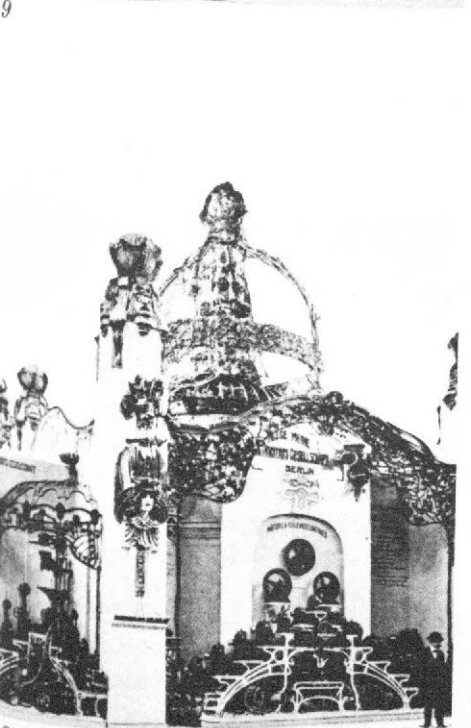
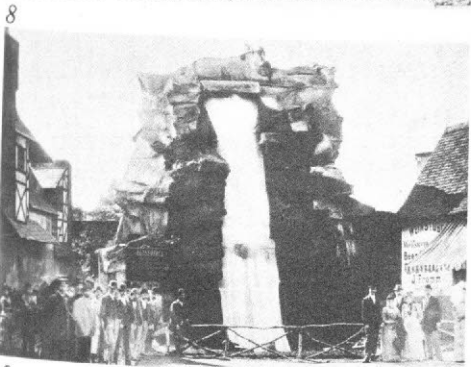
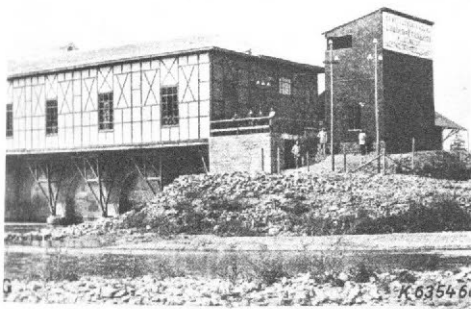
product design, graphics, exhibition design, and architecture.²

Established in 1883 as the Deutsche Edison Gesellschaft für angewandte Elektrizität, the founder of the AEG Emil Rathenau was a shrewd engineer-businessman who learned of Edison's work at the Philadelphia Exposition of 1876 and later procured the German rights for the Edison patents. The success of the AEG, the related changes in its political and cultural self-awareness, and the emergence of Peter Behrens in this development can all be gauged by comparing AEG participation in three exhibitions.

As a pioneer in power transmission, the AEG arranged an impressive demonstration of this important modern service for the Elektrotechnische Ausstellung in Frankfurt am Main in 1891. Water power drove a turbine of three hundred horsepower at Lauffen am Neckar, which, in turn, drove an electric generator (fig. 8). Fifteen thousand volts from this generator were transmitted a record 175 kilometers to Frankfurt where transformers converted it for use into one thousand incandescent lamps and a one hundred horsepower electric motor. However, neither the lights nor the motor were the culminative attraction for in accordance with a charming and naive naturalism, the motor drove a pump which lifted water to the top of an artificial hill where a theatrical waterfall spent the electrical energy that had been generated by the water power (fig. 9).³ A quite extraordinary capability for the generation and distribution of large amounts of energy was expended in a poor imitation of nature and with a naive sense of functional symmetry. Almost equally naive architecturally, the building that housed the equipment at Lauffen was derived from medieval, half-timbered prototypes. At this point the AEG was preoccupied with a popular demonstration of what it could achieve. The firm was little concerned with the expression of its capabilities through artistic form—whether in terms of its equipment, the housing of this equipment, or the image of the corporation. The AEG was interested in the machines for what they could do, not as ends in themselves.

However, for the Exposition Universelle of 1900 in Paris the AEG employed a designer to create an artistic setting

10 *Universal Exhibition, Paris*
(1900). *AEG pavilion, unidentified*
designer.



for its products. While it is clear that by this time the corporation was becoming self-conscious about its production and its relation to art, the pavilion itself was little more than a vulgar combination of Art Nouveau ornament and pseudo-classical forms (fig. 10). Such a work was as incapable of emulating the dramatic operation of the Frankfurt waterfall as it was of establishing a correspondence between the technical modernism of the AEG combine and the presumed modernism of its artistic style.

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Peter Behrens's first building for the AEG was an exhibition pavilion for the Berliner Schiffbauausstellung of 1908 (fig. 12). The machines were exhibited like sculptures within an austere centralized building form modeled after such prototypes as the Baptistery of Florence and the Imperial Chapel of Aachen (fig. 13). The AEG no longer sought merely to emphasize the utility of its products (certainly not in the form of artificial waterfalls), but rather to exhibit the product itself as an impressive object, indicative of modern industrial potential. Beyond the reification of this utilitarian potential, there were cultural and political implications which the AEG increasingly saw to be the opportunity and responsibility of the corporation. The 1908 pavilion by Behrens implicitly assumed the necessity of representing industry as a forceful agent within society. The machines were presented as the regalia of power; the increasingly studied forms adopted by both the machines and the pavilion asserted their political and cultural roles. It is significant that the Kaiser himself opened this pavilion of power and good form (fig. 11).

A similar formal development occurred in the field of graphics, the AEG passing from elaborate late nineteenth century job printing⁴ to the commissioning of a noted artist as the designer of its graphic image. In 1900 Otto Eckmann adapted his floral and lyrical Jugendstil manner to the design of a corporation signet and decorative borders for changing advertisements. Although Eckmann's designs were representative of their genre, their immediate juxtaposition with the image of machine production was again only indicative of the aspiration for, rather than the result of, a successful collaboration between art and industry (fig. 20). The AEG pavilion at Paris and Eckmann's graphics for

58 the AEG may seem to be an exception to the Jugendstil artists' general lack of sympathy for a modern civilization dominated by science and technology, but in fact the contrast between pavilion and machine and between decorative frame and photographic image of the machine product was so great in these examples that it simply confirmed the exclusion of art from the system of production—it confirmed the disjunction of art and industry rather than their union. Beginning in 1907, Behrens created a unified graphic style for the AEG by means of a precise, overt geometrical organization of the surface and the use of antique type faces (fig. 15). On occasion, Behrens also reduced the image of the product to two-dimensional graphic terms (fig. 19).

Post-Art Nouveau work, such as that produced by Behrens in Düsseldorf, reflected more of a change in formal convention than an alternation in the overall attitude toward industry. To the extent that this formal change did have implications for the union of art and industrial production, these implications had an inherent ambiguity. Certain conventions, such as the use of the T-square and triangle, the form of a brick, and the geometry of a simple structural bay, were used to suggest that straight linear compositions were more anonymous and comprehensive than curvilinear arrangements. Nevertheless while Behrens and other artists thought of these straight lines in ideal rather than practical terms, figures such as Van de Velde argued for the practical function of what he called "wavy lines."⁵

The new convention of the straight line could adapt quite well to certain limited problems, as in the case of Behrens's graphics for the AEG. But the same conventions did not go very far in resolving the problem of product design and the structure of material things—objects of use and building. Thus Behrens's past experience and the logic of his new position with the AEG posed problems on several levels. First and foremost, if the relationship of design and product form were to be worked out in terms of industrial production (for the poverty of the handicraft approach had become increasingly clear), then a reassessment of such basic attitudes as the artist's anti-positivism and his mistrust of technology and industry was necessary. At a more strategic level, Behrens was called upon to construct the



11 Shipbuilding Exhibition, Berlin. The Kaiser opening the AEG pavilion (2 June 1908).

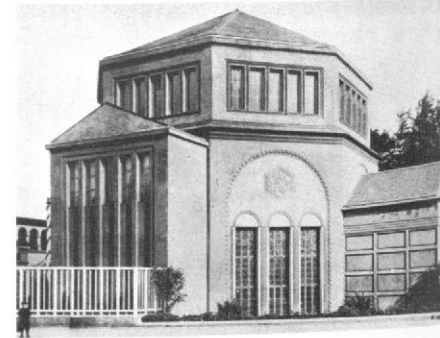
12 Shipbuilding Exhibition, Berlin. AEG pavilion by Peter Behrens.

13 Palace complex of Charlemagne, Aachen. Model of the state c.800.

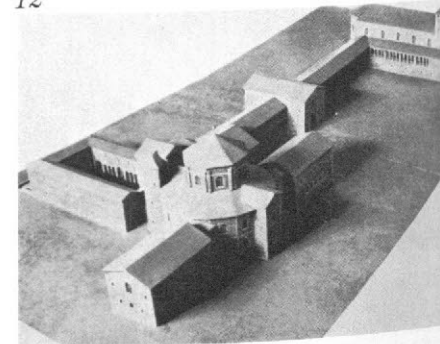
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14 Port Sunlight, the Lever company town, founded 1887. An illustration to Rathenau's dismissal of the garden city—though this precedent setting example was built by and for a major industry.



15 AEG, development of the corporate signet: (a) and (b), late nineteenth century signets by unidentified designers; (c) and (d), successive signets designed by Peter Behrens (1907ff.).

15b practice and the implicit theory for how a person with artistic talent and interest could contribute to an organizational system whose operational concerns extended from natural resources to the mass marketing of industrial products.⁶ Finally, he had the problem of relating design to the productive processes, that is to say, of discovering a viable relationship between the abstractions of the artist and the material conditions of production. At a more general level, Behrens's employment with the AEG marked a renewal of his search for a functional relationship between art and society—but no longer, as at Darmstadt, through the artists' dictation of a holistic culture. The new search, although equally utopian, entered into a discourse with the existing economic, political, and social conditions.

15c It is more than incidental that one of the directors of the AEG, Walther Rathenau, the son of its founder and president, shared Behrens's interest in a culture composed of functionally related parts.⁷ Both men believed that certain periods of history had manifested high levels of culture, that one must work to achieve such a level again, and that modern technology was *not* an inevitable contribution to this goal. Rathenau was one of the last great utopists, composing his positive image from both an evolutionary and a critical understanding of man's development. Rathenau, concerned with the reconstruction of man and culture in an industrial society,⁸ had first to offer a criticism of his own epoch, his *Zur Kritik der Zeit* ("On the Criticism of Our Times") of 1912. Despite his renown as an industrialist in the newly developed fields of electricity, automobiles, and electrochemistry, Rathenau proceeded to analyze the distress and misery of modern man which had arisen as the result of unchecked capitalism and which had inevitably led to the mechanization of work, of man, and of culture. In 1913 he wrote his book *Zur Mechanik des Geistes* ("On the Mechanics of the Spirit"). However, despite his concern about the mechanization that had resulted from industrialism, Rathenau was emphatic in his belief that such ills could not be removed by doing away with industry. Nineteenth century dreams of the return to an agrarian and handicraft society, the "garden city idylls of the average architect and art-craftsman" (fig. 14), were not only impossible in Rathenau's opinion but would condemn great parts

15d of the increased population to death through inefficient production and distribution. While Rathenau did not believe in an inevitable evolutionary progress toward a better world, he argued that the effects of knowledge, technology, and industry could not be rescinded. Human will would have to be used to enter into the historical process, to guide the way to a better world through the use of technology: "only mechanization itself can lead us beyond mechanization,"⁹ to a Kingdom of the Soul characterized by social consciousness and solidarity, love and creative responsibility. Upon entering into the historical process, it would become clear that it was the spiritual world which needed to be restructured. Rathenau said that the purpose of his book *Von kommenden Dingen* ("In Days to Come") was "to show that the spiritual guidance of life and the permeation of the mechanistic order with spirit will transform the blind play of force into a fully conscious and free cosmos, into a cosmos worthy of mankind."¹⁰

But Rathenau did not mean his call for spiritualization to be a retreat from life: "every genuine earthly experience must be taken seriously. Faithfulness in sensuous perception and devotion of the spirit lead to the inner comprehension even of everyday occurrences and to the contemptuous rejection of any sipping at the cup of life. If the world be an order, a cosmos, it behooves man to study its interconnections, its laws, and its phenomena; it behooves him to build them up within himself. Plato's, Leonardo's, and Goethe's irruption into the robust world of things was not a mundane aberration but a divine necessity. The poet who, lacking spiritual grasp, despises the present and the future of his world for the sake of artificially selected interests, is not as he fancies a seer, but a purveyor of aesthetic amusement. "What is romance in history? It is sterility. It is incapacity to imagine, still less to shape the yet unknown. . . . Fearing the ugly present and the anxious future, the romantic takes refuge with the dear, good, dead people, and spins out further what it has learned from them. But every big man was a shaper of his own time, a respecter of antiquity and conscious of his inheritance as a grown and capable man may be; not a youth in sheltered tutelage, but a master of the living world, and a herald of the future. 'Modernity' is

16 AEG sales room in the
Königgrätzerstrasse, Berlin (1910).
The shop and all visible household
objects by Peter Behrens.

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16

foolish, but antiquarianism is rubbish; life in its vigor
neither new nor antique, but young.”¹¹

Even before Rathenau wrote of the “big man” engaging
the world in order to achieve a true and young culture,
Peter Behrens and others were working out this challenge
in the arts.

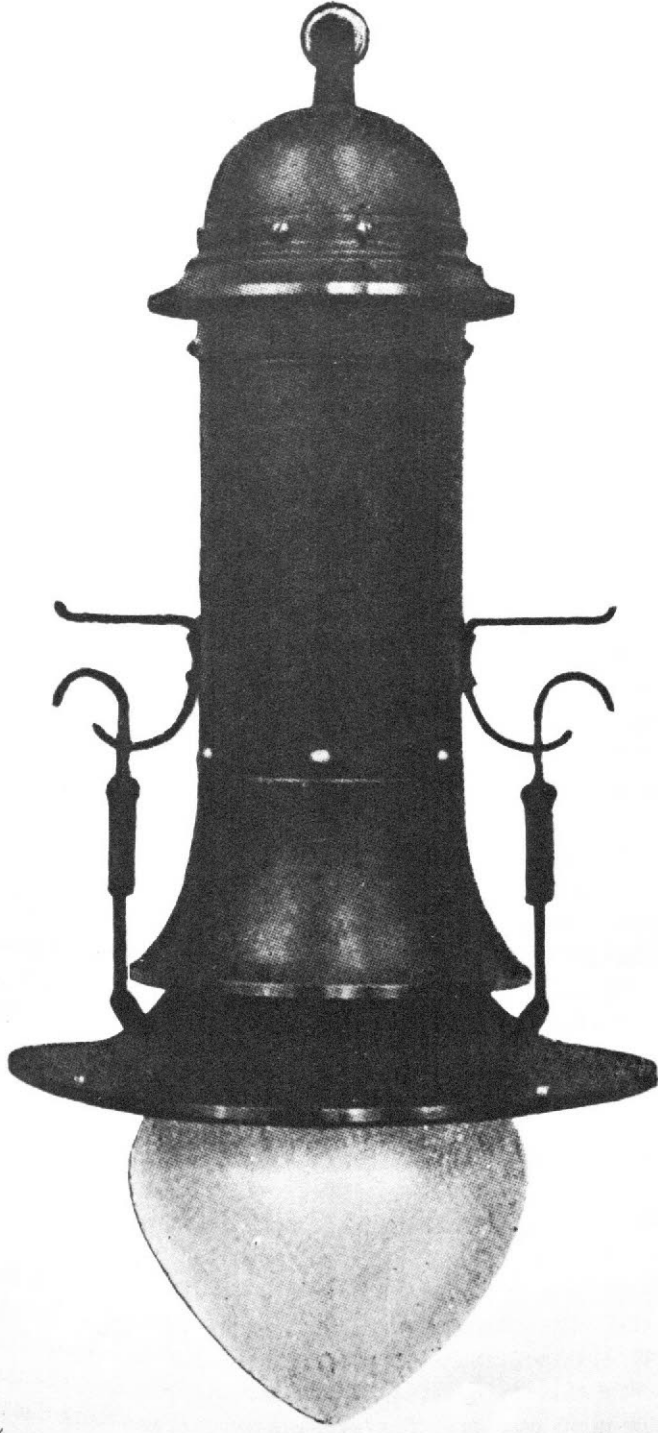
In an article of 1908 about Behrens’s work for the AEG,
the close relationship between the means of production and
artistic form was recognized. The attempt of William Morris
and his followers to restore an earlier cultural balance
through a return to an earlier productive system was specifically
criticized on the grounds that such an endeavor could not cope
with the basis of modern production—which still remained the
machine. Behrens repeated this argument and specifically
disagreed with a claim that had been made by Muthesius
that Morris should be recognized as the founder of the modern
movement in arts and crafts. On the contrary, Behrens thought
that priority should be given to those who were seeking a new
classical art while working in sympathy with modern conditions
rather than to the English Romantics and their German followers.¹³

Despite Rathenau’s and Behrens’s acceptance of the modern
situation, there remained a traditional, even conservative,
aspect to the modern society which they envisioned. Both men
believed there had been a healthy relationship between the
methods of production and the social and cultural conditions
of certain earlier times—especially classical antiquity, selected
periods of the Middle Ages, and the Germany of around 1800.
The cultural solidarity of those times provided a lesson. It
seemed obvious that it was necessary to recreate the orderly,
not to say monolithic organization imagined for the earlier
admired epochs.

Rathenau had spoken of the big man as being not only a
shaper of his own time, but also “a respecter of antiquity
and conscious of his inheritance as a grown and capable
man may be.” Such a historical consciousness is clearly
revealed in Behrens’s publications of the Berlin years,
which repeatedly dealt with the themes of “monumental
art” and “art and technology.”¹⁴ He saw monumental art

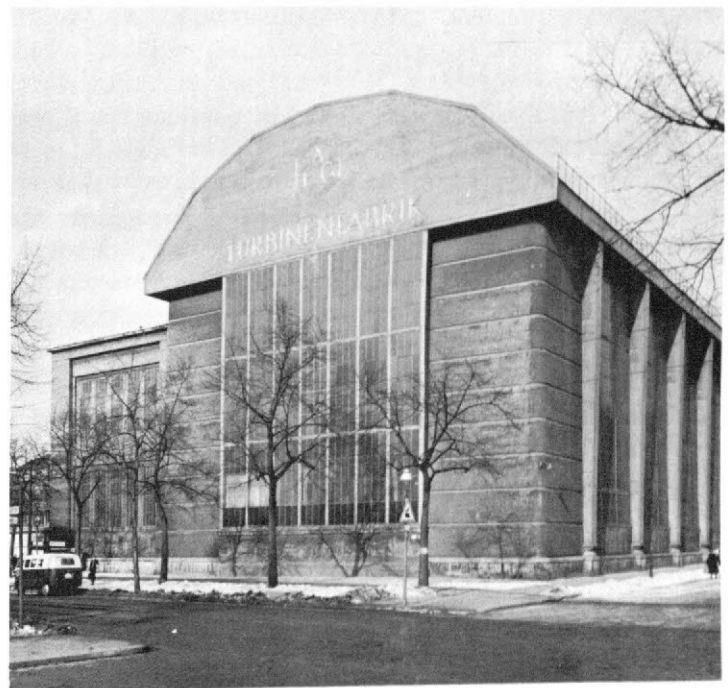
17 Design of housing and globe for AEG arc lamp by Peter Behrens (1907).

18 AEG Turbine Factory, Berlin-Moabit (now the Kraftwerk Union AG). The two street facades, Peter Behrens with Karl Bernhard (1908-1909).

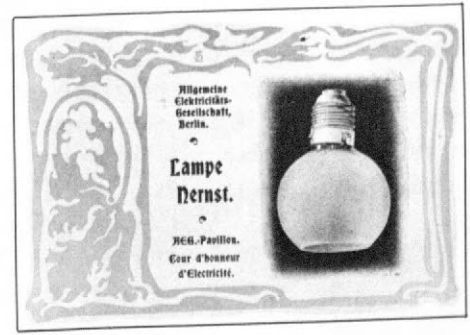


19 Peter Behrens's advertising design including type face. Dated by the AEG as 1914, but probably nearer 1910 (the type face is, in any case, from 1908).

20 Graphic frame for AEG advertisements at the Paris Exposition (1900) by Otto Eckmann.



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62 which had become his passion with his projects for the crematorium in Hagen and the Mannheim exhibition hall, as just the opposite from lyrical art. Just as he had dissociated himself from the Morris tradition, he now made specific his break with the lyrical in art. What had been so important at Darmstadt and in his relationship with Richard Dehmel and other poets was now relegated to the intimate realms where such art could work its charm on initiated amateurs. Monumental art did not necessarily have to be large (lamps and vases could be monumental while statues as high as houses could be merely decorative); it was distinguished rather by the fact that it was the expression of what was most important to a people—the source of a people's power or that which a people honors. For example, even in a time when the church had ceased to have the power and honor that it once had, death still had its mystery, and consequently a crematorium was capable of sustaining a monumental art. Furthermore, since monumental art, according to Behrens, was representative of what was most important to a people, it was also the highest expression of the culture of its time (fig. 18); indeed all other art forms (figs. 16, 17), including those of everyday life, should rely on the touchstones provided by monumental art.¹⁵ But if all art was dependent on monumental art, which was in turn the highest expression of a culture, Behrens needed to ascertain what distinguished or at least what should distinguish the monumental art of twentieth century Western culture.

In 1909, Behrens adopted Houston Stuart Chamberlain's distinction of knowledge, civilization, and culture.¹⁶ Relying on Chamberlain, Behrens built up his own relationships among these concepts. He viewed civilization as applied knowledge (science and technology). In modern times, knowledge had become essentially analytical and inductive, he felt. In contrast, such dominant aspects of culture as the *Weltanschauung* and art were synthetic and deductive.

Chamberlain had played these contrasting characteristics into an opposition between civilization and culture. Interestingly, Behrens did not fully agree. Accepting the terminology, the problem, and even the general description of the characteristics of knowledge and art in contemporary

society, he pointed out that knowledge had not always been analytical despite the fact that it was markedly so in his day. He also felt that art in contemporary society was less synthetic than ever before. For Behrens then, the outcome of this exercise was not that civilization and culture were necessarily opposed, but that the early twentieth century happened to be strongly marked by an analytic, scientific "civilizational"—that is, non-cultural—character.

This analytic character was contrary to the Goethean synthetic spirit that Behrens admired. However, there were, he claimed, clear signs of a return to constructive synthesis in science as well as art. Behrens's instances of synthesis in science were rather literal; for example, he cited the laboratory synthesis of water from hydrogen and oxygen. In art, there was, he felt, a turn from the materialistic, intellectual analysis of Gottfried Semper and his times¹⁷ to the synthetic, intuitional understanding provided by Alois Riegl and his concept of the *Kunstwollen*.¹⁸ This shift freed the artist from the implicit determinism of a materialist theory of art. In the terms with which Behrens began, there was in progress a shift from a scientific civilization to a culture in which the will of the artist and the people was dominant.

In 1910, Behrens meshed these abstract thoughts on the development of culture with his involvement in a technological industry.¹⁹ Behrens had earlier claimed that monumental art must be expressive of that which truly moves and grasps a society. He then acknowledged that in his time, technology and the material progress brought about by technology had claimed that position. The engineer had become the hero of modern times. Nevertheless, Behrens said, technology was still only a material concern—intellectual, and a matter of civilization. The challenge was to bring about the synthesis of technology and art in order that modern civilization might be elevated to a true culture.

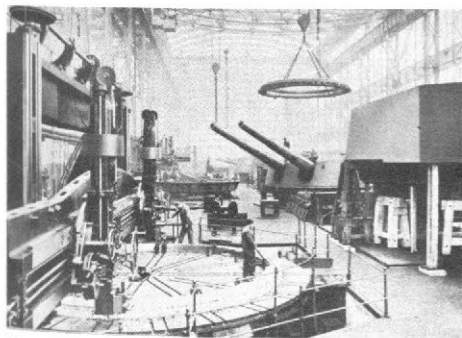
Unfortunately, no one, according to Behrens, had been making that synthesis—least of all in industry where the greatest opportunity lay. The character of the objects produced was determined by a few calculations and the taste of the shop foreman. The architects, charged with the de-

sign of an industrial building, reacted romantically and drew upon a treasury of historical forms—never exploring the formal implications of modern construction. Engineers, on the other hand, gave form to their buildings according to calculations and the conditions of construction. Often there was a beauty to great works of engineering (fig. 21), but according to Behrens this was a pseudo-aesthetic based on the lawfulness of mechanical construction. Such lawfulness was related to that of organic growth in Nature, and Nature, Behrens maintained, was not culture. Nor could the mere fulfillment of purpose be culture. In contrast, Behrens cited Riegl's theory that the artistic will of an epoch had to be accomplished even if it ran counter to material criteria.

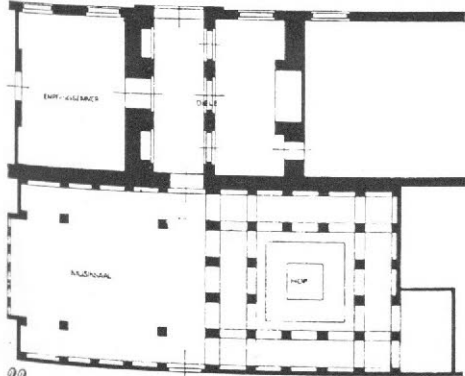
Behrens concluded this 1910 statement by outlining the service which men of his persuasion had to provide. As different as art and technology might be, they nevertheless belonged together. Art should no longer be considered a private matter. He wanted no aesthetic that sought its own rules in romantic dreams, but rather an aesthetic "rooted in the laws of surging life." He also did not want a technology that pursued its own ends, but one that was sensible to the artistic will of the time. "Thus German art and technology will work toward a single goal: to the strength ("Macht") of the German land, which will be recognized by the fact that a rich material life has been ennobled by a spiritually refined form."²⁰

As far as relating artistic form to new modes of production, the AEG had created an unusual opportunity and had placed this opportunity in the hands of Behrens. However, on the general level of ideas and policy, Behrens and the AEG were not alone.

Already in the nineteenth century a recurrent theme²¹ was the claim that excellence of design and production in the crafts—and still more in industry—would be particularly important for Germany. This idea found an especially enthusiastic supporter in the nationalist and social-democratic politician Friedrich Naumann. The argument ran something like this: Germany is not rich in natural resources and has no great navy or empire (although Naumann was



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21 Krupp Ninth Mechanical Workshop, Essen (c.1900). An illustration to the rationale, and, according to Behrens, the "pseudo-aesthetic" of the engineer as exemplified in the industrial building, machine tools, and products.

22 Exhibition space by Peter Behrens at the Third German Arts and Crafts Exhibition, Dresden (1906).



23 Richard Riemerschmid's dining room furniture designed for and fabricated by the Deutsche Werkstätte für Handwerkskunst, Hellerau near Dresden, exhibited at the Third German Exhibition of Arts and Crafts, Dresden (1906).

also an enthusiast for achieving both a navy and an empire consequently it has no cheap source of materials and no ready market for cheap goods. To compete in world commerce, Germany must acknowledge and turn to advantage the fact that it buys material and sells labor and *Kultur*. For volume and economical production, there must be reliance on machine production; but to overcome the high cost of imported materials and quality labor, it must be machine production of high quality, based on good design. The *Kultur* which Germany sells should be the German vernacular of the Machine Age, but this in turn must derive from machine-oriented people who have been reared in a thoroughly artistic culture. To succeed in satisfying all these conditions would be to assure a high standard of art, an advantageous commercial position, high employment, an elevated working and living conditions.²²

In 1907, Naumann was instrumental in the founding of an organization, the Deutscher Werkbund, dedicated to the implementation of these ideas. The Werkbund had as its immediate source the men and the activities of Die II deutsche Kunstgewerbeausstellung which opened in Dresden on May 12, 1906 (fig. 22).²³ The greatest part of the exhibition, under the direction of Fritz Schumacher, was devoted to what was termed "Raumkunst" (that is to say "spatial art" or "interior architecture"). Complete rooms for many different functions, were designed and fabricated in order "to solve each problem not according to an existing formula, but rather in accordance with a formula composed of three concerns: the character of the function which the room serves, the character of the materials which are used in the room, and the character of the person who created the room."²⁴ Great stress was placed on the "character of the person who created the room." Space in the exhibition was, for the first time, allotted only to the artists who would both conceive the designs and see them through to execution. Producers and contractors could come to be represented in the exhibition only at the request of the artist rather than vice versa. As a further assurance of artistic excellence, the organizers appointed an *Arbeitskommission* in each of the principal regions of Germany, whose job was to see that the general principles of the exhibition were fulfilled in the various sectors. The names of Muthesius

who represented Berlin; F. A. O. Kruger from the Münchener Werkstätten, who represented Munich; Bernhard Pankok for Württemberg; Behrens for the Rhineland; Josef Olbrich for Hessen; and Graf Kessler for Thüringen indicate the caliber of the administrators who sought to make Dresden in 1906 a celebration of a ten year effort to renew German crafts and architecture. One hundred and thirty-one rooms were created, most of them of a rather elegant character. While these rooms relied upon individual production to the designer's specifications, the organizers of the exhibition wanted to display high quality "machine-made" furniture as well. In 1906 the distinction between machine-assisted handwork and very simple industrial production was sufficiently obscure that any attempt to differentiate precisely between craft and industry was difficult—nor is the situation very different today. However, the handsome and simple factory-produced furniture of Karl Schmidt's Dresdener Werkstätten, which had been fabricated to the designs of Richard Riemerschmid (fig. 23), Bruno Paul, Heinrich Tessenow, and others, was a prominent feature of the exhibition. Naumann visited the Dresden exhibition, discovering in both the person and the production ideas of Karl Schmidt a complement to his own conception of the union of German crafts, industry, and art. In a speech delivered at Dresden, Naumann had the opportunity to put forward his ideas. One idea from this speech is of particular significance because of its relation to the later program of the Werkbund: "Many people do not have the money to hire artists, and consequently many wares are going to be mass-produced; for this great problem, the only solution is to infuse mass production with meaning and spirit (*"Künstlerisch zu durchgeistigen"*) by artistic means."²⁵

It is difficult to determine who was the prime mover of the Deutsche Werkbund. Theodor Heuss, who served as the business manager of the Werkbund after World War I and who was the President of the Federal Republic of Germany from 1949 to 1959, gave principal credit for the founding of the Werkbund to Friedrich Naumann in cooperation with the Dresden furniture manufacturer Karl Schmidt. Heuss also asserted that it was these men who sought out Dr. Wolf Dohrn to be the first manager of the Werkbund.²⁶

These assertions are something of an oversimplification since many men were involved in the creation of the institution, and some credence certainly should be given to those who credited Hermann Muthesius with "fathering" the Werkbund.²⁷ Muthesius's criticism of the low standard of the craft objects produced by established German artisans,²⁸ his international interests, and his advocacy of new technology while holding the position of Advisor on Applied Arts to the Prussian government brought him under fire from the protective Alliance for German Applied Arts. At a meeting of the Alliance in Düsseldorf in June, 1907, Peter Bruckmann, a silverware producer from Heilbronn;²⁹ Dohrn, an associate of Schmidt at the Dresdener Werkstätten; and the Viennese essayist J. A. Lux sided with Muthesius and withdrew from the meeting and from the Alliance.³⁰ Fritz Schumacher also came under attack for having used public funds while organizing the Dresden Kunstgewerbe exhibition in such a way as to favor ideological and artistic issues as opposed to immediate economic concerns. The defenders of Muthesius and Schumacher now represented a position which was under attack and lacked an organization. They claimed that artistic, social, and economic conditions would be improved if there were a considered, artistically conceived relationship between any product and the conditions of its production. This relationship would be different, but no less important, if machine production were involved.

The Dresden exhibition of 1906 was the focus for many energetic men who shared common ideas and who, after the Muthesius affair, found themselves in need of an official body. It was Muthesius apparently who took the initiative in bringing together twelve artists and twelve firms involved in the applied arts.³¹ The artists were Peter Behrens (Berlin), Theodor Fischer (Stuttgart), Josef Hoffman (Vienna), Wilhelm Kreis (Düsseldorf), Max Läger (Karlsruhe), Adelbert Niemeyer (Munich), Josef Olbrich (Darmstadt), Bruno Paul (Berlin), Richard Riemerschmid (Munich), J. J. Scharvogel (Darmstadt), Paul Schultze-Naumburg (Saaleck), and Fritz Schumacher (Dresden). The producers were Peter Bruckmann und Söhne, silverware fabricators, Heilbronn; Deutsche (formerly Dresdener) Werkstätten für Handwerkskunst, Schmidt's furniture fac-

66 tory in Dresden and later in Hellerau; Eugen Diederichs, a publisher operating out of Jena and Leipzig; Gebrüder Klingspor, type founders from Offenbach am Main; Kunst-
druckerei Künstlerbund Karlsruhe, printers from Karlsruhe; Poeschel und Trepte, printers from Leipzig; Saalecker Werkstätten, a firm which dealt mostly in interior furnishings, from Saaleck near Bad Kösen; Vereinigte Werkstätten für Kunst und Handwerk München, interior furnishings and crafts; Theophil Müller's Werkstätten für deutschen Hausrat, household furnishings, Dresden; Wiener Werkstätten, Vienna; Wilhelm und Co., workshop for lighting fixtures and iron and bronze work, Munich; and Gottlob Wunderlich, weavers, Waldkirchen i. S.

All of the above received invitations in August 1907 for the founding convention to be held in Munich on October 5-6, 1907. At the celebration of the founding, in the hall of the Vier Jahreszeiten ("Four Seasons"), Muthesius was to have delivered the principal exhortatory speech, but found it inadvisable because of his political position. The duty fell to Schumacher, who was elated and deeply moved when his speech found "a natural echo" in this assembly of "all the German artists allied with the new constructive and decorative endeavors." His speech had as its main theme the need for the drawing together of the inventive and the executive powers:

"The time has come when Germany should cease to look upon the artist as a man who more or less harmlessly follows his inclination, and rather see in him one of the important powers for the ennobling of work, and thereby to ennoble the entire inner life of the Land and to make the Land victorious in the competition among peoples. For in this competition only those values that cannot be imitated will prove decisive in the turn of events. Everything that can be imitated soon loses its value on the international market; only the qualitative values which spring from the inexpressible inner powers of a harmonious culture are inimitable. And consequently there exists in aesthetic power also the highest economic value.

"After a century devoted to technique and thought, we see the next project which Germany has to fulfill is that of the reconquest of a harmonious culture.

"In this pioneer work we unite ourselves, not as men who

are proud of what they have already achieved, but rather as men who are proud of what they attempt."³²

At the end of this meeting, at the suggestion of Richard Riemerschmid, the entire assembly, carrying roses, went in procession through the streets of Munich to pay homage to Adolf Hildebrand whose sixtieth birthday it happened to be.³³ While this event is anecdotal, it seems to have sealed an occasion which had been experienced as the triumphant conclusion of years of endeavor and as a rededication to the new pursuit of the elevated cultural goals which these men had previously sought under a now discredited program.

The new program, as expressed in the articles adopted by the Werkbund, was the following:

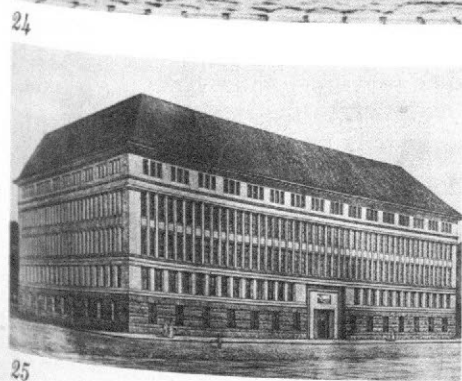
- 1) the encouragement of the fruitful cooperation among industry and craft for the enhancement of the quality of work;
- 2) a common position of craftsmen and artists in all questions which concern their relationship to the State;
- 3) the establishment of a center for professional development and the literary advocacy of the goals of the Werkbund;
- 4) the obligation of each member to participate in the achievement of excellent work;
- 5) the initiation of action for the increased understanding of quality work;
- 6) a greater influence on the education of the young above all on training in the crafts;
- 7) a greater influence on trade, on the conditions of bidding and on the conditions of expertise.³⁴

At Munich, and regularly thereafter, Naumann offered inspiring speeches and documents, including the first programmatic booklet of the Werkbund, *Deutsche Gewerkekunst*. Under the managership of Dohrn and then Alfo Paquet and Ernst Jäckh, the Werkbund enjoyed notable growth and success in its programs of "Quality Work," "Infusion of Meaning and Spirit into Work," and "Thorough Forming of All Things."³⁵

However, the conditions of 1907 were even more propitious for the personal contribution of Peter Behrens. Only a few

24 AEG Turbine Factory, the side toward the factory grounds. Karl Bernhard with Peter Behrens (1908–1909).

25 Mannesmannwerke main office building, Düsseldorf. Peter Behrens (1911–1912).



68 days before Behrens participated in the founding of the Deutscher Werkbund in Munich, he and his family had moved from Düsseldorf to Berlin, where his new duties as artistic advisor to the AEG began on the first of October.

Behrens's most renowned work, the AEG Turbine Factory (see fig. 18) was in fact a composite effort with the engineer, Karl Bernhard. Holding to his premise that the engineer's rational problem-solving is a naturalistic and pseudo-aesthetic discipline, Behrens participated in the design of the building through a division of responsibilities rather than through a true collaboration. Behrens designed the public, street facades of the building, incorporating modern engineering construction into forms which he conceived through the adaptation of established architectural conventions to the new problem of representing modern industrial enterprise. In these facades, engineering and modern techniques were brought together in the service of a traditional representational art that now was addressing itself to a new problem. In the long side elevation facing the factory grounds (fig. 24) and in the interior of the factory, the engineer was given virtually free reign—achieving a quite different result.³⁶

In the Turbine Factory as in other work for the AEG, Behrens learned to work successfully in industry without surrendering his anti-positivist position. Even his changing attitude toward technology was not one of acceptance but of accommodation. For Behrens, art and science were still distinct, and art was foremost culturally. But the writings of Alois Riegl had persuaded Behrens to accept the lawfulness of art as related not only to certain “constructive (geometric, arithmetic, formal)³⁷ ideals (as exemplified in the conventions of the buildings of his Düsseldorf period), but also to the epoch in which the art was created, to ‘the rhythm of the time.’”³⁸ It was this concept of a rhythm of the time, of a *Zeitgeist*, that allowed Behrens to submit to science and technology on the level of historical experience without fully accepting them in his ideal understanding of culture. Behrens might have said, the client's cosmology (in this case, the devotion of modern society to science and technology) is both significant and unavoidable, but it is not central to the creative process. Whereas theorists whom

Behrens deprecated as “materialists” (especially Gottfried Semper) accepted material and technical factors as inherent in problems of production and human environment, Riegl's *Kunstwollen* and the concept of *Zeitgeist* acted as filters by means of which an autocratic will could successfully modify material and technical circumstances.

Thus Behrens acknowledged that the most imposing manifestations of his time, those phenomena that established the “rhythm of the time,” were the works of modern engineering.³⁹ The artist, according to Behrens, could not ignore the technological heart of the *Zeitgeist*. At the same time, art could not simply submit to technology, whose currently prevalent role was time-bound. The role of monumental art, upon which all other art forms depended, was to give timeless, lawful, and ideal form to such general but time-bound characteristics of a particular age.⁴⁰ Finally, in view of this contemporary need to give artistic form to the accomplishments of technology, modern industry had the opportunity to serve as both the patron and the medium for the establishment of new values of national significance.⁴¹

Behrens's speech at the dedication of his office building for the Mannesmann industry in Düsseldorf (fig. 25) in 1912 makes explicit his understanding of architecture in the service of historically determined power. The architect's greatest responsibility was to design the building type forms for those individuals or institutions that provided or represented the political and economic power of their time. For Behrens, it was modern industry in alliance with central government that was the prime agency of that power at the beginning of the twentieth century. Its factories and office buildings therefore had to be the architectural touchstones of their age—receiving adequate representational form through the imaginative intersection of architectural convention and new conditions.

In summary, a common theme runs through Behrens's work and writing of these years. While he maintains his mistrust of an analytic, positivistic science and technology and the kind of civilization that he conceived such a basis would yield, he nevertheless accommodates himself and his

work to modern industry, partially through his intimations of a new synthesis but much more through his notion of artistic will as an agent of forces shaped by historical determinism. Industrial production and its intricate fusing with political power were the realities that had to be served in the face of material and social constraints.

Though often highly diluted, Behrens's historical determinism and the consequent character of his practice dominated the main thrust of the Modern Movement and even its attenuations in conventional practice today. For all that Behrens' limited position stemmed from the idea of a will to art ("*Kunstwollen*") fulfilling its historical destiny, it has to be acknowledged that the position defined by Behrens and the AEG and the Deutscher Werkbund was the first extensive and well regarded union of art and modern industry. In retrospect, what seems strongest in this position was the mistrust of a narrow, positivistic science and technology. However, the subsequent German assimilation of the object of this mistrust, by asserting and incorporating it as part of the course of historical necessity, defused both its critical and creative potential. The inherent critique became complicit resignation. The alternative to conceiving a non-positivistic science ("*Wissenschaft*," in the inclusive sense of this German word), one which would have permitted a critical and mutually contributive discourse among art, industry, and society, runs as an aspirational vein throughout this post-Nietzschean epoch, occasionally achieving tentative formulation, as in the writings of Behrens's Belgian colleague Henry van de Velde. A sound construction of that position and the writing of its history are on-going but unrealized projects.

This essay is adapted from chapter five of my doctoral dissertation, "Peter Behrens and the New Architecture of Germany: 1900-1917" (Columbia University, 1968). A summary of Behrens's early career, chapter two of the dissertation, was published as "Peter Behrens's Changing Concept of Life as Art," Architectural Design, XXXIX, February 1969, pp. 72-78.

It is a special pleasure to record my gratitude to Prof. Arnold Schürer for his many academic and personal kindnesses during my stay in Germany.

In addition to the important aid from Prof. Schürer, who was then in the employ of the AEG in Frankfurt, I also gratefully acknowledge the excellent, often warmly personal cooperation which I received from AEG-Telefunken, in the persons of Hermann Lanzke, Paul Borchardt, Herr Stärke, and Fräulein Ursula Aldag in Berlin; Peter Sieber in Frankfurt; and, more recently, Dr. Walter Feill, Miroslav Šula, Peter Obst, Herr Toepfer, and Herr Raddatz in Berlin.

1. The first section of this essay is adapted from a fuller discussion in my dissertation and will not be documented here. See dissertation references in note at head of these notes.

2. The exact circumstances of Behrens's employment by the AEG are not clear; most of the AEG archive was lost in the war. One often sees the president of the AEG, Emil Rathenau, credited with hiring Behrens; but equally often the credit goes to Baurat Paul Jordan, the manager of the huge Humboldtthain factory complex of the AEG and a member of the board of directors of the corporation. P. J. Cremers asserts that the credit goes to Jordan, not Rathenau; *Peter Behrens* (Essen: Baedeker, 1928), p. 6.

The industrial designer Arnold Schürer, who worked for the AEG for some years and who studied Behrens, was not able to discover the exact conditions of Behrens's employment. In personal exchange, Schürer suggested the following: It would appear that the friendship of Jordan and Behrens begins sufficiently early that it probably was Jordan who initiated the matter by introducing Behrens to Rathenau. Since Rathenau was known as an open person, and since Behrens came to have the AEG position, the two men must have entered into a good relationship. This is indicated all the more by the fact that only Rathenau could have given Behrens so much power and enabled him to work in divisions of the AEG which were outside Jordan's jurisdiction.

One should note, however, that as early as the 1890's Emil Rathenau's son Walther (1867-1922) and Behrens shared a number of common friends in the arts—especially in the *Pan* circle. Walther, himself a highly influential director of the AEG, may have introduced Behrens to his father, though Walther Rathenau's published letters and essays seem to give no clarification of the matter. The city of Berlin, W. Rathenau and Behrens's future had already been juxtaposed by J. Meier-Graefe, *Entwicklungsgeschichte der modernen Kunst* (Stuttgart: J. Hoffman, 1904), p. 725. There is a very sizable literature on the AEG, but see especially: Karl Wilhelm, *Die AEG* (Berlin: Widder, 1931); a 1933 manuscript published as *50 Jahre AEG* (Berlin: AEG, 1956); and *75 Jahre AEG* (Berlin and Frankfurt a.M.: AEG, 1958).

On Emil Rathenau, see the biography by Felix Pinner (Leipzig: Akademische Verlagsgesellschaft m.b.H., 1918). On Behrens's move from Düsseldorf to Berlin, see: F. H. Ehmcke, *Frankfurter Zeitung*, Aug. 23, 1907 (republished in his *Persön-*

liches und Sachliches [Berlin: Reckendorf, 1928], pp. 5ff.); E. Schur, *Dekorative Kunst*, Jg. XI (Oct. 1907), p. 48; and R. Breuer, *Werkkunst*, III (Feb. 9, 1908), pp. 145-49.

The best recent discussion, with extensive illustrations, is Tillmann Buddensieg and Henning Rogge's "Peter Behrens and the AEG Architecture," *Lotus*, 12 (Sept. 1976), pp. 90-127.

3. Photos from the AEG Archiv, Berlin. Data from Berlin, AEG, *50 Jahre AEG*, pp. 263-64. Such artificial waterfalls were already established as exhibits of power transmission, having been first used by Hippolyte Fontaine for the Gramme exhibit at the Vienna Exhibition of 1873 (three-quarter mile transmission) and again by Marcel Deprez at the Munich Exposition of 1882 (57 km). See W. James King, "The Development of Electrical Technology in the 19th Century: 3. The Early Arc Light and Generator," *United States National Museum Bulletin 228* (Washington, D.C.: Smithsonian Institution, 1962), pp. 385-390.

4. Such printing relied heavily on historical precedent (fig. 15a); an example at a large scale is provided by the stained glass window installed behind the pump at the 1891 Frankfurt exhibition discussed above. The window spelled out the name of the AEG in an ornamental nineteenth century antique type face enclosed in a band and strapwork frame based on German Renaissance models; illustrated *Dr. Felix Deutsch zum 70. Geburtstag* (Berlin: AEG, 1928), p. 23.

5. Krefeld, Kaiser-Wilhelm Museum, *Linie und Form* (Krefeld: Kramer und Baum, 1904).

6. This and the following topic are the subjects of other chapters in my dissertation; they are only briefly treated in this essay.

7. See note 2.

8. Major works by Walther Rathenau: *Reflexionen* (Leipzig: S. Hirzel, 1908); *Zur Kritik der Zeit* (Berlin: S. Fischer, 1912); *Zur Mechanik des Geistes* (Berlin: S. Fischer, 1913); *Von kommenden Dingen* (Berlin: S. Fischer, 1917; translated as *In Days to Come*, New York: Knopf, 1921); *Die neue Gesellschaft* (Berlin: S. Fischer, 1921; translated as *The New Society*, New York: Harcourt, Brace, 1921).

On Walther Rathenau, see the biography by Graf Harry Kessler (Berlin: H. Klemm, 1928; New York: Harcourt, Brace, 1930); James Joll, *Three Intellectuals in Politics* (New York: Pantheon, 1961); Fred L. Polak, *The Image of the Future*, 2 vols. (New York: Oceana, 1961), I, pp. 341ff.

It seems clear that Arnheim in Robert Musil's *The Man Without Qualities* (originally published in 1930) is modeled on Walther Rathenau. It is at least a pleasurable and enlightening way to critically observe the issues raised by the protagonists of the present essay.

9. Quoted in Kessler, *Walther Rathenau*, p. 107. This same idea appears at the beginning of Frank Lloyd Wright's remarkable lecture given in Chicago in 1901, "The Art and Craft of the Machine" (reprinted in full for the first time by Edgar Kaufmann and Ben Raeburn, eds., *Frank Lloyd Wright: Writings and Buildings* [New York: Meridian, 1960], pp. 55-73). Many of Wright's proposals, for example the necessity for artists to work with manufacturers, are highly suggestive of the concerns of Behrens, Rathenau, and members of the Deutscher Werkbund around 1907; but I know of no evidence for their awareness of Wright's lecture.

10. *In Days to Come*, p. 44.

11. *Ibid.*, p. 16.

12. Carl Widmer, "Handwerk und Maschinenarbeit," *Kunstgewerbeblatt*, N.F. XX (Dec. 1908), pp. 49-51.

13. Behrens, in *Volkswirtschaftliche Blätter*, IX (Aug. 27, 1910) pp. 265-66.

14. In addition to the article in the preceding note, Behrens also wrote: "Was ist monumentale Kunst," *Kunstgewerbeblatt*, N.F. XX (Dec. 1908), pp. 46, 48; a contribution to "Die Zukunft unserer Kultur," *Frankfurter Zeitung* (April 14, 1909), pp. 1-2; "Professor Peter Behrens über Ästhetik in der Industrie," *AEG-Zeitung*, X (June 1909), pp. 5-7; "Kunst und Technik," *Elektrotechnische Zeitschrift*, XXXI (June 2, 1910), pp. 552-55, also published in *Der Industriebau*, I (Aug. 15, 1910), pp. 176-180, and (Sept. 15, 1910), supplement pp. LXXXI-LXXXV; *Werkkunst*, VI (1910-11), pp. 124-25, 131-33; "The Aesthetics of Industrial Buildings," *Scientific American Supplement*, LXXXVI (Aug. 23, 1913), pp. 120-21; and especially "Über den Zusammenhang des Baukünstlerischen Schaffens mit der Technik," in Berlin, Kongress für Ästhetik und allgemeine Kunstwissenschaft, 1913, *Bericht* (Stuttgart: 1914), pp. 251-265.

15. Behrens' concept of monumental art is reconstructed from Lindner, *Neue Hamburger Zeitung* (April 9, 1908), and Behrens *Kunstgewerbeblatt*, N.F. XX.

16. This discussion is based on Behrens, *Frankfurter Zeitung* (April 14, 1909).

17. G. Semper, *Der Stil in den technischen und tektonischen Künsten oder Praktische Aesthetik* (2 vols., 2nd ed., Munich: F. Bruckmann, 1878-79; first published 1860, 1863).

18. A. Riegl, *Spätromische Kunstindustrie* (Vienna: Oesterr. archäologischen Institut, 1901).

19. This discussion is based on a lecture given by Behrens at the eighteenth annual convention of the Verband Deutscher Elektrotechniker in Braunschweig, May 26-27, 1910. See Behrens, *Elektrotechnische Zeitschrift*, XXXI.

20. Behrens, *Elektrotechnische Zeitschrift*, XXXI, p. 555. The original text is as follows:

Wenn wir nun zugeben müssen, dass Kunst und Technik ihrem Wesen nach wohl etwas Verschiedenes sind, so ist die Ansicht nicht minder berechtigt, dass sie beide dennoch zusammengehören. Die Kunst soll nicht mehr als Privatsache aufgefasst werden, der man sich nach Belieben bedient. Wir wollen keine Ästhetik, die sich in romantischer Träumerei ihre Regeln selbst sucht, sondern die in der vollen Gesetzlichkeit des rauschenden Lebens steht. Aber wir wollen auch keine Technik, die ihren Weg für sich geht, sondern die für das Kunstwollen der Zeit offenen Sinn hat. Deutsche Kunst und Technik werden so zu einem Ziele Wirken: zur Macht des deutschen Landes, die sich dadurch zu erkennen gibt, dass ein reiches materielles Leben durch geistig verfeinerte Form geadelt ist.

21. E. g., J. Lessing, "Neue Wege," *Kunstgewerbeblatt*, N.F. VI (Oct. 1894), pp. 1-5; *idem.*, "Das Kunstgewerbe als Beruf," *Volkswirtschaftliche Zeitfragen*, No. 97 (Berlin: L. Simion, 1891).

22. F. Naumann, "Kunst im Zeitalter der Maschine," *Kunstwart*, XVII (July 1904), pp. 317-[327].

23. The two earlier exhibitions had been in Munich in 1876 and 1888 and thus had been part of that understanding of handicraft against which the artists of the late 1890's had rebelled. The

decision to sponsor a third national crafts exhibition was made by the Dresdener Kunstgewerbeverein in the spring of 1904. See Anon., *Die Raumkunst in Dresden 1906* (Berlin: E. Wasmuth, n.d.).

24. A statement from the catalogue of the exhibition, quoted in: H. Rodewald, "Die III. deutsche Kunstgewerbeausstellung Dresden 1906 und ihre soziale Bedeutung," *Monatsschrift für christliche Sozialreform*, XXIX (1907), pp. 22-23, 156-170.

25. F. Naumann, *Kunst und Industrie* (Berlin, n.d.); also published in *Kunstwart*, XX (Oct. 1906). The first yearbook of the Deutscher Werkbund bore the title *Die Durchgeistigung der deutschen Arbeit* (Jena: Diederichs, 1912).

On Dresden 1906, see the previous footnotes and: *Kunstgewerbeblatt*, N.F. XVII (June-Sept. 1906), *passim*; F. Schumacher, *Stufen des Lebens* (3rd ed., Stuttgart: Deutsche Verlags-Anstalt, 1949), pp. 312ff.; *idem.*, *Kunstwart*, XIX (July-Aug. 1906), pp. 347-49, 396-400, 458-462; E. Kalkschmidt, *Deutschland*, V (Oct. 1906), pp. 50-63.

26. T. Heuss, *Friedrich Naumann* (Stuttgart and Berlin: Deutsche Verlags-Anstalt, 1937), pp. 296-300; *idem.*, "Notizen und Exkurse zur Geschichte des Deutschen Werkbundes," in H. Eckstein, *50 Jahre Deutscher Werkbund* (Berlin and Frankfurt a. M.: Metzner, 1958), pp. 19ff., where Heuss also notes that the archive of the Werkbund was lost in a bombing raid on Berlin in World War II. (Since this note was originally written, the Werkbund-Archiv has been founded in Berlin. To its first *Jahrbuch* of 1972, Sebastian Müller contributed "Zur Vorgeschichte und Gründungsgeschichte des Deutschen Werkbundes," pp. 23-53.)

27. R. Banham, *Theory and Design in the First Machine Age* (London: Architectural Press, 1960), p. 68; K. Scheffler, *Die fetten und die mageren Jahre* (Leipzig and Munich: P. List, 1946), p. 42.

As early as 1902, Scheffler himself had suggested that the prostituted industries be opposed by the unification of craftsmen into their own industries, a proposal that bore some resemblance to the approximately contemporary "workshops" of Vienna, Munich, Dresden, etc. See *Dekorative Kunst*, X (July 1902), p. 381. F. Schumacher, *Stufen des Lebens*, pp. 329-330, would seem to share the credit for the Werkbund idea with Schmidt, Dohrn and Muthesius.

28. Muthesius, "Die Bedeutung des Kunstgewerbes," *Dekorative Kunst*, X (Feb. 1907), pp. 177-192.

29. Friedrich Nauman was elected to the Reichstag from the city of Heilbronn from 1907 to 1918.

30. Heuss, *Friedrich Naumann*, p. 297; Eckstein, *50 Jahre Deutscher Werkbund*, p. 8.

31. F. Schumacher, *Stufen des Lebens*, p. 330.

32. Schumacher's speech is published in part in *Die Form*, VII (Nov. 1932), pp. 329-331. See also Schumacher, *Stufen des Lebens*, pp. 329-331 and 523-24.

33. Schumacher, *Stufen des Lebens*, p. 331.

34. E. Frölicher, *Monatsschrift für christliche Sozialreform*, XXXVI (1914), p. 20.

35. "Qualitäts-Arbeit," "Durchgeistigung der Arbeit," and "Durchformung aller Dinge." On the Deutscher Werkbund, see: H. Eckstein, *50 Jahre Deutscher Werkbund* (Berlin and Frankfurt a. M.: Metzner, 1958); T. Heuss, *Was ist Qualität?* (Tübingen and Stuttgart: R. Wunderlich, 1951); P. Bruckmann et al., special

number on founding of the Werkbund, *Die Form*, VII (Oct. 1932), pp. 297ff.; W. Riezler, *Die Kulturarbeit des Deutschen Werkbundes* (E. Jäckh, ed., *Weltkultur und Weltpolitik*, German Series No. 7; Munich: F. Bruckmann, 1916); H. Muthesius, "Der Werkbundgedanke. Seine Grundlagen," *Deutsche Politik*, I (Mar. 3, 1916), pp. 459-467.

See also the *Jahrbücher* of the Werkbund, published 1912ff., and of the Werkbund-Archiv, 1972ff.

For a critical assessment of the Werkbund from an interesting source, see A. Loos, "Die Überflüssigen," *März*, II (Aug. 1908), pp. 185-87. Loos's basic point is that artists should be free of applied work and, perhaps even more important, practical objects should be free of the artist's "cultural" intrusion.

36. Karl Bernhard, "Die neue Halle für die Turbinenfabrik der AEG in Berlin," *Zeitschrift des Vereines deutscher Ingenieure*, LV (Sept. 30, 1911), pp. 1625-1631, and (Oct. 7, 1911), pp. 1673-1682; *idem.*, "Die neue Halle der Turbinenfabrik der AEG in Berlin," *Zentralblatt der Bauverwaltung*, XXX (Jan. 15, 1910), pp. 25-29.

37. Behrens, as quoted in A. Lindner, "Peter Behrens in Hamburg," *Neue Hamburger Zeitung* (April 9, 1908), p. 2.

38. *Ibid.*

39. Behrens, *Scientific American Supplement*, LXXVI, p. 120, a brief version of Behrens's thoughts on "art and technology," poorly translated. See note 14 above.

40. Lindner, *Neue Hamburger Zeitung* (April 9, 1908), p. 1.

41. Behrens, *Scientific American Supplement*, LXXVI, p. 121.

42. Düsseldorf, Mannesmannröhren-Werke, *Zur Erinnerung an die Einweihung des Verwaltungsgebäudes der Mannesmannröhren-Werke in Düsseldorf, 10. Dezember 1912* (Düsseldorf: Mannesmann, 1912); Behrens address also as "Administration Buildings for Industrial Plants," *American Architect*, CXXVIII (Aug. 26, 1925), pp. 167-174.

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7 Courtesy the author. Plan redrawn by Cynthia Howard.

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