

RAFFAELLA NERI

ORCID: 0000-0002-7786-5294

Polytechnic University of Milan, Italy

PETER BEHRENS: BETWEEN THE MYTH OF ART AND THE MYTH OF SCIENCE

PETER BEHRENS: MIĘDZY MITEM SZTUKI A NAUKI

Abstract

For many architects between the 19th and 20th centuries, the myth of science and the myth of art were the two poles between which to seek a road towards a new architecture. Peter Behrens, the master of some of the greatest modern architects, was among them. His work testifies to his effort to affirm architecture as an artistic fact without denying scientific knowledge and technical achievements, two aspects which, for Behrens, must be reconciled in order to guarantee the expressive quality of architecture for the modern "big city."

Keywords: art, technique, Behrens, AEG

Streszczenie

Dla wielu architektów przełomu XIX i XX w. mity nauki i sztuki stanowiły dwa bieguny, między którymi należało szukać drogi do nowej architektury. Należał do nich Peter Behrens, który ukształtował wielu najwybitniejszych współczesnych architektów. Jego twórczość jest wyrazem dążenia do afirmacji architektury jako zjawiska artystycznego bez negowania wiedzy naukowej i osiągnięć technologicznych. Behrens uważał, że te dwa aspekty muszą współistnieć dla osiągnięcia wyrazistej architektury współczesnego „wielkiego miasta”.

Słowa kluczowe: sztuka, technologia, Behrens, AEG

Architecture has always been one of the most difficult disciplines to define and classify. Is it an art or a science? A technique or an expression? Over time, architecture has tried to define its status between rationality and creative flair, between the myth of science and the myth of art.

In the 19th century, the science of construction was hailed as a specific element of the architectural project, a tool of formal definition based on the incontrovertible exactness of scientific rationality, while other contrasting stances supported the subordination of construction in architecture in favour of the primacy of art, in an alternation of experiments in search of the reasons underlying a design, a balance between occasionally opposing worlds capable of bringing all their components back to unity.

Peter Behrens was one who addressed this theme, and it was to accompany him throughout his life and his critical, curious and contradictory fortune: when he was alive, accused

of not being rigorous enough with respect to the truth of the structure, but afterward appreciated for exactly the opposite reason, namely, the constructive clarity of his architecture. In the space between these opposing judgements, I believe we can recognize the problem which was constantly present in his work as an architect, ever since his collaboration with AEG began: the positive trust placed in the objectivity of technical knowledge and science on the one hand, and an awareness of the artistic and expressive value of architecture with the consequent need to affirm the primacy of art on the other. These were the two poles within which Behrens found it necessary to seek a road “towards architecture.” They are also a reflection of the great themes so dear to German culture: *Kunstvollen* or “the will of art,” pragmatism, ideality and technique: opposed in thought, but to be reconciled in the practice of architecture, to result in a style which, for Behrens, was to be rediscovered and reaffirmed. A style which possessed a formal unity, an expression of the “spirit of the time,” the *Zeitgeist*, which mirrored modernity.

Peter Behrens (Hamburg 1868 – Berlin 1940) received no formal training as an architect. After studying art, he settled in Munich in 1890: he was primarily a painter and graphic designer, interested in the problems of the “applied arts” – a theme which had arisen at that time – and in the industrial production of objects. Later, he was invited to join the Darmstadt Artists’ Colony, and in 1903 he was in Düsseldorf where, although still young, he became director of the School of Applied Arts.

His first architectural experiences also ensued in these years, the Villa Obenauer, the Eduard-Müller-Krematorium in Delstern with the Protestant church in Hagen, and some exhibition stands. Behrens was attracted to the Romanesque architecture he had encountered during a trip to Tuscany, and his early works smacked strongly of this influence. In his early designs, what he took from Tuscan architecture above all, was the rich decorative apparatus which provided him with a wide repertoire of ornamental motifs to cover his volumes, making them appear almost immaterial and abstract. But through this experience, Behrens learned to know and work with elementary volumes: in my opinion, it was from here that came the conviction, more and more evident in his work, that architecture consists essentially of volumes. From that point on, Behrens would reason that the values and meaning of architecture became manifest through the precision of relationships and proportions, rather than the orthodoxy of the ornamentation. This was the lesson which he would delve into more deeply later on, in the Berlin years, when he encountered the architecture of Karl Friedrich Schinkel.

In 1907, at the age of 40, Peter Behrens was invited to Berlin as an art consultant for the AEG company. Initially, he was in charge of product design and the kitting out of stands at trade fairs; later, AEG entrusted him with a more important task, a subject hitherto little recognized and practised – the designing of its industrial buildings.

Here, Behrens found himself for the first time faced with the complexity of the tasks inherent to the architecture of the *Großstadt*, the large modern city, worlds apart from those of the “applied arts.” He had to tackle two new problems: architecture for industry, a theme as recent as large-scale industrial production itself, which had become established across large swathes of the city, and the use of new building materials using techniques already tried out in major engineering works.

Both were themes that could not find any consolidated architectural answers, which did not allow Behrens to turn to traditional models, nor to resolve volumes in an ornamental key. These complex new problems imposed on Behrens a longer and more arduous path: he

was forced to question the entire design procedure, to search for the reasons and principles necessary to carry out these tasks, to reflect on the object and purpose of the art involved. To begin with, Behrens was obliged to ask himself what distinguished art from other human productions, what distinguished architecture from technique; and then to rethink the relationships between these different, apparently contrasting, activities, but both existent and necessary for architecture.

I personally believe that it was in these conditions that Behrens produced his best works, and that in these works we can find his most important teaching, which was, as Gropius would say, the habit of *thinking in principles*, of taking each specific problem back to its generality. For Behrens, the search for principles appeared to be the only possibility to ensure the renewal of forms and the generality of solutions, in search of a style that was still in line with tradition.

I think it can be argued that Behrens was, at one and the same time, both a classical and a modern architect. Modernity was the condition of his work: being *modern*, for him as for others, meant being a man of his time, and being *a modern architect* meant interpreting the values of his time and representing them through the forms of his own art. Behrens accepted this condition as a form of civil commitment, an ethical question rather than a declaration of poetics. Instead, he chose classicism as an approach in his designing.

The idea of modernity also included the brand-new possibilities offered by technique: Behrens considered these a matter of fact, to base his architecture on. Construction provided “valuable indications with respect to form,”¹ however, he warned, it was necessary to keep these two aspects separate. Technique could not be considered a value in itself: no style, no beauty could be directly determined by technique, although the constructive clarity and precision of a law, Behrens recognized, did possess a certain inherent aesthetic value.

There was a gap between architecture and construction and, to clarify the concept, he resorted to a comparison:

Just as the laws of nature do not automatically mean culture, so construction does not immediately mean art² [...] The thesis that the results of the engineer’s work are already in themselves the units of a new artistic style cannot be endorsed³ [...] For now, the works of the engineer lack Style, the result of an artistic will aware of its goals, one which triumphs over the constraints constituted by the goal, the material, and the realization.⁴

The substantial difference between the two activities, Behrens argued, consisted in the different goals they pursued: expressive intentionality distinguished architecture from engineering, and allowed it to be surpassed. The structure remained the primary tool, but it must necessarily be subordinated to the principles and aims of art.

At this point, to clarify these relationships, it was necessary to “penetrate the nature of the specifically artistic element,”⁵ to clarify just what art was, what its goals were, and what the general task of architecture was.

¹ P. Behrens, *Arte e tecnica* [in:] T. Maldonado, *Tecnica e cultura*, Feltrinelli, Milano 1979, p. 117 [*Kunst und Technik*, Elektrotechnische Zeitschrift, 1910].

² P. Behrens, *Arte e tecnica*, Casabella, 1960, no. 240, p. 33 [*Innendekoration*, July 1911].

³ P. Behrens, *Arte e tecnica* [in:] T. Maldonado, *op. cit.*, p. 119.

⁴ P. Behrens, *Arte e tecnica*, Casabella, *op. cit.*, p. 33 [*Kunst und Technik*, Der Industriebau, 15 August, 1910].

⁵ P. Behrens, *Arte e tecnica* [in:] T. Maldonado, *op. cit.*, p. 119.

Behrens considered art the most mature and profound expression of a culture, the supreme and most general manifestation of human life. Art had the task of making itself the bearer of the particular spiritual and moral values which distinguished an era. Therefore, as the bearer of general values, art could never be reduced to individual expression: architecture, first of all, had to be an interpreter of the collective values of a society.

Behrens based his work on this idea of a profoundly civil architecture. First and foremost, he took the idea of *monumentality* as the goal of his work and specified the subtle but decisive distinction between *monumentality* and *monumentalism*.⁶

By monumental, Behrens meant the effect of a building's grandeur, an effect produced by the forms when they corresponded to the value that each building assumed for the community, within a given era. An idea of adequacy was included: paraphrasing Boullée, we could say that for Behrens, *monumental* meant the adequate representation of a building's *character*.

This character reflected the values of an era: it derived from the building's purpose but must necessarily be placed at a higher level of generality.

According to Behrens, the operation which guaranteed solutions generality was *typing*: "the character, the creation of a type was in every art, and no less in architecture, the most important moment of every formulation."⁷ The identification of a type was the first, fundamental act to be performed to define the general character of buildings and to allow the road towards "monumentality." This idea of monumentality, understood as an adequate representation of character, achieved through a definition of types, was the commitment the architect must undertake in the face of any theme, especially in the face of those that lacked a stable, consolidated typological definition, such as commercial and industrial buildings, the brand-new themes of modernity. Behrens sensed, as Ludwig Hilberseimer later showed with great rigour and clarity, that the definition of building types was the indispensable condition for the completion of the great modern city, the *Großstadt*, with Berlin representing a fruitful field of experimentation in those years.

These were the tasks Behrens set himself when he accepted the request to realize the first industrial building that AEG commissioned from him in 1909, the Turbine Factory assembly room, while interpreting the ambitions of the company, which saw architecture as a tool to celebrate itself in conjunction with the growing role of industry.

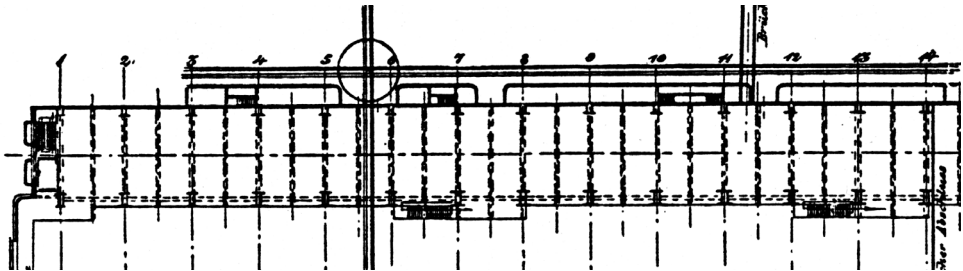
Behrens began the work in the simplest and most obvious way: he started from the functional and dimensional requirements of the building. The assembly of turbines required a large, undivided space, as well as other areas for complementary processing: it was therefore necessary to identify the general characteristics of this building in order to give it a clear and recognizable spatial definition, appropriate to the theme, in order to become "typed." The main building was conceived as a hall with a single central space, narrow and long, an undivided space through which a bridge crane could run. The volume measured 207 metres long, 18 metres high and 26 metres wide: this was joined by a smaller communicating block, of two storeys, which housed other affiliated processes. The first act towards a "generality" had been completed: the factory was a hall with a smaller building flanking it.

⁶ See P. Behrens *Che cos'è arte monumentale*, 1908 [*Was ist monumentale Kunst?*, Kunstgewerbeblatt, December 1908]; Casabella, no. 240, June 1960 [*Il futuro di Berlino*, Berlin Morgenpost, 1912].

⁷ *Ibidem*, p. 33.



III. 1. Peter Behrens, Turbinenfabrik, Mantagehalle, Berlin 1909, front façade (from Fritz Hoeber, *Peter Behrens*, München 1913).



III. 2. Peter Behrens, Turbinenfabrik, Mantagehalle, Berlin 1909, plan (from Fritz Hoeber, *Peter Behrens*, München 1913).

But how to give this hall a finished form?

Behrens tasked the elements of the structure with bringing out the character of this building, with making it “monumental,” constructing its volume and endowing this with a formal completeness. And once again, he began from a simple fact, intrinsic to the theme: the large size of the building and therefore also of its roof.

Behrens interpreted the large dimensions of the central space as a value to be represented, a character proper to production premises, inherent to the theme of the large factory. He set out to exalt it, emphasize it, represent it, through its grandeur, power, energy, and strength: in this way he sought to make the factory a heroic place.

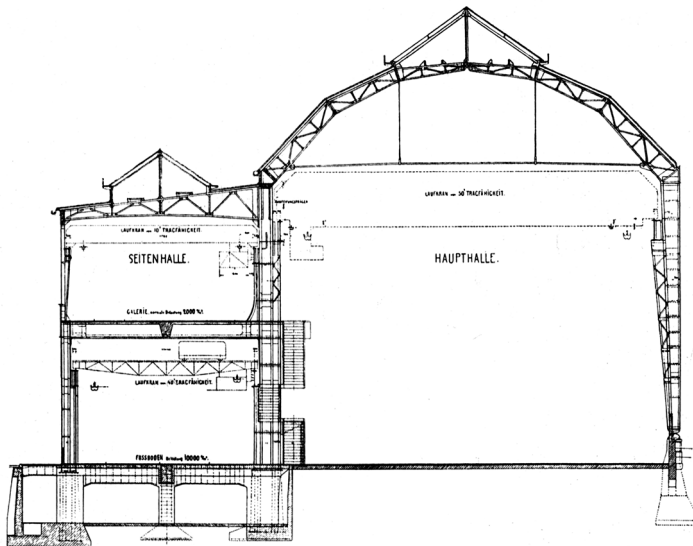
The description of the construction enterprise of the great central space became the principle on which Behrens based the formal definition of the *type*, the principle through which he gave shape to the volume and its elements, through which he represented the building’s *character*.

But what principle, exactly, was described through the forms of the architecture? This was the point of greatest interest, because there was a significant discrepancy between the structural principle implemented to support the factory and that represented in the forms of its architecture, a discrepancy which Behrens' thinking clarified, however.

Behrens chose iron and glass to realize the great hall, materials which allowed for large structural spans and good interior lighting. From a static point of view, the structure of the factory is very simple: the basic element consists of a triple-hinged arch and a 26-metre span, repeated for 22 spans at a pitch of 9.22 metres. It was designed and calculated together with an engineer, Karl Bernhard who, later on, would to some extent criticize Behrens' work on the basis of a different point of view regarding the role of construction in architecture.

Which operation would make it possible to distinguish technique from art, as Behrens hoped, to mark the distance between his work and that of the engineer, to overcome the forms of the technique?

Behrens was not satisfied with showing the triple-hinged arches in their technical evidence, the result of dimensioning the structure, but not very expressive from a formal point of view. Instead, he tried to relate these elements to an “order,” a more general and recognizable principle, one that was more evident and easily understood. The order of the elements must represent the structural principle of the building in an easy and immediate way: the triple-hinged arch responded to a static law, but the perception of it did not really render the sense of stability.



III. 3. Peter Behrens, Turbinenfabrik, Mantagehalle, Berlin 1909, section (from Fritz Hoeber, *Peter Behrens*, München 1913).

Behrens therefore defined the volume of the building as the representation of a trilithic pillar-beam system, an elementary principle, easier to recognize, and to a certain degree masking the triple-hinged arches. He tried to define an order, distinguished the elements, and demonstrated their respective roles: a low base, full-height vertical pillars, iron and glass curtain walls,

a heavy lintel linking the slabs and closing off the volume, a vast roof. Behrens clarified that his intent was to “give expression to the sense of stability, also from an aesthetic point of view.”⁸ Here, he did not exploit the qualities of lightness of iron and glass structures: his conception of architecture was based on the heaviness of the masses and the strength of the volumes, as described by the elements of their construction. The deep shadows which the pillars and the lintel cast on the glass windows, which were strongly set back and tilted to emphasize this effect, contribute to enhancing the building’s volume. This shadow determines the distance between the construction, understood as a technical fact, and the architectural fact.

These considerations extend to all the parts of the building. The end wall of the hall, which overlooks the main road, was self-evidently the part most invested with the representative task towards the city: its definition harked back to the theme of the façade, the part which summarizes the building. Here the large roof plays a key role: it concludes the volume and shows, through its unity, the unity and breadth of the space of the hall, the fact of its being an undivided place; for this reason, it becomes a clear-cut element, defined by way of a large polygonal pediment. In Behrens’ intentions, the definition of the polygonal shape aspired to become a formally stable element, an element of recognizability of industrial architecture: the formal necessity of this pediment, like that of a classical tympanum, certainly had no structural *raison d’être*, but had been deliberated on the basis of its representative capacity, its ability to manifest the building’s character.

The same applies to the solution of the corner, heavy, powerful, rusticated, which would be the object of particular criticism by the engineer Bernhard “on the basis of the truth of the structure”⁹: this corner, Bernhard argued, was not only uncalled-for, but downright misleading. This was a positivist argument: the shape of the corner, its heaviness, its solidity, did not correspond to the structural functioning of that part, unlike the other spans, so it was bogus.

But even this choice was explained through the representative goal of the architecture. Behrens, mindful of Schinkel’s lesson, replied: “the two corner pillars have the role of closing and binding,”¹⁰ thus strongly affirming the unity and conclusion of the great volume.

The lateral body was based on the same principle of analytical construction and on the desire to recount the parts of which it was composed, showing its subordination by contrast: it is set back from the road, omits the element of the large roof, and is explicitly divided into two storeys behind its double order of pillars.

With regard to this architecture, there have been frequent allusions to its close resemblance to a Doric temple. I believe that this is not a question of a formal similarity, but that it derives instead from an analogy of conception. In both cases, the construction principle takes on an expressive value: it was the principle on the basis of which the order of the elements was defined, and it was also what was represented with emphasis, the subject of a story which, through the analyticity of the elements, the proportion of the parts, and the precision of the forms, was intended to represent a particular character. This grave and austere character was what Behrens considered appropriate for an industrial building, the result of an analogy: the turbine factory possessed the same drama as archaic Doric temples.

⁸ P. Behrens, *Arte e tecnica* [in:] T. Maldonado, *op. cit.*, p. 126.

⁹ From K. Bernhard, *Die neue Halle für die Turbinenfabrik der AEG in Berlin*, Zentralblatt der Bauverwaltung, 1910; and in T. Buddensieg et al., *Industriekultur. Peter Behrens und die AEG 1907–1914*, Mann Verlag, Berlin 1981, p. 312.

¹⁰ In P. Behrens, *Arte e tecnica* [in:] F. Dal Co, *Teorie del moderno*, Laterza, Bari 1982 [Über die Beziehungen der künstlerischen und technischen Probleme, Berlin 1917], p. 285.



III. 4. Peter Behrens, Turbinenfabrik, Mantagehalle, Berlin 1909 (from Tilmann Buddensieg, Henning Rogge, *Industriekultur. Peter Behrens und die AEG 1907–1914*, Gebr. Mann Verlag, Berlin 1981).

With one major difference. That the form of the elements which make up the Doric order represents the principle actually operating in the structure, while in Behrens' factory the two principles do not coincide. In the temple there was a deviation between the technical forms, since these could be defined on the basis of structural necessity, and the forms that describe its principle. However, no contrast was made between *the acting principle* and *the represented principle*. In other words, the deviation does not concern the correspondence between the operating principle and the represented principle, but *the form* of the elements which derive from them: here the principle put into action allows us to *identify* the elements of the structure – the intent to *put it into representation* precisely defines its form.

This deviation, this added formal quality, necessary for the architecture, this surpassing of the technical form, has exactly the role of making the story of the building more expressive, more evident, clearer and more recognizable; and, through the evidence of this story, to manifest a particular character. To lead technique and science back to art.

The positivist criticism, that of the engineer Bernhard, demanded “truth” in the forms, a total adherence of the forms of the architecture to the forms of the technique, with the result of depressing the form and debasing it as a result of technical thought, depriving it of its expressive potential, its representative capacity, its very life. Because the expressive difference is contained in the forms: governed by the desire to represent the character of the building and obtained by passing through the representation of the construction. Between the “truth” of engineers and the forms of architecture there is the difference between being and representing: this operation presupposes an act of will, a choice, oriented by an expressive intentionality.

Primarily, Behrens had the great merit of having once again affirmed the expressive capacity and necessity of forms; and then to have recognized the importance of construction, far beyond the role of a guarantor of solidity, as a principle of representation of the forms of architecture. To demonstrate this, he took the operation to the limit, to the point

of dissociating the form of the elements from their static behaviour, representing a different principle from the one actually operating, in order to enhance the expressive power.

Starting from the master's lesson, it was a question of making the procedure coherent while matching the principles, what *was*, with what *was represented*; and to choose what it was intended to represent in order to bring the clarity of a principle to its "exact expression."

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A u t h o r ' s N o t e :

Full Prof. Raffaella Neri, PhD, Arch.

Full professor in Architectural and Urban Composition at the Polytechnic University of Milan and part of the teaching board of the PhD course of the IUAV University of Venice. Her research mainly focuses on architectural theory, on the problem of urban project in the modern city and on the role of construction in architectural design. She participates in many architectural competitions. In 1996, she won the National Architectural Prize Luigi Cosenza.

raffaella.neri@polimi.it