

GEAM and ZERO: Spaces between Architecture and Art

CORNELIA ESCHER

In 1961, the Museum Morsbroich in Leverkusen staged the exhibition *30 junge Deutsche. Architektur, Plastik, Malerei, Graphik* (30 Young Germans: Architecture, Sculpture, Painting, Graphic Design). To back up the narrative of the show, the young museum director Udo Kultermann, an art historian with a special interest in architecture, claimed that the arts were an aesthetic manifestation of the zeitgeist. He presented the objects on display in the exhibition as statements for a new concept of space shared by the disciplines.¹ “Space” and the meaning it was taking within the debate of the arts was indeed a crucial topic at the time, though Kultermann didn’t further elaborate on this point.

Here, I will scrutinize Kultermann’s assumption and specify the parallels one might observe between artistic and architectonic approaches at the time. To do so, I will focus on the *Groupe d’études d’architecture mobile* (GEAM), an avant-garde network of young European architects that was closely connected with the art scene. Through their work on flexible and changeable forms, but also through their collaborations with artists, GEAM architects developed ideas of an architecture relying on an aesthetics of change, which revolved around bodily sensations. Their proposals for a “mobile architecture” did indeed come close to some of the concepts and practices in Zero’s art, and culminated in the understanding of architecture as an environment.

ART AND ARCHITECTURE: THIRTY YOUNG GERMANS IN MORSBROICH

In order to come closer to a definition of shared grounds and spatial concepts in art and architecture of the European avant-garde around 1960, I will begin with the event that provoked Kultermann’s thesis, the exhibition *30 junge Deutsche*, which was also the site for one of the major intersections between GEAM and Zero. The show featured works by the German architects and GEAM members Frei Otto, Eckhard Schulze-Fielitz, and Günter Günschel, and the Zero artists Otto Piene, Heinz Mack, and Günther Uecker. Its hanging was apparently realized in a rather conventional mode and didn’t—at least in the sources I could look at—include original strategies for arranging the works in space—a tendency that would be explored in exhibitions curated by members of the ZERO movement later on.² Nevertheless, an imaginary walk through the exhibition can help to get a grip on the major topics and the shared ground between architecture and art.

To reconstruct the exhibition, I mainly rely on newspaper articles, which are an interesting source, as we can also understand how the exhibition was perceived by a certain public. The overall echo toward the exhibition was far from favorable—and even more so for the second venue, the Kunstmuseum St. Gallen, where the exhibition was presented afterward. The reactions were somewhat typical for an attitude that was still very reserved toward abstract art in general, an attitude that was not so uncommon in Germany and Switzerland at the time.

- 1 Udo Kultermann, ed., *30 junge Deutsche. Architektur, Plastik, Malerei, Graphik*, exh. cat. Städtisches Museum Leverkusen Schloss Morsbroich (Leverkusen, 1961).
- 2 Tiziana Caianiello and Mattijs Visser, eds., *The Artist as Curator: Collaborative Initiatives in the International ZERO Movement 1957–1967* (Ghent: MER. Paper Kunsthalle, 2015).

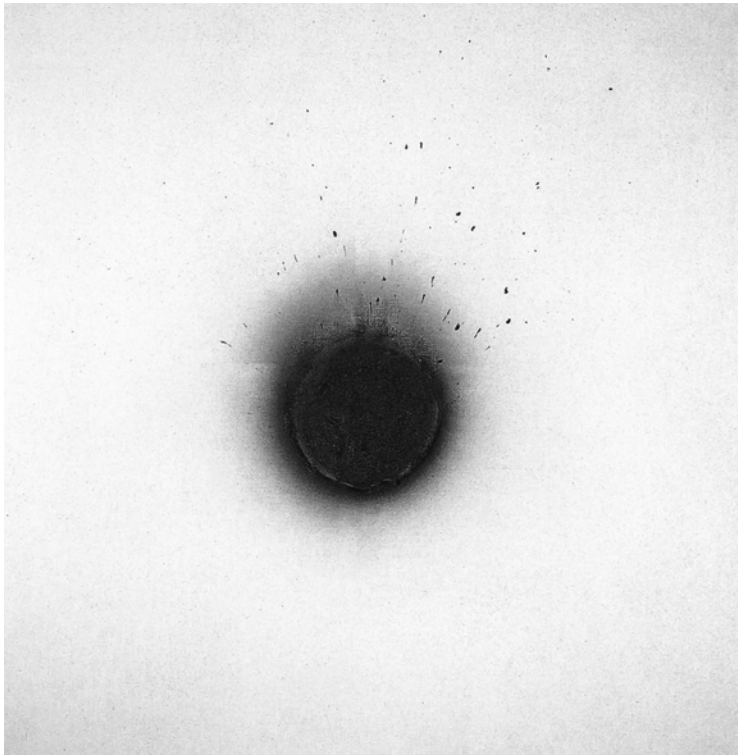


fig.1 Otto Piene,
La lune en rodage, 1961

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fig.2 Frei Otto,
Roof for the 'Tanzbrunnen',
Cologne, 1957
Photo unknown/Stadtarchiv
Konstanz, W I, L. Stromeyer & Co.,
no. 644



The art critic John Anthony Thwaites—one of the more favorable voices—described the exhibition as follows: “Entering the exhibition space, one has the impression of light, lightness, and space. Also of a certain harmony. After a first tour, you notice that some things stand out: Otto Piene’s *La Lune en rodage*, a round mark of smoke on a large white support glowing hypnotically along the corridor (fig. 1), the photograph showing a detail of an airport building by Eckhard Schulze-Fielitz hanging next to it, then an oil painting, white on gray, by Heinz Mack, whose wave structures have poetics and precision. Nearby, a large-scale photograph of the star-shaped tent covering the ‘Tanzbrunnen’ in Cologne, by Frei Otto (fig. 2).”³

By looking at these images, we can identify certain similarities: artists and architects relied mostly on non-colors and focused instead on light, physical processes, and material appearances. The presentation in the museum context had effects on the interpretation of the works, which might have contributed to highlight these similarities. It invited architects to bring the aesthetic aspects of their designs to the fore and made them focus more decisively on their means of representation. In the photograph by Schulze-Fielitz, we cannot grasp the building itself but rather the play of light and shadow on triangular volumes as it was imagined by the architect; in fact, it was not a realized building, but a model photograph, showing Schulze-Fielitz’s conceptual intentions. At the time, Schulze-Fielitz consciously used art spaces to take a distance from architecture practice, and to explore projects that left the realm of daily routine. He successfully presented the model for his project *Raumstadt* (Space City)—a utopian proposal for a city in the air—in gallery spaces, such as the Galerie van de Loo in Essen, where he presented together with André Thomkins, or the

Galerie Brusberg in Hannover, where his project was shown alongside works by the kinetic artists Takis, Jesús Rafael Soto, and Harry Kramer. The fact that the model was put on display in these contexts and the way it was represented in photographs made its status ambivalent: Was it still a model, or rather an abstract sculptural work?

Similarly, the pairing of artists’ works with architecture and graphic design in the exhibition made them appear in a different light—at least in the eyes of the audience. In his opening speech in St. Gallen, Kultermann had described the effect of new materials on architecture. According to Kultermann, new materials led to new formal solutions, which linked ornament directly to construction and statics. By consequence, critics interpreted artworks in the exhibition notably as applied art or experiments with materials. This tied in with critical or hostile positions toward abstract art, which fundamentally questioned the artistic value of the works on display.⁴

Piene’s presentation of his *Light Ballet* was labeled a “laboratory of an insane engineer” in the daily newspaper *Appenzeller Zeitung*, and was measured against contemporary experiments in lighting techniques for theater.⁵ On similar grounds, one of the critics claimed that the show had failed to demonstrate the potential of modern art. He stated that “when leaving the museum, the exhibition continues. The sand on the paths in front of the museum, the rain falling onto the asphalt ground, paint the most beautiful point-images.” As the exhibition failed to show more than physical processes, he concluded, it was playing into the hands of the adversaries of modernity.⁶

This last quote is interesting as it points both to a misunderstanding and helps us to capture an essential point: if Zero artists were interested in physical processes, they nevertheless highlighted

3 John Anthony Thwaites, “30 junge Deutsche in Schloß Morsbroich,” *Deutsche Zeitung mit Wirtschaftszeitung*, May 12, 1961 (unless otherwise noted, all translations are by the author).

4 On the hostility toward abstract art, see, for example, Antje Kramer, *L’Aventure allemande du Nouveau Réalisme: Réalités et fantasmes d’une néo-avant-garde européenne* (Paris: Presses du réel, 2012), 42.

5 P. M., “Bodenlose Raumexperimente. 30 junge Deutsche im Kunstmuseum St. Gallen,” *Appenzeller Zeitung*, July 27, 1961.

6 F. L., “Deutsche Kunst auf dem Nullpunkt. Zur Ausstellung im Kunstmuseum St. Gallen,” *Tagesanzeiger für Stadt und Kanton Zürich*, August 2, 1961.

their own artistic authorship. To underline the latter, they used terms such as “expression” and “sensitivity” and confirmed that the works originated from manual creation instead of mechanic work. If we twist the critic’s argument around, the quote may also uncover that one of the aims of the exhibition was actually reached: from his interested observation of “rain paintings” outside the museum, we could also conclude that the tour through the exhibition had transformed the critic’s sense of vision and made him more receptive toward the aesthetic processes in his immediate environment.

GEAM: NETWORKS AND OPEN FORMS

If we cannot fully grasp the spatial concepts of GEAM and Zero from the exhibition in Schloss Morsbroich, we can still see a parallel interest in processes, which was, as we will see, doubled by a reflection on authorship. For GEAM architects, the desire for a “mobile architecture,” and more specifically Oskar Hansen’s concept of “open form,” included a reconsideration of the roles of architect and inhabitant or visitor. These concepts brought together the very concrete concerns emerging from the practices of social housing, and a more aesthetic approach influenced by discussions from the art world.

In its origins, GEAM was modeled after the internationalist forum for modern architects, the CIAM, the *Congrès internationaux de l’architecture moderne*.⁷ By the mid-1950s, this forum experienced a crisis, as it had grown from a small avant-garde group to a truly internationalist forum: a congress with representatives from the different member states, whose positions were somewhat neutralized due to the wide scope of questions and attitudes it represented.⁸ Thus, the meetings of CIAM came

to an end and some of its members continued the discussion in smaller groups, such as Team 10, which established itself as the legitimate heir of CIAM thought, and GEAM.⁹ These groups formed more flexible networks that served to exchange ideas, but also to increase public attention, and, in the case of GEAM, to get in contact with interested professionals such as journalists, gallerists, or museum directors. The small-scale, internationally networked groups in fact seem to have worked somewhat similar to the ZERO network, spanning all across Europe in a rather loose formation.

The architects also maintained networks that were interconnected with the art world in order to accommodate their own works in various galleries and museums. In 1961, GEAM put together a group exhibition under the title *L’architecture mobile* (Mobile Architecture), which toured around European cities. After a presentation in Paris, it was shown at the Galerie Seide in Hannover. On this occasion, the gallery edited a folder containing two booklets: the first was realized with the help of GEAM member Günter Günschel and presented the group’s projects; the second, probably by Adam Seide himself, included theoretical texts and prints by the artists Dietrich Helms and Rolf Hartung (fig. 3).¹⁰ Later that same year, the exhibition was on view in Morsbroich, in parallel to the exhibition *30 junge Deutsche*. GEAM member Werner Ruhnau was well acquainted with Kultermann. Earlier in 1961, he had drawn Kultermann’s interest toward the work of Mack and Piene, initiating the first meeting, which, as we read in Kultermann’s report to Ruhnau, seemed to have been very intense and ended late at night.¹¹ An initiative to present GEAM’s exhibition in the Stedelijk Museum in Amsterdam, in parallel to the exhibition *Nul*, in which Uecker, Mack, and

7 Cornelia Escher, *Zukunft entwerfen. Architektonische Konzepte des GEAM (Groupe d’Études d’Architecture Mobile) 1958–1963* (Zürich: gta Verlag, 2017), 43–49.

8 On the evolution of CIAM and its crises see Marilena Kourniati, “L’Auto-dissolution des CIAM,” in *La Modernité critique. Autour du CIAM 9 d’Aix en Provence*, ed. Jean-Lucien Bonillo, Claude Massu, and Daniel Pinson (Marseille: Imbernon, 2006); Kees Somer, *The Functional City: CIAM and the Legacy of Van Eesteren* (Rotterdam: NAI Publishers, 2007).

9 On Team 10, see Max Risselada, Dirk van den Heuvel, and Victor Joseph, eds., *Team 10, 1953–81: In Search of a Utopia of the Present* (Rotterdam: NAI Publishers, 2005); Annie Pedret, *Team 10: An Archival History* (London: Routledge, 2013).

10 Adam Seide, ed., *Mobile Architekturen*, Kleine Mappe der Galerie Seide, 17 (Hannover: Galerie Seide, 1961).

11 On Kultermann and Ruhnau, see also Escher, *Zukunft*, 265–66.

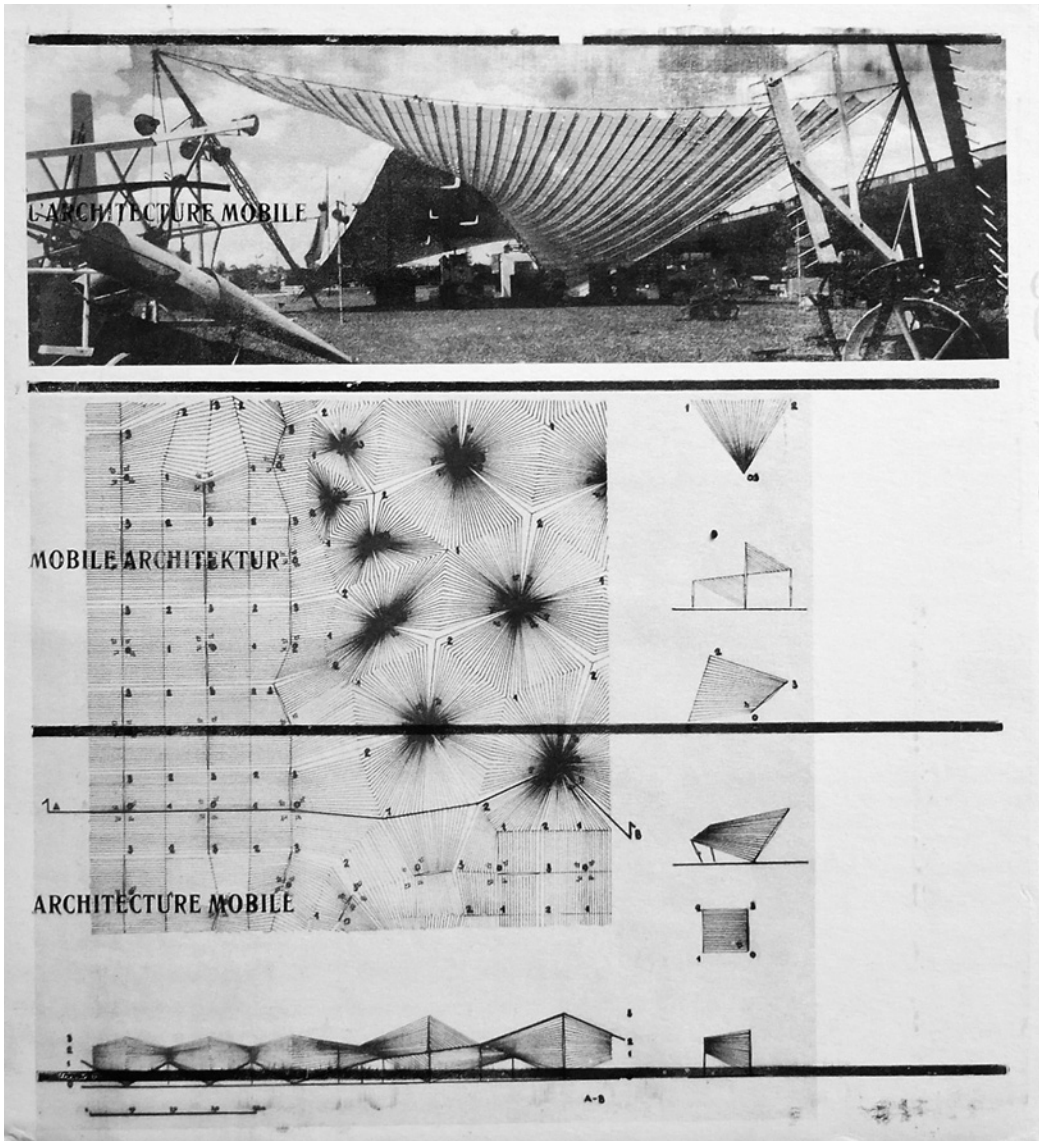
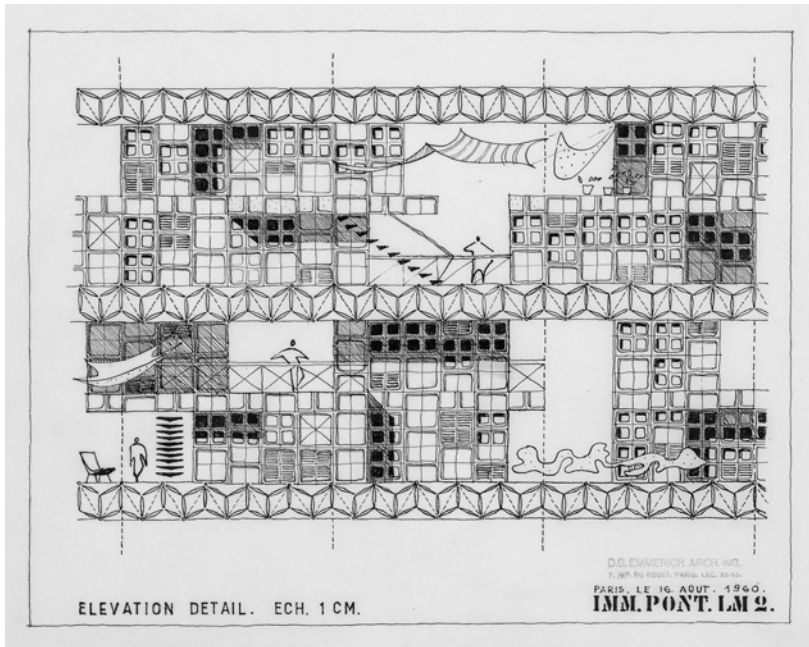


fig.3 Cover of the catalogue *L'architecture mobile* (showing Oskar Hansen's and Lech Tomaszewski's design for the pavilion in São Paulo), 1961
Photo Cornelia Escher

fig.4 David Georges Emmerich,
Immeuble pont LM 2, 1960
Collection Frac Centre-Val de Loire,
Orléans



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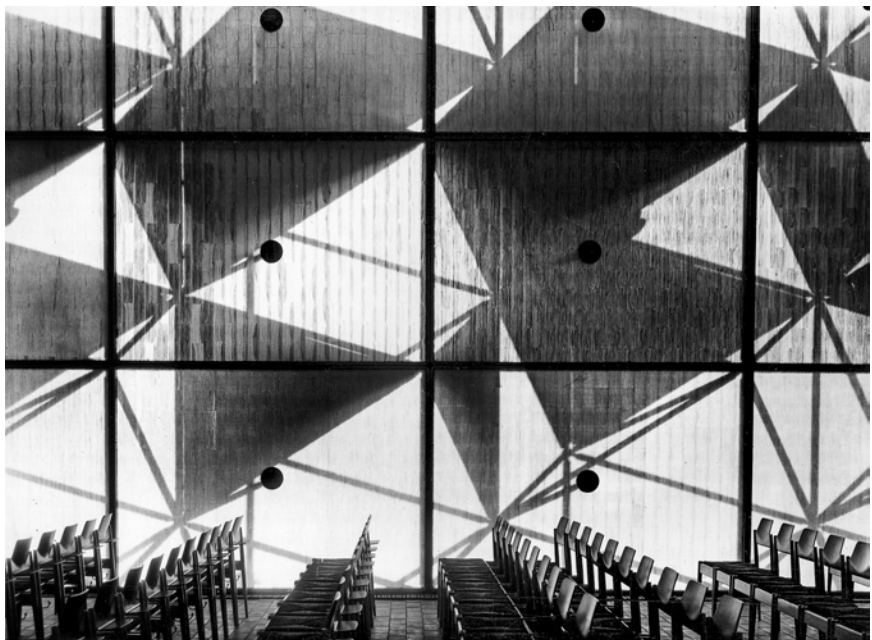


fig.5 Eckhard Schulze-Fielitz,
Interior of the Jakobuskirche, Düsseldorf, 1963
Baukunstarchiv NRW/Eckhard Schulze-Fielitz

Piëne were participating, was supported by the organizing artist Henk Peeters but opposed by the museum director Willem Sandberg. The contact had been established with the help of the Liga Nieuw Beelden, an artists' and architects' cooperative, and the Dutch artist Constant Nieuwenhuys, who eventually participated in GEAM's meetings, publications, and exhibitions.

The idea of mobile architecture, which was at the center of the group's activities, actually blended architectural and artistic discourses. Both come together in the concept of "open form," which was brought forward by the Polish group member Oskar Hansen:

As Dadaism in painting broke the barrier of traditional aesthetics, so the Open Form in architecture will bring us closer to the 'ordinary, mundane things found, broken, accidental' ... The role of the artist-architect is altered from the previous exclusively personal and conceptional role ... to the conceptional-coordinating role.¹²

These ideas drew inspiration from contemporary debates, notably on housing construction. They came up in the boom phase of postwar architecture: in the 1950s, construction of living spaces became a major task due to the destruction of World War II and the growing population in the following decades. The large-scale housing projects designed as an answer to growing needs in countries like France, the Netherlands, Germany, and also in Poland left only very limited space for individual solutions. This observation led GEAM to support a "mobile" architecture—an architecture that was to be more flexible and adaptable to the wishes of its users.

The solution most of the GEAM architects supported was the idea of the designer as a "system designer" or "manager" who would design a kit-of-parts system that could then be appropriated by the users or inhabitants of buildings. One example is David George Emmerich's design for the *Immeuble pont*: on the basis of a rigid space frame structure, a kit-of-parts system of prefabricated

and easily available parts was to be assembled to form individual living spaces (fig. 4). Emmerich hoped that this system would increase participation of the inhabitants, who could select and assemble the parts on their own and create spaces that would stay permanently flexible.

This solution might seem somewhat technocratic and focused on the organizational side of the building process. Yet GEAM architects also linked the idea of a mobile architecture with discourses from the arts. Notably Hansen, who had lived in Paris in the late 1940s, was acquainted with the art scene from this period and explicitly made reference to the French art critique Pierre Restany. In his text, he described the aesthetics of the open form as an aesthetic that can integrate preexisting objects of profane origin—similar to art practices working with the *objet trouvé* as an element that contains its own temporality and bears the traces of use and history. Yet, when looking at the works that Hansen defined as "open form," we can see that his idea of an open aesthetics is much broader and is mainly based on the idea to include and accept change more generally: for Hansen, change was not a destructive category associated with the decay of architectonic structures, rather it was to be appreciated and enhanced as a component of architecture's aesthetics.

The idea to incorporate change as a central element of architecture is at the origin of the design for the Jakobuskirche in Düsseldorf-Eller, a project on which Eckhard Schulze-Fielitz collaborated with the artist André Thomkins from 1960 to 1963 (fig. 5). The church consisted of transparent plastic walls that were fitted into a load-bearing framework equipped with triangular elements on its southern façade. These elements produced varying shadows that could be observed from the church's interior and served as a projection screen for light effects. The aesthetic concept revolved around processes of solidification and liquidation. Schulze-Fielitz described the church's load-bearing structure as a form of crystallization that, during the course of the day, became fluid

12 Oskar Hansen and Zofia Hansen, "The Open Form in Architecture: The Art of the Great Number," in *CIAM '59 in Otterlo*, ed. Oscar Newman (Stuttgart: Krämer, 1961), 191.

again through the play of shadows on the transparent wall. The expressiveness of the walls was dependent on environmental factors such as the weather and the position of the sun. During the night, light was projected from the outside onto the walls of the church so that the effect of the shadows could also be observed, and the church walls seemed to glow.

The interest in material behaviors was also mirrored in the church's equipment realized by Thomkins. The artist had incorporated so-called *Lackskins*, which arrested the flow of glossy oil paint on water on a paper surface, in some of the transparent wall panels. In addition, he had designed a font made of amber plastic, which was partly translucent as well, and resembled hardened lava. In these artistic contributions to the church, the movement of flows was captured in permanent forms, but they could be deciphered by the spectator.

PERFORMATIVE ARCHITECTURES AND ENVIRONMENTS

In the exhibition in Morsbroich, Piene's *Lichtballet* had extended the artwork into space by projecting light into the exhibition space, thus creating an artistic environment. In GEAM's architectural projects, we can discern similar ideas of a performative architectural space: space was seen to be defined and generated by fluid physical effects rather than by predetermined material limits. These effects were measured by and related to human perception; the spaces they were meant to form out could thus be described as architectural "environments."

This definition differs from contemporary uses of the term in the domain of exhibition design. In an article published in 1964, the Swiss sociologist and architecture critic Lucius Burckhardt described Le Corbusier and Iannis Xenakis's Philips Pavilion for Expo 58 in Brussels as "environmental." He

described the effects of the pavilion and the mix of sound installations and image projections inside as both absorbing and overwhelming the visitor.¹³ By contrast, GEAM architects developed environments that were characterized by the idea of a minimal intervention, and an overlapping of nature, architecture, and the spatial perceptions of human bodies, referring to biological ideas rather than to the power of media architecture.¹⁴ Many of these projects emerged out of collaborations with artists.

Both in practice and with regard to their symbolic implications, exhibition pavilions and tent membranes were an important field of activity for GEAM architects. Frei Otto was frequently highlighting the lightness of his tents, and, indeed, they were often used temporarily for concerts, exhibitions, and as flexible roofs for outdoor theater. Effects of light and shadow as well as an ideal of a life in proximity to nature were central to Otto's somewhat idealized understanding of his structures. In the 1950s, Otto used the term "event" to describe the temporariness and the fluent aesthetics of his buildings; in 1967, he spoke of his pavilion for the Expo 67 in Montreal as a "happening,"¹⁵ explicitly using a term from the art world to label his work.

GEAM architects understood pavilions as membranes negotiating between the interior and the exterior. We can clearly see this in the design for the Polish Pavilion at the international fair in São Paulo in 1959, designed by Oskar Hansen in cooperation with Zofia Hansen and the engineer Lech Tomaszewski (fig. 7). The pavilion was adapted to the tropical winds on the spot and reunited the qualities of both protection and permeability. The cloth protected the exhibits and the visitors from sun and rain while the transparent tent membrane staged the play of light and shadow. Winds were directed along the dynamic shape of the roof, but

13 Lucius Burckhardt, "Die Kunst des Ausstellens," *Werk* 51, no. 9 (1964).

14 See also Cornelia Escher, "Nested Utopias: GEAM's Large-Scale Designs," in *East West Central: Re-Building Europe, 1950–1990*, vol. 2: *Re-scaling the Environment: New Landscapes of Design, 1960–1980*, ed. Karl Kegler and Ákos Moravánszky (Basel: Birkhäuser, 2016); Cornelia Escher, "Model – Experiment – Environment," in *Frei Otto: Thinking by Modeling*, ed. Georg Vrachliotis et al. (Leipzig: Spector Books, 2017).

15 This is stated by Otto in interview material dated to 1967; see Louis Saul, dir., *Frei Otto. Von Seifenblasen und Zelten* (Munich and Cologne: megahertz, 2005), film, 60 min.



fig. 6 Yves Klein and Werner Ruhnau,
experiment for a roof made of air
at the company Küppersbusch in
Gelsenkirchen, ca. 1959
Photo bpk / Charles Wilp



fig. 7 Oskar Hansen, Lech Tomaszewski,
Polish exhibition pavilion for São Paulo, 1959
Zofia & Oskar Hansen Archives

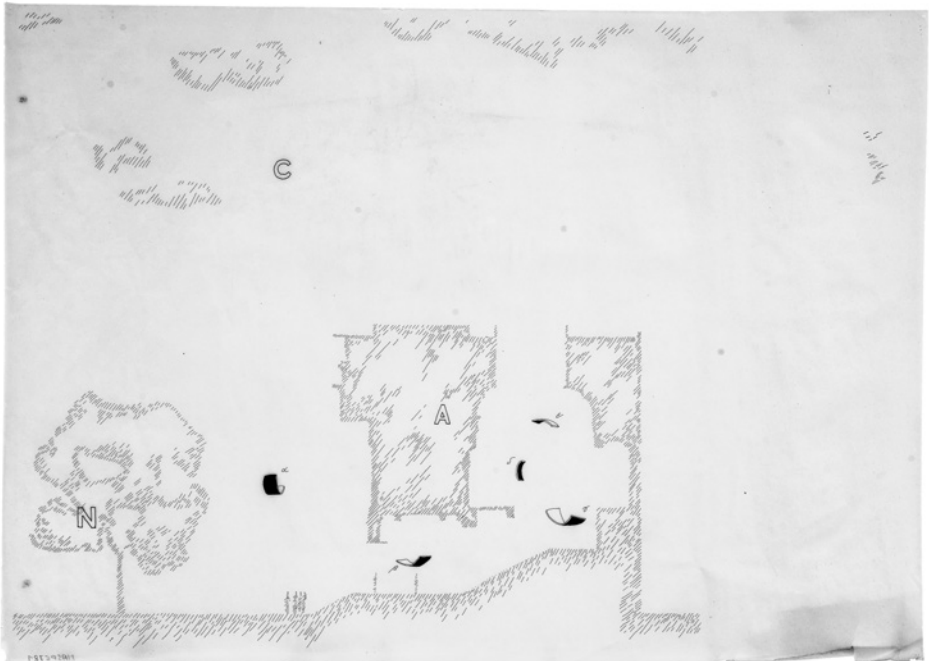


fig. 8 Oskar Hansen,
Design for the Second National Exhibition of
Modern Art, Galeria Zachęta, Warsaw, 1957
Museum of the Academy of Fine Arts, Warsaw

if they would become too strong, they could also pass through, as the roof structure consisted of long strips of cotton that were arranged in parallel on a frame. The movements of the air were magnificently set into scene: if there was wind, the whole membrane looked as if it was breathing or pulsating like a biomorphic, animated structure. For the GEAM architects, the idea of a performative space related to the human body was connected to this idea of architecture as a responsive, lifelike envelope. It was also furthered by their collaborations with artists. In Werner Ruhnau's project for the theater in Gelsenkirchen, we can see how his ideas on the role of art for architecture evolved during the process of realization. For the design of his theater, Ruhnau had invited several artists to contribute works for the building. Norbert Kricke and Robert Adams designed sculptural works on the outside of the building. Paul Dierkes and Yves Klein had realized large-scale pictorial works executed directly on the wall of the entrance hall, and Jean Tinguely had contributed a mobile sculpture for the smaller building adjacent to the main theater housing a smaller stage.

During the construction of the theater, a vivid exchange developed, notably with Klein, from which further projects originated.¹⁶ Before the theater opened, Ruhnau and Klein performed in the empty and unfurnished space of the shell. Besides, they explored the possibilities for an architecture made of air at the company Küppersbusch, which they thought could serve for the space surrounding the theater. In a period photograph, we can see Ruhnau and Klein demonstrating how the invisible roof, which is produced by a tube-like element blowing a horizontal current of air above their heads, would protect from climatic influences, represented by the vapor that the technician lets down from above (fig. 6). The "architecture"

itself is invisible in the image; we can only grasp its effects.

These experiments culminated in the project for a "school of sensibilities," for which they drafted a list of teachers. Tinguely would teach sculpture, Klein and Piene painting, Jacques Polieri and John Cage theater, and Ruhnau and Otto architecture.¹⁷ They also issued a concept for an "immaterial" architecture of large scale, a space protected from climatic influences by "horizontal curtains of sharply blown air,"¹⁸ and housing a paradisiacal community freed from patriarchic structures and the need to wear clothes. The proposal was published in the architectural press, in the German review *Bauwelt*, but the editors felt the need to distance themselves from the project by stating that publishing the article did not mean that they agreed with the position of the authors.¹⁹

If these ideas remained in a conceptual state, a design by Hansen, reuniting his ideas of open form and environmental aspects, was actually realized. Together with the exhibition designer Stanisław Zamecznik and the artist Wojciech Fangor, Hansen realized a project for the Second Exhibition of Modern Art at Galeria Zachęta in Warsaw in 1957 (fig. 8). The team used brightly colored bent plates that accompanied the exhibition—a show of Polish contemporary art—all the way from the outside of the building to the interior spaces of the museum. The idea was to create a spatial framework by highlighting the space that was captured between the plates. This resulted in a kind of secondary architecture that Hansen described as an "open form," as it did not define the exhibition space in absolute terms but worked as a way of staging the existing environment. Hansen understood the design in contrast to the "closed" form of the museum building, which dated back to the turn of the century and was a monumental, rigid, and inflexible structure.

¹⁶ See also Kramer, *L'Aventure allemande du Nouveau Réalisme*.

¹⁷ Werner Ruhnau and Yves Klein, "Schule der Sensibilität, Gelsenkirchen, 27.03.1959," in *Baukunst: Das Gelsenkirchener Theater*, ed. Werner Ruhnau (Gelsenkirchen: n.p., 1992); Yves Klein and Werner Ruhnau, "Projekt einer Luftarchitektur," *ZERO*, no. 3 (1961).

¹⁸ Werner Ruhnau, "Von materiellen zu immateriellen Architekturen," lecture manuscript, [1960–62], Nederlands Architectuurinstituut/Het Nieuwe Instituut, Rotterdam: kars E6.8.

¹⁹ Yves Klein and Werner Ruhnau, "Pro juventute. Entwicklung der heutigen Kunst zur Entmaterialisierung," *Bauwelt* 50, no. 12 (1959).

The design relied on the idea that the curved plates sent out some kind of pictorial energy. This idea was probably mainly supported by Fangor, who, in a text published together with Zamecznik, described his own pictures as “hungry,” as their composition asked for an interaction with their immediate environment—an idea that was similarly articulated by Klein and Mack at the time.²⁰

Hansen took up these ideas in his drawings: the tree in front of the house and the museum building embody “nature” and “architecture” as a preexisting material environment. Between these two entities, he suspended a blue-colored plate that stands diagonally above the roughly sketched viewers. For the visitors present, this plate occurred as a nearly tangible and artificial blue element in front of the infinite blue of the sky. It acted as a medium between the museum visitors, the immediate environment, and the immaterial sphere of the sky.

An analysis of GEAM’s contacts with the protagonists of the ZERO network demonstrates that architects and artists dealt with similar ideas. Both groups were fascinated by physical processes and used them to challenge received concepts of the objects and the agency in architecture and art. Though their interests were parallel in many ways, their approach toward the topic of space departed from different grounds: subscribing to the concept of environment, artists expanded their works into space; whereas for architects, the same ideas meant a retreat from their major field of action—the overall design of spaces. And yet, while minimizing their intervention and the footprint of their buildings, GEAM architects not only gained conceptual inspiration, they also explored new contexts of presentation in exhibitions and galleries and managed to reach different audiences. Looking at GEAM, we can observe the circulation of ideas that are very often read as artistic invention beyond the frontiers of the discipline of art. We might ask for the more precise connections of

environmental practices with architecture or exhibition design and eventually broaden our view of the contexts out of which they emerge. Collaborations between artists and architects could invite us to investigate how art was also integrated within the context of 1950s and 1960s public commissions and gained a more spatial, architectonic dimension through its role as architecture-related public art.

REFERENCES

Burckhardt, Lucius. “Die Kunst des Ausstellens.” *Werk* 51, no. 9 (1964): 313–18.

Caianiello, Tiziana, and Mattijs Visser, eds. *The Artist as Curator: Collaborative Initiatives in the International ZERO Movement 1957–1967*. Ghent: MER. Paper Kunsthalle, 2015.

Escher, Cornelia. “Nested Utopias: GEAM’s Large-Scale Designs.” In *East West Central: Re-Building Europe, 1950–1990*, vol. 2: *Re-Scaling the Environment: New Landscapes of Design, 1960–1980*, edited by Karl Kegler and Ákos Moravánszky, 81–95. Basel: Birkhäuser, 2016.

Escher, Cornelia. “Model – Experiment – Environment.” In *Frei Otto: Thinking by Modeling*, edited by Georg Vrachliotis et al., 53–60. Leipzig: Spector Books, 2017.

Escher, Cornelia. *Zukunft entwerfen. Architektonische Konzepte des GEAM (Groupe d’Études d’Architecture Mobile) 1958–1963*. Zürich: gta Verlag, 2017.

F. L. “Deutsche Kunst auf dem Nullpunkt. Zur Ausstellung im Kunstmuseum St. Gallen.” *Tagesanzeiger für Stadt und Kanton Zürich*, August 2, 1961.

Hansen, Oskar, and Zofia Hansen. “The Open Form in Architecture: The Art of the Great Number.” In *CIAM ’59 in Otterlo*, edited by Oscar Newman, 190–91. Stuttgart: Krämer, 1961.

Klein, Yves, and Werner Ruhbau. “Pro juventute. Entwicklung der heutigen Kunst zur Entmaterialisierung.” *Bauwelt* 50, no. 12 (1959): 371–73.

20 See Escher, *Zukunft*, 264.

- Klein, Yves, and Werner Ruhnau. "Projekt einer Luftarchitektur." *ZERO*, no. 3 (1961): n.p.
- Kourniati, Marilena. "L'Auto-dissolution des CIAM." In *La Modernité critique. Autour du CIAM 9 d'Aix en Provence*, edited by Jean-Lucien Bonillo, Claude Massu, and Daniel Pinson, 63–75. Marseille: Imbernon, 2006.
- Kramer, Antje. *L'Aventure allemande du Nouveau Réalisme. Réalités et fantasmes d'une néo-avant-garde européenne*. Paris: Presses du réel, 2012.
- Kultermann, Udo, ed. *30 junge Deutsche. Architektur, Plastik, Malerei, Graphik*. Exh. cat. Städtisches Museum Leverkusen Schloss Morsbroich. Leverkusen, 1961.
- P. M. "Bodenlose Raumexperimente. 30 junge Deutsche im Kunstmuseum St. Gallen." *Appenzeller Zeitung*, July 27, 1961.
- Pedret, Annie. *Team 10: An Archival History*. London: Routledge, 2013.
- Risselada, Max, Dirk van den Heuvel, and Victor Joseph, eds. *Team 10, 1953–81: In Search of a Utopia of the Present*. Rotterdam: NAI Publishers, 2005.
- Ruhnau, Werner, and Yves Klein. "Schule der Sensibilität, Gelsenkirchen, 27.03.1959." In *Baukunst. Das Gelsenkirchener Theater*, edited by Werner Ruhnau, 53. Gelsenkirchen: n.p., 1992.
- Saul, Louis, dir. *Frei Otto. Von Seifenblasen und Zelten*. Munich and Cologne: megahertz, 2005. Film, 60 min.
- Seide, Adam, ed. *Mobile Architekturen*. Kleine Mappe der Galerie Seide, 17. Hannover: Galerie Seide, 1961.
- Somer, Kees. *The Functional City: CIAM and the Legacy of Van Eesteren*. Rotterdam: NAI Publishers, 2007.
- Thwaites, John Anthony. "30 junge Deutsche in Schloß Morsbroich." *Deutsche Zeitung mit Wirtschaftszeitung*, May 12, 1961.