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BAU, BAUKUNST, ARCHI-TEKTUR
The Work of Max Bill

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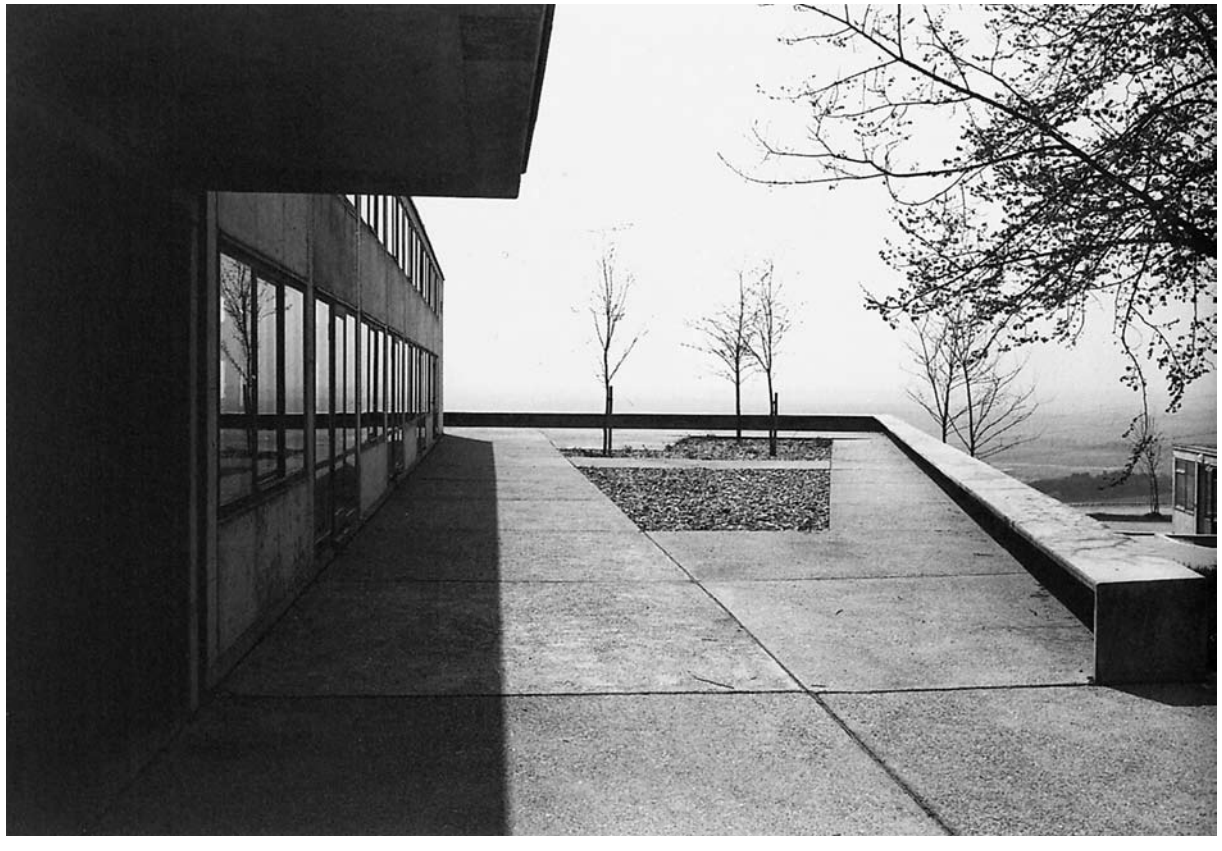
In the early 1960s I was a student at the Architectural Association School in London and in one of the winter vacations worked as assistant for Colquhoun and Miller preparing a door schedule for a secondary school in East London. The office (now that of Cedric Price) was in a cold attic near the AA and was heated only by two extraordinary objects: new turbo fan heaters made by Braun. These were sleek and rectangular, pale grey and about the size of a brick. Their form challenged both the then accepted willed plasticity of British architecture with its emphasis on craggy forms and 'real' textures and finishes, and the fag end of the rococo impulses of the 1951 'Festival of Britain' which still infected British industrial design. Their origins and authors had to be investigated. Rather like the characters in Truffaut's Jules et Jim *(1961), I and three fellow students set off to Germany to find out. In Düsseldorf we found an exhibition of* Gute Form *displaying the full range of Braun appliances, by various designers but all of a family and all eminently desirable, although we could not afford the luxurious record players with their wood veneer-clad side elevations. We traveled via Stuttgart to Ulm and visited the Hochschule where we found Herbert Ohl conducting research into 'ideal' prefabricated building components whose clever universal junctions ignored the direction of gravity or the possibility of the rain which was falling outside. We were entertained to tea in his small designing cutlery. The building by Max Bill, then unheard of in the English-speaking world, although not exactly the equivalent in architecture of Braun's appliances, was forthright, its detailed language tough, the distribution of its parts around the summit of its hill wildly romantic. England knew nothing like it. Later we ordered a wholesale consignment of the stacking TC100 catering crockery designed at Ulm by Nick Roericht and now displayed in design museums all over the world. I still eat my meals off it.*



Hochschule für Gestaltung Ulm (The Ulm School of Design), patio with a south-facing view (1956)

1908 was a fecund year for the birth of architects. Max Bill, son of Winterthur's stationmaster, shared the year of his birth with the British knights Frederick Gibberd and Leslie Martin, as did Enrico Peressutti and Gordon Bunshaft. Albert Speer had been born three years earlier, and Konrad Wachsman seven. Aged 16, in 1924 Bill enrolled in the silversmith course at the Kunstgewerbeschule in Zurich, the nearest large town to his birthplace of Winterthur and the one of the centers of German Switzerland's artistic activities. A lecture by Le Corbusier at the school in 1925 persuaded the young Bill to transfer from silversmithing to architecture and in 1927 he left Switzerland for the Bauhaus, Dessau. In the period during which Bill studied there, architecture was taught by Walter Gropius, Mies van der Rohe, Ludwig Hilberseimer, Hannes Meyer and Marcel Breuer. Marcel Breuer and Josef Albers were in charge of the metal workshop, Oskar Schlemmer of stage design, and Georg Muche of painting. Even with hindsight, what we know of the later careers of these teachers, their effect on a very young Swiss must then have been overwhelming, and their powerful ideas in both the theory and practice of architecture, and of Gropius' organization of the school may have determined much of his later development.

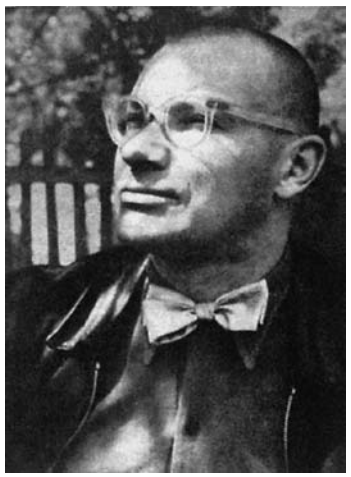
In 1930 Bill set up in practice in Zurich, not just as architect but offering services in product design and advertising. He already saw himself as a painter as well as a sculptor. His marketing must have been excellent, for in 1936 he was chosen from Switzerland's architects to design the country's exhibit at the Milan Triennale (as he was again later, in 1951). The contemporary black-and-white photographs of this work suggest that the design closely followed the examples of his Bauhaus teachers, particularly of Marcel Breuer.

In 1944, Bill was invited to organize an exhibition at the Kunstmuseum, Basel. It's title, *Konkrete Kunst*, and the lecture he gave at its opening suggest the first stirrings of Bill the theorist. The term *konkret* presents difficulties. Untranslatable – *abstract* and *concrete* can be antonyms – but most simply rendered in English as abstract it was so propagated by Herbert Read in his *Art and Industry* from 1934. The word had first been used polemically in 1930 in the manifesto of the Paris *Art Concret* group which included Van Doesburg, Hélion and Carlsund. This group's aim was to rid art of its representational duty so that it could promote and serve spiritual ends.

Bill also used the word to describe a new plastic art uncontaminated by the requirements of representation; an art which is *essential*. This art, systematic and objective and using

mathematical methods, would not aspire to the transcendental but, cleansed of among other things associations with earlier ideologies, would serve particularly the democracy of Switzerland and, Bill must have hoped more generally, the new Europe which might emerge from the World War then in its final stages. The lecture proposed an analogy between such a plastic art and the formal structures of music without, however, considering that the composing of and listening to music might be culturally circumscribed. He implies that the music of Bach, for example, is in some way absolute and affects our sensory and perceptual apparatus in the same way that, say, a painted red square might. One needs to listen to a classical Japanese composition alongside a work by Bach to conclude that, apart from the most rudimentary rhythms, the analogy was false.

The case for the *konkrete* art or design was supported by an appeal to the design of utilitarian objects (quite often spoons) which at its most successful could be imagined to be free of ideological associations. The idea that utilitarian objects should be designed at all had been proposed and to a certain extent practiced by William Morris and his associates. It was taken up at the end of the nineteenth century by the English Arts and Crafts movement. The Deutsche Werkbund had been established under its influence, which also pervaded the early years of the Bauhaus. Morris intended to bring that beauty already available to connoisseurs to mass consumers, or at least the British middle classes.



Max Bill in 1949

Stackable tableware TC 100, design by Nick Roericht

The extreme puritan and iconoclastic position, to which Bill as practitioner of the fine arts could have subscribed, had been adopted by Hannes Meyer in a Bauhaus lecture published in 1928 as *Bauen* (Building). This text was saturated with anti-art rhetoric: 'all art is composition and therefore unsuited to achieve goals. . . . architecture as *emotional act of the artist* has no justification.' It concluded: 'building is nothing but organization: social, technical, economic, psychological organisation.'

Bill himself seems clearly to have understood the difference between designing a spoon, a building or a painting. Nevertheless, he never made the case for the similarity between utensils and buildings as *types*. In his production of the plastic fine arts he allowed for the 'flash of inspiration' or for using the work of earlier artists as a jumping off point, and he accepted that his mathematical and geometrical *methods* could only be used once a type or kernel existed.

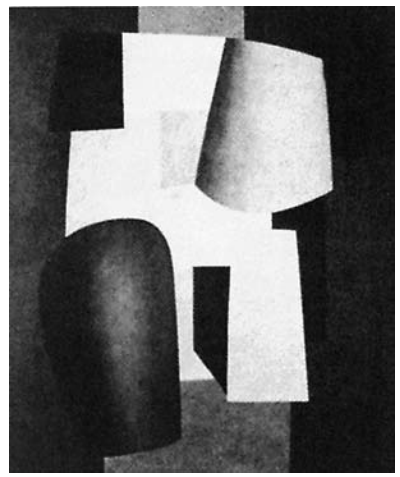
In the same year that Bill gave this lecture he started teaching design ('Form') at the Kunstgewerbeschule in Zurich, and four years later, aged 40, he lectured for the first time outside Switzerland, at the Technische Hochschule at Darmstadt. On Bill's initiative, the Musterausstellung at Basel in 1949 included an exhibit about design, 'Gute Form', sponsored by the Swiss Werkbund.

In 1949 Bill was asked to participate in setting up a *Volkshochschule*, a centre for adult education, in the South-


THE SUSSEX RUSH-SEATED CHAIRS
MORRIS AND COMPANY
449 OXFORD STREET, LONDON, W.

"Of all the specific minor improvements in common household objects due to Morris, the rush-bottomed Sussex chair perhaps takes the first place. It was not his own invention, but was copied with trifling improvements from an old chair of village manufacture picked up in Sussex. With or without modification it has been taken up by all the modern furniture manufacturers, and is in almost universal use. But the Morris pattern of the later type (there were two) still excels all others in simplicity and elegance of proportion."
"*Life of William Morris*": *By Prof. J. W. Mackail.*

Philip Webb's 'Sussex Chairs' in the Morris and Co. catalogue, ca. 1860. When designing their chairs, William Morris and his friend Webb would often hark back to older designs from the English countryside



Example of a painting cited by Herbert Read in *Art and Industry* (1934)

ern German town of Ulm. This invitation to Bill, a neutral German speaker, to help rehabilitate German culture in the post-war years is one of the most remarkable episodes of patronage in European twentieth-century architecture, and it produced one of its outstanding buildings. The story of Ulm's early years is fully documented in the highly recommended dissertation on Max Bill *Konkrete Architektur?* By Hans Frei, a Swiss architecture historian.[1] The initiative to found the *Hochschule* was taken by Inge Scholl and Otl Aicher, two young Ulm residents. Scholl's brother and sister had been student members of the *Weisse Rose*, an anti-Nazi resistance group based in Munich. They were both killed in 1943. After the war Inge Scholl conceived as their memorial, under the influence of the ideas of among others the Catholic theologian Romano Guardini, an institute, 'an active school for science art and politics', devoted to re-establishing a German culture purified of Nazi ideology.[2]

In 1948 a delegation from the Ulm Volkshochschule, including Scholl and Aicher, visited Switzerland to study the arrangements for adult education. Aicher had read and been impressed by Bill's article *Erfahrungen bei der Formgestaltung von Industrieprodukten* in the Swiss magazine *Werk*. In Zurich, Scholl and Aicher met Max Bill for the first time. They tried to persuade him to go to Ulm as a teacher in their new institute.

In 1949 the administration of the American occupied zone of Germany passed from its military commander to a civilian High Commissioner, John J. McCloy, who governed it until the international recognition of the Bundesrepublik in 1952. McCloy administered a US-sponsored fund for a 're-education' programme for high schools and universities. Scholl met McCloy, who was touched by her enthusiastic petitioning for her institute, and involved himself in propagating the idea of the school and in arranging its finance. At this time the designated Rector for the institute was the author Hans Werner Richter, appointed to run a political and scientific programme, but McCloy found Richer uncongenial. In a dramatic move during one of the meetings with the Americans, Inge Scholl proposed Bill as an alternative and more acceptable candidate. Bill agreed to join Ulm on the spot. At the same time he also got the commission to design the buildings.

A site was found on the south-facing side of the summit of a formerly fortified hill looking away from the city of Ulm and the valley of the Danube.[3] By July 1950 Bill had prepared the first layout for the site and by August 1952 the design in its present form was confirmed. The early schemes demonstrate a 'functionalist' composition: each function is identified and then housed in its separate appropriate form and clearly separated from its neighbours, but reconnected to them by neutral elements of circulation. This is one of the canonical modern compositional methods, much liked because it easily gave rise to the asymmetrical arrangements which CIAM promoted over the symmetrical. Gropius had employed the method in his 'pinwheel' design for the Dessau Bauhaus. That this method arose from the early picturesque stages of neoclassicism, most notably in the work of Schinkel, was unknown to or ignored by most modern architects except Frank Lloyd Wright and Mies van der Rohe.

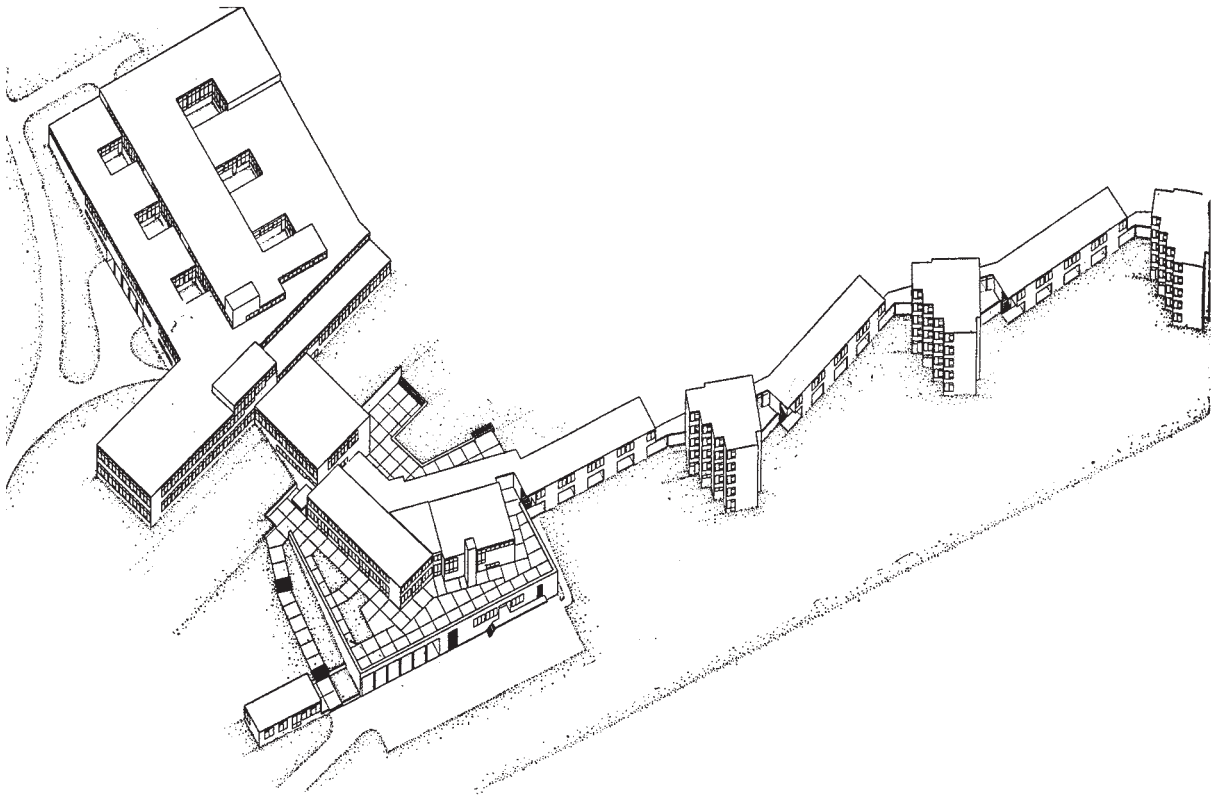
Placed on the highest part of the site, and to its 'back', a two-storey rectangular block of workshops was lit and ventilated by small internal courtyards and a continuous glazed attic. To the south of this the social facilities standing on a platform extended from the side of the hill and looked out over the valley. To the east was strung a necklace of alternating terraces of studio flats and stumpy residential 'towers' of five storeys (of which only one of the proposed three was built), their rooms stepped on plan to provide views. Finally, separate flats and houses for staff were isolated to the west. While the individual parts employ conventional orthogonal geometry, from the very first designs the parts are skewed in relation to each other.

The usual explanation for this departure from Schinkelesque practice is that the buildings 'follow the contours'. This description is inadequate: while parts of the site undeniably slope, much of the remainder on which the residential buildings are placed was flattened when the hill was terraced into fortifications. Something less utilitarian and more poetic was being considered: Bill was a declared admirer of Klee, and was perhaps influenced by the painter's working method.

1
Hans Frei, *Konkrete Architektur? Über Max Bill als Architekt* (Baden, 1991).

2
Otl Aicher was born in Ulm and from 1947 ran his own graphic studio there. He and Scholl married in 1952 and his subsequent career included the graphic design for the Munich Olympics in 1972. In later life he became typographer to Sir Norman Foster and Partners and designed the typeface now used for the practice's buildings and publications. He was killed in a traffic accident in 1991.

3
The isolation of the site from the contaminated ruined city may have been deliberately significant, but its distance from the city could have been no help when friction between city and school later developed.



Axonometric projection of the School of Design featuring the original plans for three tower blocks for students

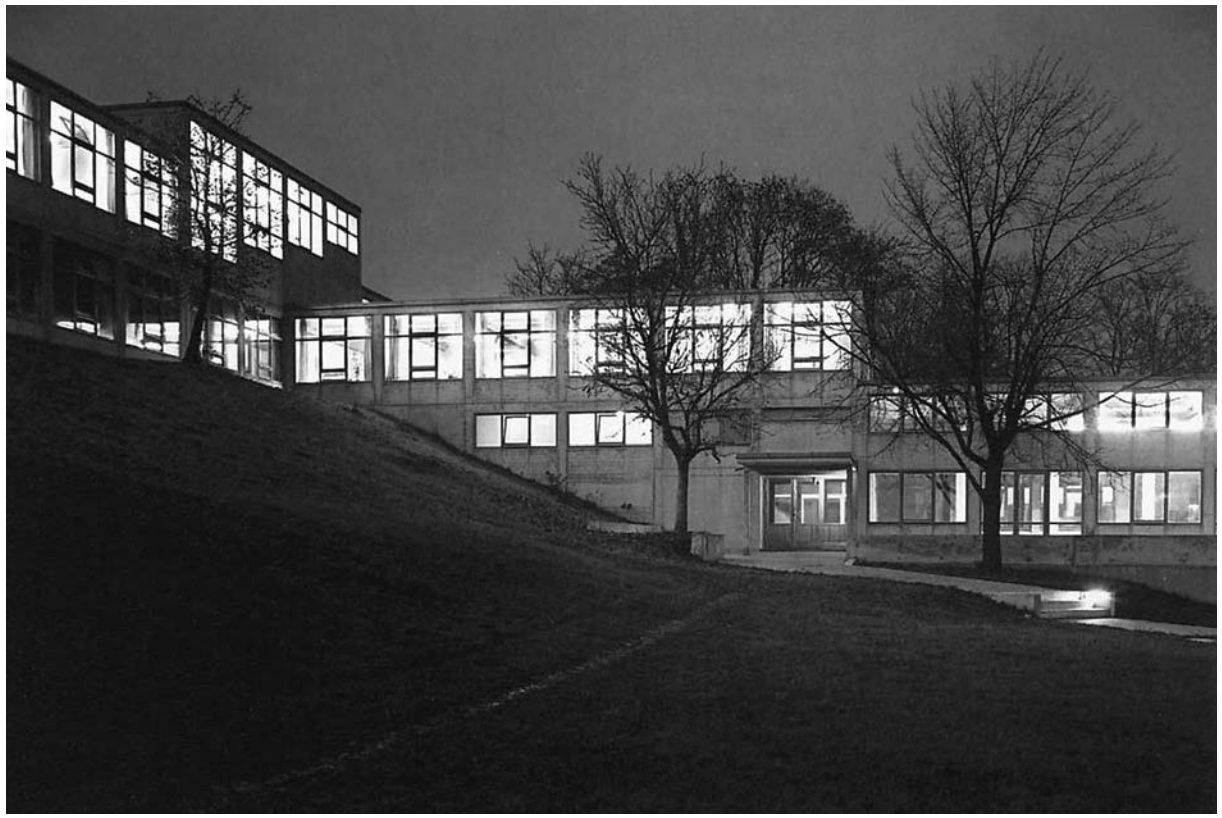
View of the south façade of the School of Design, featuring the three tower blocks and the communal facilities and the school and workshop buildings at the back

General plan School of Design
A. communal facilities
B. school with workshops
C. tower blocks for students (partly realized)
D. teachers' accommodation and studios (partly realized)

West façade of the school and communal services building. The impact of the rolling landscape is quite obvious here

Cross section of school building featuring the entrance hall at the centre

Floor plan tower block



Entrance façade (1956)

To the extent that it has one, the main and continuous circulation of the building promenades its way through the various parts to provide a rich variety of architectural events, mostly indoors, but some, like the beautiful stoas under the overhanging studio apartments, open to the air.

The paradoxical consequences of the skewing are that a reading of the plan emphasizes the different parts, while the building appears as an amorphous continuum from a distance. An alternative reading might suggest that, since axial planning and irresistible right angles had been used in the buildings of the previous regime to demonstrate its power, the angles may be a conscious or unconscious evocation of the expressionist and organic architecture suppressed as 'entartet' (degenerate) by the Third Reich. If those buildings had rather obvious entrances, their reforming successor could demonstrably ignore these: the Hochschule is remarkably open, its 'front door' is unobtrusive, and many of its parts could be entered without passing through the others.

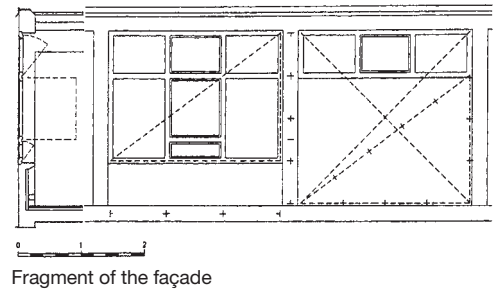
The most radical and final shift in the development of the design was the 'train-crash' resulting from the compression between the previously separate workshops which set up the main orthogonal on the site, and two differently-angled sub-elements of the social facilities. This produced between them the extraordinary and masterly circulation spaces including the doubled-height lobby with its angled walls. Rudimentarily detailed stairs connect two levels of the social facilities.[4]

4
At about the same time, Hans Scharoun was starting to develop such angled organic plans, but his junctions are more elegantly resolved, less deliberately clumsy.

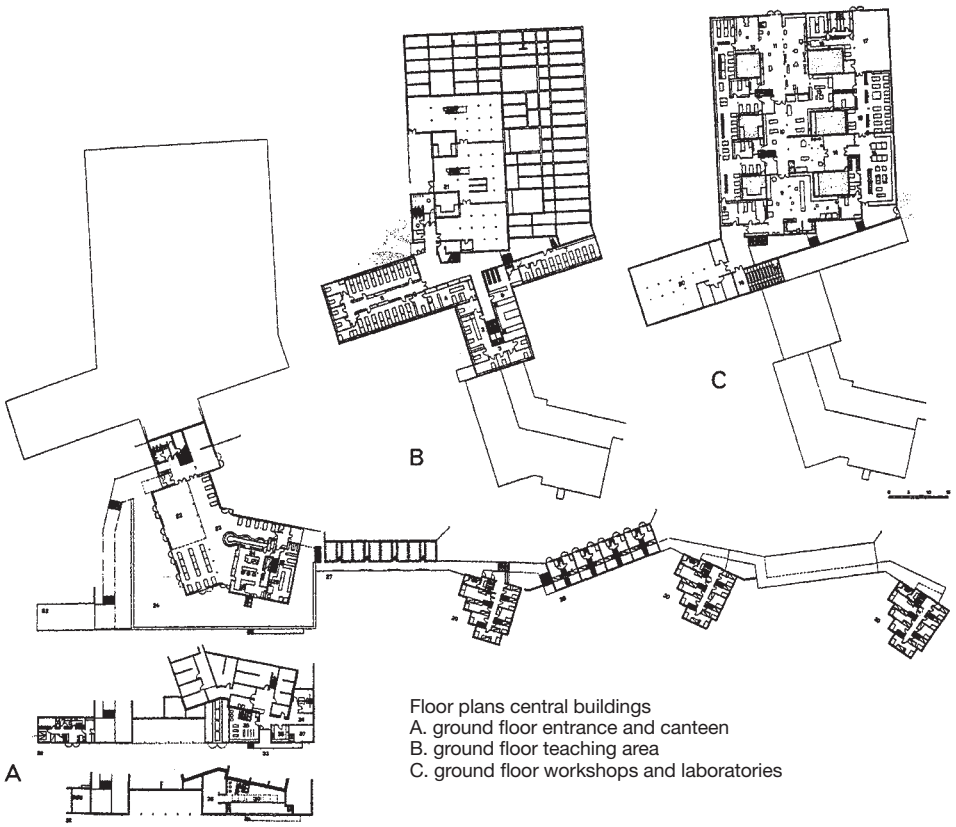
Housing block (1956)

Stairs connecting the school and workshops

Detail stairs

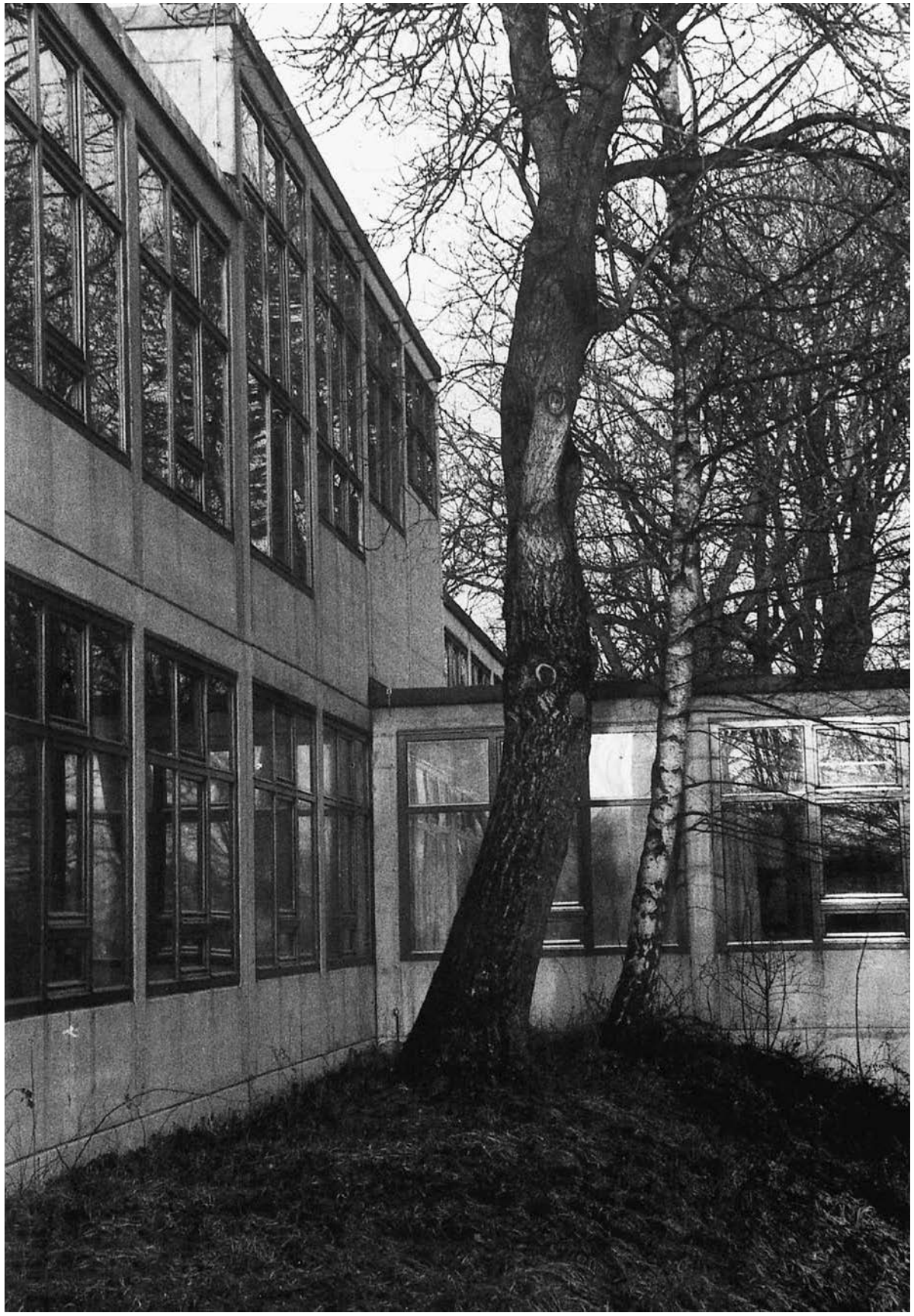


Fragment of the façade



Floor plans central buildings
A. ground floor entrance and canteen
B. ground floor teaching area
C. ground floor workshops and laboratories

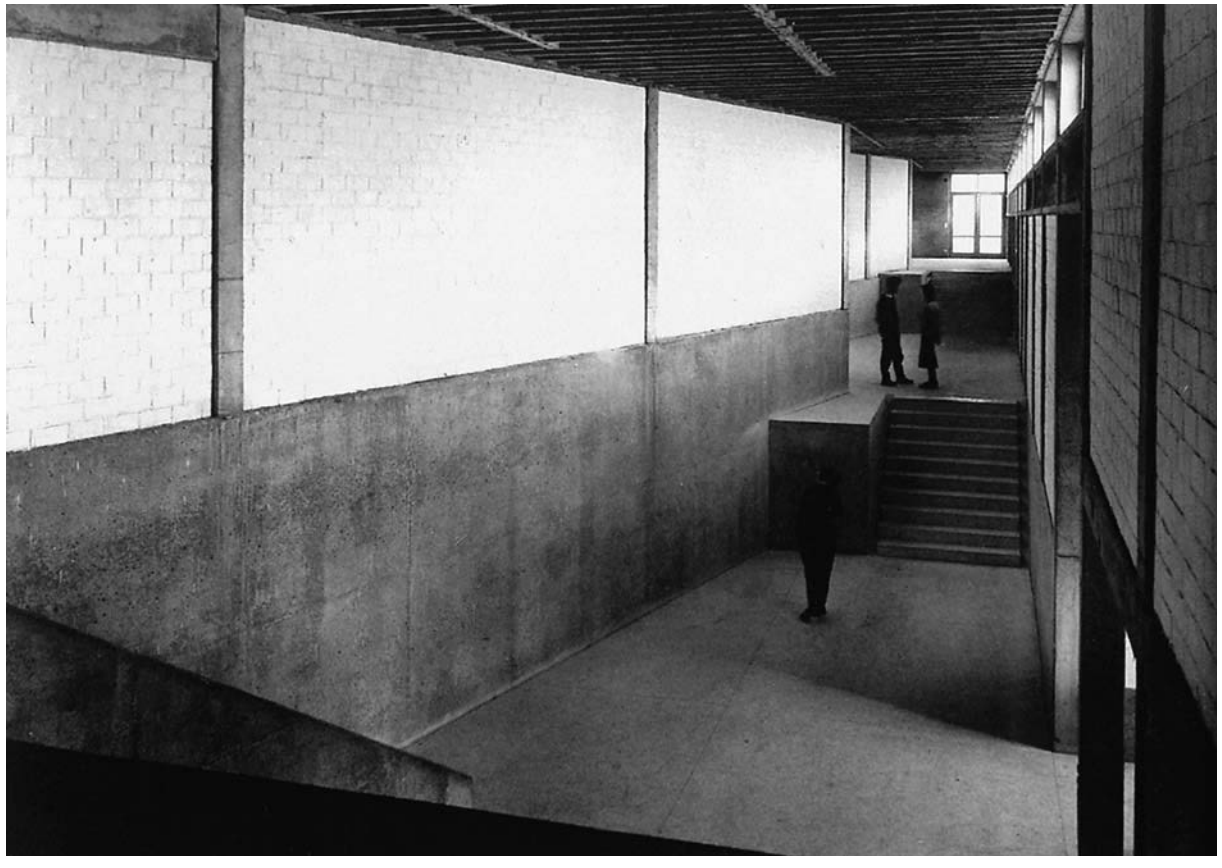
Promenade through the building (1955)



Promenade through the building, where the gallery meets the assistants' studios (1956)

The whole complex is constructed, by what must for the time have been a heroic effort of the re-emerging south German building industry, of reinforced concrete, a frame of slim columns or piers and beams supporting profiled precast flooring units for the regular parts, and the irregular parts of smooth *in-situ* concrete. Bill deliberately used an extremely restricted repertoire. Much of the exterior is clad in storey-height glazing units of square format placed between the exposed frame and subdivided on a simple scheme of four vertical divisions and three horizontal. Where not glazed, the exterior is filled with panels of concrete or rendered masonry clearly separated from the frame by narrow recesses. Glazed and masonry elements are set flush with the outside surface of the frame where possible, conferring on the exteriors a taut and constrained quality. In the interiors, by contrast, the full tectonic plasticity of the frame is evident. The brightly lit interiors were and still are strikingly Spartan, with few decorative surfaces. Many of the fittings and much of the furniture was designed by Bill.

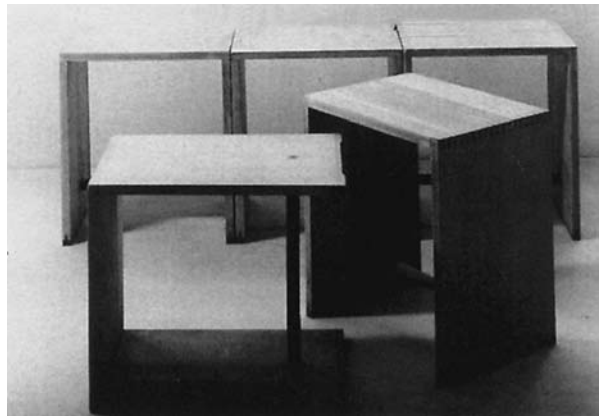
The unwillingness to be involved in 'representation', was of course part of Bill's general theoretical position, but here the reticence was particularly appropriate to the circumstances. The bourgeoisie, fed for twenty years on a diet of architectural bombast of fine materials or fake regional decorated folk architecture were being re-educated into accepting what Bill and others had defined as the new style of democracy.



The double-height hall connecting the school and workshops (1955)

Cross sections and floor plans assistants' studios

Ulm School of Design, lecture hall



Ulm School of Design – stool, design by Max Bill, Hans Gugelot, Paul Hildinger

Ulm School of Design – door handle, design by Max Bill

This suggestion finds a curious coincidental echo in England: the exactly contemporary secondary school at Hunstanton designed by Alison and Peter Smithson and built between 1949 and 1954 was a similar reaction to the empty-headed attempted prettiness of much British architecture immediately after the war. Its similarly 'brutally' exposed structure and services offered its pupils Spartan surroundings without conventional architectural finishes. It differs in its simple Palladian plan and organization.

Stung by the critical reception of what was seen as the building's extreme and deliberate truculent lack of cosiness, its willed austerity, and by the distaste of some of his former teachers at the Bauhaus including Walter Gropius, Bill disingenuously replied that the budget was very tight.[5]

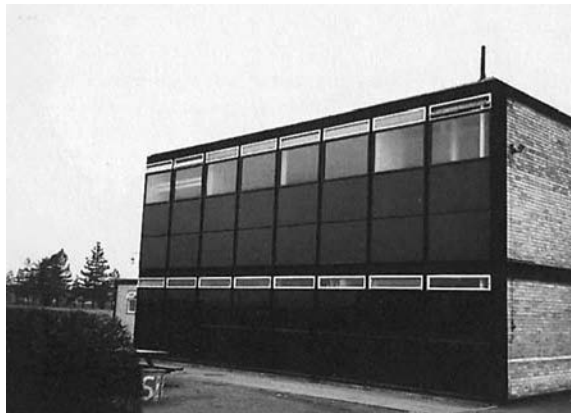
The building was formally opened on 2 October 1955. The curriculum devised by Bill was an idealized and generalized version of the many phases of that of the Dessau Bauhaus. A general foundation course was taught in the first year, followed in the second year by specialization in urban planning, industrial design, architecture and 'information'. *Freie Kunst* (liberal arts), which to Bill was the essence of any creative activity, was part of the curriculum. Its position, however, had always been subject to discussion. Bill regarded the arts lessons (which only the best students should be allowed to attend) as a laboratory for the creative process as such, free of the limitations usually brought about by practical needs and requirements. Aicher, who during the 1950s had started to take a more critical attitude towards the role of the arts at Ulm, strongly disagreed with Bill. A conflict about the question whether to keep the arts in the curriculum resulted in Bill's resignation as director. Only one year later he left Ulm for good. The school was subsequently run by a triumvirate of Gugelot, Maldonado and Aicher.[6]

Bill was never again challenged by the client's programme and site or the extraordinarily charged events at Ulm. He returned to Zurich where he reopened his architectural and design practice and resumed his hobbies of painting and sculpture: in 1952 he had been awarded third prize in the international competition to design a monument for the Unknown Political Prisoner. The architectural work of the office consists of one-family houses, small office buildings – mostly in economically comfortable Switzerland – and tends to be quiet and unremarkable. The largest commission of his later years in practice was an extension to the building of Radio Zurich carried out with Willi Roost from 1965.

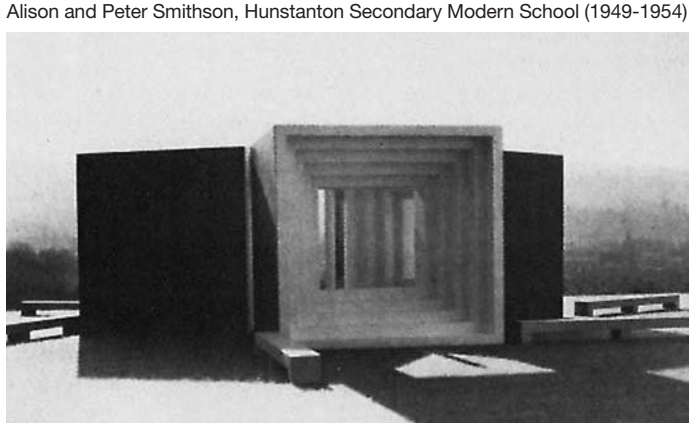
By then an internationally known figure and Switzerland's honorary federal architect in all but name, in 1964 Bill was appointed designer for temporary buildings for the Landesausstellung (Swiss National Exhibition) in Lausanne. The loose arrangement of pavilions which nearly coalesce into a singly entity continues the theme established at Ulm, but with an orthogonal geometry, and their casually 'poor' prefabri-

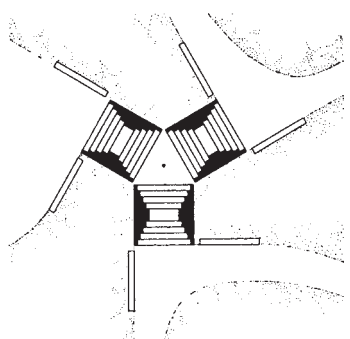
5
Mies van der Rohe was the only architect of the earlier generation who was prepared publicly to admire the building as one of the best in post-war Germany. Bill wrote in 1976: 'It could not have been cheaper or more primitive. One had reached absolute rock-bottom. The only enjoyment available to me as architect was in the arrangement of the ensemble on the site; the harmonisation of the internal functions of the various parts; the choice of a sensible but primitive means of construction; the choice of robust, cheap materials whose natural qualities complemented each other and which produced the much-mocked puritan beauty. The reproach that everything was intentionally austere can be countered by replying that nothing else would have been possible: for the money available one could only today build a slightly better villa.' Max Bill, *Vom Bauhaus bis Ulm* (1976), 18-19.

6
European politics and economic circumstances had, however, changed considerably since the last remnants of the Bauhaus were extinguished in 1933, and by the mid 1960s the theoretical work of some of the teachers at Ulm, including that of Thomas Maldonado, was beginning to expose the contradictions in the role of designers and their education in an increasingly affluent economy coming to be dominated by mass consumption: were designers and architects to be the autonomous critics of industry or its servants? Along with examples of the work of staff and students, these debates were widely disseminated in the school's beautifully produced but short lived magazine *Ulm*. The increasingly eccentric and arid theoretical position of the teachers led to correspondingly shrill political criticism and agitation by both staff and students, similar to that pertaining beyond the school in Ulm, Germany, the rest of Europe and in North America, and which led to the *événements* of '68. Its hand bitten by the school it was feeding, in that year the exasperated Landtag of Baden-Württemberg voted to close it.

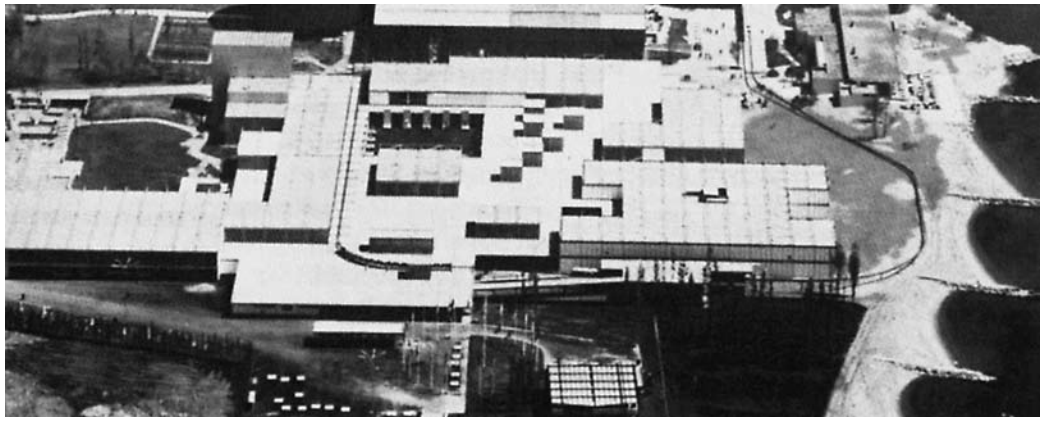


Alison and Peter Smithson, Hunstanton Secondary Modern School (1949-1954)

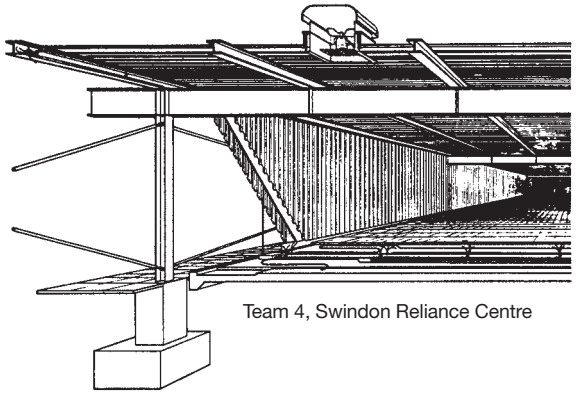




Max Bill, a monument to the unknown political prisoner, competition 1952, second prize



Max Bill, Swiss Regional Exhibition Lausanne 1964



Team 4, Swindon Reliance Centre

cated materials – an exposed slim steel frame, folded metal roofs and corrugated plastic siding – continued its theme of austerity.[7] In 1967 he took up teaching again as Professor of Environmental Design at the Hochschule für Bildende Kunst in Hamburg. In the same year he was elected as federal counsellor to the Swiss Parliament. He died in 1994 aged 86.

The building for the Hochschule für Gestaltung remains an outstanding and singular achievement both in Bill's work and the architectural production of the post-war years. Outside Switzerland none of Bill's industrial designs has yet become available to be consumed as a 'classic'; his paintings and sculptures occupy a small respectable niche in the art markets but the Hochschule für Gestaltung is firmly embedded in any canon of European twentieth-century architecture. The product of very particular circumstances, its wilful layout and austerity have had no direct progeny. But as the product of what must be seen as Bill's idiosyncratic attempt to align theories of artistic, industrial and architectural practice (*produktformen*), it undoubtedly and explicitly influenced that generation of architects now in their fifties and sixties – particularly in Britain – who began their careers by attempting to wrench architecture from gentility (*Architektur*) and *art* and towards a robust employment of technique (*Bau*) and the serious consideration of the production and thoughtful assembly of materials and components: *Baukunst*.

7
Bill as exhibition designer contributed the interiors and displays of the pavilions of 'Art and Life' [*Kunst und Leben*], 'Painting and Design' [*Bilden und Gestalten*] and 'Radio and Television'.

Jacques Herzog and Pierre de Meuron, home for private collection in Munich, 1989-1992