larger boat shed, workshop, etc. On upper floor of second section will be set up a bowling alley. Visible steel skeleton bears all the weight, its steely rigidity and structural exactness contrast sharply with landscape, yet open terraces and glass walls bring house into intimate touch with surrounding nature. Concrete and masonry walls as well as suspended window structures clearly apparent as distinct elements. Construction and design form one whole. Engineer (Gartner Brothers, Gundelfingen) and Architect share equally in creation. Steel skeleton bright cobalt, panels and supporting structure of windows, doors, parapets painted medium-grey. Aluminium parts left in natural colour.

Technical Institute, Darmstadt
Shop of machine-engineering faculty
(pages 306—307)

Relatively restricted site. Faculty for Engineering Construction combined with Institute and Work Shed. Arrangement of building determined by close tie-in between Institute building, at the present time under construction, and the shed. Like factories of medium size, this arrangement brings administration and planning into close connection with factory sheds. As circumstances change the sheds will have to serve other purposes than those provided for at present. This consideration led to the creation of a flexible lay-out, making possible later extensions and alterations. Intermediate section kept low so as to give unobstructed light to shed (skylights could be dispensed with). Building has steel skeleton and has independent elevation elements in glass or in hard burnt brick. Skeleton throughout ultramarine-blue, other parts kept yellow or brownish.

Home of an architect near Olten
(pages 308—312)

Site: difficult but interesting, on steep north slope with view on the valley side toward the Jura. Delays and changes of plan, now, with collaborator Mr. Peter Disch project is progressing, final plan has at last emerged. A small house but a large building assignment. Space for a family of 6. Possibility of housing the office. In this way entire lower floor utilized despite outcropping of rock. When an architect wishes to experiment, he may certainly do so with his own home provided that his wife submits to being a guinea pig. (Our house known locally as the Aquarium). Experiments are attempts to house a relatively big family in a more or less divided-up space and furthermore to see how far the exterior walls can be worked out in glass. Today we feel that both experiments have been a success. Transparency of rooms has a liberating effect, sunshine in all rooms, continuous ceiling makes the small rooms appear larger. Large glass front of Poly-Glass proved its value during the severe winter. Radiant solar heat helps to reduce heating costs. For summer the replaceable blinds must still be built into the projection of the skeleton as sun shield. The entire house has steel skeleton frame. Subject to the laws of the Modulor which was applied and carried out as a further experiment, with one exception, the height of the storey in the ground floor (following building regulation 2.40 m.). The lower floor ceiling and the three concrete sections serve to stiffen the skeleton. Upper floor has roof structure of Durisol slab beams, covered with gravel stucco roofing. Additional glass wool insulation laid over wooden ceiling. The static calculations made by Ernst Schild, Eng. Basel. Furniture designed by Architect BSA Haller, Solothurn.

Project for a tower house Mannesmann at Düsseldorf (pages 313—314)

New Administration Building of Mannesmann Company in Düsseldorf. Slender towering building with severe planes and crystalline transparence forms harmonic contrast to the broad massively organized Peter Behrens Building. Construction: long side runs north and south, which is unusual for buildings of this type. Departure from norm demanded by special situation on Rhine and restricted building site. Concrete core in middle houses lifts, air shafts etc. Around this core on east, south and west offices approached by corridor 1.60 wide. Steel ceilings attached to the ferro-concrete core resting on the outside again on Mannesmann tubular supports which are worked out as pendulum stanchions. In front of these tubular pendulum stanchions hangs the outer skin consisting of Alu-window sections. Windows fitted with fixed Thermopanes, as entire building is air-conditioned.

New Department Store AG (pages 315—316)

A department store to be erected with several support-free rooms one above the other as well as sufficient storage space in basements. Site: 15 x 45.5 m., to be fully utilized. Organization: sales area in front, utility area in rear. Two basements of sales area for storage, ground floor and 1st floor sales rooms, 2nd floor bar-restaurant, 3rd floor kitchen and offices. In utility area heating installation, electric installation, etc. Construction: steel construction in sales area, utility area ferro-concrete. Elevations to reveal clearly the supporting structure. Elevation insulation furnished by prefabricated 15 cm. thick porous concrete elements. Automatically controlled Venetian blinds. Badly drained site demanded elaborate system of underground waterproofing: whole building resting in watertight basin. Underground stream led under basement back into its original course through system of pipes lying under basin.

Sulzer office building, Winterthur
(pages 317—320)

Building for Firm of Sulzer Brothers AG. Site: area bounded by Zürcherstrasse, Neuwiesenstrasse and Schützenstrasse. Space for offices serving manifold purposes to be designed so as to permit subsequent extensions and re-arrangements as need arises. Preliminary analysis necessary to determine optimum dimensions for all offices, taking full account of all the various functions and operations to be housed. Analysis resulted in determination of following dimensions for all rooms:

Window axial measurement	190 cm.
Room depth	665 cm.
Headway	322 cm.

These dimensions, uniform for all rooms, entail certain disadvantages, but these are put up with for the sake of overall flexibility.
Park land with stand of tall trees intended to be kept as intact as possible, offices installed in economically arranged point-house, in line with city-planning requirements, but the building authorities could not agree to these considerations and demanded a building in keeping with the building legislation. Result: a 5-storey spread-out structure along Schützenstrasse in two sections with a central connecting building with ideal east-west illumination. This group can later on be enlarged by a higher building alined north and south. Arrangement in two large sections led to a concentration of stairs and subsidiary rooms at three points: the connecting building and the north and south ends. In this way there is created between these fixed points a coherent office area capable of being partitioned as desired measuring about 2 x 9.50 sq.m. per storey. Rooms divided by easily dismountable partitions of light metal frame with acoustic panel elements partly solid, partly glazed. In this way building can easily and economically be re-arranged to meet new needs arising from the steadily developing operations of the various departments.

Construction: Steel frame structure. Steel elevation supports bearing the weight 190 cm., interior corridor supports 570 cm. apart. Perpendicular to elevation are welded girders which support the 10 cm. thick ceiling slabs. Resulting hollow spaces serve as distribution conduits for air-conditioning system. Exterior elevation proper worked out in 8 cm. thick native stone slabs with cork insulation entirely self-supported. Connecting building and ends ferro-concrete, take most of the force of the wind.

Technical Installations:

a) Air-conditioning and heating: The top floor of the connecting building houses the central air-conditioning plant (electro-filter, mechanical filter, heater, cooler, etc.) in two parts facing north and south wings. Slightly recessed sections between connecting building and office areas house fresh air and exhaust conduits leading to sub-stations in separate floors. Air introduced into individual offices through hollow ceiling ensuring uniform ventilation throughout rooms. This system takes care of 60% of heating requirements, rest covered by radiators built into window parapets, preventing drafts and steamed window-panes.

b) Electrical installations: The group possesses its own transformer station from which distribution is made to both wings. 220 volts. Artificial illumination by three rows of two-flame fluorescent mountings 60 W with Plexiglass covering.

c) Telephone: The telephone installation for whole works situated in basement of connecting building.

d) Lift installations: With exception of a separate goods-passenger lift in south stair-well all passenger and goods lifts are concentrated in connecting building. Three roomy triplex-group lifts with completely automatic doors supplemented during rush hours by large goods lift which moreover serves for moving furniture and materials.

e) Document and plan transport: The greatest attention was devoted to problem of vertical transport and distribution of documents and copies of plans. In close connection with this problem of transport was the question of filing, plan and document duplication, internal mail distribution, etc. These operations housed in two lower floors in south wing and in north wing. Four document lifts, which on each floor are operated by a person specially assigned for this purpose, are reserved for transport of copies of plans and documents from 1st lower floor to 4th upper floor. Arrangement of whole guarantees smooth operation and eliminates confusion and errors. Horizontal distribution on individual floors by messengers.

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