

UNESCO HOUSE

**Stunning 20th-century monument
of richness and restraint is given Paris
by the Breuer-Zehrffuss-Nervi team**

Here is the first preview presentation of the new scheme for UNESCO in Paris—the European prototype of the UN in New York and correspondingly the most important architectural undertaking in Europe since the war.*

When an international team made up of architects Marcel Breuer (US), Bernard H. Zehrffuss (France) and engineer Pier Luigi Nervi (Italy) was given the UNESCO House commission last July, there was much speculation on the sort of design so brilliant a team might produce. Past performances of the three men (AF, Aug. '52) indicated it would be a magnificent job. It is—as the pictures on these pages attest.

Like any child, the UNESCO design will promptly be compared with its handsome parent, the UN headquarters in Manhattan, for looks, temperament and manners. For make no mistake, UNESCO is very much the architectural child and heir of UN. The Manhattan UN design came up in the world the hard way; it was a battle the whole trip. Some of the members of its design team were traditionalists, some modernists. They had to fight that one out; then there was the battle as to whether the UN should be a slab building or a series of eight-story boxes as urged by the high priest of low buildings, Lewis Mumford. Finally, when the designs were published, spokesmen from AIA, the Municipal Art Society and the like, attempted to save New York City from "slabs turned up and slabs lying on their belly," "a sandwich on edge and a couple of freight cars."

By the time Breuer, Zehrffuss and Nervi met in Paris, these basic issues were settled, and the verdict had been finalized by the swift and silent failure of Eugene Beaudouin's first compromise UNESCO scheme (see text, p. 154).

The physical family resemblance between UN parent and UNESCO child is strong: each has its dominating Secretariat slab for workaday business, its Plenary Hall for full-dress meetings, its Conference Center linking the other two, a fundamental functional analysis that UN bequeathed to UNESCO as a starter. The cultural resemblance is also strong, as it should be. Like the UN design UNESCO cuts free from ancient symbols (dome, spire, tower, column) inspired by the monumental forms of nature. Both UN and UNESCO take as the material of their symbolism the man-conceived forms of pure geometry; both express these forms by openly and joyfully celebrating mankind's exploring mind and technical skill.

Yet the UN and UNESCO designs are also very different. As

a composition, the smaller UNESCO House (1/3 the size of UN headquarters, 1/5 the cost) is less daring, less dynamic. It is more restrained, more formal—as formal as a Renaissance palace. In its architectural and engineering detail, UNESCO House is the more refined, imaginative and rich. Its textures, or the visual effects of its reinforced concrete engineering, would alone make it a landmark in the architecture of our time.

These differences between the two headquarters are a proper reflection of the different economies in which they were built. The Manhattan UN team had to design for US construction methods and US labor costs; that means they had to design for standardization, prefabrication, simplification. The Paris UNESCO team had to design for an economy of relatively low wages and material scarcity; their most reasonable luxury was therefore a luxury of detail. Architecturally and sociologically, UN is right for New York, UNESCO is right for Paris.

As a building for France, UNESCO makes another point. It reasserts the Le Corbusier influence at a strategic time—at the moment when France seems to be trying to forget "Corbu" and to adopt the Auguste Perret type of classicism—hard and almost brutal—as taught by Perret at the Beaux-Arts.

In its own way, the story of how the Breuer-Zehrffuss-Nervi team worked is almost as remarkable as the building it produced. Before July 15, none of the three had ever met the others ("an Arab marriage," says Breuer). In the next 62 days the three strangers completed their negotiations with UNESCO, organized an office out of thin air (they even had to buy the furniture, hire a secretary and round up draftsmen—who turned out to include ten nationalities) and planned, designed and engineered three sizable buildings for a complicated \$13 million group (estimated US building cost). Ten of these days Breuer was hospitalized with a high fever. But two months to the day after it was commissioned, the team turned over to UNESCO's advisory Panel of Five* a complete set of preliminaries. "Not only practical but inspired," reported the Panel, recommending the team be retained to carry the project through. Next step: approval by UNESCO's General Conference, meeting next month.

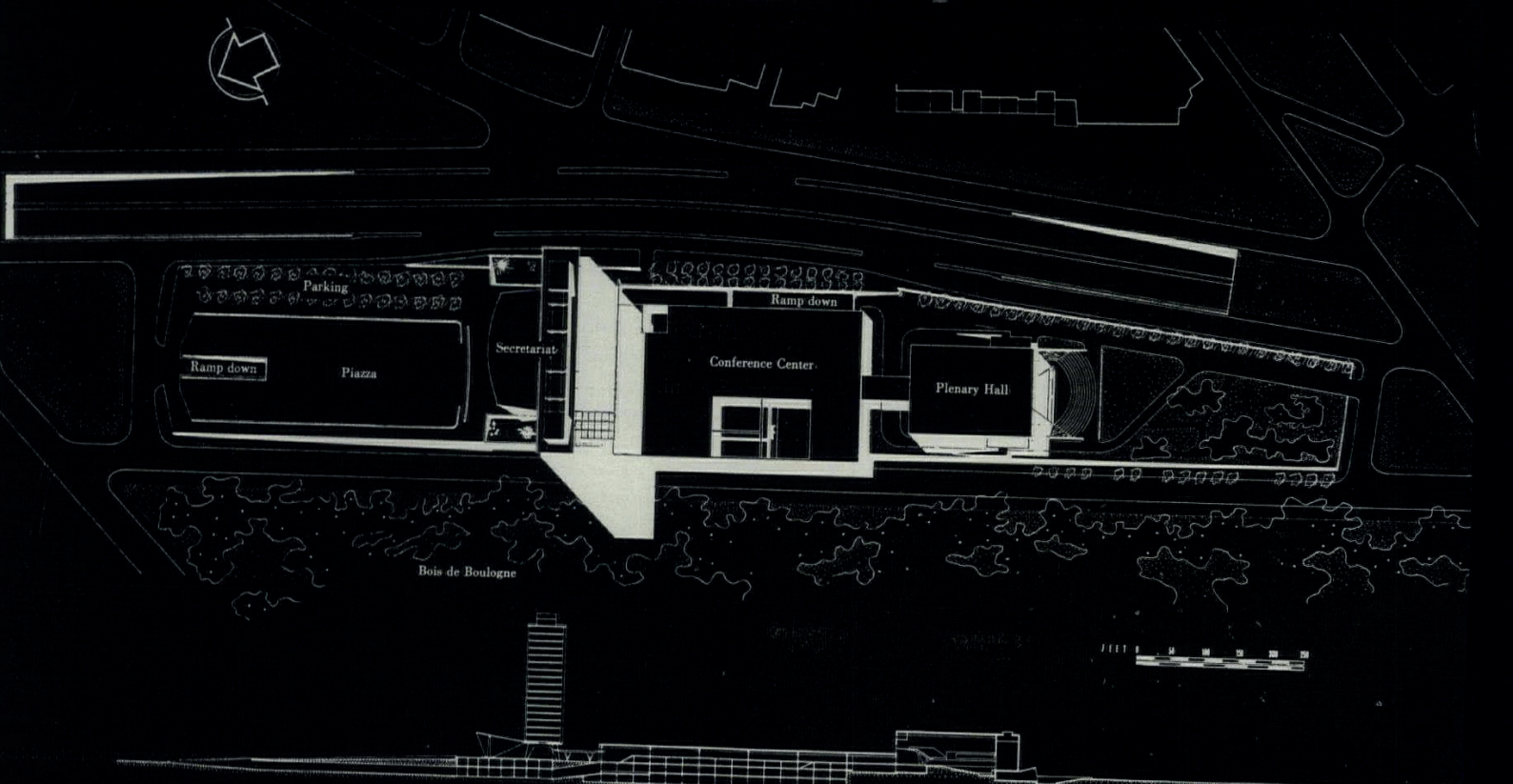
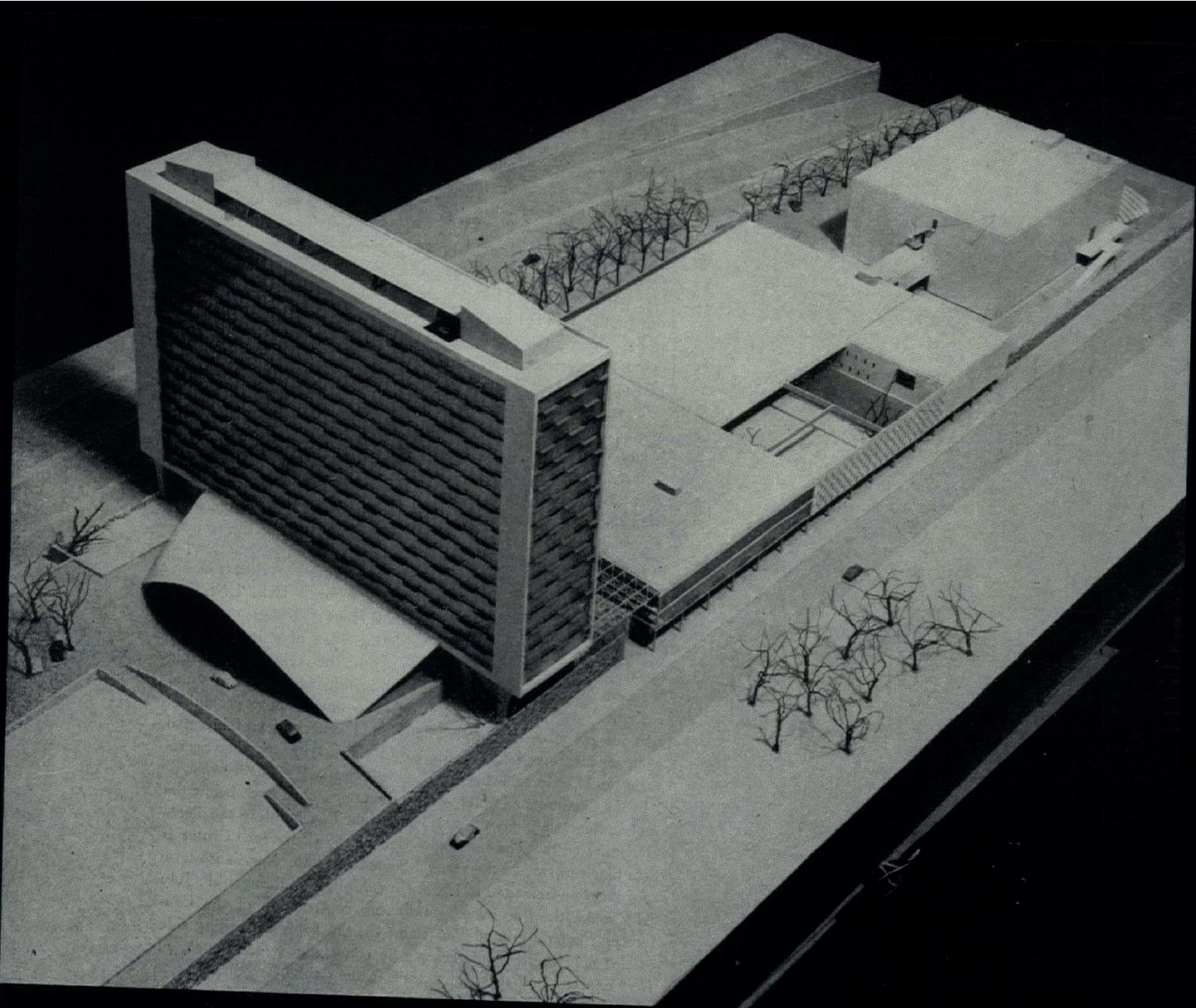
Harmony among peers

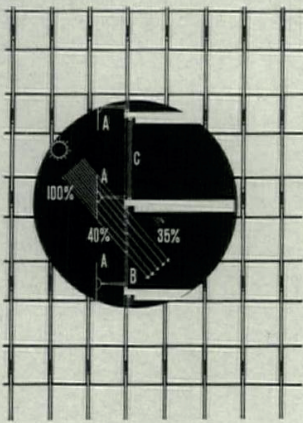
Secret of the team's incredible speed seems to have been incredible harmony. It had no chairman.† All worked as equals. Each member respected the resources of the others; each attempted to channel his own talents to harmonize with the others' strong points. FORUM readers can make some shrewd guesses as to the several contributions of the three men, but the team would like to discourage this kind of parceling, hopes the joint product will be looked upon as a joint effort. This remarkable harmony (or even the uncompromisingly modernist make-up of the team) would hardly have been possible of course had it not been for the time-consuming but trail-blazing disharmony five years ago in New York. If omens mean anything, this phenomenon augurs well for international UNESCO.

Team members believe that paradoxically the very lack of a big going office made for speed and efficiency of the work. Says Breuer: "This ought to disprove the idea that only a big office can do a big job. I have always thought that the most efficient office is small enough to be encompassed by the partners' personal design capacity and time; several small offices can associate on a big job if need be. I don't know of any big office that could have turned out this job in two months."

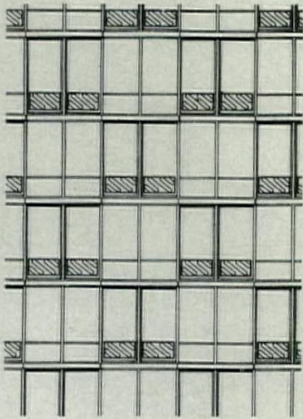
* Lucio Costa (Brazil), Walter Gropius (US), LeCorbusier (France), Sven Markelius (Sweden), Ernesto Rogers (Italy).

† As erroneously reported in FORUM.

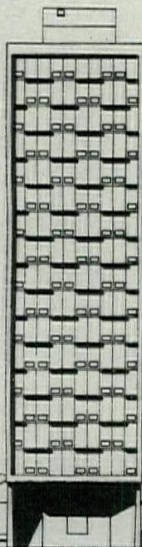




Heat-absorbing glass is hung 4' outside sliding sash of slab's south and east faces. Idea is heat from outer glass will dissipate in air space, yielding 65% total heat loss.



Texture of slab's northern and western faces is created by blue Ardoise stone projections above sliding windows, and black aluminum railings below. Sash is silvery aluminum.



The riches of UNESCO

Haste of design did not mean superficiality. There is a depth of concept that hints the ideas were long and lovingly pondered. This is one of those buildings where, the more you look at it, the more lovely things you find in it. Some of its wealth:

First, its texture: The great surfaces—vertical and horizontal—are patterned. Even the roof of the Conference Center—visible from southern offices in the slab—will be a richly textured polychrome composition of stones and plants. Northern and western faces of the Secretariat slab are a tapestry of blue stone, black and silver metal and glass (*see sketch*).

The more delicate (and more dazzling) veil of the southern and eastern faces is created by the play of blue-green glass panels set 4' outside the clear sliding sash of the slab face (*see sketches*).

Stretches of the Roman travertine wall of the Conference Center are perforated with slit-windows, to be filled with colored glass (*see rendering, below*). The Plenary Hall has a light striated wall texture, produced by recessed vertical joints between the stones.

Second, its sculptural engineering: From the breathtaking lobby shell to the diagonally framed Plenary Hall, UNESCO House is superbly engineered for visual effect:

▶ In the Secretariat slab—the Corbusier idea of stilts has been given a new fluidity and life by means of the eight great, plastic V forms which—together with the solid shafts enclosing stairs and elevators—carry the Secretariat slab two stories above ground.

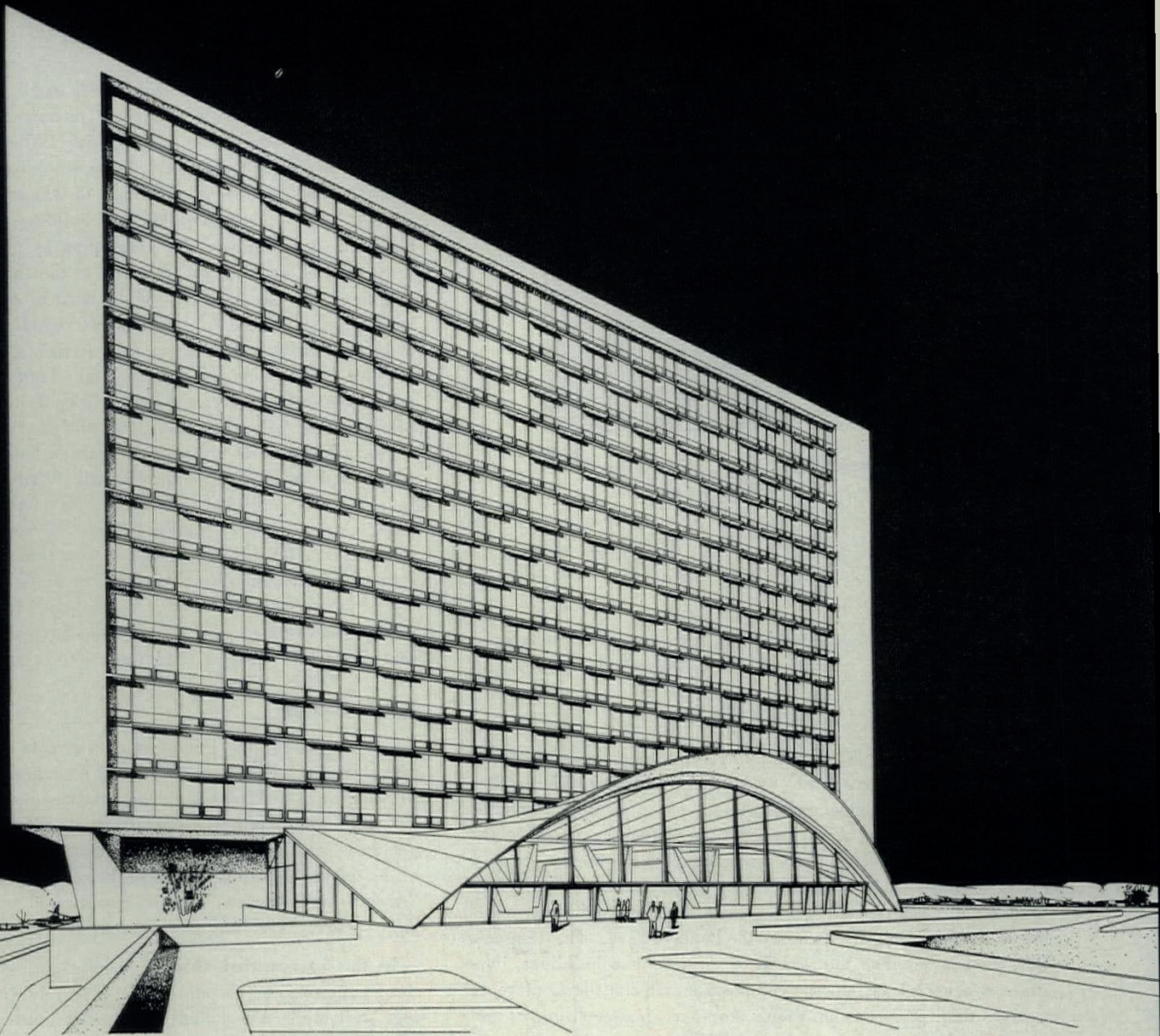
▶ In the pergola—an interlaced pyramid system of prefabricated concrete members leaps across 70' of plaza, tying together Secretariat and Conference Center.

▶ In the Conference Center—the walls are notched back below the ground-floor slab, giving an illusion that this building too floats above the earth. The horizontal slab of the Conference Center is thus like a mirror of the vertical Secretariat slab. Nervi's isostatic roof beams—first used in his Turin exhibition building (AF, July '51) make the "beamless" mushroom construction of the Conference Center's ground-floor slab. On the basement ceiling side of the slab, their wonderful plastic convolutions (*see sketch, p. 154*) express the pattern of stresses in the slab.

▶ In the Plenary Hall—crisscrossing diagonal beams sculpture the ceiling; a top-to-bottom stair void dramatizes the independent sweep of the big light roof spans.

▶ Epitomizing all this high-riding lightness and grace is the magnificent concrete entrance shell supported at its inner end by the main slab of the floor above, at its outer end by a parabolic arch. It swings 175' wide, 55' deep, without inner supports, only its two front tips touching the ground, its ceiling a tracery of beams.

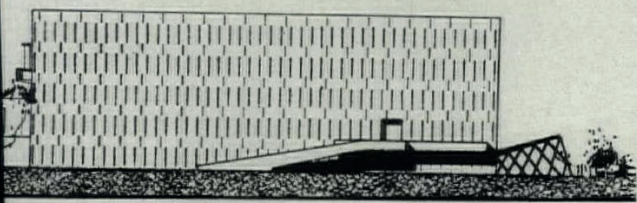
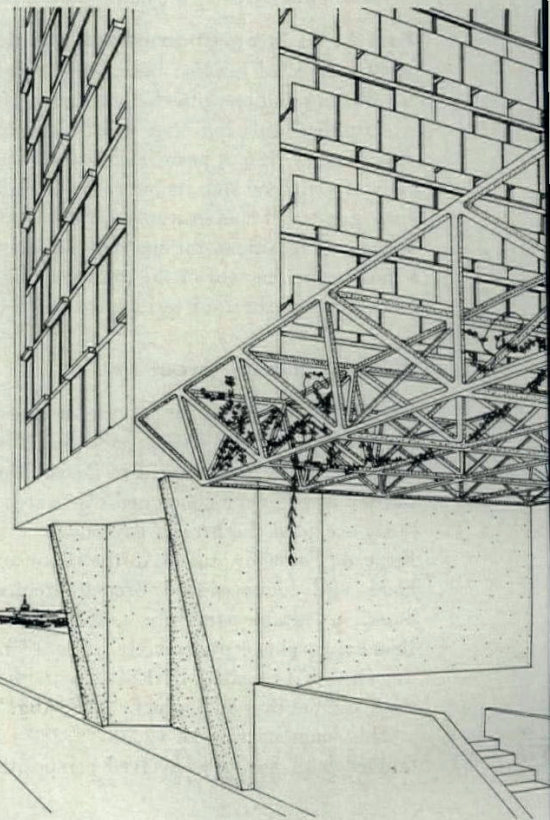
Third, its flow of space: Each of the group's three elements—vertical slab, "reflecting" horizontal slab, and box (the punctuation mark)—is separate and self-contained. Their relationship with each other is beautifully managed by using "undefined" space as part of the composition. A continuum of space flows around and through the buildings, seeming almost to obey the laws of liquids: the entrance opens up like a giant culvert, drawing into itself the river of space. The stream flows under the vertical slab, spreads out in the plaza (its upper limits hinted by bridge and pergola), then channels into a high and narrow covered gorge right through

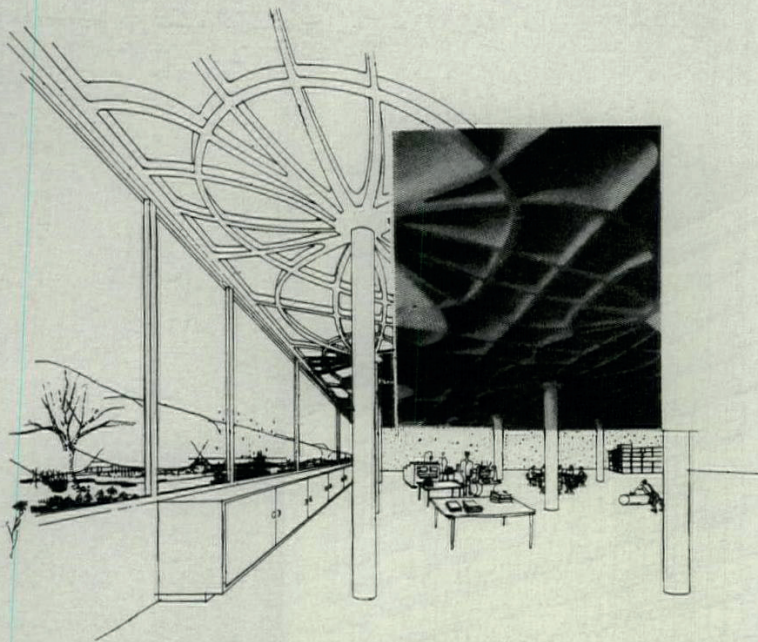


Main approach gives view of 175' wide concrete entrance shell and tapestrylike north facade of slab. Esthetic of pure geometry is plainly stated by stone frame of slab and sweep of parabolic arch.

Two-plane glazing of slab's south and east faces (right) creates shimmering blue-green veil. Pergola over restaurant terrace is engineered from prefabricated concrete members with joints poured in place.

All great surfaces are richly textured (below). Wall of central building is perforated with colored glass slits (indicated by double-line joints). Plenary Hall is striated by shadow lines of recessed joints.





Ceiling of print shop in Conference Center basement reveals isostatic beam construction of slab.

the center of the Conference Building. Here it divides into upper and lower levels opening into each other and sharing the pool of space at delegates' lounge and patio (see plans, p. 157). Climax of this journey with the space stream comes after the funnel at the neck of the Plenary Hall in the great space of the theater.

The architectural potential of the plaza between Conference Center and Plenary Hall has not been realized in this scheme—one of the few criticisms made by the Panel of Five. The designers now plan to lengthen the neck between these two buildings, integrate a larger plaza into the composition. Inside the Conference Center, they plan also to widen the space between library and bar (see plan), move the stairs out of the corridor center, to express still more clearly the continuity of passage between buildings.

Fourth, its integration of the plastic arts: Ever since architecture rejected applied ornament, it has been struggling toward a valid integration with the other arts. If the designers' intentions are fulfilled, this building will be one of the great milestones in that journey. It has been imaginatively planned for the collaboration of painters and sculptors on such unusual assignments as:

- ▶ the great roof composition atop the Conference Center;
- ▶ color compositions for the slit window patterns;
- ▶ mosaic for the roof of the parabolic entrance shell;
- ▶ ensemble of the roof terrace for the Secretariat slab.

UNESCO and the great axis

UNESCO House is a lot of useful things—office building, print shop, theater, radio studios, etc—but it is first of all a monument and specifically a monument in Paris. This is a peculiar and trying burden as everyone concerned discovered after UNESCO thoughtlessly accepted the French government's first offer of a site on the Place de Fontenoy, smack in the center of a Beaux-Arts neighborhood, and commissioned French architect Eugene Beaudoin to design a suitable structure. After the embarrassing rejection of Beaudoin's plans, presumably designed to suit the neighborhood, the French presented UNESCO with the present site at Avenue Foch and the Bois de Boulogne (AF, Aug. '52).

This long, narrow lot (2,200' x 280') in West Paris is not entangled with any preconceived composition. Nevertheless it does

bear a radial relation to Paris' "great axis." Along the axis, or close to it, march Paris' cherished monuments, beginning with 12th-century Notre Dame, ending with 19th-century Arc de Triomphe. Breuer, Zehruss and Nervi were well aware that their creation must slip into place as part of that great procession.

To this end, they endowed their building with good manners and tact. It conforms to the grand plan by placing itself respectfully parallel to the great axis and at the same time pleases the neighbors who like their view of the park, by considerably turning its narrow axis to the Bois (see sketch, right). Although the Secretariat slab is Paris' first skyscraper, it rises a modest 190' vs. the Invalides' 350'; and because the slab stands on low ground, it appears lower than even the 160' Arc de Triomphe. Its elongated profile fits serenely into Paris' dominantly horizontal pattern.

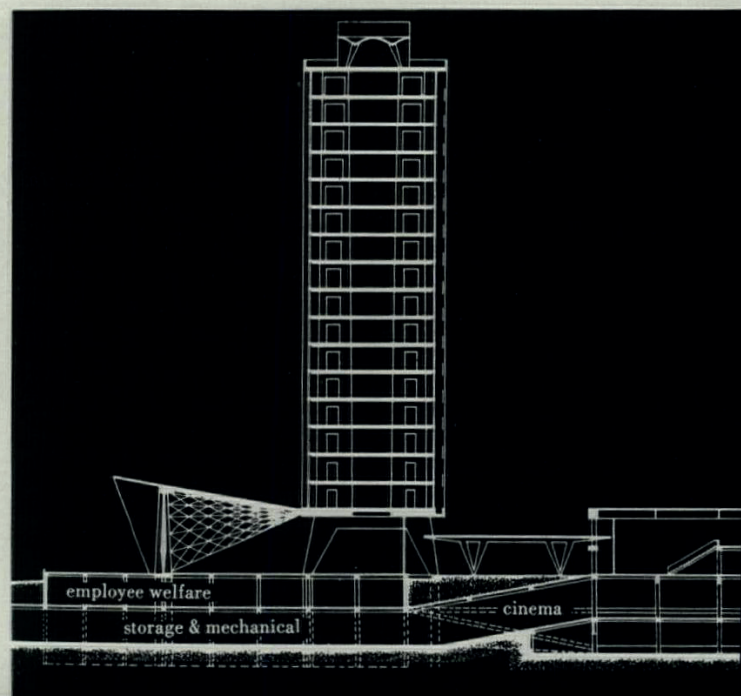
Normal approach to any of the three buildings is across the piazza and through the entrance shell. Visitor and staff parking is in a sycamore-shaded area at one side of the piazza. For delegates' cars, ramps lead into a 107-car basement garage. Because the Plenary Hall is to be used also as a theater and concert hall, it has direct automobile and pedestrian access. The slight asymmetry of the over-all plan, forced by the plot's fish shape, will probably be accentuated: the entrance shell may be offset to bring it into direct line with the Conference Center entrance.

The buildings

Requirements for the group were extremely complex (the documents section alone is as large and complicated as a good-sized printing plant). After a good look, the designers agreed they must hit on a basic simplification of some sort. They recalled the Italian palazzos, with everything clearly and understandably on the right or the left; this was the genesis of the central space-stream scheme. "Architecture is getting terribly complicated with its circulation," says Breuer. "It's time to strike out for simplification anyway."

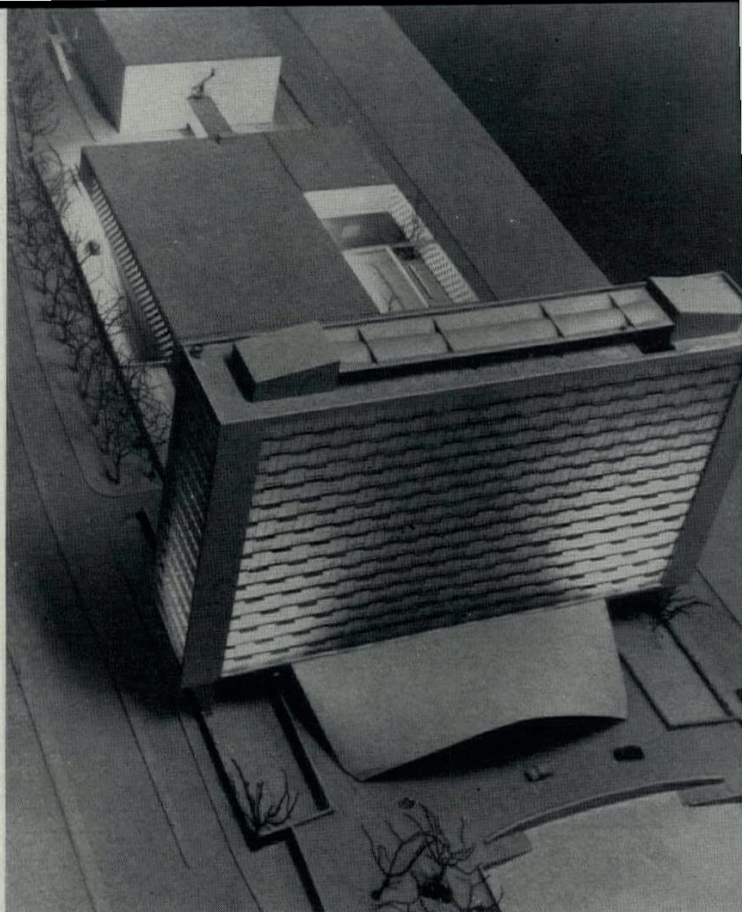
In the **Secretariat slab**, this left-right symmetry is carried out by the two end elevator stacks. Note, however, that elevators and stair wells are pulled in from the ends. Advantages: end office space, more fun with the exterior, a cleaner roofline. Elevator halls look skimpy but are ample for the slab's working population (500 against UN's 3,500).

Use of reinforced concrete for a 16-story (18 stories off the ground) tower is sure to be controversial. The choice was made because reinforced concrete, not steel, is the material familiar to

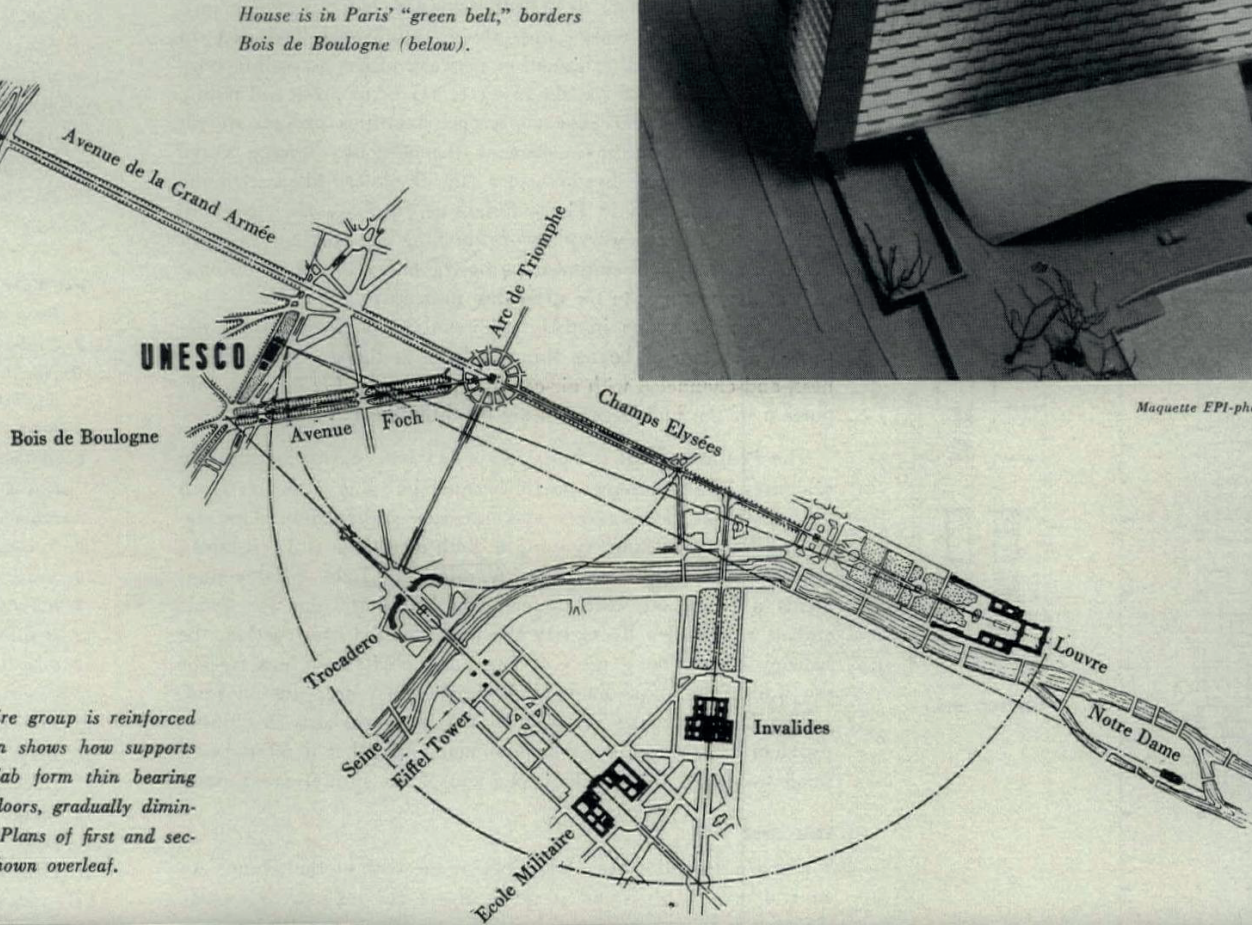


Lighted model shows slit windows in central building; roof will be polychrome composition of stones and plants. Roof of slab has covered terrace.

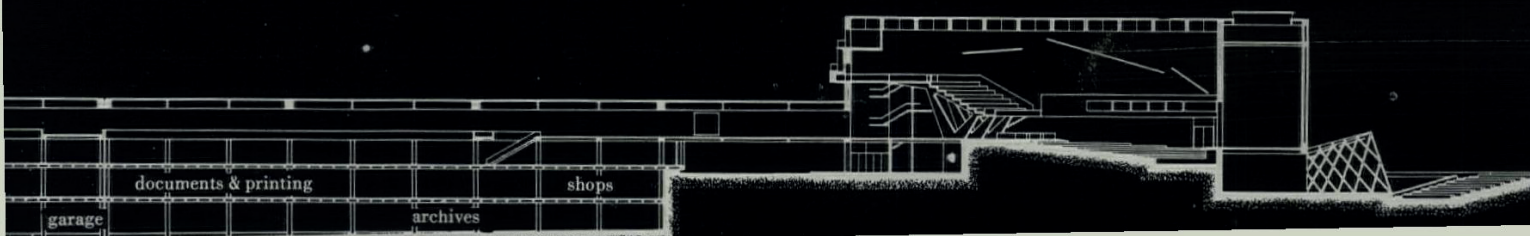
First addition since Eiffel Tower to famous monuments of Paris, UNESCO House is in Paris' "green belt," borders Bois de Boulogne (below).

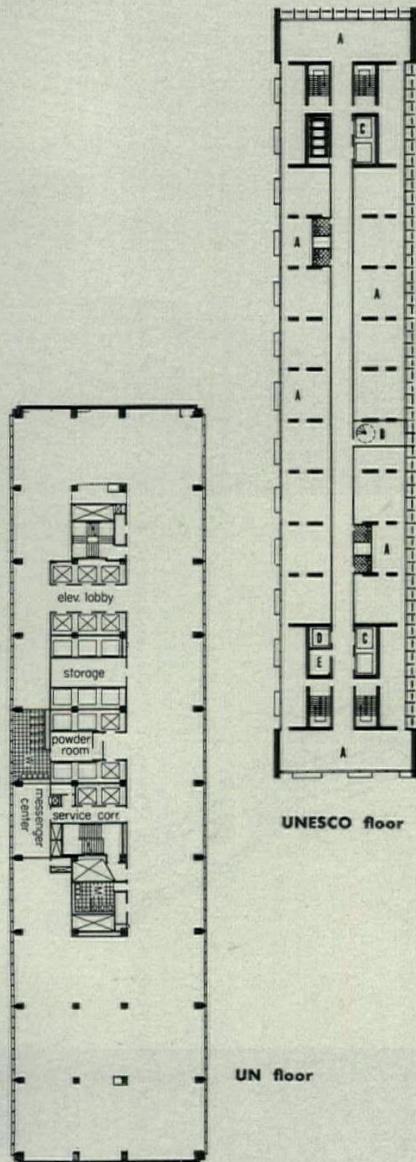


Maquette EPI-photo Duprat



Structure of entire group is reinforced concrete. Section shows how supports of Secretariat slab form thin bearing walls on lower floors, gradually diminish to columns. Plans of first and second floors are shown overleaf.





Office floors compared: 16-story UNESCO slab is same length but thinner than 39-story Manhattan UN. Fenestrated end walls of UNESCO will be used for offices. Structure forces inflexible partitions on lower floors.

the French building industry; because the team included, in Nervi, perhaps the world's greatest reinforced concrete engineer, a resource the other two members did not want to waste; and because it was thought to be cheaper. To avoid the awkwardness of great pillars in the lower floors, Nervi treated supports as bearing walls with door-sized openings. As the building rises, the bearing walls gradually become lighter (*see section, p. 154*) until they are only columns on the upper floors. Although this structural system appears beautifully light and unchunky, it yields an inflexible partition system on more than half the floors.

The two upper floors of the central **Conference Center** are treated like one high-ceilinged space with a mezzanine. Each functional element (as library, nursery school for staff children, conference secretariat) is a self-contained block with its own stair. This device makes possible an admirable flexibility in room sizes, a fine discrimination between offices accessible only to delegates and staff (on the lower level) or to press and public (on the upper level). The conference facilities proper are all grouped around one main element, the delegates' lounge, nerve center of the entire headquarters (the designers liken it to the famous waiting hall in Paris' Palais de Justice). The designers believe that their newer plan of widening the corridor between bar and library will emphasize a desirable bottleneck of circulation at the entrance to the delegates' own area.

For the 68' spans in this building's upper floors, Nervi designed a system of beams thinned down at the center for lightness, and channeled with air-conditioning ducts. (This is the only portion of the buildings with air conditioning.)

The **Plenary Hall** is built like a big box, partly because the designers like the shape, partly because building a theater from the inside out means costly and intricate construction. The system of diagonal beams, running in both directions and constantly crossing, gives 130' spans with relatively light construction, yields a frame on which panels can be hung from any point and at any angle. To clarify the free, tentlike construction, the balcony stands like a piece of furniture, on its own legs free of the walls. The stairs hang from the balcony, drop into a void.

The designers have not solved the knotty (perhaps insoluble) problem of how to expand a monument. Best that is offered is a small two-story addition atop one end of the Conference Center.

The cost

There are several ways of looking at the cost of the group. An equivalent US job would come to about \$13 million. Normally the cost in Paris would be about \$8½ million. But UNESCO is exempt from taxes and import duties, bringing the estimated cost down to \$7,427,833 (including architects', artists' and consultants' fees, landscaping and sitework, and \$72,000 already spent on the abortive Place de Fontenoy scheme).

Original estimate for cost of a headquarters project, made in 1950, was \$6 million, but this sum did not allow for fees, landscaping and administrative costs. Subtracting these from the Breuer-Zehruss-Nervi job gives \$6,664,000 for the present project, an increase of less than 12%. Meantime, since the first estimate, Paris construction costs have gone up 20%. Noting these facts, UNESCO's director commended the team for its economy.

Following the first estimate, the French government offered UNESCO a \$6 million long-term interest-free loan; it is likely this offer will be renewed. Whether it will be increased, and whether UNESCO member nations will want to obligate themselves for so large a sum is at this point problematical. Initial enthusiastic reaction to the Breuer-Zehruss-Nervi design seems to indicate, however, that UNESCO and a proud Paris will not let cost stand in the way, will start building next summer.

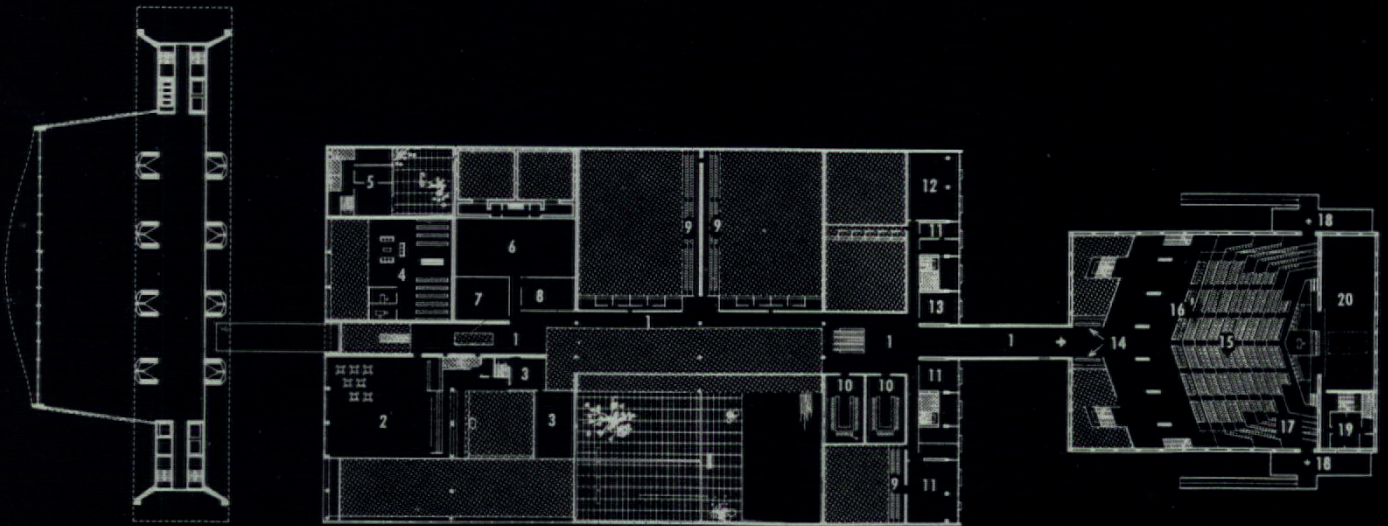
Second floor

(Shaded areas indicate voids)

1. Public gallery
2. Cafeteria
3. Kitchen offices
4. Library stacks
5. Nursery school
6. Press, recep., info.
7. Unallocated
8. Air conditioning
9. Public & press
10. Committee rooms
11. Conf. secretariat
12. Transcription
13. Interpreters' lounge
14. Cloakrooms
15. Delegates
16. Press
17. Observers
18. To balcony
19. Dressing rooms
20. Stage

First floor

1. Bookstore & info.
2. Cable & post office
3. News stand
4. Exhibits
5. Bar
6. Restaurant & terrace
7. Kitchen
8. Library
9. Nursery school
10. Radio & TV studios
11. Record library
12. Despatches & editing
13. Commission rooms
14. Committee rooms
15. Executive board
16. Delegates' lounge
17. Cloakroom
18. Delegates' bar
19. Pond
20. Conf. secretariat
21. " " (documents)
22. " " (del. receipt.)
23. Cloakrooms
24. Bar
25. Orchestra pit
26. Understage
27. Open-air stage
28. Amphitheater



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