

I. The German Pavilion in Barcelona. The 1929 building

1. Werner Blaser: *Mies van der Rohe: the art of the structure* (trilingual), Carlos Hirsch Editor, Buenos Aires, 1965.

2. Dr. Sergius Ruegenberg, who worked with Mies van der Rohe during his European period, contributed to the design and construction of the Barcelona project. After the Second World War he produced a number of drawings, presenting his own version of the Pavilion in general plans, technical details and perspectives which were never widely published, due to Ruegenberg's desire to retain control of them with a view to their possible use in concrete projects. The relationship between the two men is recounted in his article, «Ludwig Mies van der Rohe: 1886-1969», in *Deutsche Bauzeitung*, September 1st, 1969. Dr. Ruegenberg's drawings and perspectives have recently started to be published, at times combined or confused with Mies' own drawings. See: Sandra Honey: «Who and What Inspired Mies van der Rohe in Germany», *Architectural Design*, n.º 3-4, 1979; Mario Ciammitti/Giuseppe Di Giovine: «Per conoscere il Padiglione di Mies», in *Parametro*, n.º 122, December 1983, and also «Mies van der Rohe. European Works», in *Architectural Monographs*, London, 1986.

3. The arduous task of cataloguing over 20,000 documents carried out by Ludwig Glaeser between 1968 and 1980, when he was in charge of the Mies van der Rohe Archive, forms the basis of our current level of understanding. Prof. Glaeser whose extensive study of the Pavilion is to be published soon, has already made his considerable knowledge of the subject available in his book *Furniture and Furniture Drawings from the Design Collection at the Mies van der Rohe Archive*, New York, 1977, and in the exhibition catalogue *Ludwig Mies van der Rohe. The Barcelona Pavilion*, Washington, D.C., 1979.

1. The state of research

During many years, the execution and the characteristics of the German Pavilion for the Barcelona Universal Exposition of 1929 were entirely unknown. In spite of the growing recognition accorded to the building in the years after the Second World War, the swiftness of its disappearance after the event for which it was built seems to have contributed to the many uncertainties and imprecisions which it seemed that no one was in any position to clarify. The documentation was far from accessible, the Civil War in Spain and the Second World War in Germany having so dramatically affected many of the individuals and institutions who had been responsible for the production and administration of that piece of work recognized as fundamental for the architecture of the 20th century.

For the above reasons, there could be no detailed and in-depth understanding of the characteristics of the German Pavilion until relatively recently. The attempt to recreate through drawings and plans the most exact definition of the building did not come about until Werner Blaser, then working on a monograph study of Mies van der Rohe, produced a number of new drawings of the European projects in collaboration with Mies himself and his studio in Chicago.¹ In the case of the German Pa-

vilion, it is now possible to recognize the importance of Blaser's work, even admitting the limitations to be ascribed to Mies' testimony thirty years after the fact in drawings which, while they afford previously unknown insights, tend not to reproduce with complete fidelity the reality of the building constructed in 1929.

The second attempt at redrawing the project was undertaken by Dr Ruegenberg, who devoted years to preparing what he considered to be the most reliable documentary evidence available for a minutely detailed description of the building and the clarification of all its dimensional and technical characteristics.² Looking beyond the restrictions imposed by Dr Ruegenberg on the dissemination of his documents—documents which, when they have been made public, have thrown much light on a considerable number of questions of detail and technical execution—these amount to what is more properly a personal proposal of a new way of constructing the building than a faithful description of the material characteristics of the building as actually constructed in Barcelona in 1929.

For this reason we can say that it is only fairly recently, with the architect Ludwig Glaeser as director of the Mies van der Rohe Archive, working alongside the historian Wolf Tegethoff under the guid-

ance of Arthur Drexler from the Architecture and Design Section of the Museum of Modern Art in New York, that any substantial advance has been made in our detailed knowledge of the building's characteristics and the modifications imposed on it during the course of its progressive definition.³ The exhibition on the German Pavilion organized by Ludwig Glaeser for the MOMA in 1979 and subsequently shown throughout the United States and Europe, and specifically in Barcelona, represented a first attempt at compiling the information of all kinds—graphic, written, and direct testimony—painstakingly collected by the MOMA researchers. Wolf Tegethoff's doctoral thesis, initially published in the catalogue for an exhibition in Krefeld and later issued in book form in Germany and North America, subsequently provided further illumination of the set of problems presented by the 1929 Pavilion.

However, it was only at the start of the eighties, with the imminent celebration of the centenary of Mies van der Rohe's birth, that the inventory of sources—Berlin, Barcelona, Chicago, etc.—and the comparative study of the collected data resulted in a more precise understanding of what the building had been, of the vicissitudes affecting its architectural definition and its critical fortunes, in a way that had not been achieved in the past.

The efforts of those of us who worked on the reconstruction in Barcelona, which was inaugurated in 1986, but whose origins go back precisely to those first years of the eighties, are absolutely indebted to the scientific and historiographic labours of those who went before us, and in particular to those architects and historians we have mentioned above.

The text and the graphic materials presented below, constituting a resumé of the body of information now at our disposal, is to a certain extent a synthesis



Fig. 1. Panoramic view of the Avinguda M.ª Cristina, from a period poster.

of the work of information which we ourselves were obliged to undertake in order properly to carry out our task of construction; it is also, however, to a great extent a summary of the most solidly researched comparative information available to date in published form.

2. The architect and the place

The Barcelona International Exposition, inaugurated by King Alfonso XIII on the 19th of May, 1929, was the consummation of a project long cherished by the city and repeatedly delayed for reasons of one kind or another. Barcelona had hosted the Universal Exposition of 1888, and although this had been an event of more limited scope the positive contributions it had brought to the city soon gave rise to a desire to host a second and grander exhibition, more daring, thematically more incisive and urbanistically more ambitious in its implications for the city. From the beginning of the new century the idea of another International Exposition was put forward on a number of occasions, but it was not until 1914 that a committee of industrialists and politicians finally took the initiative of announcing the new exhibition.⁵ With the decisive support of the City Council of Barcelona, the organizing committee of the International Exposition of Electrical Industries set in motion the process necessary for the celebration three years from then, in 1917, of this latest international event. The outbreak of the Great War in Europe a few months later put a halt to the project, which was postponed, on the ending of the war in 1918, until 1923. These were not idle years, however. Within a few months of the setting up of the Management Committee, the architect Josep Puig i Cadafalch presented a sketch design scheme for the Exposition site which, in its second phase, was developed as three separate projects: by the architects Lluís Domènech

i Montaner and Manuel Vega i March, by Enrique Sagnier and Augusto Font, and, in the third of the zones into which the complex was divided, by Puig i Cadafalch himself.

The conception of the Exposition as it was developed in the scheme by Puig i Cadafalch and his fellow architects followed the accepted criteria of use for International Exhibitions at that time, based on a system of grand palaces laid out around some coordinating element, which was in this case to be the great avenue ascending from the Plaza de España to culminate on the crest of the Montjuïc hill in the dominating mass of the Palau Nacional building.

From the 1870s on, this system had effectively taken the place of the primitive type of exposition design with its single great building in whose interior all the activities and exhibits were laid out either on the basis of means of production or of country. The system adopted in Barcelona consisted of a series of independent buildings devoted to different branches of production—Steel-making, Transport, Textiles, Agriculture, Graphic Arts, Electricity, etc.—and subdivided internally into areas occupied by the industries of the different exhibiting nations. It is worth noting this approach to the organization of an exhibition—which was in due course, in the fifties, replaced by the concept of individual National Pavilions—in that an awareness of this circumstance helps us to understand the low level of integration of the national pavilions in the Barcelona Exposition of 1929.

In effect, the decision to establish national representation was formulated when the built structure was already basically in existence, and in line with the thematic criteria described above. For this reason, the organizers of the Barcelona Exposition, once it was decided in 1927 to propose that the presence of the various countries interested in taking part should consist not only of the exhibition of their products but of individual national pavilions, had to over-

come both the inertia of an established procedure that was already being implemented and the difficulty of an unforeseen architectonic intervention which proved anomalous and conflictive in relation to the general layout worked out by Puig i Cadafalch ten years earlier.

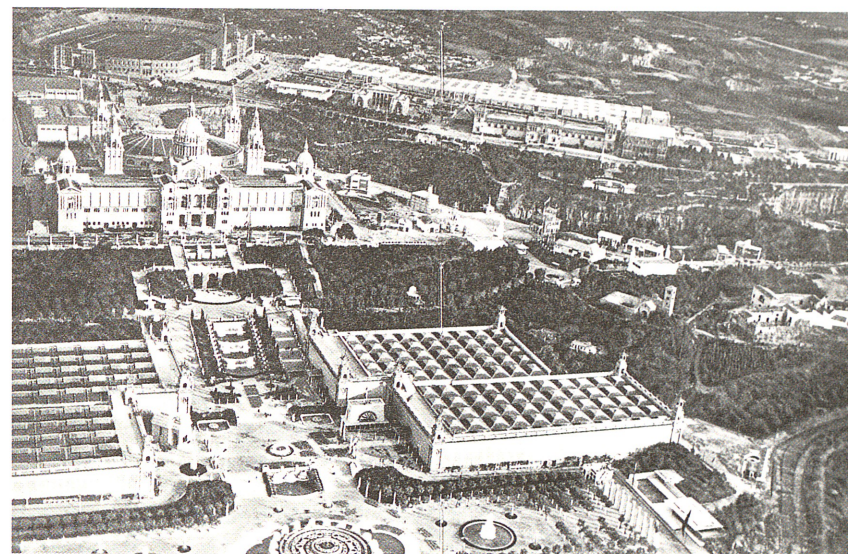


Fig. 2. Aerial view of the central zone of the Exposition with the German Pavilion on the right.

In the case of the German presence, the initial response was negative, with the protocols preparatory to the Exposition including reports from the German Embassy in Madrid and the Deutsches Ausstellungs und Messe Amt discounting the idea of a separate building representing Germany in addition to the specific displays for each branch of German manufacturing output.⁶

In fact, the nature of German participation was not formally decided until the middle of 1928. The agreement between the Spanish and German authorities is dated May 29th, 1928; that is, less than a year before the day of

4. Wolf Tegethoff: *Mies van der Rohe. Die Villen und Landhausprojekte*, Essen, 1981.

5. For a study of the Barcelona International Exposition of 1929 in its entirety, see Ignasi de Solà-Morales: *L'Exposició Internacional de Barcelona 1914-1929. Arquitectura i Ciutat*, Barcelona, 1985.

6. In a confidential report sent by the German ambassador in Madrid to the president of the Executive Committee of the Barcelona International Exposition, as late as September 13th, 1928 there was insistence that «it has been determined to discount as hardly practical the idea of constructing a German Pavilion», adding that «the fact that other nations should meanwhile have decided to construct pavilions of their own does not seem apt to motivate a change in the above decision, if for no other reason than that the short period of eight months still remaining would be insufficient to erect a building worthy of standing alongside the splendid Spanish palaces». Documentary Section, Files of the International Exposition, Institut Municipal d'Història, Barcelona, 1929.

7. «Official communication Ministry Foreign Affairs notifying German Government accepts with pleasure invitation Spanish Government to participate Barcelona Exposition, having appointed Dr Georg von Schnitzler general commissioner», May 29th, 1928. Text of the telegram preserved in the archives of the organizing Delegation of the International Exposition of 1929. In a telegram dated May 30th, it was announced that the architect Mies van der Rohe would arrive in Barcelona «next Friday» (June 7th). Documentary Section, Files of the International Exposition, Institut Municipal d'Història, Barcelona, 1929.

8. See W. Tegethoff, *op. cit.*, n.º 4, pp. 73-74 and notes 21, 23 and 25.

9. Walter Genzmer: «Der Deutsche Reichspavilion auf der Internationalen Ausstellung Barcelona», in *Die Baugilde*, n.º 1, 1929, pp. 1654-1657.

opening.⁷ The decision to give the architect Mies van der Rohe the responsibility for the setting up of the physical fabric of the German Exposition buildings was made at the same time as the appointment of Dr Georg von Schnitzler as general commissioner, and those of Drs Kraemer, Herle and Matthies as assistant commissioners. Germany's participation was by then firmly agreed but imprecise, and certainly far from definite as regards the construction of a separate national pavilion.

The brief given to Mies van der Rohe, who immediately set out for Barcelona, where he arrived on June 7th, to make personal contact with the Exposition authorities, had reference to the series of spaces on which the various pavilions were to be constructed.

It seems that the first idea was to erect, alongside the different exhibition stands, a «lighthouse-tower» which would act as a signal beacon giving visual representation to the German presence. On this first lightning visit, as also on the second, on September 19th, in the company of Lilly Reich and Dr Schnitzler and his wife, Mies van der Rohe was fundamentally concerned with the fitting out of the stands in the different pavilions, asking for the technical specifications of the available spaces and negotiating in Barcelona with the Exposition architects to obtain the most suitable locations in each of the pavilions for the display of German produce.

In a report dating from this time the German authorities continue to insist that they have no intention of constructing a separate national pavilion in addition to the various stands.

We have no precise information to enable us to give a definite date for the change in policy, but Tegethoff suggests in his book that immediately following Mies' return from this second visit to Barcelona his Berlin office began the period of intense activity that was to continue uninterrupted until the opening ceremony.⁸

The article published by Walter Genzmer in *Der Baugilde* in 1929, which is one of our most valuable sources of firsthand information, refers to the matter of a change of site for the pavilion, with the German authorities apparently now being interested in the possibility of its construction. A *Raumsraepresentation*, that is, a space freed of any practical use for exhibition and intended purely for official functions, was what Mies van der Rohe had to produce in the short time available from the end of September, 1928, to the date of the inauguration on the 26th of May of the following year.⁹

The Spanish authorities' response to the challenge of including separate national pavilions betrayed a tremendous poverty of architectonic ideas. Anyone unaware of the relationship between politics and architecture would be astonished to observe the attempts to introduce, without any kind of rational criterion, a considerable number of small buildings —the Italian, French, Danish,

Swedish, Yugoslav, Belgian and other pavilions— into a composition of such a markedly academic character, organized around a series of grand palaces, all designed by local architects. All of these pavilions were designed by architects from the respective countries, who set about the task with total disregard for the setting in which their work was to be constructed. The only one to dissociate himself from this poor, anomalous approach, perhaps best understood in terms of the conflicts surrounding the figure of Puig i Cadafalch after the Spanish coup d'état of 1923, was Mies van der Rohe.

Thus the architect commissioned by the German authorities to construct the fabric of their national presence made frequent trips to Barcelona; rejected the unthinkable site —dependent on the Pavilion of France, down at the bottom of the flight of steps leading up to the Palau Nacional— proffered by the Exposition's bureaucrats and proposed an alternative location in its stead. He contrived to move his pavilion from this excessively formalized, proportionally disadvantageous setting to win a place for the German Pavilion on the south rim of the Gran Plaza de la Fuente Mágica, the true heart of the exposition, behind eight tall sandstone Ionic columns erected by Puig i Cadafalch in 1923 to mark out the geometrical boundary of the great central area of the Exposition.

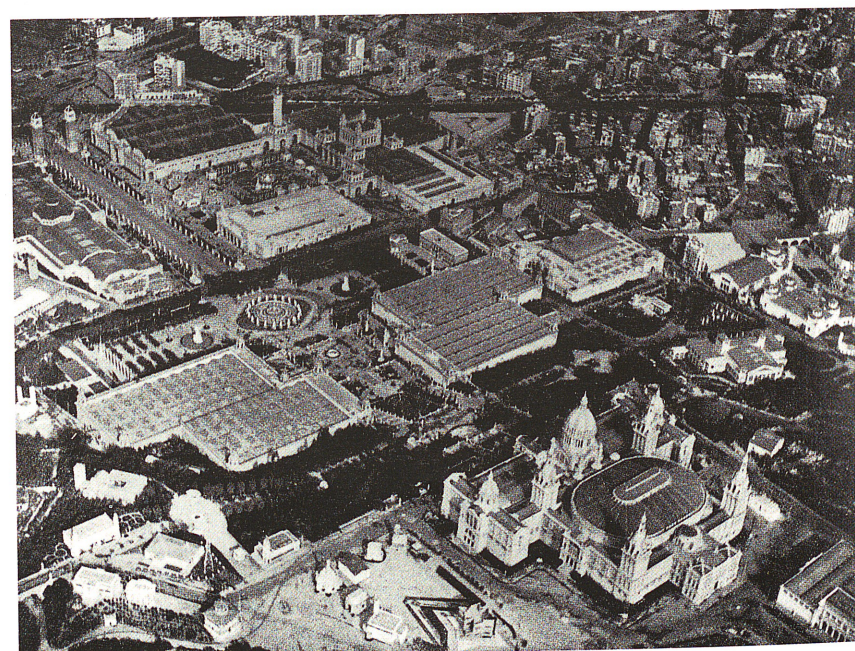


Fig. 3. Aerial view with the German Pavilion on the left.

The chosen plot consisted of an elongated rectangle with a pronounced slope to the south, formed by the side of the hill climbing up towards the popular amusements of the Pueblo Español. To the east, the gigantic blind wall of the Palau de Victòria Eugenia would provide that element of contrast celebrated by the more intelligent critics of the day when they came to compare the geometry, the colour, the texture and the language of Mies' building with the traditional aspect of the architecture of the palace constructed by Puig i Cadafalch in 1923.

The position of this plot was by no means neutral. Not only did it have the blind wall of the Palau de Victòria Eugenia and the Ionic columns marking the boundary of the Gran Plaza, but its sloping form included one of the areas of richest vegetation in the gardens of Montjuïc, as well as the pedestrian route defined by the steps which, prior to construction of the German Pavilion, had constituted one of the points of connection between the esplanade and the Pueblo Español.

Faced with the offer of the first, trivial site, Mies' response was to request an alternative location, apparently marginal, but rich in territorial possibilities which the future building was to make its own, interiorizing them in the organization of the Pavilion as one of the most effective means of allowing a small, conventional representative space to root itself in its setting and emphasize the territorial conditions in which it also shared.

3. The evolution of the project

One thing that has been a constant problem in recreating the scheme for the German Pavilion in Barcelona is precisely its nonexistence. With the knowledge we now have at our disposal, we can say that this lack of a project as such should not be thought of as meaning that the original documents have been lost, but rather that, in our opinion, the process of designing and building the Pavilion was subject to so much pressure, haste and last-minute change that it would be misleading to speak of any definitive state, whether

as a drawing on paper showing how the building was intended to be, or even for the finished building, in the sense of its definitive physical materialization. The provisional nature of the building, to which we shall return in due course, is revealed, we believe, more in the open, changing character of many of the solutions and details embodied in it than in its lack of durability or in the fragility of its construction processes. In our judgement, the only thing that we can undertake to do at this stage, on the basis of the abundant but widely dispersed existing documents, is to recreate something of the process by which the solution ultimately adopted and constructed was given a physical form and a precise definition.

Wolf Tegethoff has painstakingly compared the various different pieces of information which make it possible to accurately recompose the process by which the building was defined, from the framing of the first ideas late in 1928 to the point where Mies' design team moved to Barcelona at the end of February, 1929.

According to verbal testimony recorded by Sergius Ruegenberg¹⁰, the earliest work on the project was centred on a model assembled from movable pieces, used to experiment with the range of variable positions for the different planes of the elements of partition and closure. For some of these positions tested on the model, Mies himself had already determined the most interesting solutions by means of perspective sketches which revealed repeated effects of transparency or interrelation.¹¹ The presence of vertical planes sliding between the flat surface of the Pavilion's roof and the cubic mass of the podium is evident from the start, as is the cutting effect produced by the main flight of steps, positioned from the very outset perpendicular to the main access of the Plaza. Initially this stairway seems to have been conceived as excavated, carved out of the mass of the podium, and only later more clearly defined as a point of articulation of two parallel sliding planes which were to constitute the side of the podium facing towards the Gran Plaza de la Fuente Mágica.

10. See W. Tegethoff, *op. cit.*, p. 75.

11. The majority of these perspectives, along with others drawn by Dr Ruegenberg, are now to be found in the Kunstbibliothek of the Staatliche Museen of the Preussischer Kulturbesitz.

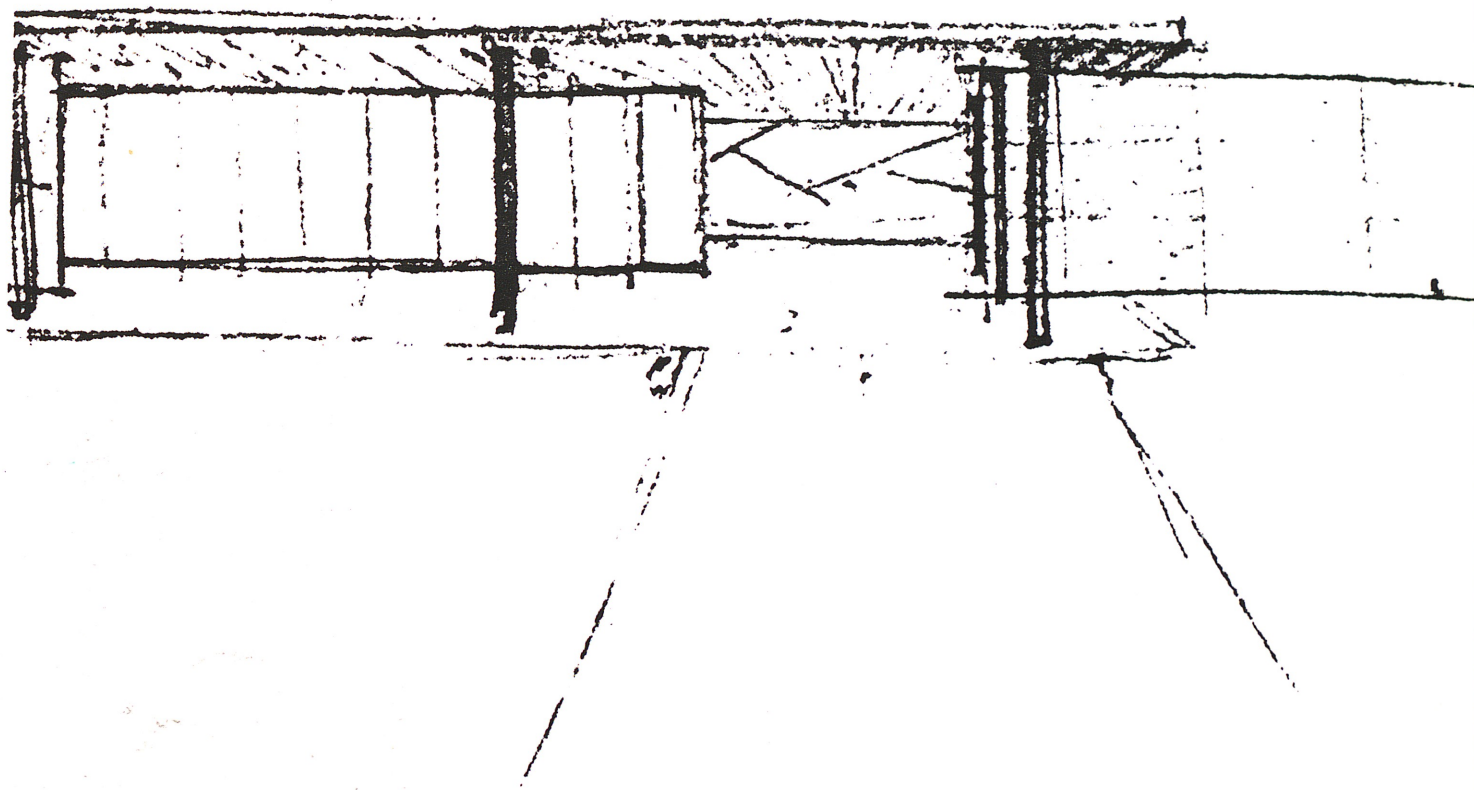


Fig. 4. Preliminary sketch (pencil on paper).

Figs. 5 and 6. Preliminary sketch (pencil on paper).

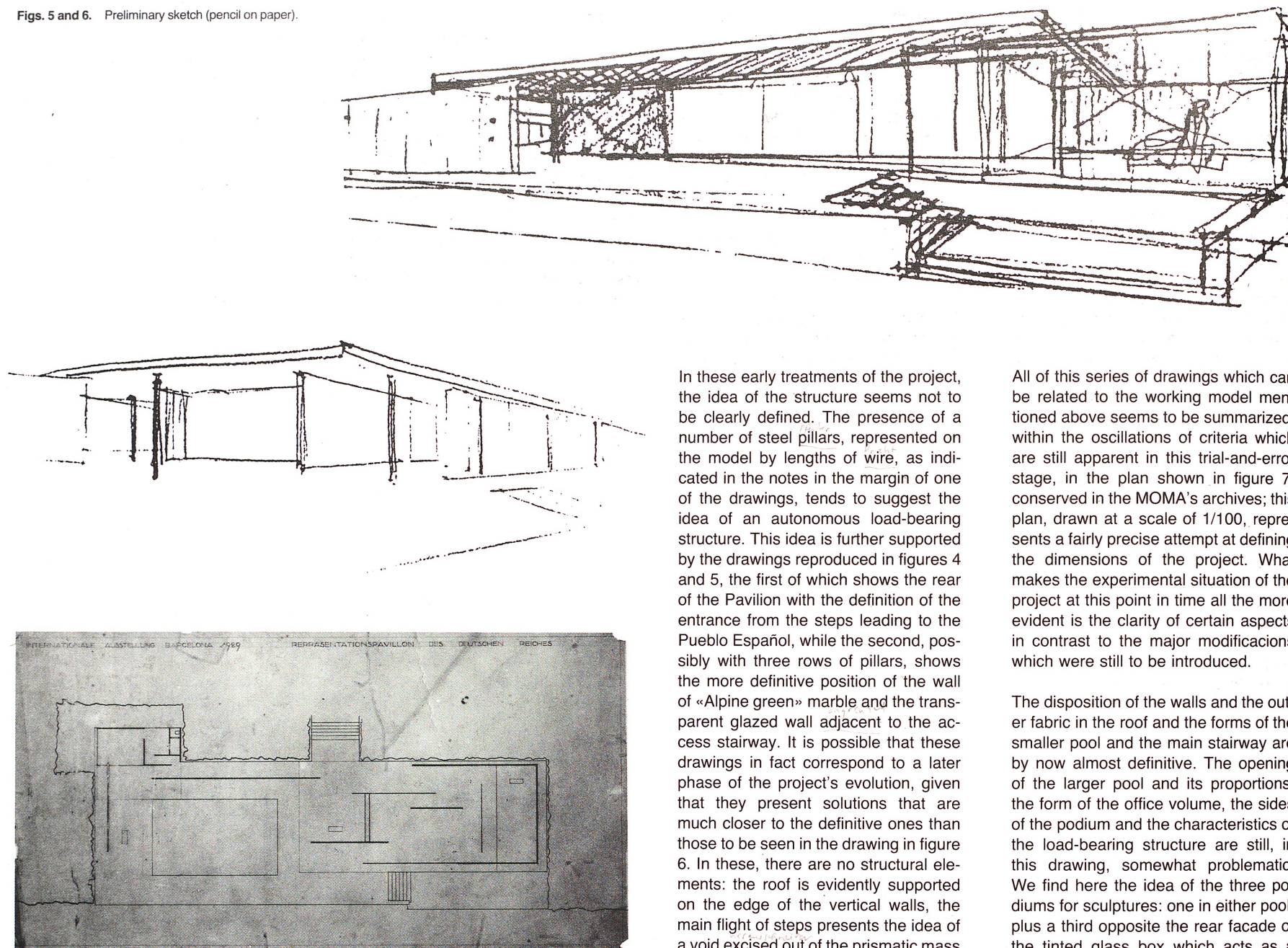


Fig. 7. First preliminary drawing (1928) (pencil on transparent paper).

In these early treatments of the project, the idea of the structure seems not to be clearly defined. The presence of a number of steel pillars, represented on the model by lengths of wire, as indicated in the notes in the margin of one of the drawings, tends to suggest the idea of an autonomous load-bearing structure. This idea is further supported by the drawings reproduced in figures 4 and 5, the first of which shows the rear of the Pavilion with the definition of the entrance from the steps leading to the Pueblo Español, while the second, possibly with three rows of pillars, shows the more definitive position of the wall of «Alpine green» marble and the transparent glazed wall adjacent to the access stairway. It is possible that these drawings in fact correspond to a later phase of the project's evolution, given that they present solutions that are much closer to the definitive ones than those to be seen in the drawing in figure 6. In these, there are no structural elements: the roof is evidently supported on the edge of the vertical walls, the main flight of steps presents the idea of a void excised out of the prismatic mass of the podium, while of the two areas with ornamental pools, one appears to be visually open to the stairway space, with the other, by contrast, closed off by a travertine wall of vertically arranged slabs that is still far removed from the definitive solution.

All of this series of drawings which can be related to the working model mentioned above seems to be summarized, within the oscillations of criteria which are still apparent in this trial-and-error stage, in the plan shown in figure 7, conserved in the MOMA's archives; this plan, drawn at a scale of 1/100, represents a fairly precise attempt at defining the dimensions of the project. What makes the experimental situation of the project at this point in time all the more evident is the clarity of certain aspects in contrast to the major modifications which were still to be introduced.

The disposition of the walls and the outer fabric in the roof and the forms of the smaller pool and the main stairway are by now almost definitive. The opening of the larger pool and its proportions, the form of the office volume, the sides of the podium and the characteristics of the load-bearing structure are still, in this drawing, somewhat problematic. We find here the idea of the three podiums for sculptures: one in either pool, plus a third opposite the rear facade of the tinted glass box which acts as a light well serving the interior of the Pavilion. The carpentry detailing is a long way here from its final form, and the building's relationship with its surroundings is not that finally arrived at.

In the correspondence on file in the MOMA archives there are numerous references to the changes which had to be made in the exact siting of the building in relation to the Palau de Victòria Eugenia, to the existing flight of steps leading up to the Pueblo Español and to the parallel street which passed in front of the Pavilion between the travertine wall and the row of Ionic columns, mentioned above, enclosing the area of the Gran Plaza.¹²

When, some time in February 1929, work on the project was suspended for several weeks for economic reasons¹³, it seems that the exorbitant rise in costs was due, amongst other causes, to the unforeseen uprooting and resurfacing of the road attendant on the definitive decision as to the exact site of the building. Moving it closer to the Palau de Victòria Eugenia, as well as towards the centre of the Gran Plaza, evidently in the interests of the scheme, added to the cost of the work and modified the character of the side facades and the rear of the building, as can be seen in the subsequent drawings.

A second study in the elaboration of the plan is conserved in the Mies van der Rohe Archive, reproduced here in figure 8. In this plan, the general dimensions of the building have changed, having been appreciably reduced to their definitive values. At the same time, this plan presents the broken treatment of the podium which Mies was to retain from this moment on, as it appeared in the built work. The earlier conception of the podium as an autonomous platform raised off the floor has given way to a prismatic element, its composition fractured by the opening of the main stairway and sharply interrupted as it turns on the two side facades, forming a cut-away figure which gives way to the smooth, flush-set surface of the enclosing walls which emerge directly from the floor. The podium does not return at the rear, so that the horizontal plane of the floor of the Pavilion tends to favour a gentle encounter with the ascending slope of the hillside, going on to find the level of the existing flight of steps in the Montjuïc gardens.

Alongside this definition of the fragmentary character of the podium, we find on this ground plan the independent load-bearing structure, which at this stage of its evolution consists of six cruciform pillars supporting the greater part of the roof surface, while perhaps leaving the side walls with the task of supporting the area closest to the small pool. It is only in a more advanced study (fig. 9) that we are introduced to the definitive structure of eight pillars as it was actually constructed, within a few months of the drawing of this plan.

The plan we are concerned with here still features the three bases for statues, executed just as they were sketched in on some of the drawings now held in Berlin. The layout of the office building is different from what we saw in the previous plan, and we should note here that in later detail drawings which can be seen in New York there are a number of variants which help us to understand the continual changes to which the treatment of this part of the Pavilion was subjected; an aspect which, in our view, even in the completed version fails to present a solution that can plausibly be considered as definitive. At all events, the programme for the annexe building of two offices plus a toilet is one of the scheme's most variable elements, evolving from a more open treatment to the final version, enclosed, with high windows, as con-

structed. Of the series of details relating to this part of the building we have a set of three schematic elevations (fig. 12) which show us how the flexibility in the handing of these spaces was conceived without the limitations imposed by the excavation of the site out of the hillside, on the basis of an imaginary flat surface open on three sides. When, with construction about to commence, the limitations of the topography became apparent, the solution adopted was to make do with a greater spatial simplicity and a drastic reduction in the number of openings.

12. The minutes of the meeting addressing problems of increased construction costs and relating these changes in detail, dated July 8th, 1929, are in the Mies van der Rohe Archive, MOMA.

13. Regarding the interruption of the building work, Tegethoff provides a fundamental document taken from the minutes of the Werkbund meeting, at which Mies himself, then vice-president, reported on the state of the project under construction. There are also a number of letters in the MOMA files which record this unforeseen change of attitude by the authorities which halted progress during several weeks. See W. Tegethoff, *op. cit.*, p. 74, and notes 24-25.

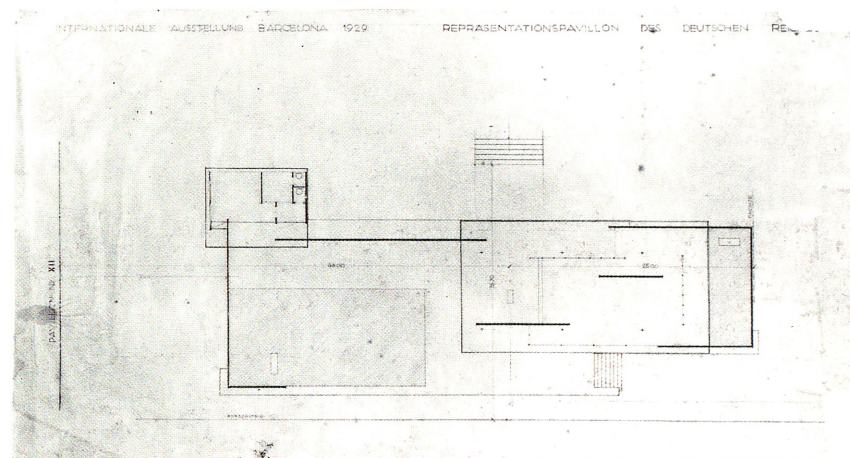


Fig. 8. Second preliminary drawing (1928) (pencil and coloured pencil on transparent paper).

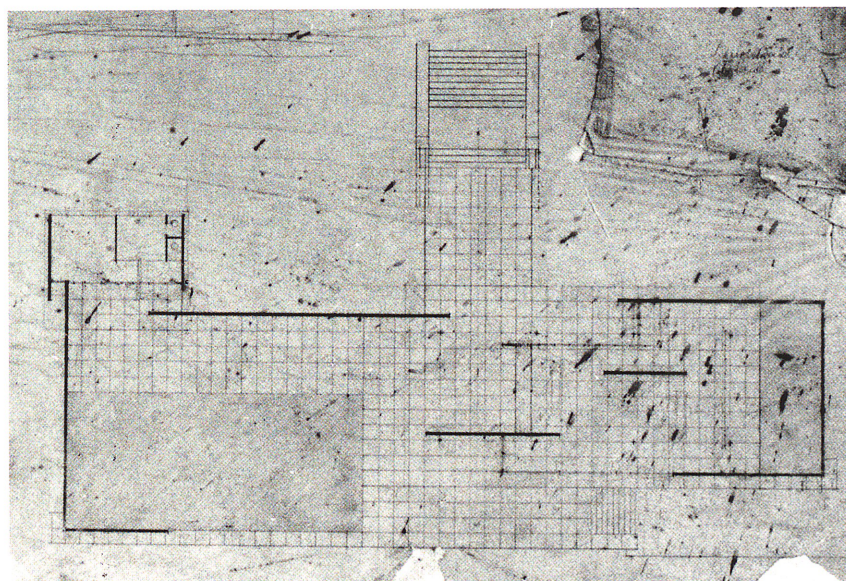


Fig. 9. Definitive plan.

14. See I. de Solà-Morales, *op. cit.*, note 5, pp. 41 ff.

15. We would like to note here the numerous laudatory texts which appeared at the time of the Exposition and run counter to the opinion expressed by Juan Pablo Bonta that Mies van der Rohe's Pavilion initially provoked no interest. See J. P. Bonta: *Anatomía de la interpretación en arquitectura. Reseña semiótica de la crítica del Pabellón de Barcelona de Mies van der Rohe*, Barcelona, 1975. It is enough to refer to the Diario Oficial of the International Exposition, in which more than twenty different articles voiced favourable, positive opinions regarding the German Pavilion. See, too, the article by Marius Gifreda in *D'Ací i d'Allà*, for December 1929: «L'arquitectura de l'Exposició», pp. 89-93, and the views reflected in local newspapers such as *La Vanguardia*, *La Noche*, *La Publicitat*, *La Veu de Catalunya*, *El Noticiero Universal*, *La Nau*, *Las Noticias* and others.

In this plan, as in the previous one, there is still no sign of the bench of travertine stone in front of the wall of the same material. We do not know precisely when Mies decided to include this highly characteristic element, but it is clear that this must have occurred at an advanced stage of the scheme's definition. The MOMA archives have a working drawing (fig. 10) of the stone bench. Perhaps its most noteworthy feature is the extreme simplicity of its construction, the supports palpably cubic—although the dimensions of the three sides are not exactly equal—and the thick slab of the seat cut in such a way that it coincides neither with the sequence of the paving nor with that of the wall behind it: the absolute limits of this element are sufficiently autonomous to

detach it from both the start of the wall which serves it as backrest and the end of the pool which seems to mark its position (fig. 13).

In this bench we find confirmation of the freedom with which each material and each element establishes its own dimensionality, entirely avoiding any attempt at imposing a rigid, universal dimensional law to unify all the parts of the building by referring them to a single uniform module.

We can still discern in the plan we are considering here a different layout in the relationship between the existing flight of steps to the rear and the Pavilion's rear «entrance» or «exit».

On the one hand, we know that this stairway existed and formed part of a footpath that led up from the Plaza de la Fuente Mágica to the Pueblo Español; its construction most probably dates from the time when Rubió i Tudurí and Forestier were commissioned to landscape the part of Montjuïc above what was then the «Gran Vía K»—now the *Avinguda de Rius i Taulet*—some time around 1916.¹⁴ On the other hand, we can see how the various different drawings of the general plan, and the perspective sketches, show that the position of this flight of steps remains practically constant: always centred in relation to the rear access and occupying a frontal position. Nevertheless, we know that the dimensions of the building changed, becoming smaller, and that it shifted its position relative to the blind wall of the *Palau de Victòria Eugènia*. From this we can deduce that, throughout the project, the position of this stairway must have been taken as a fixed and immovable reference point, determining not only the exact siting of the building but even its dimensions.

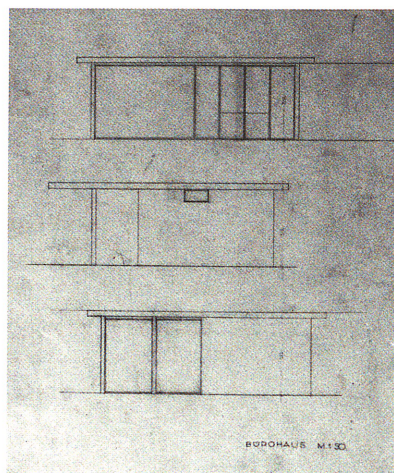


Fig. 12. Elevations of the annexes.

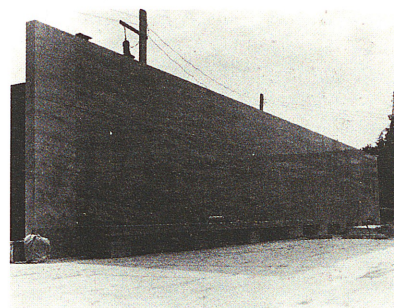
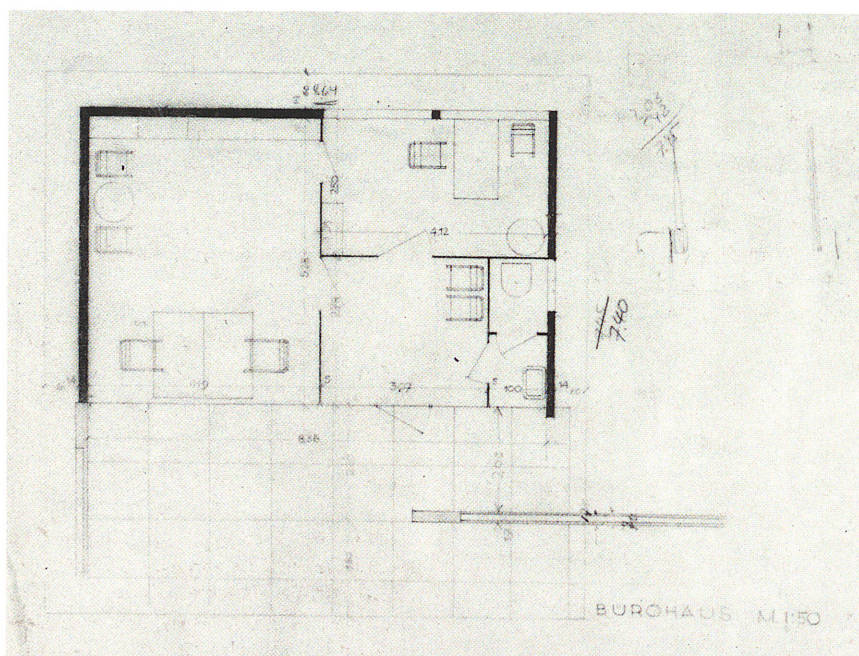


Fig. 13. The travertine bench and wall during construction.

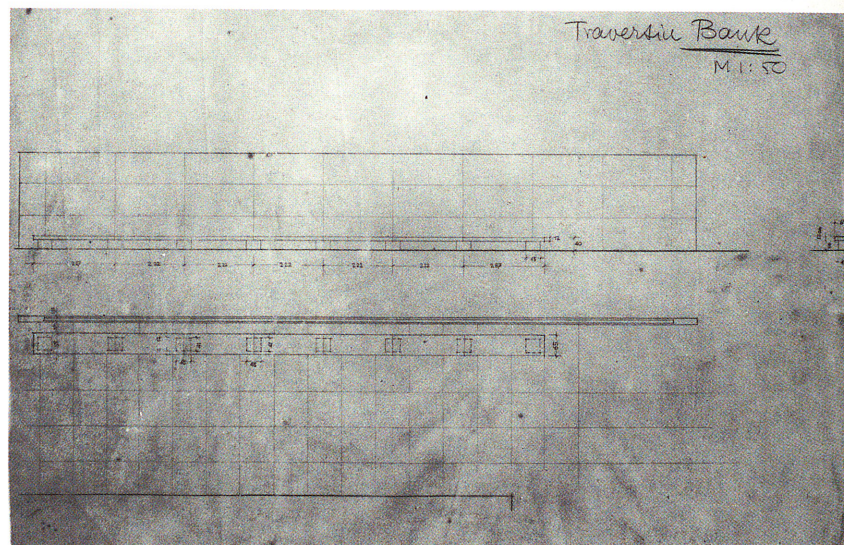


Fig. 10. Detail of the travertine bench.

Fig. 11. Plan of the annexes.

The design solution adopted to produce the connection between the building and this stairway also varies through time, appearing as an extension of the stone paving of the podium, or, as it was finally fixed, by means of a rectangle of flattened sand at a level somewhat lower than that of the building's platform. The variations in this solution to be seen in the different ground plans, even in those drawn after the building's construction, demonstrate the conceptual difficulty of resolving the connection between a rectangular podium that gave the impression of being cut off at the sides but which, at precisely that point, was extended out to seek connection once again with an external element such as the existing flight of steps.

4. Materials and construction

It has been repeated *ad nauseam* that one of the reasons for the impact produced by the German Pavilion was the modernity of its materials. However, this widely accepted assertion needs more careful consideration, since it is by no means obvious that a building constructed basically of stone must, by virtue of its materials, be a modern, innovative construction. The journalists of the time spoke of the reflections, the highlights, the perfection and the advanced technology demonstrated by the materials of the German Pavilion.¹⁵ In fact, we can now see that Mies van der Rohe's originality lay not so much in the radical newness of the materials on view, but in managing to make these express an ideal of modernity through the vigour of their geometry, the exactness of their cutting and shaping and the clarity of their assembly.

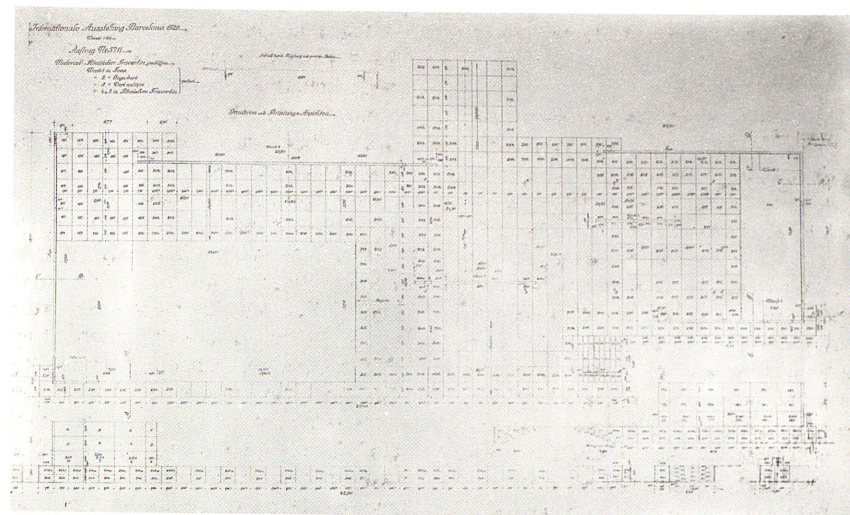
Even in the earliest drawings it seems that Mies van der Rohe had little doubt about the presence of water, glass and marble as the basic surfaces that would give the building its character. The ar-

ticle by Genzmer referred to above¹⁶ gives the most precise and detailed information about the materials used. We can affirm that the building's base and its principal defining walls (fig. 14) are executed in slabs of Roman travertine provided by the Berlin company of Köstner und Gottschalk. Not only a beautiful working drawing bearing the name of the firm, but the advertisements placed in the International Exposition press attest to the fact that they supplied the stone for construction.

The paving was laid in square slabs measuring approximately 1.10×1.10 m, although the actual plan as it has come down to us reveals the extent to which the dimensions of this basic module were subject to multiple corrections which made it necessary to move the joints of the stone slabs a few millimetres in one direction or another to fit them to the previously determined position of the vertical walls and the pillars. Some people have concluded from this plan that in effect Mies gave himself free rein in modifying a grid that was never rigorously adopted.¹⁷ We believe this not to have been the case, and impossible to deduce from a detailed scrutiny of the minute differences introduced more as fine adjustments than from any deliberate desire for variation on a hypothetical module.¹⁸ In any case, it is just as true to affirm that for Mies in the Barcelona Pavilion there was, as we have said, no single module, and in fact there was a separate modular network for each of the materials used.

The travertine of the vertical walls had a double dimension of roughly 2.20×1.10 m, the walls being based on a double slab 3 cm thick with a load-bearing metal structure in its interior.

This was also the system used for the walls of green marble, of which there were two types in the Pavilion: one known in the twenties as green Tinos marble, obtained from quarries on the Greek mainland, and the green Alpine marble, supplied for the most part by the great stone quarries of the Valle d'Aosta. We should note that in the legend supplied by Genzmer to the plan published with his article on the building



of the Pavilion, extensively reproduced up until the sixties, the identification is incorrect.¹⁹ The long, three-segmented wall which encloses the outer part of the small pool was of green Alpine marble, while the free wall by the main access steps at the entrance to the interior of the Pavilion was of the green marble from Tinos, not the other way round as is marked in the above-mentioned plan and numerous subsequent texts.

However, of the different types of stone used, the most famous is undoubtedly the *onyx doré* which Mies purchased from a Hamburg marble merchant, and from which he fashioned the free-standing central wall of the Pavilion's roofed space. Quarried, beyond all doubt, somewhere in North Africa, in Morocco, according to some authorities, or in what is now Algeria, as we believe²⁰, the enormous block of stone which Mies had personally set aside for the decoration of a transatlantic liner allowed him, remarkably, to design the central wall on the basis of four pieces for each face, plus a further four solid pieces forming the walls, in line with the technique adopted for all vertical stone surfaces.

Fig. 14. Plan and elevations of the pavings and claddings supplied by Köstner und Gottschalk (1929).

16. W. Genzmer, *op. cit.*, note 9.

17. See Pere-Joan Ravetlat: «Primer van ser les parets...», in *Quaderns d'Arquitectura i Urbanisme*, n.º 163, Barcelona, 1985.

18. From a different point of view, a more critical approach to the discussion of problems of scale in Mies van der Rohe's work is offered by Tegethoff in the essay on Mies referred to above.

19. W. Genzmer, *op. cit.*, note 9.

20. The reconstruction work took us to all the onyx quarries we could find, from Egypt to Morocco, and led us to the conclusion that the onyx used by Mies must have come, virtually beyond all doubt, from one of the quarries in the Oran region of Algeria.