

Arquitectura

The life of the line

A sketch by Paulo Mendes da Rocha for the Museu de Arte Contemporânea da Universidade de São Paulo

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Invitado internacional

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Arquitectura
Ensayo

Resumen

En oposición a la tendencia de considerar el dibujo arquitectónico como una simple fuente de información sobre el proyecto, o limitarse a contemplar su eventual belleza, este ensayo pretende analizar el boceto en su especificidad. Para hacer este tipo de experimento, el texto utiliza uno de los muchos bocetos realizados por Paulo Mendes da Rocha durante la preparación del proyecto para el Museo de Arte Contemporáneo de la Universidad de Sao Paulo (1974-1975). El objetivo no es aislar artificialmente un dibujo entre los muchos otros, dando al boceto una autonomía que no le es propia, sino adoptar un nuevo punto de vista, a través del análisis de un diseño, dentro del universo específico del arquitecto brasileño.

Palabras clave: arquitectura moderna; proceso proyectual; representación gráfica.

Abstract

Against the tendency to consider the drawing in architecture as a simple source of information about the project, or simply to contemplate its potential beauty, this essay aims to analyse one in its specificity. To carry out this experiment, the text uses one of the many sketches made by Paulo Mendes da Rocha during the preparation of the project for the Museum of Contemporary Art of the University of São Paulo (1974-1975). The aim is not to artificially isolate one drawing among the many, giving it an autonomy that it does not possess, but to adopt a new point of view on the universe of the Brazilian architect.

Keywords: modern architecture; design process; graphic representation.

The life of the line

A sketch by Paulo Mendes da Rocha for the Museu de Arte Contemporânea da Universidade de São Paulo¹

Daniele Pisani

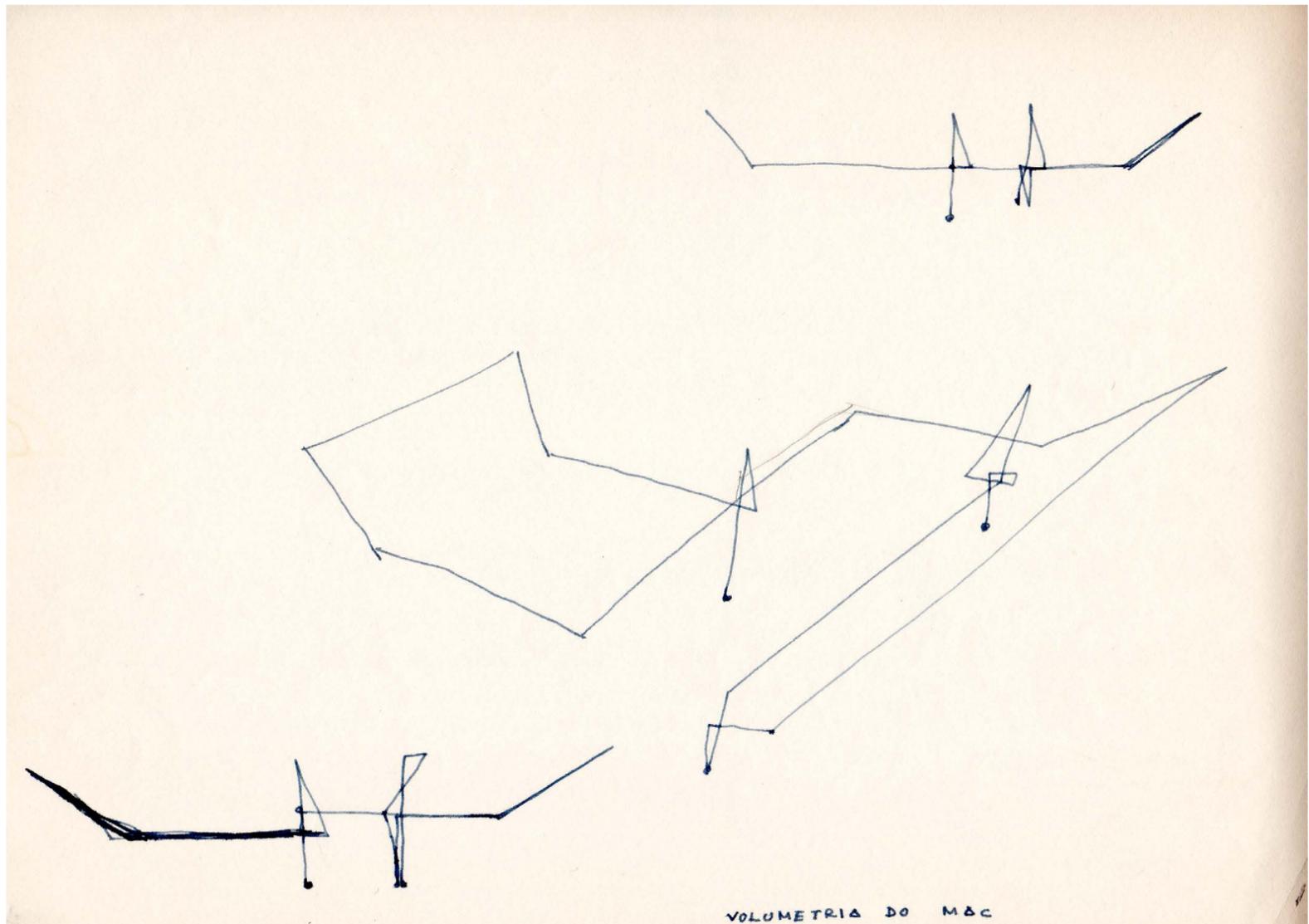


Figura 1.

Few projects by Paulo Mendes da Rocha are as well documented as the one for the Museu de Arte Contemporânea da Universidade de São Paulo (MAC-USP) of 1974-1975. There are in his studio several versions of the project (fig. 2), technical drawings by the engineering firm engaged for the quantification (fig. 3), reports by draughtsmen and structural engineers; until last year it also held a model recently donated to MoMA (fig. 4). But if the project for the MAC-USP, which eventually remained on paper despite a start being made on the foundations, stands out in terms of documentation, it is because of the large number of sketches. This fact is unusual: Mendes da Rocha is not among those architects who preserve every trace of the design process; on the contrary, he tends to eliminate the intermediate steps leading to the final draught.

¹ I owe particular thanks to Adriano Aymonino, with whom I have discussed many of the issues I examine in this paper.

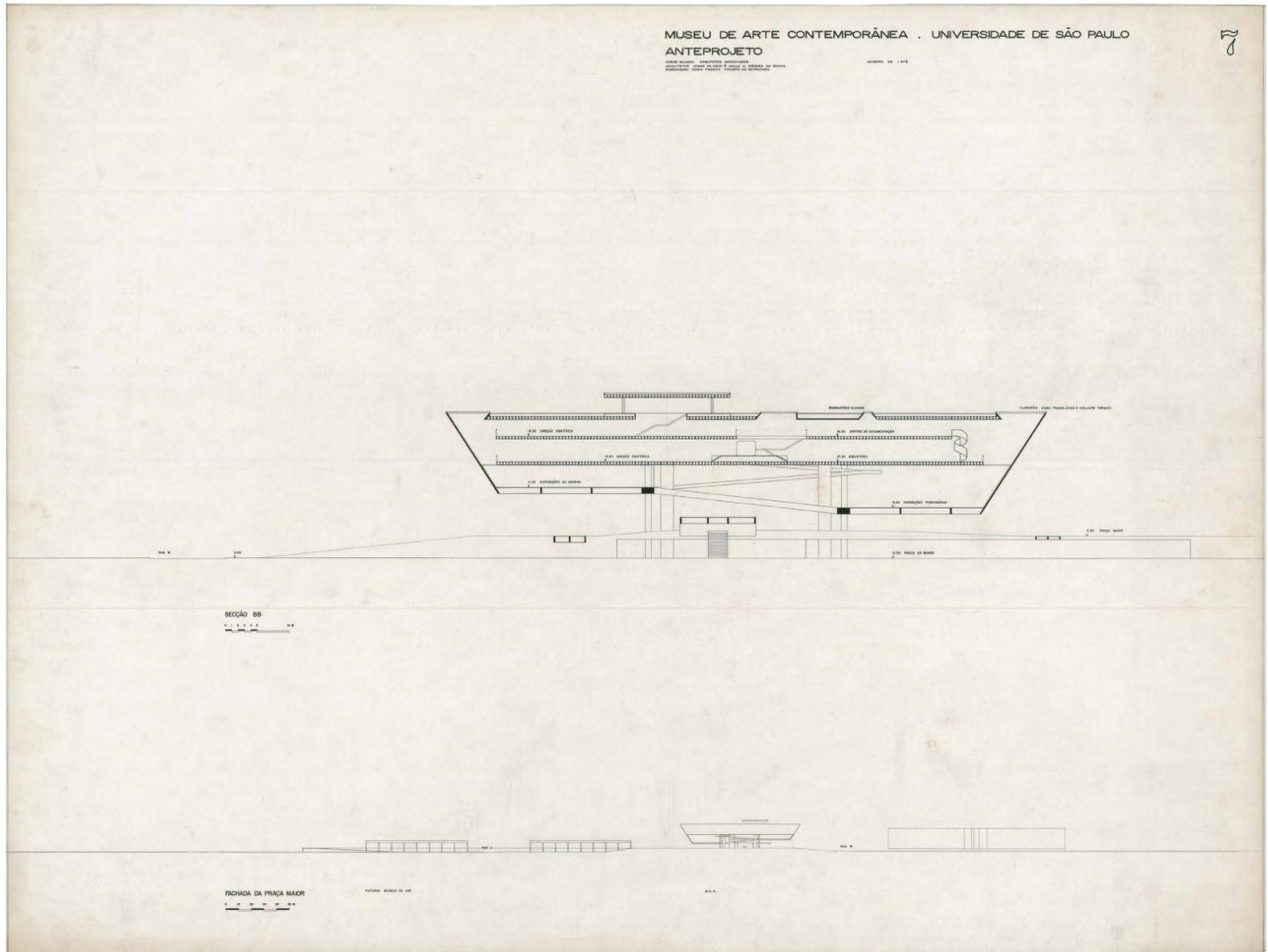


Figura 2.

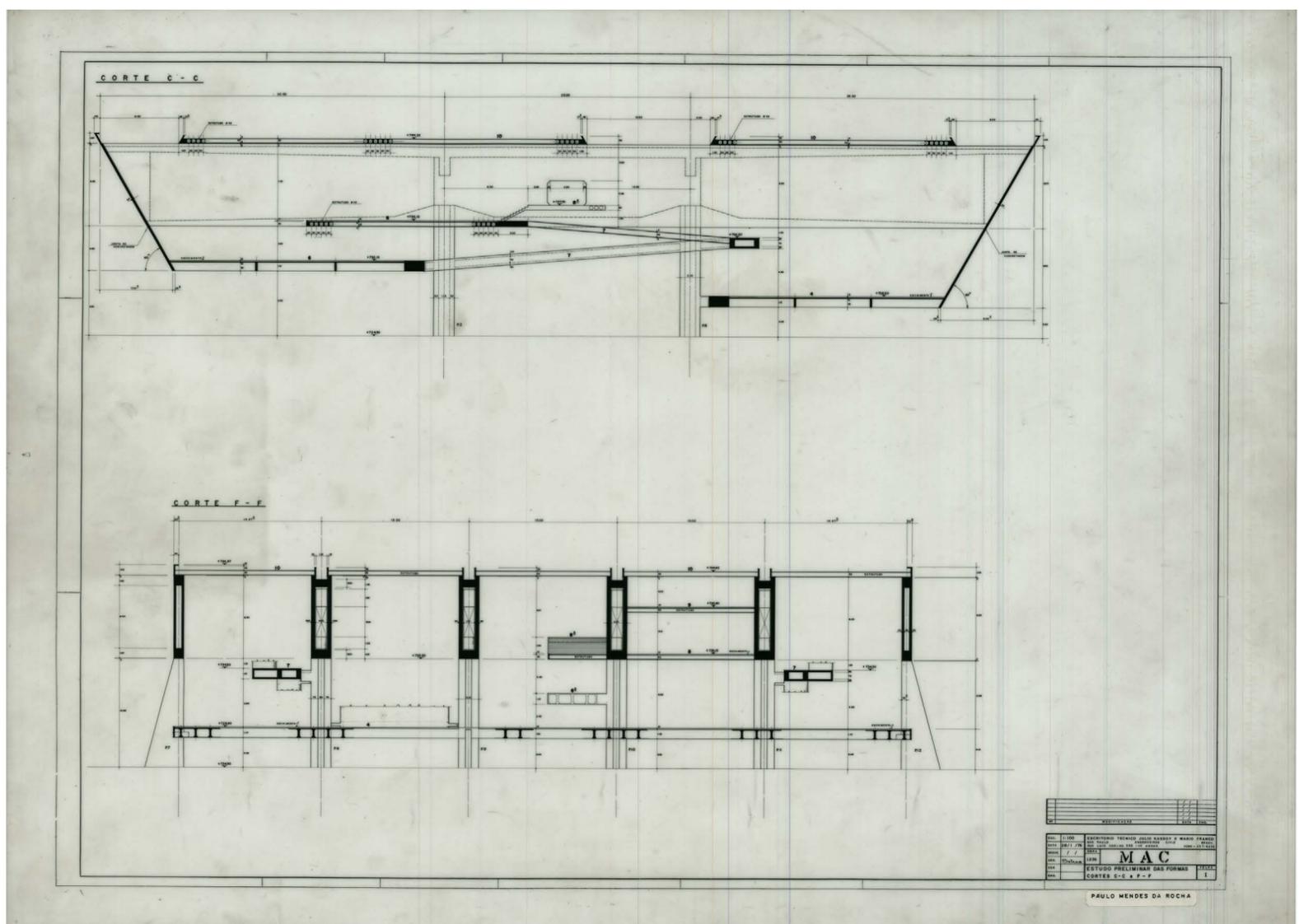


Figura 3.

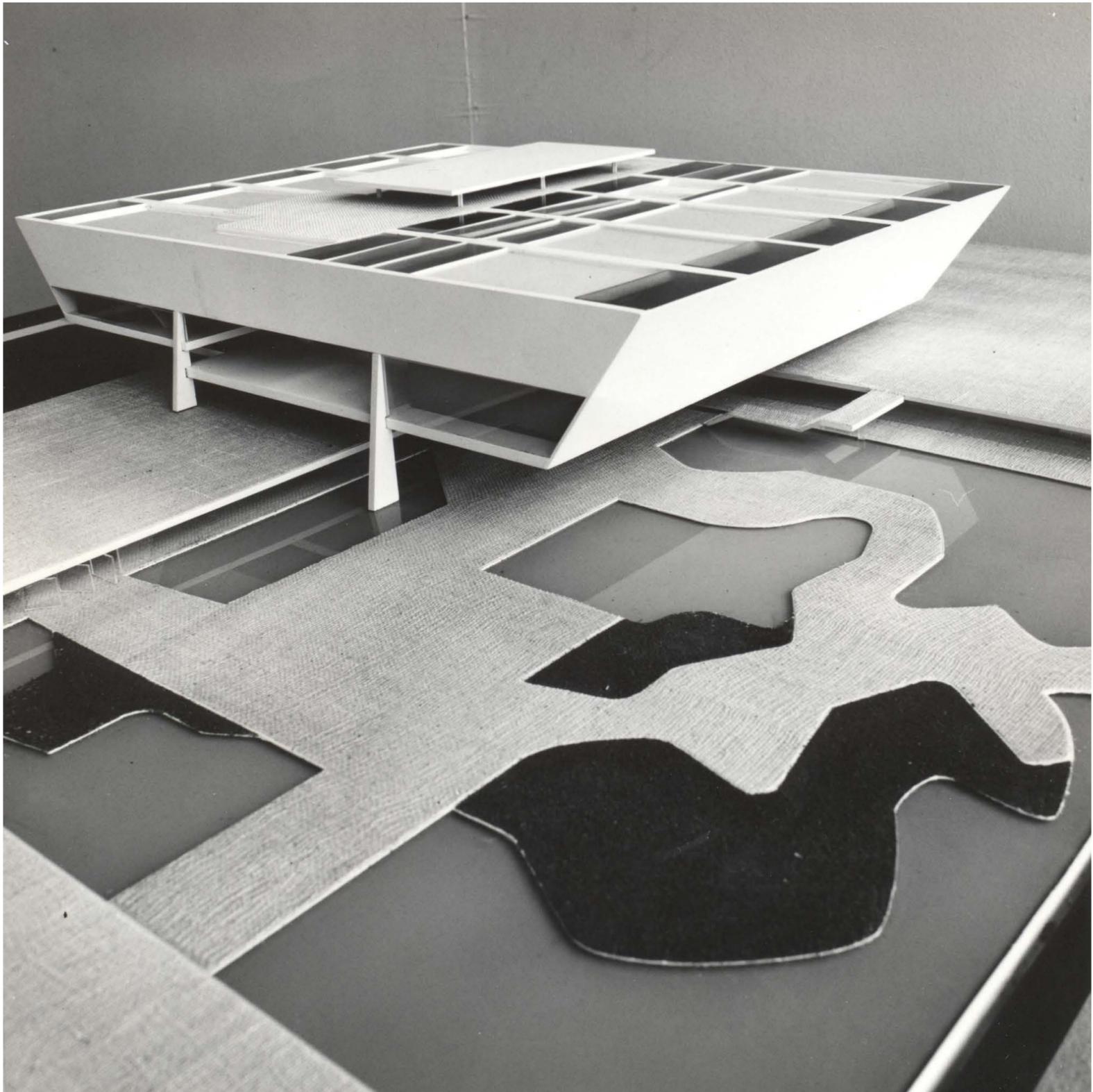


Figura 4.

The project for the MAC-USP is an exception. It is hard to say why for sure. For when an architect unaffected by fetishistic love for his own scribbles chooses to retain sketches relating to a project, it is impossible to say just how much this is due to chance. What their existence clarifies is the authorship of the project. The formal indication on the sheets is “Jorge Wilhelm arquitetos associados”, followed by the words “Arquitetos Jorge Wilhelm e Paulo A. Mendes da Rocha” or “Jorge Wilhelm/A. Paulo Mendes da Rocha/Leo Tomchinsky”. Everything, however, confirms that the project is only *pro forma* by Wilhelm: to the extent that the concept of museum implicit in the project and the shaping given to it reveal the unmistakable hand of Mendes da Rocha².

² See. D. Pisani, *Paulo Mendes da Rocha. Complete Works*, New York, 2015 (or Milano, 2013, and Barcelona, 2013), p. 76-81; id., “O museu na obra de Paulo Mendes da Rocha”, *Projeto Design*, 395, 2013, p. 90-97.

Were this still not enough to understand how things actually went, one can check the evidence against the historical facts. The project dates back to the mid-seventies. At that time Wilhelm was a central figure on the São Paulo cultural and political scene (from 1975 to 1979 he was *Secretário estadual de Economia e Planejamento*: National Secretary for the Economy and Planning); Mendes da Rocha was instead dismissed from the university and his possibilities of practising the profession were limited by the military junta³. The project for the MAC-USP had been assigned to Wilhelm, but rather than an architect, he was an urban planner and politician, and was hence not up to working out a project of that complexity and importance: the museum was in fact meant to house a rich collection of modern and contemporary art. And it is precisely for that reason that in spite of everything he was forced to put forward the name of Mendes da Rocha. The project was entirely developed in the latter's studio. The only contribution from Wilhelm was the secondment of one of his own colleagues, Tomchinsky; he then limited himself to inspecting the project when completed⁴. That is why *all* the sketches are by Mendes da Rocha and are to be found in his studio.

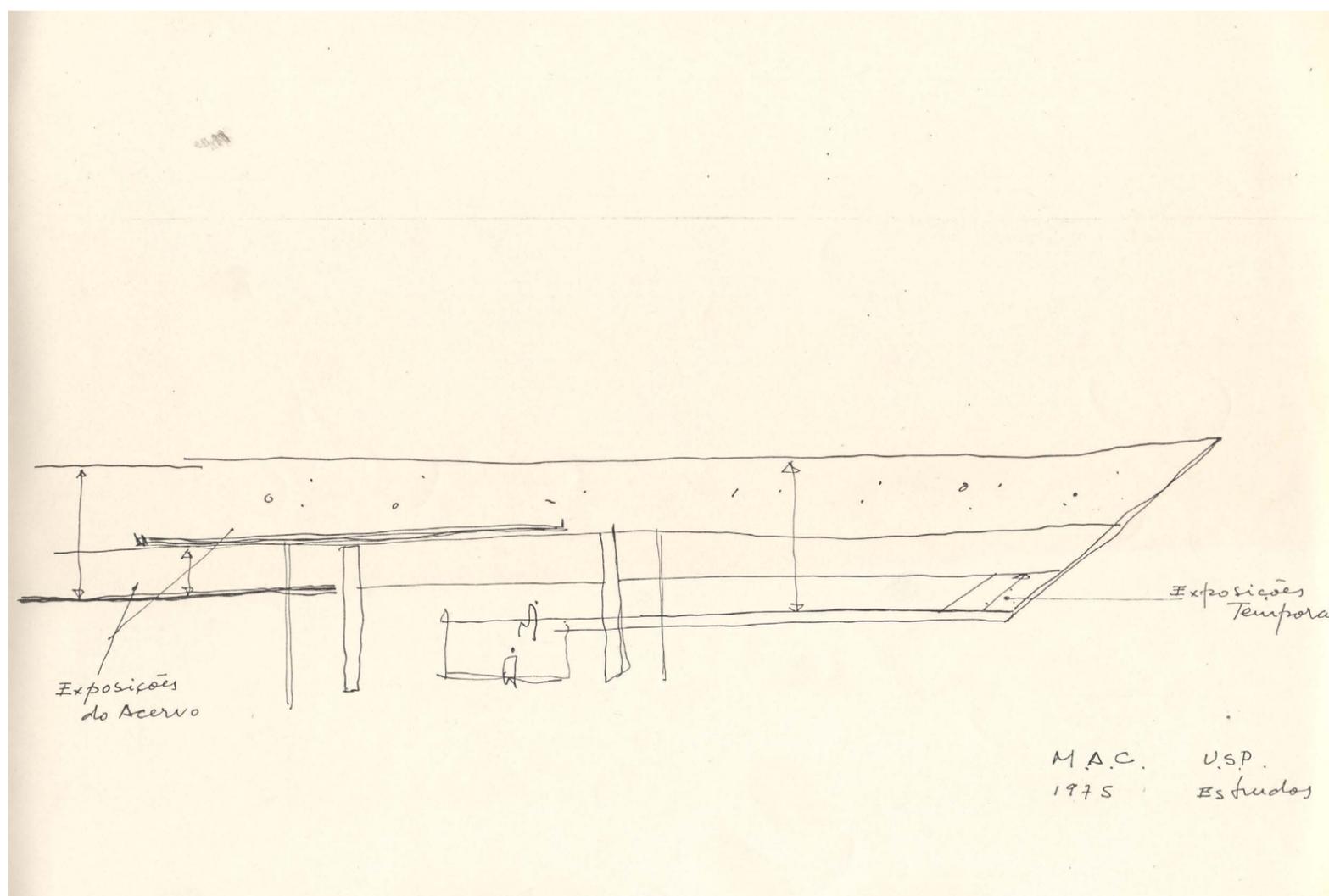


Figura 5.

³ See Pisani, *Paulo Mendes da Rocha. Complete Works*, p. 167-213.

⁴ Mistaken attempts are made to attribute the project to Wilhelm not only in books such as *A obra pública de Jorge Wilhelm*, but also in the thesis of Renato de Andrade Neto de Maia on projects for the MAC-USP (cf. J. Wilhelm and M. Castells, *The public work of Jorge Wilhelm: 50 years contributing to cities and urbanlife*, São Paulo 2003; R. de Andrade de Maia Neto, *Arquiteturas para o Museu de Arte Contemporânea da USP*, PhD thesis, FAU-USP, São Paulo 2004). In addition to the design and documentation available, clear testimony for Mendes da Rocha also comes from himself (I interviewed him on the subject on January 1st, 2009 and January 23, 2015) and from Maria Helena Flynn, who as a member of the Mendes's studio took part in working out the project (I interviewed her on 23 January 2015).

There are eighteen sketches of the MAC-USP. Only one of them is dated, to 1975 (fig. 5). All are drawn on A4 or slightly larger sheets (except one, on a A3 sheet folded in two). The sketches are always disposed horizontally on the sheet. They are almost all drawn in black ink, except for some in pencil. In general, it seems that rapid, initial sketches of section projections are drawn in pencil, and their more controlled and precise versions in ink belong to a more advanced stage of the design process. In some sections projections in ink, the latest therefore among those drawn, various pencil marks are still visible after some erasure. This suggest that while with other forms of representation, such as perspective projections, Mendes da Rocha aims to give an idea of the imagined space, and thus allows himself a certain margin of error, with the inked section views he is instead engaged in an effort to define and check the functionality of the building both from a formal point of view and in terms of distribution and structure; and in that there can be no room for approximation, since what is at stake is effective control of the project through the medium of drawing. Hence the strategy, at least in some decisive stages of the design process, of “constructing” the *design* in pencil and then going over it again in ink.

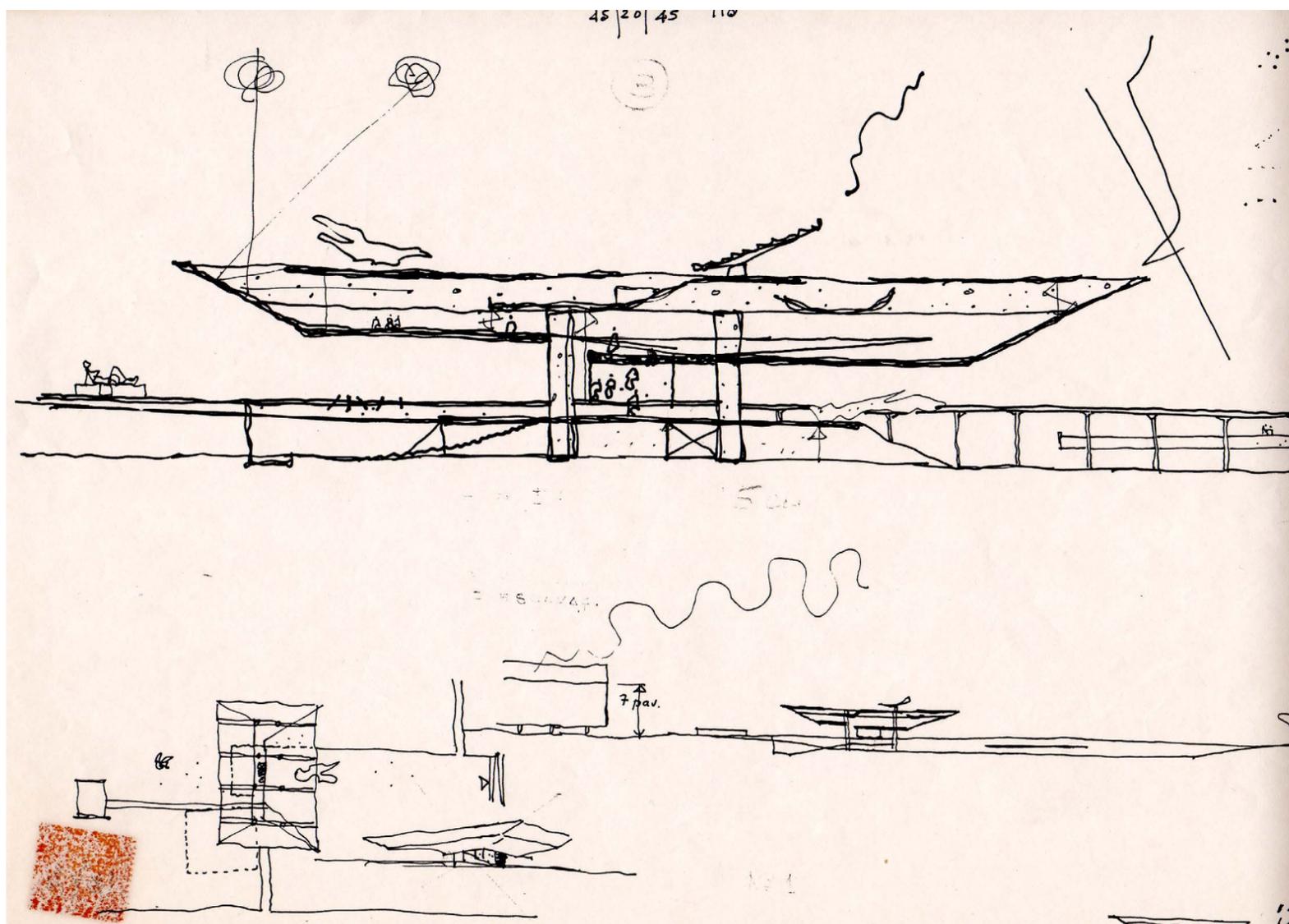


Figura 6.

Most of the drawings are sections projections (twelve). In some cases, the section is flanked by other views; in one case – it is one of the ink drawings on which pencil marks can still be seen – there are some much smaller section sketches (but on a different scale), in plan and in perspective, for checking the relationship established by the project with the urban surroundings (the university campus) (fig. 6). This is one of the few plans that appear in the entire series of sketches, along with two sheets of overall plans. Then there are three perspective views, drawn with great economy of means, without the slightest pretence of offering a “realistic” rendering. On the contrary, expression is given to one of the main themes of Mendes da Rocha’s work, the idea that architecture is a vector for the reconfiguration of landscape, starting from the terrain and from the ground (figs. 7-8). Not surprisingly, in these rapid pen sketches the skyline as an external and “objective” reference point of the project disappears. The human figures located below the built mass move on inclined planes, natural or artificial it is difficult to decide. The fact is that they are, as it were, compressed between two different forms of human artefact: the uneven ground turned into a walkway beneath their feet and the reinforced concrete structures above them, both the one and the other depicted in the same abstract terms, only in their outlines.

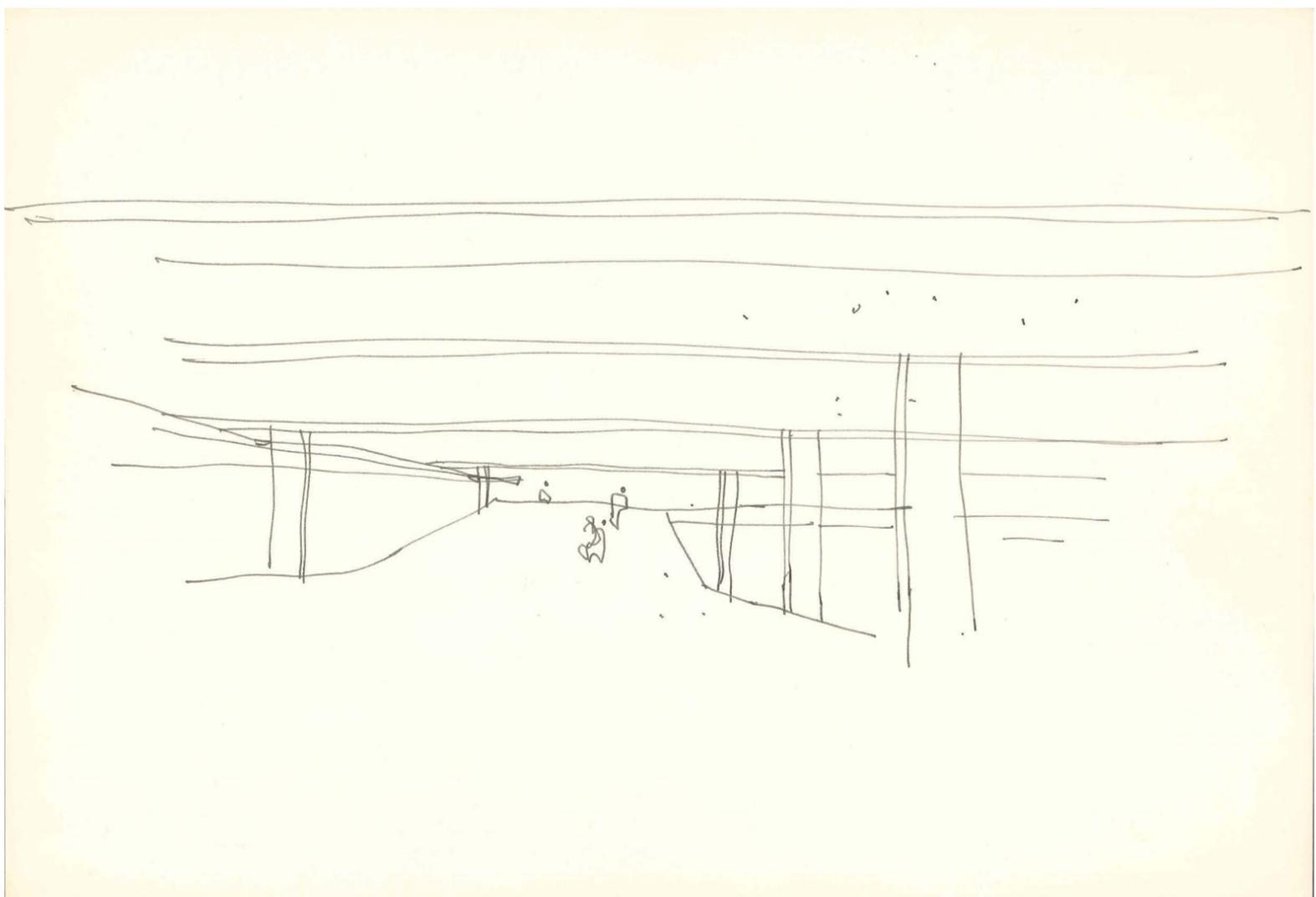


Figura 7.

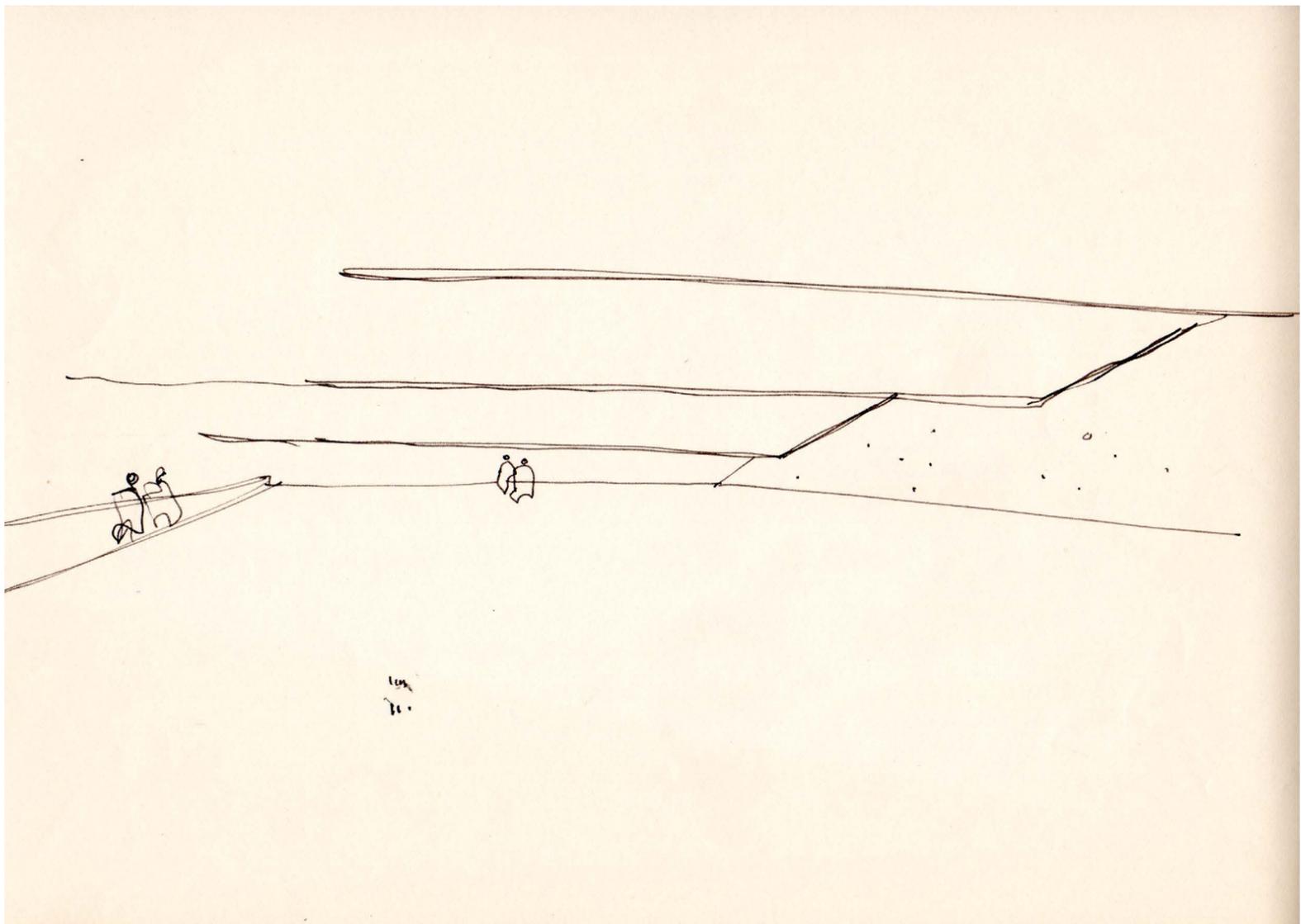


Figura 8.

From these preliminary observations one can already see that Mendes da Rocha's sketches are not attempts at a "faithful" representation of the project. There is nothing to suggest a realistic representation; indeed, a series of indications relating to both the solutions of details and materials is absent. Precisely because of their deliberate omission, the perspective views are a condensed expression of the programmatic requirements of the project.

The majority presence of sections among the depictions of the MAC-USP is also worthy of consideration: if architecture is not just the volume that is set on the ground, but the transformation of the landscape, will not the section constitute its chief representation? In the words of Ernst Cassirer and Erwin Panofsky, will it not be precisely the section – which cuts both the architecture and the land that it transforms – the "symbolic form" of Mendes da Rocha's architecture?

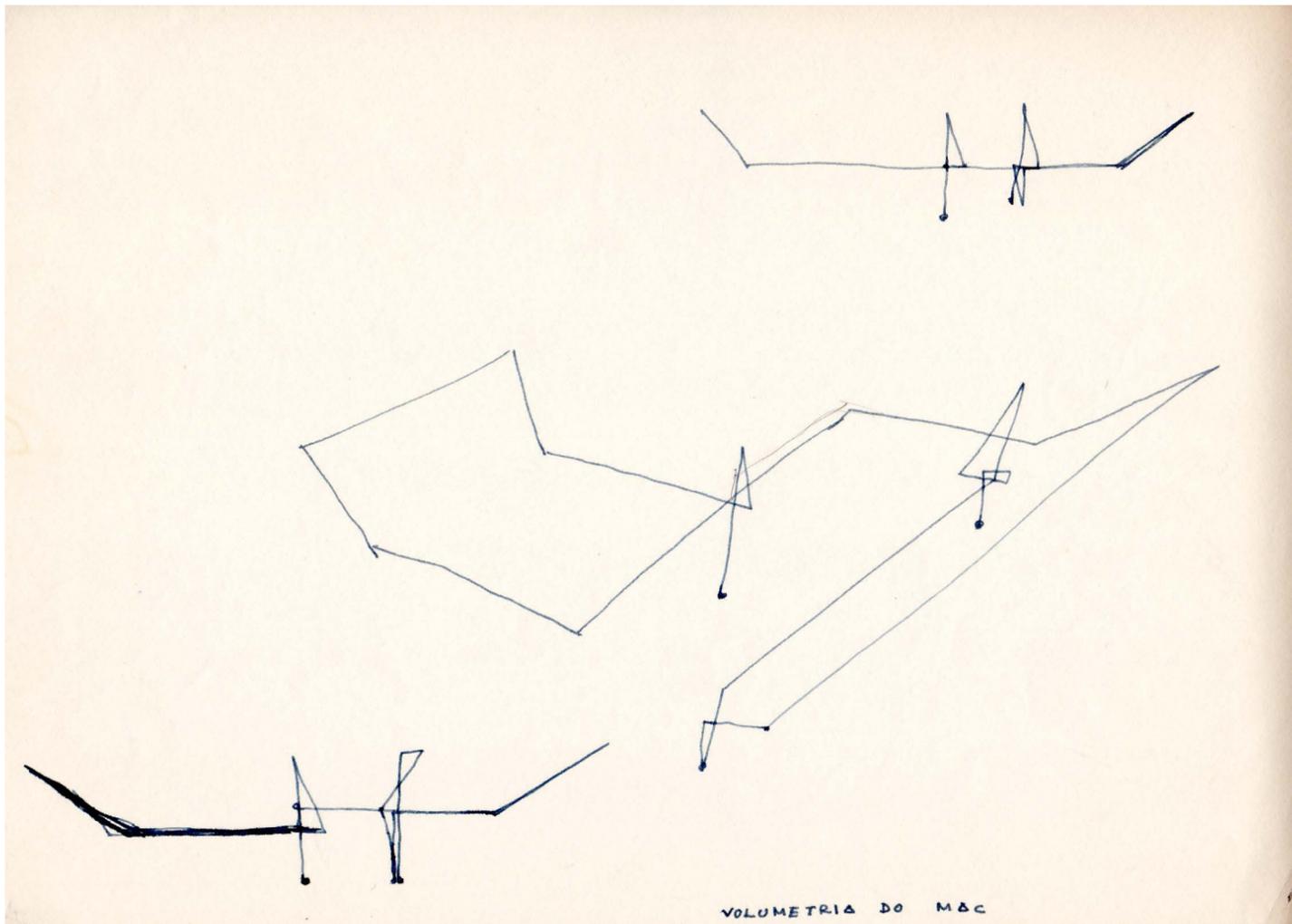


Figura 9.

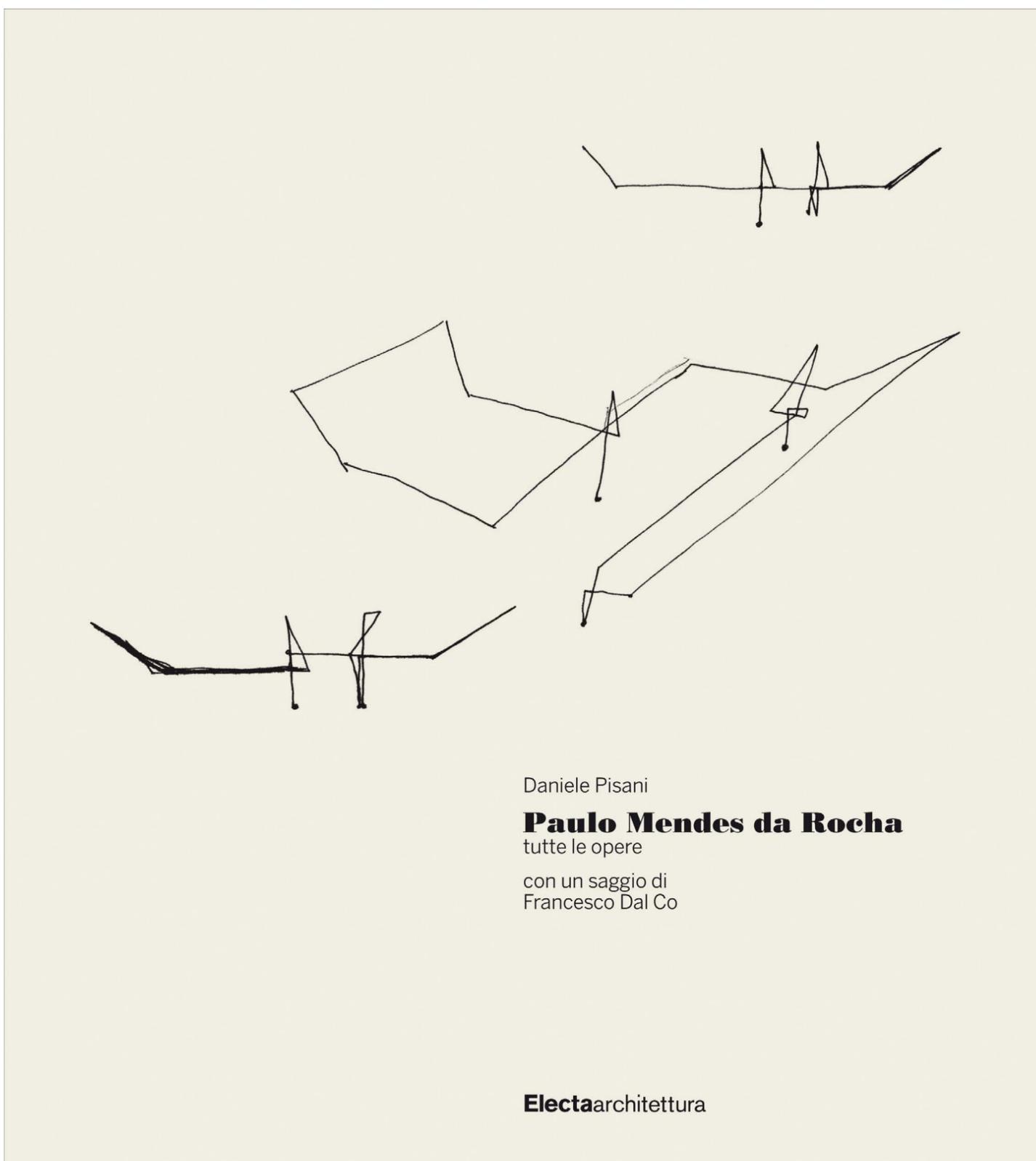


Figura 10.

Among the various sketches the one that pose the most interesting questions is, however, also the one most difficult to elucidate (figs. 9-10). Its format is the same as most of the others (31.8 x 21.7 cm) and again the sheet is disposed horizontally. Like the perspective views, it presupposes a project whose main features have already been worked out. It is the only one done by fountain pen in blue ink; of the three sketches the main one also reveals some pencil marks, evidence – once again – that the pen strokes over-traced a pencil drawing then erased. What we have therefore is a drawing thought-out and “approved” first by tracing over with ink, i.e. making it indelible, and then – the only one in the series – by giving it a title: *Volumetria do MAC*.

On the same sheet, there are three different drawings set along a diagonal axis, with the central one larger and the other two are different versions of the same view. The one at bottom left, in particular, appears to offer a “corrected” version of the one at upper right, and must have been made at a later moment; as a result it is somewhat compressed between the main drawing and the bottom left corner of the paper. The drawing at top right is a schematic section, which lack any trace of the ground and only the lower floor of the building is cut through. One can follow the movement of the hand on the sheet in the act of tracing it: first the lower outline, consisting of a line broken in three, two slanting and one horizontal line; then the pillar (or rather the row of pillars) to the left, a broken line traced without ever lifting the pen from the paper, starting from the dot at the bottom; and then, in similar but more tortuous fashion (from the dot the line moves to the upper right, then comes down to the lower right as far as the outline, runs horizontally for a distance to the left, goes down to the lower right, rises vertically and finally retraces, moving toward the right, the lower outline). It is to be noted that Mendes da Rocha in some way lets himself be guided by the logic of the drawing: the choice (in the case of the marks corresponding to the two rows of pillars) of drawing broken lines without taking the pen off the paper twice leads him to trace over the lower outline, even if those marks with double thickness have meaning only in the logic of the drawing, and not of the project. The large degree of freedom of the drawings as opposed to the project is further evinced by the triangular surfaces that appear in the drawing where they do not correspond to anything; they serve only to ensure the continuity of the line, alluding (consciously?) to a form of representation typical of architects – the diagram of forces – but emptying it of its meaning.

The drawing to the lower left is a kind of correction of the one just examined, with the bottom outline divided into two separate sections; in effect, in the project for the MAC-USP the exhibition spaces are laid out at different heights on either side of a central block for the lift systems (fig. 11). The logic, however, remains the same, except that this time the pen has been taken off the sheet four instead of three times.

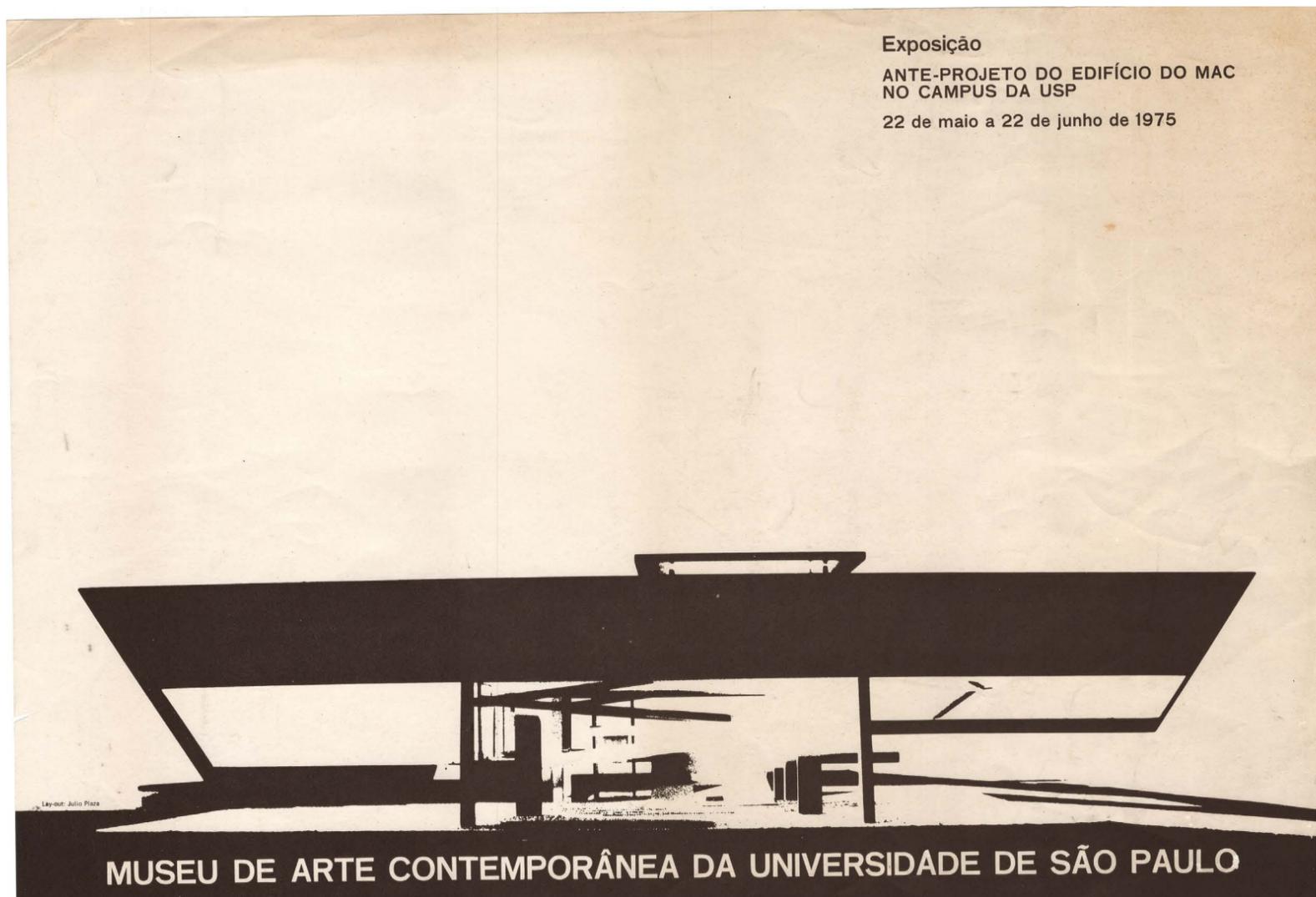


Figure 11.

The drawing in the middle of the sheet combines many of the same themes. Here the entire drawing is a single broken line, that from the dot at the bottom of the pillar placed at the centre of gravity rises, bends, runs to the upper left, then continuing counter-clockwise comes down, rises towards the top right to then come down, bend at a second pillar, rise again and finally bend at the third pillar, ending with the dot at its base. The representation of the “volumetry” of the project passes – conceptually, because at least in retracing the hand has lifted from the sheet a few times – through the development of a single line, that, however, differently from with the sections, also defines surfaces; even if, of the two broken surfaces that the line defines with its movement – corresponding to what was the bottom outline in the sections – only one of them is closed; the other is suggested but remains open. To put it in the terms used by Paul Klee in the *Pädagogisches Skizzenbuch* (Pedagogical Sketchbook), one of the *Bauhausbücher* (1925), we are dealing with “a medial line which is both point progression and planar effect [...]. In the process of being created, these figures have linear character; but once completed, this linearity is replaced by planarity⁵.” The reference to Klee is pertinent: he is the author not only of some of the main thinking on the means of representation, but also the creator of a vast range of works in which

5 P. Klee, *Pedagogical Sketchbook*, New York, 1953, p. 18. See. Also id., *Kunst-Lehre*, Leipzig, 1995, pp. 99–101.

the pen is never taken off the sheet. The great Brazilian admirer of Klee, Geraldo de Barros (1923-1998), deliberately adopted this approach in some of his *Fotoformas*; and there are countless drawings by Mendes da Rocha – many of them unpublished – that belong to this family (figs. 12-15)⁶.

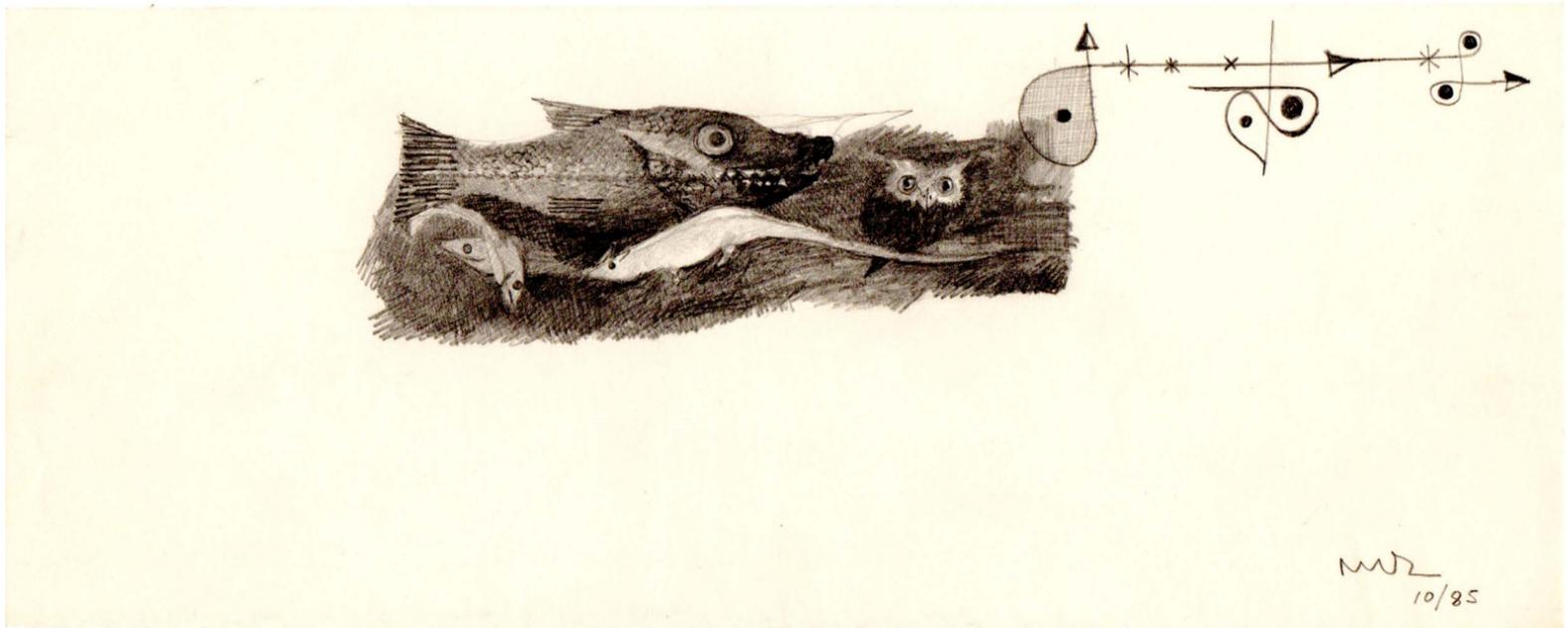


Figura 12.

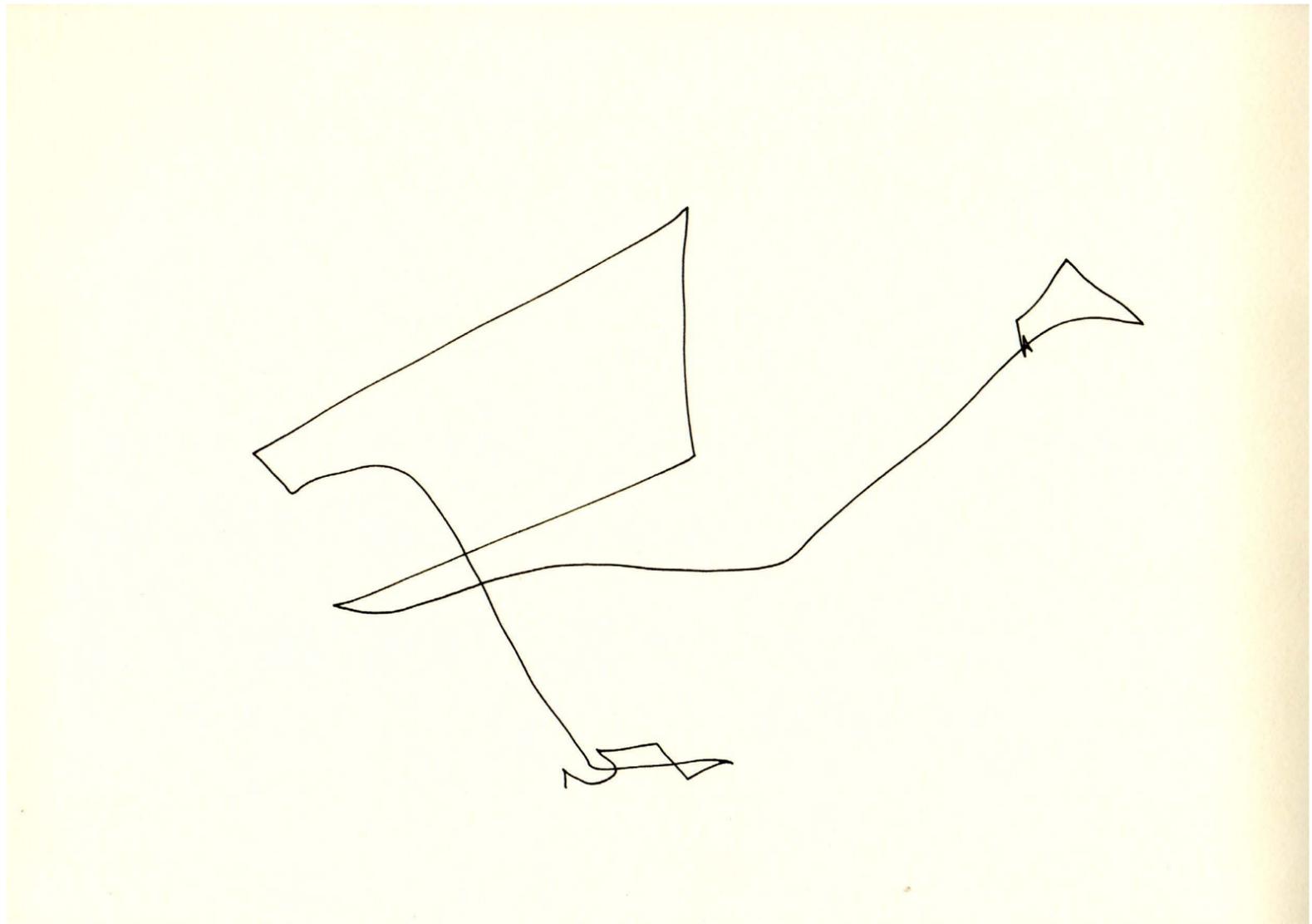


Figura 13.

6 Cf. D. Pisani, “Prima e più dell’architettura. Gli schizzi di Paulo Mendes da Rocha”, *Casabella*, 836, 2014, pp. 4-7.

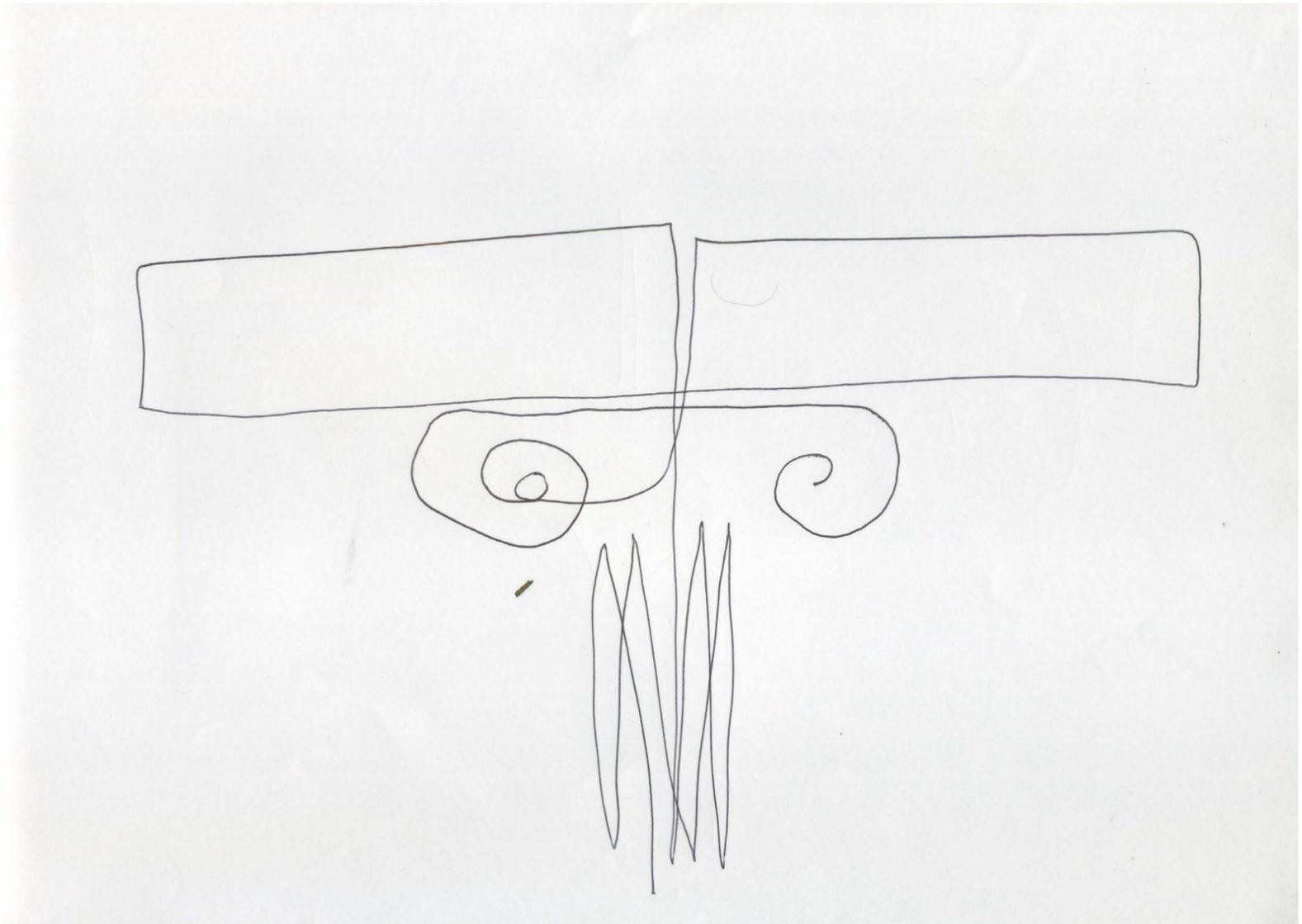


Figura 14.

If one wonders why Mendes da Rocha is so intrigued by the line in its unfolding, some possible answers can be proposed: it is an exercise in rigour, taken so seriously as to produce a distancing from the object depicted; it is the most extreme act of freedom that an architect, far from considering himself a “genius”, can allow himself – a kind of free improvisation that as such, and even if only on paper, can only take shape from a constraint, in this specific case of the graphic sort.



Figura 15.

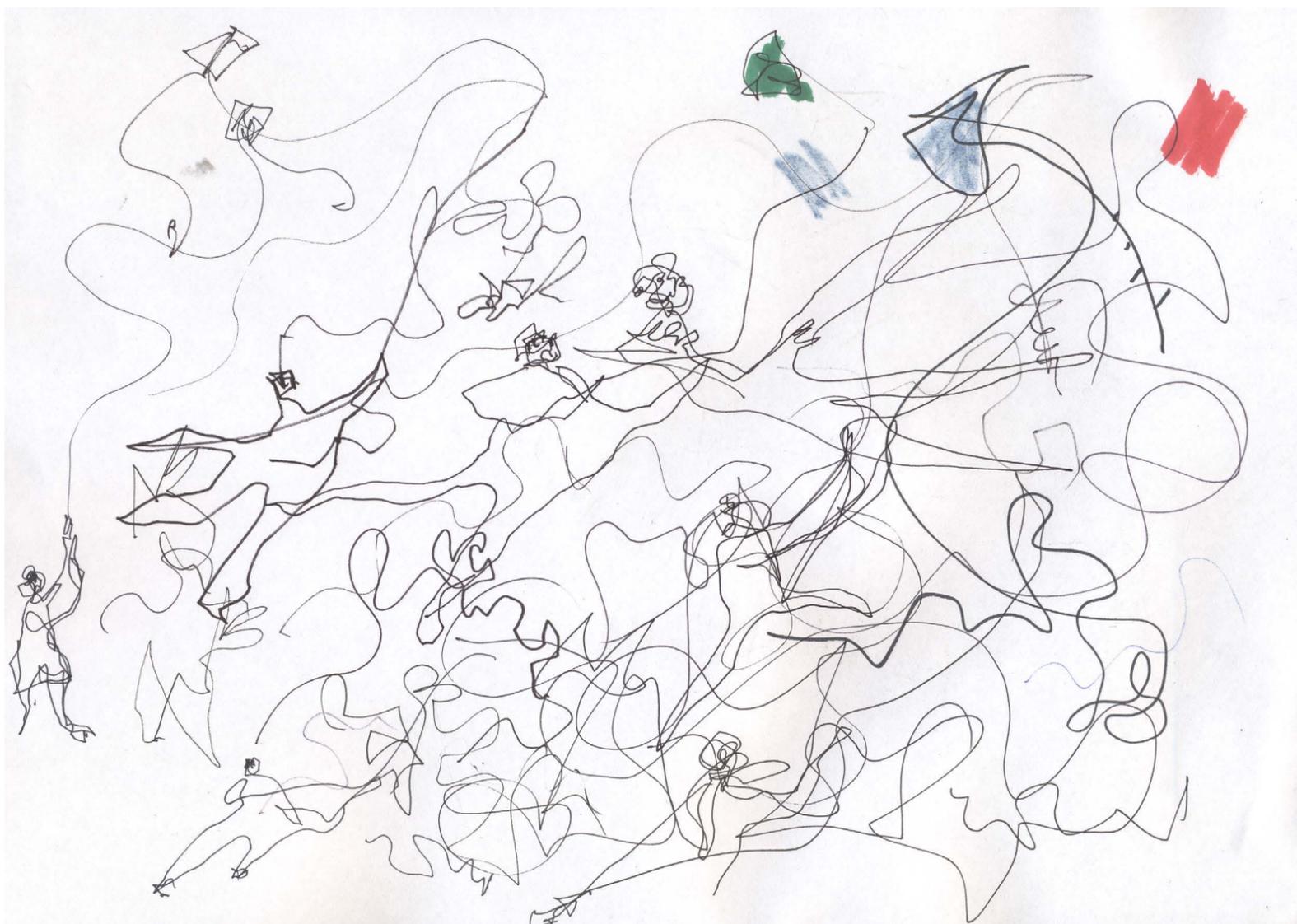


Figura 16.

This is, moreover, a fundamental theme in Mendes da Rocha's architecture, which from a certain point of view is entirely conceived from a constraint: it is, in fact, based on the introjection, from the first phases, of the structural problem, and precisely for this reason – for having solved the problem from the start – is capable of developing freely. This is the great theme of the technique in the work of Mendes da Rocha, understood as the *sine qua non* of architecture and as a form of constriction that by defining the realm of the possible, enables the imagination to deploy freely, without the threat of finding itself in situations impossible to resolve – or solvable only by straining – with the tools of architecture and engineering.

Even in the case of the drawing in question, where this technique may lead cannot be known at the outset. This is partly true even for a “planned” drawing like *Volumetria do MAC*, and in particular for the larger sized sketch that forms the pivot. The exactly orthogonal point of view of the smaller drawings is shifted to one both rotated and raised; from the section one is shifted to something, whether an axonometric or perspective drawing is not clear. We are dealing with a point which, moving, becomes a line, defines some surfaces and articulates a space (rather than a volume, as stated in the title) (fig. 16). And this is precisely the reason for the interest of this drawing: on the one hand *serio ludere*, in which the creator gets carried away by the criterion adopted almost as a joke, and on the other a rendering of some of the distinctive features of the project with an immediacy that no form of conventional representation would have permitted – as if the project, *every project*, to find full expression in its unrepeatable logic requires the development of a specific form of representation, or at least to be represented in a particular one of the various possible ways. Hence the quality, enigmatic as eidetic, of this kind of section deployed in space.

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