Architectural Drawing in the *Escuela de Madrid* during the 1960s

Carlos Montes Serrano, Amparo Bernal López-Sanvicente, Jesús Luna Buendía

Abstract

This article is intended to provide a sample of the architectural drawing undertaken by Spanish architects of the so-called 'Madrid School' in the 1960s. During that decade, a good number of architects were prominent within what came to be known as the 'modern organic style'.
This comprised works strongly rooted in the places where they were built and of considerable construction quality, thanks to the use of traditional materials. The article also has an objective on the theory front. In contrast with the relativism of criteria for evaluating art, it claims that it is possible to speak of a 'canon of excellence'.
The basis is a rigorous selection of the architects with the highest profiles in the years under consideration. This would rate drawings as of greater or lesser relevance, and see means of representing architecture as of more or of less significance at a given point in historical time.

Keywords: Architectural Drawing, Spain, 1960-1969.

Introduction. Materials for a History of Drawing

Although recent decades have seen the completion of a good number of doctoral theses on the main Spanish architects of the twentieth century, very little attention has been paid to specific studies of how they represented their projects. This includes the type or style of drawing they used or the influences from other countries that affected them. Similarly, there have been no more general investigations such that would enable the detection of graphical characteristics or trends common to a given school or time period. It is noteworthy that, in comparison with Italy, Spain lacks books like that edited by professor Carlo Mezzetti, *Il disegno dell'architettura italiana nel XX secolo* (2003). In order to fill this lacuna, the journal *EGA: Expresión Gráfica Arquitectónica* has started to include in each of its issues a final section under the general heading of historical approaches to architectural drawing in twentieth-century Spain. This series of articles is intended to cover those architects who stood out by reason of their practices in drawing in relation to graphical thinking and their architectural works. So far, four have been published, relating to Antonio Palacios, José Luis Sert, Luis Moya Blanco and Luis Albert Ballesteros.
This present text has the same aim, offering a significant sample of the various uses of drawing employed by several Spanish architects resident in Madrid during the 1960s. This was a period of especial relevance in Spain. It saw the last years of Franco regime. There were major technological advances. There was a decided opening to the outside

world, bringing in many values and ideas hitherto alien to Spain. There was an unprecedented growth in the economy which facilitated a peaceful transition to democracy in the next decade and integration into shared European institutions, and so forth. In architecture there was a group of leading lights who were beginning to have an international profile, publishing work in journals outside Spain.

Criteria for Selecting Drawings

The principal problem in dealing with drawings from those years is the criterion of relevance. Most of the architects of the generation arising after the Spanish Civil War were able draughtsmen, thanks to the demanding syllabuses of the two schools of architecture in existence in Spain at that time, Madrid and Barcelona. However, a historical account must above all select the graphical output of those architects who held more prominent positions thanks to their architectural works. This is because the interest and quality of their projects led to the diffusion of their drawings through journals and books.
It is hence imperative to go back to bibliographical sources in making this selection. The history of Spanish architecture in those years is not well covered, as there were scarcely any architectural publications, and the most widely available books frequently came from publishers outside Spain. Nevertheless, there are a number of collections of journals: *Arquitectura* (established in 1916), this being the publication of the Madrid association of architects, *Cuadernos de Arquitectura* (established in 1944), the equivalent for Barcelona, *Hogar y Arquitectura* (1955 to 1977), issued by the Spanish Ministry of Housing, and *Nueva Forma* (1966 to 1975), an independent journal of high critical standard, if somewhat short-lived.
These journals include considerable amounts of information on the work of the most outstanding architects. It is true that the greater part of the data is limited to architects from Madrid and Barcelona. This is both because they were close to the editorial committees of the two main journals and because they were the individuals who were awarded the largest contracts for public works or for private promotions [Montes 2017, pp. 170-179].
This article will concentrate on what has been termed the Madrid School or *Escuela de Madrid*. The expression was first used by the architect Juan Daniel Fullaondo [Fullaondo 1968, pp. 11-23], one of the most insightful writers of the time. It was in contraposition to the Barcelona School or *Escuela de Barcelona*, called such by Oriol Bohigas [Bohigas 1968, pp. 24-30] in an attempt to identify two clearly differentiated modes of practice in architectural projects.
Among the architectural tendencies of the period, one outstanding style, which is normally termed 'modern organicism', was associated with the *Escuela de Madrid*. This followed the ideas of Bruno Zevi on the honesty of materials and looked for its sources of inspiration in the work of Wright, Alvar Aalto and other Nordic architects [Ruiz 2001, pp. 43-52]. A second tendency derived from rationalism and modern technology; its principal model was the architecture of Mies van der Rohe, and it resulted in a number of striking pieces of work in Spain. Finally, in the second half of the decade it is possible to detect an increasing influence from Brutalism, involving work of strong formal expressiveness constructed using reinforced concrete [Capitel 1986, pp. 23-28].
All this leads to the conclusion that the architectural trends occurring in Spain appeared the better part of ten years later than they did in more advanced countries nearby. This chimes with the sociological tendencies of the period, which the cultural trends of the 1960s elsewhere in Europe enter Spain and spread through the country with some delay between 1966 and 1975, in other words during the final years of the Franco dictatorship.
Thanks to research carried out on architectural journals of the 1960s [Bernal 2011], it has proved feasible to specify with some degree of objectivity which were the architects achieving the highest profiles during that decade by means of the publication of their projects, many awarded through architectural contests. It has been possible to check and to nuance this by means of monographs that have been published over the years since the 1980s, when a growth in, and consolidation of, architectural publishers took place in Spain.
These are well-known figures in the field of Spanish architecture, with careers that in some cases had begun to be established as early as the 1950s, whilst others burst onto the national scene more suddenly. Even a rigorous weeding out would probably find extensive agreement that any list of such architects would have to include: Francisco de Asís Cabrero, Alejandro de la Sota, Francisco Javier Sáenz de Oiza, José Antonio Corrales, Ramón Vázquez Molezún, Fernando Higueras, Antonio Fernández Alba, José María García de Paredes, Javier Carvajal, Julio Cano Lasso and

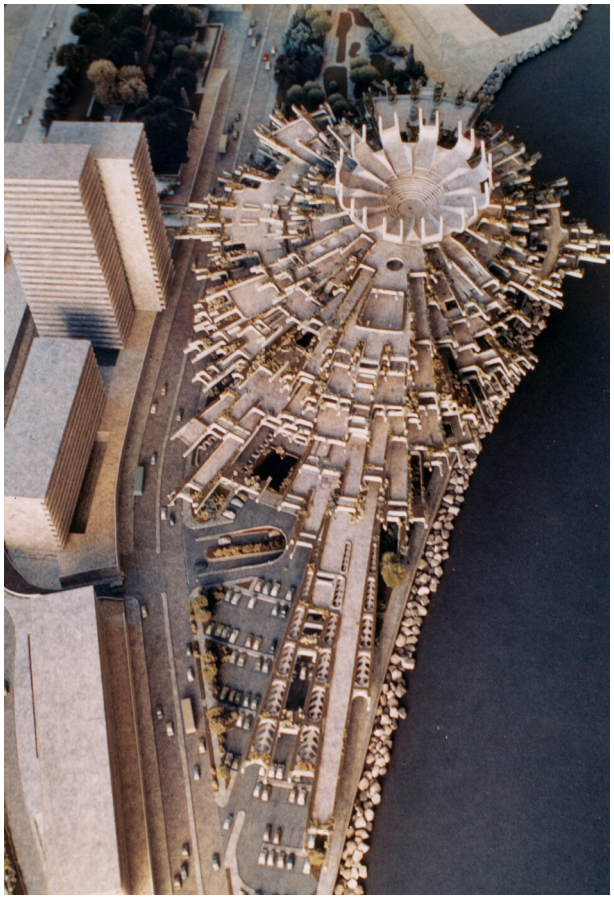

Fig. 1. Fernando Higueras, Competition for an Entertainment Centre in Monte Carlo, 1969. Library of the School of Architecture, University of Valladolid.

Rafael Moneo. As always happens in the drawing up of any standard for excellence, there would naturally be some hesitation as to whether certain other architects should be incorporated into the list as well as those mentioned [Montes 2010, pp. 44-51].
The limited space available for this article does not permit going into any great depth in analysing the graphical work of all of these figures. Hence, the decision has been taken to comment on just one drawing from each. Overall, this forms a very complete sample of the systems of representation most often used by architects. These include hand-drawn sketches, elevations and plans of buildings, scale models, construction details and some perspective views. Only a single axonometric projection is included, since Spanish architects barely ever used this system of representation before the 1970s. It is true that Juan Daniel Fullaondo (always attentive to the international panorama) started employing this type of drawing in the late 1960s, perhaps influenced by James Stirling or the architects known as the *New York Five*.
It should be noted why two photos of scale models have been included in the selection. In Spain the 1960s were a decade of major public calls for contests or competitions in architecture. In this competitive context, models, or photographs of them, almost ousted perspective views as a system for visualizing projects, whether at the stage of calling for tenders or in later publications in journals [Bergera 2016, pp. 8-27]. Photos of scale models thus fulfilled a role similar to more recent renderings or infographics, even suffering the same decline into overly virtuoso features and excess. An example of this are the sophisticated models produced by Fernando Higueras towards the end of the decade, the swan song of a practice that would fall into disuse in the 1970s (fig. 1).

Ten Architects, Eight Drawings and Two Scale Models

Francisco Cabrero (1912-1995) first came into the public eye in 1949 when he won the competition for the State Trades Union building in Madrid. This was a structure that moved away from the historical styles that drew their inspiration from the Escorial Palace, to find new benchmarks in the architecture of Adalberto Libera and Giuseppe Terragni, visited by the architect some years previously. In the 1960s he constructed a number of buildings inspired by the glass, steel and brick architecture of Mies van der Rohe. Prominent among these was the Crystal pavilion in the *casa de Campo* park in Madrid (1964). A little later he built his own home and studio in Madrid (1962). This was a striking structure in which Cabrero combined a range of materials (reinforced concrete, brick, steel, aluminium, wood and others), succeeding in making compatible the comfort of interior spaces and an intended outward-facing lightness and transparency. From the project for this dwelling an axonometric projection has

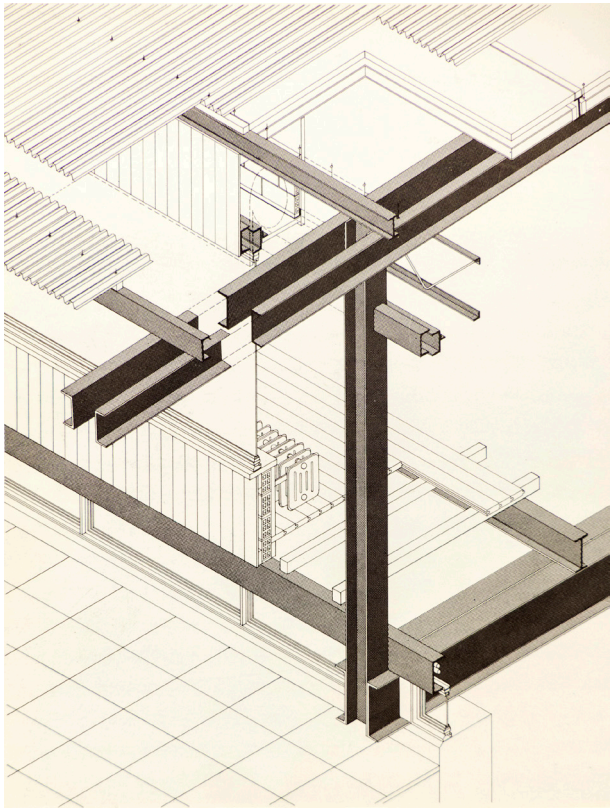

Fig. 2. Francisco Cabrero residence at Puerta de Hierro, Madrid, ca. 1962 [Climent 1979, p. 110].

been chosen in which Cabrero masterfully displays the solution he adopted (fig. 2). Although this drawing is of a technical nature, it has been reproduced numerous times in publications about Spanish architecture, as an example of the interest Spanish architects had in adopting building systems derived from the aesthetic currents predominant in the United States.

Alejandro de la Sota (1913-1996) was a magnificent draughtsman who put into practice the most varied techniques. As happens with his architecture, it is possible to see how his graphical language evolved over the course of his professional career. It ran from his early natural views

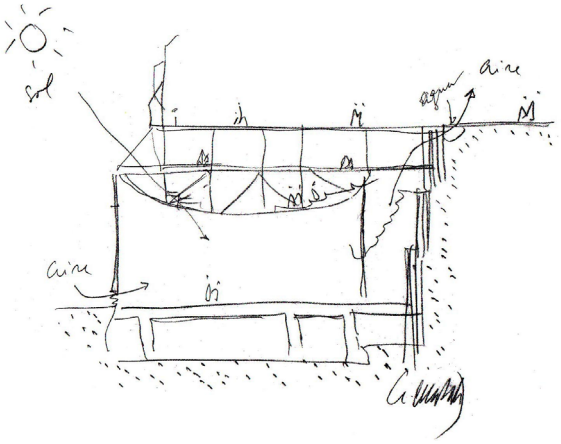

Fig. 3. Alejandro de la Sota, Gymnasium for the Maravillas school, Madrid, ca. 1962 [De Llano 1994, p. 106].

of buildings and project sketches, in which his mastery of more traditional techniques can be appreciated, through to his later more minimalist drawings. This small sectional sketch of the Maravillas school gymnasium in Madrid is without a doubt the Spanish architectural drawing most often reproduced in books and journals (fig. 3). It is a free-hand pen-and-ink sketch, in which de la Sota summarizes the very best of his project. This is because it is clear that the guiding idea for the Maravillas gymnasium resides in his intelligent use of curving inverted roof trusses, something which it is possible to explain only by showing a vertical section. Hence, in this drawing it is feasible to observe not merely the structural solution, but the lighting, the cross-wise ventilation, the steeply sloping spectator zone, not to mention the three levels for use achieved: the roofed playing area, the classrooms echeloned onto the trusses, and the gymnasium surface itself.

Many architects consider the *torres Blancas* building in Madrid (1961-1969) to be the best piece of Spanish architecture of the 1960s. It was the work of Francisco Javier Sáenz de Oiza (1918-2000), who was professor of Design at the Madrid School of Architecture, and was thus the teacher of a whole generation who became lecturers at that school during the last quarter of the twentieth century. Dozens of sketches and varying versions of the

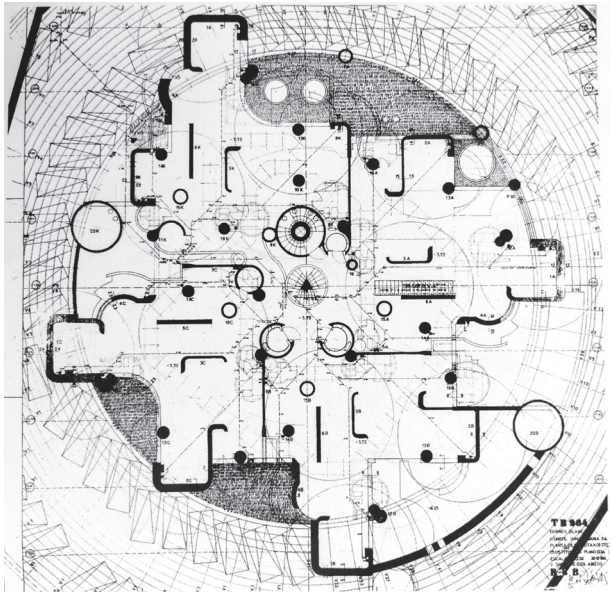

Fig. 4. Francisco Javier Sáenz de Oiza, Torres Blancas High-Rise Apartment, Madrid, 1964 [Alberdi, Sanz Guerra 1996, p. 125].

floor-plans of this project have been preserved. They reveal considerable influence from the organic architecture of Frank Lloyd Wright. Indeed, Oiza used to refer to this building as a tree with various trunks growing upwards, or as a vertical garden. Among the hundreds of drawings of the project the definitive ground-plan for the basements has been selected (fig. 4). In this it is feasible to appreciate the technical precision of the project, the formalism of the solution for the building, its structural complexity, and the stylistic organicism of the architects of that decade.
Julio Cano Lasso (1920-1996) was part of the organicist trend that is the best definition for the Madrid School. He was very deft at drawing, and over the years published many drawings of cities in the landscape (Madrid, Cuenca, Toledo, Salamanca and others), a collection of which he eventually brought out as a book with its title reflecting this concept. He was a sensitive architect, attentive to details and superb at handling brickwork, which he managed to use to root his architecture in its natural surroundings.

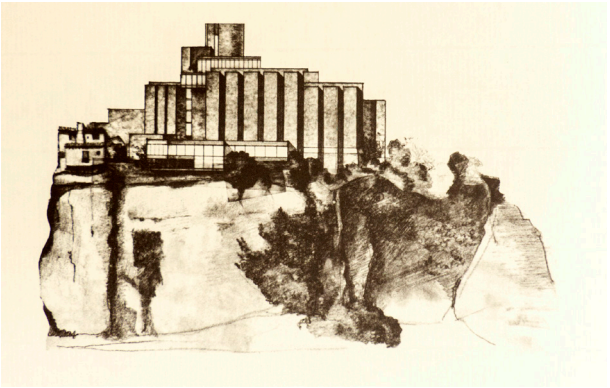

Fig. 5. Julio Cano Lasso, Entry for a 'parador de turismo' in Cuenca, ca. 1968 [Capitel et al. 1991, p. 83].

From the years considered here, the choice made is his proposal for a hotel for the State-owned *paradores de turismo* chain within the castle of the city of Cuenca. This won the first prize in the competition (fig. 5). The drawing shows the siting for the project, in a striking locality of great beauty and abrupt terrain. The technique employed is graphite pencil, with which he achieved varying nuances and a warmth in the drawing that was strongly in accordance with the typicality that the Ministry concerned desired for its *paradores de turismo*. As Cano Lasso wrote, after he had finished the project it became clear that the functional needs of the planned hotel were excessive, so that the resulting size would have been somewhat too aggressive in a zone of modest and traditional houses.
José Antonio Corrales (1921-2010) and Ramón Vázquez Molezún (1922-1993) formed a partnership in 1952, after the latter returned from a two-year stay in Italy financed by a grant from the Spanish Academy of Fine Arts in Rome. They gained national recognition with their Spanish pavilion for the Brussels World's Fair of 1958. There are distinctive features to this and other projects, such as the structural and constructional solution, light-weight elements, adaptation to the terrain, clarity in the drawing of floor-plans and sections, and the relevance of the roof as unifying the whole functional programme. The choice here has fallen to the plan for the roof of the Huarte residence in Madrid, because it shares some of these characteristics

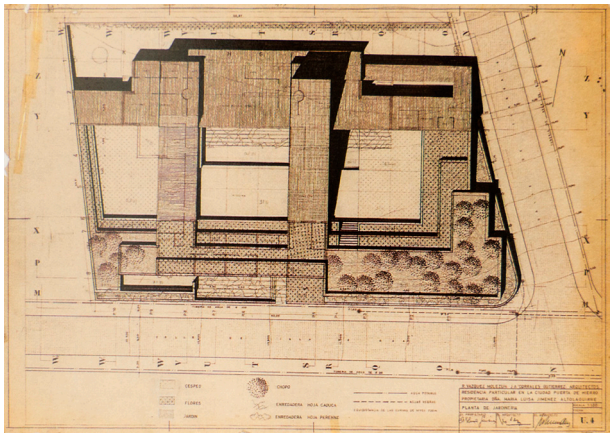

Fig. 6. José Antonio Corrales and Ramón Vázquez Molezún, Huarte residence in Madrid, ca. 1966 [AA.VV. 1992, p. 116]

and because it is probably the best known of the buildings they constructed in those years (fig. 6). It was an elegant, and timeless piece of work, sober in its use of materials. This plan highlights the importance of the roof thanks to the shadows it is shown casting. The two architects' liking for working with steep slopes is evident, the aim being to unify the various different spaces in the project, while also giving greater privacy for the inner courtyards.

José María García de Paredes (1924-1990) qualified as an architect in 1950. He lived in Rome between 1956 and 1958, having won a scholarship from the Spanish Academy a year earlier. After that, he was able to travel to Scandinavia to gain familiarity with Nordic countries' architecture. In 1960 he presented an entry in the competition for a parish church in Cuenca, a project which was so radical that it got nowhere. It was a uniform isotropic space formed by a network of slender metallic columns. In order to display his proposal better he constructed a very abstract scale model, one of the photographs taken by the architect himself having been chosen here (fig. 7). Although the image is a photograph of a model, it attempts to give the impression of a ground-plan in which the shadows cast have been exaggerated. This yields a graphic composition very similar to the famous drawing used by Jørn Utzon to explain his ideas for the platform of the Sydney Opera House. This image thus

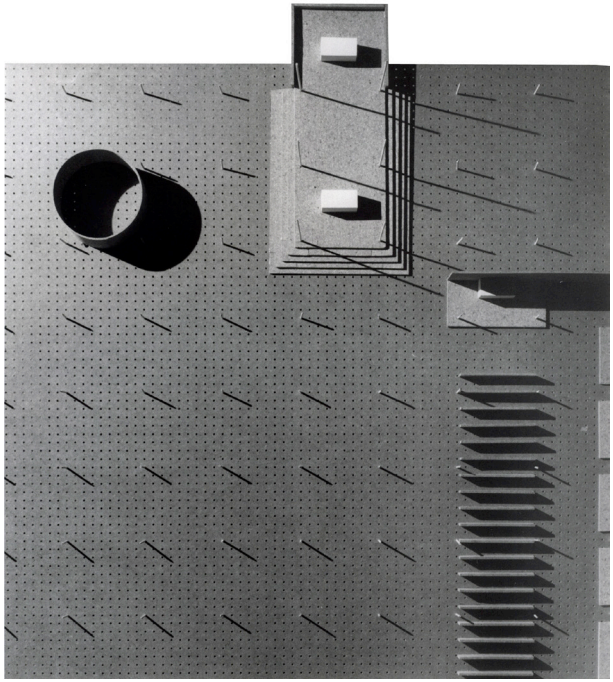

Fig. 7. José María García de Paredes, Competition for a church in Cuenca, 1960 [Bergera et al. 2016, p. 134].

lies in the frontier area where drawings and photographs of models overlap. Its effects are achieved by a process of formal abstraction that avoids the documentary finality of a photograph in order to attempt to bring out qualities more typical of architectural drawing [Bernal 2017, p. 642].

Javier Carvajal (1926-2013) graduated in 1953, and the following year was awarded a scholarship by the Spanish Academy in Rome. This allowed him to round out his studies and undertake several projects in Rome between 1955 and 1957. On his return, he combined teaching with professional work, obtaining the Architectural Design chair at the University of Madrid in 1965. He gained rapid international recognition with the Spanish pavilion for the New York World's Fair, which in 1964 won the prize for the best foreign building in the Fair. It is difficult to put Carvajal's work into a single stylistic pigeonhole,

Fig. 8. Javier Carvajal, Carvajal residence, Madrid, 1964 [Fernández-Isla 1996, p. 46].

although it is pervaded with a sculptural feel and formal elegance that might be compared with some of the buildings of Leslie Martin or Denys Lasdun. Carvajal had a special gift for thinking in three dimensions and for projecting any sort of space quickly and precisely, without losing sight of the building as a whole, its dimensions, or its scale. The ground-plan chosen here is that of his own home in Madrid (fig. 8). On considering this drawing it is possible to imagine the architect before his drawing-board, resolving the functional distribution of the floor-plan, organizing and linking spaces, as he fine-tuned the twinned-crystal structure of the house's volumes. The floor-plan of the edifice seems to grow out from a central core as if it were an organism adapting to, and colonizing, the building plot, giving rise to a graphic composition that recalls those of the Spanish painter Pablo Palazuelo.

Antonio Fernández Alba (born 1927) was one of the most prominent figures of the 1960s, thanks to the buildings he constructed, his writings on architectural theory and his teaching as a professor of Design at the Madrid School of Architecture. Apart from this, it must be stressed that he was an excellent draughtsman, fluently using freehand pencil sketches along with other forms of representation, such as models or photographic compositions. He was always aware of the international scene and it is possible to detect in his projects from that time the influence of Alvar Aalto. Jørn Utzon's drawings for the competitive tendering for Sydney Opera House must have left a strong impression on him, as he adapted the Danish architect's way of drawing to several of his proposals for competitions, such as the Conference centre for Madrid (fig. 9). Using the shadows cast and light shading, Fernández Alba manages to stress the relief of the great platform of the complex, together with the functional differentiation of its spaces: the low-level access

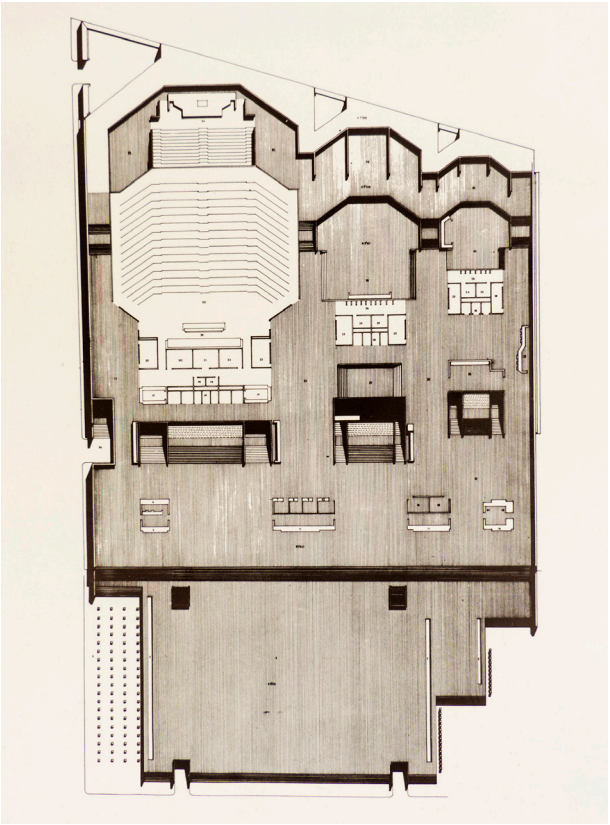

Fig. 9. Antonio Fernández Alba, Entry for a Conference centre in Madrid, 1965 [Uría et al. 1981, p. 92].

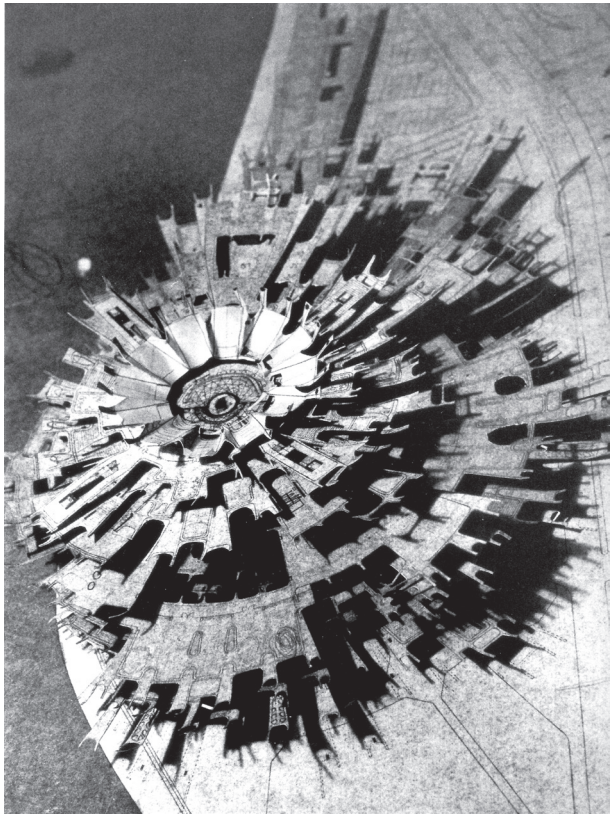

Fig. 10. Fernando Higueras, Entry for an Entertainment Centre in Monte Carlo, 1969 [Bergera et al. 2016, p. 195].

zone, the upward route, the junction with the conference rooms, and the like.
Fernando Higueras (1930-2008) was one of the most creative architects of the period under consideration. He was a shooting-star who shone with exceptional strength during that decade and then burnt out to the point of almost vanishing in the following years. In his works, always showing an exaggerated sculptural expressionism, various sources of inspiration come together. Firstly, there was his interest in geometry; secondly, there was the daring application of constructional and structural solutions; finally, there was his predilection for the shapes of natural organisms. There were three particularly outstanding projects in his career. These were his entry in the competition for a new Opera House for Madrid (1964), the centre for Art Restoration in Madrid (1965), and his project for an Entertainment centre in Monte Carlo (1969). Because of its exuberant creativity, the selection made here is a photo of his first scale model for Monte Carlo (fig. 10). This is partly because it was a really spectacular project and partly because it shows very clearly the organicist and biomorphic ideal to which he aspired, as mentioned above. However, a careful look reveals that the model in the photograph is made up of a set of drawings on card of the various floors, superimposed on the ground-plan in such a way as to give the impression of being a conventional scale model. Where García de Paredes used a photograph of a model to mimic a floor-plan, Higueras photographed a series of drawings to simulate a three-dimensional model.
Rafael Moneo (born 1937) studied architecture in Madrid and qualified in 1962. With considerable foresight, he spent the next few years rounding out his training, collaborating with various professionals, and enjoying a long stay in Italy between 1962 and 1965 thanks to having won a scholarship from the Spanish Academy in Rome. Although only a few works of his were actually built in the second half of the 1960s, there are entries from architectural competition which stand out by reason of the clarity of his ideas and the beauty of his drawings. These were something which was to be present in his major commissions from later decades. Of the proposals, a choice has been made of his entry for the Madrid Opera House (fig. 11). As can be seen, his design is related both to the organicism of the Madrid School and to certain architectures in the Brutalism of that decade. It is of interest to note the graphical style, using soft-leaded pencil, and fluency of strokes, permitting him to recreate the chiaroscuro and textures of the building. This was a very popular technique in the 1930s, at which German expressionist architects like Hans Poelzig or Dominikus Böhm became consummate masters. After the war, Gottfried Böhm continued to use the same pencil technique in his projects as had been used by his father, for instance in his drawings for the competition for a Pilgrimage church at Neviges in Germany (1963). It is not known whether Moneo, always with an eye on the architecture of the moment, became familiar with these drawings, widely publicized at the time. If not, it would indicate the young Rafael Moneo's fine sensitivity for being in tune with the architectural trends of the day.

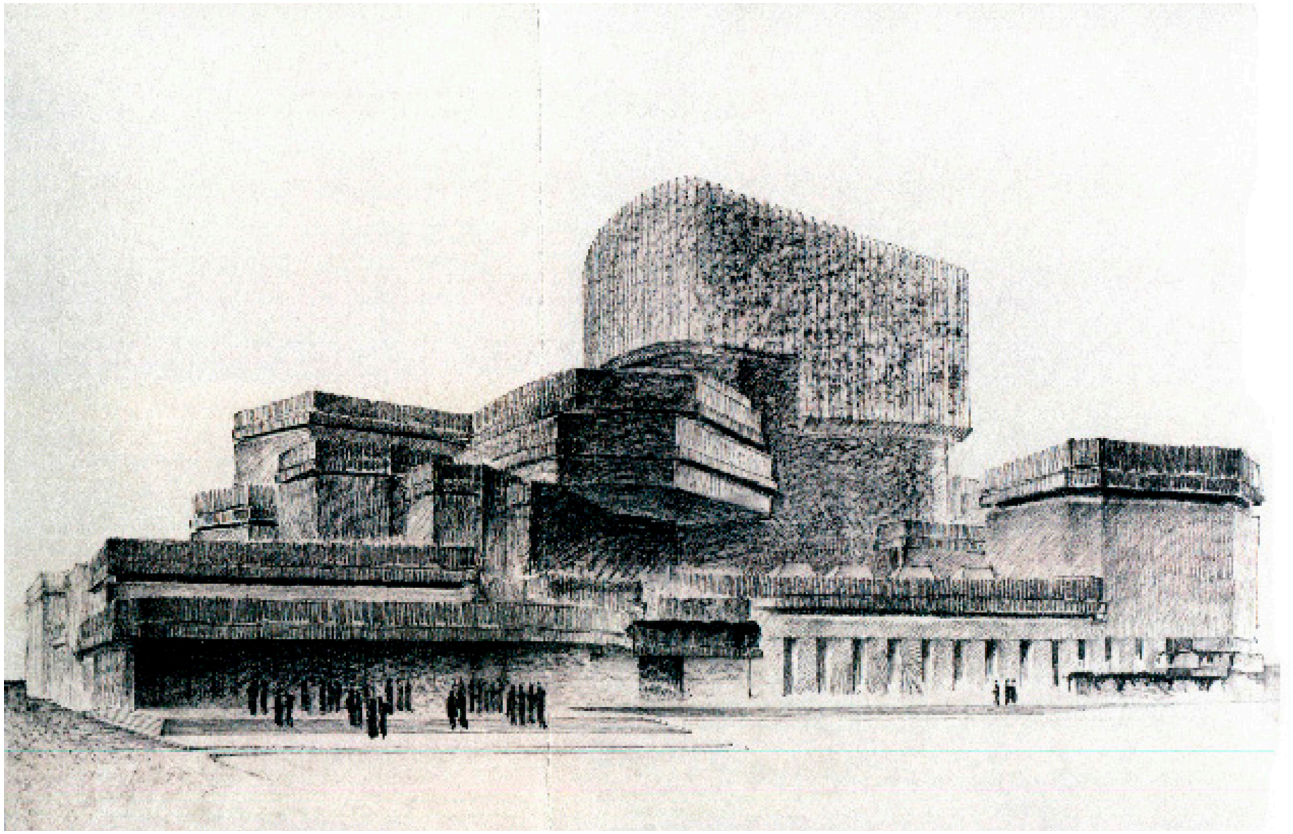

Fig. 11. Rafael Moneo, Entry for a New Opera House in Madrid, 1964 [González de Canales et al. 2017, p. 155].

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