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Women and the Making of the University of Alicante Campus: Critical Reappraisals of Modern Architecture (1982–1999)

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Abstract: A stroll around the University of Alicante campus is like a journey through the history of Spanish architecture of the last 40 years, as many of its buildings exemplify the best production of the period. This legacy also tells a story about the role played by female architects within the profession. In fact, a gender reading reveals that only two women, Pilar Vázquez Carrasco, the architect of the Faculty of Sciences (FS, 1982) and the Social Club I (1987), and Dolores Alonso Vera, responsible for the Higher Polytechnic School IV (HPS, 1999), have designed structures on the campus over almost four decades and out of a total of more than 50 buildings. The FS is an example of structural sincerity whose brick and concrete materials and externalisation of services provide Brutalist echoes. The HPS IV is a design exercise consisting of a series of elegant, inviting volumes and open spaces intertwined with the campus garden. This essay focuses on the comparative analysis of these two award-winning works to unveil those contributions that female authorship has brought to their solutions by relating them to comparable buildings in space, time and type, but designed by male architects.

Keywords: female architects; Spanish architecture; peripheral modernism; postmodernism; University of Alicante; teaching facilities; gender perspectives; historiography; gender and place

1. Introduction

The history and development of the University of Alicante (UA) campus gives insight into the role of female architects with regard to professional practice in Spain during the last two decades of the 20th century. In this respect, a gender perspective reveals that only two women, Pilar Vázquez Carrasco¹ and Dolores (Lola) Alonso Vera,² designed teaching facilities on this campus. Furthermore, both were appointed by winning competitions, with architectural works that reinterpreted in their own way a modern tradition that has served to preserve them from passing fashions. This paper explores two significant buildings of the University of Alicante that were conceived by female architects. The first

¹ Pilar Vázquez Carrasco was born in Madrid in 1949. She graduated from the Higher Technical School of Architecture of Madrid (ETSAM) in 1977. Even before graduation, in 1975, she set practice in Alicante, where she had to move due to her husband's, architect Miguel Dolç Rincón, career, completing her studies through distance learning. They both lived and worked in Alicante up until 1998, when they returned to Madrid. Over her professional practice she has always acted as a freelance architect. Vázquez Carrasco's Educational, Research, Culture, and Sports Regional Ministry building in Alicante is one of her most significant works.

² Lola Alonso Vera was born in Alicante in 1951. She graduated from the Higher Technical School of Architecture of Valencia (UPV) in 1976. From 1998 to 2005, she was a faculty member at the Higher Polytechnic School in Alicante, where she taught Design Studio. In 2005, she was appointed head curator of the VIII Spanish Architecture Biennale. Her work has been exhibited at the VII Venice Architecture Biennale (2000) as well as at Expo 2000 in Hannover, being awarded and extensively published in national and international journals.

one is the Faculty of Sciences I and II (FS) constructed in 1982 by Pilar Vázquez Carrasco. The second is the Higher Polytechnic School IV (HPS IV) erected in 1999 by Dolores (Lola) Alonso Vera (Figure 1).



Figure 1. Faculty of Sciences (FS, 1982), Pilar Vázquez Carrasco (a) and Higher Polytechnic School IV (HPS, 1999), Dolores Alonso Vera (b), University of Alicante. Photos: Authors.

Previous research into ‘gender perspectives in architecture’ (Pérez-Moreno 2018, 2019) have mainly covered historical reviews, from the ones conducted initially by Hayden and Wright (1976), Wright (1976), Torre (1977), and the Heresies Collective (1981) in North America, to the more recent work of Espegel (2006), Hervás y Heras (2015), Pérez-Moreno (2016), and Arias Laurino (2018) in Spain, who has focused on the forgotten female architects of modernism. Other research is centered around feminist reviews of spatial analysis (Rendell et al. 1999), largely related to the domestic realm, such as those also undertaken by Hayden (1981, 1984), Friedman (1998), Colomina (1992), Heynen and Baydar (2005), and Baydar (2012), to give some examples. Lastly, other lines of activity have centered around developing and promoting equality policies (Sánchez de Madariaga and Zucchini 2020), mainstreaming new gender perspectives into the management of infrastructures (Gutiérrez-Mozo et al. 2020), and rethinking urban design (Azara and Gil 2017; Col·lectiu Punt 6 2014, 2017; Sánchez de Madariaga and Novella-Abril 2020; etc.) as examples of the latest studies carried out in the Spanish context that reproduce personal experiences of several female architects (Álvarez Lombardero 2015). Some of these surveys are noteworthy for the discovery and recounting of the careers of past and present female architects, such as the abovementioned exploration of Friedman (1998) or Mary McLeod and Victoria Rosner’s research project and website *Pioneering Women of American Architecture* (McLeod and Rosner 2012). However, outside the Anglo-Saxon sphere, the type of partnership that produces the architectural work is not usually considered and in most cases comes from collaboration. On the other hand, when architecture publications are a key source to investigate gender and place in architecture, it is crucial to question how the location of certain publishing hubs, cultural and educational institutions, etc., vis-à-vis the case studies proposed has affected their historical and historiographic account through their very editorial interests and/or political bias. The examination of who/what makes some places/architectures the norm and others regional, as well as who gets published and who gets ignored, seems of utmost importance in peripheral areas such as Spain’s southeast coast, particularly when compared to Madrid or Catalonia. This aspect is fundamental to understanding the phenomenon in all its complexity and depth, as both archive research and field work are essential for a comprehensive approach to architecture as a discipline and as a domain of individual and collective life.

This essay thus questions the following statement as a point of departure: “Men and women do not make different architecture and neither is one better than the other. Men and women perceive space and their environment differently and this impacts architectural production” (Muxí Martínez 2008). Therefore, we propose to study and analyze architecture made by women working independently to describe and understand its particular features and, hence, reveal and evaluate it, not as better or worse than male architecture, where we agree with Muxí, but different and even alternative. In order to crystalize the idiosyncrasies of gender accurately and thoroughly, it is essential that a woman is the architecture’s sole author, with no collaboration from male colleagues. In partnership it is impossible

to discern clearly the contribution of each collaborator, this being the result of how the work is shared. This is even more true if they are partners in life.

The second basis for this essay is that the examination and understanding of female architects' work is inextricably associated with an in-depth knowledge and experience of the local environment (cultural, geographical, economic, social, and administrative) as the levels of analysis required cannot be satisfied simply from the relevant publications, which provide necessary, but insufficient and frequently biased information.

The aim of the analysis of both the Faculty of Sciences and the Higher Polytechnic School IV as case studies located on the University of Alicante campus is to describe and explain the particularities of the architecture created by women from two different generations who worked independently and relied on their own cultural background, by comparison with the work of their male peers. This research will entail looking beyond quantitative or enumerative knowledge already available on the theme. Instead, it will focus on the Iberian domain to explore in-depth qualitative knowledge that contributes to recognition that the work of female architects has brought something different to the discipline.

By scouring through architectural works of quality and professional interest, often forgotten because of its female authorship and peripheral location, and discarded from architecture's hegemonic 'grand narrative', we intend to contribute to its exposure, understanding, and appreciation. Ultimately, we are discussing the professional and cultural recognition of female architects' work, focusing more on the qualitative aspects that tell us about these women's intellectual and technical qualities.

We will employ two scientific methods to achieve the research objectives: firstly, the case study and secondly, the comparative method, a systematic process of contrasting one or more parameters (local environment, proposed program of uses, materiality, and conceptual references), in order to establish points of similarity and difference between them, to analyze architecture produced by women in relation to that authored by men. As a result, this essay's main contribution will emerge and consist of the study and discussion itself of the cases investigated. This entails the need to collect a significant number of examples through this inductive method with the aim of drawing general conclusions and proving our hypothesis. Therefore, this paper puts forth a seminal research procedure for further analysis of more buildings within the Spanish context, being conceived as a first step to rigorously test a methodology that will be evolved, adapted and/or improved according to the very nature of future case studies.

Context: The University of Alicante Campus

The University of Alicante (UA) was created out of the Centre of University Studies, which was established in 1968 making the most of the buildings of the Rabasa military base that, during the Spanish Civil War (1936–1939), had occupied the old aerodrome, opened in 1919 as a fueling station for flights between Morocco and France. The UA campus appears in the local landscape like an oasis in the middle of an arid area on the urban periphery intersected by main carriageways in the municipality of San Vicente del Raspeig. This original isolated position between San Vicente and Alicante, which is served by the highway connecting both cities, has subsequently been affected by the construction of the A-7 bypass along the site's southeastern edge and the expansion of San Vicente towards the University in the north east, giving the campus a different orientation ([Martí-Ciriquián and Gutiérrez-Mozo 2019](#)).

The A-7 highway now connects the campus with Valencia to the north and Murcia to the south (AP7), and to Albacete (A3) and Alcoy (A70) to the west, which provides the UA excellent road connections with the region. These changes have transformed the previous vehicle access from the San Vicente road. Upon the construction of the tramline joining the campus to Alicante and the installation of the tram stop next to the bus stop, the main entrance has been converted to be served by public transport, thus emphasizing the pedestrian character of the campus's main gate. The other two access points have acquired a complementary role, based on their site position and connections: the southeast entrance has vehicle access only from the highway, and the northeast gate is connected locally within the town of San Vicente (Figure 2).

The planning of the campus has also evolved. The central axis formed by the military buildings has been shifted to the south-east and turned orthogonally, creating a new central axis, not only because of the building's functions (general services) but also because of their architectural and planning features. This can be noted both in their size and scale, compared with the former base, and the creation of a public space around which the buildings are sited, forming the largest group of buildings on campus.

One of the most interesting planning initiatives on the university site is the pedestrianization of the internal road network, confining the vehicle traffic to the campus perimeter and moving the parking lots to this ring. This strategy originates from the so-called Radburn model, developed by Clarence C. Stein in the United States in the 1920s. The planting of lines of trees along the pedestrianized pathways originates from the tradition of denoting each path with its own plant species, a feature used both in the Garden City and various Modern Movement projects—such as R. Unwin's and E. May's, respectively. If we consider this together with the campus's isolated but well-connected, even almost self-sufficient situation, the Anglo-Saxon influence that inspired the design becomes obvious (Arnau-Amo et al. 2013).

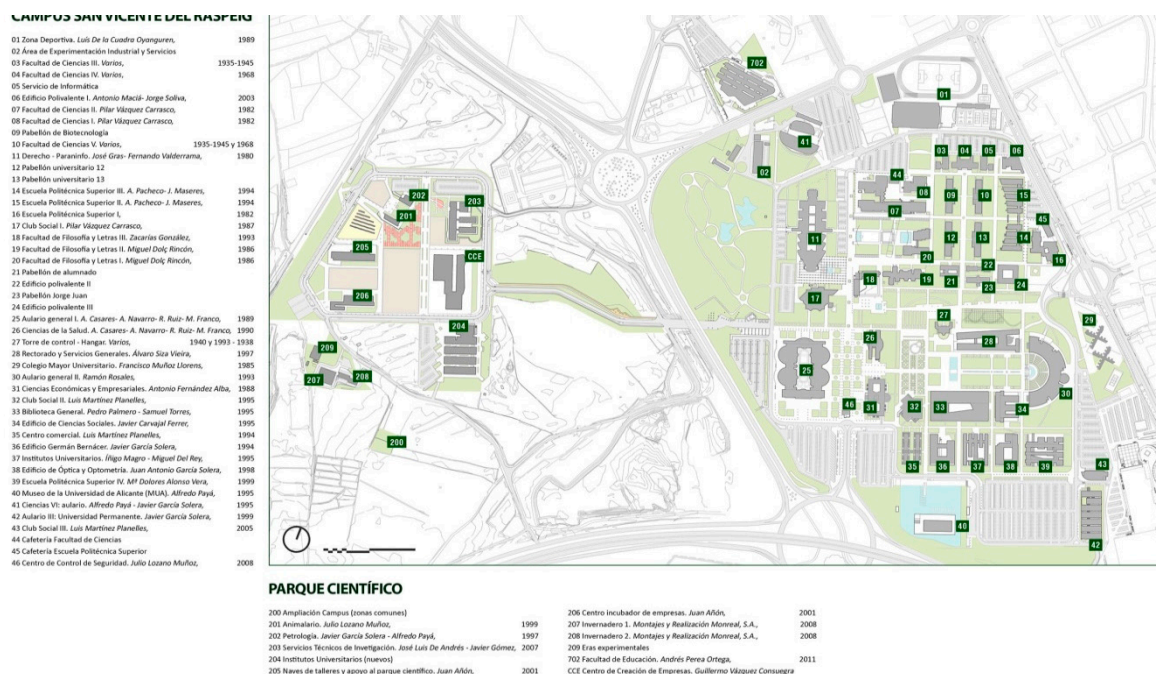


Figure 2. The University of Alicante (UA) campus. Courtesy of UA's Technical Office.

Although the park design within the site generally obeys the principles of the French formal garden, following geometric patterns that determine the planting arrangements, two other areas relating more to an English or landscape garden are worth highlighting: the *Bosque Ilustrado* grove, which also plays a key role in the sustainable management of the campus by defining the views and enhancing the environmental quality, as it conceals the presence of San Vicente's disused cement factory. Similarly, the landscaping to soften the visual and acoustic impact of the A-7 highway, located to the south of the campus, bordering the UA Museum, where the creation of a sloping embankment provides an effective barrier. In the adjacent Science Park, the planting attempts a more modern expression.

The UA campus architecture also constitutes a rich and varied heritage that would be enough to represent, by itself and within its setting, schematically and quite convincingly the evolution of Spanish architecture during the last forty years. It also possesses the singular quality of preserving the memory of its origin. Today, this legacy is particularly evident in a kind of 'historic center' denoted by the arrangement of the military facilities on a north-south axis, consisting of an aircraft hangar

(1938) whose riveted structure is still preserved, and the Control Tower (ca. 1940), which was recently included in the Iberian DCOMOMO Register.

The first expansion of the campus in the 1980s was to the west and maintained the north-south alignment. It accommodates the Faculties of Law, Sciences, Philosophy, and Humanities; the Faculty of Education was housed in one of the military buildings. The resulting architecture is a sort of restrained modernism with multiple references, such as the Faculty of Law's expressionism or the Brutalist features of the Philosophy building. It was during this period that female architects first played their role, particularly in Pilar Vázquez Carrasco's FS buildings I and II, which exhibit a striking rationality of emphatic forms fashioned in exposed brick and concrete.

At the end of the same decade, postmodernism also burst onto the campus with the architecture for the Faculties of Economics and Business and Health Sciences. Both constructions are arranged to the south of the new east-west axis created by the campus's expansion. The construction of four community facilities brings the decade to a conclusion: the Sports Pavilion to the north, the former Residential Hall to the east, Lecture Hall I and Vázquez Carrasco's Social Club I, both to the west.

The buildings erected in the 1990s, both in terms of quality and quantity placed the UA campus in the spotlight, with the designs featured extensively in the main Spanish architecture publications. Many were the result of international competitions. The buildings were located in the south and east of the campus to bestow the kind of institutional imagery that the university sought. Then, the east-west growth axis was closed to the east with Lecture Hall II, arranged around an open-air amphitheater, and completed with Alvaro Siza's elegant yet subtle Rectorate building, facing the General Library.

To the east of the Library is the Social Sciences building and to the west the Social Club II. Parallel to these to the south is perhaps the most famous architectural sequence on campus, the Germán Bernácer building, the University Institutes, the Optics and Optometry School and Dolores Alonso Vera's HPS IV building. At the southern end of the long axis, which commences from the entrance to the Sports Pavilion at the north end lies the UA Museum, the cultural counterpoint to sports activity. In the south-east corner of the campus, Lecture Hall III contrasts with the Centre of Chemistry Technology at the opposite end.

In this new millennium, the campus has expanded beyond its boundaries, establishing itself in San Vicente with the new Faculty of Education and breaching the borders of Alicante with the Science Park.

In a nutshell, this complex, as we previously stressed, can be said to represent the history of the last decades of Spanish architecture, while also expressing the role of Spanish female architects in the same period. Up until 2012, only three structures—Vázquez Carrasco's 1982 FS and 1987 Social Club I and Alonso Vera's 1999 HPS IV—out of a total of more than 50 buildings on the campus had been designed by women (Figure 3).



Figure 3. University of Alicante campus site plan with FS and HPS IV highlighted. Drawing: Carlos Pastor García.

2. Comparative Analysis

2.1. The Environment

During the controversial renovation of the Rijksmuseum in Amsterdam (2001–2013), the local Council took the side of cyclists and invited Spanish office Cruz y Ortiz Arquitectos to resubmit their design proposal, thereby firmly establishing a basic principle of civic architecture, namely that a building should defer to the urban environment on which it depends. For all architecture, whatever its time and place, the building's contribution to the public space that accommodates it is essential to measure the extent of its success and subsequent prestige.

This contribution may be expressed through various strategies: one of these is the passage. Halfway between an open-air path and an alley or cut through, the passage invites the pedestrian to walk through, opening an area of encounter and exchange in which the public and the private coalesce harmoniously. Dolores Alonso's HPS IV building provides an inviting and partly covered lateral passage avoiding a detour round the building and revealing its interior spaces. It even encourages the pedestrian to linger in its peaceful excavated patio (Figure 4). The architecture thus is able to break the insularity to which its type, which is clearly inspired by Modern movement references is prone. In Spanish, the native language of both the architects featured in this essay and its authors, the word '*pasaje*' has other accepted meanings, including the welcome or reception given to someone. This building is an excellent example of hospitable architecture.

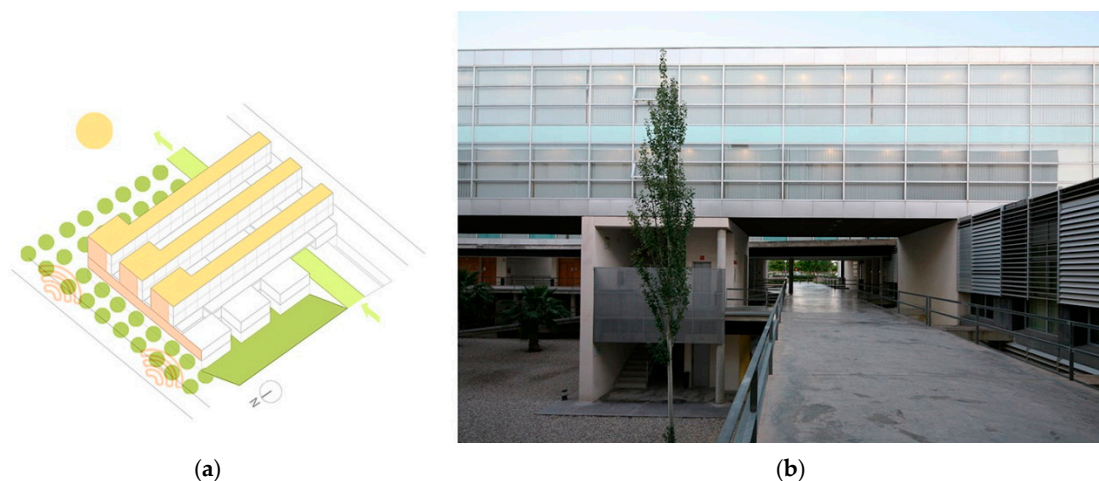


Figure 4. Sketch of adjacent area (a) and passage (b) through the HPS IV. Drawing: Carlos Pastor García. Photo: Courtesy of UA's Technical Office.

Another example is to be found in the intimately connected, yet clearly differentiated Pilar Vázquez's FS buildings I and II, which are integrated into their surroundings and become part of them. In this case, the circulation is central not lateral, introducing us to the complex in a bold and assertive manner. To cross is to penetrate and encompass the complex of structures that comprise the FS. We sense that we move through horizontal blocks and that we are received by vertical blocks without really knowing with any certainty the nature and extent of their functions yet defined and qualified clearly in each case. A modest service block closes the site to the north, like a plaza, and ensures a sunny reception on which the horizontal southern bridge structure, giving access to the open space of the court, does not intrude (Figure 5).

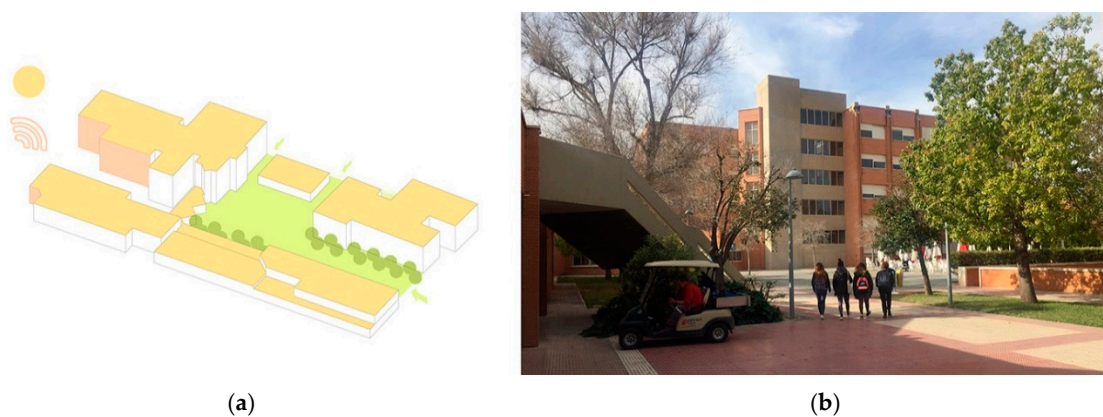


Figure 5. Sketch of adjacent area (a) and plaza (b) next to the FS. Drawing: Carlos Pastor García. Photo: Authors.

The whole responds to the idea of *civitas minima* that [Alberti \(1977\)](#) proposed as a valid model for all architecture. The environment, in this case, is composed of the surrounding buildings. There is a certain desire for introspection in the organization of the spaces, which for the scientific community occupying the buildings is extremely appropriate.

For the passerby, the FS invites repose. However, for those who wish to discover its secrets, the full articulation of its parts, with their connections and different heights and unexpected nooks do not make it easy. Similarities and differences switch roles. We are surprised by the seemingly simple interplay of volumes; the layout consists of an L at the southeast, a tower at the northeast, and the service block to the north, the three of them creating the site's boundary. Yet what appears simple in the floor plans is not true for the elevations, marked by sudden emphasized changes of level that at first sight give the impression of a labyrinth. To overcome this, we would need to understand the specific uses assigned to each space.

The FS buildings are rigidly aligned to the cardinal points. To some extent, they seem to forget their immediate surroundings to create their own environment, which is conceived to facilitate the concentration of the scientific community. Thus, we might say that we find ourselves on an island, or islet, in the rich and varied landscape of the University of Alicante campus.

2.2. Program of Uses and Architectural Programme

The arrangement of Dolores (Lola) Alonso Vera's HPS IV is predicated on the design's assumption that the site must have a pedestrian route linking the parking lot at its back to the rest of the campus whose park opens before it. This passage acts as a bridge, being partially covered to provide shade. This passage flies over the building's basement and separates a small longitudinal service area in the west, from a large circulation space around a central, excavated patio serving as a public forum at the said basement level. This patio is formed by eight prismatic volumes—three in the north, three in south, and two in the east—that define the space's limits, and house in the basement and ground floor the classrooms, workshops and laboratories of the School of Architecture (which is housed in the HPS IV) (Figure 6).



Figure 6. HPS IV: main circulations scheme (a) and cross-section (b). Drawings: Carlos Pastor García.

Another three boxes invade the patio, completing the plan of lecture rooms, among which the one devoted to Drawing has been conceived as a double height space. This gives rise to an ambulatory, rather like an open cloister, challenging the very nature of this type as an enclosed space. A ramp running in the east-west axis invites access to the patio (Gutiérrez-Mozo and Maciá-Mateu 2014). This is a prominent architectural element which plays a crucial role as space for interpersonal relations. The ramp facilitates exchange between the members of the university community as well as connecting the most public spaces of the building (Figure 7).



Figure 7. HPS IV: View of the ground floor passage (a) and ramp (b) linking it to the basement. Photos: Courtesy of UA's Technical Office.

Over the lower parallelepipeds, which, as explained above, are devoted to lecture rooms, workshops, laboratories, and service areas, are three longitudinal two-story volumes. These three prisms house the teaching staff's offices and meeting rooms, being for climate and structural reasons completely open and glazed on the north and having very few and small openings to the south. The architect's design strategy clearly responds to an idea of privacy that increases as we move higher: the upper levels are places of individual work; the basement is a place of encounter and exchange; finally, the passage on the ground floor is the space that links the building to the campus. The plan is as simple as it is rigorous and effective.

Located between the military buildings and the Faculty of Law, the FS occupies a substantial plot of the campus. Its buildings were constructed in two phases (I and II) but intended to be interpreted as a whole. The first, compact and separate, with a basement and four floors, is situated at the northeast limit. The second, an L shape, with a long arm to the south and a shorter arm to the west, has two floors, is completed at its north eastern end, with another block of five floors with three unequal arms that span out to the north, south and west (Martínez-Medina and Merlo 2014) (Figure 8).

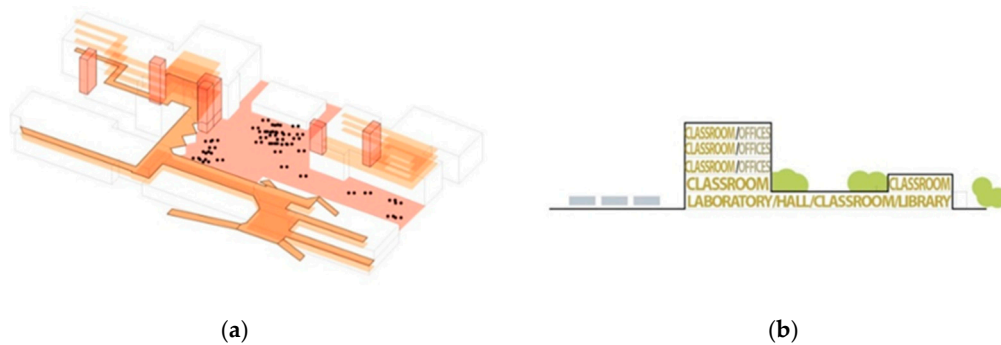


Figure 8. FS: main circulations scheme (a) and cross-section (b). Drawings: Carlos Pastor García.

FS I functions as a great foyer, illuminated naturally from above, from which corridors and stairways distend. Two compact volumes, at the north and west, mainly housing laboratories complete the outline. From the south, the FS II presents a longitudinal facade (the long arm of the previously mentioned L) with the covered entrance to the plaza, which both volumes define. This southern block mainly houses large lecture rooms and offices. The west wing of the L is connected by a passage in a north-south direction with a large volume to the northeast.

Walkway terraces, accessible from stairs and external ramps, lie above the passage areas on the ground floor (Figure 9). The volume at the north-east end echoes the design of the FS I with an extra floor. Again, a series of laboratories are grouped around a large central void to the north and west, with offices to the south. An additional one-story service block completes the complex and turns what would have been a wide passage area into a welcoming plaza, open in all directions, and to the sun, giving unity to a design of various disparate elements. This modest volume adds a pleasant meeting place to the initial whole.



Figure 9. FS: Walkway terraces (a) and (b). Photo: Courtesy of UA's Technical Office.

2.3. Materiality

The austere economy of materials, more in keeping with the spirit rather than the letter of modernism in no way impedes our vision, of the HPS IV, as an exemplary exercise of rich articulation of spaces with basic and inexpensive construction materials. The luxury, in this case, is provided by the project's insightful ideas. The concrete structure and glazing with metal framing and slats in the facades pay homage to the legacy of the Modern Movement. Regardless of the modesty of building

materials, the squared railings, white plastering, cement floors, and wooden partition walls allow for a rich interplay of spaces (Figure 10).

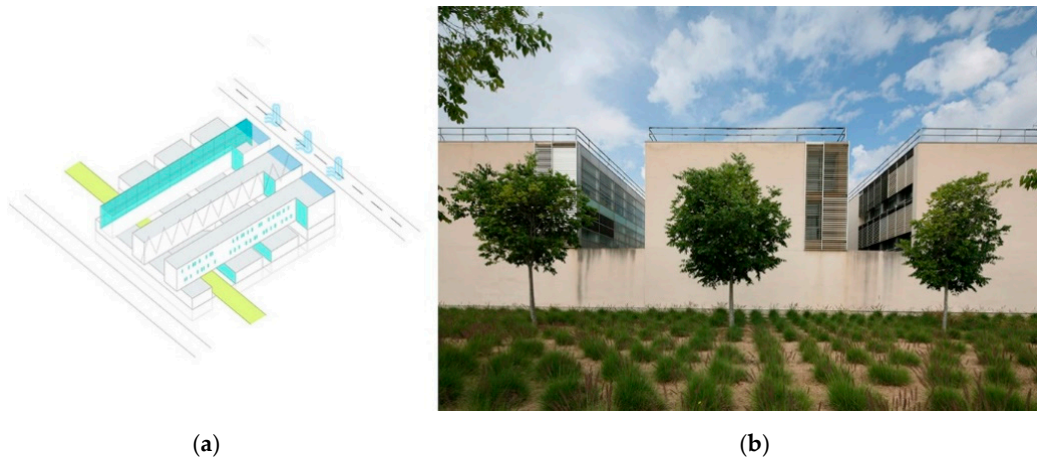


Figure 10. HPS IV: Materiality scheme (a) and north facade (b). Drawing: Carlos Pastor García. Photo: Courtesy of UA's Technical Office.

In contrast, the FS buildings although older seem to subscribe to a later language, illustrated by the radical opposition between the ubiquitous brickwork that belongs to a timeless traditional past, and the uncompromising concrete, impeccably executed. In their intelligent interplay, the brickwork contributes to the building's durability, while the repetition of concrete elements, particularly in the connections between levels—such as the massive parapets and stairways—articulates the variety and plastic interest of the FS (Figure 11).



Figure 11. FS: Materiality scheme (a) and access (b). Drawing: Carlos Pastor García. Photo: Courtesy of UA's Technical Office.

Moreover, the profusion of exposed services and architectural devices, such as pipework to expel gases and smoke, movable slats, etc., emphasizes the material quality and technological control exerted by the architect over her building. Perhaps the most remarkable design feature of the building is found in the interior passages connecting the FS blocks. Here, the wonderfully wrought diaphanous vaults speak volumes about the ambitious objectives of this remarkable architecture (Figure 12). The design symbolizes the scientific spirit of enquiry previously mentioned. The care which went into the execution of this small “city of sciences” testifies to the importance of these disciplines to the UA as a whole.

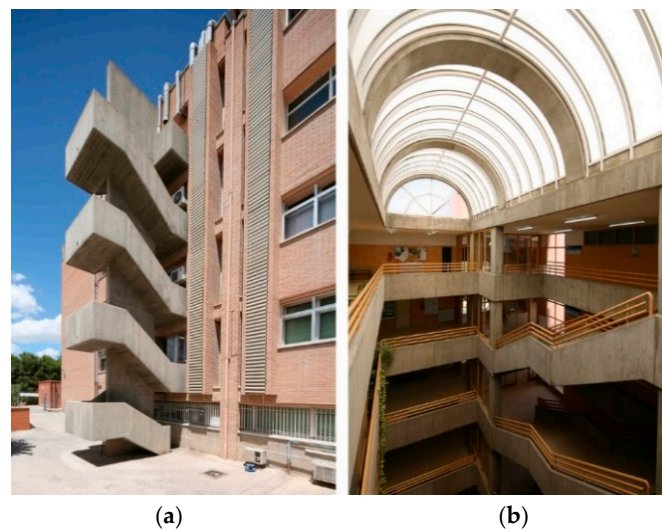


Figure 12. FS: Views of the concrete stairways (a) and interior glazed vaults (b). Photo: Courtesy of UA's Technical Office.

2.4. The References

Despite its relatively recent construction (1999), which was awarded by competition, the HPS IV contains definite features of the Modern movement, at a time and in a place, when its influence had become part of the classical architectural canon. The arrangement of the building's forms satisfies the very definition of a clever, precise, and delightful game played with volumes and light; a game whose rules are based on geometry and a whole disciplined application governs the space in its three, or rather four dimensions, above and beyond all other considerations (Gutiérrez-Mozo et al. 2018).

To ascribe this building to what Jencks (1971) called late-modernism would not be appropriate, because apart from its aesthetic ambition noted at the time, the HPS IV stands out for its ingenious devotion to observing the principles practiced by the Modern movement's great masters. Being the results of both remarkable spatial achievements and functional deficiencies, such as its indifference to the local climate, this building represents a kind of return to the roots, like an act of faith in a rejuvenated modernism.

Yet, the Faculty of Sciences' small citadel can obviously be ascribed to post-modernism: both in its background of "complexities and contradictions" (Venturi 1966), and in the assault of its Brutalist forms and gestures from all sides. The L shaped structure described above receives us as we first reach the building from the campus. Its south façade provides access to the plaza and offers us passage beneath the bridge, which is crossed by a wide stairway and ramp. There, the possibility of taking three different routes diverts our attention from the lower windows of the building. Thus, a complex and contradictory design strategy organizes circulation and the privacy of the spaces opening to the plaza (Figure 13).

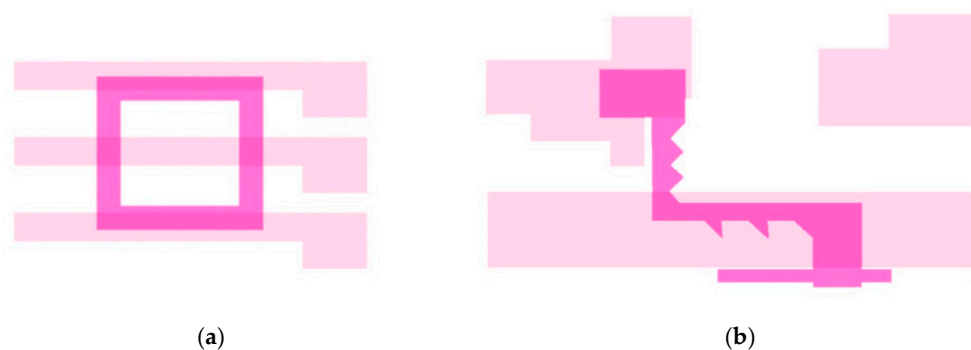


Figure 13. Conceptual reference plans of HPS IV (a) and the FS (b) Drawings: Carlos Pastor García.

As regards Brutalism, the exposed concrete, which is emphasized by the diagonals of the stairways, together with the exhibition of building services, when seen from the distance, remind us of a small-scale version of Piano and Rogers's 1977 Pompidou Centre. Similarly, the display of forms, materials and technological devices seems to compose a Piranesi engraving.

2.5. Contemporary Pairs

To place Dolores Alonso's and Pilar Vázquez's respective works in context and demonstrate their singularity, a comparison is made with other buildings designed and constructed by male architects, which are related closely in space, time and type. To do so, two case studies on the relatively proximate University of Murcia's Espinardo campus (which is less than 80 km and 50 min's drive from the University of Alicante campus) sharing similar design strategies, architectural solutions and program of uses (higher education facilities) are selected and examined. The first is the Faculty of Economics and Business (FEB) built in 1996–1999, which is proposed with respect to Alonso's HPS IV completed in 1997–1999. The second is the Faculty of Veterinary Medicine (FVM) erected in 1984–1989, being presented in relation to 1982's Vázquez's FS. The main features of these four education buildings have been summarized in comparative Tables 1 and 2.

Table 1. Technical sheet for the FS of the University of Alicante and the FVM of at Murcia University.

Description	Faculty of Science I-II (University of Alicante)		Faculty of Veterinary Medicine (University of Murcia)		
Location	Alicante		Murcia		
Surface	201.27 km ²		881.90 km ²		
Population/Density	334.887 (2019)/1639.53 per km ²		447.182 (2018)/507.03 per km ²		
Climate	Semi-arid warm		Semi-arid warm		
Architect(s) Partners	Pilar Vázquez Carrasco		Veremundo Nuñez Arenal, Isidro Luna Seco, Manuel García Cendan, Manuel Díaz Ros		
Developer	University of Alicante		University of Murcia		
Project	unknown		1984		
Construction	1982		1989		
Construction Management	Pilar Vázquez Carrasco		-		
Budget	unknown		766,305.726 Pesetas (4.61 M €)		
Surfaces	20,310.77 m ²				
	Basement	1342.77 m ²		15,330.50 m ²	
	Ground floor	1325.00 m ²	4957.00 m ²	Basement	1786.94 m ²
	1st floor	1266.00 m ²	3,683,00 m ²	Ground floor	6213.47 m ²
	2nd floor	1.266.00 m ²	1,735,00 m ²	1st floor	3.241,70 m ²
	3rd floor	1.266.00 m ²	3683.00 m ²	2nd floor	1.481,82 m ²
	4th floor		1,735,00 m ²	3rd floor	1.481,82 m ²
	FS I	6465.77 m ²		4th floor	1.124,75 m ²
	FS II	13,845.00 m ²			
Number of Students	2158		940		

Table 2. Technical sheet for the HPS IV of the University of Alicante and the FEB of the University of Murcia.

Description	Polytechnic School IV (University of Alicante)	Faculty of Economics and Business (University of Murcia)
Location	Alicante	Murcia
Surface	201.27 km ²	881.90 km ²
Population/Density	334.887 (2019)/1639.53 per km ²	447.182 (2018)/507.03 per km ²
Climate	Semi-arid warm	Semi-arid warm
Architect(s) Partners	Dolores Alonso Vera Adriana Figueiras Robisco	Enrique Carbonell, Ad hoc (Carlos Jurado and Juan A. Sánchez Morales), Salvador Moreno Pérez and Juan Luis Ballesteros Galante
Developer	University of Alicante	University of Murcia
Project	1997	1996
Construction	1999	1997–1999
Construction Management	Dolores Alonso Vera, Luis Martínez Planelles, architects and Juan Manuel Cánovas, civil engineer	Enrique Carbonell, <i>Adhoc</i> (Carlos Jurado and Juan A. Sánchez Morales), Salvador Moreno Pérez and Juan Luis Ballesteros Galante
Budget	926,210,974 Pesetas (5.57 M €)	1,716,382,200 Pesetas (10.32 M €)
Surfaces	22,004.90 m ²	
	10.953,11 m ²	Basement 393.90 m ²
	Basement 3727.43 m ²	Ground floor 3551.60 m ²
	Ground floor 3346.10 m ²	1st floor 3727.20 m ²
	1st floor 1939.79 m ²	2nd floor 3672.20 m ²
	2nd floor 1939.79 m ²	3rd floor 3555.20 m ²
	Open spaces 1850.00 m ²	4th floor 4037.80 m ²
		5th floor 3067.00 m ²
Number of Students	500	3514

As the HPS IV, the FEB was built in the late 1990s, being equally the result of an open competition in which a proposal prepared by Enrique Carbonell, Ad hoc msl, and Salvador Moreno, working in collaboration, proved to be the winner. Granted prominence on campus by its size and materiality, it lies at the center of the perimeter ring road, flanked by a grove to the south and open spaces to the east and west, while its northern vista is restricted by the University Library and the Faculty of Library and Information Science.

Located in the northern part of the Espinardo campus, the FVM was constructed at the end of the 1980s. It appears as a sequence of longitudinal volumes structured along an east-west axis, having an irregular boundary and a seemingly immovable mass. The FVM gives the impression of a large complex engaging with the exterior through a series of small windows in the otherwise solid walls that define it (Figure 14).

Within the curving contours of the campus, the FEB emerges as a round volume of six floors formed by four parallel blocks of offices and lecture rooms oriented east-west, which are crossed perpendicularly by two other prisms that accommodate the corridors and communication hubs. The western orientation creates the building's central space, where common areas, walkways, and stairways to higher floors flow in to form a great interior patio for access and encounters. The FEB

creates an interior universe of relations that appears isolated from the rest of the campus, inviting us to enter from the east via the three patios between the four teeth of its comb-like form (Figure 15).

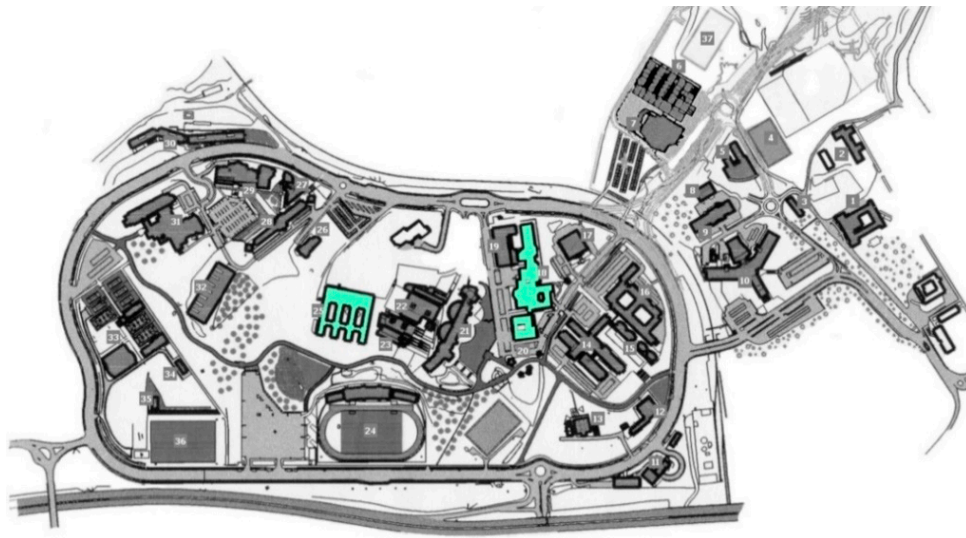


Figure 14. Murcia University's Espinardo campus showing the Faculty of Economics and Business (FEB) and Faculty of Veterinary Medicine (FVM). Drawing: Authors.



Figure 15. Photos and ground floor of the FEB, University of Murcia. Photos: Authors. Drawing: University of Murcia Technical Division.

The FVM is a complex formed by the juxtaposition of various volumes of different heights unified by the treatment of the exposed brick facade. The ground floor has a linear structure featuring a series of patios which separate functions and program requirements. Access is via two flights of stairs perpendicular to this axis, the east stair leads to a large hallway, the only communication space, from

which a long corridor extends the whole length of the building, dividing it into two parts: the south with two story's and the north with four floors. Subsequently, the building was extended to the west by building a veterinary hospital resulting in an excessively symmetric and rigid whole (Figure 16).

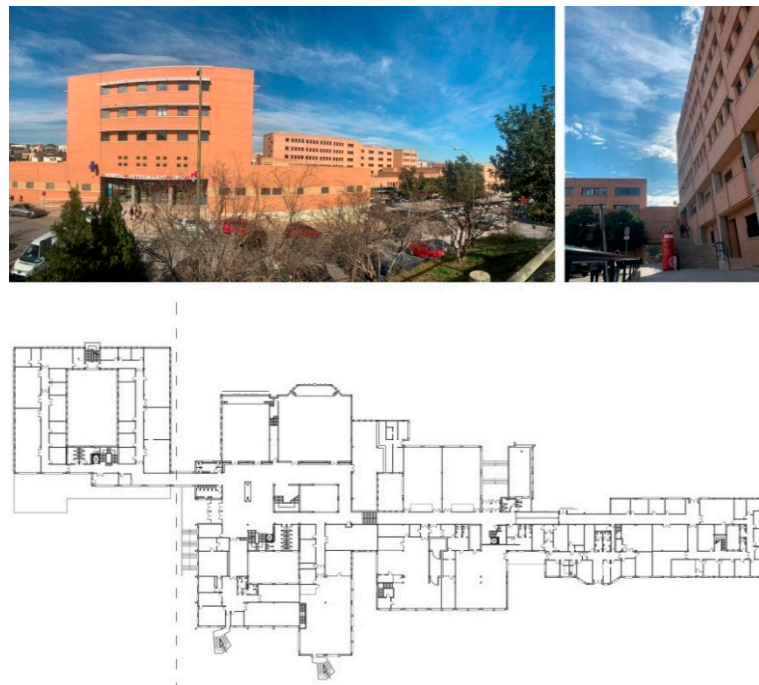


Figure 16. Photos and ground floor of the FVM, University of Murcia. Photos: Authors. Drawing: University of Murcia Technical Division.

The FEB's orthogonal geometry engenders a strong concrete structure clad by a series of expressive curtain walls which bring in natural light and afford views over the surrounding area. The glass surfaces also contribute to dematerializing the building's conspicuous volume. The facades facing the south are defined by horizontal bands of perforated aluminum plates that protect from the sun, while the west facades are covered in a braided metal skin that provides additional thermal insulation. The continuity of these facades is interrupted by the staircases that protrude externally.

The FVM's structure of reinforced concrete is adapted to the complex plan and requirements for classrooms, laboratories, operating theatres, departments, services, and administration areas that comprise the various volumes clustered together. All these volumes, that share the same materiality and architectural image, reveal slight variations in the form, proportions, and rhythm of their windows. In the higher volumes of the north façade, the communication areas protrude externally and interrupt the continuity of the facades and the rectangularity.

3. Discussion

As shown in our analysis above, both the FS and the HPS IV, emphasize their dialogue with the UA campus by enabling passage across it. In the case of the FS, via the plaza, facing north, which is demarcated by the service block. As for the HPS IV, via an entrance and exit passage through the building, which is located south of the campus. Yet in Murcia, the relations established between the buildings and their environment are quite different as both the FVM and the FEB appear remote from the surrounding Espinardo campus. The FVM looks like an imposing wall and the FEB as aloof and insular, creating their own universe at the margin of the world outside.

The space created in the FS center, like a haven, is at surface level. In contrast the space generated in the HPS IV is sunk down a level, to the building's base. Thus, the welcome is more heartfelt, from the core of the building. We are not discouraged from entering; we are received within. In contrast, the

meeting and connection spaces of the FVM and the FEB are found in the interior, after crossing the threshold. Although more open in the FEB, the FVM space is decidedly secluded.

The stairs and ramps, accentuated by their exposed concrete, creating the FS's most distinctive feature, is replicated, in their shared postmodern allegiance, by both the FVM and the FEB, whose externally protruding stairways form the most arresting image of both buildings, although their formal and material languages are different. A single ramp giving access to the interior patio is crucial to the organization of the HPS IV's public space. All other stairs are contained within the building, like platforms for a hidden theatre fly system.

The idea of a nineteenth century vaulted foyer under a glazed roof is used in the FS's two blocks, traversed by stairs and galleries. The HPS IV, in contrast, evokes the timeless cloister, paradoxically open, but no less intimate. Moreover, a certain Anglo-Saxon spirit of reserve, originator of Brutalism (Banham 1966) permeates the FS, which in the FVM borders on severity. In the HPS IV, with its Mediterranean air, a playful quality pervades, while in the FEB, an impression of what Jencks (1971) would describe as late-modern architecture can be ascribed to its display of technology and its derivative aestheticism. Yet, despite its deliberate referencing of La Tourette's primary colored skylights, the overall mood is serious.

In the architecture of these buildings we can read the slogans defining two chronologically closed but culturally dissimilar eras following one upon the other. Here is the postmodernist "more is not less" motto of the FS—and the FVM, although softened—as well as the "less is more" of the HPS IV's reinvented modernity. Meanwhile, the FEB converts Gropius's idea of "art and techniques: a new unity" into an ideology aligned with the high-tech movement of late modernity. This diversity of approaches corresponds to the differences between those faculties adhering to the idea of scientific progress (FS and FVM), and the FEB, which is indebted to the pragmatism of capital and, finally, the School of Architecture (HPS IV), which acknowledges artistic tradition. The FS and the HPS IV, respectively, flow versus measure, image versus geometry, represent, to some extent, two ways of understanding architectural practice: *Baukunst* vis-à-vis *Architektur* (Woodward 2008).

4. Conclusions

Although sharing the same postmodern language, a comparable materiality in terms of their exposed brick and concrete walls as well as a reserved, introspective attitude, the FS and FVM differ substantially in their treatment of both interior and exterior public space. In the FVM, collective spaces are practically missing, being reduced to the strict programmatic requirements of common areas, which far from being places to stay are treated as mere passageways and vertical communications. Conversely, the FS creates a quiet, welcoming plaza at the UA campus and organizes its most significant blocks around central, meeting spaces filled with overhead natural light and animated by the dynamic presence of staircases and corridors.

We contend that it is precisely the female architect who is responsible for this difference because of her concern for the collective, which leads to the creation of a forum at the FS and a foyer in each of its two blocks. Such spaces are completely absent, even disregarded, at the FVM where even the most minimal *joies essentielles* are not permitted.

Due to the fragmentary nature of her building, which is the result of an articulation of different volumes, Dolores Alonso's HPS IV overflows with sun, air, and greenery. Public spaces are generously designed, their dimensions prevailing over the small spaces, such as offices, conceived for private use. Thanks to the slopes located on the north side of the School, the conspicuous natural elements of the campus enter the building and spread over it through its main and secondary patios which connect all blocks of the complex. Moreover, these *joies essentielles*, unlike in the case of the FEB, can be enjoyed outside the building by the whole university community. The HPS IV also entices us with its playfulness that underlies any composition exercise and which incites us to action, to benefit and take pleasure in the full exercise of freedom. In contrast, the impeccable execution of the FEB prefers us to be spectators, admirers of its deployment and control of trades and materials, keeping its various

surprises only for its very users. At the HPS IV one feels instantly at home, where the act of inhabiting fosters the flourishing of the human condition. In its turn, the FEB welcome both its users and visitors with hospitality, but everyone must observe the rules of its formal etiquette.

Due to their female authorship as well as these women's attention to their physical and cultural milieu, both the FS and the HPS IV, each in their own way, are works that are sensitive to the community they serve, as permeable spaces that invite the public to discover them. Both buildings create training and learning habits. They acknowledge their place within the campus and yet create their own space. Thus, we believe we have shown in these case studies that the presence of female architects at the forefront of these projects has led to a positive and defining contribution above and beyond questions of function, construction, and language.

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References

- Alberti, Leon Battista. 1977. *Los Diez Libros de Arquitectura*. [Translation Francisco Lozano, Facsimile Edition]. Valencia: Albatros. First published in Florence, 1485.
- Álvarez Lombardero, Nuria. 2015. *Arquitectas, Redefiniendo la Profesión*. Málaga: Recolectores Urbanos Editorial.
- Arias Laurino, Daniela. 2018. *La Construcción del Relato Arquitectónico y las Arquitectas de la Modernidad: Un Análisis Feminista de la Historiografía*. Ph.D. thesis, Dir. Zaida Muxí, Universitat Politècnica de Catalunya, Barcelona, Spain. Available online: <https://upcommons.upc.edu/handle/2117/123109> (accessed on 8 January 2020).
- Arnau-Amo, Joaquín, María-Elia Gutiérrez-Mozo, and Raquel Pérez del Hoyo. 2013. De la ciudad universitaria al campus de universidad. Estudio de una evolución: Tres épocas, tres escalas, tres modelos. *Dearq* 13: 6–23.
- Azara, Sira, and María Vicenta Gil. 2017. *Set para Introducir la Perspectiva de Género en el Proceso Urbano*. Valencia: Conselleria de Vivienda, Obras Públicas y Vertebración del Territorio de la Generalitat Valenciana, Available online: http://www.habitatge.gva.es/documents/20558636/0/SET_cas_link.pdf/0cf2c19d-e679-4c10-810a-fea0dd4fb484 (accessed on 10 January 2020).
- Banham, Reyner. 1966. *The New Brutalism*. London: Architectural Press.
- Baydar, Gülsüm. 2012. Sexualised Productions of Space. *Gender, Place and Culture. A Journal of Feminist Geography* 19: 699–706. [CrossRef]
- Col·lectiu Punt 6. 2014. *Mujeres Trabajando. Guía de Reconocimiento Urbano con Perspectiva de Género*. Available online: <http://www.punt6.org/wp-content/uploads/2016/08/PDF-mujeres-baja-con-portada.pdf> (accessed on 13 January 2020).
- Col·lectiu Punt 6. 2017. *Entornos Habitables. Auditoria de Seguridad Urbana con Perspectiva de Género en la Vivienda y el Entorno*. Available online: http://www.punt6.org/wp-content/uploads/2016/08/Entornos_habitables_CAST_FINAL.pdf (accessed on 13 January 2020).
- Colomina, Beatriz, ed. 1992. *Sexuality and Space*. Princeton: Princeton Architectural Press.
- Espiegel, Carmen. 2006. *Heroínas del Espacio. Mujeres Arquitectos en el Movimiento Moderno*. Valencia: Ediciones Generales de la Construcción.

- Friedman, Alice T. 1998. *Women and the Making of the Modern House. A Social and Architectural History*. New York: Harry N. Abrams.
- Gutiérrez-Mozo, María-Elia, and Antonio Maciá-Mateu. 2014. Obras realizadas entre 1990–2000. In *campus Universidad de Alicante*. Edited by María-Elia Gutiérrez-Mozo and Pablo Martí-Ciriquián. Alicante: Servicio de Publicaciones de la Universidad de Alicante, pp. 130–31.
- Gutiérrez-Mozo, María-Elia, José Parra-Martínez, and Ana Gilsanz Díaz. 2018. Miradas cruzadas sobre las Escuelas de Arquitectura de Alicante y Nantes. Lola Alonso y Anne Lacaton, creadora y productora de hábitats para la enseñanza y el aprendizaje. *Hábitat y Sociedad* 11: 165–83. [CrossRef]
- Gutiérrez-Mozo, María-Elia, José Parra-Martínez, and Ana Gilsanz-Díaz. 2020. Gestión de infraestructuras con perspectiva de género. Caso: El campus de la Universidad de Alicante. *Ciudad y Territorio Estudios Territoriales (CyTET)* 52: 103–20. [CrossRef]
- Hayden, Dolores. 1981. *The Grand Domestic Revolution: A History of Feminist Designs for American Houses, Neighborhoods and Cities*. Cambridge: MIT Press.
- Hayden, Dolores. 1984. *Redesigning the American Dream: The Future of Housing, Work and Family Life*. New York: W.W. Norton.
- Hayden, Dolores, and Gwendolyn Wright. 1976. Architecture and Urban Planning. *Signs: Journal of Women in Culture and Society* 1: 923–33. [CrossRef]
- Heresies Collective. 1981. *Making Room: Women in Architecture*. Heresies Special Issue 11. Edited by Barbara Marks, Jane C. Mc Groarty, Deborah Nevis, Gail Price, Cynthia Rock, Susana Torre and Leslie Kanes Weisman. New York: Heresies Collective.
- Hervás y Heras, Josenia. 2015. *Las Mujeres de la Bauhaus: de lo Bidimensional al Espacio Total*. Buenos Aires: Editorial Nobuko.
- Heynen, Hilde, and Gülsüm Baydar, eds. 2005. *Negotiating Domesticity. Spatial Productions of Gender in Modern Architecture*. London and New York: Routledge.
- Jencks, Charles. 1971. *Architecture 2000: Prediction and Methods*. London: Studio Vista.
- Martí-Ciriquián, Pablo, and María-Elia Gutiérrez-Mozo. 2019. Paisaje, Urbanismo, Arquitectura en el campus de la Universidad de Alicante. In *Paisaje, Urbanismo y Arquitectura en el campus de la Universidad de Alicante*. Edited by María-Elia Gutiérrez-Mozo, Pablo Martí-Ciriquián and Carlos Barberá-Pastor. Alicante: Publicacions Institucionals Universitat d'Alacant, pp. 15–25.
- Martínez-Medina, Andrés, and Luis Ferre de Merlo. 2014. Obras realizadas entre 1980–1990. In *Campus Universidad de Alicante*. Edited by María-Elia Gutiérrez-Mozo and Pablo Martí-Ciriquián. Alicante: Servicio de Publicaciones de la Universidad de Alicante, pp. 80–81.
- McLeod, Mary, and Victoria Rosner. 2012. Co-Directors. *Pioneering Women of American Architecture*. Available online: <https://pioneeringwomen.bwaf.org/> (accessed on 27 December 2019).
- Muxí Martínez, Zaida. 2008. Arquitectura y Género. Entrevista a Zaida Muxí. *Revista Su Casa* 46: 152–55.
- Pérez-Moreno, Lucía-C. 2016. The 'Transition' as a Turning Point for Female Agency in Spanish Architecture. In *A Gendered Profession*. Edited by James Benedict Brown, Harriet Harriss, Ruth Morrow and James Soane. London: RIBA, pp. 108–15.
- Pérez-Moreno, Lucía-C., ed. 2018. *Perspectivas de Género en la Arquitectura. Primer Encuentro*. Madrid: Abada.
- Pérez-Moreno, Lucía-C., ed. 2019. *Perspectivas de Género en la Arquitectura. Segundo Encuentro*. Madrid: Abada.
- Rendell, Jane, Barbara Penner, and Iain Borden, eds. 1999. *Gender Space Architecture: An Interdisciplinary Introduction*. London and New York: Routledge.
- Sánchez de Madariaga, Inés, and Inés Novella-Abril. 2020. Género y Urbanismo en España: Experiencias y perspectivas. *Ciudad y Territorio Estudios Territoriales (CyTET)* 52: 5–12. [CrossRef]
- Sánchez de Madariaga, Inés, and Elena Zucchini. 2020. "Movilidad del cuidado" en Madrid: Nuevos criterios para las políticas de transporte. *Ciudad y Territorio Estudios Territoriales (CyTET)* 52: 89–102. [CrossRef]
- Torre, Susana. 1977. *Women in American Architecture: A Historic and Contemporary Perspective*. New York: Whitney Library of Design.
- Venturi, Robert. 1966. *Complexity and Contradiction in Architecture*. New York: Museum of Modern Art.

Woodward, Christopher. 2008. Bau, Baukunst, Architektur. The Work of Max Bill. *25 Years of Critical Reflection on Architecture, OASE* 75: 265–74. Available online: <https://www.oasejournal.nl/en/Issues/75/BauBaukunstArchitektur> (accessed on 13 January 2020).

Wright, Gwendolyn. 1976. On the Fringe of the Profession: Women in American Architecture. In *The Architect: Chapters in the History of Profession*. Edited by Spiro Kostof. New York: Oxford University Press, pp. 292–93.



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