

THE EARLY DAWN OF SPANISH SCHOOL ARCHITECTURE (1869-1886)^{αβ}

El nacimiento de la arquitectura escolar española (1869-1886)

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Abstract. By the mid-19th century hardly any village in Spain had a school building, and most of the existing schools were housed in buildings that did not meet the minimum teaching requirements. During the period known as the six democratic or revolutionary years (Sexenio Democrático, 1868-1874), the progressive liberalism promoted school constructions and launched in 1869 a call for project proposals to build public primary schools. The significance of the call could be considered the early dawn of Spanish school architecture, although the procedure and its outcome could be questioned. The 1869 call resulted in the construction of the *Escuela Modelo* (school model) for Madrid, the *Escuelas Aguirre* of Cuenca and Madrid and the *Jardines de la Infancia*, the first Froebelian institution in Spain, also located in Madrid.

Keywords: Primary state schools; School architecture; School buildings; Francisco Jareño; Enrique M.^a Repullés y Vargas.

Resumen: A mediados del siglo XIX apenas había en España un solo pueblo que tuviera un edificio propio para escuela, estando las más de ellas alojadas en lugares carentes de las condiciones mínimas necesarias para la enseñanza. Durante el Sexenio Democrático (1868-1874) el liberalismo progresista impulsó las construcciones escolares, convocando para ello en 1869 un concurso de modelos de escuelas públicas de instrucción primaria. La trascen-

^α A preview of this article was presented at the 41st *International Standing Conference for the History of Education* (ISCHE 41), held in Porto, Portugal, from 17 to 20 July 2019. The title in Spanish is grateful to Anne-Marie Châtele's book on the primary schools of Paris built between 1870 and 1914 [Anne-Marie Châtele, *La naissance de l'architecture scolaire. Les écoles élémentaires parisiennes de 1870 à 1914* (Paris: Honoré Champion Editeur, 1999)].

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dencia del certamen fue tal que, aunque el procedimiento seguido en él y su mismo fallo sean discutibles, podría ser considerado como el punto de partida de la arquitectura escolar española. Del concurso de 1869 derivan, de algún modo, la construcción de la Escuela Modelo para Madrid, las Escuelas Aguirre de Cuenca y Madrid y los Jardines de la Infancia, primera institución froebeliana en España, también en la capital.

Palabras clave: *Escuelas de instrucción primaria pública; Arquitectura escolar; Construcciones escolares; Francisco Jareño; Enrique M.ª Repullés y Vargas.*

INTRODUCTION

We consider the years from 1869 to 1886 as the founding period of Spanish school architecture. That is, from the call for project proposals, at the beginning of the six-year democratic period,¹ to the completion of the latest school constructions that were promoted during that period.

Viñao Frago, who dedicated an essential part of his ample research to the study of school buildings –and in particular to the school buildings of the six-year democratic period–,² showed in 1993 that the studies performed in Spain in this area were scarce and “did not tend to go beyond mere information about the buildings [...], and accompanied, at most, with photographs and maps”.³ The present article tries to show the opposite and tries –if possible– to analyze the school building constructions of this period, delving into the architects’ sources and the reasons behind their projects.

The spirit of the 1869 call was that of a basic one-room school building, the so-called ungraded school, and not a graded school model that

¹ This is the period of contemporary Spanish history since the victory of the 1868 September revolution, which put an end to the reign of Isabel II, until the pronouncement of December 1874, which marked the beginning of the period known as the Bourbon Restoration.

² See: Antonio Viñao Frago, «Construcciones y edificios escolares durante el sexenio democrático (1868-1874)», *Historia de la Educación* 12-13 (1993-94): 493-534, «La escuela graduada: una nueva organización escolar y pedagógica», in *Cien años de educación en España. En torno a la creación del Ministerio de Instrucción Pública y Bellas Artes*, dir. Pedro Álvarez Lázaro Lázaro (Madrid: Ministerio de Educación, Cultura y Deporte, Fundación BBVA, 2001), 363-388, and «Templos de la patria, templos del saber: los espacios de la escuela y la arquitectura escolar», in *Historia ilustrada de la escuela en España: dos siglos de perspectiva histórica*, coord. Agustín Escolano Benito (Salamanca: Fundación Germán Sánchez Ruipérez, 2006), 47-72.

³ Antonio Viñao Frago, «El espacio escolar. Introducción», *Historia de la Educación* 12-13 (1993-94): 11-16. This is the introduction to the monographic section of this issue, dedicated to the school surrounding in history, which was coordinated by the author.

was already demanded by the teachers. The graded school had different separate classrooms within a single building and, each with its teacher.⁴ On the contrary, the prevailing organizational model at that time was the ungraded school based on a large one-room model, where different pedagogical methods were combined: the individual, the simultaneous, the joint or the mixed method.⁵ It was not until the turn of the century that the graded school of Cartagena, the first one specifically designed for this purpose, became a reality. But this does not mean that school buildings with several classrooms were not built in Spain before that period, as the *Escuela Modelo* of Madrid, or the *Escuelas Aguirre* in Cuenca and Madrid, established between 1885 and 1886.⁶

THE CALL FOR SCHOOL BUILDING PROJECT PROPOSALS IN 1869⁷

The six democratic years (1868-1874) was a “period of highs and lows, of reforms and radical changes, but also unfinished projects, fiascos and restructurings”.⁸ The school buildings of the six-year period could be included in this last group, as they were never accomplished for the lack of the necessary budget support despite the best of intentions declared in the Decree-Law of 1869.⁹ It is essential to recognize the importance of this period regarding school constructions, and this is mainly due to the call for school projects proposal as a result of the Decree of 1869. The importance of this initiative is due, on the one hand, to the fact that it was the first time this procedure was used in Spain, but which was already widely used in other countries. Furthermore, it was the first

⁴ Viñao, «Construcciones y edificios escolares», 494.

⁵ José María Hernández Díaz, «Espacios escolares, contenidos, manuales y métodos de enseñanza», in *Historia de la educación en la España contemporánea. Diez años de investigación*, coordinated by Jean-Louis Guereña, Alejandro Tiana and Julio Ruiz (Madrid: Ministerio de Educación Cultura y Deporte, C.I.D.E., 1994), 191-213.

⁶ Viñao, «La escuela graduada: una nueva organización escolar y pedagógica», 366.

⁷ See: Viñao, «Construcciones y edificios escolares», 493-534; Francisco Burgos Ruiz, *La arquitectura del aula. Nuevas escuelas madrileñas, 1868-1968* (Madrid: Ayuntamiento de Madrid, 2007), 12-18; and Francisco Javier Rodríguez Méndez, «Arquitectura escolar en España 1857-1936. Madrid como paradigma» (Phd thesis, Universidad Politécnica de Madrid, 2004), 141-159.

⁸ Viñao, «Construcciones y edificios escolares», 493.

⁹ Decree-Law of January 18, 1869, provisions for the construction of Public Schools for Primary Education. *Gaceta de Madrid*, 23 January 1869, 23, 1-2. <https://www.boe.es/datos/pdfs/BOE/1869/023/A00001-00002.pdf> (accessed May 16 2020).

attempt to regulate the requirements for school buildings. The conditions were included in the Commissions' expert opinion who was in charge of judging the projects submitted to the call.

The call included minimum requirements for any school such as a classroom, teacher's accommodation, a library and a garden. The inclusion of a library within the schools was in response to priority cultural objectives of the six-year period, called the creation of "popular libraries". These libraries had served both the educational community and the general population. Therefore they had to be located on the first floor and in a visible location.¹⁰

The four proposals submitted to the call by the School of Architecture of Madrid, and those of Francisco Jareño y Alarcón, a well-known architect and professor at the same school, who submitted ten projects are particularly noteworthy. The School of Architecture's Board of Professors appointed the project to professor Manuel Aníbal Álvarez, who called on his "former and favorite students" Emilio Rodríguez Ayuso and Enrique M.^a Repullés y Vargas to collaborate.¹¹ Although both graduated in 1869, at the age of twenty-four, it is not entirely clear whether they were already architects at the time of the call.¹² The projects thus drafted were submitted to the call and were awarded first prize, which gave the School of Architecture only an honored award, since there was no cash prize or subsequent contract of any kind.

The experience and knowledge in this field by Francisco Jareño –a civil servant of the Ministry of Public Works on leave of absence and a professor at the School of Fine Arts, and at the School of Architecture– were undoubtedly far superior to those by Repullés and Rodríguez

¹⁰ Viñao, «Construcciones y edificios escolares», 494.

¹¹ Article "Repullés", *Enciclopedia Universal Ilustrada Europeo-Americana*, t. 50, 1068-1070 (Madrid: Espasa-Calpe, 1923).

¹² Years later, in Rodríguez Ayuso's obituary, Repullés states that when they participated in the call both were still students: "As a student of the School of Architecture, and with the author, he designed, by order of the Board of Professors and under the direction of the Director of Projects, Mr. Aníbal Álvarez, the designs for public schools commissioned by the Ministry of Public Works, which won first prize in the competition held for this purpose". Enrique María Repullés y Vargas, «Obras arquitectónicas de Rodríguez Ayuso», in *Biografía y obras arquitectónicas de Emilio Rodríguez Ayuso*, ed. Santiago Castellanos and Enrique M.^a Repullés (Madrid: Imprenta y litografía de los huérfanos, 1892), 17-31 [29].

Ayuso. The Report that accompanied Jareño's projects¹³ was based on the experience gathered in the city of Cologne, which the author knew firsthand. In contrast, the novel architects Repullés and Rodríguez Ayuso, used the bibliography available at the School of Architecture's library, specifically that of French origin.

The Commission's decision on the projects of the School of Architecture –very favorable, of course– emphasized the positive aspects and totally ignored the deficiencies: “The floor layout nothing leaves to be desired; the size, shape, and convenient order in its accommodations [...] make the horizontal plans or floors of these projects a true artistic conception”.¹⁴ The lack of unanimity within the Commission proves the existence of an anonymous report in which the projects of the School of Architecture are openly criticized.¹⁵ The lack of unanimity and transparency in the outcome may have been one of the reasons for not publishing the winning projects on behalf of the Ministry of Public Works, thus breaking the rules of the competition.

The projects of the School of Architecture of Madrid

The four projects of the School –the three types required in the call plus one additional type– respond to a straightforward design along the axis of symmetry and with the main body standing out in the façade. The axis usually includes the library and the classroom when there is only one (types 1 and 2). If there are two classrooms, they are located on both sides of the axis with the toilets (type 3 and the additional type). All the results are strongly influenced by the French school architecture and, more specifically, by the *Revue Générale de l'Architecture*. The elementary ideas on classroom organization and teaching methods are taken from this

¹³ Francisco Jareño y Alarcón, *Memoria facultativa sobre los Proyectos de Escuelas de Instrucción Primaria premiados en concurso público, adquiridos por el Estado y mandados publicados por Decreto de S. A. el Regente del reino de 7 de Abril de 1870* (Madrid: Imprenta del Colegio Nacional de Sordomudos y Ciegos, 1871).

¹⁴ Document n.º 4: “Opinion of the Commission appointed by His Excellency the Minister of Public Works to examine the projects presented for the construction of public primary schools. *Gaceta de Madrid*, 23 February 15, 1870” [Viñao, «Construcciones y edificios escolares», 513].

¹⁵ Document n.º 5: “Notes on Primary Schools presented in public calls. School Projects” [Viñao, «Construcciones y edificios escolares», 519]. The unknown author of the report declares to have a profound knowledge of the subject matter. Nevertheless, none of the observations in this document were taken into account by the Commission in its report.

publication. The articles published by Paul-Eugène Lequeux between 1849 and 1851 on buildings for public schools¹⁶ make up the theoretical basis of the models projected by the School of Architecture twenty years later.

The modest structure of the floors tries to show on the outside the construction procedures employed by using two different materials (brick masonry combined with ashlar or rubble masonry) and clearly distinguish the load-bearing elements from the enclosure.

First Building Type. Public school for both sexes in a population of less than 500 people

The building is constructed on the ground floor and has an H-structure, composed of two pavilions –entrance and accommodation– linked by a third perpendicular to the other two that is used as a classroom (figure 1). This is the only project of the School of Architecture intended for both sexes, and this is reflected in its completely symmetrical outline. Two entrances, located on each side of the library, give way to the classroom, which is divided by a wooden barrier that ends at the teacher's desk. Therefore, he can, "attend both sections as he sits at his desk, and both sides cannot see or communicate with each other".¹⁷ Such an arrangement requires an excessively large width for the classroom to cover it all at once (8.5 meters), timber posts are placed which, reduces the width at the half, and enables construction.

This is a novel outline in our country, but in France, it was applied for a long time already. In a collection of school models from 1834, compiled by Bouillon, several buildings of this type can be found.¹⁸ The mixed rural elementary school designed by the architect Lequeux in 1849 has the same layout, as explained by the author, as it is the only way to guarantee the separation of girls and boys when a single teacher teaches them: "Elle

¹⁶ Paul-Eugène Lequeux, "Édifices pour l'Instruction Publique. Écoles Primaires", *Revue Générale de l'Architecture et des travaux publics* (1849), 258-261, sheets XXVI-XXVII, and "Édifices pour l'Instruction Publique. Écoles Primaires Communales", *Revue Générale de l'Architecture et des travaux publics* (1851): 18-28, sheets II-VII.

¹⁷ Enrique María Repullés y Vargas, *Disposición, Construcción y Mueblaje de las Escuelas Públicas de Instrucción Primaria* (Madrid: Imprenta de Fortanet, 1878), 68.

¹⁸ Auguste Bouillon, *De la construction des maisons d'école primaire* (Paris: Hachette, 1834), 1-2 and sheet 1. See also in: Rodriguez, *Arquitectura escolar*, 149, Image 21.

(la classe) devra être divisée en deux parties égales par une cloison perpendiculaire à l'entrée, et de 1,40 m de hauteur".¹⁹ Leculée's project, awarded in 1863 in a call for primary schools model design organized by the French Ministry of Education, used the same outline.²⁰

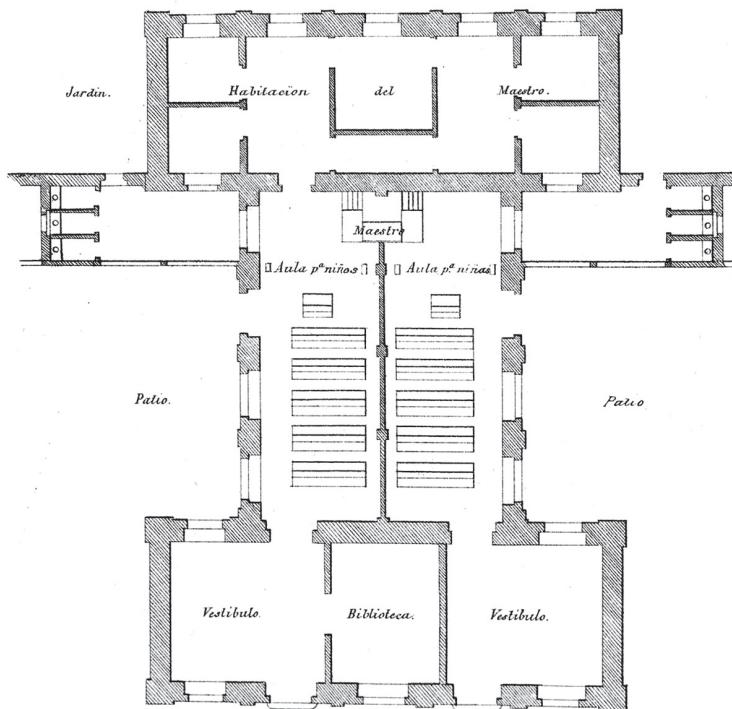


Figure 1. Plan of the first building type presented by the School of Architecture of Madrid for the call for project proposals of 1869 [Repullés, *Disposición, Construcción y Mueblaje*, Sheet V].

The *Mairie-école* of Dammarie-lès-Lys (figure 2) resembles the first building type of the School of Architecture.²¹ This school is particular

¹⁹ Lequeux, "Édifices pour l'Instruction Publique. Écoles Primaires», sheet XXVI. See also in: Rodriguez *Arquitectura escolar*, 150, Image 22.

²⁰ Châtelet, *La naissance de l'architecture scolaire*, 56-57. See also: Rodriguez, *Arquitectura escolar*, 151, Image 23.

²¹ Figure 2 shows that the first floor of the main pavilion, which was the teacher's accommodation, was shown isolated and just above the ground floor of the school. That representation could well have given rise to the idea of placing the accommodation behind the front of the classroom and thus completing the H-shaped floor of the first type.

because it was included in a collection of school model designs that were published six years before the call,²² and also included other similar examples with projects by Repullés and Rodríguez Ayuso, which shall be discussed later. For this reason, and because there exists a copy in the library of the School of Architecture in Madrid, this book may be considered the main source on which the architects of Madrid based their work.

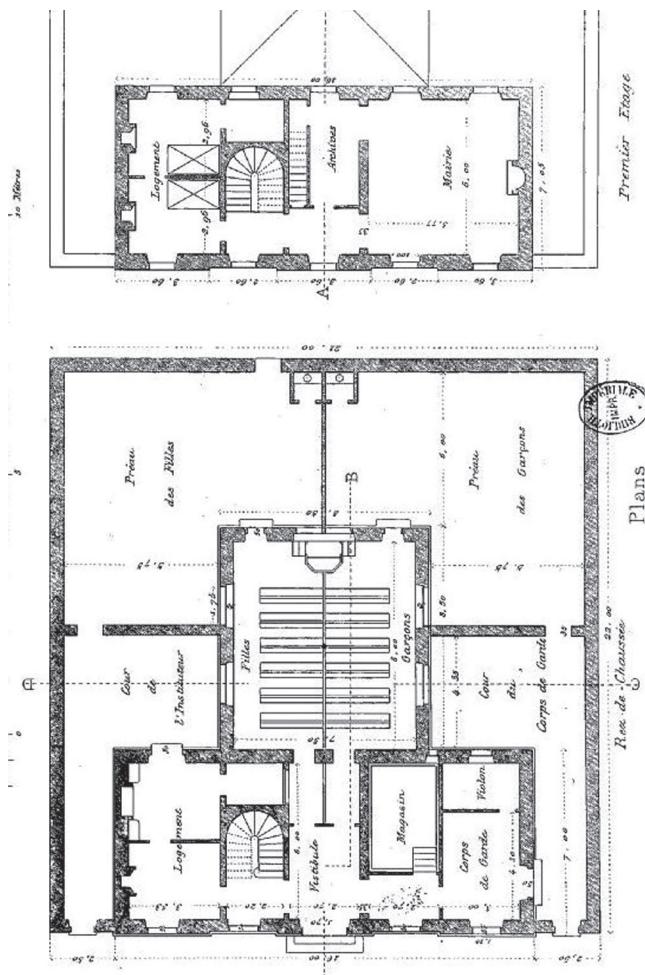


Figure 2. Plans of the *Mairie, école mixte et logement d'instituteur* in Dammarie-lès-Lys (France) [Vacquer, *Bâtiments scolaires*, Sheet 1].

²² Théodore Vacquer, *Bâtiments scolaires récemment construits en France et propres à servir de types pour les édifices de ce genre* (Paris: Cadrilier, 1863), 9 and sheet 1.

Felix Narjoux's manual on the schools in France and England recognizes that the system of dividing the classroom longitudinally by a central partition –a system only used in France according to him– seems pointless as the boys and girls will mingle with total freedom out on the street.²³ In his book from 1878, Repullés also excluded this system –implemented in the first building type–, arguing the same as Narjoux.²⁴

Second Building Type. Single-sex public school in a population of 500 to 5,000 people

Few schools based on this system are to be established in France later. The technical instructions for school construction, decreed in 1880, require the separation between boys and girls within the class, but without a physical partition: “Suppression de la cloison de séparation, groupement des élèves dans les classes des écoles mixtes: La classe de l'école mixte ne sera plus divisée par une cloison séparant les garçons des filles...”²⁵

The design resembles a Latin cross in which the class and the library are located in the main arm, as the library stands out on the façade (figure 3). The other two symmetrical arms, regarding the axis, are used as halls, one as a classroom and the other –smaller– as a library, and the staircase that leads to the teacher's accommodation on the first floor.

The connection with the *Mairie-école* of Dammarie-lès-Lys (figure 2) is now, perhaps, higher than in the first type, and even more so if the central partition is removed and the width of the classroom is narrowed. The amount of T-shaped floor design among the French schools built in the 19th century²⁶ is equal to the tripartite scheme design –that is, a

²³ Félix Narjoux, *Les Écoles Publiques en France et en Angleterre. Construction et installation* (Paris: A. Morel et Cie., 1877), 138-139.

²⁴ Repullés, *Disposición, Construcción y Mueblaje*, 26.

²⁵ Article 32 of the *Règlement pour la construction et l'ameublement des maisons d'école*, Decree of 17 June, 1880, was written by a multidisciplinary commission –the *Conseil supérieur de l'Instruction publique*–, created in the first months of the Ferry Ministry, which included the architects Viollet-le-Duc, Narjoux, Trélat, Vaudremer y Salleron [Châtelet, *La naissance de l'architecture scolaire*, 80-86].

²⁶ Christine Granier y Jean-Claude Marquis, “Une enquête en cours : La maison d'école au XIX^e siècle», *Histoire de l'éducation* 17 (1982) : 31-46, 36.

central body of two floors and two ground floor lateral wings for the classrooms–, to which we will refer to later.

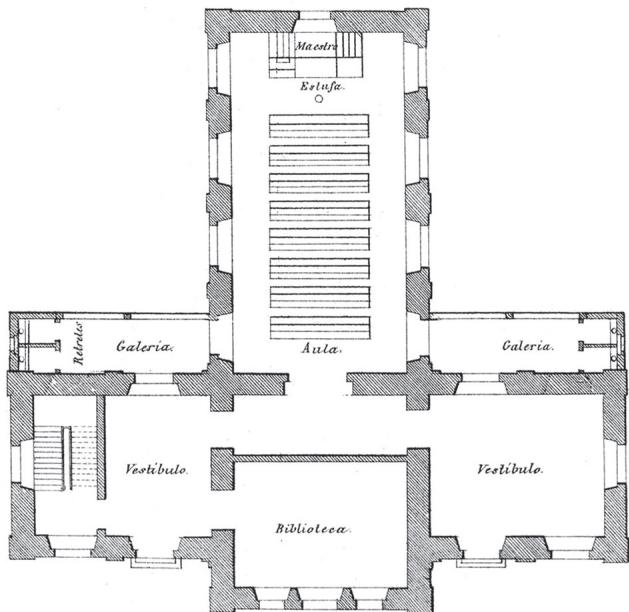


Figure 3. Plan of the second building type presented by the School of Architecture of Madrid for the call of 1869 [Repullés, *Disposición, Construcción y Mueblaje*, Sheet VI].

The classroom is 12m long and 6.5m wide. This area is larger than the first building type, as it is approximately twice as long as it is wide. Even so, the width is insufficient if, as Repullés says, the side corridors are to be used for teaching in sections. It is interesting to contrast Repullés' opinion with Jareño's statement in 1869, regarding the teaching method, which would become the usual teaching method:

It should be noted that monotony or misapprehension places in some schools in France and even in Spain, platforms close to the wall and at a certain distance from each other, for different student group meetings in semicircles. These barriers in the classroom take up much space that should be used for desks instead. Children are exposed to continuous disruptions and falls due to the tendency to push each other and, therefore, such faulty practice should be discarded and

prohibited. Also, the teaching method, using half circle arrangements, has major inconveniences and tends to be rejected everywhere.²⁷

As in the other types, the classroom had bilateral lightning, something that was already discussed already at that time and will be ignored from now on as it is bad for the children's eyes. The image of the type of classroom used in the projects of the School of Architecture is shown in Repullés's book (figure 4).



Figure 4. Class proposed by the School of Architecture of Madrid in the call of 1869 [Repullés, *Disposición, Construcción y Mueblaje*, Sheet IV].

Third Building Type. Single-sex public school in a population of more than 5,000 people

The building is composed of two T-shaped pavilions as before (figure 5), in which the accommodation and the classroom are exchanged. On the ground floor, the 26 meters long by 6 meters wide classroom, is built in parallel to the access street. The hall, the entrance to the classroom, and the staircase leading to the first floor is a second pavilion perpendicular to the first which advances to meet the street, and whose axis of symmetry

²⁷ Jareño, *Memoria facultativa*, 79.

coincides with the classroom. On the second floor, the library is located over the entrance hall, along with a complementary classroom and the teacher's accommodation. Both spaces use up the 26 meters long longitudinal pavilion of the classroom on the first floor.

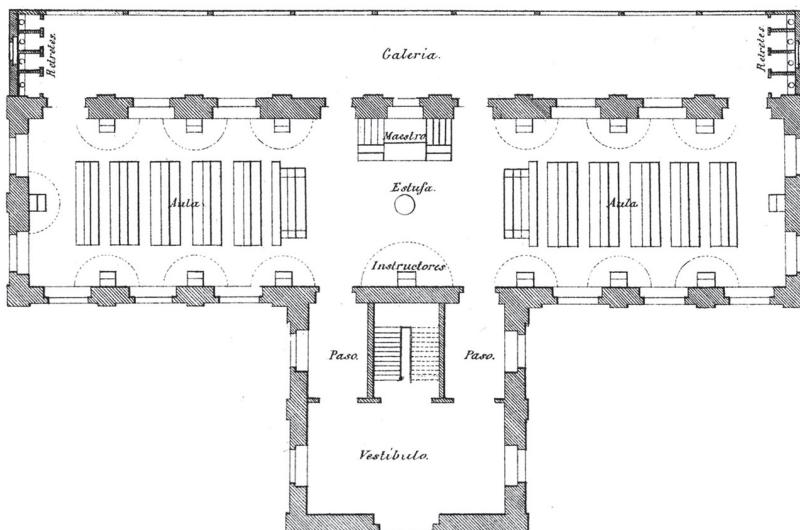


Figure 5. Plan of the third building type presented by the School of Architecture of Madrid for the call of 1869 [Repullés, *Disposición, Construcción y Mueblaje*, Sheet VII].

This type is undoubtedly the most deficient of all the projects presented by the School of Architecture. Its most notable defects are the classrooms, and these would make its practical application impossible. These defects are detailed in the anonymous Report mentioned before: "The layout of the room could not be faultier. If the teacher has to keep an eye on the pupils on his right and left, his head must be in constant movement".²⁸ The anonymous author also criticizes, on the one hand, the excessive disproportion between width and length of the classroom and, on the other, the number of windows along the four sides of the rectangular room. The authors were aware of the first problem and tried to minimize the difficulties of the excessive length by placing the teacher in the middle point of the wall that separates the classroom

²⁸ Document n.º 5 [Viñao, «Construcciones y edificios escolares», 522].

from the corridor, but even so, forcing him to turn his head to either side to supervise constantly.

Additional Building type. School for both sexes in populations of 500 to 5,000 people

A large city justifies having two teachers, which is why this school has two separate classrooms –one for boys and one for girls– and two accommodations, in addition to the library. This program fits into a single-storey school building built in a T-shape (figure 6). The classrooms are located at the end of both arms which are built in parallel to the street, and the accommodations are located at the end of the perpendicular arm, all according to a strictly symmetrical layout. The central building separates the playgrounds, and the library stands out on the façade. On both sides of the library, each hall for both boys and girls give way to the respective classrooms and the teacher's accommodation of each class. The size of the classrooms (11 x 5.6 m) is suitable for a group of 60 students and a simultaneous teaching system. The characteristics make this small school group a more acceptable type than the three previous ones, even though this is the “additional” type.

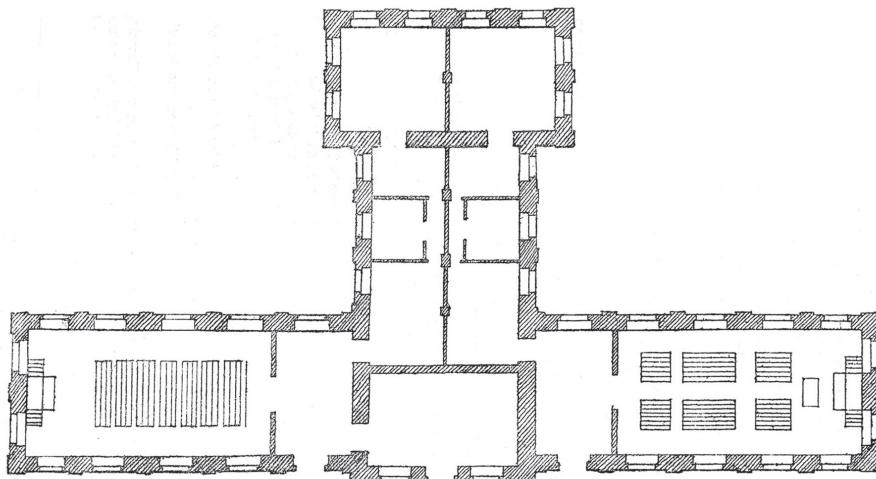


Figure 6. Plan of the additional building type presented by the School of Architecture of Madrid for the call of 1869 [Repullés, *Disposición, Construcción y Mueblaje*, 72].

The French schools with a T-shaped floor design built in France during the 19th century show a typical tripartite scheme, that is, a building with three bodies and a central two-storey body –usually the first floor is used as the town hall and the second floor for accommodation– and two symmetrical single-storey lateral wings are used as classrooms.²⁹ According to Granier and Marquis' classification, in a T-shaped French school, the classrooms could be located in the foot of the T (as in the second building type of the School of Architecture), or they could be in the arms of the T-structure (as in the third or additional type). In this second case, the central body or foot of the T was used for different purposes such as accommodation or the library, and even as a telegraph office or assembly room.³⁰

In the collection of school models compiled by Bouillon in 1834 one example of this type is shown (figure 7), for 160 children of both sexes,³¹ where the classrooms are located in each arm of the T-structure of the ground floor, and the accommodations are located on the upper floor. The central body paves the way to the arms and is used as the *préaux couverts*³² of each class.

²⁹ Of all the *Mairie-écoles* that were built in France during the Second and Third Empires, see some at *Parc naturel régional de la Haute Vallée de Chevreuse*. <https://www.parc-naturel-chevreuse.fr/park-protected-area/un-territoire-preserve-patrimoine-historique/mairies-ecoles> (accessed May 22 2020).

³⁰ Granier and Marquis, «Une enquête en cours», 36.

³¹ Bouillon, *De la construction des maisons d'école primaire*, 27 and sheet 3.

³² “The room called by the French covered courtyard (*préau couvert*), which we can also call the playroom, is a large room intended not only for the children's leisure, when bad weather does not allow them to go outdoors, but it is also used as a hall, the cloakroom, the toilet and the refectory” [Repullés, *Disposición, Construcción y Mueblaje*, 15-16].

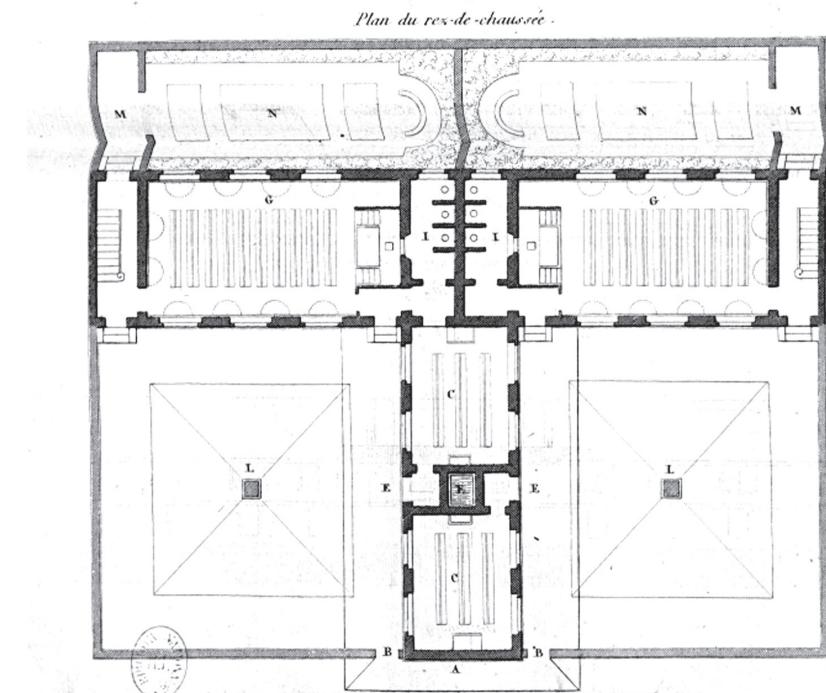


Figure 7. School floor plan for 160 students, boys and girls [Bouillon, *De la construction des maisons d'école primaire*, sheet 3].

The school in the Parisian district of Petit-Monrouge, which was included in the collection of schools published by Vacquer in 1863,³³ has a very similar layout, except for the accommodation which was located above the *préaux couverts* at the foot of the T and not above the classrooms, as in the previous design (figure 8). Vacquer highlights this school by including it in his collection, but he does not hesitate to propose some improvements regarding the deficiencies he detects. The author considers that the *préaux couverts* should be closed by windows and have major extension. To solve this issue, he proposes to extend the *préaux* to the façade of the classrooms and get rid of the garden, which he finds useless. As for the first building type, again we think that the model that could have influenced the most the present type is a model included in Vacquer's book (figure 8). If this is the case, once again Repullés and Rodríguez Ayuso used the technique of placing the

³³ Vacquer, *Bâtiments scolaires récemment construits*, 11 and sheet 3.

accommodation on the ground floor, instead of the *préaux couverts*, and following Vacquer's advice, they extended the central arm through the library to the façade of the classrooms.

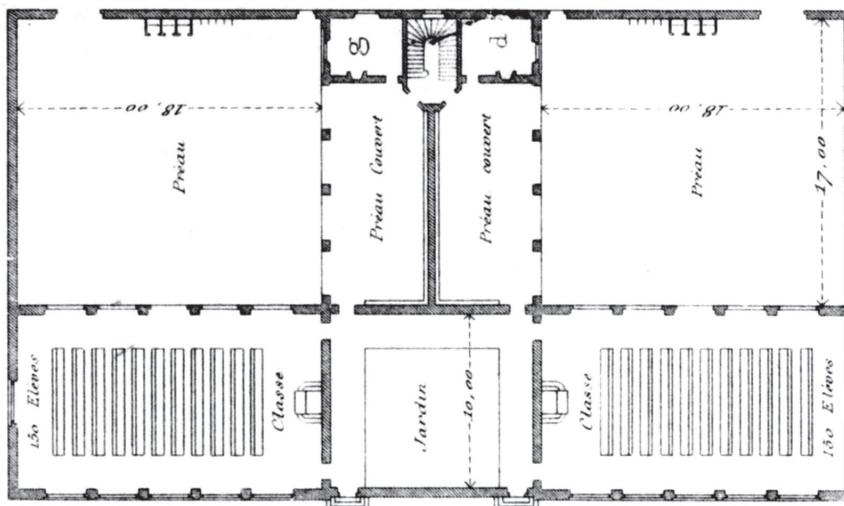


Figure 8. Floor plan of the neighborhood school Petit-Monrouge (Paris) [Vacquer, *Bâtiments scolaires*, Sheet 3].

In his book published in 1878, as he refers to the schools that his colleague Rodríguez Ayuso just designed in Cuenca, Repullés sustains that he did so based on the “additional type of projects designed by the School of Architecture”.³⁴ However, it seems to us instead that both outlines are heirs to a third imported design from France: the *Mairie-école*, widely used in the neighboring country, especially since the Third Republic. The Spanish variation includes teachers' accommodation instead of municipal premises and endures throughout the country until well into the twentieth century.³⁵ The design is linear, symmetrical and tripartite, with a two-storey central body –the first floor is used for accommodation– and the lateral wings are used as classrooms. The relationship between both is clearly shown if we compare schools on either side of

³⁴ Repullés, *Disposición, Construcción y Mueblaje*, 78.

³⁵ Anne-Marie Châtelet establishes a similar relationship between the French *Mairie-école* and the German religious schools [Anne-Marie Châtelet, “Dialogue France-Allemagne sur l'architecture et la pédagogie”, *Proyecto Progreso Arquitectura*, 17 (2017): 16-27].

the Pyrenees; for example, the school in Champagne-Mouton (France), built between 1882 and 1885, and the school in Pámanes (Cantabria), built between 1906 and 1909 (figure 9).

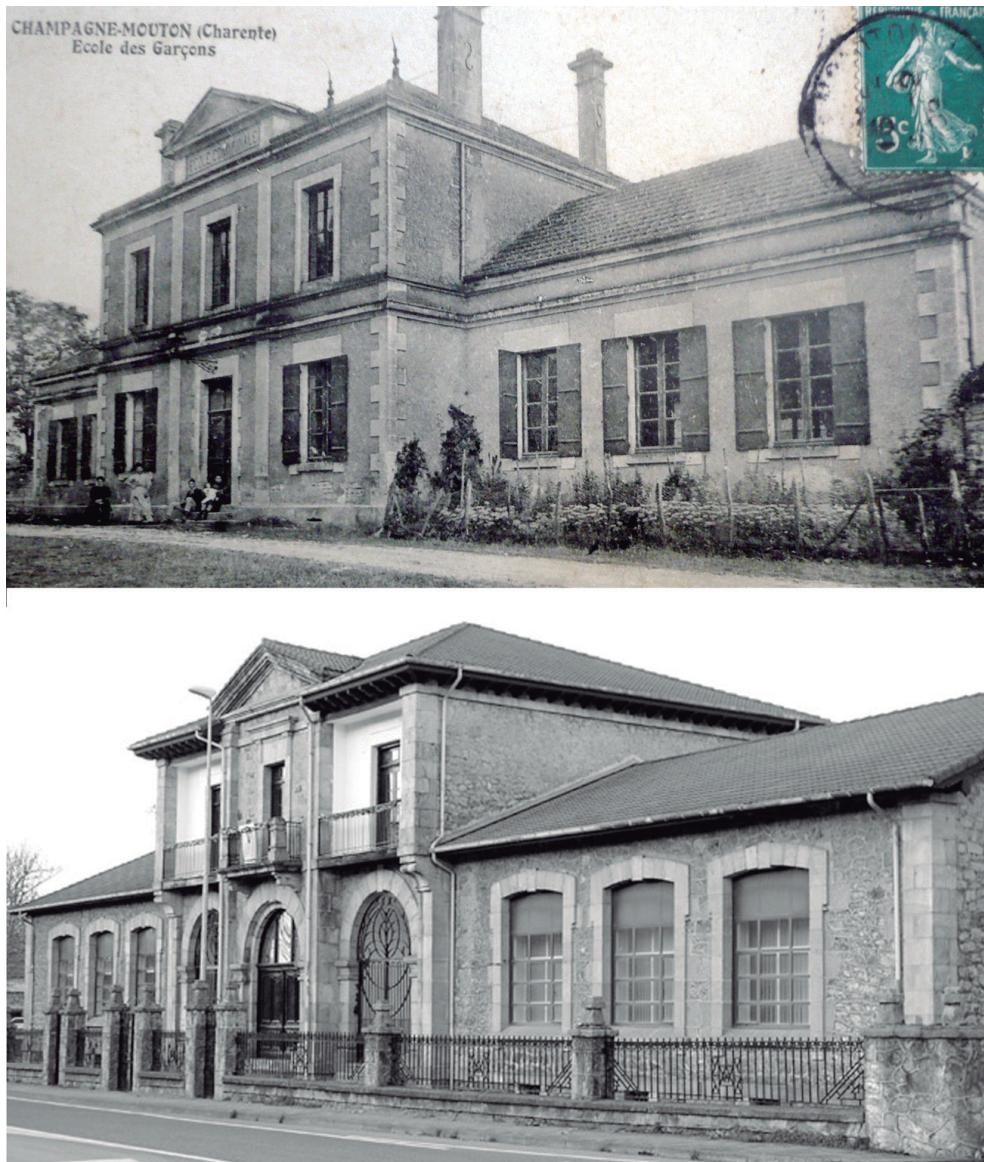


Figure 9. Above picture: School of Champagne-Mouton (France). 1882-1885. Picture below: School of Pámanes (Cantabria- Spain). 1906-1909. Architect: Valentín Ramón Lavín Casalís.

The idea that the additional type was the model for later Spanish school architecture has been quite popular among researchers of the subject. Llano Díaz, for example, claims, referring to Cantabria, that the additional type “would inspire large part of the most important school buildings from the 1980s onward throughout the region”.³⁶ This author identifies several Cantabrian school buildings based on the additional building type which were designed by distinguished architects such as Alfredo de la Escalera, Valentín Ramón Lavín,³⁷ Joaquín Rucoba, Gonzalo Bringas or Emilio de la Torriente. We find it instead forced to accredit such influence on a modest floor building that was never built. This is all the more so considering that the libraries of our Schools of Architecture had plenty of foreign publications, full of colorful illustrations of school buildings with similar outlines.

The projects of Francisco Jareño

Francisco Jareño, Professor at the School of Architecture in Madrid, did not represent the school in the call for project proposals of 1869. Although his qualities were far superior to those of the chosen team, he was forced to enter the call on his own. Jareño says in the introduction of his projects' optional Report that, “remarking how this branch is considered in well-educated cultures”,³⁸ he decided to undertake a similar study on school constructions, and he was conducting research when the call was announced. Later on, the author states that he visited the Paris Universal Exhibition of 1867, paying particular attention to the advances in school organization in countries such as England, France, Belgium, Saxony, Bavaria and Prussia. This led him to personally visit the main schools of Saxony and Prussia “to examine them closely considering all their specific details”, since these were the ones that, in his opinion, had “the highest degree of perfection”. The organization and

³⁶ Ángel Llano Díaz, «Notas sobre el espacio rural escolar en Cantabria (1850-1936)» [online], *Cabás: Revista del Centro de Recursos, Interpretación y Estudios en materia educativa (CRIEME) de la Consejería de Educación del Gobierno de Cantabria (España)* [serial publication online] 1 (2009). <http://revista.muesca.es/articulos/66-notas-sobre-el-espacio-rural-en-cantabria-1850-1936> (accessed May 26, 2020).

³⁷ Among the schools projected by Valentín R. Lavín in Cantabria, which Llano Díaz based on the additional building type, are those of Pámanes, represented in the lower part of figure 9 [Llano, «Notas sobre el espacio rural escolar en Cantabria», 12-13].

³⁸ Jareño, *Memoria facultativa*, 5-7.

teaching systems of these two countries, as well as the layout of the buildings and the school furniture, set the ground for Jareño's study.

The Report is divided into three parts: the first comprises some reflections on the educational organization in Saxony and Prussia; the second describes the school buildings he visited in these two countries; the third, based on the former, includes the models presented by Jareño in the call.

Only two –numbers 8 and 10– of the ten projects presented by Jareño in the call were approved by the evaluation commission. All others were excluded for not complying with the rules, especially to meet the requirement to include a library. Jareño was aware of this, as he mentioned in the optional Report, but he supported the presentation of all the projects because they were all highly recommended for small towns as they were economically viable:

The Jury, following the terms of the call, only admits projects that comply with the rules. Its righteousness did not allow them to proceed otherwise; but if we are sincere, for the sake of perfection, the practicable and feasible is rejected and is adapted to the particular circumstances of the majority of the towns in Spain. In that case, the projects number 1 to 7 of this Memory are the best, as much for his cost as for the other conditions.³⁹

It is not possible to review the designs of the schools projected by Jareño.⁴⁰ In his book, published a year after the decision, only the floor design of one classroom, isolated from the rest of the building is shown (figure 10). This classroom is like the schools in Cologne, which he presented in the first part of the book. The dimensions shall later be considered official: 20 by 30 feet, that is, 6.28 by 9.42 meters. The organization of the classroom is also the usual from now on for simultaneous teaching: two rows of desks separated from the side walls by an aisle and between them by a central aisle whose axis coincides with the teacher's table. The classroom has unilateral left lighting. In short, this is a class adapted to the latest pedagogical advances.

³⁹ Jareño, *Memoria facultativa*, 83.

⁴⁰ Viñao, «Construcciones y edificios escolares», 499, note 13.

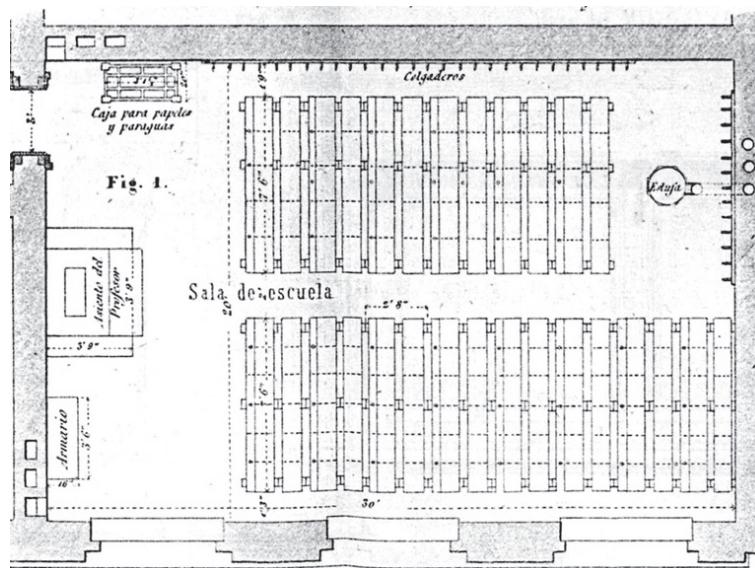


Figure 10. Classroom presented at the call in 1869 [Jareño, *Memoria facultativa*, Sheet II].

According to the written description, the models proposed by Jareño ranged from a basic design –a classroom and an attached open porch– to the most complex two-story buildings with complementary spaces such as the library or the teacher's accommodation. In some models, two or more classrooms are grouped together, which makes them ideal for large cities with a scarcity of spacious plots. For example, model number 8 comprises two well-defined bodies: the main body has four spaces similar to the one described above (figure 10), of which two are used as classrooms, and the remaining two are for the library and the gym; the second body is for the teacher's accommodation. The projects of the School of Architecture usually overlap the use of the rooms. However, Jareño totally separates the school and accommodation entrances, although “the teacher can communicate through the interior of his rooms with the classrooms”.⁴¹

The Commission is surprised that in projects 8 and 10 –the only ones accepted– “the garden is included within the limits of the building, and enclosed on two sides by neighboring buildings”.⁴² Although there are no

⁴¹ Jareño, *Memoria facultativa*, 74.

⁴² Document n.º 4 [Viñao, «Construcciones y edificios escolares», 514].

general floors, the classroom in figure 10 shows in its lower right corner how the façade extends beyond the building. This suggests that the layout of Jareño designs, which the Commission rejected, must have been similar to the French models shown above (figures 2, 7 and 8), or the designs published by the Ministry of Public Instruction and Fine Arts in 1908.⁴³ In short, inward-looking designs surrounded by walls.

Francisco Jareño also submitted an additional project to the call that included two schools to be built in the garden of the 'Escuela Normal Central'. Since it was not required in the rules of the call, this project was not taken into account.⁴⁴ A few years later, Jareño designed the school building called *Jardines de la Infancia* for the same location, which was obviously not the one submitted to the 1869 call and which will be studied later.

A remarkable contribution of the author of the *Memoria facultativa* was the promotion of a school that was built a few years before in Washington, which would have a remarkable outcome in our country in the 20th century. Let us see how Jareño describes this building that so fascinated him (figure 11): "It frames the character of modern German constructions. The whole is beautiful and harmonious, rich in details and carefully accomplished. It is built with exposed fine bricks, with a regular and symmetrical distribution for boys and girls".⁴⁵ The compact and symmetrical type of building has clear advantages regarding cost-effectiveness and the design allows for easy control of the children, but, on the other hand, it causes the poor solar orientation of half of the classroom and of the unilateral right lighting that some of them have. Repullés also mentions in his book these schools in Washington (also without citing the source). He includes them among the foreign schools which are worthy of study, but he will discard them as a model for the Spanish schools, since "they can only offer us some useful details, but rarely or never a complete set that satisfies our needs".⁴⁶

⁴³ Elena de Ortueta Hilberath, «Los modelos de escuelas destinados a los centros de educación primaria pública avalados por el Negociado de Arquitectura Escolar del Ministerio de Instrucción Pública y Bellas Artes», *Norba: Revista de Arte*, 17 (1997): 165-192, 187-188.

⁴⁴ Document nº 4 [Viñao, «Construcciones y edificios escolares», 517].

⁴⁵ Jareño, *Memoria facultativa*, 78-79.

⁴⁶ Repullés, *Disposición, Construcción y Mueblaje*, 84.

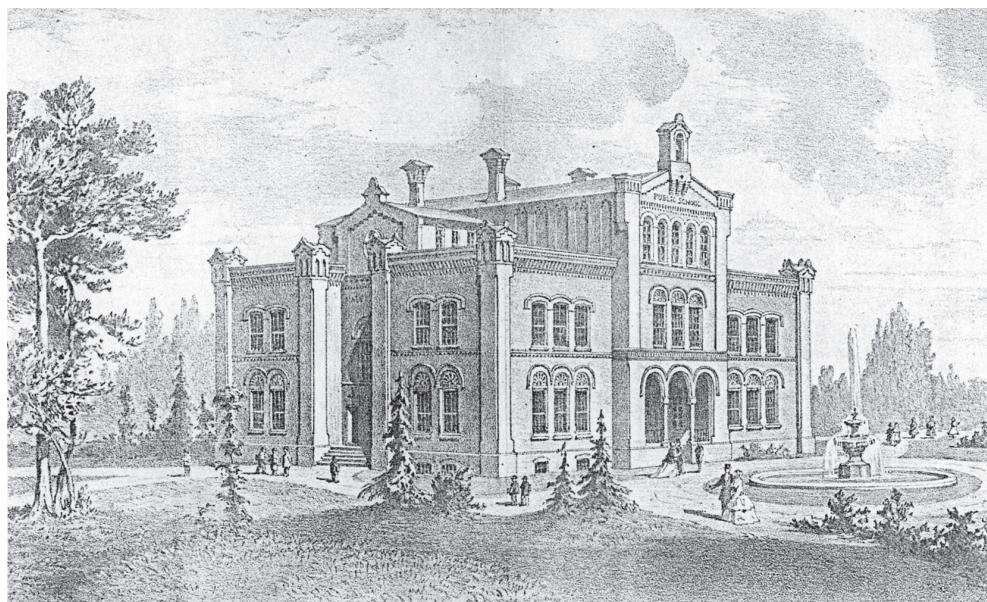


Figure 11. School building in Washington [Jareño, *Memoria facultativa*, Sheet VI].

Although Jareño did not provide more data of this school, recent research confirmed that it is the Wallach School, designed by the German-American architect Adolf Cluss. The school opened in Washington in 1864 and was demolished in 1950.⁴⁷ Francisco Jareño, while preparing his participation in the school project call of 1869, knew of the Wallach School through the article published that same year in the *Allgemeine Bauzeitung*,⁴⁸ and included the construction design in the *Memoria facultativa*.

The Cartagena graded school building⁴⁹ –the first one in Spain explicitly built for this purpose– has its origin in the Wallach School. The connection between the school in Cartagena and the one in Washington was known since the project started. Martínez Muñoz, who was the first

⁴⁷ Francisco Javier Rodríguez Méndez, «La huella de Adolf Cluss en la escuela graduada de Cartagena», *Foro de Educación* 12 (2014): 69-89.

⁴⁸ Adolf Kluss and J. W. Kammenhüber, “Schulgebäude zu Washington”, *Allgemeine Bauzeitung mit Abbildungen* (1868-69): 34-35 and 186-188). The copy in the library of the School of Architecture in Madrid, shows that the illustrations of the article on pages 34 and 35 are missing.

⁴⁹ See: Félix Martí Alpera, *Por las escuelas de Europa* (Valencia: Imprenta Vives, 1904), 355-360.

director with Félix Martí Alpera, proposed a few years before the construction of a building “with a design based on a Washington school.⁵⁰ It was probably Martí Alpera, who had a good knowledge of the literature on school buildings, who provided the model to the architect Tomás Rico when he was designing the school in Cartagena.

Disposición, Construcción y Mueblaje..., by Repullés y Vargas

Unlike Jareño, who in his book only published the Report of the projects submitted to the call a year earlier, Repullés waited almost ten years to complete and publish his book. Repullés' book, published in Madrid in 1878, was the second edition of his work; the first had been published in thirteen successive chapters of the magazine *Anales de la Construcción y de la Industria*, between 1877 and 1878.⁵¹ The book showed the project submitted to the call, along with a novel report of considerable length.

Before the book was written, “the authors who have been most involved in the matter were asked, and depending on the case some opinions were accepted”.⁵² Throughout the book, Repullés reveals the names of these authors. He recognizes the influence of Narjoux, and regarding this study on the schools of France and England, he affirms “we are beholden to some data”.⁵³ Moreover, we sustain that he translated a large percentage of the study without citing the source.⁵⁴ A thorough analysis of the paragraphs with Repullés' description of the different elements of the school (doors, windows, floor, ceilings, walls, class division, drawing classes, workshops, playgrounds, etc.) shows that, to a large extent, the book of the Spanish architect is a translation of Narjoux's book on the

⁵⁰ Antonio Viñao Frago, *Innovación pedagógica y racionalidad científica. La escuela graduada pública en España (1898-1936)* (Madrid: Akal, 1990), 17.

⁵¹ Enrique María Repullés y Vargas, «Nuevas escuelas de instrucción primaria en Cuenca», *Anales de la construcción y de la industria* II (1877): 88-90, and «Edificios destinados a escuelas públicas de instrucción primaria», *Anales de la construcción y de la industria*, II (1877): 212-215, 234-236, 246-249, 290-295, 310-313, 321-325, 340-342 and 358-361.

⁵² Repullés, *Disposición, Construcción y Mueblaje*, V.

⁵³ Repullés, *Disposición, Construcción y Mueblaje*, 47.

⁵⁴ For a detailed study of this issue, see: Francisco Javier Rodríguez Méndez, “Influencia francesa en la arquitectura escolar española”, in *Francia en la educación de la España contemporánea (1808-2008)*, ed. José M.^a Hernández (Salamanca: Universidad de Salamanca, 2011), 185-218.

French and English schools, in which he introduced some specific modifications that he found convenient. For example, a text by Repullés referring to playgrounds is compared below with the source in Narjoux's book:

Whether trees should be planted has been discussed at length, but it is clear that this depends on the climate and conditions of each country. In some parts they are convenient to avoid the sun's rays, and in others, they will have to be banned as they are producers of humidity.= In England the question of schoolyards has become very important, as it is an indispensable element of the education system; that is why they take so much care to orient them to the South or the East, never to the North or the West [...] ⁵⁵

La question de savoir si la cour de récréation (préau découvert) d'une école doit rester nue ou être plantée d'arbres a souvent été débattue; c'est là une question de climat. Dans le Midi, en Provence par exemple, les arbres sont non-seulement utiles, mais indispensables; dans le Nord, au contraire, ils peuvent être une cause d'humidité et, par suite, devenir nuisibles [...] Les Anglais attachent une très grande importance à la cour de récréation (*play ground*) de leurs écoles, à ses dimensions et ses dispositions; elle constitue pour eux un des éléments essentiels, nécessaires à la mise en pratique de leur système d'éducation et de leur mode d'enseignement. Une cour d'école anglaise ne doit être exposée au nord ou à l'ouest, mais doit être orientée au sud ou à l'est [...] ⁵⁶

This is not the only source he uses –“in some data”– Repullés, who seems to have taken some paragraphs directly from texts (all published in the *Revue Générale de L'architecture*) by the French architects Lequeux regarding primary schools, and from Desiré Laverdant regarding nurseries.⁵⁷ Again, as an example, texts by Repullés and Lequeux describing the public school are now compared:

⁵⁵ Repullés, *Disposición, Construcción y Mueblaje*, 11.

⁵⁶ Narjoux, *Les Écoles Publiques en France et en Angleterre*, 82-83.

⁵⁷ Desiré Laverdant, “Architecture communale. Crèches”, *Revue Générale de l'Architecture et des travaux publics* (1851): 161-169.

In fact, public schools are, along with public and free classes, among which we include religious enlightenments, the only places where a man gets to know the divine essence of his soul; and also, after the temple and the parental house, they are the worthiest place of respect, where a child learns to develop his intelligence and understands all that he can achieve by work and instruction. = So, it is the duty of those in charge of the government to increase as much as possible their instruction as the foundation of good progress, of true civilization. That leprosy is the ignorance of understanding and leads to shameful brutality, that must vanish at any cost. Let us raise the lower level of human knowledge and bring it closer to the higher; the lesser the distance, the more easily will men understand each other.⁵⁸

Les écoles primaires communales sont, avec les cours publics et gratuit des villes, les seuls lieux où l'instruction soit donné aux pauvres; les écoles primaires sont, après l'église, où l'homme apprend à connaître la divine essence de son âme, et, je dois dire, après le toit paternel, malgré de tristes exceptions, le lieu le plus respectable où l'enfant apprend à développer son intelligence; [...] Le devoir du gouvernement, celui de l'autorité, est de reprendre cette instruction primaire sur tous les membres de la grande famille française, de les forcer même à recevoir cette instruction, comme dans certains temps on forçait à recevoir les secours de l'art pour les maladies du corps. L'ignorance absolue n'est-elle pas une lèpre de l'intelligence? Ne conduit-elle pas à un abrutissement honteux pour l'humanité? Il faut donc à tout prix que cette lèpre disparaisse; il faut éléver le niveau inférieur des connaissances humaines en France; cela le rapprochera du niveau supérieur, et la distance étant moins grande, les hommes seront plus près de s'entendre.⁵⁹

Among the foreign schools that could be adopted as models to replicate in Spain, Repullés highlights the French schools, and proposes six specific examples: "the schools of Alesia, on Barbanegra street

⁵⁸ Repullés, *Disposición, Construcción y Mueblaje*, 2.

⁵⁹ Lequeux, "Édifices pour l'Instruction Publique. Écoles Primaires", 259.

(sic.), Curial and Laugier (Paris); the school of Batignolles-Monceaux (Seine); the rural school of Sully, la Tour (sic.)".⁶⁰ It is interesting to note that, of the six, five are cited consecutively in Narjoux's book on France and England –the schools of Paris and the rural school of Sully-la-Tour.⁶¹ The school of Batignolles-Monceaux is from one of Lequeux's articles that Repullés used in the preparation of his book.⁶² As far as the English schools are concerned, the Spanish author only translates what Narjoux says and replicates the same models: The London schools on West Ferry Road –an example of the English teaching system–, and the school on Johnson Street –example of the Prussian system– and the school on Wornington Road.⁶³

AN ESCUELA MODELO IN MADRID⁶⁴

In October 1869, an excellent year for this type of calls, the Madrid City Council launched a project call to build an *Escuela Modelo* on the site of the former 'Convento de las Maravillas'. However, it did so with a very tight deadline, and few architects presented their proposals. The winning projects were, firstly, those of Emilio Rodríguez Ayuso, who received the optional contract, and secondly, those of Enrique Repullés y Vargas, who received an honorary second prize.⁶⁵ The building was completed in 1885 after many changes in its construction and was once the most modern teaching center in the country, equipped with state-of-the-art teaching materials acquired in Switzerland and Belgium.

The Madrid City Council established, before the call, detailed instructions with the characteristics and the program that the design of

⁶⁰ Repullés, *Disposición, Construcción y Mueblaje*, 82.

⁶¹ Narjoux, *Les Écoles Publiques en France et en Angleterre*, 179, 182, 184, 187 and 191

⁶² Lequeux, "Édifices pour l'Instruction Publique. Écoles Primaires Communales", 18-28.

⁶³ Repullés, *Disposición, Construcción y Mueblaje*, 82-83, and Narjoux, *Les Écoles Publiques en France et en Angleterre*, 231-238.

⁶⁴ See: Repullés, *Disposición, Construcción y Mueblaje*, 76-78; Burgos, *La arquitectura del aula*, 19-22, and Rodríguez, *Arquitectura escolar*, 160-165.

⁶⁵ Again we find Rodríguez Ayuso and Repullés participating in a call for proposals, although now separately. It was indeed a productive year for both in 1869, although Repullés had to wait until 1902 to see one of his school building designs materialized, the Alfonso XII schools in Madrid [Pozo, *Urbanismo y educación*, 134-135, and Rodríguez, *Arquitectura escolar*, 198-204].

the building had to comply.⁶⁶ According to these instructions, the school was for primary education with four classrooms: one for nursery school, another for girls and two for boys, the latter being adjacent and with the possibility of joining both classrooms. Each of the classrooms had to accommodate seventy or eighty students. The entrances had to be independent for each sex, and the girls' class could be used for the preschoolers.

Based on these conditions, both architects came up with fairly similar floor designs: in both cases they were compact buildings with an interior courtyard, adjusted to the Daoiz y Velarde street and the Plaza del Dos de Mayo. Both projects, however, have the shortcoming already mentioned above regarding the Washington school: the symmetry taken to the extreme results in different alignments for the classrooms.

After a first comparative analysis of both descriptions, it can be seen that Repullés wanted to comply more rigorously than Rodríguez Ayuso with the rules of the call, and this at the expense of greater clarity and cleanliness of his proposal and a larger occupation of the plot. The winning project (figure 12), on the other hand, responds to a clearer outline, organized around an axis of symmetry parallel to Daoiz y Velarde Street and composed of three areas: the lateral areas are used as classrooms and offices, and the central area organizes the transit around the courtyard.

However, above all, the most notable difference between both proposals lies in the idea of what a classroom should be. In Repullés' project (figure 13) the classroom –a space of 9 x 20 meters which, due to its excessive width, is divided in two by a row of cast-iron columns– is still anchored in the large classroom model which is based on the mutual learning system. On the other hand, his friend and colleague Rodríguez Ayuso selects a smaller classroom size and unilateral lighting, more in line with the new trends in pedagogy.

⁶⁶ Repullés, *Disposición, Construcción y Mueblaje*, 98-100.

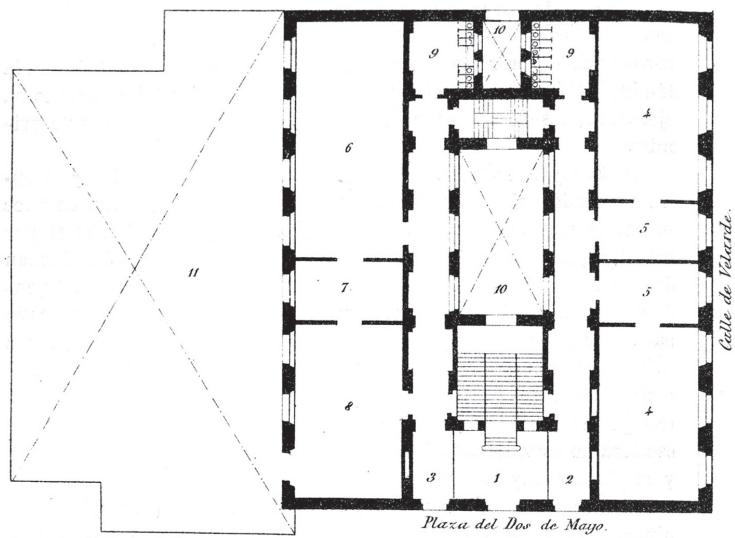


Figure 12. Project for the *Escuela Modelo* of Madrid. Ground floor. Arch.: Rodríguez Ayuso [Repullés, *Disposición, Construcción y Mueblaje*, Sheet VIII].

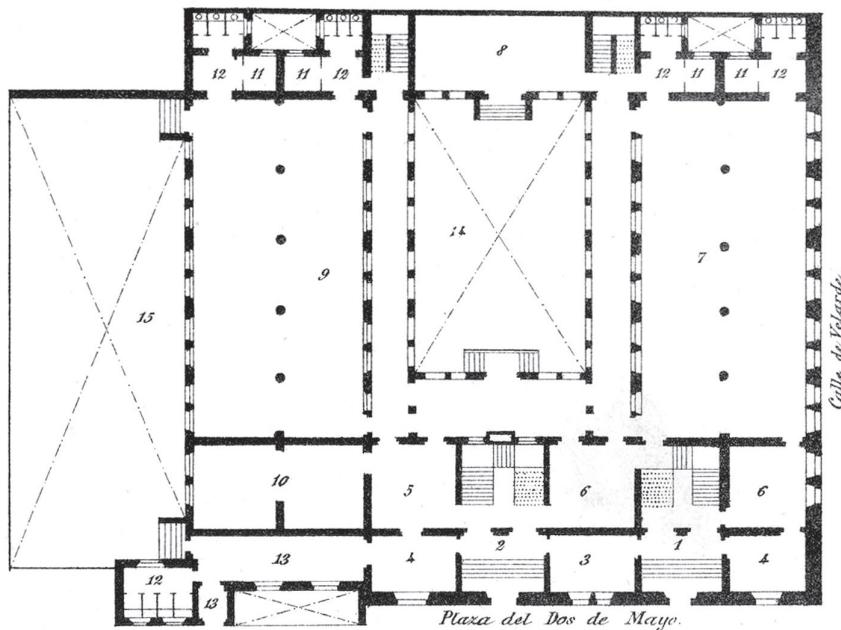


Figure 13. Project for the *Escuela Modelo* of Madrid. First floor. Arch.: E.M. Repullés [Repullés, *Disposición, Construcción y Mueblaje*, Sheet IX].

The current CEIP⁶⁷ Pi i Margall is the result of the profound restructuring that Bernardo Giner de los Ríos performed in the *Escuela Modelo* of 1933. The modification consisted, firstly, in modifying the third floor –initially intended for accommodation– into one more floor at the service of the students, and secondly, in providing an image more appropriate with the times:

Apart from all the demolitions [...], we will level the bulging brickwork of the decoration on the façades, such as the jambs of the holes, the crest of the crown of the building, coats of arms and imposts, to obtain façades devoid of ornamentation, [...], for which all of them will also be plastered, and Tyrolean coated.⁶⁸

The original roof was replaced by a flat terrace to enlarge the surface destined for children's play, a decision that probably led Giner to change the image of the building radically. At present, it is only possible to find Rodríguez Ayuso's track on the main staircase. According to Pedro Navascués, "there was nothing Neo-Mudejar about his style, which resembled more a typical Neo-Greek style, with a very characteristic technique of finishing off the gaps with stone lintels which we could call antefixes, two at the ends seen in profile and a central one in front".⁶⁹

THE SCHOOLS OF DON LUCAS AGUIRRE IN CUENCA AND MADRID⁷⁰

Lucas Aguirre y Juárez, a liberal and progressive man, was born in Cuenca in 1800. His family was dedicated to business and was part of the local high bourgeoisie. He went to live in Madrid in 1860, where he spent his last years committed to the most educationally disadvantaged persons. The philanthropist Aguirre arranged for all his assets to be liquidated upon his death and, with the profits, schools were founded in

⁶⁷ CEIP: Spanish acronym for "Colegio de Educación Infantil y Primaria" (School for Early Childhood and Primary Education).

⁶⁸ Bernardo Giner de los Ríos, *Proyecto de reforma y ampliación del Grupo Escolar Pi y Margall (Madrid)*, July 1933, Archivo General de la Administración, Education, Box 32/552. Taken from: Rodríguez, *Arquitectura escolar*, 162.

⁶⁹ Pedro Navascués Palacio, *Arquitectura y arquitectos madrileños del siglo XIX* (Madrid: Instituto de Estudios Madrileños, 1973), 228. Taken from: Rodríguez, *Arquitectura escolar*, 163.

⁷⁰ See: Repullés, *Disposición, Construcción y Mueblaje*, 78-79; Burgos, *La arquitectura del aula*, 30-32, and Rodríguez, *Arquitectura escolar*, 165-172.

three specific areas that were close to his personal history. The first school in Siones de Mena, a small town in Burgos where his father was born, was built in 1868 and this is the only one that was founded while he was alive. The second was founded in Cuenca where he was born, after his death in 1873, and the third was founded in Madrid, the city that treated him so well in his last years. A legacy was created with the remaining funds, and the benefits were used to support the schools.

The schools did not become a reality until thirteen years from the death of Don Lucas. The first school opened in Madrid, on October 18, 1886. Its location in Alcalá Street, next to the Retiro Park, was not arbitrary: it was deliberately chosen –as Rodolfo Llopis said- for all those who went to the bullfights so that both on their way there and on their way back, they would necessarily come across “a superb building that speaks of culture and reproaches them for their barbaric hobbies”.⁷¹ The new bullring of Madrid, a building that is considered the initiator of the Neo-Mudejar architectural current (the same as the *Escuelas Aguirre* in Madrid), was inaugurated in 1874 and was a project by Rodríguez Ayuso and Álvarez Capra. Perhaps this is why the first was chosen to design the *Escuelas Aguirre*, although at the time he was working on the construction of the *Escuela Modelo*.

The *Escuelas Aguirre* in Cuenca

The schools of Cuenca also opened in 1886, though they had been planned before those in Madrid, as the inclusion in Repullés' book shows. Although they are usually referred to in the plural form, it is a single building with two independent classrooms, one for each sex (figure 14). As proposed,⁷² the building has a central two-storey body and two single-storey lateral bodies that are used as classrooms. The central body goes into the plot much more than the lateral arms. The ground floor is used as a gallery, and the main floor is used for teacher's accommodation.

⁷¹ Rodolfo Llopis Ferrández, *Las ideas de Don Lucas Aguirre* (Cuenca: Ruiz de Lara, 1924), 25. The bullring designed by Rodríguez Ayuso and Álvarez Capra was replaced in 1934 by the current one in Las Ventas. The 'Palacio de los Deportes' of Madrid is now located on the site of the former bullring, just one kilometer from the *Escuelas Aguirre*.

⁷² The building, currently the *Aguirre Cultural Center*, is not exactly Rodríguez Ayuso's project. The length of the left class was drastically reduced, and there are no covered galleries, which, if they were ever built at the time, were demolished later on.

Both schools are completely symmetrical with a hall and an attached small waiting room. One door communicates the hall with the classroom and another with the *covered gallery* which is 24 m long by 5.50 wide (figure 14, No. 8 and 8'). The first five meters of the gallery goes into the central pavilion. This first section of the gallery is in direct communication with the closet, the cloakroom, and the classroom. The toilets are arranged in a traditional way, that is, small attachments next to the teacher's desk for better control by the teacher.

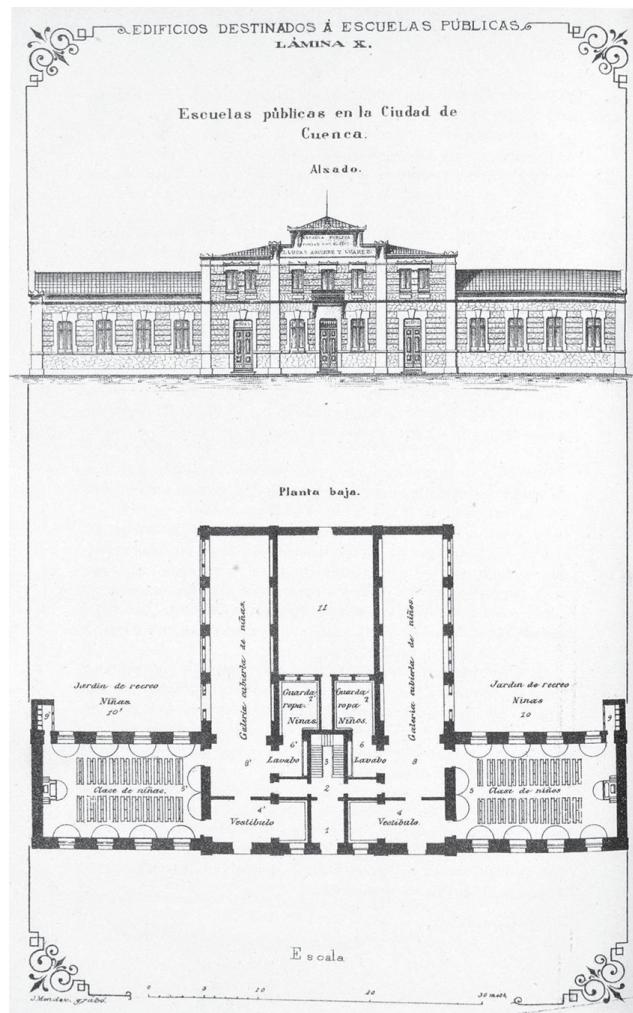


Figure 14. The *Escuelas Aguirre* in Cuenca. Ground floor. Arch.: Rodríguez Ayuso [Repullés, *Disposición, Construcción y Mueblaje*, Sheet X].

There is a rectangular space between the covered galleries (figure 14, n.º 11) that lacks a roof in the project but that, eventually, could be covered to use it as a gym, in which case it would receive daylight either from the roof window or from the windows in the main wall.⁷³ This is a fascinating area that anticipates the most complex result used in the *Escuelas Aguirre* in Madrid.

Each classroom measures 9 x 15 m, has accommodation for 100 students, has bilateral lightning, and not from the front side of the classroom, as was the case with the additional type. The furniture layout suggests that the design of the classroom is for a teaching system in semicircles attached to the walls. A system that forces to raise the height of the parapet of the holes two meters above the class floor.

According to Repullés, Rodríguez Ayuso's project for Cuenca was based on the "additional building type" of the projects designed by the School of Architecture (figure 6).⁷⁴ When we referred to the same statement above, we said that both outlines came from one imported from France: the *Mairie-école*, and we proposed the school in the Petit-Monrouge neighborhood (Paris) as the most likely one among the possible models that served as a model for the additional building type could. If one compares the floor plans of the Cuenca and the Parisian schools (figures 8 and 14), one may find that the similarity between both is more considerable in this case: The Cuenca school could be considered an evolution of the Petit-Monrouge school with halls in the front garden and with extended *préaux couverts* (in Cuenca they built covered galleries), as Vacquer recommended regarding the Paris school.⁷⁵

It is possible to find reminiscences of the *Escuelas Aguirre* of Cuenca in other schools which were built later on, and they were widely used thanks to Repullés' book. This is the case of the schools of San Miguel in Palencia, now CEIP Jorge Manrique, designed in 1886 by the municipal architect Cándido Germán. If one disregards the added kindergarten and the adaptation of the remaining classrooms to simultaneous teaching, the similarity between both is remarkable.⁷⁶

⁷³ Repullés, *Disposición, Construcción y Mueblaje*, 79.

⁷⁴ Repullés, *Disposición, Construcción y Mueblaje*, 78-79.

⁷⁵ Vacquer, *Bâtiments scolaires récemment construits*, 11.

⁷⁶ See: Lourdes Espinilla and José Luis González, "Génesis de la primera 'Escuela de Párvulos' en Palencia capital (1857-1910). La Insigne figura de D. Vicente Inclán", *Tabanque* 20 (2006-2007): 137-166 [142].

The *Escuelas Aguirre* in Madrid

The floor design of the building is composed of three U-shaped pavilions that mark out a rectangular space, which is in turn divided in two by a fourth bay located on the axis of symmetry (figure 15). Both exterior bays are in parallel to the axis and are used for classrooms on the ground floor and for accommodation on the upper floor. The entrance and offices are located in the central body on the ground floor, and the meeting room and library are on the first floor. The fourth central bay is shown in the façade by a high tower –a real urban landmark– and is used for the staircase, an inner courtyard and the toilets. The rest of the ground floor has two spaces under a three-sided roof with access to the classrooms and could also be used as a gym due to the size. Here again, the distinctive signs of Rodríguez Ayuso can be seen, and clearly distinguished him from Repullés in the *Escuela Modelo*: the perfect plan design and the consistency between the inside and the outside.

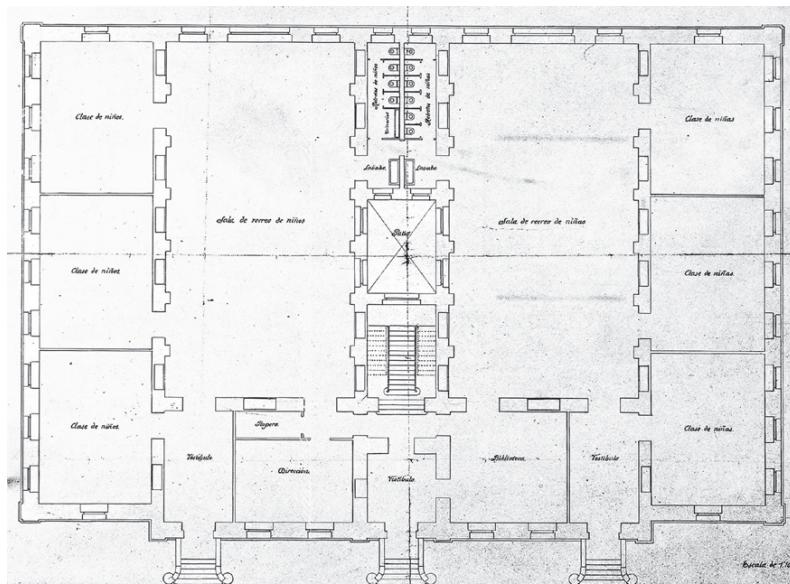


Figure 15. The *Escuelas Aguirre* in Madrid. Ground floor. Arch.: Rodríguez Ayuso
[Archivo de Villa de Madrid: 16-281-21].

The *Escuelas Aguirre* in Cuenca and Madrid were designed by Rodríguez Ayuso more or less simultaneously, and similar criteria

were used. If we compare both floors, we can conclude that the ones in Madrid seem to retract over the central body of the building, due to the narrowness of the site. These wings were extended in Cuenca. In Cuenca the covered gallery was open to the courtyard, and in Madrid it is a closed space with above and front lightning. In other words, Ayuso wanted to put into practice in Madrid the office that in Cuenca did not materialize, that is, the space between both galleries, which, as Repullés said, could be covered in the future and to use it as a gym (figure 14, n.^o 11).

The question is, why are the classrooms different in each case? In Cuenca, the classroom is nine meters wide, while here –as the *Escuela Modelo*– the width is less than seven meters. The thing they have in common is that there is more than one floor. In Cuenca the width of nine meters is covered by trusses and does not need intermediate columns for support. In both schools of Madrid this is not possible on the ground floors; therefore the width needs to be reduced if one wants to get rid of the intermediate columns. Rodríguez Ayuso found himself in a similar situation to the French architects of that time, who had to narrow the classrooms to eliminate the columns. As Châtelet points out, the solution for a structural problem forced the modification of the classroom capacity and its design.⁷⁷

The origin of the covered courtyard used by Rodríguez Ayuso in Madrid, a somewhat atypical space in Spanish school architecture, is an influence of the Brussels' Model School, a well-known building throughout Europe since its exhibition at the Universal Exhibition of 1878.⁷⁸ The Parisian school on rue Keller, designed by Durand-Billion in 1844 and considered a forerunner of the Brussels' Model School,⁷⁹ may also have influenced Rodríguez Ayuso, either by the *Revue Générale de*

⁷⁷ Anne-Marie Châtelet, "L'école prend forme", in *Paris à l'école, 'qui a eu cette idée folle...',* ed. A. M. Châtelet (Paris: éditions du Pavillon de l'Arsenal, 1993), 78-89 [85].

⁷⁸ Francisco Javier Rodríguez Méndez, «Ecos en España de la Escuela Modelo de Bruselas», in *Infuencias belgas en la educación española e iberoamericana*, ed. José M.^a Hernández (Salamanca: Ediciones Universidad de Salamanca, 2019), 291-302.

⁷⁹ Françoise Jurion - de Waha, "L'école en beauté, un exemple d'architecture pour l'enfant", *Cahiers Bruxellois* 1, XLVII (2015): 194-243 [206 and 218]. The author locates the school on Keller Street on Charonne Street, but is referring to the same school designed by Durand-Billion.

l'Architecture,⁸⁰ or by Vacquer's book that we have cited above as a possible source for Rodríguez Ayuso and Repullés.⁸¹

THE JARDINES DE LA INFANCIA OF MADRID⁸²

The first kindergarten was known in Spain in the middle of the 19th century. Although the first practical experiences of the Froebel method, both in Madrid and Barcelona, are from this date, the *Jardines de la infancia* –or Kindergarten– were not really known until the Ministry of Public Works opened the first kindergarten in Madrid based on the Froebel system built on a site located on Daoiz y Velarde street, between the 'Escuela Normal Central de Maestros' and the *Escuela Modelo*.⁸³

The architect of the project and director of the construction was Francisco Jareño (who, as we have already mentioned, participated in the 1869 public school model call). Jareño's project was remarkably in line with the kindergarten model proposed by Fiedrich Froebel, a model that, according to the given descriptions should be strongly connected with the natural environment and have a gradual transition of spaces: "closed, open and transitional".⁸⁴ Repullés y Vargas also paid attention to this type of school, and he dedicated an entire epigraph of his book.⁸⁵ According to his description, the Froebelian school consisted of four classes and the children were grouped according to their level of education. In front of the classrooms, there had to be a hall with a cloakroom, two offices, and a small kitchen-dining room. Along with the basic rooms, Repullés refers to "a big hall" –the intellectual gym– for recreation and games on bad weather days. The upper floor

⁸⁰ Joseph Uchard, "Écoles communales de la ville de Paris", *Revue Générale de l'Architecture et des travaux publics* (1862): 9-14.

⁸¹ Vacquer, *Bâtiments scolaires récemment construits*, 13-14 y láminas 11-15. See notes: 22, 33 and 75.

⁸² See: Purificación Lahoz, «El modelo Fröbeliano de espacio-escuela. Su introducción en España», *Historia de la educación* 10 (1991): 107-133; Burgos, *La arquitectura del aula*, 22-24, and Rodríguez, *Arquitectura escolar*, 173-178.

⁸³ Lahoz, "El modelo Fröbeliano de espacio-escuela", 125.

⁸⁴ Lahoz, "El modelo Fröbeliano de espacio-escuela", 110.

⁸⁵ Repullés, *Disposición, Construcción y Mueblaje*, 32-35.

was used for teacher and janitor accommodation. Finally, an essential part of the kindergarten was the “closed and spacious courtyard” –with abundant trees, bathrooms and storing spaces for tools and animals– and the garden, divided into small plots for individual work and larger ones for common work.

The Madrid kindergarten started in 1877 and consisted of several pavilions attached to the sides of the rectangular plot that enclosed an extensive garden (figure 16). The entrance was on Daoíz y Velarde Street, crossing the central pavilion, which had two floors and a single bay, aligned with this street. Opposite, there was another one-story pavilion with the gym and dining room. The two pavilions were connected by a covered gallery attached to the eastern boundary.⁸⁶

The main pavilion had a completely symmetrical alignment. The entrance to the school was on the axis through a hall. Around the axis and separated from each other by the passages to the classrooms, there were four rooms used as offices and cloakrooms. The central body projected in the façade and was finished off at the top by a Neo-Greek style pediment. The classrooms were grouped in pairs, on both sides of the central body. As there exists only one bay, to get from the hall to the farthest classroom, it was necessary to cross the first one. The first floor of the main pavilion comprised the entrances to the upper floor accommodations and the staircase. The toilets were only accessible from the courtyard and are placed on both sides next to the doors of the accommodations.

The pavilion located on the other side of the garden was attached to the southern side of the plot and consisted of a simple ground floor construction and a single bay with a one-water roof. It housed the school canteen –dining room and kitchen–, the “intellectual gym” and the gardener’s house. The gym occupied the central position, and its entrance was located on the axis of symmetry. The layout of the garden consisted of four parterres separated from the outside pavilions and each other by two perpendicular paths, and an oval central reinforced the axiality of

⁸⁶ All the spaces that make up a kindergarten listed by Repullés [*Disposición, Construcción y Mueble*, 34-35], the only one missing here is the one for individual and community gardens, which Jarén had to do without due to the size of the plot.

the floor. The remaining constructions included the eastern gallery which linked both pavilions and some small sheds for the henhouse and bathrooms on the other side.

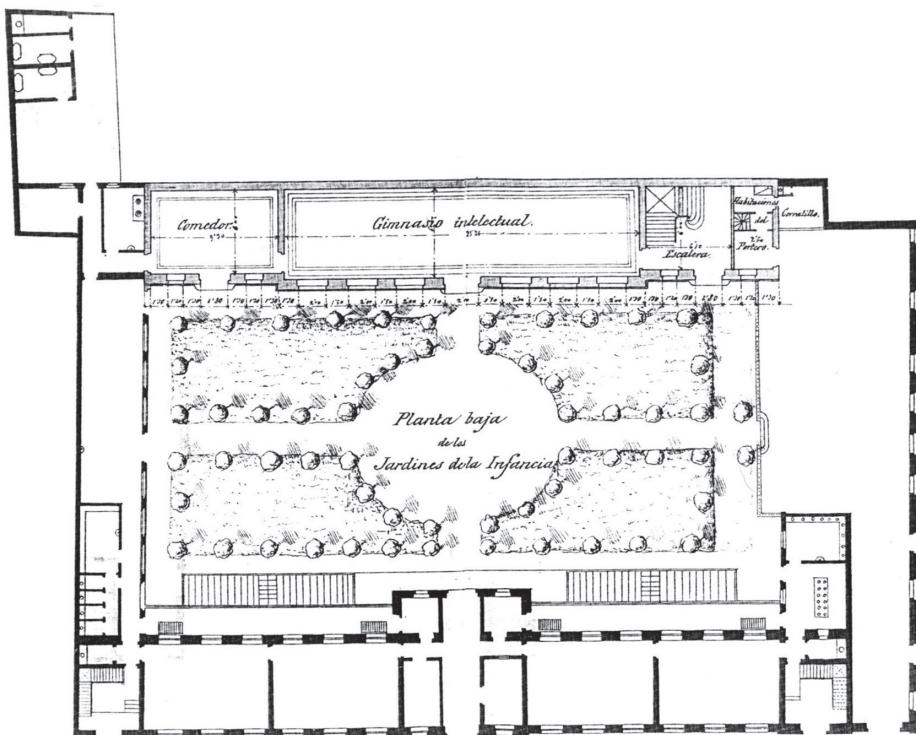


Figure 16. Ground floor of the *Jardines de la Infancia* of Madrid. Arch.: Francisco Jareño [Archivo General de la Administración, Education, Box 32/8101].

The classrooms were quite similar to those proposed by the architect as suitable in the 1869 call and whose characteristics are shown in figure 10. The dimensions are the same in both cases: 20 by 30 feet (6 by 9 meters). The windows are also the same (three per class), but in the school we are dealing with here, Jareño chose to open gaps to the street and courtyard, contrary to what he said in his Report on the convenience of unilateral side lighting. To avoid distractions for the children, he raised the parapet two meters off the ground, thus failing to comply with another of his proposals.

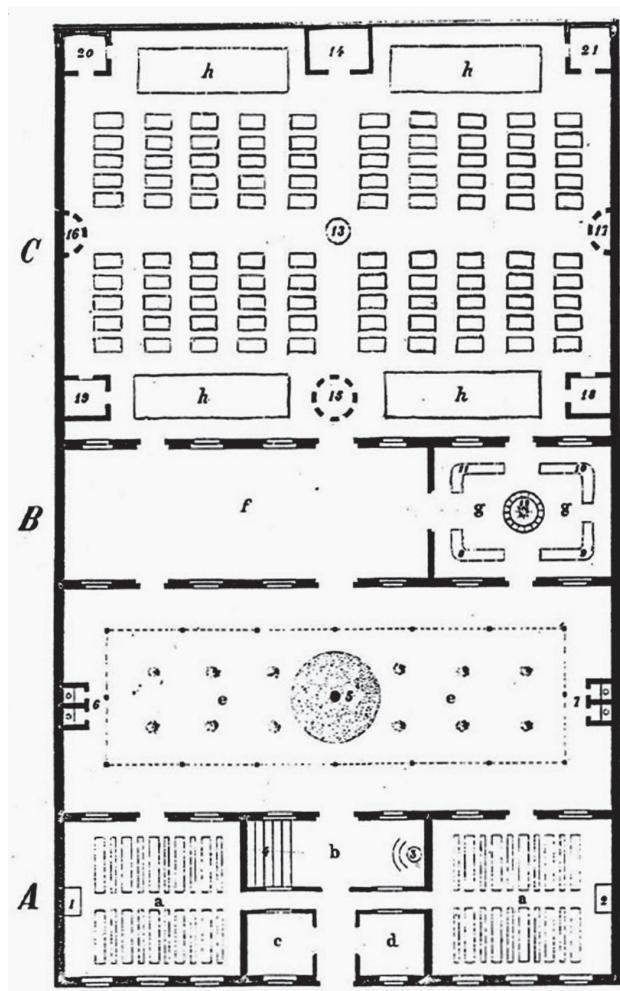


Figure 17. Kindergarten designed by Pedro de Alcántara García, according to the Froebelian model [Lahoz, "El modelo Fröbeliano de espacio-escuela", 112].

If one compares the Madrid Kindergarten with an ideal school organized according to the Froebelian philosophies, for example, the one designed by the Spanish pedagogue Pedro de Alcántara García,⁸⁷ we can conclude that Jareño's project is remarkably in line (figure 17). Like the pedagogue's learning model, Jareño's design is composed of a single-axis, symmetrical, bilaterally lit main pavilion, with the entrance and hall

⁸⁷ Lahoz, «El modelo Fröbeliano de espacio-escuela», 112.

located on the axis. In both cases, the gym, located in the rear pavilion, parallel to the main one, occupies the same space as the classrooms. In both cases, the playground with trees and a central circular parterre covers the space between both pavilions.

The importance of this school as an inspiration for Spanish school architecture is more closely aligned to the Froebelian pedagogy that was put into practice rather than for its construction. It is possible, however, to find reminiscences in the *Escuelas Froebel* of Pontevedra, designed in 1912 by Antonio Flórez. This building can only be understood if you look at it from Francisco Jareño's viewpoint forty years earlier.⁸⁸

CONCLUSIONS

Despite having been distinguished with the highest award in the public school models call held in 1869, the projects of the School of Architecture are based on models that are difficult to put into practice in our country. The first building type corresponds to a typology that was tried in France for some time, but which at the time of the call was practically in disuse. The third building type is undoubtedly the most deficient because of the disproportion between the width and length of the classroom. The 'additional type', a small school with two independent classrooms and teacher's accommodation, is the most acceptable of the four types proposed by the School of Architecture and this may be the reason why it was chosen as the main model for many schools, that is, a central two-storey body and lateral wings for the classrooms. However, it is necessary to take into account a common French origin: the *Marie-école*.

The projects of Repullés and Rodríguez Ayuso had little or no practical application due, on the one hand, to the high cost of these models and, on the other, to the economic hardship of the town councils that had to build the schools. There is no doubt that Francisco Jareño's knowledge and experience were far superior to those of the winners of

⁸⁸ Francisco Javier Rodríguez Méndez, «Influencias alemanas en la arquitectura escolar española», in *La pedagogía alemana en España e Iberoamérica (1810-2010)*, ed. José M. Hernández (Valladolid: Castilla Ediciones, 2011), 194-224.

the call, who were recently graduated architects at the time. If Jareño's projects had been selected, the outcome would have been very different and also significant time savings to find a solution for the serious problem of children's schooling.

The call for project proposals for the Madrid *Escuela Modelo*, also in 1869, brought together again Repullés and Rodríguez Ayuso, but this time as competitors. The winner was Rodríguez Ayuso, whose project responded to a clearer outline than Repullés' although it did not completely comply with the rules. The latter's idea of a classroom is still anchored in the model of the mass class, while Rodríguez Ayuso opts for a smaller class and unilateral lightning.

The *Escuelas Aguirre* in Cuenca and Madrid were built by Rodríguez Ayuso in 1873 due to his previous successes. In both schools, similar criteria were used although the school in Madrid had a more compact design and included two covered courtyards, an imported foreign design and quite atypical in Spanish schools. The classrooms in Cuenca and Madrid differ: in Cuenca the classrooms are large and adapted to mixed teaching, those in Madrid resemble the ones used in the *Escuela-modelo*.

The first Spanish kindergarten started in Madrid in 1877, according to a project by Francisco Jareño. It consisted of several pavilions attached to the sides of the plot that enclosed an extensive garden. Jareño's design was very similar to the kindergarten model described in many publications and proposed by Fiedrich Froebel.

Of the three leading architects of this period, Repullés was the one who obtained hardly any practical benefit from his participation in the 1869 school model call, since he had to wait until 1902 to see one of his school model projects built, despite the relevance it achieved after the publication of his book.

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REFERENCES

Bouillon, Auguste. *De la construction des maisons d'école primaire*. Paris: Hachette, 1834.

Burgos Ruiz, Francisco. *La arquitectura del aula. Nuevas escuelas madrileñas, 1868-1968*, Madrid: Ayuntamiento de Madrid, 2007.

Châtelet, Anne-Marie. “L'école prend forme”. In *Paris à l'école, 'qui a eu cette idée folle...'*, edited by A. M. Châtelet, 78-89. Paris: éditions du Pavillon de l' Arsenal, 1993.

Châtelet, Anne-Marie. *La naissance de l'architecture scolaire. Les écoles élémentaires parisiennes de 1870 à 1914*. Paris: Honoré Champion Editeur, 1999.

Châtelet, Anne-Marie. “Dialogue France-Allemagne sur l'architecture et la pédagogie”. *Proyecto Progreso Arquitectura* 17 (2017): 16-27.

Espinilla Herrarte, María Lourdes and González Sánchez, José Luis. «Génesis de la primera 'Escuela de Párvulos' en Palencia capital (1857-1910). La Insigne figura de D. Vicente Inclán». *Tabanque* 20 (2006-2007): 137-166.

Granier, Christine and Marquis, Jean-Claude. "Une enquête en cours: La maison d'école au XIXe siècle". *Histoire de l'éducation* 17 (1982): 31-46.

Hernández Díaz, José María. "Espacios escolares, contenidos, manuales y métodos de enseñanza". In *Historia de la educación en la España contemporánea. Diez años de investigación*, coordinated by Jean-Louis Guereña, Alejandro Tiana and Julio Ruiz, 191-213. Madrid: Ministerio de Educación Cultura y Deporte, C.I.D.E., 1994.

Jareño y Alarcón, Francisco. *Memoria facultativa sobre los Proyectos de Escuelas de Instrucción Primaria...* Madrid: Imprenta del Colegio Nacional de Sordomudos y Ciegos, 1871.

Jurion – de Waha, Françoise. "L'école en beauté, un exemple d'architecture pour l'enfant". *Cahiers Bruxellois* 1, XLVII (2015): 194-243.

Kluss, Adolf and Kammenhüber, J. W. "Schulgebäude zu Washington". *Allgemeine Bauzeitung mit Abbildungen* (1868-69): 34-35 and 186-188.

Lahoz Abad, Purificación. "El modelo Fröbeliano de espacio-escuela. Su introducción en España". *Historia de la educación* 10 (1991): 107-133.

Laverdant, Desiré. "Architecture communale. Crèches". *Revue Générale de l'Architecture et des travaux publics* (1851): 161-169.

Lequeux, Paul-Eugène. "Édifices pour l'Instruction Publique. Écoles Primaires". *Revue Générale de l'Architecture et des travaux publics* (1849): 258-261, Sheets XXVI- XXVII.

Lequeux, Paul-Eugène. "Édifices pour l'Instruction Publique. Écoles Primaires Communales". *Revue Générale de l'Architecture et des travaux publics* (1851): 18-28, Sheets II-VII.

Llano Díaz, Ángel. «Notas sobre el espacio rural escolar en Cantabria (1850-1936)» [online]. Cabás: *Revista del Centro de Recursos, Interpretación y Estudios en materia educativa (CRIEME) de la Consejería de Educación del Gobierno de Cantabria (España)* [serial publication online] 1 (2009). <http://revista.muesca.es/articulos/66-notas-sobre-el-espacio-rural-en-cantabria-1850-1936> (accessed May 26, 2020).

Llopis Ferrández, Rodolfo. *Las ideas de Don Lucas Aguirre*. Cuenca: Ruiz de Lara editores, 1924.

Martí Alpera, Félix. *Por las escuelas de Europa*. Valencia: Imprenta Vives, 1904.

Narjoux, Félix. *Les Écoles Publiques en France et en Angleterre. Construction et installation*. Paris: A. Morel et Cie., 1877.

Navascués Palacio, Pedro. *Arquitectura y arquitectos madrileños del siglo XIX*. Madrid: Instituto de Estudios Madrileños, 1973.

Ortueta Hilberath, Elena de. "Los modelos de escuelas destinados a los centros de educación primaria pública avalados por el Negociado de Arquitectura Escolar del Ministerio de Instrucción Pública y Bellas Artes". *Norba: Revista de arte* 17 (1997): 165-192.

Repullés y Vargas, Enrique María. "Nuevas escuelas de instrucción primaria en Cuenca". *Anales de la construcción y de la industria* II (1877): 88-90.

Repullés y Vargas, Enrique María. "Edificios destinados a escuelas públicas de instrucción primaria". *Anales de la construcción y de la industria* II (1877): 212-215, 234-236, 246-249, 290-295, 310-313, 321-325, 340-342 and 358-361.

Repullés y Vargas, Enrique María. "Edificios destinados a escuelas de instrucción primaria". *Anales de la construcción y de la industria* III (1878): 1-4, 21-26, 53-55, 86-89 and 145-147.

Repullés y Vargas, Enrique María. *Disposición, Construcción y Mueblaje de las Escuelas Públicas de Instrucción Primaria*. Madrid: Imprenta de Fortanet, 1878.

Repullés y Vargas, Enrique María. "Obras arquitectónicas de Rodríguez Ayuso". In *Biografía y obras arquitectónicas de Emilio Rodríguez Ayuso*, edited by Santiago Castellanos and Enrique M.ª Repullés, 17-31. Madrid: Imprenta y litografía de los huérfanos, 1892.

Rodríguez Méndez, Francisco Javier. "Arquitectura escolar en España 1857-1936. Madrid como paradigma". PhD thesis, Universidad Politécnica de Madrid, 2004.

Rodríguez Méndez, Francisco Javier. "Influencia francesa en la arquitectura escolar española". In *Francia en la educación de la España contemporánea (1808-2008)*, edited by José M.ª Hernández, 185-218. Salamanca: Universidad de Salamanca, 2011.

Rodríguez Méndez, Francisco Javier. "Influencias alemanas en la arquitectura escolar española". In *La pedagogía alemana en España e Iberoamérica (1810-2010)*, edited by José M.ª Hernández, 194-224. Valladolid: Castilla Ediciones, 2011.

Rodríguez Méndez, Francisco Javier. "La huella de Adolf Cluss en la escuela graduada de Cartagena". *Foro de Educación* 12 (2014): 69-89.

Rodríguez Méndez, Francisco Javier. "Ecos en España de la Escuela Modelo de Bruselas". In *Influencias belgas en la educación española e iberoamericana*, edited by José M.ª Hernández Díaz, 291-302. Salamanca: Ediciones Universidad de Salamanca, 2019.

Uchard, Joseph. "Écoles communales de la ville de Paris". *Revue Générale de l'Architecture et des travaux publics* (1862): 9-14.

Vacquer, Théodore. *Bâtiments scolaires récemment construits en France et propres à servir de types pour les édifices de ce genre*. Paris: Caudrilier, 1863.

Viñao Frago, Antonio. *Innovación pedagógica y racionalidad científica. La escuela graduada pública en España (1898-1936)*. Madrid: Akal, 1990.

Viñao Frago, Antonio. "El espacio escolar. Introducción". *Historia de la Educación* 12-13 (1993-94): 11-16.

Viñao Frago, Antonio. "Construcciones y edificios escolares durante el sexenio democrático (1868-1874)". *Historia de la Educación* 12-13 (1993-94): 493-534.

Viñao Frago, Antonio. "La escuela graduada: una nueva organización escolar y pedagógica". In *Cien años de educación en España. En torno a la creación del Ministerio de Instrucción Pública y Bellas Artes*, directed by Pedro Álvarez Lázaro, 363-388. Madrid: Ministerio de Educación, Cultura y Deporte, Fundación BBVA, 2001.

Viñao Frago, Antonio. "Templos de la patria, templos del saber: los espacios de la escuela y la arquitectura escolar". In *Historia ilustrada de la escuela en España: dos siglos de perspectiva histórica*, coordinated by Agustín Escolano Benito, 47-72. Salamanca: Fundación Germán Sánchez Ruipérez, 2006.