Architectural renewal and open-air education in Spain (1910-1936)

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In Spain, when we talk about the open-air schools, or for that matter school architecture, what we mean is the *Institución Libre de Enseñanza* (the free learning institution). Founded in 1876 by a group of liberal teachers, headed by Francisco Giner de los Ríos, the *Institución* played an important role in Spanish culture (A. Jimenez-Landi, 1996). Its promoters were intellectuals critical of the contemporary Spanish teaching system, who wanted to see the country's educational structures modernised as a means of social transformation.

All its members' writings are in favour of the open-air school, which is presented as the epitome of every virtue and as a model. In 1884, Francisco Giner contended that the ideal for any school was to get closer to the outdoors (E Giner, 1884). His favourite disciple, Manuel Bartolomé Cossío — who became rector of the *Institución* on the master's death, and and was also director of *the National Educational Museum* and professor at the University of Madrid - gave a paper in Bilbao in 1905, defining the essentials of educational renewal in Spain. In it, he cast doubt on the municipality of Bilbao's school building criteria and in his turn recommended the open-air school as a model. "They dream of scholastic monuments; yet for my part I believe that the ideal would be to come as close as possible to Rousseau's dictum: the best school is the shade of a tree." (Cossio, 1906)

In 1908, Domingo Barnés, a member of the *Institución* sent by the Ministry of Education to the Franco-British Exhibition in London, produced a very full and well-documented report. His conclusions recommended the creation of open-air schools for weak children, in addition to the school colonies, and the gradual replacement, climate permitting, of traditional schools by the more hygienic, economical and effective open-air schools. As the ideal location for the first experiment, Barnés suggested Dehesa de la Villa in the Madrid suburbs, the origin of Madrid's *escuelas del bosque* (forest schools) (D. Barnés, 1910).

A short time later, following a stay in France and in Germany, Ricardo Rubio, who was to become director of the Institución, published an essay on school hygiene. Taking the Charlottenburg *Waldschule* as his standard, he defined a system of demountable sheds which he described as the "avant-garde in the design of school buildings" (R. Rubio, 1910). He proposed that this type of system should apply not only in the *escuelas del bosque*, but in every other type of school, whatever the climate.

First experiments (1910-1920)

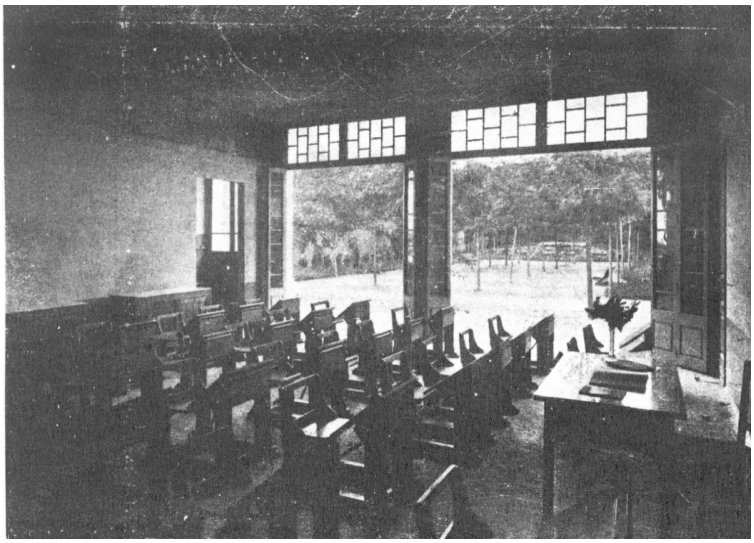
It was thus the *Institución* which encouraged and inspired the creation of the first open-air schools, though the backing of other institutions, such as the municipal autho-rities of Barcelona and Madrid, as evidenced by the first Spanish experiments. It is because of his links with the *Institución* and the municipality of Barcelona that Hermenegildo Giner de los Ríos made so successful a contribution to the creation of the *escuela del bosque* and later to the *escuela del mar* (seaside school). He was the brother of the *Institución* founder and closely linked with it, and also a member of the Municipal Committee of Culture.

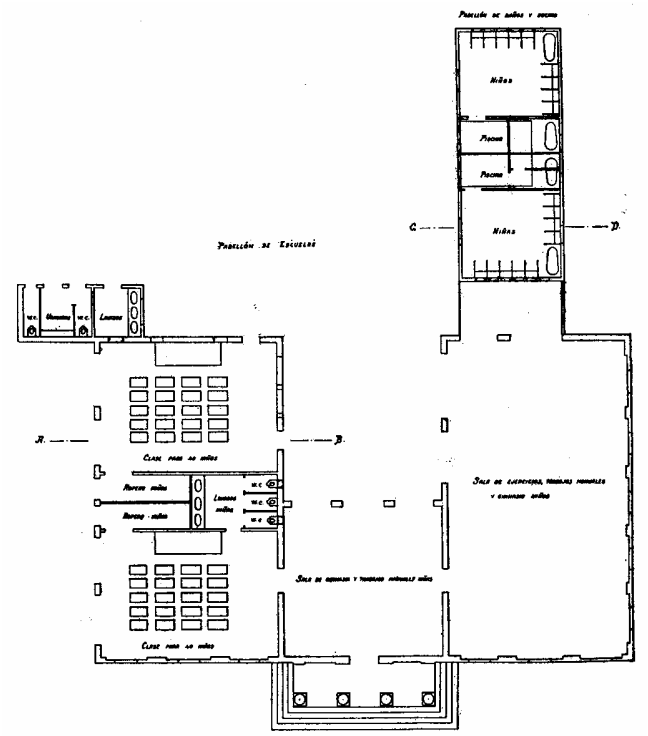
Barcelona: *Escuela del Bosque* (19U) and *Escuela del Mar* (1922)

In 1910, the municipality of Barcelona, aware of the importance of education, decided to créate a large number of city schools. These included the *escuela del bosque*, which was to open its doors in 1914 (Ajuntament de Barcelona, 1922, pp. 129-134). It was located at Montjuich, dominating a spectacular view over the sea. The initial site comprised two buildings, one of them an old and picturesque neo-Mudejar-style private residence which contained the dining-hall, toilers, infirmary and anthropometric unit. The school building itself was designed by the municipal architect. It was a U-shaped building, consisting of two symmetrical wings linked by a third in the form of a neoclassical portico, which housed the vestibule, singing room and rhythmic gymnastics room (Ill. 1, 2). The southern villa consisted of two south-facing classrooms each measuring 70 sq m. They were both bathed in air and light from the large windows, which could be opened fully, giving the impression of being out of doors (Ill. 3). The rooms were protected by elegant awnings, so that the doors could be left open when it rained. The other wing of the building was completely open, and was used as a playground and occasionally an area for gymnastics or practical exercises. The whole construction was surrounded by spacious courtyards with flowers, extensive playgrounds, pine and eucalyptus trees and fountains. The pupils were chosen by the medical inspectors from the weakest children in the municipal schools. Although the *escuela del bosque* suffered all sorts of vicissitudes and its aims were sometimes abandoned, especially in the post-war period, it is still in operation. Since the 1970s, one educational movement has sought to return to its original principles.

In 1918, Barcelona's Municipal Committee of Culture considered creating another school, on one of the city beaches. This initiative gave rise to the *escuela del mar* in Barceloneta, which opened in 1922, apparently in a converted former spa. The project and the construction were managed by the municipal architect, Josep Goday (Ajuntament de Barcelona, 1922, pp. 218-224). The building had graceful proportions and elegant lines: big rooms with immense windows and, in the centre, a sort of raised rostrum facing the sea (Ill. 4). It was built of wood and comprised three sections in the form of a "U" open to the sea. It consisted of two storeys raised over a substructure of iron columns covered with reinforced concrete, at a height well above the stormiest high water mark. The ground floor housed the offices, infirmary, two large rooms for the elementary classes, the dining hall and a small storage room. On the first floor were four classrooms, each with a capacity of 50, two for the boys and two for the girls, and a large central room for lectures, films and performances. This room served as a refectory in bad weather. In summer, the building was used as a spa and fresh-air resort.

The design of the *escuela del mar* ran counter to contemporary Spanish norms for school construction. School was be a calm and quiet place, where children were not distracted. Immobile at their desks, they studied and learned their teachers' lessons by heart. Teaching in the open-air schools was the opposite of this and the *escuela del mar* was nothing more than an open-air school at the beach. Like all the schools of its kind, it had a medical character, in the preventive sense of the term. The doctors selected pupils from the children of Barcelona, on the basis of the severity of their breathing disorders. The number of pupils was limited to two hundred: two groups of boys, two groups of girls and a mixed group in the elementary classes. They were aged five to fourteen. The school working day lasted a maximum of three hours, divided into short sessions with breaks in between. The rest of the day was given over to games, resting, singing, rhythmic exercises and, in particular, sunbathing, sea bathing or fresh air, depending on the doctor's prescriptions. In good weather, much teaching took place on the beach, with the children wearing nothing but swimming cosrumes. The *Escuela del Mar* was destroyed by bombing during the Civil War.





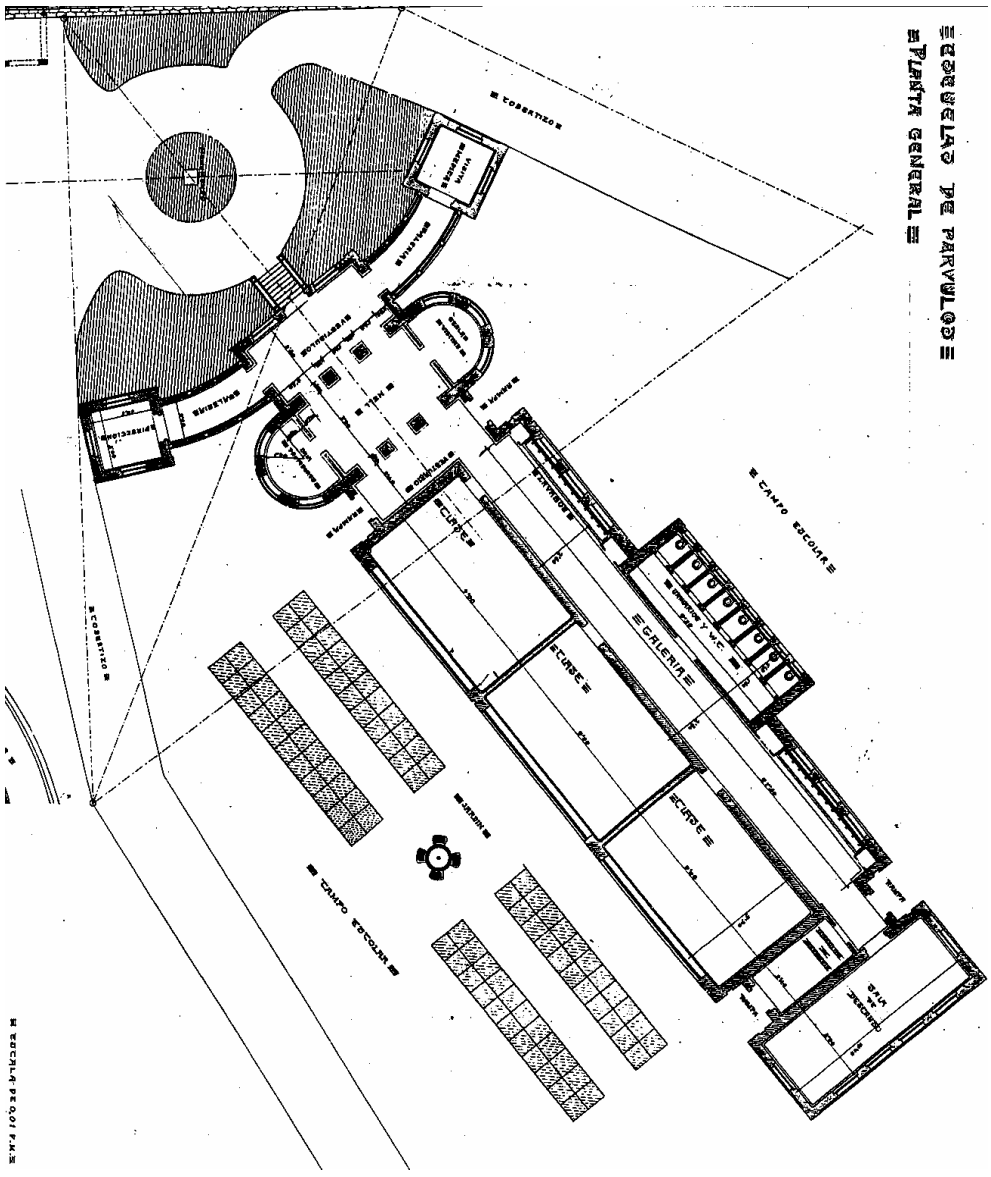
1, 2, 3. Escuela del Bosque, Francesc Folguera architect, 1910-1914. Monjuich, Barcelona

4. Escuela del Mar. Barcelone. Inaugurated in 1922, converted by Josep Goday.

The Madrilian and Castilian experiments (1918)

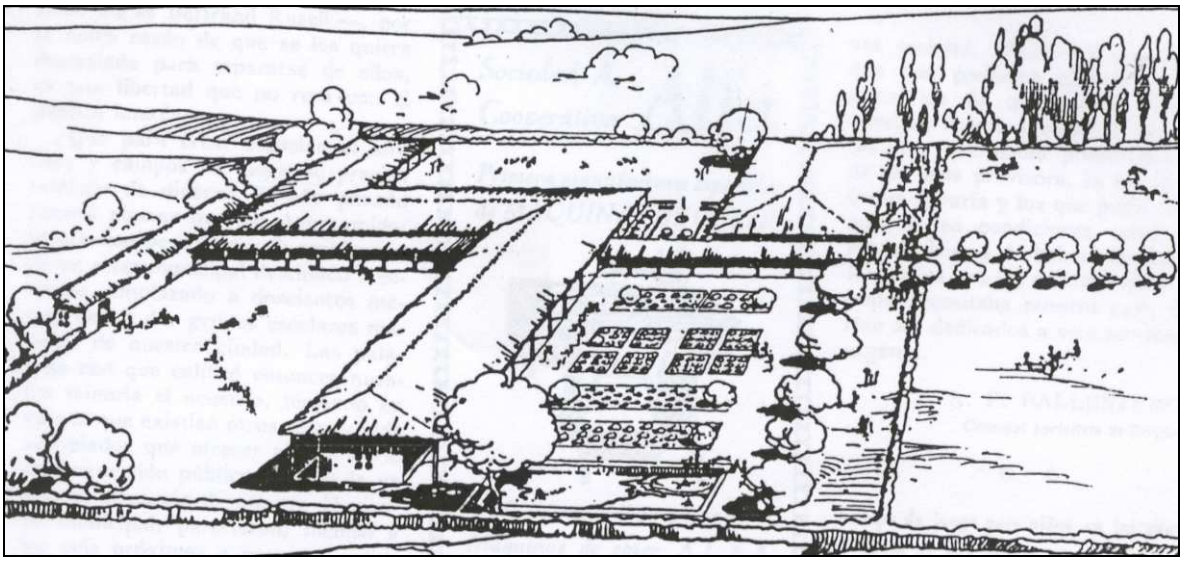
In Madrid, it was some time before the construction of the first *escuelas del bosque*, in Dehesa de la Villa. Built at the location suggested by Domingo Barnés in 1908, they were not completed until 1918 (M. Pozo, 1993). They consisted of eight pavilions in a line: six classrooms, canteen and showers. The architecture was ordinary and very simple: plain brick walls, large east-facing windows, doubled pitched roofs, flat tiles. Jesús Carrasco, the municipal architect, had to work within Madrid's tight municipal budget. There is no doubt that this was a local version of the system of sheds at Charlottenburg, described and suggested by Ricardo Rubio as the recommended design for a school (R. Rubio, 1910). Although the pupils chosen were originally the weakest or those most predisposed to disease, the operation of the *escuelas del bosque* gradually carne to resemble that of any other school facility in the capital. The outcome, in both architectural and educational terms, was therefore more modest than in Barcelona. Today, only one of the villas remains, converted to a municipal centre.

Although less well-known, the infant class experiment in the Allende schools in Toro, conceived in a very different geographical environment and circumstances, is interesting. This little Castilian town, situated in the north-west of the country at a height of some 100 m above the Duero River, owes its character to this strategic position. The estate left by the philanthropist Manuel González Allende at his death in 1847, was used to start a foundation managed by the *Institución Libre de Enseñanza*. In 1914, Manuel B. Cossío, who was rector of the foundation at the beginning of the 20th century, chose Antonio Flórez as the architect of the schools project. They had worked together on the plans for the Cervantes and *Príncipe de Asturias* schools and the *Residencia de Estudiantes*, both built in Madrid between 1914 and 1918. These constructions are evidence of cooperation between the *Institución* and the *Oficina Técnica*, a national official body responsible for school building, founded in 1920 and headed by Flórez.



5,6. Antonio Flórez, architect, 1914-1916. Kindergarten, Toro (Zamora).

The Toro elementary school buildings are situated in the south-east of the town. The report that accompanied the project reveáis that Flórez was familiar with the theories of Froebel (Arch. Fund. G. A., A. Flórez, 1914). His description of learning spaces follows Froebel's postulates to the letter, especially with respect to the small individual gardens. The infant school is organized by means of a longitudinal axis with spaces that house different functions aligned along it: entrance, rooms with a corridor to the north and classrooms to the south, and a laterally positioned living room (Ill. 5, 6). The complex has a winding boundary path which recalls the Austrian baroque. The original contributions by Flórez are the southern orientation of the rooms, in contrast with official norms, and the apertures of the big, eight-metre-wide metal windows, with their sills only 40 cm from the ground - eye-level for sitting children - although the norms required two metres to prevent the children being distracted. The Allende Foundation's infant school is not an open-air school in the strict sense of the term, but it fulfils Barnés' recommendation that the open-air schools should be used as a model.



7. Open-air school in the Pavilion of Guinea in the Hispanic-American Exhibition, 1929 (1934), Seville.

After this first wave of building, little was undertaken in the 1920s. In 1921, the City of Barcelona's Commission of Culture decided to enlarge the *escuela del bosque* by building a new wing to increase its capacity from 90 pupils to 200. This new unit was for boys, with the girls remaining in the old school, closer to the kitchen and dining-hall where the girls went to learn domestic skills. Adolfo Florensa, architect of the municipal commission's technical support bureau, designed the extensión project. Elsewhere, a fortunate initiative enabled Seville to build its own open-air school, without excessive financial input: the municipality decided to reuse the Guinea pavilion from the 1929 Hispanic-American Exhibition. The pavilion materials were about to be sold off by the Exhibition liquidating committee. The buildings, lightweight ground-level wooden constructions, housed classrooms, workshops, a library, gymnasium, etc (Ill. 7). The complex was completed with the installation of a swimming pool, an artificial beach, a garden and a playground. This example shows how, in a climate as warm as Seville's, all that is needed is a roof to provide shade, rather like Rousseau's tree.

From the Republic to the Civil War (1931-1936)

With the arrival of the Republic in 1931, the situation changed and the City of Madrid began to look seriously at the creation of open-air schools. Until then, the city had only the *escuela del bosque* in Dehesa de la Villa, already described. With a limited budget, the administration was above all keen to resolve the schools problem, a serious one if

we consider the 47,000 children - 32 percent of Madrid's school-age population - without schooling in 1930. Weak and pretubercular children were sent to the "urban colonies", precariously constructed open-air schools located in the green areas, where the teaching curriculum was relieved by a large proportion of games activities.

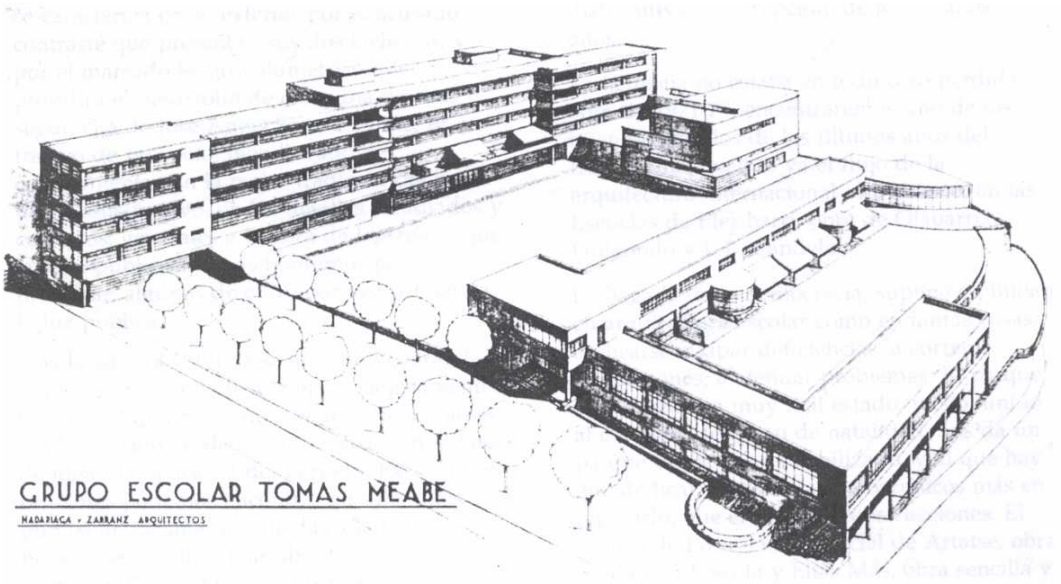
Madrid's school colonies and permanent colonies, 1933

In 1933, Bernardo Giner, nephew of the founder of the *Institución Libre de Enseñanza* and Madrid's schools architect, designed a pavilion intended as an urban colony on municipal land belonging to Los Viveros de la Villa, an enclave near the River Manzanares. In this way, the City hoped to turn a temporary arrangement into a permanent one. The building had a large dining hall measuring 10 m x 30 m, which was designed to be used in the summer months and was therefore open on four sides. An adjoining pavilion housed the kitchen and related facilities, together with the office accommodation. Finally, a third L-shaped building provided a playing area on rainy days and in the heat of the summer. In the accompanying report, the project's designer explains the impossibility of building a permanent colony, because of the closeness of the river: "Experience is not favourable to establishing a building that will provide boarding accommodation." (Arch. Fund. G. A., B. Giner, 1934)

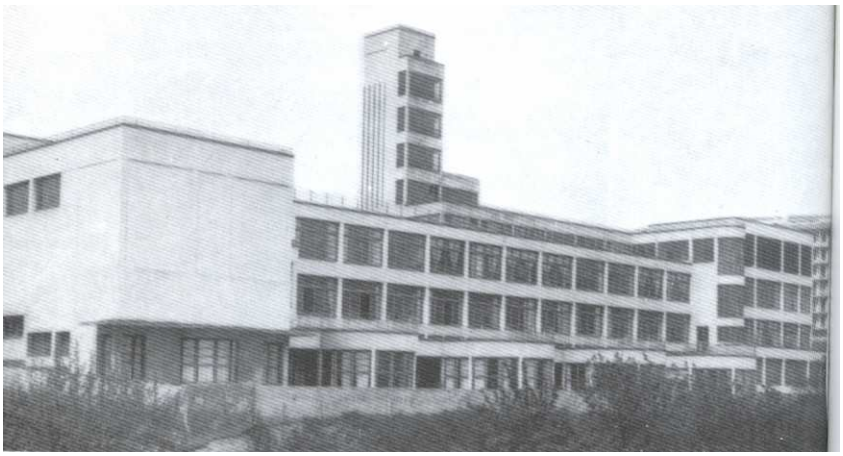
At least three locations in the Madrid suburbs were considered for permanent colonies of more complex design: Fuencarral, Cercedilla and Rascafría. The first was adjacent to Mount Pardo and the two others in the heart of the Sierra de Guadarrama. The *Junta Municipal de Primera Enseñanza* dedicated the Fuencarral colony to the memory of Herminio Giner de los Ríos, the father of Bernardo, promoter of the Barcelona open-air schools. However, only the Cercedilla colony was built, the other two being abandoned following the ideological shifts in national policy in 1934 and because of the Civil War. All three projects were *preventoriums* (disease prevention centres), which in summer extended admission to all sorts of school-age children and operated as colonies. The layouts are very similar: three-storey buildings with first-floor terraces on the south side.

Influence of the open-air on school architecture

During these years, the influence of open-air theories began to make an impact on the design of ordinary school buildings. A number of projects bear witness to the importance attributed to the position of the sun and to the expansion of easily accessible outdoor spaces, for teaching purposes as well. One of these projects, at Madariaga y Zarranz, shown in the Spanish Pavilion at the 1937 Paris Exhibition, had particular repercussions. It was designed in June 1932, when the City of Bilbao organised a competition for the design of a model school on a plot of some 13,000 sq m. Intended for 1600 primary and 700 elementary pupils, the schools were intended to include, amongst other things, a large hall and premises for adult education. The Madariaga y Zarranz project would have divided the plot into two areas, one public and the other for the school. The volumes were oriented north-east / south-west, with a stepped design so that they would not cast shadow over the open spaces (Ill. 8). This meant that the buildings backed to the north-west, the worst direction in Bilbao, while the front faced a fine panorama to the east. The classrooms benefited from the morning sun. Five of them, on the first floor of the elementary school, had their own large 4-metre wide terrace for open-air teaching. In the infant section, they were laid out in a similar way, with light from both sides and a south-facing terrace. The children's playground was sheltered from bad weather and the infant school's terrace garden had a view down on to the ria. Of the whole, only the south wing was built, and it is still in use today.



8. Madariaga and Zarranz, architects, 1932. Tomás Meabe schools, Bilbao.

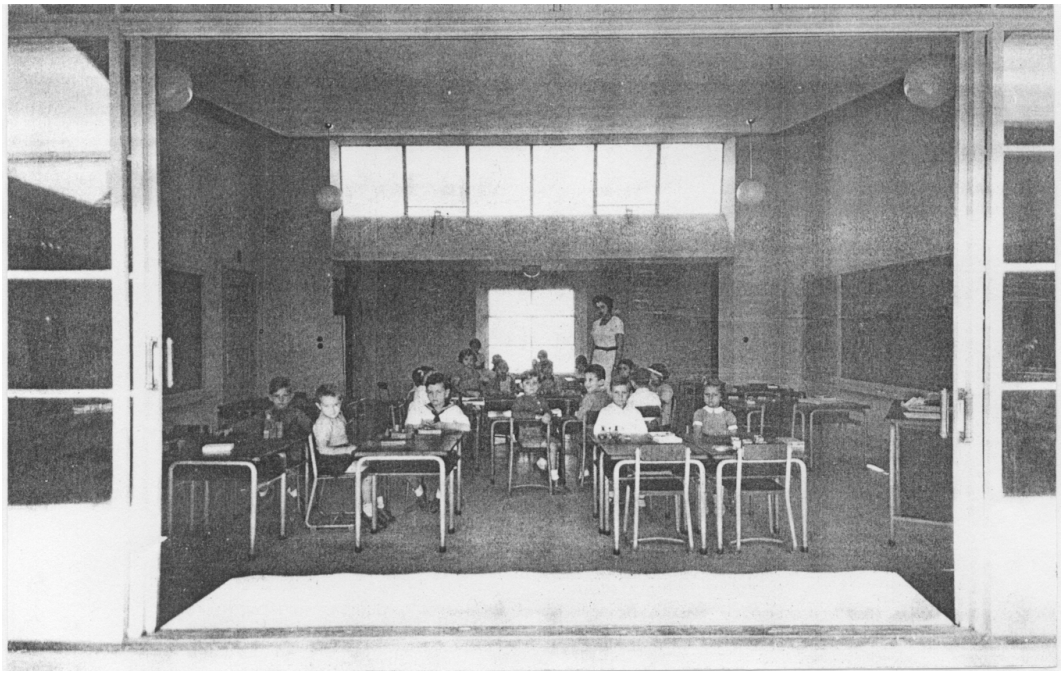


9. Pedro Ispizúa, architect, 1932-1933. Briñas school, Bilbao.

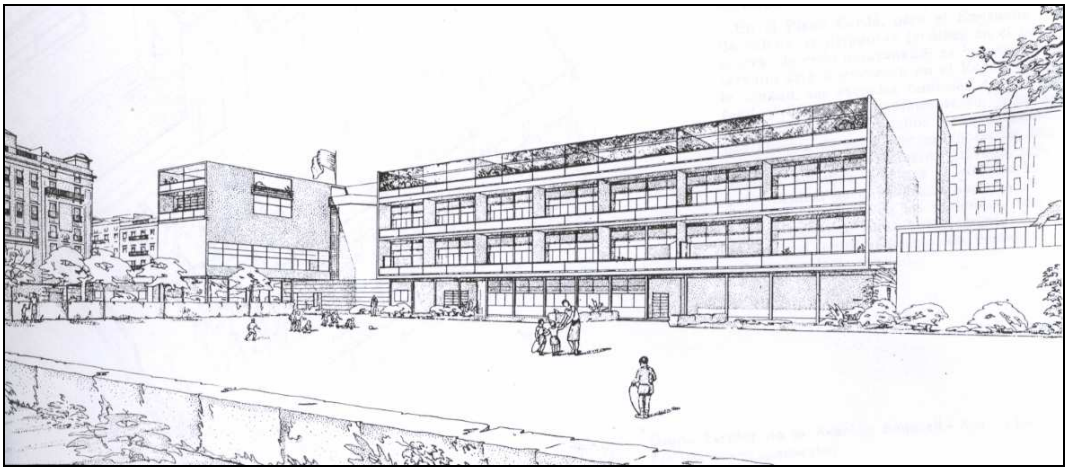
A year later, in 1933, Pedro Ispizúa, who was in charge of municipal school building, drew the plans for another unusual school complex. The long, narrow, steeply sloping plot called for a linear, extended form with terracing. Open terraces on one side and glass facades on the other créate a marked horizontality, which is balanced by the impo-sing vertical stair tower. The result resembles the famous Hilversum Town Hall by the architect Willem Marinus Dudok. On the ground floor, the complex contains four south-facing infant classes giving directly on to the terrace designed for open-air teaching (Ill. 9).

In the same year, in Madrid, an elementary school was built with an even greater resemblance to the open-air model. It is part of the small campus formed around Antonio Florez's *Residencia de Estudiantes*. The architects, Arniches and Domínguez, had already contributed brilliantly to the Secondary Education building. Their success was largely due to a close collaboration with the management of the *Instituto-Escuela*. The infant school had a T-shaped layout, in which the two-storey wing houses the administrative section and special classrooms, marked out by their sawtooth roof. The single storey base of the "T" is the most interesting part of the building. It houses six classrooms in a line, each with its own independent vegetable and flower garden. They receive light from both sides, and the corridor roof is lower than the classroom roof so that the windows at the top can be opened to provide cross ventilation and better air circulation (Ill. 10). A large, fully folding glass bay, five metres in length turns each garden into an extension

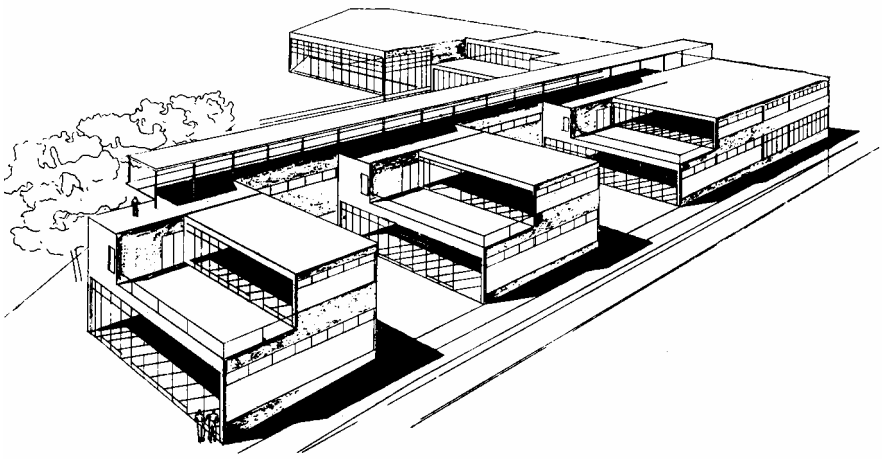
of the classroom, so lessons can take place in the open air. Between each two garden groups are elegant awnings, designed by the engineer Eduardo Torroja, which give the school an extremely powerful image.



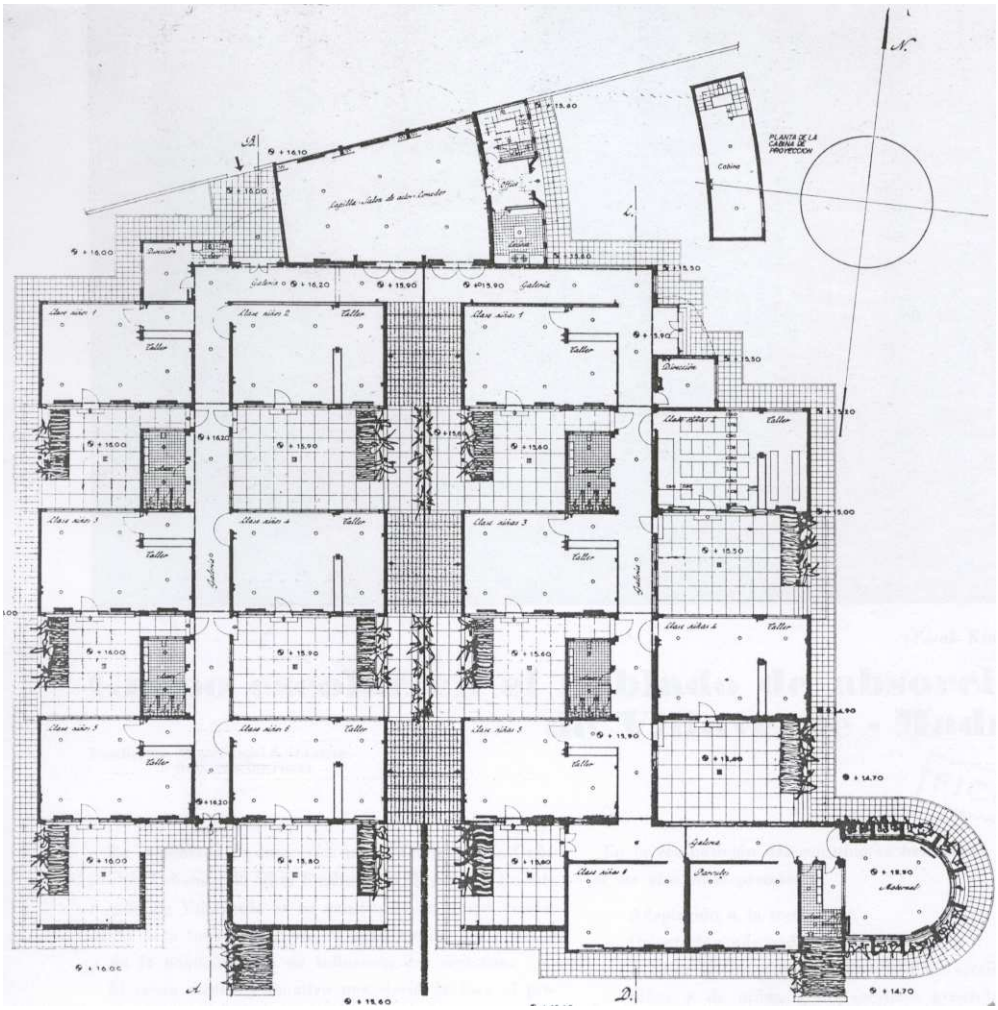
10. *Instituto Escuela*, Arniches and Domínguez, architects, Eduardo Torroja, engineer, 1933. Kindergarten, Madrid.



11. José Luis Sert architect, 1932. Schools in Avenida Bogatell, Barcelona.



12. Aizpurúa, Labayen and Vallejo (GATEPAC) architects, 1933. Primary school project, Avila.



13. *Poblado de absorción* in Vista Alegre, Guillermo Diz architect, 1958. Primary school project, Madrid.

The open-air and avant-garde architects

GATEPAC (Spanish Artists and Technicians Group for the Progress of Architecture), the Spanish section of CIRPAC (International Committee for the Resolution of the Problems of Contemporary Architecture), which was particularly influenced by rationalist European architecture and notably by Le Corbusier, showed particular interest in the architectural solutions that emerged from thinking about the open air. This is obvious in the school design produced in Barcelona, in 1932, by one of the group's most brilliant architects - José Luis Sert. Situated on a triangular plot at the junction of three streets in a new district, it has a linear layout. Terraces punctuating the circulation corridor provide cross ventilation. The classrooms face south-east and have large folding glass bays which open on to a small exterior terrace, an essential element to protect them from the sun and from excessive light (Ill. 11). The economy of this solution was stressed by the architect:

> "In this way, in countries with a temperate climate such as the coasts of the Levant, pupils can at all times enjoy the benefits provided by life in the open-air. This system does not increase the cost of construction, as it does with certain foreign schools where each class has an additional covered terrace as big as the classroom. The type in which we are interested is, at the same time, a room and a terrace. Rolling or folding shutters protect the interior of the room from an excess of sun when necessary." (A. C. Documentos, 1933, pp. 18-19)

This very lightweight architecture no doubt has a family link with the school building designed two years earlier by the architect André Lurçat in Villejuif (France), which is particularly apparent in the articulation of one of the end wings, which both helps the building to blend with the urban landscape and defines the open space of the courtyard.

Other architects belonging to the GATEPAC Group - Aizpurúa, Labayen and Vallejo - put forward an interesting design in the competition for the elementary trade school in Avila. This building consists of two sections at right-angles, housing distinct functions: the workshops and classrooms on one side, the cultural functions on the other (111. 12). Between them are the staff-rooms and the general entrance. The best possible orientation was sought for the first section, which is broken down into three pavilions linked by a corridor. The ground floor houses the practical rooms or workshops, for ease of access; on the first floor, the technical and drawing rooms open out on to proper terrace-classrooms.

* * *

In Spain, the few examples of avant-garde school architecture emerged outside the ambit of the State, generally in municipal competitions. This is what we see in the last examples, which are not strictly speaking open-air schools, but conventional schools partly based on open-air ideas. At the beginning of 1933, there was a campaign against the official norms of school building, backed by a section of the press and by some architects with avant-garde connections. The criticisms were levelled at the excessive cost of the school buildings built by the *Oficina Técnica*, at the use of materials and building processes which took little account of progress and at the backward-looking inspiration of the architecture. These criticisms reached the ears of the Congress, where the opposition parties used them as a political weapon against the government. This kind of disagreement was not exclusive to Spain. In France, and in other European countries, the same phenomenon occurred. Jacques Debat-Ponsan raised these same problems in 1933, in the pages of *L'Architecture d'aujourd'hui*, putting forward arguments that could equally have come from the architects who questioned the *Oficina Técnica* (J. Debat Ponsan, 1933).

Nonetheless, the last school design projects, developed jointly with the municipality of Madrid and the *Oficina Técnica*, show signs of a change of attitude, particularly vis-á-vis the open-air schools. However, nothing carne of them because of the Spanish Civil War. It was not until the late 1950s, once the period of post-war isolation was over, that designs inspired by the open-air schools reappeared in official school buildings. An example are the three schools planned by Guillermo Diz, an architect who was all the more remarkable in that he belonged to the *Oficina Técnica* and contributed to most of that organisation's pre-war projects. The schools were designed for the school popu-lation from the working-class districts of Caño Roto, Vista Alegre and Villaverde in the Madrid suburbs. They consist of pavilions linked by corridors. The classrooms are grouped in different manners, but always in such a way as to create a certain mutual independence. Each classroom is matched by a well sheltered and oriented open-air room of the same size, directly communicating with the recreation áreas, so that the latter can be used as open-air classrooms (Ill. 13). These constructions illustrate the slow but genuine influence that the open-air schools exercised on Spanish school construction right up to the 1950s.

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