Richard Neutra's Active Learning Schools, 1927 to 1939: from Open Air School Precedents to Modernist Innovations

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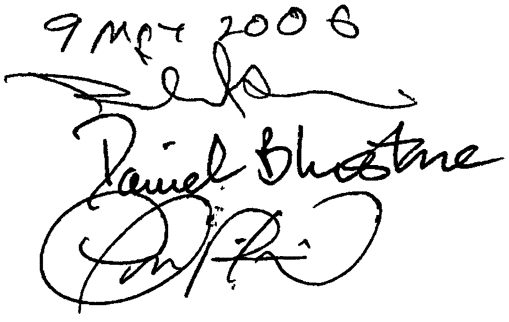

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Introduction

Richard Neutra's school architecture from 1927 to 1939 addressed the needs of progressive education and also fulfilled his theorization of biorealism.[1] Taking as their precedent California's open air schools of the 1890s to 1920s, Neutra's modernist one-story designs with outdoor-indoor connections offered an architectural school model that was uniquely suited to California's temperate climate and environment. In addition, Neutra's school architecture fulfilled the demand for modern, "active learning" schools. Finally, Richard Neutra's school architecture fulfilled his architectural philosophy, biorealism, in which he sought to reconnect humans to nature through design.

The influence of California's open air schools on Richard Neutra's school architecture was established by David Gebhard and Harriette Von Breton in their book *L.A. in the Thirties, 1931-1941*, but they did not undertake a thorough study of the open air schools.[2] Since there are few extant open air schools, the best records of these schools are articles from architectural periodicals and bulletins from the Bureau of Education. These articles provide brief written and photographic accounts of the open air schools. In addition to these periodicals, the California Office of the Superintendent's 1914 pamphlet *School Architecture of California* charts the history of California's school architecture in the early twentieth century. Using all of these resources, the development of California's open air schools is reconstructed in order to better understand their influence on Neutra's schools.

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[1] Richard Neutra, 1892-1970, was born in Vienna and immigrated to the United States in 1923. Influenced by the architecture of Otto Wagner, Adolf Loos, Erich Mendelsohn, Frank Lloyd Wright, Rudolph Schindler and Irving Gill, Neutra's career included private and public residential design, urban design, school and university buildings, and commercial buildings. See Thomas S. Hines, *Richard Neutra and the Search for Modern Architecture: A Biography and History*, (New York: Oxford University Press, 1982).

[2] David Gebhard and Harriette Von Breton, *L.A. in the Thirties, 1931-1941*, (Layton, Utah: Peregrine Smith, 1975).

The history of Richard Neutra's school architecture by comparison is well documented both in terms of primary and secondary sources. Esther McCoy's *Richard Neutra* and Thomas Hines' *Richard Neutra: A Biography* provide brief histories of Neutra's Ring Plan School project, Corona Avenue School and Emerson Junior High School. In addition, Hines and McCoy make the connection between Neutra and progressive education. More recently, Amy Weisser's 1995 dissertation *Institutional Revisions: Modernism and American Public Schools from the Depression through the Second World War* gives the most comprehensive history of the design and construction of the Corona Avenue School and deals broadly with the development of modern school architecture in the United States. Barbara Lamprecht's *Richard Neutra, 1892-1970: Survival through Design* provides a succinct statement of Neutra's design philosophy, biorealism, which contributes toward a greater understanding of his school architecture. Finally, Neutra revealed the motives behind his 1930s schools in his writings and his architectural drawings, located at the Richard J. Neutra Papers, UCLA.

Chapter One of this thesis examines the precedents to Neutra's schools, while Chapter Two illuminates the pedagogical aims behind these schools. Chapter Two also traces the development of Richard Neutra's school architecture to his interest in progressive education. Chapter Three investigates how Neutra's schools architecturally and programmatically fulfilled the tenets of progressive education and International Style modernism. The Conclusion evaluates Neutra's school architecture within the context of his theorization of biorealism, revealing that Richard Neutra's schools were a product of his interests in progressive education, California's climate, health, psychobiology, urban design and the processes of human learning.

Chapter One: The Influence of the Mission, Ranch and Open Air Schools

California's contribution to school architecture is often traced to Richard Neutra's 1935 International Style Corona Avenue School, but this emphasis fails to account for the predecessors to Neutra's schools. Beginning in the late nineteenth century, California architects created a new school model based on the forms of the Spanish missions. These schools were spatially organized around quadrangles or courtyards and were one or two stories in height. In addition, outdoor corridors were used for circulation. This model subsequently led to other school types such as the ranch revival school and, later, the open air schools. These mission revival, ranch revival and open air schools were rooted in California's Hispanic architectural past and emphasized the integration of the indoor classroom area with the outdoors.

California's innovation in school architecture started with the mission revival schools. In addition to employing the ornamentation of mission churches, the mission revival schools adopted their quadrangular organization. For example, one of the first mission revival schools – the 1891 Leland Stanford Junior University – had classrooms distributed in single and double heights around quadrangles with covered walkways that provided circulation between the classrooms (Figure 1). Following the design of the Stanford campus the mission revival style was introduced in primary and secondary schools, such as in George Costerisan's 1898 Long Beach High School. The mission revival schools spread quickly thereafter and reached the apex of their popularity from 1900 to 1915.[3] Evidence of their popularity is found in the 1914 publication *School*

[3] Karen J. Weitze, *California's Mission Revival*, (Los Angeles: Hennessey & Ingalls, 1984), 21-23, 70-71, 96-103.

Architecture in California which illustrated several examples of this school type such as the Santa Paula Grammar School. This school employed bell towers, stucco walls, and tile-roofed classroom wings around an arcaded patio (Figure 2). It was also located on a large plot, which allowed the school grounds to be used by the public. As one writer explained, "The great value of organized play and the increasing interest in the opening of school buildings to the larger community for use after school hours, has led to the now generally adopted idea that every school should have ten or twelve acres of ground if possible."[4] Whereas the national trend in school design was multi-story complexes located on restricted sites, the mission revival schools were simple, one or two story structures that spread out on the land. This sprawled design was made possible by the availability of open land in California.

The mission revival schools were also architecturally unique from their east coast counterparts because of their regional identity. In the 1911 book *American Schoolhouses*, the author, Fletcher B. Dresslar, a Professor of Philosophy and Education at the University of Alabama and renowned commentator on school architecture, wrote about the uniqueness of the mission revival style. In his description of the mission revival school phenomenon, Dresslar commented on its architectural and regional characteristics:

> There is, from the strictly architectural point of view, another type or style in process of development in the West, and especially on the Pacific slope. This is the so-called mission style. This form first found expression in mission churches and in smaller school buildings, but is now occasionally seen in larger buildings. It lends itself especially to one-story buildings, and preferably to those built about a court...The feeling dominant in this style of architecture harmonizes in a peculiarly artistic manner with the sunshine and brown tints so characteristic of the Southwestern States.[5]

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[4] Edward Hyatt, *School Architecture in California*, (Sacramento: California State Printing Office, 1914), 11.

[5] Fletcher B. Dresslar, *American Schoolhouses*, (Washington, D.C.: Government Printing Office, 1911), 125.

Taking into account Dresslar's knowledge of school architecture around the country, this statement is important because he identified how the mission form was not simply a derivation of east coast precedents. Whereas for example the courtyard school had developed at the end of the nineteenth century on the east coast in response to demands for better lighting and ventilation, Dresslar pointed out that the mission revival style school was distinct from this type because of its one story design.[6] Aside from its architectural characteristics, the second component of Dresslar's statement focused on the way in which the mission revival style displayed regional identity. He mentioned that the mission revival style originated in California's mission churches and also in "smaller school buildings." Dresslar's incorrect assumption that school buildings were part of the original mission style had to do with the prevalence of these schools by the time of his book's publication. The mission revival buildings were unique to Dresslar because of the way in which they "harmonized" aesthetically with the environmental characteristics of the southwest, especially California: the white walls of the mission revival schools reflected the California sunlight and the red tile roofs mimicked the "brown tints" of the landscape. In this way, the mission revival schools were an embodiment of California's cultural and physical environment.

The mission revival school phenomenon was part of ongoing experimentation with school architecture in California. Architectural historian Karen Weitze points out that the mission revival style was a departure point for the development of other new school models. As she wrote, "[it was not that the] mission style was...the essential

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[6] For a closer examination of the evolution of school design in the nineteenth and early twentieth centuries, see Dale Allen Gyure, *The Transformation of the Schoolhouse: American Secondary School Architecture and Educational Reform, 1880-1920*, PhD Dissertation, University of Virginia, 2001.

heritage, but rather that it was through principles of design derived from the Mission Revival that a really new type of school architecture had been brought about."[7] While perhaps not the "essential heritage," the mission style was important in the development of a new school model because it was the mission courtyard scheme and the simple fenestration which became the basis for the simplicity and openness of later California schools.

The Ranch School

The mission revival school was one facet of California's multiple cultural heritages: while the mission style school embodied the Spanish period, the Mexican period was exemplified by Hunt and Grey's ranch style Polytechnic School. Greene and Greene had used the ranch style as early as 1903 in their design for the Arturo Bandini House in Pasadena, California. The Bandini House was organized around a three sided courtyard with covered walkways like in some of the mission revival buildings.[8] The difference between the ranch style and the mission revival style, however, was the ranch style's vernacular aesthetic. Using this residential project as their precedent, Hunt and Grey designed the Polytechnic Elementary School in 1907, also in Pasadena (Figure 3). The Polytechnic School was organized around landscaped patios in an H-plan with an auditorium in the center (Figure 4). The ranch aesthetic of the school was achieved through simple materials and construction techniques: for example, the rafters of the corridor roof were exposed and the classroom walls were executed in plasterboard with

[7] Weitze, *California's Mission Revival*, 101-103.
[8] See L. Morgan Yost, "Greene and Greene of Pasadena," *The Journal of the Society of Architectural Historians*, March 1950, 12.

simple wood trim.[9] Hunt and Grey chose the ranch style for their school because its domestic quality made the school comforting to elementary school-aged children and parents. In addition, Hunt and Grey regarded the flexibility and connection to the environment of the style as ideal for school design. Hunt wrote about this latter aspect of the Polytechnic School's design:

> It is well adapted to the warm climate of California. Its picturesqueness and the flexibility of the parts, making it possible to add to the school as it grows, seem to be features that might be of interest to school boards having a similar problem...You can easily see that the advantage of having sunlight in all rooms and having the entire building on the first floor is worth considering. The broad, covered porches make a place for the children to play in rainy weather; stuffy corridors are eliminated...The building is in every way adapted to ideal school conditions in this climate. It is of one story in the so-called California style. A unique feature of the arrangement is the extension of the broad, cement-floored colonnade which surrounds the front or north patio entirely through the building as a sort of hall and around two sides of the patio on the south...These broad open-air passageways hum with the life of children.[10]

Hunt's commentary focused on the way in which the architectural design of the school solved many of the problems of east coast school buildings, including circulation, lighting and building additions. The one story design of the complex, for example, allowed additions to be made as well as permitted more natural light than in a multistory school building. Aside from the architectural qualities of the school, what's most intriguing about Hunt's statement is his revelation that the school was designed in the "California style." This stylistic label reveals Hunt's conviction that the Polytechnic School was uniquely suited to California's environment. For Hunt the design of the Polytechnic School was not a result of copying the Bandini House, but rather that the

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[9] Alson Clark, "Myron Hunt in Southern California," in David Gebhard, ed., *Myron Hunt, 1868-1952: The Search for a Regional Architecture*, (Santa Monica: Hennessey & Ingalls, Inc., 1984), 29.
[10] Myron Hunt, originally in *School Architecture in California* 1909 edition, excerpt reprinted in Dresslar, *American Schoolhouses*, 121.

school design was a result of the intimate connection between environment and architectural design. Hunt therefore pointed out that the warm California climate eliminated the need for "stuffy" indoor corridors. In addition, his emphasis on the "broad open-air passageways" reflected his concern with the curative elements of fresh air. This last point foreshadowed the growing concern for creating salubrious school environments in California.

The Open Air Schools

While the term "open air school" was applied to all California schools that fostered indoor-outdoor relationships, the term originated with the open air schools that were imported to America from Europe in the 1900s. The open air school program began in 1904 in Charlottenburg, Germany with the goal of curing ill children. Diseases such as tuberculosis and anemia were "treated" with exposure to the outdoors and a regimen of diet and exercise. These health benefits attracted American educators who subsequently opened open air schools in New York City and Providence, Rhode Island in 1908. In response to tuberculosis cases in children, the demand for open air schools increased in the U.S., doubling every year between 1908 and 1912. While these schools were originally intended for the use of only ill children, it was proposed that all children, sick and healthy, should partake. "Fresh air for all the children is the next step. Educators and parents are beginning to ask why if open air schools are such benefit to ailing children they should not be even more beneficial to healthy children," advertised one pamphlet.[11] California architects and educators claimed that California's climate was perfect for these

[11] "Open Air Schools," (New York: Division of Education Russell Sage Foundation, 1913), 3.

schools.[12] In addition to their advertised health benefits, California educators and architects advocated the construction of open air schools because of their cheaper building cost. "It is better for the health and growth of the children and costs less money to build, why in the name of Heaven should it *not* become the dominant feature of our [California school] architecture?" one commentator asked.[13] Another reason for the popularity of the open air schools was California's social culture, which favored freedom and adventure, qualities that were reflected by "open air" or outdoor living.

In designing the open air schools, California architects and builders adopted the domestic form of the bungalow because of its symbolic and architectural connection to the outdoors and outdoor living. In order to meet the program of the open air school, California architects used windows that opened to sloping or horizontal positions (Figure 5). Ironically, these tilting windows also nullified the original goal of the open air schools because teachers could shield their classrooms from the environment. The result was what some architects and educators derisively called "open-window" schools.[14] Despite this criticism, the "open window" bungalow classroom became the unit for a series of proposed but unrealized open air school campuses. For example, architect John Woollett used his design for a "Model Inexpensive Open Air School Room" as the basis for his proposed "Fresno type" school. With covered walkways around a double-height auditorium, the immediate precedent to Woollett's design was Hunt and Grey's Polytechnic School (Figures 6 and 7). The resemblance between Woollett's design and Hunt's school pointed to the continued popularity of the mission and ranch schools.

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[12] This is not to say that only California was interested in the open air schools: the phenomenon was both national and international in scope.
[13] Hyatt, *School Architecture in California*, 53.
[14] William Templeton Johnson, "An Open-Air School in California," *Journal of the AIA*, April 1916, 163.

Another example of this connection was an "open air school" project which was displayed at the 1915 Pan Pacific International Exhibition in San Francisco (Figure 8).[15] The school was organized around an arcaded courtyard, and the one story buildings were sheathed in white stucco and tile, yet the school was not called a "mission revival school." The term "open air" became synonymous with the earlier school types, demonstrating that in California different school styles could be referred to as "open air" schools.

Toward the end of the 1910s and early 1920s scientific evidence contested the curative claim of the open air schools. "A critical inspection of these claims," a research study found, "reveals that they are largely claims and nothing more. Open-air schools are such a radical departure that their very novelty appeals to radicals and enthusiasts. This alone might account for the rapid spread of the idea."[16] Despite these attacks, California architects and educators continued to promote the open air schools. For example, in 1912 Hunt and Grey designed an addition to the Polytechnic School which utilized French doors that opened the classrooms directly to patios (Figure 9).[17] The connection to the outdoors was also emphasized by the extensive use of glazing in the walls of the classrooms (Figure 10). Another example of a California open air school was William Templeton Johnson's 1916 Francis W. Parker School in San Diego, California, which had classrooms that opened to the outdoors through the use of accordion doors (Figure 11). The Francis W. Parker School was described as being "finished on the outside with cream stucco and red mission tiles," but its main façade was devoid of any of the typical

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[15] Sherman C. Kingsley and F.B. Dresslar, "Open-air Schools," (Washington D.C., Government Printing Office, 1917). 10.
[16] William A. McCall and Bronson L. Huestis, "Mental and Physical Effects of Fresh Air," *The Scientific Monthly*, February 1922, 135.
[17] Clark, "Myron Hunt in Southern California," 29.

mission school details, such as bell towers or quatrefoils.[18] The architect Johnson explained that the use of this simplified aesthetic was an economic and artistic decision. His goal was "to design an efficient building at a minimum cost; to have the air in the class-rooms as fresh as the air out-of-doors and to get a pleasing effect by good proportions and harmony of color, rather than by a profusion of ornament."[19] William Templeton Johnson's school building, with its lack of profuse ornament, indirectly led to the modern school architecture of Irving Gill. Gill's school architecture in turn inspired Richard Neutra's school architecture (see Chapter Three, pages 26-27).

California's open air school phenomenon of the 1890s to 1920s emphasized the importance of California's curative environment. Architecturally expressing this connection to the environment through one story design, courtyards, and covered walkways, California architects created a new school model which influenced Richard Neutra's school projects of the late 1920s and 1930s.

[18] "The Housing and Equipment of Kindergarteners," Department of the Interior Bureau of Education Bulletin, 1921, No. 13, (Washington D.C., Government Printing Office, 1921), 8.
[19] Johnson, "An Open-Air School in California," 163.

Chapter Two: Child-centered School Planning

In addition to their innovative architectural characteristics, the open air schools displayed in interest in progressive educational theory. The open air schools therefore sought to improve the full physical and mental development of the child. Similarly, in Richard Neutra's school designs of the 1930s, progressive education was the catalyst for his school design that fostered John Dewey's idea of active learning. In both the open air schools and Neutra's schools, child-centered education resulted in revisions of school architecture.

Of the early twentieth century's educational reforms, the move toward child-centered education was the major impetus for changes in teaching and school design. The concept of child-centered education was advocated by John Dewey who, in *The School and Society* (1899) and *Child and the Curriculum* (1902), asserted that education should be directed toward the full physical and mental development of the child.[20] Instead of forcing children to memorize facts, Dewey insisted that the child had to actively participate in the learning process. Whether outside playing or inside the classroom, the child-centered approach emphasized the child's freedom. Dewey's ideas about "learning by doing" developed from the ideas of the late nineteenth century educational reformer, Francis W. Parker. An advocate of the educational theories of Pestalozzi and Froebel, Parker argued that school curricula should be guided by student curiosity.[21] This "new education" as he called it was the forerunner to Dewey's "active learning" and spawned several schools that implemented this new pedagogical approach. In California, for example, the Francis W. Parker School opened in 1916 in San Diego (see Figure 11). In

[20] For an overview of John Dewey's educational philosophy, see Wayne J. Urban and Jennings L. Wagoner, Jr., *American Education: A History*, (New York: McGraw-Hill, 2004), 218-222.
[21] See Urban, *American Education: A History*, 190-191, for a description of Parker's career.

order to allow the educational freedom that Parker advocated, this school employed an innovative school day organization. Instead of having children stay in one classroom throughout the day students moved from one room to another depending on the subject. The architect William Templeton Johnson described this type of organization: "the classrooms are not places where the children are chained down to a desk to sit in one position for five hours a day...they go from room to room for their different studies and a large part of the day they are at work out-of-doors."[22] The emphasis on outdoors work was advocated by Parker, who urged that the outdoors be used as a place to learn about geography and science. As the curriculum of the Francis W. Parker School demonstrated, the freedom of the child was at the heart of child-centered education.

John Dewey adopted Parker's pedagogical approach, and emphasized that the child's freedom could only be achieved when the role of the teacher was changed from that of enforcer of facts to a facilitator of learning. Dewey wrote about this change in the teacher's role:

> For in the classroom where the teacher is doing all the work and the children are listening and answering questions, it would be absurd to allow the children to place themselves where they please, to move about, or to talk. Where the teacher's role has changed to that of helper and observer, where the development of every child is the goal, such freedom becomes as much a necessity of the work as is quiet where the children are simply reciting.[23]

While not explicitly commenting on school design, Dewey's observation carried design ramifications. Since child-centered education necessitated freedom, then the design of the classroom needed to allow that freedom. Dewey, however, did not see how architecture could facilitate child-centered learning. Instead of proposing changes to the design of

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[22] Johnson, "An Open-Air School in California," 164.
[23] John Dewey, *Schools of To-morrow*, (New York: E.P. Dutton & Company, 1915), 140.

classrooms Dewey focused on the improvement of classroom furniture, proposing that movable furniture be used. Aside from this, Dewey also advocated that classrooms should be full of fresh air and light but did not offer an architectural solution.[24] Dewey's failure to see the importance of architecture points to the disjuncture between school design and educational theory, a disjuncture that several California architects attempted to address in the early twentieth century. California, unbound by the educational and architectural traditions of the east coast, was a ripe place for experimentation in school pedagogy and school architecture.

William Hays and the Psychology of School Design

While Dewey may not have seen the link between architectural design and educational theory, there were several architects who did. One of these was William C. Hays, a professor of architecture at the University of California in the 1910s. Hays wrote on the relationship between pedagogy and architecture in a manner that directly foreshadowed Neutra's writing on school architecture. Aware of child-centered education, Hays proposed a new approach to school planning that emphasized child psychology. In 1917, Hays wrote about the importance of recognizing the psychological needs of the child in order to prepare them for their social duties. He wrote:

> But deeper, if less tangible forces are at work in the minds of those who think much about school buildings. There has been much consideration given to the psychology of the problem...we live in the day, the age, and not merely the hour of the child. To prepare children...for duties already far more complex than their parents will ever grasp...is the first concern of our passing generation.[25]

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[24] Amy Suzanne Weisser, *Institutional Revisions: Modernism and American Public Schools from the Depression through the Second World War*, PhD Dissertation, Yale University, 1995, 24-27.
[25] William C. Hays, "Second and Concluding Paper," *The Architectural Forum*, September 1917, 58, 60.

While the standard discussion on school architecture focused on providing better light and ventilation, Hays was aware that the psychological needs of students were just as important. For Hays psychological factors were defined as those factors that reinforced certain behaviors. Of these behaviors, what Hays called "the willing" was the most important and he believed that schools should psychologically reinforce this behavior. He explained:

> The school environment...shall be a microcosm of life itself; which shall from the beginning accustom the child to the "willing," to freedom of movement, to freedom of choice, and at the same time to a repeated experience of the unswerving results of such free choice; a practical, reiterated experience, until it becomes *d'habitude* in the association of action with reaction: this is the psychological basis of the new type of educational plant.

Hays' words reflected the anxiety of American society as it faced its entrance into the First World War. Schools had "to prepare children...for duties already far more complex than their parents will ever grasp," Hays said. These duties involved every American citizen's goal to protect democracy for the world. As a "microcosm of life" – a life of freedom – the school was therefore seen as an antidote to this threat.

Hays translated his psychological basis for school planning into principles for the physical planning of schools. Proposing that the traditional classroom was restraining, Hays argued that California's open air schools offered a possible model for new school design. He wrote: "I suspect that behind the well warranted, growing popularity of the one story, "open-air" schoolhouse lies a logical revolt. It is revolt...against the restraining "classroom" itself – as institution, physical, psychological, social." Besides fulfilling certain health requirements, the open air schools allowed the freedom that Hays advocated. As Hays' comments indicate, he was interested in the creation of a school

environment which could facilitate the child's full physical, psychological and social development. Consequently, Hays asserted that school buildings needed to remove the barrier between the child's inner being and the child's physical environment. In Hays' words, "The vital, guiding principle [of school architecture] is the establishment as nearly as possible of a perfect *rapport* between the child and his physical and intellectual environment...it may be inferred that the simpler forms of building, such as the one story-type, promise best results as forming the least strange environment."[26] Hays justified the design of California's open air schools, which, with their one-story designs and simple fenestration departed from the staid rigidity of east coast schools. The aforementioned Parker School, for example, with its residential scale and simple fenestration, provided the "least strange environment" for children (see Figure 11). While Hays' philosophy about school architecture was explicitly concerned with the psychological role of education, it foreshadowed Neutra's rhetoric on school architecture of the 1940s concerning biorealism (see Conclusion).

Richard Neutra and Progressive Education

Like Hays, Richard Neutra was influenced by child-centered education, specifically by John Dewey's educational philosophy. By the 1930s, Dewey's educational ideas were widely known throughout the country, including Los Angeles. There were several progressive educators in the Los Angeles School District who wished to implement Dewey's ideas about active learning. One educator in particular, Nora Sterry, had a profound impact on Neutra's formulation of his school architecture philosophy. She was a progressive educational thinker who had been a follower of Dewey's educational theories, especially his ideas about the social role of education.

[26] Hays, "Second and Concluding Paper," 60-62.

Sterry had learned of Dewey's theories as a student of sociology at the University of Southern California, where she used Dewey's book *Democracy and Education* as the basis for her studies on immigrant school children.[27] In her 1924 master's thesis, Sterry examined a predominantly ethnic-minority school in Los Angeles, and correlated the influence of external stimuli, such as home background, with the assimilation of these students. Concurring with Dewey's argument that one of the goals of education was to foster democracy, Sterry made the point that Americanization of immigrants should be one of the goals of democratic education. As such, she proposed that progressive teaching methods like role-playing facilitated the assimilation of these children.[28] Like Dewey, Sterry believed that these new teaching methods were directly linked with the social aims of education.

Neutra believed like Dewey and Sterry that the school was an incubator of democracy. According to Neutra, traditional education that focused solely on academics failed to promote a democratic society. "Acquisition of extensive theoretical knowledge," Neutra wrote in 1935, "results by no means automatically in well-integrated, cooperatively directed practical action." Neutra's emphasis on "integrated, cooperatively directed practical action" reflected his belief that American society should consist of citizens who worked toward a common goal. This democratic aspect of citizenship, Neutra argued, was formerly learned at the farmstead, where the working together of all the farmhands instilled these values. This democratic indoctrination was lost in contemporary society, however, because of the transformation of American society from

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[27] For more on Dewey's conception of the democratic role of the school, see Urban, *American Education*, 219-220.

[28] Nora Sterry, *The Social Basis for the Reorganization of the Macy Street School*, USC master's thesis, 1924.

a rural society to an urban society. The school therefore, in addition to teachings the 3 Rs, had to teach this democratic character. As Neutra wrote:

> The modern active school has to take over the responsibility for such education, where the solving of practical problems, the working together, the sharing with others and considering the welfare of others becomes a concrete experience and where the children do not learn, through reading and listening alone, what others have done.

Neutra believed that schools could reinforce cooperative group action by utilizing progressive educational teaching methods that focused on group work rather than solitary work. He asserted that early education was the first and primary means of teaching these skills. "The kindergarten," he wrote, "and the elementary school have been recognized as the necessary stage for the first and most consequential act of educational reorganization." In order to achieve this educational organization, Neutra believed that school architecture played a fundamental role.

In his article "New Elementary Schools for America," Neutra argued that progressive teaching methods could not be facilitated by old school types. He cited Sterry, writing, "Nora Sterry, a successful educator of the West Coast...describes the traditional "listening school" as having classrooms with four substantial walls, floors, ceilings, windows and some provisions for heat, light and air."[29] The "listening school" was the typical school of the past, the school where students merely sat memorizing the facts that the teacher gave. Following Sterry's lead, Neutra attacked the old type of school architecture, writing:

> But if it is true that a child can more successfully sustain fertile concentration when active, not only receptive, our old type classroom proves unsuitable and lacking in functional as well as esthetic appeal: with its fixed sitting arrangement caused by one-sided fenestration and writing light from the left only, with its cramped floor area due to economy of the

[29]Richard J. Neutra, "New Elementary Schools for America," *The Architectural Forum*, January 1935, 25.

> building budget, the traditional classroom is the contrary of an activity room. Its rigidity...does not permit the elastic changes from one grouping of the children to another, such as variegated activities may demand. The new classroom is a room for the productive life of children, who learn while they work, as human beings have done at all times.[30]

In criticizing the old school classroom, Neutra failed to note the precedents in California which had already abandoned these old features. For example, the fixed seating arrangement which he cited as an obstacle to progressive education had already been abandoned in some open air schools. One California educator wrote in 1914 for example:

> Schools are here and there discarding the time honored school desk because it restrains freedom of movement and hampers actual work. It does not fit into real life, because neither before nor afterward do people live in wooden cages. The increasing variety of school activities is likely to push out more and more the formal school furniture.[31]

Neutra's other critiques did not apply to the open air schools either. For example, the open air schools favored large classrooms, which often opened to courtyards. Similarly, Neutra's comment that light was poorly distributed can be refuted by the open air schools, like Hunt and Grey's Polytechnic School, whose abundance of windows mitigated this problem. Neutra most likely omitted these open air schools in order to give more weight to his argument. In addition, Neutra was responding to the fact that traditional multistory, ornate school buildings were still the standard building type in the Los Angeles City School District, even though the District used the most current trends in educational philosophy and teaching.[32] Because of the increasing growth in population and size of the school district and the City itself, several large school construction bonds

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[30] Richard Neutra, "Modern School," *California Arts and Architecture*, March, 1941, 44.
[31] Hyatt, *School Architecture*, 53.
[32] See Muriel Sugden Newhauser, *The Los Angeles City Elementary Schools from 1781 to 1965*, Master of Science in Education Thesis, The University of Southern California, 1965, for a history of the curricular advances the district incorporated.

were passed between 1920 and 1928.[33] While no set architectural style was stipulated, the schools that were constructed were multi-story buildings sheathed in historical revival styles ranging from the collegiate gothic to the Romanesque revival.[34] To give one example, the 1923-24 Warren G. Harding High School, in West Los Angeles, was a double-height, double-loaded corridor type brick school building with Italian Romanesque ornamentation (Figure 12). Neutra described this old type of school: "They were on cramped plots story above story...brick boxes with wasteful stairways and stairhalls, and dark, smelly corridors, artificially illuminated at noon time."[35] Neutra opposed these types of school buildings because of their ornate monumentality which he felt was a needless expenditure that detracted from the educational mission. As Neutra explained:

> The least valuable aspect, the massive monumentality of some senior high schools, supposedly an ornament to the community, has in the past often been used to interest chambers of commerce and patriotic voters at large. But this means misleading patriotism and civic interest in educational matters. Too much valuable money has been wasted on external cathedral and palatial architecture, and too seldom has the educator himself been employed by the public relations department of the average school board to arouse the people's interest in his problems.[36]

Using the tenets of progressive education, Neutra proposed a radically different school architecture from these old school buildings. Neutra's school architecture, like that proposed by William Hays in 1917, was meant to redirect school design away from the restraining paradigm of the "massive monumental" school to a school architecture that fostered the physical, educational and psychological freedom of the student.

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[33] Newhauser, *The Los Angeles City Elementary Schools*, 57.
[34] For a sampling of the Los Angeles School District's school architecture during the 1920s, see Leslie Heumann and Anne Doehne, "Historic Schools of the Los Angeles Unified School District," LAUSD document, March 2002.
[35] Richard J. Neutra Papers, UCLA Special Collections, hereafter cited as RJN-SC, Box 791, typed letter by Neutra and Mrs. Neutra, dated 1932.
[36] Neutra, "New Elementary Schools," 28.

Chapter Three: Neutra's International Style Schools

While Richard Neutra was neither the first nor the only architect to link educational environment and pedagogy, his school architecture was different from its open air school predecessors because of the way it used the International Style to give architectural form to the tenets of progressive education.

The Ring Plan School

Neutra's first conceptual school project, the Ring Plan School, was part of the urban scheme, Rush City Reformed, which was first published in Neutra's 1927 book *Wie baut Amerika?* As its name implied, Rush City Reformed, like the Italian Futurist cities of the 1910s, was based on the technologies of modern transportation systems. The Ring Plan School, with its sleek, curved form, reflected the progress and speed of Rush City Reformed (Figure 13). It was also designed to be an "active learning" school. Neutra's six points of the Ring Plan School, for example, focused on the way in which the school design would facilitate progressive education. These six points were:

1. Independence of orientation to make the type fitting for variegated conditions.
2. Independence of a fixed seating arrangement within the classrooms in order to assure free grouping of the children around the teacher who is one of the group, instead of being contraposed to them. The light influx from above replaced one-sided fenestration and provides for this desired freedom.
3. Far reaching but still supervisable decenentralisation of the collection of instructive materials, library, washroom and accessories to produce a self-centeredness of each room with an instructive atmosphere of its own, devoted to a specific subject of active study.
4. Each classroom with a possibility of expansion of educational activity into the out-of-doors, therefore a mere ground floor layout with private school room patios as peripheral ring.
5. In principle substitution of the school bus ride for the individual walking of small children from home to school to minimize the traffic hazards and increase safety.

6. Use of the best and most satisfactory material available.[37]

These points re-envisioned the traditional classroom from a fixed, rigid setting to a flexible environment. In order to alleviate the cramped conditions of the traditional classroom, Neutra proposed that the classroom open with upswinging doors to patios. To counter the rigidity of the "listening school," Neutra specified the use of free-standing furniture in each classroom. Another goal of Neutra's Ring Plan School was to improve the poor lighting of the traditional classroom by introducing skylights into the design. This overhead lighting would also allow students to sit anywhere in the classroom without having to restrict themselves to any one side of the classroom. The freedom of the child to sit where he desired replaced the hierarchical, unilateral layout of the classroom where the teacher was at the head, both literally and figuratively, of the classroom. The six points of the Ring Plan School indicated that Richard Neutra's school design proceeded from his desire to fulfill the needs of progressive education while also improving the lighting and the architectural organization of the classroom.

Aside from the individual details of the classrooms, Neutra configured the Ring Plan School's campus plan to express the tenets of progressive education. First, Neutra pulled the administration wing away from the classrooms in a symbolic act that put teaching back in the hands of the educators (Figure 14). The ring shape itself was important because it represented progress and equality. Another feature that emphasized the importance of the child was the placement of the recreational space in the protected middle space of the "ring." In addition to the architectural form of the Ring Plan School, Neutra also proposed a curriculum that was aligned with child-centered education. For

[37] Richard J. Neutra, "Notes on the Manufactured Ring Plan School," *Shelter,* April 1932, 26.

example, he envisioned that each classroom would be dedicated to a specific subject, like the previously discussed Francis W. Parker School (see Chapter Two). He wrote that "the classrooms [were] devoted in singles and pairs to a certain subject of instruction – no homeclassrooms."[38] The oval shape of the Ring Plan School accommodated this curriculum by making walking distances between the classrooms shorter. In addition, each classroom was an independent unit because Neutra provided them with restrooms and washrooms and storage spaces for school supplies. The self-centeredness of the classroom reflected the autonomy of the child to learn what he wanted.

The Ring Plan School was also important because it reflected Neutra's conviction that school architecture should be a national concern rather than a localized affair. Neutra wrote that "elementary school buildings, as text books are not [to be] left to local decisions." The Ring Plan School was the solution to this problem because he envisioned that it would be mass produced. As he explained, "manufactured school buildings [like the Ring Plan School] based on findings of authoritative mixed commissions shall be produced by a governmentally supervised industry and supplied to communities at low cost after their zoning is checked and accepted."[39] Although the mass production of the Ring Plan School went unrealized, this project was a testament to Neutra's profound interest in school design, an interest that resulted in his continued experimentation with school design in the late 1920s and 1930s.[40]

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[38] Richard Neutra, "Industriell hergestellte Schulgebaude," *Die Form*, April 1932.
[39] Neutra wrote this directly onto the plans of Ring Plan School, Undated, RJN-SC, Oversize Folder No. 1240.
[40] The Ring Plan School was finally built by Neutra and Alexander in 1961 in the form of the Richard J. Neutra School at the Lemoore Naval Air Base in California. In terms of prefabricated schools, in 1936 Neutra built the California Military Academy, a private school, in Los Angeles, of prefabricated steel, which was assembled on site in a matter of days.

The Ring Plan School established the design tropes that Neutra used in his subsequent school designs. In 1928, for example, Neutra devised another project for a school, the Activity Classroom Study, in which he applied the principles of the Ring Plan School to an orthogonal site. In this project, Neutra placed three linear wings of classrooms next to landscaped patios (Figure 15). Like the Ring Plan's classrooms, each classroom in this project opened to a patio, although in this case a sliding wall was used instead of upswinging doors. Each "activity classroom" was subdivided into a main study area and two smaller workrooms, with restrooms located at the end of each classroom wing (Figure 16). In a rendering that Neutra used to advertise his school architecture, the active classroom was shown with students performing a variety of activities in different groups both inside and outside the classroom (Figure 17). Such a dynamic picture of learning contrasted with the regimented classrooms of the past where the students sat in rows. Neutra subsequently used the Activity Classroom Study for the design of his proposed, but unrealized, 1934 project for the Lawton Avenue School in San Francisco which, instead of having three wings like in the Activity Classroom Study, had four.[41] Neutra also designed another unrealized school, the Sawtelle Elementary School, Los Angeles, in which he placed three wings of classrooms and a fourth administration wing on the edges of a small, square lot.[42] These school studies took as their inspiration several built schools in California.

The California Influence

The largest influence on Richard Neutra's International Style school architecture of the 1930s was California's own school architecture of the 1920s, specifically Irving

[41] Richard J. Neutra, "New Elementary Schools for America," *The Architectural Forum*, 26, 27, 29.
[42] The Sawtelle School is undated. Plans of it are located in RJN-SC, Oversize Folder No. 1168, project no. 6-14. This folder also contains the plans for the Lawton School.

Gill's work of the early 1930s. In his 1930 book *Amerika: Die Stilbildung des Neuen Bauens in den Vereinigten Staaten*, Neutra revealed the architectural influences on his practice since his emigration to America in 1923. For example, Neutra illustrated Thomas Jefferson's design for the University of Virginia, showing the building-to-outdoor space relationship that he used in his architecture.[43] Neutra showed two other schools that foreshadowed his school architecture. The first was a 1921- 23 school in Santa Monica, California, designed by Parker T. Wright. This building's stark, undecorated cubical volumes foreshadowed Neutra's International Style schools (Figure 18). The second school was the Polytechnic School in Oakland, California, which employed large expanses of industrial glazing for the classrooms (Figure 19). This glazing, as well as other examples of glazing in factories, foreshadowed Neutra's industrial aesthetic and also his use of large expanses of glass in his school and residential architecture. Perhaps the largest influence on Neutra's architecture was Irving Gill, whose work was copiously illustrated in *Amerika*. In addition to the Bishop's Schools in La Jolla of 1910-16, which Neutra illustrated in *Amerika*, Gill designed several schools that postdated the publication of Neutra's book which most likely inspired Neutra's school architecture. These were Gill's 1931 Kindergarten and the Americanization School, both in Oceanside, California (Figures 20 and 21).[44] With their banks of French doors opening to the playground, roof overhangs that protected the classrooms from direct sunshine, white cubical volumes and

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[43] The immediate precedent to Neutra's "outdoor living" type of architecture was the work of his one-time partner and fellow émigré, Rudolph Schindler, specifically Schindler's House on King's Road in Los Angeles, 1920-21. This house employed "Japanese-style" sliding screen doors that opened to gardens. Interestingly, however, Schindler never built any schools. For more on the relationship between Neutra and Schindler, see Hines, *Richard Neutra*, 55-59.

[44] Esther McCoy made the connection to the kindergarten in Oceanside. In addition, she also cited Bruno Taut's 1927 Municipal School at Berlin-Neukoln as another precedent, proving that Neutra was aware of both local and international examples of school design. Esther McCoy, *Richard Neutra*, (New York: George Braziller, Inc., 1960), 27, footnote 13.

one-story plans, these schools were derived from the earlier open air schools and were the antecedents to Neutra's first built school, the Corona Avenue School.

The Corona School

Neutra's first built school, the Corona Avenue School in Bell, California, made a dramatic impact in Los Angeles and nationally because of its marked stylistic departure from existing schools. Although the Ring Plan School, which had been in the Museum of Modern Art's 1932 *Modern Architecture: International Exhibition*, had exposed the museum-going public to Neutra's school architecture, the country lacked many examples of International Style schools (Figure 22). The rare exceptions were Howe and Lescaze's 1929 Oak Lane Country Day School in Philadelphia, Pennsylvania, their 1931 Hessian Hills School in Croton-on-Hudson, New York and the aforementioned California schools of Irving Gill (Figures 23 and 24). During this time some American architects called for modern school architecture. In the 1931 book, *School Buildings of Today and Tomorrow*, for example, the editor R.W. Sexton wrote, "While methods of teaching have improved, new structural materials invented, and mechanical equipment perfected, the plans and structural design of our school buildings must change to conform to these new conditions."[45] Sexton looked to Europe for examples of modern school design, such as Otto Haesler's 1928 school in Celle, Germany and Johannes' Duiker's 1928-30 Open-air school in Holland.[46] Tellingly, many of the American schools that were illustrated in Sexton's book were conceived in historical revival styles.

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[45] R.W. Sexton, ed., *School Buildings of Today and Tomorrow*, (New York: Architectural Book Publishing Company, Inc., 1931), introduction.

[46] See Otto Volckers, *Die Neue Volksschule in Celle: Ein Beitrag Zum Problem Des Neuzeitlichen Schulhauses*, (Frankfurt: Verlag Englert & Schlosser, 1928). Neutra visited Duiker's school, Hines, *Richard Neutra*, 164.

Locally, the school building policy in Los Angeles did not change until 1933, when the Long Beach Earthquake struck, damaging many schools and causing 40 of its 1,691 school buildings to be condemned (Figure 25). In response to this natural disaster, the Los Angeles School Board stipulated that all ornamental features be removed from existing buildings lest they collapse in a tremor (Figure 26). Moreover, California passed the Field Act in 1933, which called for State supervision of school construction and the implementation of a strict structural code. In addition, the Los Angels School Board declared that all new school buildings should be one story high. [47] Although neither the Field Act nor the School Board specified a set architectural style for the new school buildings, schools that were proposed were executed in stripped Hispanic or Mediterranean styles (Figure 27). Of the 130 school buildings that were constructed after the earthquake only Neutra's Corona Avenue School addition was designed in an avant-garde architectural style.[48]

An "experimental school" for new teaching methods, Neutra's commission for the Corona Avenue School campus was made possible by Los Angeles school principal Nora Sterry, who with the support of the League of Women Voters, the School Building Committee of the Elementary Principal's Club and the University Club, convinced the Los Angeles School Board to enlist Neutra for the project. Sterry and the Women's University Club had formulated their own recommendations for new school buildings in the aftermath of the earthquake. They recommended that elementary school buildings be one story, bungalow types, and that each classroom be divided into an indoor section and an outdoor section much like Neutra's school proposals of the late 1920s and early

[47] *Historic Context Statement*, Los Angeles Unified School District, March 2002, 8-10.
[48] Weisser, *Institutional Revisions*, 6.

1930s.[49] The commission for the Corona School was for an addition to the existing Corona Avenue School building. Completed in 1935, Neutra's design was a fulfillment of his school architecture principles. The simple one story structure of seven classrooms was conceived in an industrial aesthetic of white stucco and silver paint in an L-shaped plan (Figure 28). Neutra's design was a departure from the symmetry and monumentality of the existing Corona School building, which was double height, symmetrically organized and conceived in a Mediterranean style (Figure 29). The Corona School addition also differed from the existing building because of its unassuming main entrance. Whereas the existing building's entrance was prominently expressed through ornamentation and by extruding the main bay from the wing of classrooms, Neutra placed the entrance to his addition at the intersection of the main wing of classrooms and the kindergarten unit. In addition, whereas the existing main building was set back from the street, leaving unusable space, Neutra's addition was separated from the street edge by a "playgarden" and outdoor patios (Figure 30). The Corona School façade and plan expressed two of the characteristics of the International Style as defined by Henry Russell-Hitchcock and Philip Johnson: lack of ornamentation and dynamic asymmetry.[50] The third characteristic, volume over mass, was exhibited in the classrooms, whose large volumes were meant to allow the expanded activities of progressive education.

Aside from its exterior appearance, Neutra's addition to the Corona School showcased the new, progressive type of classroom that he had envisioned in the Ring Plan School. In contrast to the existing Corona School's classrooms, with their double-

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[49] Los Angeles Unified School District Board of Education Minutes, July 23, 1934, in Weisser, *Institutional Revisions,* p.16, footnote 23.

[50] Henry-Russell Hitchcock and Philip Johnson, *The International Style*, (New York: W.W. Norton & Company, 1966), 29.

loaded configuration, each of Neutra's classrooms was bilaterally lit, with clerestory windows on the east side above the covered walkway and a floor-to-ceiling sliding glass and steel wall on the west, garden side (Figures 31 and 32). The sliding walls were a novel use in school buildings, although Neutra had also employed this type of wall in his residential design. For example, Neutra's William Beard House in Altadena, California, completed the same year as the Corona School, employed these sliding walls (Figure 33). As in his residential design where the sliding doors opened to gardens or patios, the sliding walls in the Corona School opened to outdoor areas. These outdoor areas were extensions to the classrooms and Neutra reinforced this concept by bounding each outdoor area with hedges (see Figure 28). An interstitial space between the sliding walls and these outside areas was created by roof overhangs, which with awnings, protected the classrooms from excessive sunlight or rain.[51] In addition to the outdoor classrooms, the processes of progressive education were further promoted by the use of movable classroom furniture. Instead of individual, fixed seats, large wooden desks which could be rearranged for activity lessons were used in the Corona School. Each classroom also incorporated a sink, a supply case, book shelves and a coat section. These design features gave the classrooms a level of freedom and flexibility that reflected Neutra's belief that the classrooms should emulate the home environment. As architectural historian Esther McCoy explained:

> Neutra's ideas in school design grew out of the conviction that tensions begin to accumulate in a child when he is taken from the home and living room into a school and classroom, to be moored to the floor...The vertical blackboard on the wall behind the teacher could also be disturbing to the

[51] Giuseppe Terragni had used a similar device in his 1929-37 Sant'Elia kindergarten in Como, Italy, except that in his project, Terragni used a simple door in a wall of glass instead of sliding walls. In addition, Terragni included fabric parasols instead of awnings.

> child, because learning at home had taken place on the ground or on the floor, which were in intimate relationship to him.[52]

The Corona School classroom was like the living room in Neutra's house designs. In this "least strange environment," as William Hays would have put it, learning was returned to a more natural condition that mimicked the learning that took place at home (see Chapter Two).

The design for the Corona School garnered much attention, both positive and negative, and this ambivalent reaction toward the design revealed the tension over the use of modern architecture in schools during the 1930s. The public's perception of the Corona School was mostly negative, with the building being given such disparaging names as the "drive-in market" and a "penthouse on Mars," for example.[53] These remarks reflected a discomfort with International Style architecture, a discomfort which was readily reflected by the School Board's decision to allow the commission only on the outskirts of Los Angeles. Despite the public's disapproval of the Corona School's architectural styling, some architects and educators thought positively of the school. The chief architect of the Division of Schoolhouse Planning, for example, thought of Neutra's design as "pleasing and honest" because of its lack of "historic romancing." Similarly, the principal of the school, Georgina Ritchie, stated that the school design was an improvement over the "antiquated type of buildings, to which we have so stubbornly adhered in face of a steadily changing philosophy of education."[54] Another newspaper article claimed that "[the] Corona School offers an opportunity of freedom to the child

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[52] McCoy, *Richard Neutra*, 20.
[53] The *Los Angeles Times*, October 14, 1935 quoted in Weisser, *Institutional Revisions*, 8.
[54] Hines, *Richard Neutra*, 164.

hardly possible under the old schemes of architecture."[55] Such a claim failed to consider the similarities between Neutra's architecture and the tradition of California's open air schools. Comparing Neutra's Corona School addition with Hunt and Grey's Polytechnic Elementary School, for example, reveals that Neutra's school employed many of the same features as these earlier schools. For instance, the Corona School had classrooms which opened to patios much like the Polytechnic School. Likewise, the Corona School's one story design connected by covered walkways was also seen in the Polytechnic School and other open air schools. It wasn't until Esther McCoy wrote about the Corona School in 1960 that this similarity was noted. In her description of the Corona School she mentioned that the covered passages related to the "indigenous Spanish Colonial architecture [which] had made wide use of arcaded passages."[56] It is interesting to note that while McCoy acknowledged this influence she only included it in a parenthetical notation. The omission of the similarities between the open air schools and Neutra's Corona School, both during the completion of the Corona School and later when McCoy wrote about the school, points to the modernist bias in architectural history, a bias that was corrected when David Gebhard and Harriette Von Breton wrote in 1975 that "Neutra carried on and refined the earlier California tradition of the open-air school."[57]

As Gebhard and Von Breton noted, Neutra wasn't copying the earlier open air schools; instead Neutra expanded upon the principles of these precedents. For example, the Corona School was not organized around a quadrangle or courtyard like some of the open air schools. Moreover, even in the case where Neutra did use a traditional courtyard

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[55] *The St. Louis Post-Dispatch Sunday Magazine*, September 13, 1936, in Weisser, *Institutional Revisions*, 1.
[56] McCoy, *Richard Neutra*, 20.
[57] Gebhard and Von Breton, *L.A. in the Thirties*, 91.

scheme, as in his unrealized project for the Sawtelle Elementary School, he inverted the plan by flipping the directionality of the classrooms. Whereas the Polytechnic School's classrooms were inward looking, the Corona School's outdoor classrooms were open to the larger world around them. This public nature of this school design was exemplified in Neutra's second major school commission of the 1930s, the Ralph Waldo Emerson Junior High School.

The Emerson Junior High School

The commission for the Emerson Junior High School was Neutra's opportunity to design an entire school complex. Although the programmatic and site differences between the Corona School and Emerson projects prevented Neutra from realizing a one story plan, the design of the Emerson Junior High School successfully reconciled the needs of progressive education with Neutra's desire to make the school a place for public use.

As in the commission for the Corona School, Neutra was awarded the Emerson project in 1936 with the patronage of another woman, School Board member Margaret Clark.[58] As part of Westwood Village, which was a newly developed neighborhood south of the 1929 UCLA campus, the commission required that Neutra design a school for high student densities. Bound by a Roman Catholic parish and school on the north, and the old Rancho San Jose de Buenos Aires to the southeast, which later became a site for old movie sets, the site was the location of an existing school that operated out of bungalows (Figures 34 and 35).[59] Because the school continued to operate on the site, Neutra saw the

[58] Letter dated January 10, 1936 to Mr. Richard J. Neutra from the Secretary of the Board of Education, H.E. Griffin: "Please be advised that funds are now available and accordingly, we are sending to you herewith copies of agreement covering your services." RJN-SC, Box 47. Hines, *Richard Neutra*, 166.
[59] RJN-SC, Box 562, Plan #: 6:16A-22.25.

project as an opportunity to design a school with the close collaboration of students and teachers. This unique circumstance also meant that the teachers could teach lessons related to the construction of the buildings. As Neutra explained:

> All of sudden it became clear to all concerned that building a school plant right in plain view of teachers and pupils was an educational venture of the first order...For the students the entire project grew into an ideal vast unit of experience with almost universal implications. [60]

As with the Corona School, Neutra's commission for the Emerson Junior High School required him to design an educational plant that fulfilled the needs of modern education. The principal, Paul E. Gustafson, described the modern junior high school as an institution which facilitated the full development of the adolescent. Echoing Neutra's, Sterry's and Dewey's thoughts about the role of progressive education, Gustafson wrote:

> Modern educational practice...[has] made new demands on school building architecture. In addition to many of the formal disciplines inherent in learning activity there has arisen need for socialization of the individual, and his adjustment to the democracy of which he is a part. With this objective in mind teachers have inaugurated new devices which bring about various types of activities, physical as well as mental. This activity calls for added facilities in the way of equipment and increased areas in which to operate.[61]

In terms of the program for the Emerson project, these "added facilities" included classrooms for both academic and vocational work, an auditorium for drama and music performance, and a gymnasium for physical education. In the typical school design of that time, these auditoria and gymnasia were usually attached to the rear of the main classroom building. This type of organization meant that the gymnasium and auditorium were not visible from the front side of the school. As an example, the 1931 John Adams High School in New York contained both the gymnasium and auditorium toward the rear

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[60] Richard J. Neutra, "A Junior High School: Practical and Ethical Problems," RJN-SC, Box 802, Folder 6.
[61] Paul E. Gustafson, "The Ralph Waldo Emerson Junior High School: A Modern Educational Plant," RJN-SC, Box 802, Folder 6.

of the building (Figure 36). But at Emerson Neutra moved the auditorium and gymnasium away from the classrooms, much as he done in the Ring Plan School. While his initial sketches showed the auditorium to the east, or behind, the main building, in the final design Neutra moved the auditorium to the north, next to the main building (Figure 37).[62] This location, on a slight topographical rise, indicated the auditorium's importance in the school design. By placing the auditorium away from the main building, the public could access the auditorium without having to enter the main building. The location of the gymnasium also facilitated public use of the school: located perpendicularly to the east of the main classrooms the gymnasium building formed the edge of a large playground for student use during the school day and for community use after school.

Neutra's campus planning was emblematic of a larger trend by modern architects to separate the functions of schools into more discernible parts. For example, in William Lescaze's 1937 Ansonia High School in Ansonia, Connecticut the auditorium was located next to the main entrance, while the gymnasium was located to the rear along a street, leaving a large playfield for use in the middle of the complex (Figure 38). Such planning, according to Lescaze, represented a modern, functional approach to school architecture that contrasted to "conventional planning" which resulted in "bad circulation, poor access to the gymnasium and auditorium [and] insufficient space left for athletics."[63] The difference between the Ansonia High School and the Emerson Junior High School, however, was that at the Ansonia School the auditorium and gymnasium were physically connected to the main building. At Emerson on the other hand Neutra detached the auditorium and gymnasium from the main classroom building in order to fit the

[62] Unpublished sketch, RJN-SC, Oversize Folder No. 1170.
[63] William Lescaze, "Schools: Ansonia High School," *The Architectural Forum*, December 1937, 487-492.

temperate Southern California climate, which allowed circulation between buildings during most of the school year. Despite this difference, both Lescaze and Neutra shared the desire to design school campuses that could be used by the public, a goal that had already been exhibited in the open air schools (see page 6, footnote 4).

Besides its community-focused site planning, the Emerson Junior High School also reflected the ideology of progressive education through its architecture. Modernism, as architectural historian Amy Weisser points out, was closely allied with progressive education and architects and educators both in the United States and Europe saw the avant-garde architecture of the 1920s and 30s as a means to express this connection. In Britain, for example, modern architecture played an important part in the development of progressive schools. As historian Andrew Saint wrote, "[I]n the 1930s the new architecture coming out of Europe offered a heaven-sent alternative [to the old school architecture]. Simplicity, lightness, openness and informality were advocated by both architects and educators."[64] In the design for the Emerson Junior High school, like the Corona School, Neutra employed a design that embodied lightness, openness and informality.

To express the dynamism of progressive education, Neutra proposed a dramatic Expressionist façade for the main building with a curved northwest corner that was reminiscent of Erich Mendelsohn's 1921-23 design for the Berliner Tageblatt building (Figure 39). [65] Neutra worked with Mendelsohn at the time on the Berliner Tageblatt project, explaining his use of this precedent. In the final scheme for the main building, however, Neutra abandoned the Expressionist façade, adopting instead an International

[64] Andrew Saint, *Towards a Social Architecture: The Role of School-Building in Post-War England*, (London: Yale University Press, 1987), 49.
[65] This proposal is unpublished. RJN-SC, Oversize Folder No. 1170.

Style aesthetic. Articulating the building's steel skeleton, Neutra divided the facade into expansive glazed areas interspersed by white stuccoed areas (Figures 40 and 41). Taking advantage of this construction method, Neutra also integrated bilateral lighting in the southeast second story rooms by lowering and setting back the roof level of the west-facing rooms. Similarly, Neutra articulated the staircases as large glass volumes much as he had done in his 1927-29 design of the Lovell House (Figure 42). This use of glazing gave the main building a sense of transparency which contrasted with the dark, masonry structures of existing schools. With flat roofs, white stucco and metal trim, the main building reflected the lightness and openness that progressive educators advocated in school design. The second most important building of the Emerson commission, the auditorium building, completed in 1939, departed from the International Style aesthetic of the main building. Although in initial sketches Neutra proposed a building that mimicked the aesthetic of the main building, he chose a subtly curved design for the final design. The curved end of the auditorium, like his unused Expressionist façade for the main building, animated the entire school complex and provided an aesthetic counterpoint to the main building (Figure 43). The dynamism of the auditorium reflected the dynamism of the overall plan.

Beside the articulation of the building façades, Neutra differentiated the design of the Emerson Junior High School from the school institutions of the past by asymmetrically arranging the buildings. Like the Bauhaus buildings in Dessau, Germany, the Emerson buildings radiated around the main building with the auditorium to the north and with the gymnasium to the east. The dynamism of the campus plan was also reflected in the plan of the main classroom building. In contrast to the long, massive blocks of

typical administration buildings, Neutra's main building consisted of two interlocking volumes, with one volume receding past the other (Figure 44). This staggered plan gave the impression that the building was smaller than it was. In addition, the staggered internal corridor of the first floor provided visual interest in comparison to a long, monotonous corridor and also served to separate the administrative offices from the classrooms. Like at the Corona School, Emerson's main entrance was another feature which differentiated this design from previous school models. Instead of a large, highly decorated entrance, the main entrance at Emerson was a simple cubical porch that formed a transitional space from the outside into the inside and which also served as the focal point of the complex's circulation. Interconnected by paved walkways, this arrangement of buildings resulted in a dynamism that expressed the school's progressive educational activities.

The Emerson Junior High School was a built example of Richard Neutra's philosophy that the school should be a "stage for all around educational life." The Emerson commission followed similar educational and architectural principles as the Corona School with the exception that at Emerson Neutra employed a double-story, double-loaded corridor design. While the restrictions of the site prevented him from realizing a one story plan Neutra compensated for these differences by carefully integrating his ideas for progressive schools into the design. For example, along the double-loaded corridor scheme, Neutra placed workrooms that allowed students to perform scientific experiments. Neutra explained the functions of these workrooms:

> The upper story...contains the rooms for academic and natural science study, which are most useful by adjoining workrooms. As Bertha Goodrich, the science teacher voiced a current principle: "It is now felt

> that scientific knowledge should not be factual alone but combined with habits and attitudes of scientific methods."[66]

Advocating the principle of "learning by doing," Neutra incorporated other workrooms on the first floor, like in between the art classrooms. This workroom provided the storage space for the art supplies, making the art classrooms independent of any centralized storage space.

In addition to these workrooms, Neutra created outdoor learning spaces similar to those at the Coronã School. The east-facing classrooms on the first floor, for example, employed sliding walls (Figure 45). Because of budgetary restraints, however, Neutra could not employ the sliding walls on the west façade. Instead the west-facing classrooms of the first floor were accessible to the outside through regular doors located at the corners of the rooms. Similarly, the second story classrooms could not employ these sliding walls or doors, but Neutra compensated for this limitation by including a roof patio next to one of the rooms (Figure 46). Neutra explained that the learning area was augmented by the use of these outdoor areas:

> [P]atio doors from the social science room and the well-equipped art department open up to outdoor instruction areas, "patios" intimately attached to the indoor classroom. Several of these exterior doors are of a sliding type, 16 feet wide, so that the landscaped outside patio and the classroom are welded into one useful area dedicated to a more space-taking activity training of all sorts. Thus without increasing the costly building cubage, the instructional area was enlarged by 30%.[67]

These outdoor group learning places also reinforced the notion that the building was a public building. For example, the art classrooms opened to the auditorium so that students could display their art on the steps of the auditorium. Any passerby could see

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[66] Neutra, "A Junior High School: Practical and Ethical Problems," RJN-SC, Box 802, Folder 6.
[67] Richard Neutra, "Architect and Educator Joined Hands to Make New Los Angeles School Esthetic and Functional," *School Management and School and College Supply and Equipment News*, March 1941, 197.

and enjoy the art. Similarly, on the second story of the main building, the roof terraces were located next to the music room, so that music recitals could be held outside, allowing the neighborhood to hear these recitals. These gestures reinforced Neutra's belief that education should be a public experience.

Neutra's integration of the aforementioned workrooms and the "outdoor classrooms" in the Emerson design demonstrated his conviction that architecture was crucial in promoting the learning process. There were three fundamental learning processes to Neutra, which informed the design of the learning spaces at Emerson and his other school projects. These three processes resulted in the careful differentiation of learning space into spaces for group learning and spaces for individualized learning. Neutra explained these learning methods:

> The first one is introspection...Undoubtedly it has been instrumental in a great deal of human achievement. And a great deal of it...is greatly overlooked in our school layouts.
>
> Another way...is objective and object observation...you become a scientist. You become a scientist exercising what I would call observational curiosity which is ingrained into our brains...This kind of activity is a solitary activity.
>
> The third way...is the dialectic method. It is the way of getting into an argument, of engaging in a conversation of each other's brains. This kind of thing is a group activity.[68]

The first method, introspection, was facilitated by Neutra's inclusion of landscaped areas next to the classrooms, which gave the students points for meditation. The second method was facilitated by Neutra's inclusion of the workrooms next to the classrooms which allowed students to engage in personal scientific experimentation. The third method, group activity, was made possible by the expansion of the classrooms into the outdoors.

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[68] Richard J. Neutra, "School Design," *The Canadian Architect*, April 1962, 61-62. Found in RJN-SC, Box 196, Folder Aug., Nov. 43.

This latter method also stemmed from Neutra's belief that children learned best in circles while drawing on the ground.[69] The iconic photographs and sketches of the Corona Avenue School and Emerson Junior High School exemplified this learning, with students engaged in group lessons with the infinite horizon beyond them (Figure 47). For Neutra group activity was the most important means of learning and he argued that architecture played a crucial role in facilitating this process. As he said:

> It's entirely conceivable that not only dialectics and conversation, even demonstration may require the grouping of people. Altogether, the grouping of students, of pupils in numbers different from the individual is one of the jobs which call for facilitation by the architect. It calls for the space arrangement which will not only accommodate the educational process, but really become part of it. In other words, architecture is not just helping the educator.[70]

Unlike John Dewey who claimed that the school building was only a shell for the processes of education, Neutra claimed that the building just as much as the teacher influenced the development of the student.

The Streamlined Schools and the Post War Period

The main building of the Emerson Junior High School was completed in 1937 and it was hailed by its principal as an "outstanding example of an attempt to plan a school structure with modern educational purposes in mind."[71] Despite being Neutra's second built school, other modernist strains of architecture were favored for school buildings. Specifically, Art Deco and Streamlined Moderne design resonated more with the public, since these styles with their streamlined fenestration represented progress to a population that was recovering from the Depression. These schools also integrated the same

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[69] Barbara Lamprecht, *Richard Neutra, 1892-1970: Survival through Design*, (Los Angeles: Taschen, 2004), 9, 35.
[70] Richard Neutra, "School Design," 65-66.
[71] Letter from Paul E. Gustafson, Principal to Richard J. Neutra, dated November 23, 1937, RJN-SC, Box 47.

principles about progressive education that Neutra's schools did. To use one example, H.L. Gogerty and C.E. Noerenberg's Susan Miller Dorsey High School in Los Angeles, also completed in 1937, claimed to accommodate the functions of teaching. The architects wrote that the school was intended to "architecturally and structurally express in functional form the outer envelope of a process of public education."[72] Like in Neutra's Emerson design, each of the functions of the Dorsey school was clearly differentiated. The separate academic subjects were housed in individual buildings that were laid out in a semicircle, echoing Neutra's Ring Plan School (Figure 48). In addition, with its plain white walls and streamlined ornament, Dorsey's aesthetic also departed from historical styles (Figure 49). Despite its modernist aesthetic, though, Dorsey was traditionally conceived in its organization. For example, the main façade was a typical symmetrical block with the entranceway clearly emphasized. In this respect, Neutra's International Style schools and the Art Deco/Streamlined schools diverged: while the International Style departed from the traditional conception of building as a symmetrical object, the Art Deco/Streamlined maintained this organization. Perhaps because the Art Deco/Streamlined schools used this traditional, "monumental" type of design – as Neutra called it – did they gain popularity and acceptance over his International Style schools. Aware of this critique of modern architecture, Neutra defended his school architecture, writing:

> A fundamental thought in designing progressive school plants is to divert the available funds to the fulfillment of purely educational needs. They should be buildings created as far as possible for the benefit of the significant activity of the educator and of the children. No mere "machine for education,"-for modern education is far from being mechanical—the plant will in spite of its straightforward simplicity and when endowed with

[72] H.L. Gogerty and C.E. Noerenberg, "Susan Miller Dorsey High School," *Southwest Builder and Contractor*, October 1937, 12.

> its preconceived garden setting command its good measure of beauty. Not the static beauty of an architectural monument for itself; but that of a building in pleasant use, that of a stage for all around educational life, actively experienced. Adaptation to child life and pupil interest calls for a renaissance in school plant design which will yield this refreshing sort of active beauty by use.[73]

Far from being just functional, or "machines for education," Neutra's schools were bold aesthetic departures from previous school models. But they were not just aesthetically different: the driving force behind them was progressive education. Because of this Neutra argued that the beauty of his schools was not related to a specific aesthetic, but rather that the beauty of his school buildings was found in their successful fulfillment of educational requirements.[74]

While feelings toward Neutra's International Style schools were mixed in the 1930s, their perception changed toward the positive in the post war years. In 1955, for example, Allen Campbell, principal of the Emerson Junior High School, wrote to Neutra: "I want you to know that that the facilities which were built here for the convenience of junior high school children eighteen years ago are functioning most admirably today. In fact, many people are amazed when they learn the school is not comparatively [a] new one."[75] This statement reflected the acceptance of International Style modernism after the Second World War, a time which emphasized the promise of good life modernism. Because of the changed attitude toward modernism, and the fact that modern schools were cheaper to construct, Neutra's 1930's school type – one story plan with covered

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[73] Richard Neutra, "Modern School," 28-29.

[74] The question of the relationship between school architecture and education remains today, as changes in pedagogy are reverting to more traditional teaching methods. This despite the findings of Stanford psychologists, who have concluded that "active learning" is best for the early development of children. See Simon Firth, "At Bing Nursery School, Children, Teachers and Stanford Psychologists Have Come to One Conclusion: The Play's the Thing," *Stanford Magazine*, January/February 2006.

[75] Letter dated September 2, 1955 from the Principal of Emerson Junior High School, Allen Campbell, to Richard J. Neutra. RJN-SC, Box 47.

walkways – became the basis of school design throughout California and nationally (Figure 50). As Esther McCoy wrote in 1960, "By 1938 most of Neutra's ideas on schools began to pass into public domain. There is hardly a school built in Southern California today that does not make use of covered walks for halls." [76] In the post war years, Neutra continued to design schools, including the 1951 Kester Avenue School, Los Angeles, the 1958 UCLA Experimental and Training School, and the 1961 Palos Verdes High School, Palos Verdes, California (Figures 51 and 52). All of these school designs reflected a shift in Neutra's aesthetic. His strictly white, cubic International Style modernism was reinterpreted in stone and wood. Despite the aesthetic change, the principles of school architecture that Neutra established in his school designs between 1927 and 1939 remained the same, proving that for Neutra school architecture was not merely a matter of aesthetics.

[76] Esther McCoy, *Richard Neutra*, 21.

Conclusion: Biorealistic Design

Aside from fulfilling the tenets of progressive education, Richard Neutra's school architecture also fulfilled the principles of his design philosophy called biorealism. Starting from the theory that humans originated in East Africa, Neutra believed that humans had to be physically connected to the environment. This "biological reality" led to Neutra's design philosophy, which held that architecture and urban design had to facilitate human interaction with the natural world. California, according to Neutra, was an ideal place to carry out this "biorealistic" or "nature-near" design because outdoor living was possible in California's temperate climate. As Neutra wrote:

> If nature is a wholesome precedent for the most successful design, our generation has become more friendly to it, more nature-minded than any generation in history. Science has urged us to re-discover the merits of fresh-air and light, of healthful exposure, of sport-like exercise. California climate puts a premium on it...this generation emerges into freedom of again loving nature, of recognizing biological facts and requirements and of fulfilling them as well as we can with our new technological tools.[77]

Like in his residential work, Neutra's biorealistic school architecture provided "healthful exposure" to fresh air and light.[78] With their sliding walls and large windows that opened to the outside, Neutra's schools, like the open air schools of the early twentieth century, were hailed as healthy learning places for students. The Ring Plan School project, for example, was described as a "health boon."[79] Similarly, the *Los Angeles Times* described how the architecture of the Emerson Junior High School was salubrious for its users: "Classrooms have walls mostly windows...clear daylight is provided for youthful eyes,

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[77] Neutra, "Architect and Educator Joined Hands to Make New Los Angeles School Esthetic and Functional," 197.

[78] Neutra didn't draw a distinction between his residential design and his school architecture. As he once wrote, "There is only one world. You cannot departmentalize it and divide architecture or environmental design into schoolhouse architecture, residential architecture and architecture for bank branches of for gas filling stations." Neutra, "School Design," 63.

[79] RJN-SC, Box 194, Folder "Jan, Feb., March, 1932."

fresh air for youthful lungs."[80] While these statements indicate that Neutra's theorization of biorealism was a recapitulation of the "open air" theory that light and air led to physical health, biorealism went further and posited that environmental factors also affected *psychological* health.

Based on experimental psychologist Willhelm Wundt's 1847 book *Principles of Physiological Psychology*, Neutra's "biological realism" included the belief that the mind *and* body were linked.[81] Applying this principle to school architecture, Neutra argued that old school buildings with improper ventilation and lighting led to adverse psychological effects. He cited his own experience as an example of this phenomenon:

> We must understand that there is really only *one* world...there is only one world and *one natural landscape which transcends our skin and penetrates through it*...the skin is not a barrier. It's an absorbent, it's a transmitter...Visual stimulation, audial stimulation, are entering you continuously and play a great role whether you know it or not. I don't remember how my schoolroom looked as to visual detail, but I have only again to encounter that sour smell, and after 60 years I know at once, that's it (Neutra's emphasis)![82]

While individual buildings like schools could have negative psychological and physiological effects, Neutra was especially wary of modern society, which with its environmental pollution due to modern technologies, affected the human nervous system.[83] To counter the threat of modernization, Neutra argued that schools played a critical role in disseminating his biorealistic philosophy. As he wrote, "The educational procedure and the physical school plant, the educator and the architect can influence the adult of tomorrow, to see and embrace life in this new, healthy, biologically beautiful

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[80] RJN-SC, Box 196, Folder "September 1939," *Los Angeles Times*, September 24, 1939.
[81] Lamprecht, *Neutra, 1892-1970: Survival through Design*, 9.
[82] Richard Neutra, "School Design," 63.
[83] Richard Neutra, *Survival Through Design*, (Oxford University Press, New York: 1954). Another educator, Alice Barrows, had argued in 1929 that modern society also led to nervous tension in children because urban schools did not provide the access to playgrounds and nature that rural schools once did. Alice Barrows, "Changing Conceptions of the School-Building Program," (Bureau of Education: 1929).

way."[84] It was not that the architect and educator were supposed to give lessons on biorealism, but rather that through the design of the school and the learning procedure would children learn to live in tune with nature. The imperative of Neutra's school design consequently was to provide school buildings that were carefully integrated with nature. It followed that the actual buildings were just as important as their site planning and landscape architecture. Neutra elaborated on this holistic approach to school design, saying that the goal of his architecture was:

> [T]o raise children in psychologically satisfactory surroundings and not have them warped by sensorial privation, by confusion and irritation to the eye or the ear or the nose or to inner body senses, all tied together with intimately related organic functions when they sit on the school benches, is worth while. To have them look out during intermissions onto a green ground, or into green foliage, or play in the shade of trees—instead of the board spending money on well-advertised aluminum blinds or electronically controlled awnings after cutting the trees and putting low-cost blacktop or glaring cement where there used to be grass to be watered every so often – all this worry is not just "idealistic." It is quite practical.[85]

Schools played an even larger part in Neutra's biorealist design because by virtue of their public status, size and aforementioned 'green design' did they occupy an important role in urban design. As Neutra said:

> Our teeming cities deserve to be loosened up by [a] careful plan. School plots can give form to it and be green nuclei in it. By their sheer existence they can teach a lesson. School rooms and living rooms alike can be open broadly into a patch of outer landscape which interlinks its natural health factors with the inner human landscape within our skin. Boys and girls can grow up conditioned to form and live their lives in communities of the future which will be biologically more bearable than our current metropolises and would-be-metropolises. Their rampant technology is controlled only by an explosive commercialism and the laws of the patent

[84] Richard Neutra, "Architect and Educator Joined Hands to Make New Los Angeles Schools Esthetic and Functional," 196-198.
[85] Richard Neutra, *Life and Shape*, (New York: Appleton-Century-Crofts: 1962), 325-6.

> office, but not by what our organic equipment can tolerate (Neutra's emphasis).[86]

Neutra's school architecture microscopically and macroscopically demonstrated that the world of the outside was fundamentally connected to the world inside the human body. For example, the architectural analogue of this concept in Neutra's school architecture was the sliding wall, which dissolved the boundary between outside and inside, nature and building, the environment and man (Figure 53). Neutra's school campuses, which formed a continuum between the classrooms and their neighborhoods, macroscopically expressed this connection as well. For these reasons Neutra called his schools, like the Corona School, "more nature-near, bio-realistic school design[s]."[87]

Richard Neutra's school architecture oeuvre demonstrated his commitment to education and, moreover, to "biorealist" architecture. School buildings were a crucial part of Neutra's career because of their impact on society. As Neutra said, "There is hardly any building which has worthier, a more significant function, than a structure in which and by which we like to influence the growth of a coming generation, designed to shape the future."[88] For Neutra, schools influenced the future by teaching academic subjects, social skills *and* by teaching humans about their relationship to the natural world. In this way, Richard Neutra's school architecture and view of education were truly progressive.

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[86] This was the caption to an illustration of the Corona School that Neutra sent to a colleague at Notre Dame, dated May 4, 1966, RJN-SC, Box 791, Folder 12.
[87] Richard Neutra, *Life and Shape*, 214.
[88] Richard Neutra, "Architect and Educator Joined Hands To Make New Los Angeles School Esthetic and Functional," *School Management and School and College Supply and Equipment News*, March 1941.

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Illustrations

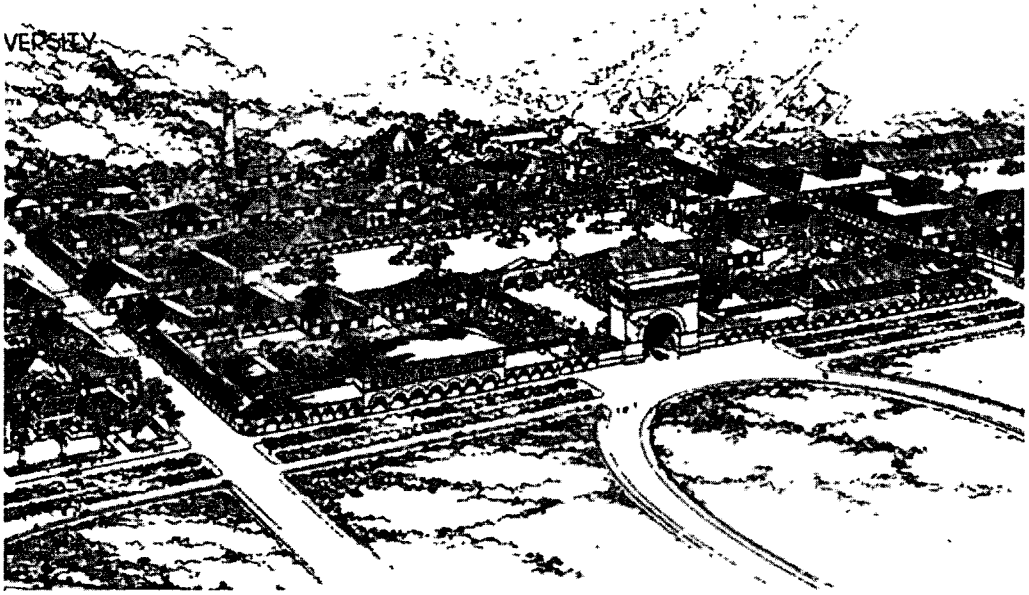

Figure 1: Aerial Perspective, Stanford University, showing quadrangular organization, Charles Coolidge with Frederick Law Olmsted, 1887-1891, Stanford, CA (Turner, *Campus* 173).

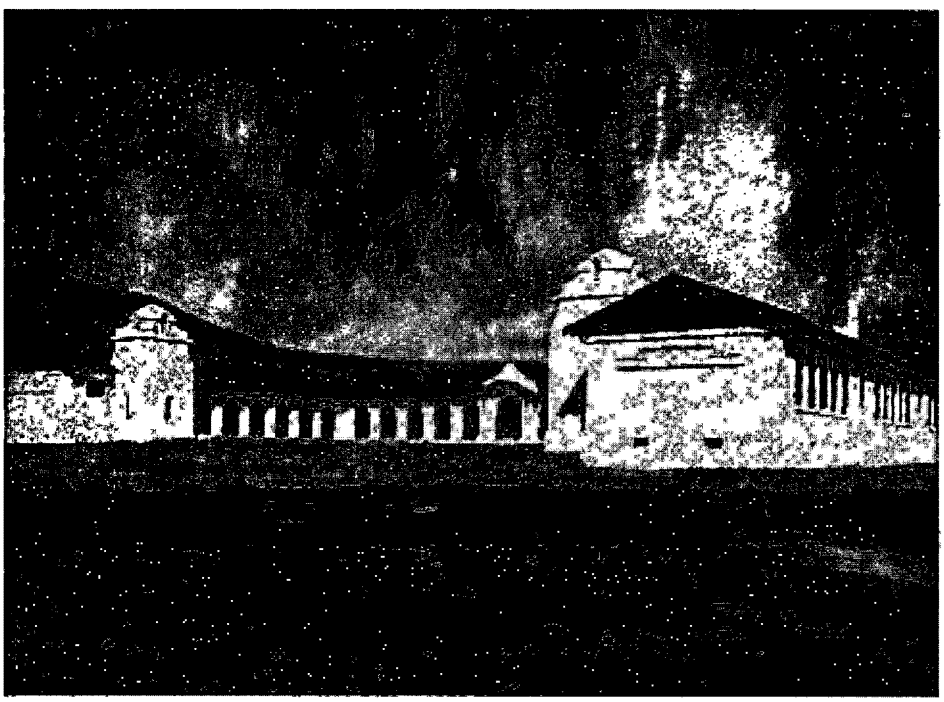

Figure 2: Santa Paula Grammar School, exhibiting mission revival features such as the arcade and towers, architect unknown, circa 1914, Santa Paula, CA (Hyatt, *School Architecture in California* frontispiece).

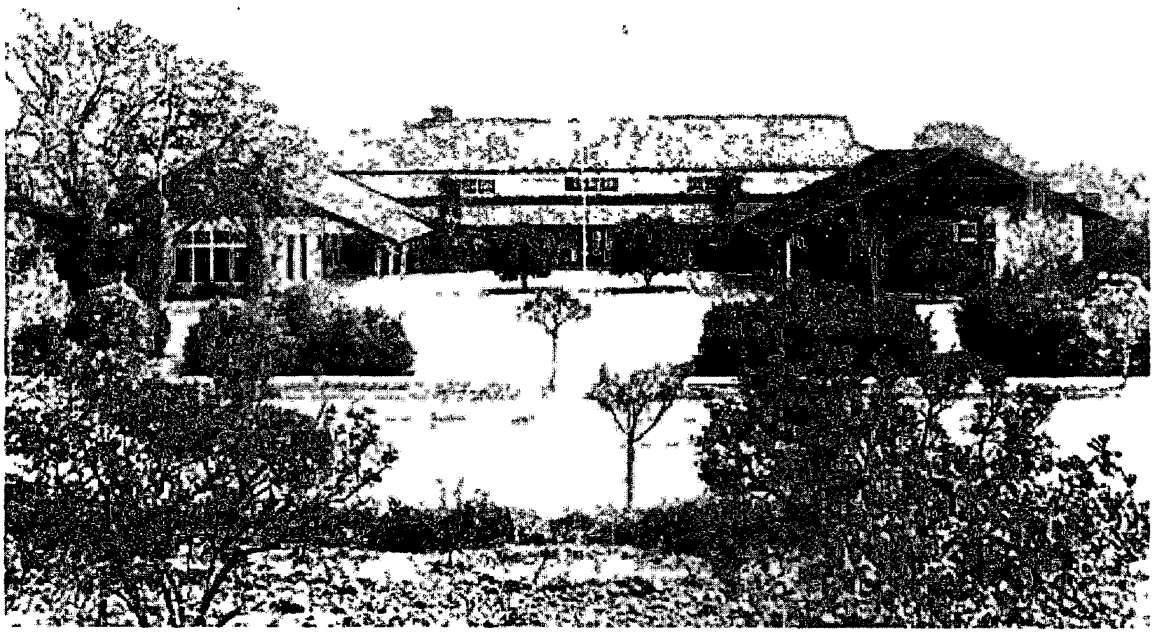

Figure 3: Polytechnic Elementary School, Hunt and Grey, note covered walkway, 1907-12, Pasadena, CA (Gebhard, *Myron Hunt* 92).

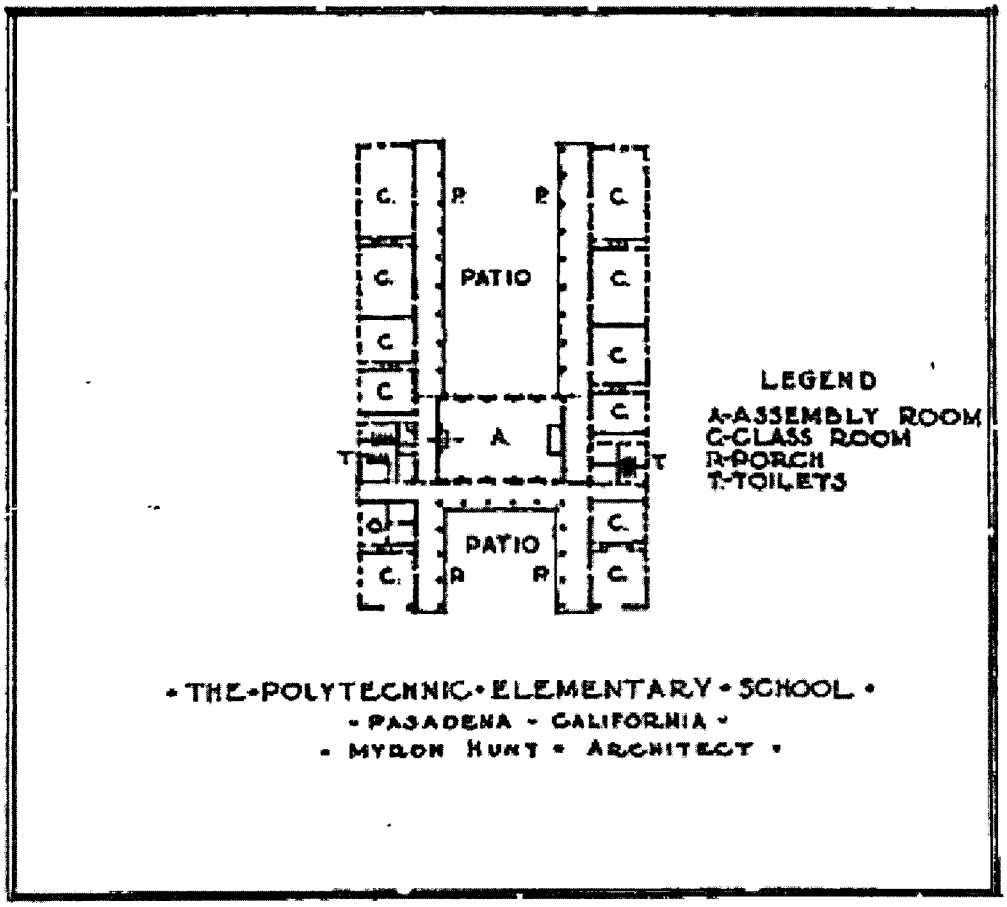

Figure 4: Plan, Polytechnic Elementary School (*Myron Hunt* 93).

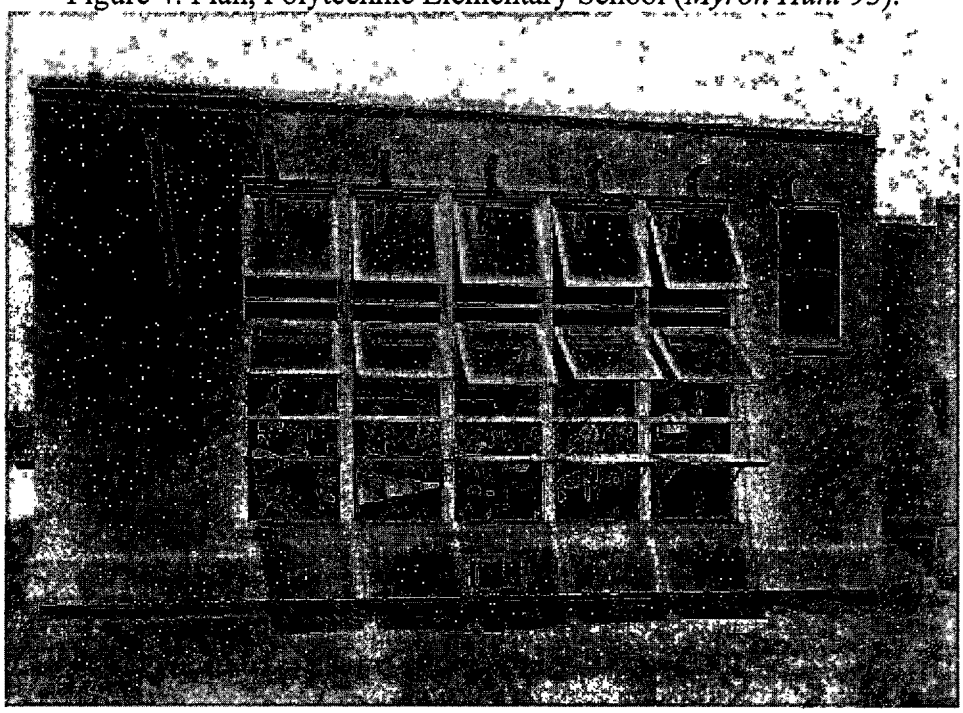

Figure 5: Open air school in College Park, with horizontally opening windows, architect unknown, circa 1914, Santa Clara, CA (*School Architecture* 58).

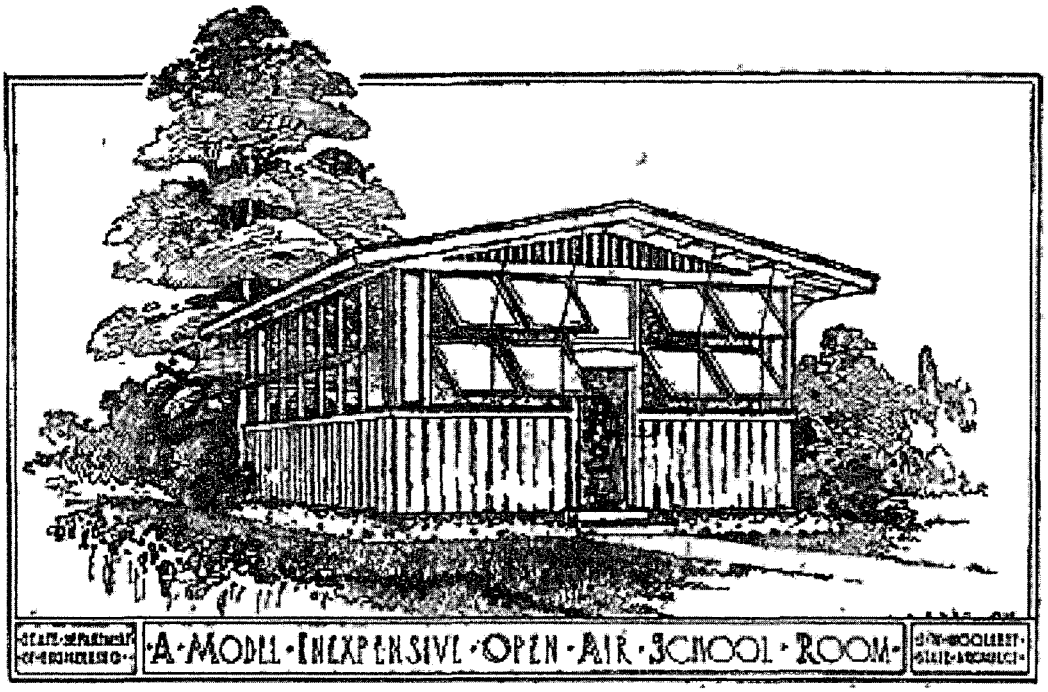

Figure 6: Perspective, Open air school room conceived as a bungalow unit with tilting windows, John Woollett, circa 1914 (*School Architecture* 62).

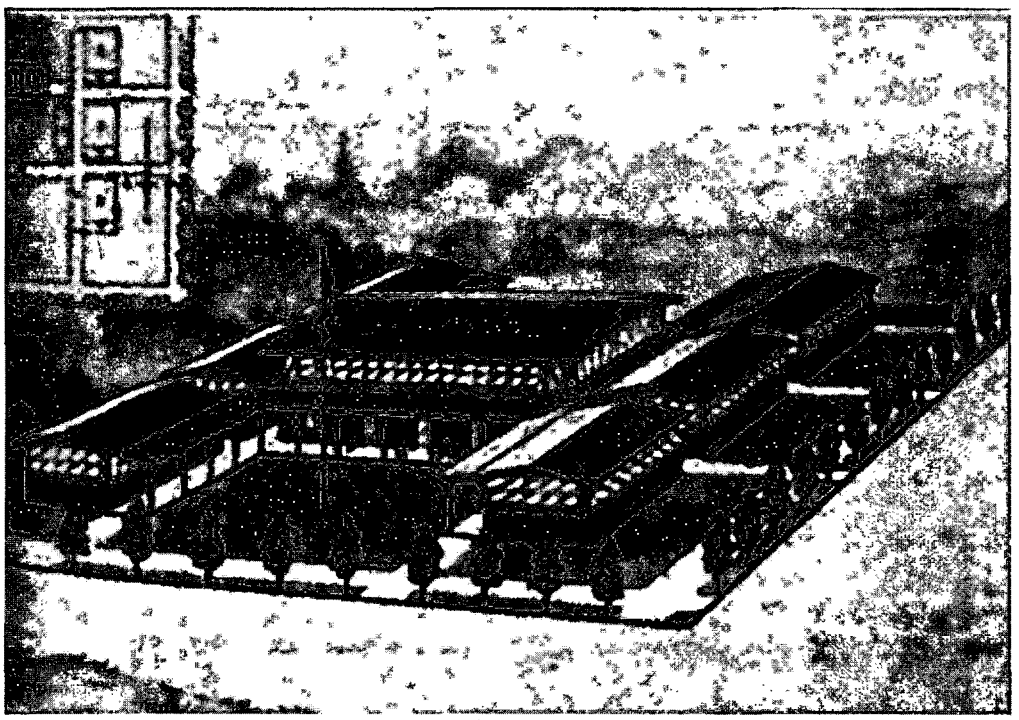

Figure 7: Perspective, "Fresno type" school project, compare with Figure 4 for plan relationship, John Woollett, circa 1917 (Kingsley, "Open-air Schools" 31).

Figure 8: Model, Open air school, note landscape and mission architecture (Kingsley, "Open Air Schools" 10).

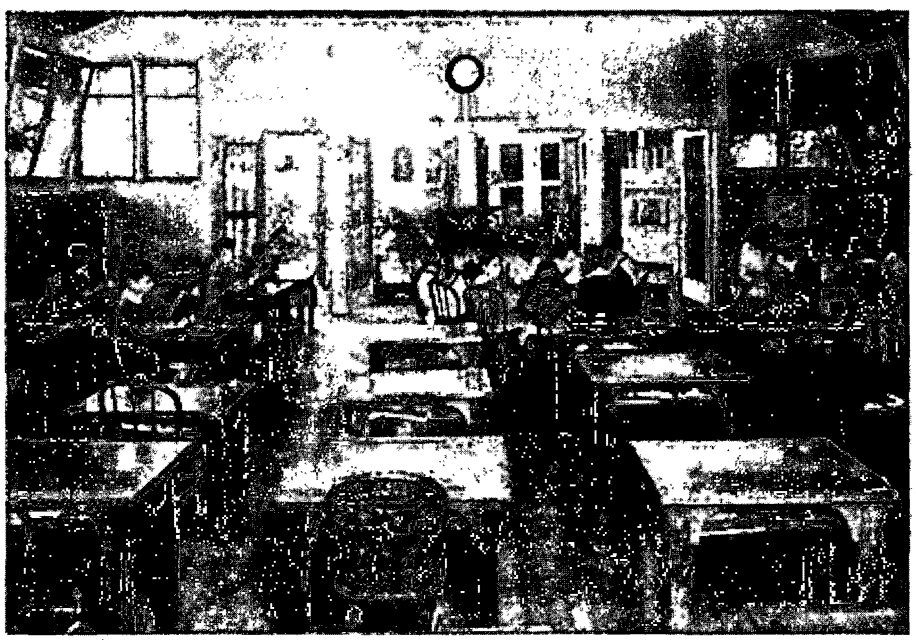

Figure 9: Classroom, Polytechnic Elementary School addition, with French doors that open to the outside, Hunt and Grey, 1912 (*Myron Hunt* 29).

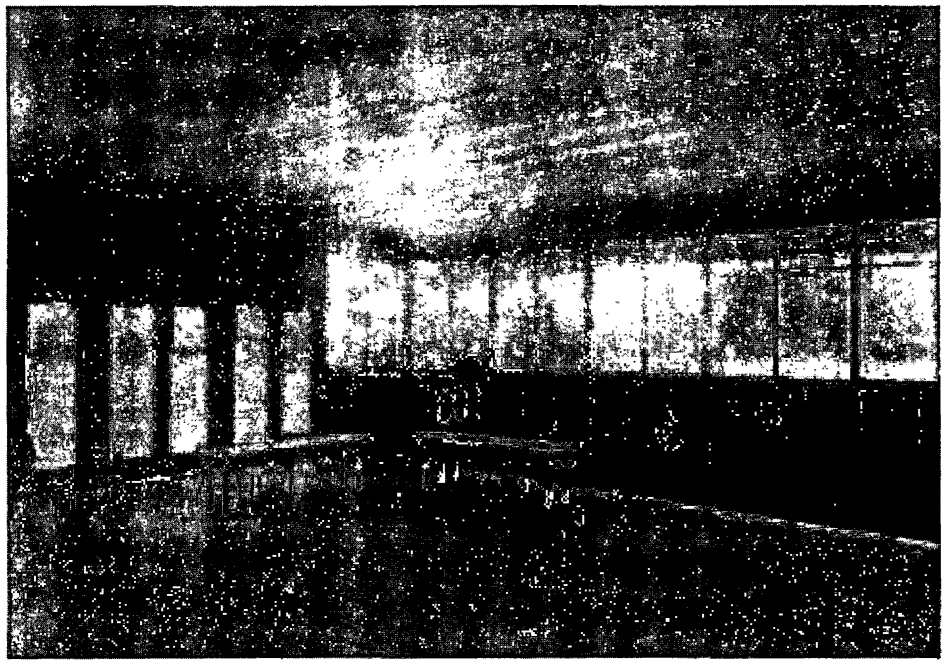

Figure 10: Classroom, Polytechnic School Addition, with horizontal window, circa 1914 (*School Architecture* 6).

Figure 11: Francis W. Parker School, "open air" classroom, William Templeton Johnson, circa 1921, San Diego, CA ("The Housing and Equipment of Kindergarteners," *Bureau of Education Bulletin* Plate 2).

Figure 12: Warren G. Harding High School, example of the old, "monumental" type of school, Russell and Alpaugh, 1924, Los Angeles, CA (Los Angeles Public Library Photo Database SPNB Collection).

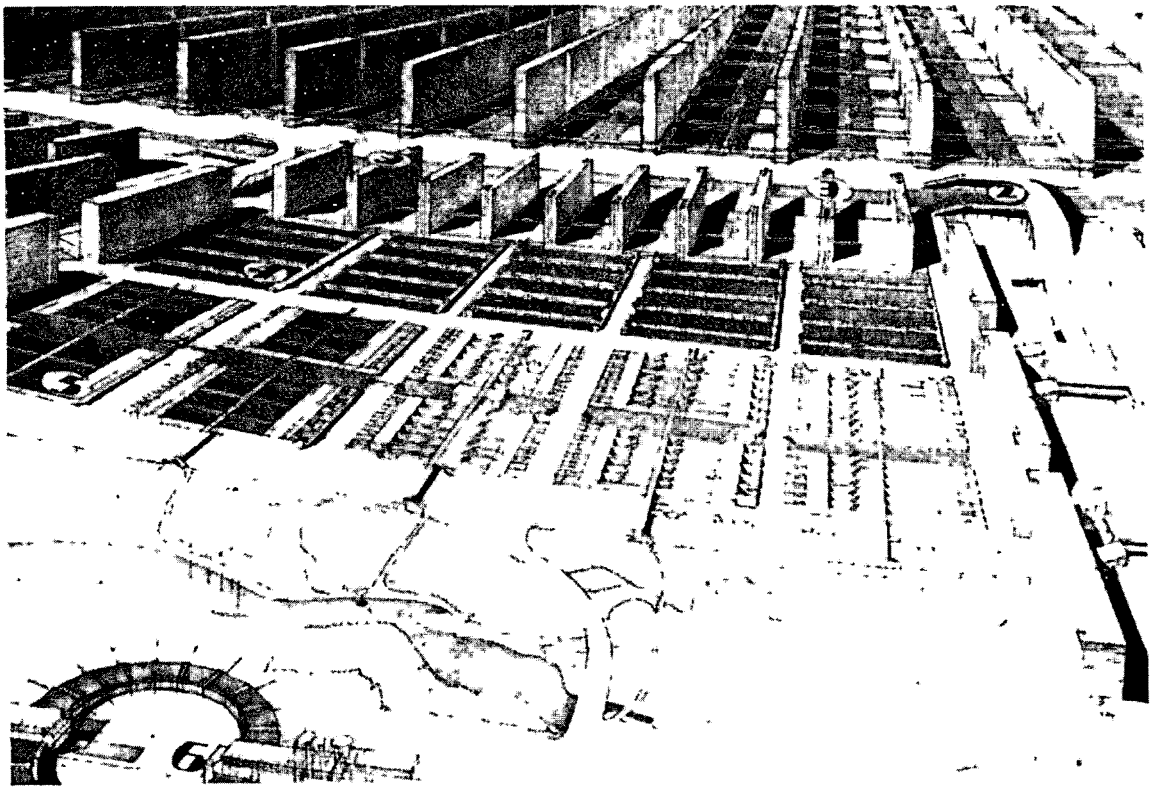

Figure 13: Aerial Perspective, Rush City Reformed, with Ring Plan School on the bottom left, note the greenbelt between the school and the city, Richard Neutra, 1927 (Hines, *Richard Neutra* 62).

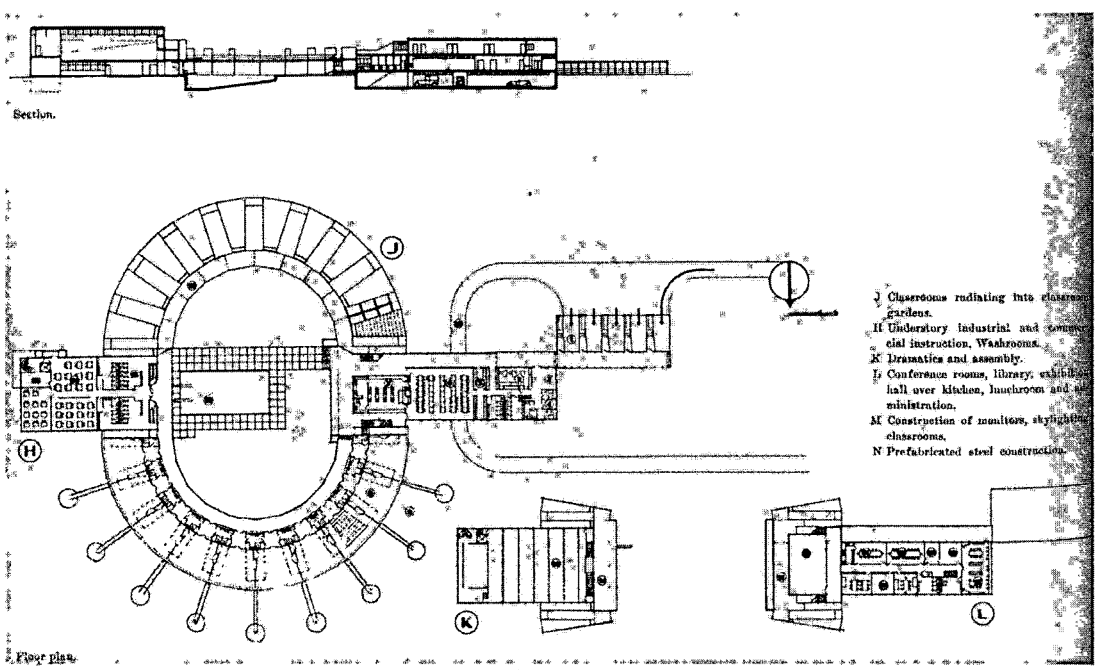

Figure 14: Plan, Ring Plan School, administration is to the right (Boesiger 146).

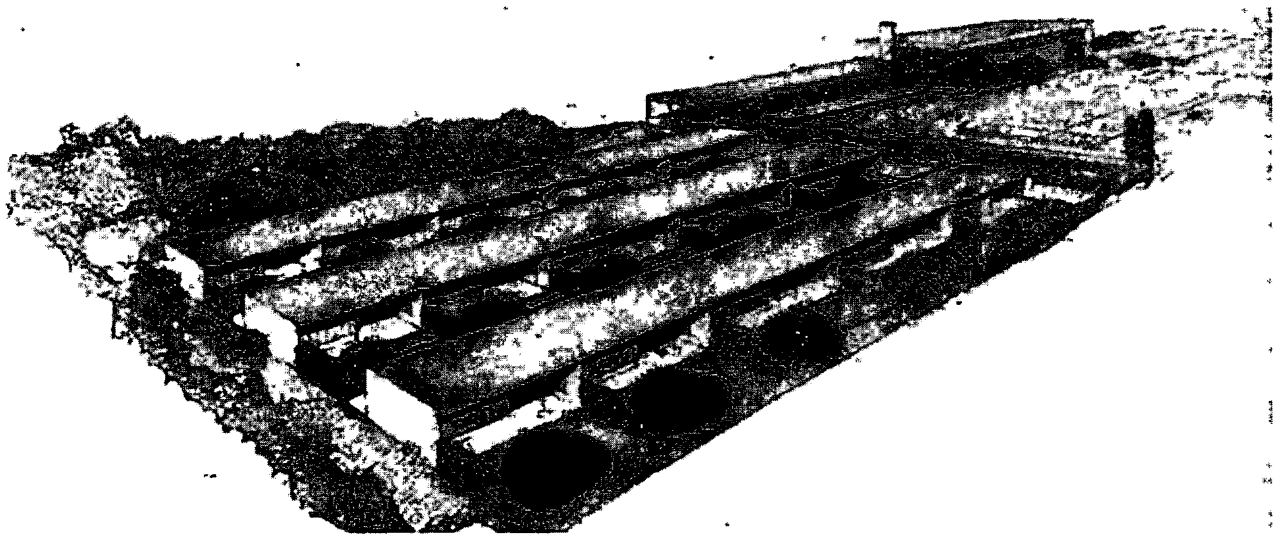

Figure 15: Aerial perspective, Activity Classroom Study, prototype for the Lawton School, Richard Neutra, 1928 (Boesiger 148).

Figure 16: Cutaway Axonometric, Activity Classroom Study, note the subdivision of the classroom and the indoor-outdoor relationship (Boesiger 148).

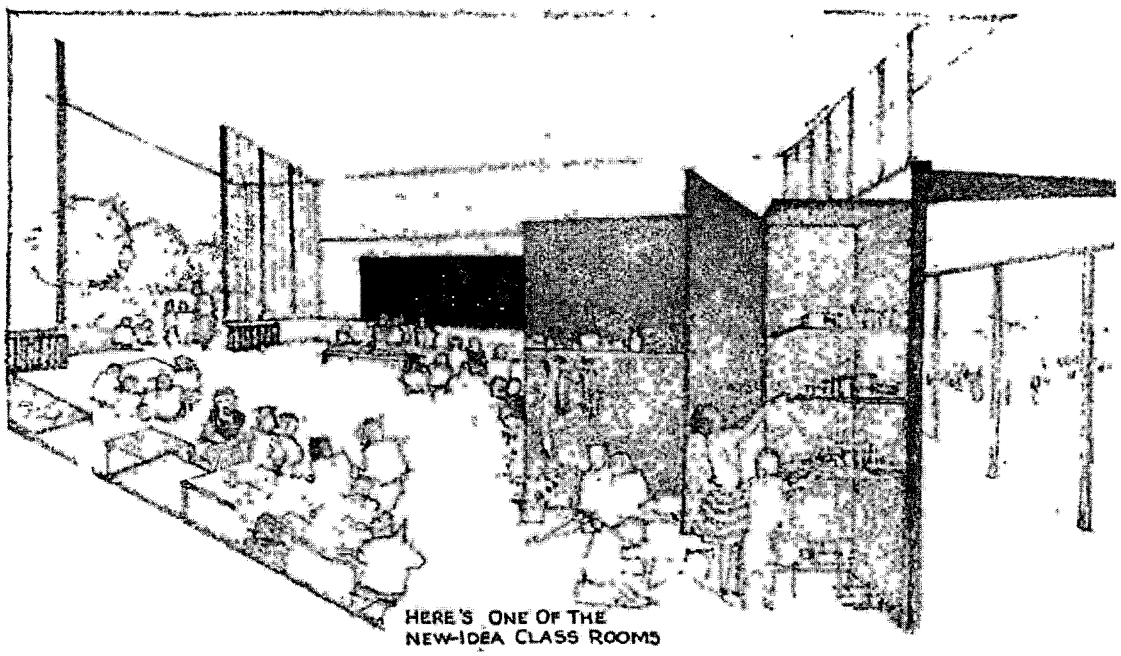

Figure 17: Rendering, "New-idea classroom," with many different groups of children engaging in "active learning," Richard Neutra, undated (Lamprecht, *Richard Neutra: Complete Works* 84).

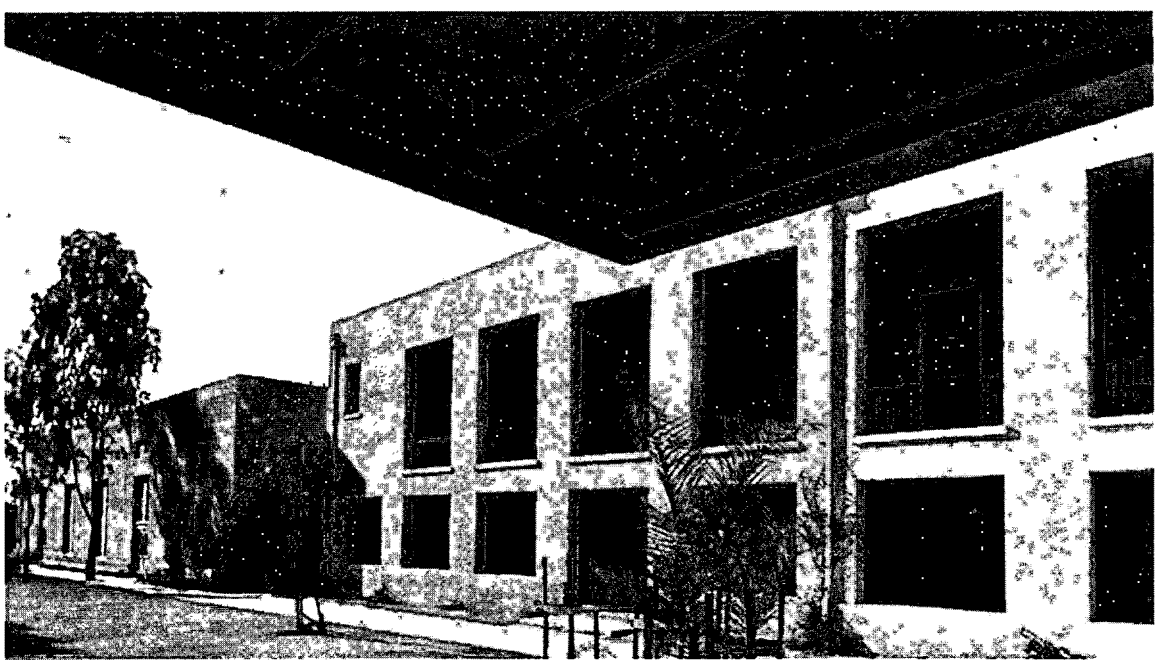

Figure 18: Santa Monica School, Parker T. Wright, 1922-23, Santa Monica, CA (Neutra, *Amerika: Die Stilbildung des Neuen Bauens* 78)

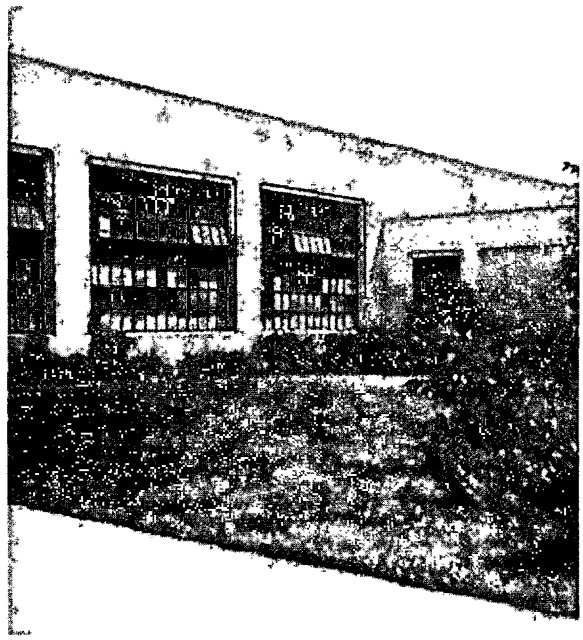

Figure 19: Polytechnic School, architect unknown, circa 1920s, Oakland, CA (Neutra, *Amerika: Die Stilbildung des Neuen Bauens* 79)

Figure 20: Americanization School, with the classroom doors to the outdoors, Irving Gill, 1931, Oceanside, CA (Hines, *Irving Gill* 246).

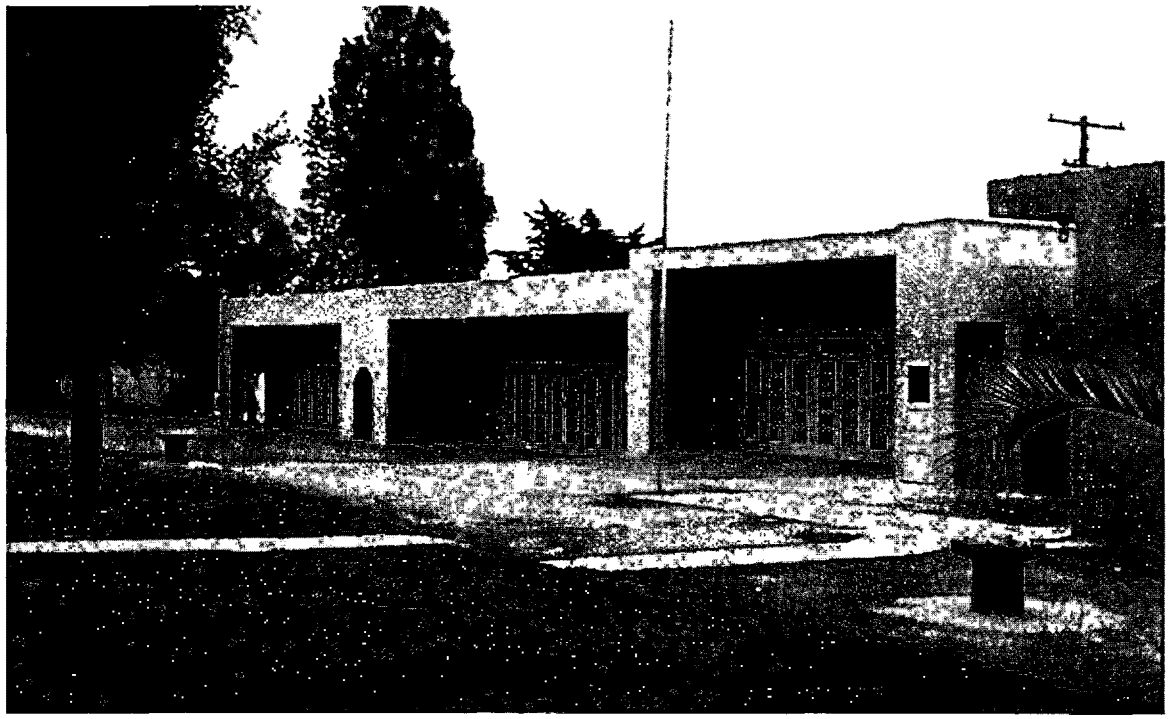

Figure 21: Kindergarten, with roof overhangs, Irving Gill, Oceanside, CA, 1931, (Hines, *Irving Gill* 245).

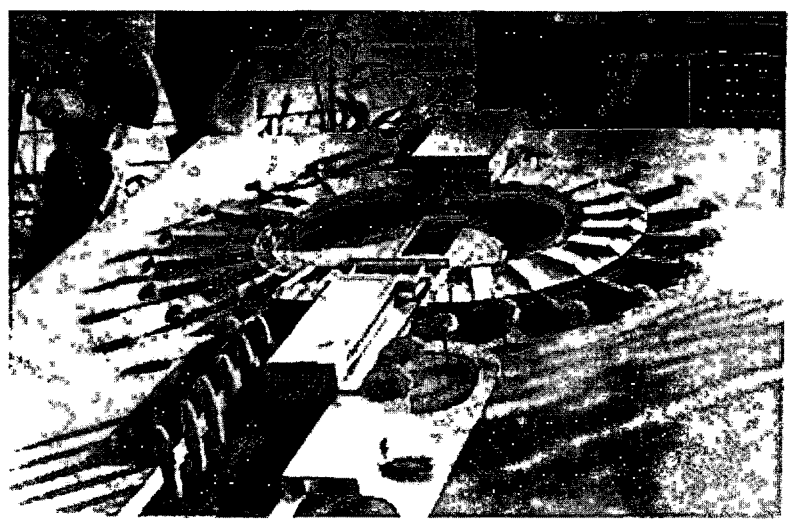

Figure 22: Model of the Ring Plan School which was exhibited at MOMA's International Architecture exhibition (Lamprecht, *Richard Neutra: Complete Works* 82).

Figure 23: Oak Lane Country Day School, an example of modern school architecture, Howe and Lescaze, Philadelphia, PA, 1929 (Johnson and Hitchcock, *Modern Architecture: International Exhibition* 151).

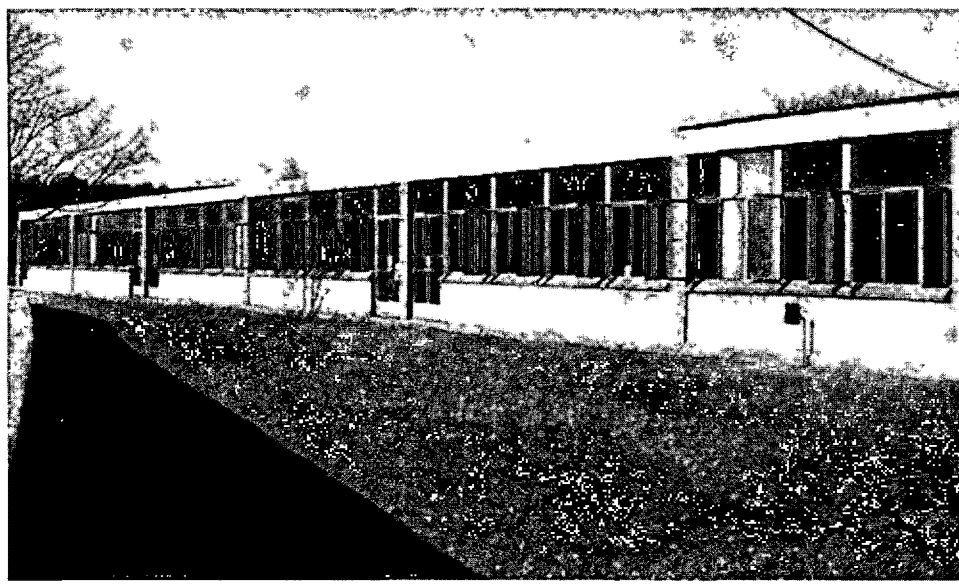

Figure 24: Hessian Hills School, Howe and Lescaze, Croton-on-Hudson, NY, 1931 (Johnson and Hitchcock, *Modern Architecture: International Exhibition* 152).

Figure 25: Roosevelt Junior High School after the 1933 Long Beach Earthquake, Compton, CA (Los Angeles Public Library Photo Database, SPNB Collection).

Figure 26: Liberty Avenue School, an example of the reconstruction of schools damaged in the 1933 earthquake (Los Angeles Public Library Photo Database, Herald-Examiner Collection).

Figure 27: Perspective, proposed school that fulfilled the new building requirements post-1933 Long Beach earthquake, unknown architect, 1934 (Los Angeles Public Library Photo Database, Herald-Examiner Collection).

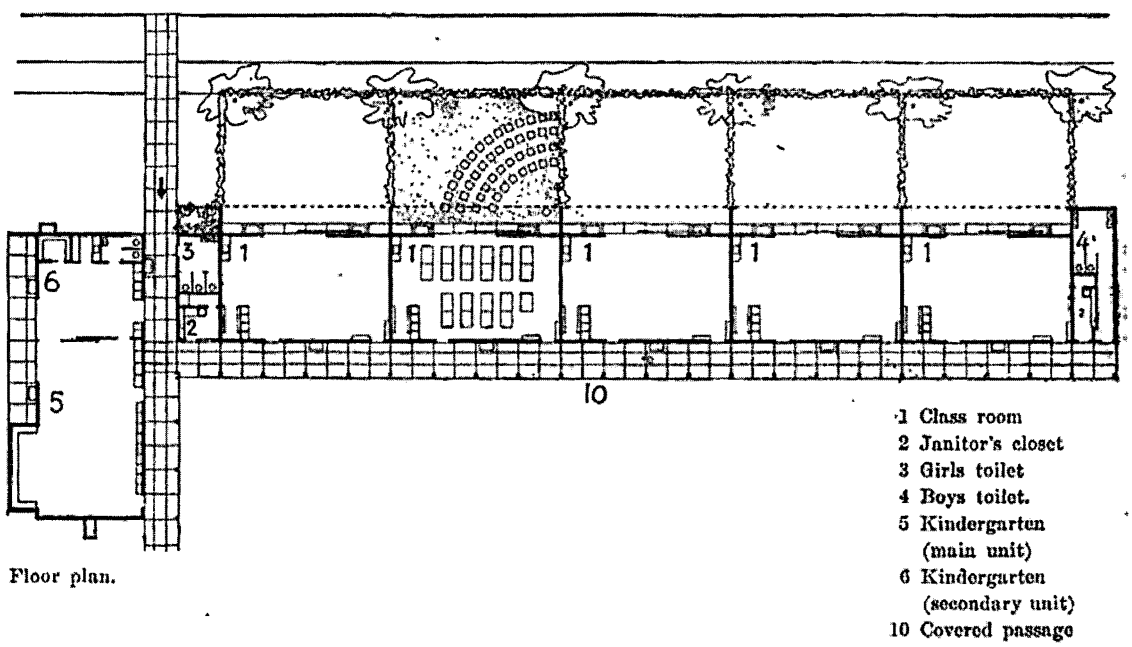

Figure 28: Plan, Corona Avenue School addition, Richard Neutra, 1935, Bell, CA (Boesiger 151).

Figure 29: Corona Avenue School, main building, architect unknown, date unknown, Bell, CA (Los Angeles Public Library Photo Database SPNB Collection).

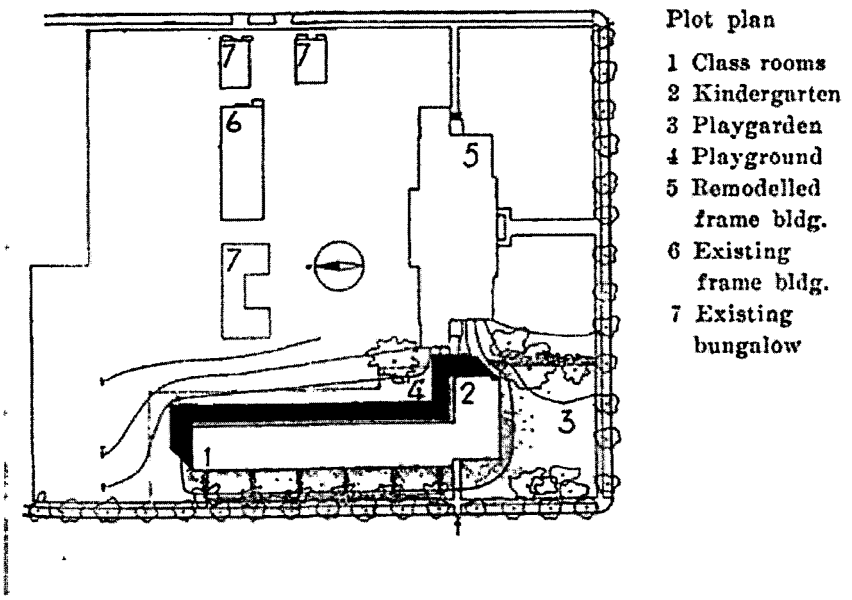

Figure 30: Site plan, Corona Avenue School addition, with the existing building shown (Boesiger 151).

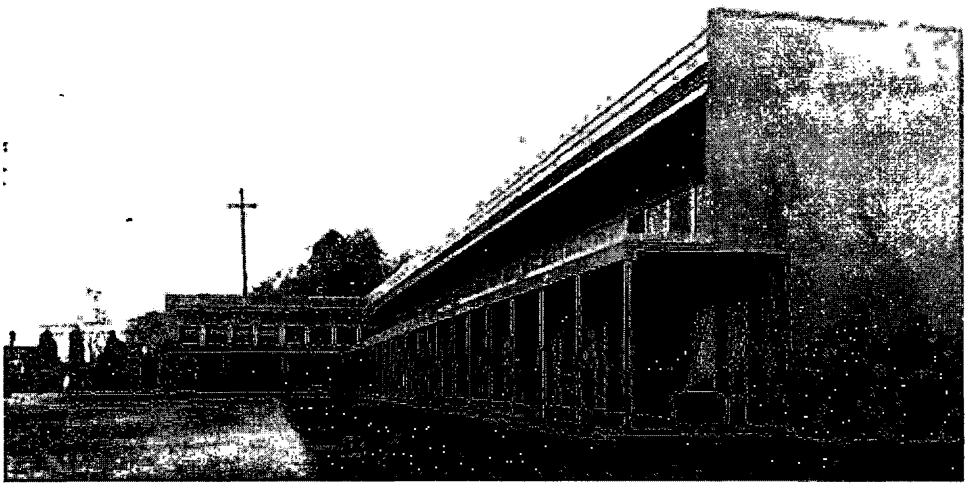

Figure 31: Corona Avenue School addition, east elevation with covered walkway and clerestory lighting, 1939 (Los Angeles Photo Database SPNB Collection).

Figure 32: Corona Avenue School addition, west elevation, with outdoor classes in session, note sliding wall and awnings, prior to the landscaping, circa 1939, (Los Angeles Photo Database SPNB Collection).

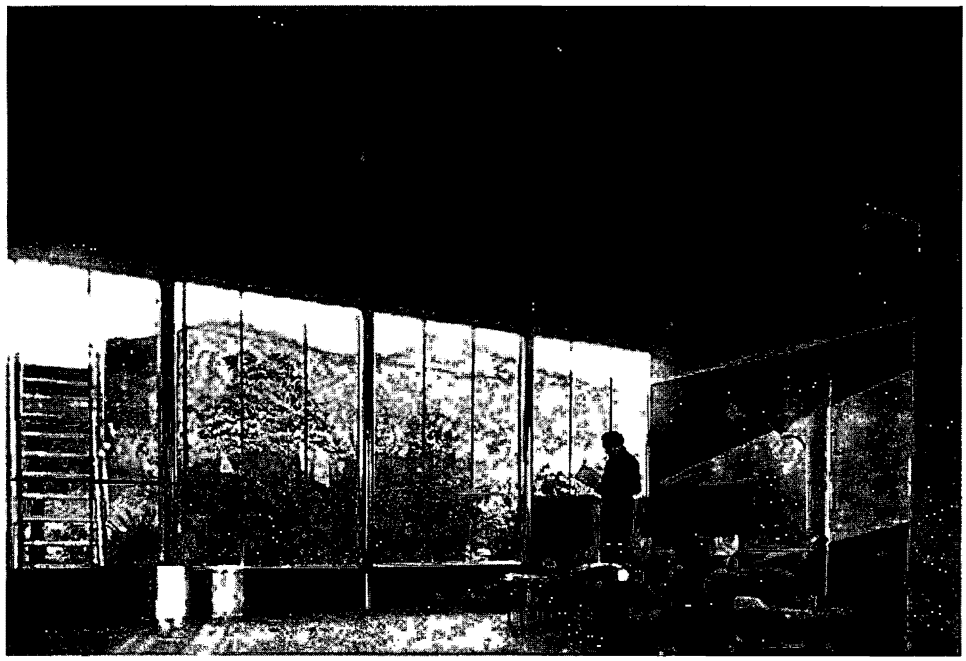

Figure 33: Beard House, showing use of the sliding wall, Richard Neutra, 1934-35 Altadena, CA (Lamprecht, *Richard Neutra, 1892-1970: Survival through Design* 38).

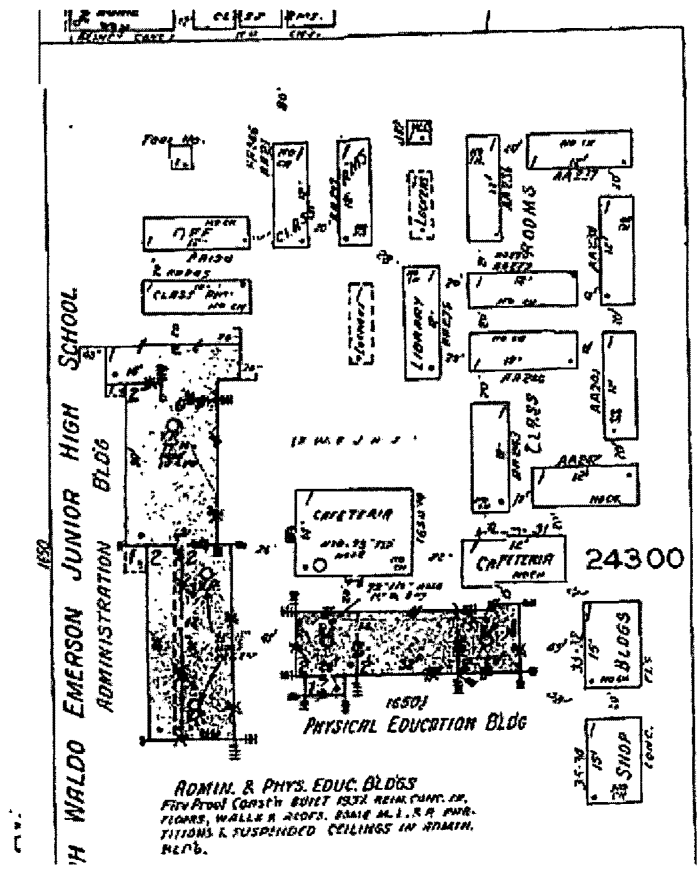

Figure 34: Site plan, Emerson Junior High School, with existing bungalows, predating the construction of the auditorium; Neutra's 1937 buildings are in the bottom left corner (Sanborn map, Los Angeles, CA, Volume 24, Sheet 2243).

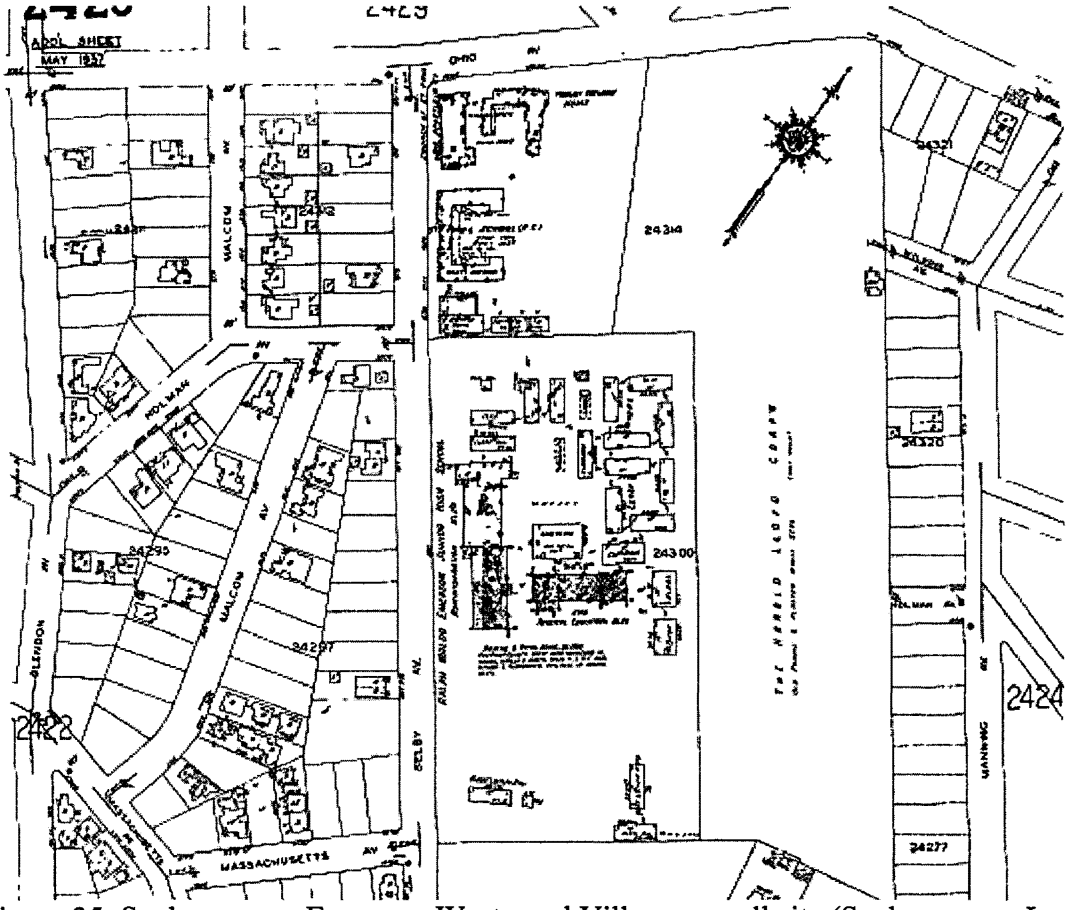

Figure 35: Sanborn map, Emerson, Westwood Village overall site (Sanborn map, Los Angeles, CA, Volume 24, Sheet 2243).

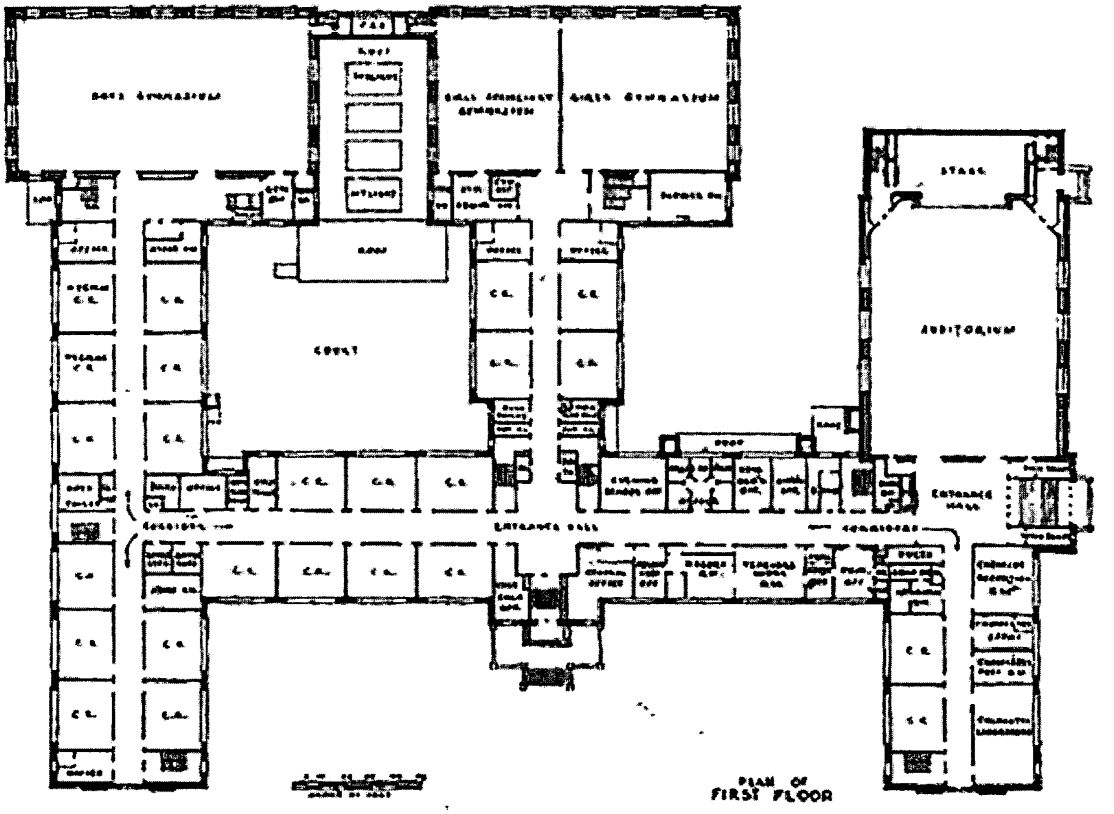

Figure 36: Plan, John Adams High School, showing "conventional planning," with the gymnasium and auditorium in top left and top right, architect unknown, 1931, New York (Sexton 210).

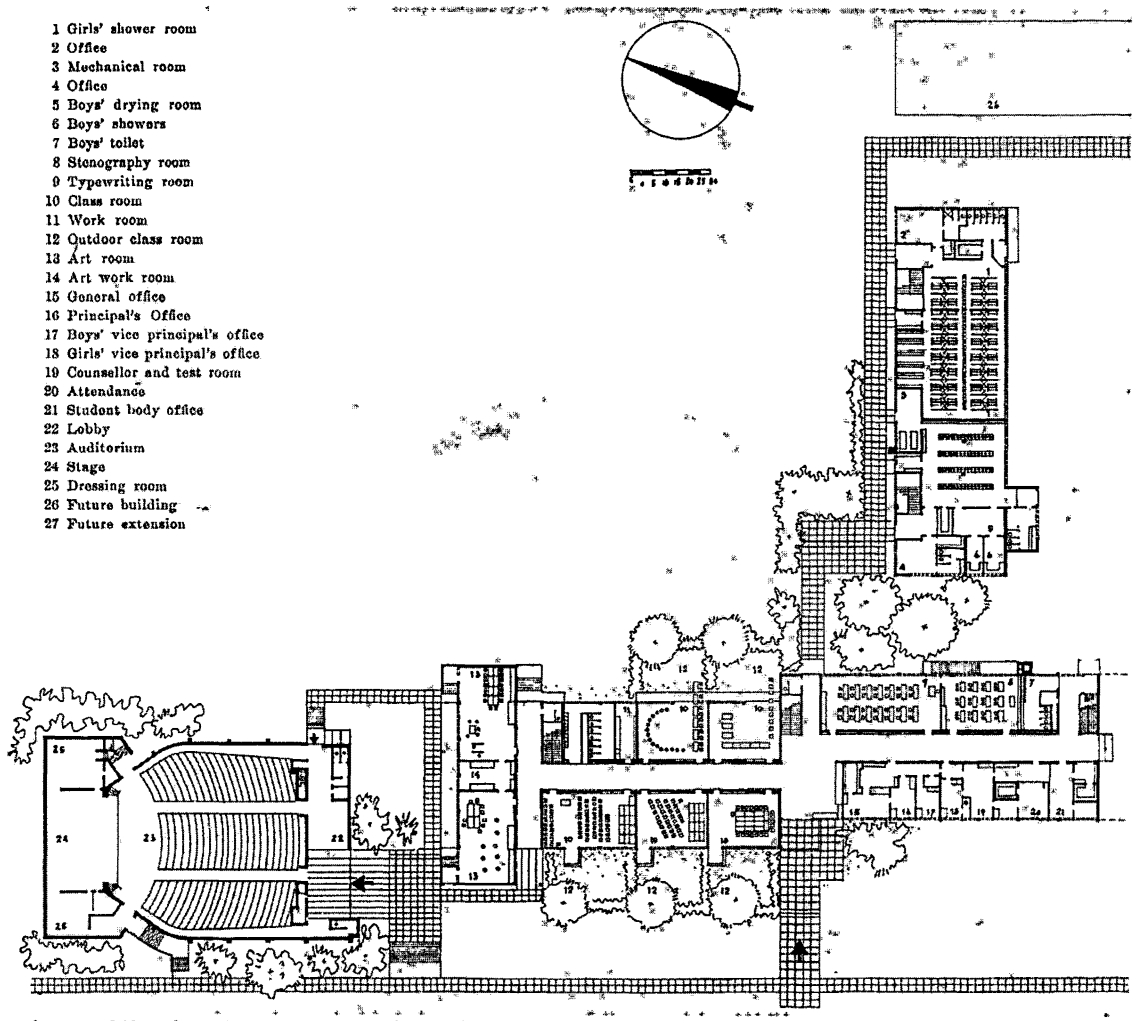

Figure 37: Plan, Emerson Junior High School, with the auditorium to the north and the gymnasium to the east of the main building, Richard Neutra, 1937, Los Angeles, CA (Boesiger 159).

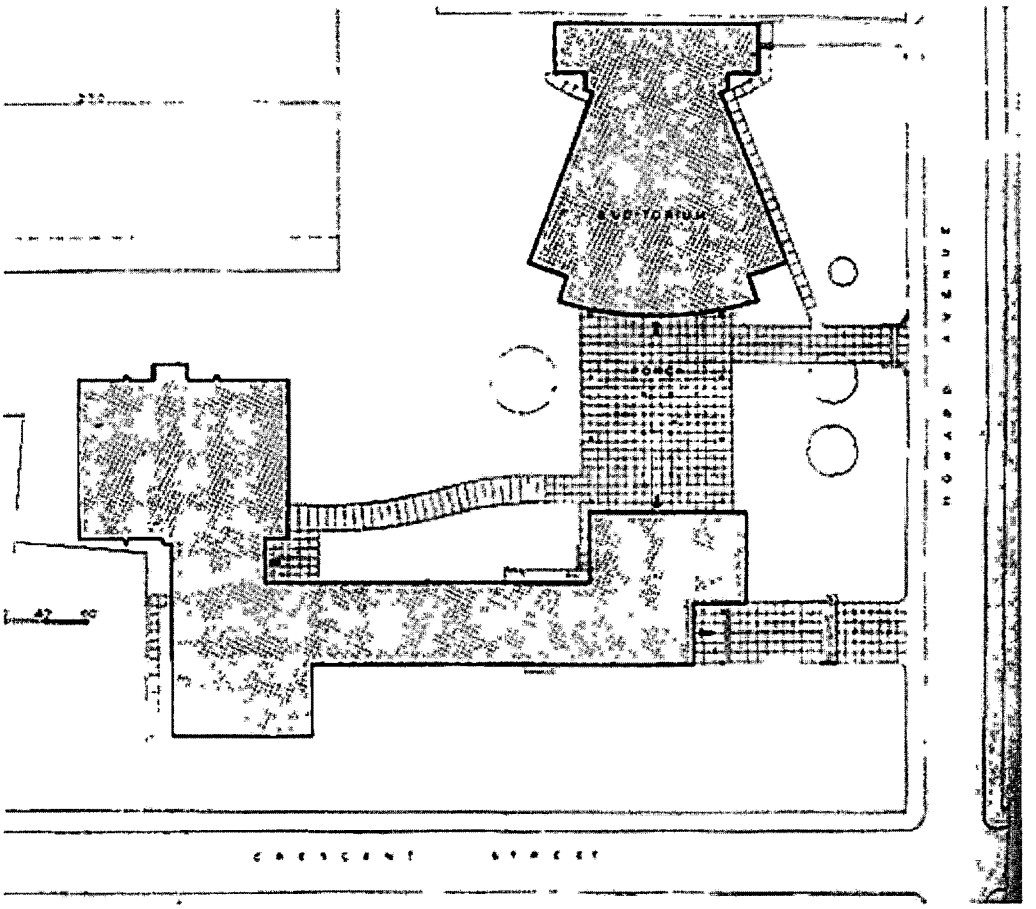

Figure 38: Site plan, Ansonia High School, with the auditorium to the top and the gymnasium to the far left, William Lescaze, 1936, Ansonia, CT (*The Architectural Record* June 1936 486).

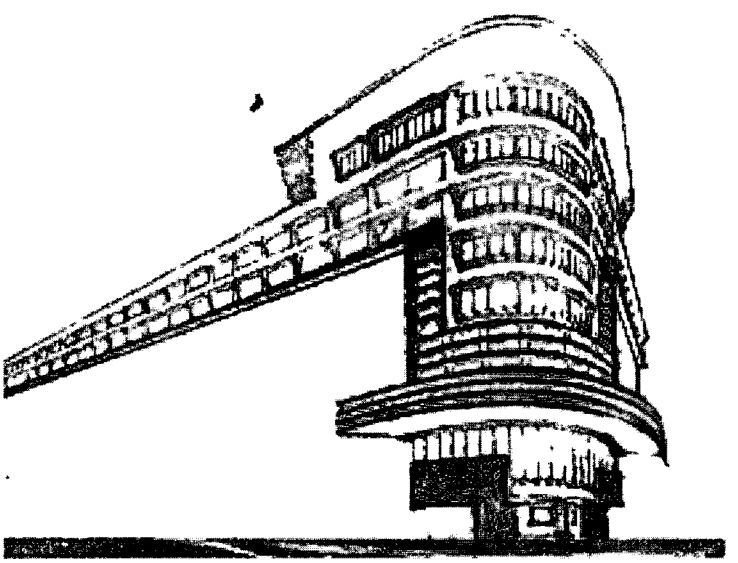

Figure 39: Perspective sketch, Richard Neutra for Erich Mendelsohn, Berliner Tageblatt building, 1921-23, Berlin (Hines, *Richard Neutra* 33).

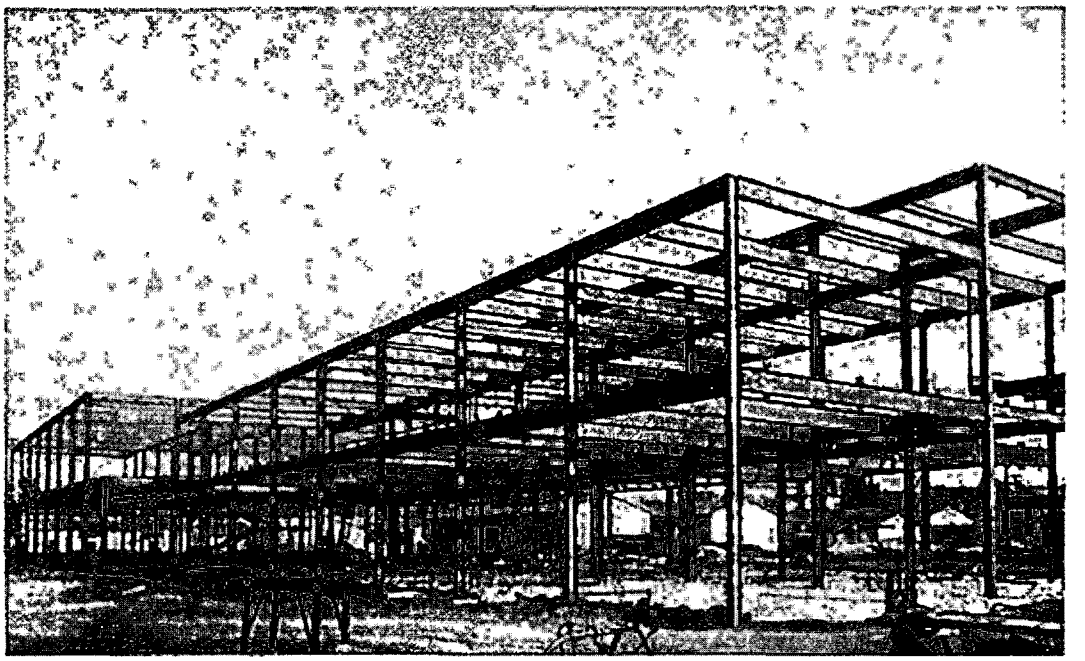

Figure 40: Construction, Emerson Junior High School, showing the steel skeleton for seismic strength (Boesiger 160).

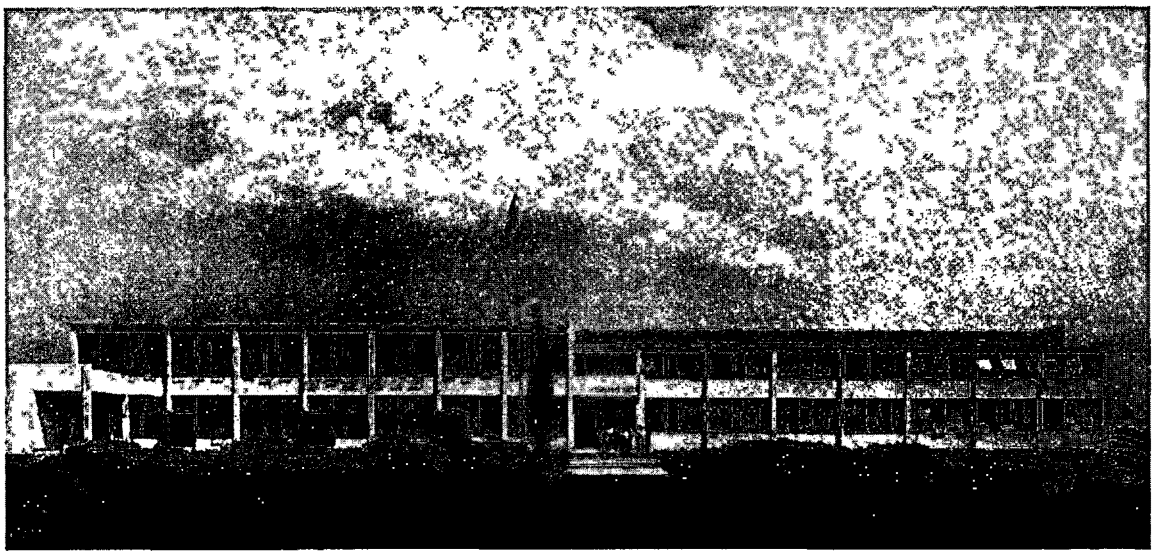

Figure 41: West Elevation, Emerson main building, classrooms to the left with the open doors and the administration on the right, note expression of the steel skeleton (Boesiger 161).

Figure 42: Partial east elevation, Emerson main classroom building, in the middle is the main staircase with large expanse of glass, to the right one of the sliding walls is open (Gebhard and Von Breton, *L.A. in the Thirties, Second edition,* 87).

Figure 43: West elevation, Emerson Junior High School, with the "streamlined" auditorium to the left (Julius Shulman photograph, Boesiger 161).

Figure 44: View looking northeast toward main building with auditorium in the far background, Emerson Junior High School (Los Angeles Public Library Photo Database).

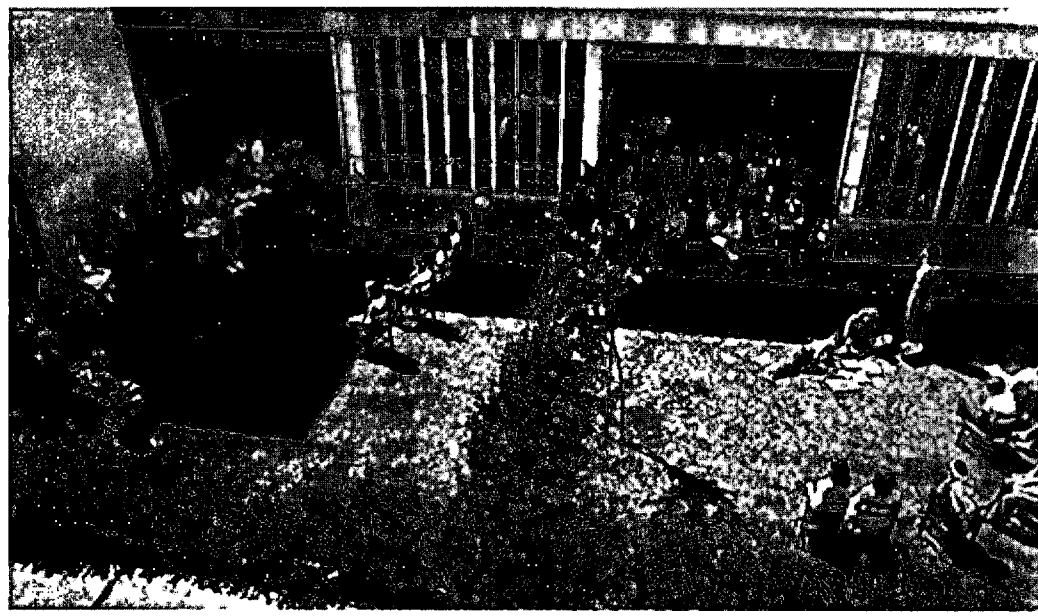

Figure 45: East elevation, Emerson Junior High, with outdoor classrooms, note hedge partitions (Lamprecht, *Richard Neutra: Complete Works* 140).

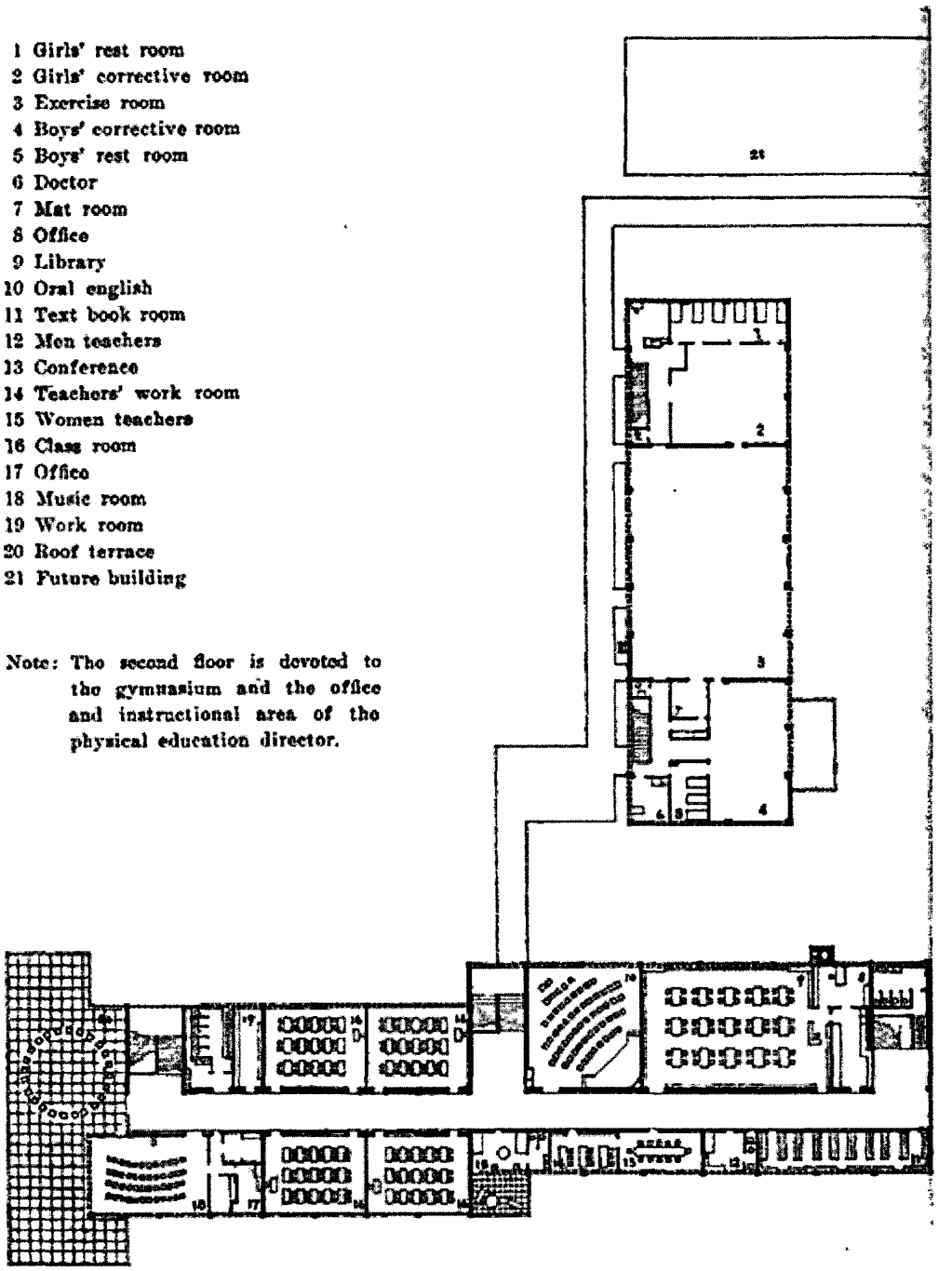

Figure 46: Second floor plan, Emerson Junior High, with rooftop patio on the left (Boesiger 158).

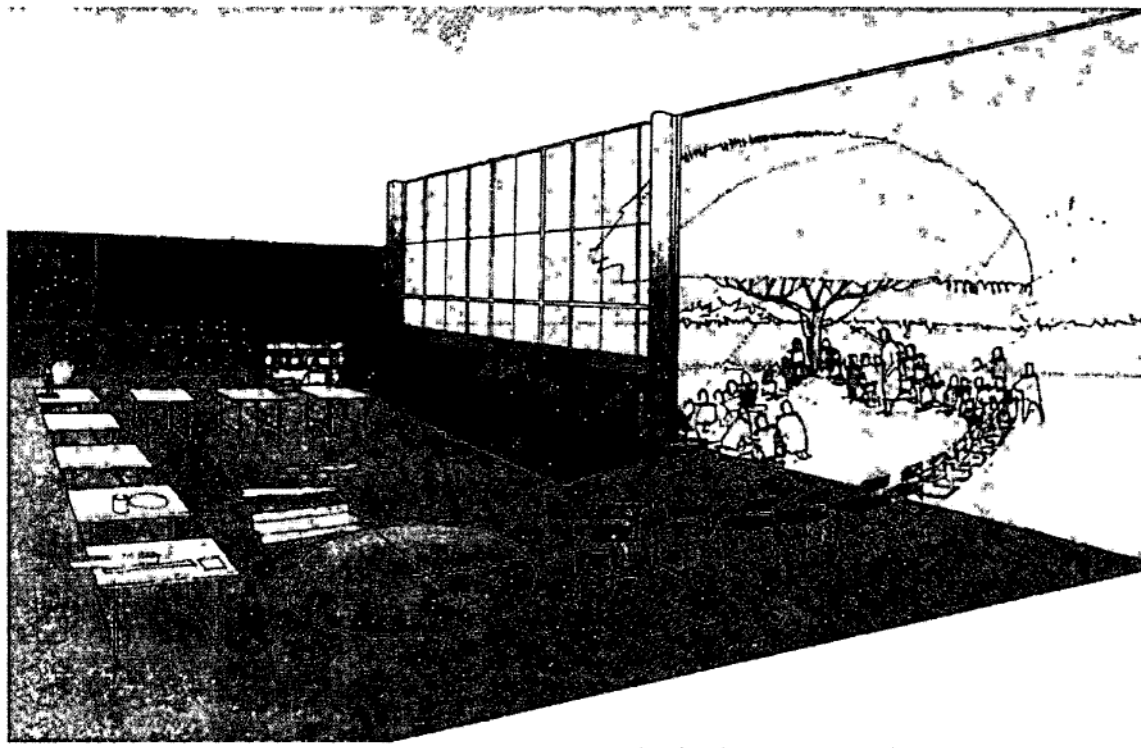

Figure 47: Rendering, Emerson classroom, continuity between inside and outside, note Neutra chair design (Boesiger 157).

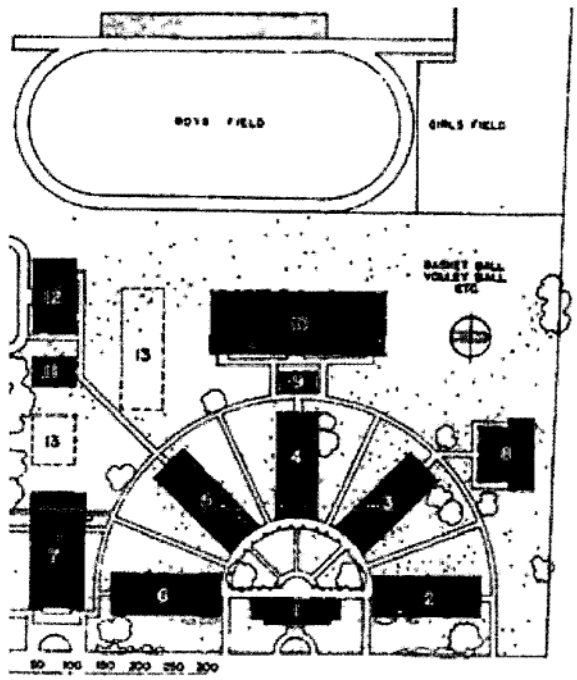

Figure 48: Plan, Dorsey High School, "half-ring" plan school, H.L. Gogerty and C.E. Noerenberg, 1937, Los Angeles, CA (*The Architectural Record* September 1938 40).

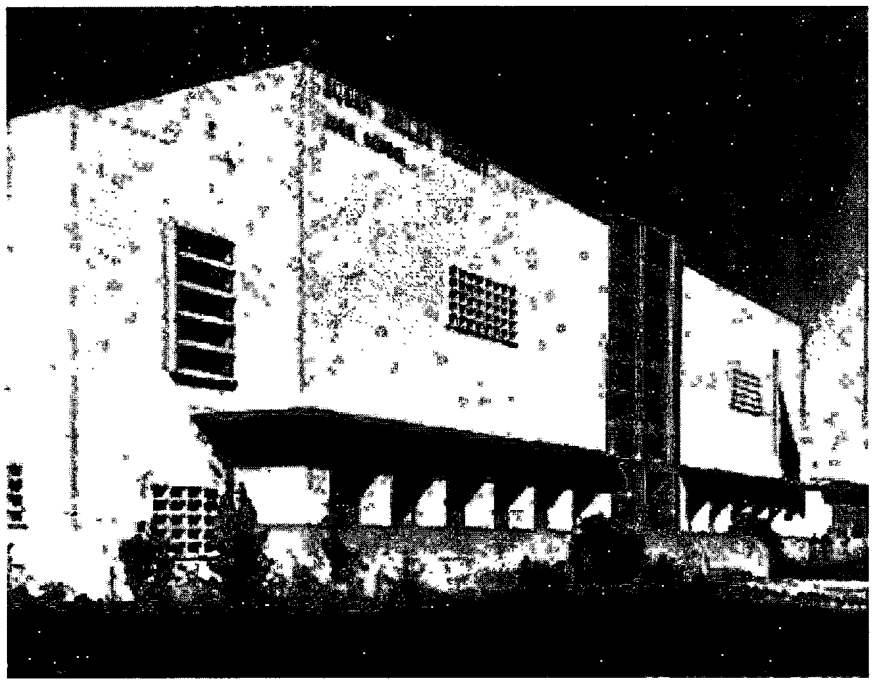

Figure 49: Main building, Dorsey High School, an example of a Streamlined Moderne school, H.L. Gogerty and C.E. Noerenberg, 1939, Los Angeles, CA (Los Angeles Public Library Photo Database).

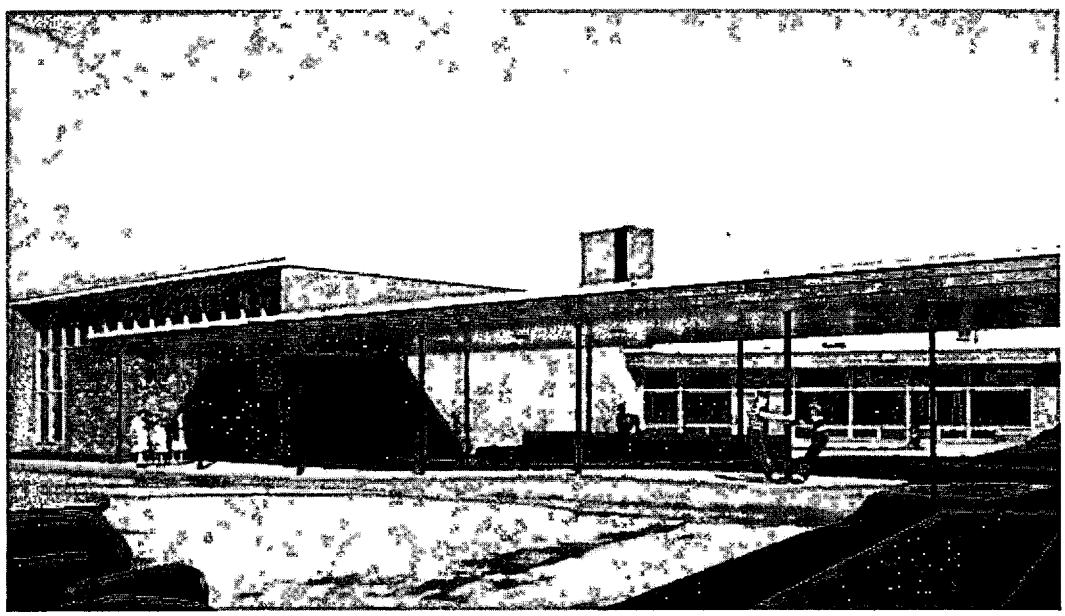

Figure 50: Hoover School, Perkins & Will, an example of the spread of Neutra's one story, covered walkway school type, circa 1957, Neenah, WI (Perkins 11).

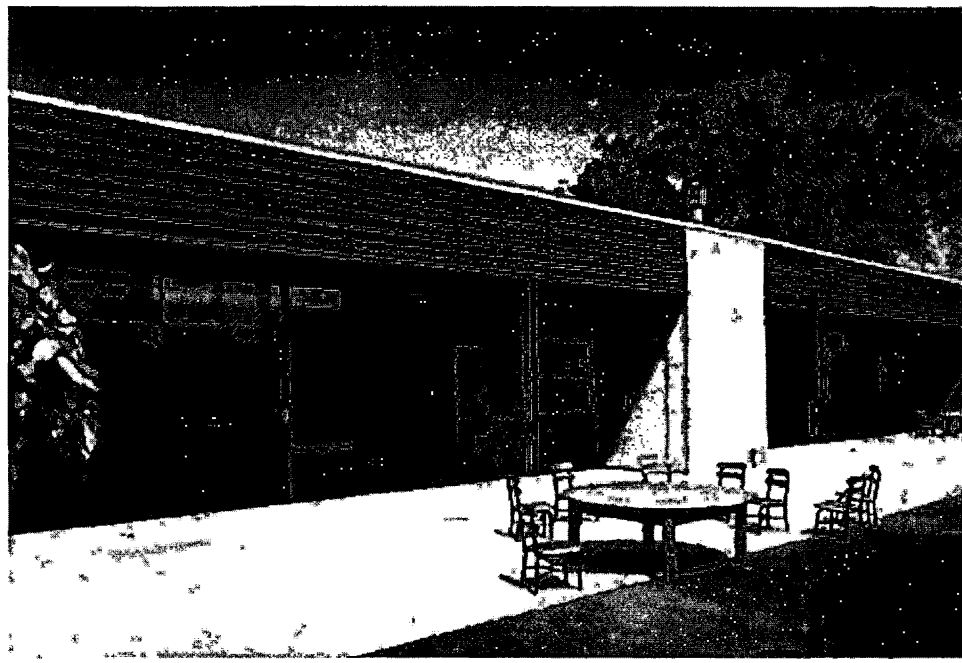

Figure 51: Kester Avenue Elementary School, an example of Neutra's post war school architecture, with sliding walls, 1951, Los Angeles, CA (Lamprecht, *Richard Neutra: Complete Works* 238).

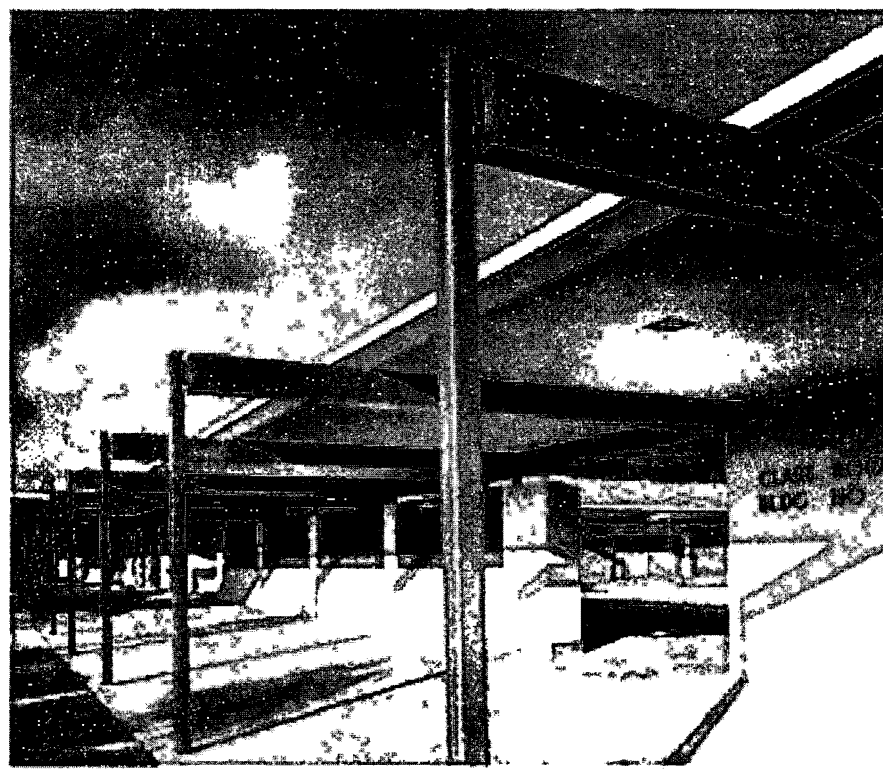

Figure 52: Palos Verdes High School, with spider-leg outrigging, Richard Neutra, 1961 Palos Verdes, CA (Lamprecht, *Richard Neutra: Complete Works* 403).

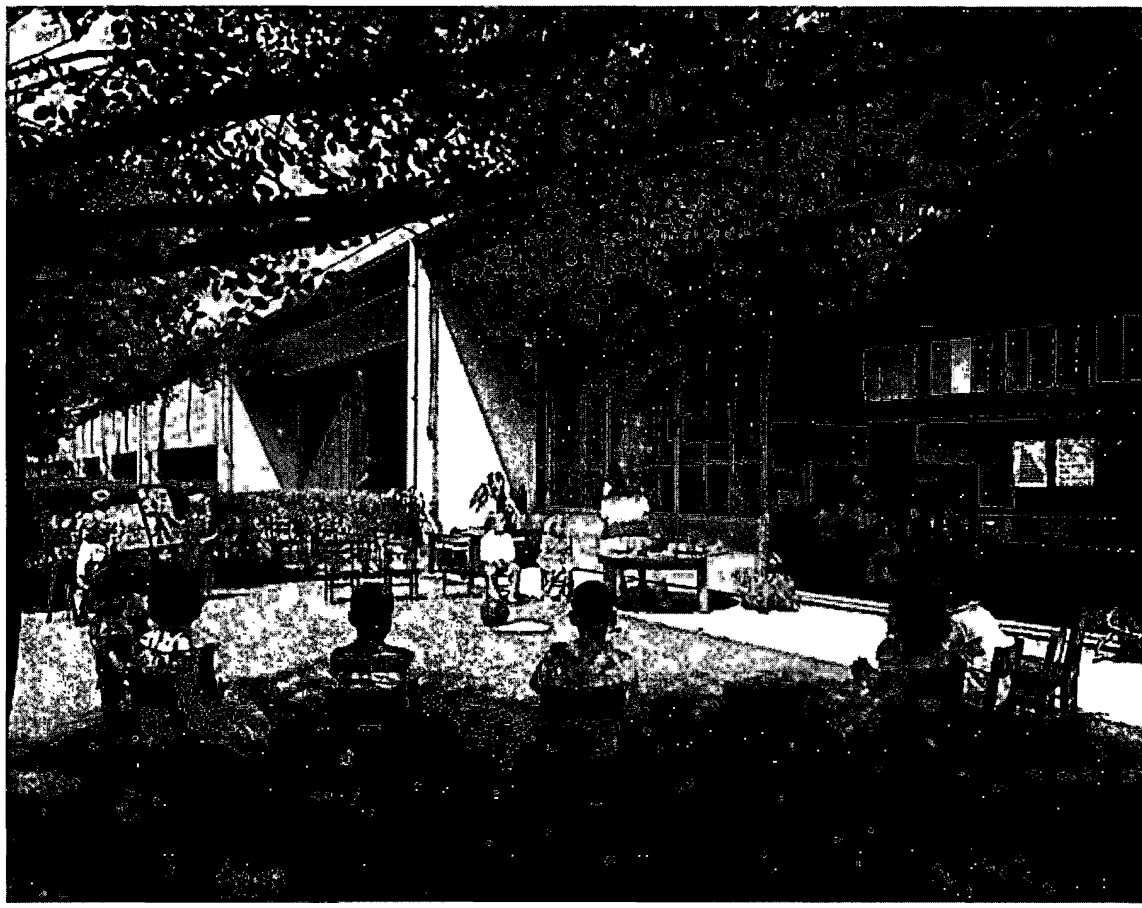

Figure 53: Corona Avenue School, biorealistic, nature-near design (Lamprecht, *Richard Neutra, 1892-1970: Survival through Design* 34).