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“Architecture or Revolution”: Taylorism, Technocracy, and Social Change

By Mary McLeod

Le Corbusier's social and political position continues to be one of the most controversial dimensions of his career. On the one hand, Post-Modernist critics and architects denounce his messianic social vision: his belief that architecture is a tool for social redemption. Charles Jencks, for instance, sarcastically describes Le Corbusier's “heroic object of every day use” as the “new, revolutionary detergent”; the editors of *Harvard Architecture Review* condemn his utopianism with their assertion that “architecture can profit more by working with what ‘is’ rather than what ‘should be.’”¹ On the other hand, historians have often been skeptical of the claim that politics played a significant role in the formulation of Le Corbusier's work. Reyner Banham and Colin Rowe call attention to the academic strains in Le Corbusier's thinking; more recently, William Curtis dismisses politics as irrelevant to the generation of Le Corbusier's forms.² In contrast to the position of current architectural polemics, the standard biographical interpretation maintains that he was an essentially apolitical man, governed by aesthetic considerations and an all-embracing humanism.³ Peter Blake's *The Master Builders* makes explicit this interpretation:

The facts are that Corbu is totally disinterested in politics; that he finds it necessary, at times, to deal with politicians in order to achieve certain important objectives of planning and redevelopment; and that his own “political” philosophy has to do with such issues as the continuity of civilization on earth and the need for assuring such continuity—concerns that are not easily labeled in terms of today's political pressure groups.⁴



Fig. 1 “If Paris becomes Americanized.” Le Corbusier published this newspaper clipping discussing Plan Voisin (1925) in *L’Almanach d’architecture moderne* (1925).

Le Corbusier himself would have gladly endorsed this assessment—at least until 1930. Throughout the twenties he vehemently denied any party affiliations; he frequently cited the various political epithets given to him—Bolshevist, Fascist, *petit bourgeois*—as proof of his own neutrality. He was, he declared, strictly a professional man. At the conclusion of *Urbanisme*, he states:

I am an architect; no one is going to make a politician of me. Everyone, in his own domain where he is an expert, can apply his special knowledge and carry his solutions to their logical conclusion. . . .

[Ville Contemporaine] has no label, it is not dedicated to our existing Bourgeois-Capitalist Society nor to

the Third International. It is a technical work. . . .

*Things are not revolutionized by making revolutions. The real revolution lies in the solution of existing problems.*⁵

His task, like that of the “healthy and virile” engineer, was to measure, analyze, and propose solutions—a role, Le Corbusier believed, removed from the vagaries and fluctuations of parliamentary politics.

Yet this purported neutrality, as Post-Modernists have intuitively understood, did not imply isolation or detachment from society. Le Corbusier was deeply engaged in social issues, although his involvement generally defies party labels. Words like “technical,” “logical,” “solution,” and “expert” all associate him with a general

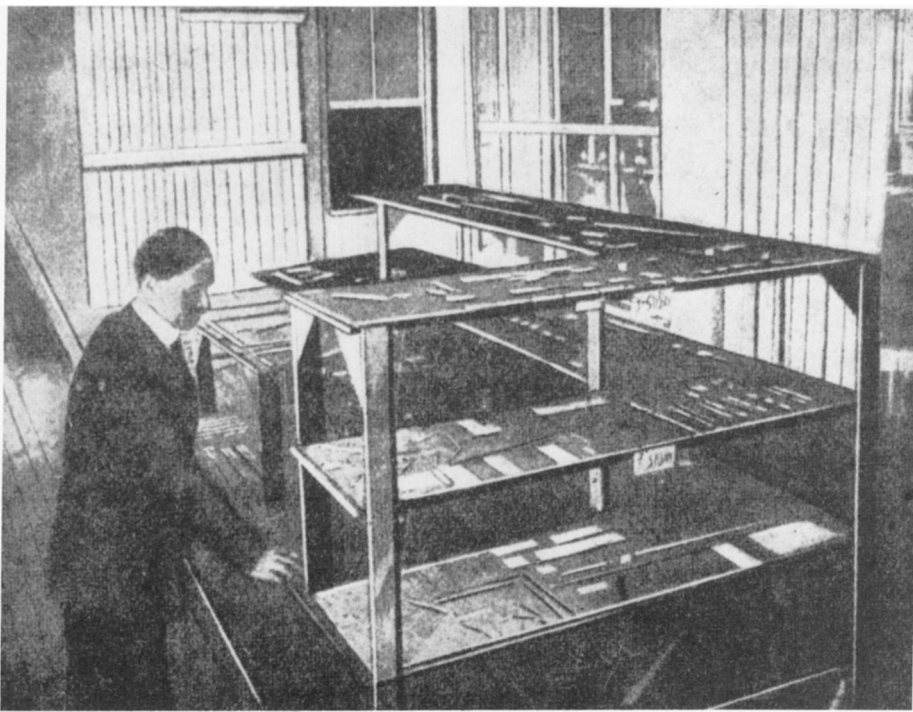


Fig. 2 A workshop plan in relief. An important component of Taylorism was the organization of the order and direction of the production process. Perspective views and models were frequently used to illustrate the production flow of multi-story workshops.

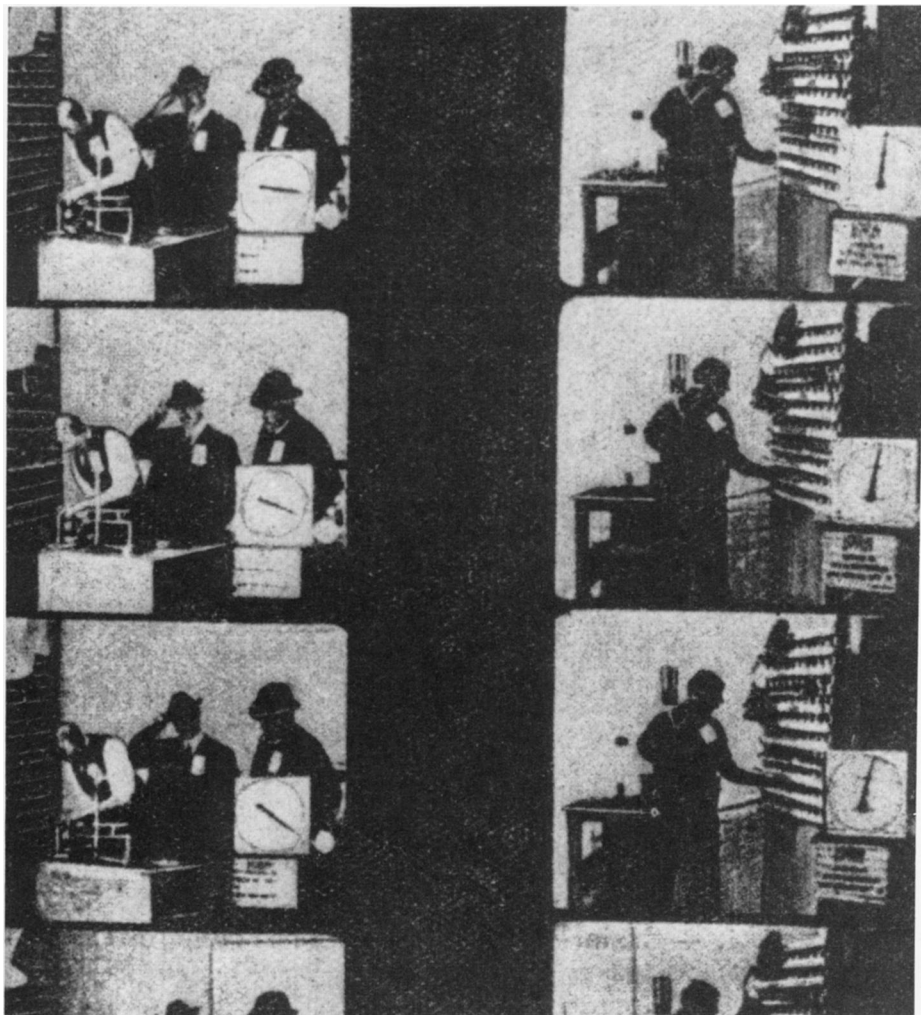


Fig. 3 Film study of a worker's movements. Film techniques were popular with many advocates of Scientific Management. The film frames, taken every 1/15 of a second, revealed useless or inefficient movements, which could then be eliminated.

ideological position current in postwar France that was predicated on American models of industrial rationalization and managerial reform. Both art and politics were placed under the rubric of professional expertise. Far from being void of specific political and social implications, this vision—incorporating Taylorism, Fordism, and other models of so-called Scientific Management—frequently led to specific stances on international commerce, world government, trade regulations, production hierarchies, and land ownership, all of which he conceived as essential components of a foreseen social regeneration. This vision linking technology and social change, as this essay will attempt to show, was fundamental to Le Corbusier's architecture and theory during the postwar period.

Taylorism

An important dimension of this ideological stance was Taylorism, the American system of Scientific Management. Like many European professionals, Le Corbusier saw Taylorism as a means of breaking with prewar society, a key to social renewal. The word "Taylorism" appears in almost every one of his books from *Après le cubisme* (1918) to *La Ville radiieuse* (1935); *Ville Contemporaine* and *Plan Voisin*, premised upon speed, efficiency, and economy, were architectural visions of the American industrial utopia made manifest (**Fig. 1**).

Taylorism, popularized in the first years of the century, was a method of labor discipline and plant organization based upon ostensibly scientific investigations of labor efficiency and incentive systems. In the early 1880s the American engineer, Frederick Winslow Taylor, disturbed by work slowdowns, organized manufacturing plants and devised wage scales based on piecework, to improve efficiency and expand production (**Figs. 2 and 3**). His objective was to maximize the ratio of output to input, benefits to cost; rationalized management, he believed, would bring optimal production.

The most original feature of his system, however, was the application of efficiency engineering to labor relations; Taylorism entailed, to use the words of its zealous followers, "a complete mental revolution." Both laborers and management, Taylor explained, "take their eyes off of the division of the surplus as the important matter, and together turn their attention toward increasing the size of the surplus."⁶ The increased productivity would ultimately benefit all. With scarcity and constraint eliminated, there would no longer be bitter confrontation over the divisions of profit. In short, Taylorism—or Scientific Management, as the more general movement was frequently called—offered an escape from ideological conflict and class divisions: traditional politics would be

subsumed by a rational technology of political and economic choice. As the historian Charles Maier has shown, it was this political and social implication, more than Taylorism's strictly technical features, that generated a European interest.⁷

Before World War I Taylorism was already known in France by a small group of technicians. Their interest had first been sparked at the Paris Exposition of 1900, where Bethlehem Steel exhibited high-speed steel. The French industrialists hailed this example of Taylor's experiments as a great scientific invention, and by 1914 the metallurgist Henri Le Chatelier, "le barnum français de Taylor," had translated three of Taylor's major works: *On the Art of Cutting Metals* (*La Coupe des métaux*), *Shop Management* (*La Direction des ateliers*), and *The Principles of Scientific Management* (*Les principes d'organisation scientifique*). In 1907–08 industrialists introduced Taylor's time-study methods into factories, but these early efforts, known to the workers as "systematized sweating," generated a spate of unfavorable publicity and ended abruptly in a series of violent strikes throughout the region of Paris in 1913.⁸

World War I, however, completely reversed this situation. The demands for rapid, precise production, the loss of manpower, and the introduction of new, unskilled (and often weaker) workers into the labor force encouraged interest in American industrial innovations; in 1916 the publication of the French engineer Henri Fayol's *Administration industrielle et générale* added impetus to the "scientific" organization of war-related industries. Newly rationalized enterprises included a major state plant for gunpowder manufacture, large sectors of the steel industry, the shipbuilding yards of Penhoet (the builders of the great French liners Paris and the Ile de France), and a military automobile repair shop, the last celebrated in 1918 through a series of lectures sponsored by the Society for the Encouragement of National Industry. The government itself was a leader in the introduction of the precepts of Scientific Management. Albert Thomas, the Minister of Armaments, spoke of the war as an "enormous industrial revolution" for France and pleaded with labor and management to intensify production, ignore class differences, and accept Taylorism. In early 1918 Clemenceau himself signed a decree asking that all heads of military establishments study new industrial techniques and proposed the creation of a Taylorite "planning department" in every plant.⁹

But it was not only the demands of war production that generated the impulse towards industrial innovation; the formidable task of reconstruction encouraged exploration of more general applications of modern productive techniques. By the



Fig. 4 An invaded area near Lens in Northeastern France, November 1918.



Fig. 5 The new city of Lens-Mericourt. This garden city development with its pitched roof houses and picturesque plan was typical of the reconstruction efforts following the war. Erected by the railroad company Nord, it was one of several towns designed completely by engineers. Construction began one week after government authorization, May 9, 1919, and in six months 800 houses were constructed.

war's end, the devastation was immense: in the 4,329 communes that had been occupied or evacuated, some 6,147 public buildings—townhalls, schools, and churches—were razed; 293,039 dwellings were completely destroyed; another 435,961 homes severely damaged; and 52,734 kilometers of highways needed to be rebuilt. Much of northeast France was reduced to rubble: some 100,000 wagonloads were required to clear the debris from the city of Arras alone (Figs. 4 and 5).¹⁰ Although after the war many simply wanted to recapture the past and return to "normalcy," there were dissidents, among them progressive industrialists, officials, and trade union groups, who sought to adapt the innovations of war to a peacetime economy. In February 1919 Louis Loucheur, the Minister of Reconstruction, decreed that "there must be from now on only one hymn on the lips of every Frenchman—the hymn to production," and Léon Jouhaux, Secretary-General of the principal trade union federation, the CGT, condemned the toleration of "the worst prewar methods and follies, the practices that made our industry puny and shabby."¹¹ As early as 1917, Lieutenant Colonel G. Espitallier declared that "reconstruction should be a point of departure for progress toward a more scientifically modern [form of] organization."¹² In the avant-garde art world, Le Corbusier

(then still Charles-Edouard Jeanneret) and Amedée Ozenfant were among the first to announce their endorsement of new industrial methods:

The war has ended; all is organized; all is clear and purified; factories are built; nothing is just like it was before the War; the great Struggle tested everything, it destroyed senile methods and replaced them with those which the battle proved best.

[Taylorism] is not a question of anything more than exploiting intelligently scientific discoveries.

Instinct, groping, and empiricism are replaced by scientific principles of analysis, organization, and classification.¹³

Taylorism, a fundamental component of the Purists' *l'esprit nouveau*, now became a pervasive call in discussions of reconstruction, just as it had been in plans for war production. As a writer in *Revue des Vivantes* explained, "The war made the Taylor method the order of the day. . . . The name Taylor, which was barely known in France by well-informed people only a few years ago, is now mentioned by everyone: owners, engineers and workers."¹⁴

Also important to the introduction of Taylorism, however, was a long-standing

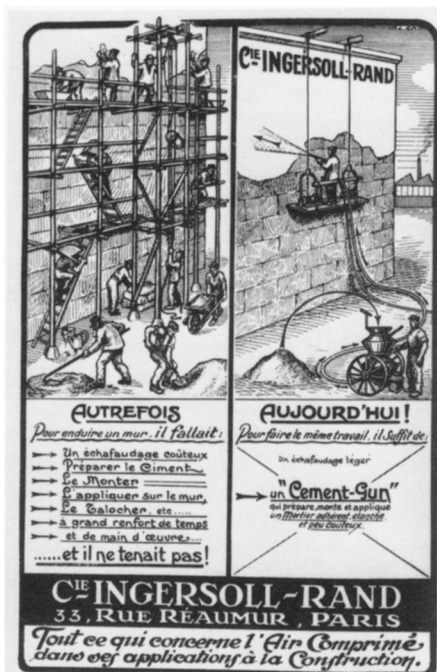


Fig. 6 (left) Advertisement for a cement-gun, *L'Esprit Nouveau* no. 28. Le Corbusier used the cement-gun to cover the pressed straw walls of the *Esprit Nouveau* pavilion, as well as the garden walls of his housing project at Pessac.

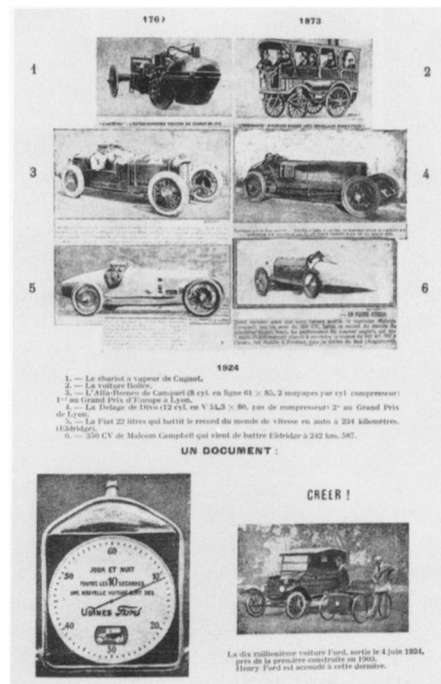


Fig. 7 (right) A page from *L'Esprit Nouveau* (no. 27), current events section, November 1924. Le Corbusier had previously published the upper series of photographs in *Vers une architecture* to illustrate the evolution of a "standard." He took the lower-right photograph from *L'Illustration* (July 12, 1924), a French picture magazine that covered closely the developments of the automobile industry.

ideological strain in French politics of rational administrative reform—in particular, Saint-Simonianism. The nineteenth-century social thinker Henri de Saint-Simon had proposed a system of organic inequality with "productive" and "industrial" elements replacing useless aristocrats and landowners; in his 300-member Chamber of Inventions some 200 places were occupied by engineers. American theories of reform were strongly reminiscent of this nineteenth-century utopian plan in their proposal of the engineer as social manager, their condemnations of waste and inefficiency, and their belief that an increased aggregate wealth would be beneficial to all. After the war Saint-Simonianism gained a small following with Gabriel Darquet's publication of *Le Producteur* (1920–33), named after the nineteenth-century periodical.¹⁵ This strict revival found an echo in the general endorsements of production, modernization, and new technology by such prominent figures as the popular mayor of Lyon and Radical leader, Edouard Herriot; Clemenceau's Minister of Commerce, Etienne Clementel; the editor of *Figaro*, Lucien Romier; and the resident general of Morocco, Marshal Lyautey. One of the most important popularizers of the American industrial methods was a working mechanic and union leader, Hyacinth Dubreuil, whose two studies *Standards* (1929) and *Nouveaux Standards*

(1931) were among Le Corbusier's most heavily annotated books.¹⁶

By 1923 Taylorism was popular enough to be the subject of an elaborate satire published on the front page of *L'Intransigeant*. Shortly afterwards, *Le Quotidien* serialized Henry Ford's memoirs and in 1925 published a French edition of *My Life and My Work*.¹⁷ Fordism had joined Taylorism as a model of rationalization; the assembly line, standardization, and the expansion of a mass market through higher wages and lower prices gave impetus to the belief that social problems could be alleviated within the boundaries of capitalism. The French, like the Germans, appeared to take the claims of Ford's ghost-written books at face value, seeing them as "primitive socialism"; Ford's prognostication of a car for every family was a sign of the well-being to come.¹⁸

Also popular, although eventually overshadowed by American methods, was a native French theory of industrial rationalization, Fayolism. In contrast to Taylor and Ford who concentrated on the operational levels of industry, Henri Fayol focused on issues of management and administrative reform. His *Administration industrielle et générale* especially attracted French employers who had initially been put off by the excessive technical detail of the first articles on Taylorism.¹⁹

Le Corbusier probably first became

familiar with the principles of Scientific Management during the war years, when he studied extensively at the Bibliothèque Nationale. In 1917 he wrote to his Swiss friend William Ritter that he was immersed in Taylorism, but not without some ambivalence: he called it "the horrible and ineluctable life of tomorrow."²⁰ But his doubts had clearly subsided by the time of the publication of Ozenfant's and his *Après le cubisme* the following year, and throughout the partners' cultural review *L'Esprit Nouveau* (1920–25) references to mass production and economic efficiency abound (Figs. 6 and 7). Even in its advertisements, "Taylorism" is cited.²¹

Le Corbusier's interest in Taylorism, however, was more than theoretical. By December 1914 he had already developed, in response to the immense devastation of the first months of the war, the Dom-ino system, one of the earliest applications of mass-production techniques to housing.²² After his arrival in Paris in February 1917 he served as an architectural consultant for the S.A.B.A. (Société d'Application du Béton Armé), an association of engineers and industrialists involved in the construction of national defense projects. Shortly afterwards, he also founded his own enterprise, S.E.I.E. (Société d'Entreprises Industrielles et Etudes), which included both a small concrete block factory and a research section devoted to the study of concrete and refrigeration. Le Corbusier described his enthusiasm for this new industrial endeavor to Ritter:

The scene magnificent: enormous gas meters, four huge chimneys to the east. I breathe proudly on my site: the bureaucrat, the agent, the functionary, the eunuch architect will be obliterated one day, finally. I will make beautiful prints of my factory and I will be able to talk of "my stocks" and "my sales" like a rice or coal merchant!²³

At S.E.I.E. he continued his pursuit of prefabricated low-cost housing "for reconstruction in the devastated regions" and gained first-hand experience with Taylorism in the tasks of industrial design and production. Although the factory venture soon ran into difficulties that culminated in bankruptcy in the early twenties, Le Corbusier maintained close contact with engineers and industrialists.

Throughout the twenties Le Corbusier, like many of his German contemporaries,²⁴ regarded Taylorism and serial production as fundamental components of social renewal. While the aesthetic suggestions of mechanistic repetition and standardization echoed many of his own formal principles, the promise of industrial efficiency and greater productivity allowed him to conceive of architecture as a social tool. Only with the application of modern industrial

techniques, Le Corbusier believed, could architecture be produced cheaply, and thus become available to all.

This argument becomes one of the pre-dominant themes in his famous polemic *Vers une architecture*. As Reyner Banham has demonstrated, the text, composed largely of a series of articles published in *L'Esprit Nouveau*, can be interpreted as a dialectic between old and new, classical and mechanical, architecture and engineering, which concludes that architecture must incorporate the lessons of mass production or perish.²⁵ Although its links with the past are deep and explicit, the book strongly proclaims a commitment to an industrial future. It is, in fact, in a passage following his nostalgic tribute to the Acropolis that Le Corbusier introduces his most significant and original argument, "Mass-Production Houses". Here he specifically advocates Taylorism and modern industrial methods, and at the same time illustrates his own studies for low-cost prefabricated housing: Dom-ino, Monol, Citrohan, and the Immeuble-Villas.

The section opens with the assertion that Bonneville and Loucheur's reconstruction plan for 500,000 low-cost dwellings is an "exceptional event," and continues with the statement that the building industry is completely unequipped to meet such a program.²⁶ The only solution, Le Corbusier asserts, is the abandonment of hand-crafted production and the widespread adoption of modern industrial techniques—technical specialists, workshops, standardization, mass production; the innovations of war manufacturing must be applied to housing.

The war has shaken us all up. One talked of Taylorism. It was done. Contractors have bought new plants—ingenious, patient and rapid. Will the yard soon be a factory? There is talk of houses made in a mould by pouring in liquid concrete from above, completed in one day as you would fill a bottle. . . .

Nothing is ready, but everything can be done. In the next twenty years, big industry will have co-ordinated its standardized materials, comparable with those of metallurgy; technical achievement will have carried heating and lighting and methods of rational construction far beyond anything we are acquainted with. Contractors' yards will no longer be sporadic dumps in which everything breathes confusion; financial and social organization, using concerted and forceful methods, will be able to solve the housing question and the yards will be on a huge scale, run and exploited like government offices. Dwellings . . . will be enormous

and square-built and no longer a dismal congeries; they will incorporate the principle of mass-production and large-scale industrialization.²⁷

This vision of the future models housing production on airplane and automobile manufacture. Just as Henry Ford's assembly line was to result in lower-priced goods and more available commodities for the worker, so, too, industrialized building processes were to reduce housing costs and provide a "maximum dwelling" for all. Even the relationship between tenant and landlord was to be changed in the "inevitable social evolution." Lower costs would permit a system of rent purchase in which tenants would take shares in the enterprise.²⁸ Similarly, a more efficient urbanism, including rational transportation systems and an increased density of services, would lead to greater economies and increased land values. One need not worry about sacrificing the rich to solve the social problems of the poor. The surpluses, as Le Corbusier was later to explain, would be sufficiently large to compensate the owners "up to the present value of their property."²⁹ Additional funds would still remain for greater public services. Le Corbusier's "technical solution," like Taylor's "mental revolution," offered an improved environment for all.

The social urgency of implementation becomes the focus of the last chapter of *Vers une architecture*, written specifically for the book's publication. Le Corbusier's analysis was based upon the assumption that the physical environment—namely, housing—was the major social ill facing France. "The balance of society comes down to a question of building."³⁰ Both workers and intellectuals (such appeals to a professional elite were common to both Le Corbusier and Taylorist advocates) suffered seriously from the lack of appropriate dwellings: tuberculosis, mental demoralization, and the destruction of the family were among the dire consequences; social upheaval was imminent in postwar France. The book concludes with his famous rhetorical plea for reform:

Society is filled with a violent desire for something which it may obtain or may not. Everything lies in that: everything depends on the effort made and the attention paid to these alarming symptoms.

Architecture or Revolution.
Revolution can be avoided.³¹

This statement of strong protest was still far less radical than the conclusions of the growing Communist Party. But although *Vers une architecture* was a call for reform not violent revolution, for working within existing political and economic structures rather than overthrowing them, it was hardly a retrenchment into architecture as

an isolated discipline. In contrast to the Beaux-Arts practitioners who rarely considered in the prewar period the issue of housing or new materials, Le Corbusier was arguing for an expansion of the very conception of the architect's role to embrace the consideration of social problems. Taylorism and new industrial methods were the only way the architect could continue to be relevant in a society threatened with potential destruction.

Le Corbusier stated this with greater zeal and to a larger lay audience than did any of his French contemporaries, but he was hardly alone in his perception of housing as "the problem of the epoch" and "at the root of social unrest."³² With the exception of the Communists, all sides of the political spectrum—republican, socialist, clerical—were in accord. In Paris, about two fifths of the population were said to be dangerously housed; serious overcrowding and general deterioration of living conditions were common. Some 16,000 deaths, in the 1920s alone, were attributed to these conditions. The severity of the housing crisis threatened to drive traditionally stable middle-class supporters of the Third Republic into a precarious financial position as housing costs soared while income stagnated.³³ It was not illogical to see these conditions as leading to social unrest. Like Le Corbusier, Loucheur saw large-scale construction of low-cost housing as one of the only means of preserving the weak and tottering Republic.³⁴ Nor were other architects completely unaware of the necessity of coping with this immense problem. Long before the war ended, as Kenneth Silver has shown, architects argued for an expanded conception of the profession's social role.³⁵ The architect Adolphe Dervaux, for instance, claimed:

Now to create or reconstruct a city, is assuredly an issue of national economy, but it's also architecture!

To sanitize a tightly populated region, to join a river's banks with a bridge, that's architecture.

To plan conveniently a locale, to study the inhabitant's social customs and needs to ease their labor, their education, their rest—that is, to involve oneself with individual and collective psychology—that's still architecture.³⁶

And the large exhibition *La Cité Reconstituée*, held in the Tuileries gardens in 1916 and organized by such prominent practitioners as Agache, Jaussely, Jourdain, and Plumet, focused on the problem of reconstruction and the use of new industrial building methods "to spread the fruitful principles of association, cooperation, regrouping, which will conspicuously facilitate the realization of plans of development. . . ."³⁷

Although culturally, conservative fac-

tions seem to have dominated in the postwar period—regionalism was particularly strong in the early twenties³⁸—Le Corbusier's endorsement of scientific management was in fact echoed throughout large segments of the Parisian town-planning movement. Leftists such as Henri Sellier, Maxime Leroy, and Georges Benoit-Lévy, as well as more conservative spokesmen such as Louis Renault, Pierre Lhande, and Louis Loucheur, all advocated some form of "municipal Taylorism."³⁹ They believed that a more efficient organization of transportation and services would produce less fatigued workers and thus prevent the "degradation and disintegration of human capital."⁴⁰ For most of these reformers, garden city towns, located close to industry, were the most rational solution. Benoit-Lévy, for instance, whose work *La Cité-jardin* (1904) Le Corbusier had studied closely, carried the notion of efficient functional segregation (somewhat analogous to Taylor's division of labor) to an extreme. He divided each new town into "hamlets," with every hamlet representing a different specialty: there was to a hamlet for ironworkers, for carpenters, and for men of letters.⁴¹ Also popular was the notion of the home as a model of managerial efficiency, an idea anticipated by Alfred de Foville and others of the Musée Social. The Scientific Management advocate Fayol explained:

Like any other enterprise, the home has to be managed, i.e., it needs foresight, organization, command, co-ordination, and control. . . . Then only will the home play the part which befits it in the management training of youth.⁴²

But for most architects and urbanists the application of industrial models to urban planning and house design was limited to studies of efficient organization and management of the physical plan. Mass-production procedures were largely ignored. Their interests in Taylorism, like those of most French industrialists, were more psychological than technical, more concerned with theory than substance. Dubreuil, an eyewitness to both French and American experiments, observed that Taylorism had not fully penetrated even American factories and was no more than a superficial gloss on the operations of most French enterprises.⁴³ Loucheur and Renault, for instance, despite certain innovations in war and automobile production, made no effort to propose prefabrication in the housing industry itself.

Le Corbusier's technocratic stance was more radical than that of most architects and town planners in its endorsement of not only efficiency but also mass production. Ford as much as Taylor was his model; standardization and prefabrication were predominant concerns, however naïve his

actual understanding of the economic variables of the construction industry may have been. Among the French architects of the early twenties only Perret and Garnier, both illustrated in *L'Esprit Nouveau*, shared his interest in new industrial methods.⁴⁴ Yet, in other respects Le Corbusier's approach to social change resembled that of the more official town-planning reformers. Economic rather than political measures were the means to social reform. Big business—"a healthy and moral organism"—more than parliament, was likely to be the generator of reform.

Business has modified its habits and customs. . . . Industry has created new tools. . . . Such tools are capable of adding to human welfare and of lightening human toil. If these new conditions are set against the past, you have Revolution.⁴⁵

In short, Le Corbusier envisioned the "Revolution" of Fordism and Taylorism as an improved corporate capitalism, premised on efficiency and economy. For the advocates of Taylorism, social justice was a product of technical rationalization, not of material equality.

The specific political and social implications of this technological vision become more evident if one considers Le Corbusier's writings in the context of *L'Esprit Nouveau* as a whole. Although the review dealt predominantly with the arts, it also examined science, industry, economics, sociology, and foreign affairs as topics of important concern. By the fourth issue, January 1921, the subtitle changed from *Revue internationale d'esthétique* to *Revue internationale illustrée de l'activité contemporaine*; later, in fact, *L'Esprit Nouveau* was to publish a *L'Esprit Nouveau, revue internationale hebdomadaire d'économie*.⁴⁶ As the editors explained in the preface to an article "Wilson et l'humanisme français,"

A few of our readers were surprised that *l'Esprit Nouveau* showed interest in economic and sociological questions. *L'Esprit Nouveau* wants to be the great *Review of connection* for people who think, . . . who can not but realize that in this day and age all subjects are more than ever of great relevance and that intellectual and spiritual questions are closely related to the social situation.⁴⁷

In the spectrum of well-known French cultural reviews of the epoch, *L'Esprit Nouveau* appears as one of the most aesthetically and politically progressive. Only *Clarté* and the later *Révolution Surréaliste* were further to the left. At a time when many artistic publications were calling for a resurgence of regional styles and a return to *la tradition latine*,⁴⁸ *L'Esprit Nouveau* was unequivocal in its endorsement of

modern technology and an accompanying social change. In the elections of 1919, the parties of the right, grouped in the Bloc National, won 433 seats in the Chamber, against a mere 86 for the Radicals and 104 for the Socialists; for the first time since the 1890s, clerical and reactionary segments dominated. Particularly disturbing to this conservative public, yearning for stability after the wartime upheaval, was *L'Esprit Nouveau's* internationalist orientation and its commitment to land reform.

Although for some French industrialists the advocacy of new, productive methods was a protectionist call, a means to insure France's industrial preeminence, for Le Corbusier, as for the technocrats involved in the Pan-Europe movement, it was intrinsically tied to a broader world vision.⁴⁹ Taylor's orderly factory creating orderly men was eventually to lead to a more orderly world. Le Corbusier's future, like that of the earlier Saint-Simonians, was one of order on a series of ever grander scales; rationalization would spread in even wider spheres, resulting eventually in the attainment of universal harmony. International cooperation and reduced trade restrictions were essential components of this projection. Just as traditional class structures had little relation to appropriate managerial hierarchies in Scientific Management, so, too, national boundaries had only marginal connection to issues of industrial production and economic exchange. The architect's endorsement of an international stylistic vocabulary related directly to his conception of industrial efficiency and a network of rationally unified enterprises. A standardization of architectural elements, Le Corbusier stated in his article "Nos moyens," would not only result in greater formal unity, but also lead to "universal collaboration" and "universal methods."⁵⁰ The larger-scale production and wider access to technological innovations resulting from a broader market would lower costs and benefit all. Le Corbusier cited the Barrage de Barberine, with parts coming from Germany, Switzerland, and the United States, as an example of the kind of "great work" emerging from international cooperation; it embodied "the sum of man's knowledge." Subsequently, he suggested in *Urbanisme* that Paris should be rebuilt with foreign capital; German, American, Japanese, and English investment would insure the city against future attack.⁵¹ In short, rational business practices meant world peace. Camille Mauclair, the art critic of *Figaro*, was particularly sardonic about this suggestion for "the internationalization of the center of Paris":

This immense value of the built center of Paris—it would be good for one section of it to belong to foreigners. If, of the numerous billions of gigantic glass towers to be raised, a large

part belonged to Americans and Germans, don't you think that they would prevent the towers from being destroyed by long-range canons. . . .

The interesting thing is not to decide whether this genius is recovering with the help of psychiatry, but whether this Picasso of concrete is not rather Lenin.⁵²

Le Corbusier, perhaps in anticipation of such attacks, was careful in *L'Esprit Nouveau* to show examples of "French rationalism"—Perrault's east façade of the Louvre or Gabriel's Place de la Concorde—and to defend the straight line as French.⁵³ But more than most contemporary French architects he resisted the nationalism that was to characterize the Exposition des Arts Décoratifs of 1925.

Other aspects of *L'Esprit Nouveau* reiterated Le Corbusier's internationalism. The review published numerous articles by foreigners (Loos, Gropius, Rathenau, and the Czechoslovakian Sibli), cited foreign periodicals frequently, and devoted considerable space to the discussion of foreign literature and painting. Erik Satie, in his "Cahiers d'un mammifère," ridiculed the chauvinism that permeated French art circles: "He who does not love Wagner does not love France."⁵⁴ The review in its articles devoted to "économique" and "sociologique" and in its one issue *L'Esprit Nouveau Economique* unequivocally rejected protectionist policies in favor of free trade and greater international exchange. Modern industry and commerce were envisioned as transcending national boundaries and regional differences. R. Chenevier, the review's political spokesman, was harshly critical of the Versailles treaty and proclaimed the League of Nations a symbol of "l'esprit nouveau." At a time when anti-Bolshevist sentiment was strong he argued for economic rapprochement with the Soviet Union.⁵⁵ On a more humanitarian plane the review waged a campaign for contributions to fight the famine in the U.S.S.R., and after Lenin's death in 1924 it paid tribute to the man who "had knocked out old Russia."⁵⁶ Lenin himself had strongly advocated Taylorism as a means of developing the new Soviet state. Henri Hertz, Chenevier's successor, also vocally supported world government, and in their preface to his article "L'Acheminement vers les grands conseils internationaux," Ozenfant and Le Corbusier endorsed his aspirations:

He gives a comprehensive view of the actual embryonic state of these organizations—news in the economic and political history of mankind—which are vast organizations of power, directing nations. These organizations tend to impede the individual action of the organization

member; we are expecting from the meetings a regulation of international relations, restraint of individual desires, a start in thwarting individual impulse, and therefore the limitation of impulsive declarations of war, the creation of a more stable state of peace—peace being the only state of society favorable to the blossoming of works of the new spirit in all its forms.⁵⁷

The editors hoped that ultimately a series of rationally conceived organizations would lead to world federation, brought together by the ties of multinational, rational, productive planning.

Although this social vision represented a liberal humanism based on "rational" analysis rather than anything approaching Communist policy, critics were quick to indict the review's position on foreign affairs. Both Camille Mauclair and Alexander de Senger, the author of the infamous diatribe *Le Cheval de troie du bolshevisme*, called *L'Esprit Nouveau* Bolshevik propaganda. De Senger, particularly perturbed by the large number of Jewish contributors, cited Guillaume Apollinaire as "a typical representative . . . a bank employee whose mother is Lithuanian and whose father is unknown, and whose name is Kostrovitsky."⁵⁸

Even more threatening to existing French capitalist society, although not as widely addressed perhaps because of its obvious utopianism, was *L'Esprit Nouveau*'s position on land ownership. Le Corbusier stated that private property was a "serious barrier" to the transformation of housing and the urban environment. Although he was careful, as always, to base his argument on professional, not political, grounds and to stop short of calling for the complete abolition of private land ownership, he condemned inheritance and the landlord's escape from "the rough war of competition."⁵⁹ Paul Lafitte's article "A propos de la Grand Crise," however, was more specific: state ownership of land was the technician's solution to the barriers blocking efficient urban planning; it "provides cities with a certain flexibility, which permits them to adapt to all their changing needs, and to all the requirements of a progressive society."⁶⁰ Ozenfant and Le Corbusier introduced Lafitte as a "subtle theoretician" with "a prudent, clever, and reasonable economic program."⁶¹

Despite Le Corbusier's personal reluctance to label himself, the review also exhibited leftist, though hardly socialist, sympathies with regard to parliamentary politics. In the issue released just after the 1924 elections, both Henri Hertz and the artist Jean Lurçat, in a statement representing an obscure Cartel des Indépendants, declared their endorsement of Edouard Herriot's Cartel des Gauches, which com-

prised both Radicals and Socialists.⁶² To a greater extent than its predecessor, the conservative Bloc National, Herriot's new government promised to spend funds on social reform and to redistribute taxes; the Radicals offered, as Hertz explained in words reminiscent of *Vers une architecture*, "une révolution pacifique." But both Lurçat and Hertz voiced strong qualifications in their support of the great party built up by Gambetta:

Radicalism is the humus of the republic. Within it, among its many impurities, is the seed of a political spirit.

The elections of May 11 are an excellent example of this. The possibility of renewing and re-erecting the public spirit rests in this big and crass party, and resides only in it. A laborious and crude amalgamation of current life, it represents valuable plans and values, to which it alone is in a position to give intelligent meaning.⁶³

Herriot, who as mayor of Lyon had sponsored many of Tony Garnier's great public works, was himself a strong advocate of Taylorism; in his book *Créer* of 1919 he called for a technologically inspired "fourth republic" that would abandon the party intrigues, local patronage, and *café-comptoir* comités that had dominated pre-war French politics.⁶⁴ Despite the promise of such rhetoric, the Radical-Socialists' power base of small-town and peasant interests necessarily put into question any hope for reform.

The progressive dimension of *L'Esprit Nouveau*'s industrial utopia emerges in its endorsement of world government, of the modification of property arrangements, and of the election of Herriot's coalition. More conservative strains, however, can be detected in its conception of social order. Most apparent of these was the proposed hierarchy of power. Taylorism, which purported to transcend political divisions in its guise of professional neutrality, was by no means egalitarian. Casting aside traditional determinants of power—wealth, family, and class—the system, like Saint-Simonianism, predicated rank on capacity and expertise. As Le Corbusier himself explained:

the right man for the right job is coldly selected; laborers, workmen, foremen, engineers, managers, administrators—each in his proper place; and the man who is made of the right stuff to be a manager will not long remain a workman; the higher places are open to all.⁶⁵

This vision of a hierarchy of talent takes material form in *Ville Contemporaine* and *Plan Voisin*, illustrated in the final issue of *L'Esprit Nouveau*. Engineers, industrial-

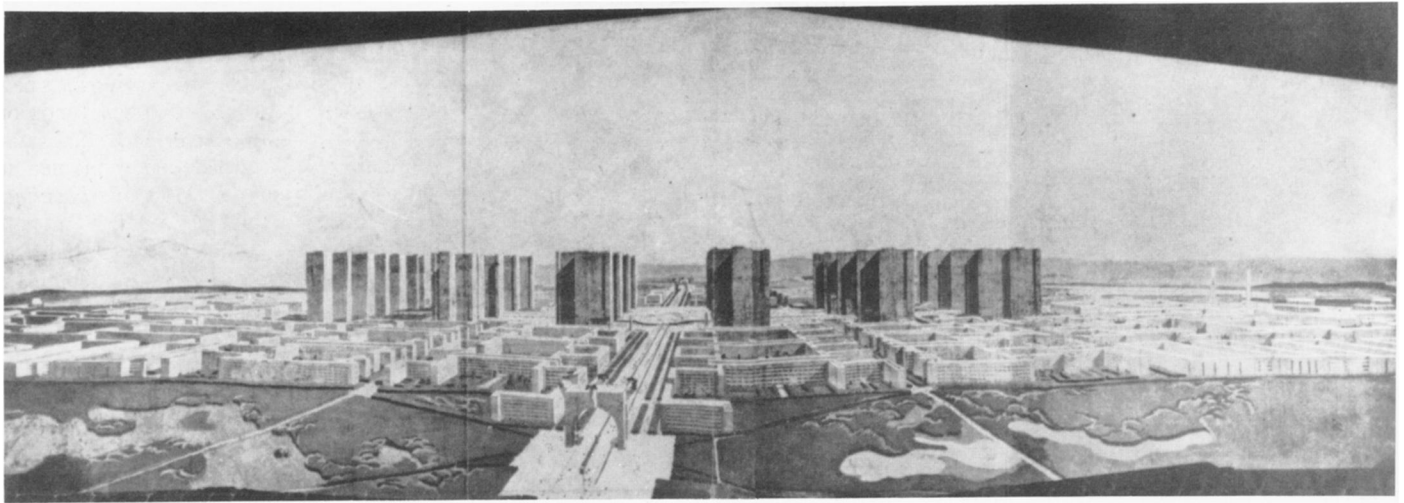


Fig. 8 Diorama of Ville Contemporaine. At the center of the town, at the crossing of the two highways is the great transportation center. The towers, located on either side, contain business and commercial facilities. Among the hills on the horizon, just beyond a wooded “protected” zone, are the Garden Cities, housing workers.

ists, financiers, and artists work in the great skyscrapers of the city center, “clothed in a dazzling mirage of unimaginable beauty (Fig. 8). Other activities, like those in Benoit-Lévy’s hamlets, are carefully segregated in the surrounding outskirts. The planning of the residential quarters further enforces the rigid hierarchy of physical and social stratification. Workers and subordinates, “their destinies . . . circumscribed within the narrower bounds of family life,” live in garden cities; the professional elite reside close to the city center.⁶⁶ The urban plan, as rationally determined as the Taylorist plant, does embody a new social order, but inequities in income, habitation, and work conditions remain. For the Taylorists, efficiency—not equality—was the means to social renewal.

L’Esprit Nouveau was unabashedly oriented towards Le Corbusier’s future tower occupants. An editorial statement described syndicalism (the French trade union movement) and Bolshevism as being

under the tragic aspect from which one must not miss seeing the pathetic attempt at a needed re-establishment of values, necessitated by persisting monstrous anomalies such as war and the arms race.

In contrast, the *esprit nouveau* was

created by faith in the possible organization of all factors of progress; the prodigious intellectual effort of the period has created an elite of marvelous fecundity; an elite which has yet to find a place in the social machinery or in the government and which is dying of hunger.⁶⁷

The review aimed, as the editors reiterated on numerous occasions, to address these leaders, to provoke “an indispensable connection between the elites”—an appeal they shared with the Saint-Simonian *Producteur*. Although this publication differed

from *L’Esprit Nouveau* in its syndicalist orientation and its aim to destroy the “financial plutocracy,” Le Corbusier and Ozenfant included it in *L’Esprit Nouveau*’s list of recommended publications and called it essential for their readers.⁶⁸ At least one of the *Producteur*’s writers, the economic theorist Francis Delaisi, also contributed to *L’Esprit Nouveau*. Le Corbusier had hoped that Delaisi would write the last chapter of *Urbanisme*, “Finance and Realization.”⁶⁹

Concomitant with this elitist orientation was a preoccupation with ends, not means; an emphasis on material results, not parliamentary procedures. For the Taylorists, decisions were based on science and rationality; participation and abstract rights were irrelevant in the face of expertise. Throughout *L’Esprit Nouveau*, Le Corbusier alternated between naïvely wishing for implementation and urging authoritarian control. Colbert, Louis XIV, Napoleon I, and Haussmann were proposed as the heroes of Paris. The concluding plate of *Urbanisme* shows Louis XIV commanding the building of the Invalides, and the caption underneath reads:

Homage to a great town planner. This despot conceived immense projects and realized them. Over all the country his noble works still fill us with admiration. He was capable of saying, “We wish it,” or “Such is our pleasure.”⁷⁰

Aware of the possible negative connotations, Le Corbusier added in parentheses “this is not a declaration of the ‘Action Française,’” thereby disclaiming any connection to Charles Maurras’ royalist group.⁷¹ In a later proposal for a statue in a working-class neighborhood the architect reconciled his technocratic and authoritarian tendencies by placing casts of his monarchical heroes on a pedestal composed of various automobiles. But simultaneously

he asserted, though not convincingly to his contemporary critics, that his demands for radical expropriation and indemnification were “within the bound of practical politics” and “possible under our own democracy.”⁷² Georges Benoit-Lévy, the President of the French Garden City Association, had fewer hesitations about expressing the authoritarian strain underlying much of the rationalist doctrine of the town-planning movement.

The inadequacy of a democratic regime in such affairs can easily be pointed out. One regrets the absence of a Napoleon III, ordering the conservation of open spaces, of the forts and fortifications, or a Haussmann who commanded for 17 years at the Hôtel de Ville. One regrets the absence of a Mussolini, telling the Mayor of Rome: “Governor, in five years I will have razed the entire heart of the old city and the model city of Rome-Ostia will have been built.”⁷³

Echoes of frustration with the parliamentary government of the Third Republic were, in fact, heard throughout French society. In the mid-twenties the rampant inflation and severe market fluctuations, the general legislative paralysis, and the lingering sense that the Great War demanded profound if undefined alterations all contributed to the anti-parliamentary overtones manifest in the resurgent popularity of the Action Française. Even a radical sympathizer such as Hertz complained in his series “Balbutiements de l’esprit politique” of the displacement of “esprit politique” with “esprit politicien.” Despite the victory of the Cartel des Gauches in 1924, Hertz saw universal suffrage as an embodiment of politicians’ opportunism and therefore mistrusted it.⁷⁴ Almost all political groups voiced in some variation Le Corbusier’s demand for a stronger executive. For those

on the right, there was the promise of a more rigidly hierarchical and stable social order; for those on the left, the potential triumph, in Max Weber's terms, of the rationalizing bureaucrat who upheld the public good over capitalistic individualism. Le Corbusier shared this ideal of a "man of good will" but also the conservatives' strong yearning for order.

Accompanying these authoritarian tendencies were somewhat ambivalent attitudes in *L'Esprit Nouveau* towards the family and its importance to social equilibrium. Le Corbusier's proclamations of the house as a "machine-for-living," his rejection of the hearth and dining table as formal foci, and his choice in Ville Contemporaine to design the central business city rather than the family-oriented garden city suggest a disdain for, or at least indifference to, the French devotion to family life. In his article "Mass-Production Houses" Le Corbusier made it clear that serial production and Taylorism inevitably demanded the destruction of certain values based on tradition in the interests of efficiency:

The house will no longer be an archaic entity, heavily rooted in the soil by deep foundations, built "firm and strong," the object of the devotion on which the cult of the family and the race has so long been concentrated.⁷⁵

This challenge to traditional notions of "maison," "famille," and "patrie" was exaggerated in the minds of Le Corbusier's critics by *L'Esprit Nouveau's* interest in psychoanalysis and sexuality. Libertine literature was often reviewed favorably; André Gide's *L'Immoraliste* called "a very beautiful book filled with the most diverse virtualities."⁷⁶

But Le Corbusier did not reject the family outright; he only discarded some of its forms and customs. In fact, like most of the garden city planners, he upheld the Proudhoninian ideal of the family as the primary structural unit and as a model for other social relationships.⁷⁷ Part of Le Corbusier's argument for standardized architecture, paradoxically, was based on the preservation of this dimension of the status quo:

his town, his street, his house or his flat . . . hinder him [man] from following in his leisure the organic development of his existence, which is to create a family and to live, like every animal on this earth and like all men of all ages, an organized family life. In this way, society is helping forward the destruction of the family, while she sees with terror that this will be her ruin.⁷⁸

As with Le Corbusier's polemical juxtaposition of the Parthenon and the automobile, his discussion of social structure

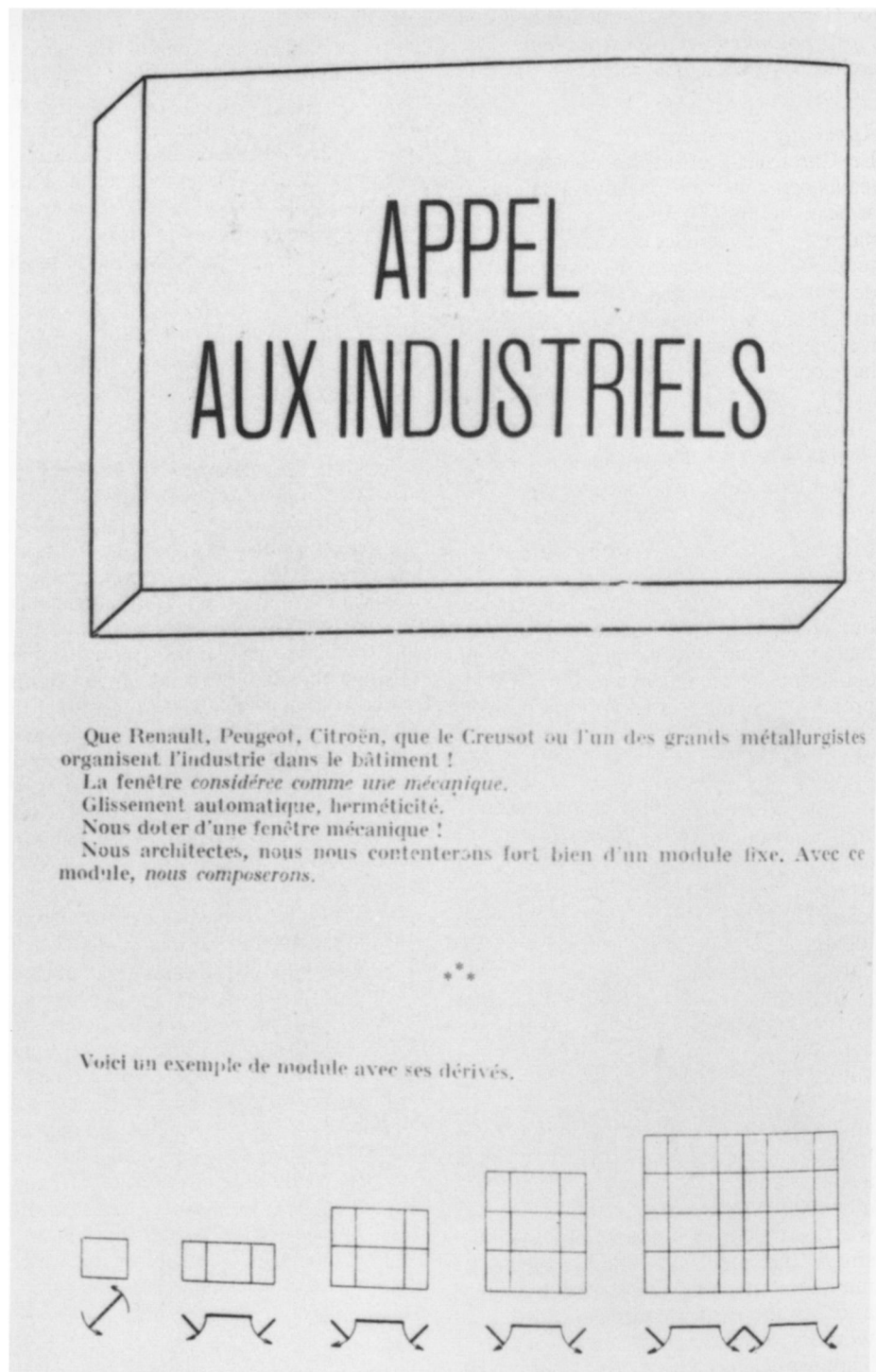


Fig. 9 A page from *L'Almanach d'architecture moderne* (1925), the catalogue of the *Esprit Nouveau* pavilion.

combined progressive and traditional viewpoints. He was at once willing to uproot the "firm and strong" French family traditions while upholding the benevolent paternalism long characteristic of the French housing-reform movement. The technologically innovative Ville Contemporaine channeled social interaction to fit patterns of social hierarchy and family structure. Any changes in social order resulted primarily in benefits for the progressive cadre of modern industrial society. Lacking in his technocratic world view was any concept of improving the condition of the

poorest sectors of society per se.

As in many of the Americanist visions of social reform, there is in Le Corbusier's view a blurring of distinctions between right and left. He denied the existence of class struggle and simultaneously demanded major transformations in international policy and property ownership. It was a position that purported to transcend political categories; yet, in contrast to the apolitical cast of Beaux-Arts academicism (involving the passive endorsement of the status quo), it was deeply engaged in social and political issues. For Le Corbusier, as

for Hertz, there was a distinction between *esprit politicien* and *esprit politique*. The architect's professional role might exclude the former, but not the latter.

Appel aux industriels

Le Corbusier's efforts to implement his technocratic vision were naïve and scattered at best. Believing profoundly in the rationality and universality of both his architectural and social ideas, he assumed that demonstration of his program would in itself generate wide-scale acceptance and realization. Like Henry Ford, he might have declared:

I am quite certain that it is the *natural code* and I want to demonstrate it so thoroughly that it will be accepted, not as a new idea, but as a natural code.⁷⁹

Most of Le Corbusier's writings, theoretical projects, and exhibitions in the twenties were devoted to just such a demonstration, but unlike Ford, he had at that time no factory or industrial enterprise to prove the economic or technical feasibility of his premises. As the *Esprit Nouveau* pavilion so clearly reveals, his *maison types* were polemical statements, not actual realizations of mass-production procedures. The modular storage units, streamlined bicycle stair, and factory-type windows were all custom manufactured. Perhaps most ironic were the specially made copies of Maples's leather club chairs: the market models were too large for Le Corbusier's new "standard" doors.⁸⁰

Beyond the Parisian artistic milieu, most of Le Corbusier's social and professional contacts were with industrialists and innovators in the business world. After the collapse of his own short-lived industrial endeavors, he envisioned himself as a detached "technical" advisor. His "appel aux industriels," the slogan of *L'Almanach d'architecture moderne* (1925) (Fig. 9), was a mixture of flattery, demand, and simple example. His letter to the glass-manufacturing company Saint-Gobain, after its failure to realize his project for workers' housing near their factory at Thourotte, is typical of this presumptuous approach:

I am sending you a copy of No. 13 of the magazine *L'Esprit Nouveau* which contains an important article on mass-produced housing, under my pseudonym, Le Corbusier-Saunier. When I did a project at your request, for Thourotte, I was sorry that the program which was given to me did not permit me to put forward ideas similar to those contained in this article. Those ideas appear subversive today and yet they will be current practice tomorrow.⁸¹

In particular, Le Corbusier courted automobile manufacturers, whom he saw as

most likely to be sympathetic to standardization and mass production. He named the prototype Citrohan-house (1920–22) after the automobile manufacturer André Citroën,⁸² and in 1925 he honored Gabriel Voisin with the name of his plan for Paris, after Peugeot and Citroën had rejected his requests for financial support.⁸³ Earlier, in the second issue of *L'Esprit Nouveau*, he had praised the prefabricated "Maison Voisin" as "light, flexible, and strong"; its resident as "animated by 'l'esprit nouveau.'" ⁸⁴ The Voisin firm donated 25,000 francs towards the construction of the *Esprit Nouveau* pavilion, and both Voisin and Mongernon, the director of *Aéroplanes Voisin*, attended the opening ceremony of the pavilion. Even the advertisements in *L'Esprit Nouveau* for industrial products—Ingersoll-Rand cement guns or Roneo metal doors—often designed by Le Corbusier, served as "appels aux industriels." Only once in the twenties, however, was Le Corbusier able to persuade an industrialist to build standardized low-income housing; the sugar manufacturer Henri Frugès commissioned him to design 135 workers' residences at Pessac, a small town outside Bordeaux (Fig. 10). There, Le Corbusier was able to construct a few of his prototype designs and use some of the products and techniques, if with only occasional success, advocated by *L'Esprit Nouveau*.⁸⁵

Le Corbusier's appeals for mass production, reflecting the American tendencies of the period, were directed predominantly to private industrialists, not public officials. He had contacts with both Anatole de Monzie, Herriot's Minister of Public Education and the Arts, and Louis Loucheur, who had become Poincaré's Minister of Commerce in his reshuffled cabinet of March 1924. De Monzie supported the construction of the *Esprit Nouveau* pavilion, and his mother was one of the original clients of the villa at Garches. Loucheur had

helped solve some of the legal problems surrounding Pessac. But the government hardly appeared to Le Corbusier as a source of innovation. He considered the H.B.M. (Habitations à bon marché) complexes, built of masonry construction with traditional apartment plans, to be "slums."⁸⁶ Furthermore, the Chamber of Deputies had not succeeded in passing any major housing legislation until 1928. In contrast, Michelin et Cie., one of the first French companies to introduce Scientific Management, had constructed by 1925 a large-scale workers' housing complex at Clermont-Ferrand, using methods of Taylorism and mass production.⁸⁷ The Voisin plant developed the transportable *Maison Voisin*, using airplane technology, and Louis Renault, though more conservative in his construction techniques, sponsored a considerable amount of working-class housing.⁸⁸

Redressement Français

One of Le Corbusier's most important industrial contacts was with Ernest Mercier and his organization *Redressement Français*, and his participation with this organization perhaps best exemplifies his technocratic stance during the nineteen-twenties. For Le Corbusier, Mercier, the managing director of France's leading utilities company and later president of the *Compagnie Française des Pétroles*, was representative of the new elite that he envisioned leading France, a man "capital et général."⁸⁹ In the midst of the critical financial crisis of 1925, Mercier decided to initiate a movement for general reform that would enlist the "directing classes" of the nation. Called the *Redressement Français*, it sought to overhaul the Third Republic along technocratic lines through a dynamic economy premised on mass production and a government headed by experts. Mercier had just visited the United States and was convinced that the future of France depended on following the Ameri-

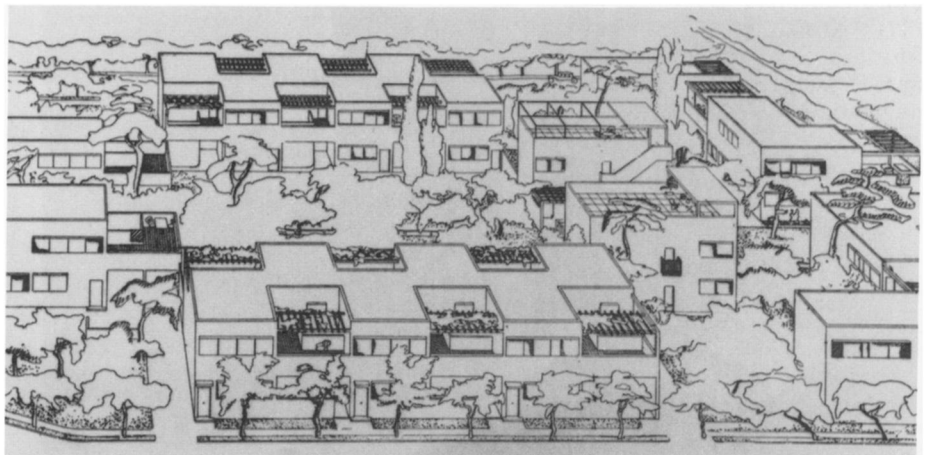
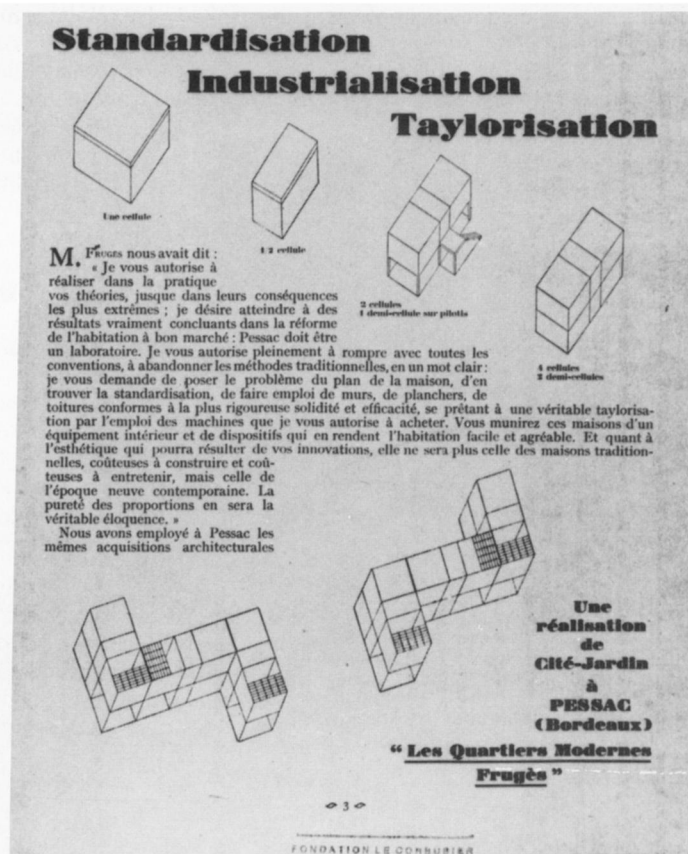


Fig. 10 Le Corbusier, Quartiers Modernes Frugès, Bordeaux-Pessac, 1924. In the later editions of *Vers une architecture* Le Corbusier includes the Pessac project as an illustration of "Mass-Production Houses." The first edition of the book, Le Corbusier claims, inspired Henri Frugès to commission him to construct workers' housing.



Figs. 11 and 12 Le Corbusier, *Pour bâtir: standardiser et tayloriser*, Supplement au Bulletin du Redressement Français, May 1, 1928.

can economic model. The appointment of Hoover as Secretary of Commerce had added potency to that nation's image as the bearer of standardization and the eliminator of waste. Mercier embraced the Taylorist belief in enlightened industrial production as a weapon against social injustice and indeed hoped for the victory of "Ford over Marx." The Redressement's slogan was "Enough politics. We want results."⁹⁰

The organization quickly gained a sizable following, and in 1926 it began publishing a monthly *Bulletin*. On the cover was a symbol of national regeneration, a wounded Gaul rising from the earth to rejoin the battle. Inside were articles analyzing current events and reporting on organizational news. Some 25,000 to 30,000 copies of the periodical were distributed without charge to France's ruling elite. The Redressement enlisted various "men of action"—journalists, lecturers, professionals—to contribute to the *Bulletin* or to participate in its study committees, which produced a series of reports, the *Cahiers*. Among its most distinguished members were Marshal Foch, Etienne Clementel, the syndicalist spokesman Hubert Lagardelle, the executive Edmond Giscard d'Estaing, and the Conseil d'Etat member Raphael Alibert.⁹¹

Le Corbusier was enlisted to participate on an urban study committee.⁹² From its inception the Redressement maintained that housing was the major problem of the Parisian working class. Lucien Romier,

the movement's primary spokesman and a patron of C.I.A.M., feared that the miserable dwelling conditions made many residents ripe for Communist propaganda. In the first series of the *Cahiers*, published in 1927, Jean Leveque and J.-H. Ricard wrote on housing and Henri Prost and Gaston Monsarrat on urban planning.⁹³

Le Corbusier contributed two pamphlets, which were published as supplements to the February and May 1928 *Bulletin: Vers le Paris de l'époque machiniste* and *Pour bâtir: standardiser et tayloriser*.⁹⁴ As their titles suggest, these reports were among Le Corbusier's most explicit espousals of technocratic doctrine.

The first report elaborates the ideas of Plan Voisin. In contrast to his earlier publications, however, there are neither photographs nor drawings: only functional and economic arguments—with limited quantitative support—for the reconstruction of Paris and the development of mass-produced housing in garden cities. Le Corbusier criticizes a recent proposal for a new transportation route extending the Grand Voie along the axis of the Champs Elysées because it ended in a cul de sac, the Tuileries Garden. Any effective solution to modern traffic conditions, he argues, requires more significant transformation; he proposes instead a major new cross artery further north, as in Eugène Hénard's scheme of 1904 and his own Plan Voisin. He reiterates his argument for quadrupling the density of central Paris, while reserving

85–95 per cent of the land for vegetation. In this document for technicians, he makes no reference to the aesthetic possibilities of the new business quarters; the industrialization of construction, not classical tradition or Platonic purity, becomes the sole justification for aesthetic decisions:

The consolidation of blocks reintroduces an *orthogonal system* and permits the application of standardization, industrialization, and Taylorization to building.⁹⁵

The same tone characterizes the architect's critique of the picturesque garden cities, such as Suresnes and Stains, that were being built around Paris. The "mystique" surrounding "la petite maison," he claims, is a major inhibition to industrialization: "the effect is to establish vehement opposition to all attempts to change the concept of both the overall organization and the details of garden cities and workers' houses." One's model for emulation instead should be Ernst May's 4,000 dwellings in Frankfurt, which were the result of a "remarkable industrial process."⁹⁶

This advocacy of *Neue Sachlichkeit* is given further force, and also an autocratic slant, by the inclusion in the *Bulletin* of specific legal recommendations. Among them were a law giving the state unrestricted eminent domain with the purchasing price fixed at current market value and a dictate establishing a new "authority" with powers surpassing traditional

ministerial jurisdiction to implement the urban program. This authority, a modern Colbert, would stand apart from parliamentary politics "to work out the future." "The breadth of his vision would be the greatness of the country."⁹⁷

In the second pamphlet Le Corbusier demonstrates the results of standardization and Taylorization with photographs and drawings of his projects at Stuttgart and Pessac (*Figs. 12 and 13*). With the exception of the temporary Esprit Nouveau pavilion, these two projects were his only executed designs for prototypical housing. This *Bulletin* supplement is again much more specific in its technical details than were Le Corbusier's earlier contributions to *L'Esprit Nouveau*. Unlike his article of 1921, "Maisons en série", which included only diagrammatic plans and rough perspective sketches, *Pour bâtir: standardiser et tayloriser* demonstrates various assemblages of room unit types and gives dimensions of structural components. It concludes with a demand for action:

In order to BUILD: STANDARDIZE to be able to INDUSTRIALIZE AND TAYLORIZE

... That is the most urgent program of town planning.

One must begin at the beginning!⁹⁸

At this point Le Corbusier, like most of the members of Redressement Français was still confident that this program could occur within the framework of the Third Republic. Indeed, the victory of the Union Nationale in April 1928, to which the Redressement had strongly contributed, and the passage of the Loucheur Law later that summer gave, for the moment, some grounds for this optimism. The housing bill, which the Redressement claimed as "the pure and simple application of our ideas," provided public aid for the construction of 200,000 low-priced and 60,000 medium-priced dwellings and was successful in instigating an unprecedented building boom all over France.⁹⁹ Le Corbusier himself probably again saw an ally in Loucheur, who as a leader of the Gauche Radicale party became the parliamentary floor spokesman of the Redressement. In an article for the *Revue des Vivants*, August 1928, Le Corbusier expressed his optimism about the new law:

This certainly had to happen one day! The Loucheur Law (which was suggested for the first time in 1922) places the country in the face of a gigantic, magnificent, and sensitive problem, if the spirit would seize it, enlighten it, and stir it to give France a historic renown, in the way that the works achieved by the Middle Ages, by Louis XIV, by Napoleon, by Haussmann have become historic.¹⁰⁰

1930, *Architecture and Revolution*

During the next two years, however, Le Corbusier lost his faith in the capacity of the Third Republic to rejuvenate itself. The Loucheur plan had not solved the social crisis: no rational urban plan or commitment to industrialized production had emerged. Rather, as Alexander Werth, the Paris correspondent for the *Manchester Guardian* observed, it "transformed much of the country round Paris into a mass—an incoherent mass—of ugly red-roofed suburban houses and villas."¹⁰¹ After more than a decade of research and proselytizing, Le Corbusier became convinced that his earlier answer to "Architecture or Revolution" had been incorrect. Ironically, the reassessment of his stance was the result of the same professional attitude:

By a strictly professional route I arrive at revolutionary conclusions.

Since I am a professional man, I make plans according to my professional concepts; this is where my judgment is good. If everyone did the same thing and the plans were coordinated by an authority in charge of the public interest, the result would, of course, be a Five-Year Plan, impossible to implement. Impossible because of our present social system! So now what?

Now what? Dilemma. The present social system preserves the status quo, opposes any action, eliminates or rejects proposals both pressing and necessary in the public interest. . . . Let's change the system.

Such an act would be called revolutionary. There are those who would make the word "revolutionary" mean "destructive."

Untrue; it is a completely constructive point of view.¹⁰²

Now, his plea was "Architecture and Revolution."¹⁰³ A more activist stance, one that would soon lead to his participation in the Regional Syndicalist movement, was required.¹⁰⁴ This movement, emphasizing regional groupings and natural hierarchies based upon climate, topography, and race, encouraged a more limited endorsement of technology. Instead of standardization and uniformity, these latter-day syndicalists stressed regional diversity and local traditions. Likewise, Le Corbusier in his own designs, particularly for the small houses Errazuris, Mandrot, and Mathes, began to employ local building materials and techniques. Just as the rational, geometric forms of the twenties were a manifestation of his faith in technology and American systems of Scientific Management, the rustic, more primitive works of the thirties were a rejection of the supremacy of this selfsame viewpoint.

The American stock market crash was a crushing blow to Le Corbusier's techno-

cratic ideals. In 1931, under a photograph of Wall Street he placed the caption "All is paradox, disorder; the liberty destroying collective liberty. Lack of discipline."¹⁰⁵ Both formal disarray and financial disaster resulted from the lack of a collective sensibility. The conditions of the Depression had undermined the faith of many French intellectuals in the American industrial utopia. Fordism and Taylorism no longer seemed such certain means for obviating class tensions once the prospects of abundance were in doubt; and with Hoover, the Great Engineer, impotent in the face of national disaster, the mystique of the managerial elite was shattered. The disillusionment with technocracy had almost immediate repercussions on French economic and political life. Tardieu, the Saint-Simonian hero, failed to obtain a parliamentary majority for his five-year program for economic modernization and technocratic streamlining, and he soon repudiated his association with the "leftist" Redressement.¹⁰⁶ The movement itself had lost its dynamism. With France's own ensuing depression, the renaissance of Saint-Simon came to its end.

In certain respects the reaction to the crash and the subsequent disillusionment with Taylorism and Fordism reflected the superficial hold that the technocratic vision had had on French society. The repeated calls for Taylorism had led to little practical commitment. Herriot's pleas in 1919 for a technologically advanced "fourth republic" and Clementel's efforts to formulate a model for industrial administration in a Fédération des Syndicats encountered resistance from politicians and businessmen who wanted to return to the security of their prewar practices.¹⁰⁷ The call for a technocratic elite premised on production, although it had a precedent in the two Napoleonic eras, was threatening to the traditional European classes—the aristocracy, clergy, army, academicians, and even civil service personnel—who were concerned only with self-preservation and the maintenance of their fossilized institutions. As Gramsci argued in his essay on "Americanism," rationalization of production was essentially irreconcilable with European "tradition" and "civilization," which he saw as intrinsically linked to the existence of a parasitic class with essentially no function in production. Despite its pervasiveness, Americanism was in the face of France's long-standing historical and artistic structure "as strident and jarring as the make-up on the face of an aging *femme du monde*."¹⁰⁸

Le Corbusier's own fate was symptomatic of the deep resistance to the actual implementation of rational productive methods. The French government had ignored his urban plans and proposals for land reform; private industry failed to develop standardized construction practices;

Pessac, his one mass-housing project, stood empty for five years as local officials refused to grant an occupancy permit; and finally, the jury of the League of Nations competition awarded the commission to four academic architects, who enshrouded Le Corbusier's own proposal in masonry construction and historicist details. Léandre Vaillat's comments on the *Esprit Nouveau* pavilion were typical of the suspicion that many Frenchmen had of Le Corbusier's advocacy of the mass-produced dwelling, the "house-tool":

If this pavilion is in the author's intention a demonstration to teach the public, which has forgotten it, the supremacy of construction over ornament, then I approve of it, with the reservation that none of this is so new that one wishes it affirmed for us; but if he intends to persuade us, with a forcefulness that has nothing persuasive about it, that a house is a "machine for living," no. A house is not a factory where one works and where, in order to earn a little paper money, one performs a few mechanical gestures, always the same. A house, to be sure, must be answerable to logic, reason, and good sense, and we find, thank God! enough of these qualities in our national and regional traditions, without seeking them in German-Swiss rationalism.¹⁰⁹

Critics, forever aware of Germany's industrial superiority, often condemned efforts to implement Scientific Management as not French. Indeed, Walter Rathenau, Germany's Minister of Reconstruction and one of Europe's most significant thinkers on industrial organization, had contributed an article in the midst of reparations anxiety to *L'Esprit Nouveau* "Critique de L'Esprit Allemand."¹¹⁰ The *Figaro* writer Mauclair, elaborating on de Senger's argument, related the anonymity and regularity of Le Corbusier's mass-produced architecture to the objectives of Bolshevism. Both wanted to destroy man's spiritual core: to reduce the Frenchman to an "animal géométrique."¹¹¹

To some extent, however, Le Corbusier's failure to attain a mass-produced architecture was his own. Like Mercier, he hardly chose the most effective means of exerting his influence. His hope to influence policy decisions while maintaining independence from politics was naive. Technicians and architects had been effective functioning as officials or advisors within the government—for instance, Ernst May in Frankfurt or Henri Sellier in Paris and Suresnes—but Le Corbusier naïvely believed that he could shape government policy simply by offering unsolicited advice. The leadership of the Republic, responding to a much larger constituency and one that was often hostile to innovation, had little reason to initiate either Le

Corbusier's or the Redressement's reforms. Mercier admitted his failure, but attributed it, in language reminiscent of his colleague, to the public's insensitivity to "wisdom, moderation, prudence, and disinterestedness." As Kuisel points out, Albert Thiabaudet gave another more convincing explanation for the technocrats' failure to achieve reform: Neo-Saint-Simonianism, he claimed, had allied itself too strongly with the defense of economic interests to speak with authority as a broad ideological movement.¹¹²

For Le Corbusier as an architect, the detachment from party politics was perhaps a special temptation. Visions of industrial utopia, unlike Marxism, offered both the promise of social redemption and a means by which to continue to practice one's art. Although by 1930 Le Corbusier's faith in America's model of industrial productivity was shaken, the search for this dual goal was to persist. The new ideology of production had changed the architect's conception of his social role; housing, urban planning, and modern construction methods are in part the legacy of the perished hopes of the 1920s.

Notes

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- 1 "Beyond the Modern Movement," *The Harvard Architecture Review* no. 1 (Spring 1980) 6; Charles Jencks, *The Language of Post-Modern Architecture*, 3rd ed., New York, Rizzoli, 1981, p. 37. These critiques are directed at the Modern Movement as a whole.
- 2 Reyner Banham, *Theory and Design in the First Machine Age*, 2nd ed., New York, Praeger Publishers, 1960; Colin Rowe, "The Mathematics of the Ideal Villa," *The Mathematics of the Ideal Villa and Other Essays*, Cambridge, Mass., MIT Press, 1976, pp. 1–27; William Curtis, "Ideas of Structure and the Structure of Ideas: Le Corbusier's Pavillon Suisse, 1930–1931," *Journal of the Society of Architectural Historians* 40, no. 4 (December 1981), pp. 295–310.
- 3 See in particular Maximilien Gauthier *Le Corbusier ou l'architecture au service de l'homme*, Paris, Editions Denoël, 1944; Stephen Gardner, *Le Corbusier*, New York, Viking Press, 1974; Peter Blake, *The Master Builders*, New York, Alfred A. Knopf, 1960. Henry-Russell Hitchcock's *Architecture:*

Nineteenth and Twentieth Centuries, Baltimore, Penguin, 1971, and Sigfried Giedion's *Space, Time, and Architecture*, Cambridge, Mass., Harvard University Press, 1967, largely ignore the political implications of Le Corbusier's work. Charles Jencks's biography, *Le Corbusier and the Tragic View of Architecture*, Cambridge, Mass., Harvard University Press, 1973, after a brief recapitulation of Le Corbusier's contradictory political positions, dismisses his "quasi-fascism" on the grounds of artistic purity. In recent years, however, several scholars have begun to explore more extensively Le Corbusier's political connections. See especially Robert Fishman, *Urban Utopias in the Twentieth Century: Ebenezer Howard, Frank Lloyd Wright, and Le Corbusier*, New York, Basic Books, 1977; Jean Louis Cohen, "Le Corbusier and the Mystique of the U.S.S.R.," *Oppositions* no. 23 (Winter 1981), pp. 85–121; Giorgio Ciucci, "A Rome con Bottai," *Rassegna* 2, no. 3 (July 1980), pp. 66–71; Thilo Hilpert, *Die Funktionelle Stadt Le Corbusier's Stadtvision—Bedingungen, Motive, Hintergründe*, Brunswick, Vieweg, 1978.

4 Blake, *Master Builders*, p. 109.

5 Le Corbusier, *Urbanisme*, Paris, Editions Crès, 1925; reprinted in Paris, Vincent, Fréal, 1966. Translated into English by Frederick Etchells in Le Corbusier, *The City of Tomorrow and Its Planning*, London, John Rodker, 1929; reprinted in Cambridge, Mass., 1971, p. 301.

6 Judith A. Merkle, *Management and Ideology*, Berkeley, University of California Press, 1980, pp. 14–15.

7 An important source for this account of Taylorism and, in particular, its ideological implications in Europe is Charles S. Maier's excellent article, "Between Taylorism and Technocracy: European Ideologies and the Vision of Industrial Productivity in the 1920s," *Journal of Contemporary History* 5, no. 2 (1970), pp. 27–61.

8 Henri Le Chatelier, *Le Taylorisme*, 2nd ed., Paris, Dunod, 1934, p. 2.

9 Paul Devinat, *Scientific Management in Europe*, Geneva, International Labor Office, 1927, pp. 233–37; Richard K. Kuisel, *Capitalism and the State in Modern France*, Cambridge, Cambridge University Press, 1981, pp. 31–35.

10 These statistics, prepared by the French Ministry of the Liberated Regions, are from William MacDonald, *Reconstruction in France*, New York, MacMillan, 1922, pp. 24, 28, 93.

11 Kuisel, *Capitalism*, pp. 54, 61.

12 Lt. Col. G. Espitallier, *Pour rebâtir nos maisons détruites*, Paris, 1917, p. 3, cited by Kenneth Silver, "Esprit de Corps: The Great War and French Art, 1914–1925," dissertation, Yale University, 1981, pp. 207–8.

13 Charles-Edouard Jeanneret and Amedée

- Ozenfant, *Après le cubisme*, Paris, *Commentaires*, November 15, 1918, pp. 11, 26.
- 14 Charles Faroux, "L'exemple industriel des Etats-Unis," *Revue des vivantes* 1, no. 9 (October 1927), p. 443.
 - 15 Marc Bourbonnais, *Le Neo-Saint-Simonianism dans la vie sociale d'aujourd'hui*, Paris, Les Press Universitaires de France, 1923.
 - 16 Le Corbusier owned six books by Dubreuil, several of which were warmly dedicated to the author. Dubreuil was an adjunct secretary of the French labor union C.G.T. (Confédération Générale du Travail). His best seller *Standards, Comment un ouvrier français a vu le travail américain*, Paris, Grosset, 1929, describes his largely positive reactions to workers' conditions under Taylorism, made after a trip to the United States. For Dubreuil, the essential difference between assembly line work and ordinary work was that in the former all the implements necessary for the worker lay at hand at the right moment, and that disorder associated with certain manufacturing processes was abolished.
Le Corbusier also had professional contact with Marshal Lyauty and Lucien Romier. Lyauty attempted to publicize Scientific Management in the French colonial army. In his *Sketchbooks*, vol. 1, Cambridge, Mass., MIT Press, 1981, p. 21, Le Corbusier praised Lyauty's sensitive modernization of Morocco. Lucien Romier was the primary spokesman of Redressement Français, an organization in which Le Corbusier was also involved. See the discussion, later in this article. Le Corbusier's library included Romier's work *Esquisse des conséquences du progrès*, Paris, 1929.
 - 17 Herve Lauwick, "Taylorisations," *L'Intransigeant*, April 16, 1923, p. 1; Henry Ford, *Ma vie et mon oeuvre*, Paris, Payot, 1925.
 - 18 Georges Bricard, *L'Organisation scientifique du travail*, Paris, Armand Colin, 1927, p. 201; Merkle, *Management and Ideology*, p. 154.
 - 19 See Devinat, *Scientific Management*; Henri Fayol, *General and Industrial Management*, trans. Constance Storrs, New York, Pitman, 1949.
 - 20 Charles E. Jeanneret to William Ritter, December 25, 1917, cited in Brian Brace Taylor, "Le Corbusier's Prototype Mass Housing, 1914-28," dissertation, Harvard University, 1974, p. 51.
 - 21 *L'Esprit Nouveau*, no. 20.
 - 22 For an excellent account of the Dom-ino project and Le Corbusier's activities during the war years, see Eleanor Gregh, "The Dom-ino Idea," *Oppositions* no. 15/16 (Winter/Spring 1979), pp. 60-87.
 - 23 Charles E. Jeanneret to William Ritter, October 1917, cited in Brian Brace Taylor, *Le Corbusier at Pessac*, Exh. cat., Harvard University, Cambridge, Mass. (in collaboration with the Fondation Le Corbusier, Paris), October-November 1972, p. 6.
 - 24 Since its formation in 1907, the Deutsche Werkbund had encouraged collaboration between progressive industries such as AEG and architects, including Hermann Muthesius, Peter Behrens, and Walter Gropius. The messianic hope in industrial methods is perhaps most clearly (and naively) expressed by Mies van der Rohe in the third edition of *G* (June 10, 1924): "I see in industrialization the central problem of building in our time. If we succeed in carrying out this industrialization, the social, economic, technical, and also artistic problems will be readily solved." ("Industrial Building," *Programs and Manifestoes on Twentieth-Century Architecture*, ed. Ulrich Conrads, Cambridge, Mass. MIT Press, 1970, p. 81).
 - 25 Banham, *Theory and Design in the First Machine Age*, pp. 220-46.
 - 26 Le Corbusier, *Vers une architecture*, Paris, Editions Crès, 1923; reprinted in Paris, Editions Arthaud, 1977. Translated into English by Frederick Etchells in *Le Corbusier, Towards a New Architecture*, London, John Rodker, 1927; reprinted in New York, Praeger, 1960, p. 211. The chapter "Mass-Production Houses" was originally published in *L'Esprit Nouveau* no. 13.
Loucheur (1872-1931) came from north-eastern France, where he had substantial holdings in the railroads serving the mining regions. Immediately following the war, he served as Minister of the Liberated Zones and led reconstruction efforts in the north. In 1920, he proposed with Bonnevey a law for the construction of 500,000 units of low-cost housing. Although rejected at the time, the proposal later became the basis of the 1928 Loucheur Law, which created the Habitations à loyer modéré (H.L.M.).
 - 27 Le Corbusier, *Towards*, pp. 215-18. I have included the reference to Taylorism from the French edition (p. 193), which Etchells omits from his translation. Etchells, perhaps given the general lack of knowledge about Scientific Management in Britain, sometimes omits passages referring to Taylorism.
 - 28 Le Corbusier, *Towards*, p. 231.
 - 29 Le Corbusier, *City*, p. 301.
 - 30 Le Corbusier, *Towards*, p. 247.
 - 31 *Ibid.*, pp. 268-69.
 - 32 *Ibid.*, pp. 247, 250.
 - 33 In 1926, twenty-five per cent of the Parisians lived in apartments averaging two residents per room; 318,000 people lived *en garni*, compared to 222,000 in 1912; and the tuberculosis mortality rate varied from 83 per 100,000 in the 8^e arrondissement to 1,247 per 100,000 in parts of the 4^e arrondissement (and to 4,263 per 100,000 in furnished hotels). During the twenties, nearly 1,000,000 people moved into the still semi-rustic suburbs, where squatter settlements without sewage or service facilities proliferated. The instability of the home mortgage market and construction industry exacerbated the housing problem. See Louis Loucheur, *Le Carnet secret*, 1908-1932, Brussels, Brepols, 1962, p. 145; Peggy A. Phillips, "New-Corporatist Praxis in Paris," *Journal of Urban History* (August 1978), pp. 413-14.
 - 34 Loucheur, *Le Carnet secret*; Phillips, "New Corporatist Praxis."
 - 35 Silver, "Esprit de Corps," pp. 206-9.
 - 36 Adolphe Dervaux, "Le Beau, le vrai, l'utile et la réorganisation de la cité," *La Grand Revue* 90, no. 584 (April 1916), p. 36.
 - 37 *La Cité Reconstituée*, May-July 1916, cited in Gregh, "The Dom-ino Idea," p. 83. As Gregh points out, the exhibition's emphasis on winning public favor for industrialized building methods, in order that reconstruction could proceed rapidly, economically, and on a large scale, is extremely similar to Le Corbusier's own position.
 - 38 Le Corbusier specifically attacks the pervasive "t-e-g-i-o-n-a-l-i-s-m-e!" in his chapter "Maison en Série," *Vers*, pp. 189-92 (again in a passage omitted by Etchells). Many of his articles later reprinted in *L'Art décoratif d'aujourd'hui*, Paris, Editions Crès, 1925; reprinted in Paris, Vincent, Fréal, 1959, are also aimed at countering this pervasive trend. For a general discussion of regionalism, see Gérard Monnier, "Un Retour à l'ordre: architecture, géométrie, société," in Université de Saint-Etienne, *Le Retour à l'ordre*, Paris, Spadern, 1975, pp. 45-54.
 - 39 This term is used by Maxime Leroy in his book *La Ville française*, Paris, Rivière, 1927, p. 37. Leroy, a university professor and former syndicalist, gave theoretical formation to the neo-corporatist town-planning movement. He sought a reestablishment of "community" in French cities, and saw corporations as the new "guilds" of French society. Henri Sellier, a syndicalist-socialist, was the most active member of the Parisian housing-reform movement. In the twenties, he was mayor of the new middle-class suburb Suresnes and acted as national secretary of the offices d'H.B.M. (Habitation à bon marché). During the Popular Front, he served as Minister of Public Health. Georges Benoit-Lévy, the president of the French Garden City Association, was one of the first to introduce the British garden city movement to the French. Louis Renault, the automobile manufacturer, was a national trustee in the H.B.M. program and built a significant amount of the workers' housing under this program and later under H.L.M. He saw housing as an answer to atheism and communism. Later he was involved in the production of armaments for the Nazis. Pierre Lhande was one of the chief spokesmen of social Catholicism in France and sponsored several "Catholic" garden cities. He considered these projects to be a way to "combat the scourge of hovels" and to "civilize and christianize" the working class.
Phillips's "New-Corporatist Praxis" gives a brief account of each of these figures and their neo-corporatist orientation. For a more extensive discussion of Henri Sellier and the Parisian public-housing movement, see Ginette Baty-Tornikian, *Architecture et*

- Social Democratie: Un projet urbain idéal typique: agglomération parisienne 1919–1939*, Paris, Institut d'Etudes et de Recherches Architecturales et Urbaines, Ministère d l'Environnement et du Cadre de Vie, C.O.R.D.A., 77 73 028 00 202 7501, n.d.
- 40 Georges Benoit-Lévy, *La Formation de la race*, Vichy, n.d., cited in Phillips, "New-Corporatist Praxis," p. 406.
- 41 Benoit-Lévy, *Paris s'entendu*, Nice, Société Générale d'Imprimerie, 1927, pp. 42–43; idem, *La Cité-jardin*, Paris, Jouve, 1904. *La Cité-jardin* predates the widespread introduction of Taylorism in France, but it relates directly to ideas of rationalization of production. Benoit-Lévy opened the text with a quotation from the Le Play's Saint-Simonian text, *L'Organisation du travail*. He argued for the need for "ville modèles" to accompany "ateliers models." For Benoit-Lévy's influence on Le Corbusier, see Paul V. Turner, "The Education of Le Corbusier: A Study of the Development of Le Corbusier's Thought, 1900–1920," dissertation, Harvard University, 1971, pp. 129–33.
- 42 Fayol, *Management*, p. 96. During the war, Le Corbusier studied at the Bibliothèque Nationale Alfred de Foville's *L'Enquête sur les conditions de l'habitation en France, Les Maisons Types*, Paris, 1894. The book, utilizing Foville's research with the Section des Sciences Economiques et Sociales du Comité des Travaux Historiques et Scientifiques of the Musée Social, is an early illustration of social engineering. In contrast to earlier academic studies such as Charles Garnier's *L'Habitation humaine*, the book proposes a new scientific and statistical approach to design; implicit is a notion of potential social reform. See Gregh, "The Dom-ino Idea," p. 82; Taylor, *Pessac*, p. 1.
- 43 Devinat, *Scientific Management*, p. 78; Dubreuil, *Standards*, pp. 10–11.
- 44 Le Corbusier published Perret's drawings for a concrete house in "Maison en Série" and Garnier's Cité Industrielle" in "Trois rappels à MM. les Architectes," *Esprit Nouveau* no. 4. Perret's drawings, however, were omitted in *Vers une architecture*.
- 45 Le Corbusier, *Towards*, pp. 263–64.
- 46 *L'Esprit Nouveau, revue internationale hebdomadaire d'économie* no. 1 (January 1921). This was the only issue of this review dedicated to the discussion of "Economie politique, Economie nationale, Economie internationale, Science et Industrie, Méthodologie." For a discussion of *L'Esprit Nouveau*, see Robert Gabetti and Carlo Olmo, *Le Corbusier e l'Esprit Nouveau*, Turin, Giulio Einaudi, 1975; Françoise Will-Levaillant, "Norme et forme à travers *L'Esprit Nouveau*," Université de Saint-Etienne, *Retour à l'ordre*, pp. 241–76. An adequate analysis of the social and political ideas of the review remains to be done.
- 47 N.D.L.R., note to R. Chenevier, "Wilson et l'humanisme français," *L'Esprit Nouveau* no. 11/12, p. 1223.
- 48 The postwar "call to order" is evident in both the political and cultural spheres. For a discussion of the conservative reaction on the cultural sphere, see Université de Saint-Etienne, *Retour à l'ordre*, and especially Silver's excellent article, "Purism: Straightening Up after the Great War," *Artform* 15, no. 7 (March 1977), pp. 56–63; also his dissertation, "Esprit de Corps."
- 49 Many of the strongest advocates of European economic integration were advocates of industrial modernization. Loucheur served as president of the French Pan-Europe committee, and was followed upon his death in 1931 by Mercier. Both were associates of Le Corbusier, as was the internationalist Paul Otlet, Le Corbusier's client for the Mundaneam. The Pan-Europe movement was founded after World War I by Count Coudenhove-Kalegi, a European nobleman of international ancestry. See Richard F. Kuisel, *Ernest Mercier, French Technocrat*, Berkeley, University of California Press, 1967, p. 73. For the broader world vision of French Taylorists, see Merkle, *Managment and Ideology*, p. 137.
- 50 Le Corbusier, "Nos moyens," *L'Esprit Nouveau* no. 27, in Le Corbusier, *City*, p. 140.
- 51 Ibid., pp. 147–48, 296.
- 52 Camille Maclair, *L'Architecture va-t-elle mourir? La crise du "panbétonnisme intégral"*, Paris, Nouvelle Revue Critique, 1933, p. 38.
- 53 The association of forms with national identity or patriotic allegiance was most common throughout World War I and the 1920s. Ozenfant in his article in *L'Esprit Nouveau* on Villa Schwob (1916) addressed this issue: "even nationalism has become mixed up with it and certain fine spirits have decreed that the straight line is German (witness the Pantheon, the Egyptian temples, and palaces of Gabriel). The straight line is one of the rights of man." (Julien Caron [pseudonym for Ozenfant], "Une Villa de Le Corbusier," *L'Esprit Nouveau* no. 6, pp. 679–704; Julien Caron, "Villa of Le Corbusier," trans. Joan Ochman, *Oppositions* no. 15/16 [Winter/Spring 1979] p. 187–97.) Later, in *Urbanisme*, Le Corbusier also disputes claims that the straight line is German, Le Corbusier, *City*, p. 23. See Silver, "Esprit de corps," for an extended and perceptive discussion of art and national identity during this period.
- 54 Erik Satie, "Cahiers d'un mammifère," *L'Esprit Nouveau* no. 7, p. 833.
- 55 R. Chenevier, "La Vie française," *L'Esprit Nouveau*, no. 6, pp. 705–14; idem, "Wilson et l'humanisme français," *ibid.*, no. 11/12, pp. 1223–30; idem "Ou même la politique anti-sovietique," *ibid.*, no. 9, pp. 1045–51.
- 56 *L'Esprit Nouveau*, no. 16, p. 1969; Henri Hertz, "Lenine," *ibid.*, no. 21.
- 57 *L'Esprit Nouveau*, no. 15, p. 1727. See also Hertz, "Wilson," *ibid.*, no. 22.
- 58 Alexander de Senger, *Le Cheval de troie du bolchevisme*, Bienne, Editions du Chandelier, 1931.
- The best discussion of de Senger's text, as well as of Maclair's *L'Architecture va-t-elle mourir?*, is still Gauthier's *Le Corbusier*. See also Jacques Gubler, *Nationalisme et internationalisme dans l'architecture moderne de la Suisse*, Lausanne, L'Age d'homme, 1975.
- 59 Le Corbusier, *Towards*, p. 261.
- 60 Paul Lafitte, "A propos de la Grand Crise," *L'Esprit Nouveau* no. 16, p. 1900.
- 61 Ibid., p. 1889.
- 62 Hertz, "Balbutiements de l'esprit politique III," *L'Esprit Nouveau* no. 24; Jean Lurçat, "Le Cartel des Indépendants," *ibid.*
- 63 Hertz, *L'Esprit Nouveau* no. 24.
- 64 Maier, "Between Taylorism and Technocracy," p. 38.
- 65 Le Corbusier, *Towards*, p. 254.
- 66 Le Corbusier, "La Grand Ville," *L'Esprit Nouveau* no. 23, in Le Corbusier, *City*, p. 102.
- 67 La Direction, "Ce que nous avons fait, ce que nous ferons," *L'Esprit Nouveau* no. 11/12, pp. 1212, 1213.
- 68 *L'Esprit Nouveau* no. 11/12, p. 1372; *ibid.* no. 10, p. 1202.
- 69 Francis Delaisi, "Faut-il émettre 150 milliards de billets de banque?" *L'Esprit Nouveau* no. 8, pp. 927–934; see also n. 43 above. Le Corbusier wrote in *Urbanisme*, p. 277, that he had hoped to give the chapter "Chiffres" to Francis Delaisi to write.
- 70 Le Corbusier, *City*, pp. 251–72, 302.
- 71 Le Corbusier, *Urbanisme*, p. 285. This phrase does not appear in Etchell's translation.
- 72 Le Corbusier, *La Ville radiieuse*, Paris, *L'Architecture d'Aujourd'hui*, 1935. Translated into English by Pamela Knight, Eleanor Levieux, and Derek Coltman, in Le Corbusier, *The Radiant City*, New York, Orion Press, 1964, p. 120; idem, *City*, p. 256.
- 73 Benoit-Lévy, *Paris s'entendu*, pp. 22–23. The translation is from Phillips, "New-Corporatist Praxis," p. 405.
- 74 Henri Hertz, "Balbutiements de l'esprit politique," *L'Esprit Nouveau* no. 21; "Balbutiements II," *ibid.* no. 22; "Balbutiements III," *ibid.* no. 24.
- Although Hertz found "impuretés" in the Radical Party, he believed that it was the only hope for a renewal of "l'esprit publique." Later Hertz wrote for the communist review *Europe*.
- 75 Le Corbusier, *Towards*, pp. 219, 245.
- 76 Paul Dermée, "André Gide," *L'Esprit Nouveau* no. 25.
- 77 The importance of Proudhon to the *L'Esprit Nouveau* group is expressed in R. Chene-

- vier's article "L'Esthétique de Proudhon," *L'Esprit Nouveau* no. 4, pp. 444–48.
- 78 Le Corbusier, *Towards*, p. 268.
- 79 Henry Ford, *My Life and Work*, New York, Arno Press, 1973, p. 3.
- 80 Le Corbusier, *L'Almanach d'Architecture Moderne*, Paris, Les Editions Crès, 1925, p. 145.
- 81 Taylor, *Pessac*, p. 7.
- 82 Le Corbusier, *Towards*, p. 222.
- 83 Le Corbusier, *City*, pp. 275–76.
- 84 L[e] C[orbusier] S[augnier], "Les Maisons 'Voisin,'" *L'Esprit Nouveau* no. 2, pp. 211–15.
- 85 For a detailed account of the development of this project, see Taylor, *Pessac*.
- 86 Le Corbusier, *Radiant*, p. 13.
- 87 Le Corbusier owned a copy of a brochure published by Michelin et Cie. in 1925, concerning their successful efforts to Taylorize the construction of a company housing complex built at Clermont-Ferrand. Le Corbusier and Pierre Jeanneret are said to have visited this complex (Taylor, *Pessac*, p. 24).
- 88 Louis Renault, like many of the industrialists, did work in conjunction with the government. Much of the housing that he sponsored was built under the H.B.M. program. But, as with many social reforms in the twenties, the initiation came from the private sector.
- 89 Le Corbusier to Bruya, October 11, 1932, Fondation Le Corbusier. Le Corbusier expressed his admiration of Ernest Mercier in his preface page to the 1963 publication of *The Radiant City*:
- Mobilization of the land for the common good (the Redressement Français has published this thesis).
- The President of the Redressement Français was Ernest Mercier, President of Est-Lumière (1928). He wanted to face his country with a crucial decision: to exploit the land of the nation. Thirty-five years have passed!!!
- At the conclusion of his work *Précisions sur un état présent de l'architecture et de l'urbanisme*, Paris, Editions Crès, 1930; reprint ed. Paris, Vincent Fréal, 1960, p. 249. Le Corbusier, under the title "Un Institut de France de l'époque machiniste," published excerpts of a letter to Lucien Romier, after Mercier, the most important figure in the Redressement. The letter, written in February 1928, expresses Le Corbusier's hope in this organization composed of "capitaines d'industrie." For other references in *Précisions* to the Redressement, see pp. 144, 176–77, 187, 190.
- 90 The account of Ernest Mercier and the Redressement Français is drawn from Kuisel's *Ernest Mercier*.
- 91 The *Esprit Nouveau* contributor Francis Delaisi worked on one of the first *Cahiers* series, *Echanges commerciaux*.
- 92 Le Corbusier, in his article "Réflexions à propos de la loi Loucheur," *Revue des Vivantes* année 2, no. 8 (August 1928), pp. 239–45, expressed many of the ideas resulting from his work with Redressement Français. In a footnote, p. 243, he referred to the urbanism study committee and its proposal of a law on the "recuperation of surplus value." See also his interview with Charles Kunstler, "Pourra-t-on bientôt se loger? Une enquête sur la loi Loucheur," September 27, 1928 (no reference, Fondation Le Corbusier).
- 93 *Bulletin*, June 19, 1928, cited in Kuisel, p. 86; H. Prost and G. Monsarrat, *L'Urbanisme*, Paris, Editions de la S.A.P.E., n.d.
- 94 Le Corbusier, *Vers le Paris de l'époque machiniste*, Rapport provisoire, *Supplément au Bulletin du Redressement Français*, February 15, 1928, 14 pp., idem, *Pour bâtir: standardiser et tayloriser*, *Supplément du Bulletin du Redressement Français*, May 1, 1928, 8 pp.
- 95 Le Corbusier, *Vers le Paris*, p. 6.
- 96 *Ibid.*, p. 11.
- 97 *Ibid.*, p. 14.
- 98 Le Corbusier, *Pour bâtir*, p. 8.
- 99 Kuisel, *Ernest Mercier*, p. 86.
- 100 Le Corbusier, "Réflexions à propos de la loi Loucheur," p. 239.
- 101 Alexander Werth, *The Twilight of France 1933–1940*, ed. D.W. Brogan, New York, Harper and Brothers, 1942, p. 4.
- 102 Le Corbusier, *The Radiant City*, p. 8.
- 103 Le Corbusier, "L'Autorité devant les tâches contemporaines," *L'Architecture d'Aujourd'hui* (September 1935), pp. 22–23; reprinted in *L'Architecture d'Aujourd'hui* no. 158 (May 1971), 87.
- 104 For a discussion of Le Corbusier's participation in this movement, see Fishman, *Utopias*, pp. 213–42; Mary McLeod, "Le Corbusier and Algiers," "Plans: Bibliography," *Oppositions* no. 19/20 (Winter/Spring 1980), pp. 55–85, 185–89.
- 105 Le Corbusier, "Descartes est-il américain?" *Plans* no. 7 (July 1931); translated into English in Le Corbusier, *The Radiant City*, p. 129.
- 106 Kuisel, *Ernest Mercier*, p. 87.
- 107 Maier, "Between Taylorism," p. 38.
- 108 This phrase of Luigi Pirandello (1929) is quoted by Antonio Gramsci in his essay "Americanism and Fordism," in *Selections from the Prison Notebooks*, ed. and trans. Quintin Hoare and Geoffrey Nowell Smith, New York, International Publishers, 1971, pp. 279–322. In this contemporary analysis, Gramsci argued that Americanism and Fordism in Europe did not constitute the beginning of a "new historical epoch" and that little had been actually changed in the "character of the relationships between fundamental groups."
- 109 Léandre Vaillat, "La Tendance internationale à l'exposition des arts décoratifs," *L'Illustration* no. 4313 (October 31, 1925), pp. 459.
- 110 Walter Rathenau, "Critique de L'Esprit Allemand," *L'Esprit Nouveau* no. 9, pp. 1093–1106. This issue came out in July 1921, just following the first Wiesbaden conference between Louis Loucheur and Walter Rathenau. Loucheur and Rathenau attempted to work out an agreement by which Germany would meet its reparation payments in German goods and workmanship. Twenty-five thousand houses made in Germany were to be erected in the devastated region. The plans called for a standardized house plan with concrete plaster double walls, the intervening space filled with compressed peat. The roofs, of slate or tile, were to be made locally; all other materials were to be provided by Germany. Although Rathenau's essay, written in 1918, makes no reference to this agreement, the publication of the article in the midst of a lively discussion in the French press and in parliament can be interpreted as an endorsement by Ozenfant and Le Corbusier of the proposal. Many feared that payment in kind, as opposed to money, was contrary to the Versailles treaty, and that the influx of German goods and workmen would result in a German "colonization" of a region that the German armies had only recently ravaged (MacDonald, *Reconstruction in France*, p. 253).
- 111 Maclair, *L'Architecture*, especially pp. 35–45.
- 112 Albert Thibaudet, *Les Idées politiques de la France*, Paris, Stock, Delamain et Boutelleau, 1932, pp. 66–68; *Bulletin du Redressement Français*, July 1932, p. 11, as cited by Kuisel, *Ernest Mercier*, p. 38. Kuisel's critique of Mercier was a source for my analysis of Le Corbusier's political ineffectiveness in the twenties.

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