FROM AUTOS TO ARCHITECTURE

Fordism and Architectural Aesthetics in the Twentieth Century

David Gartman
For my daughters Greta and Hanna—
to whom I leave these seeds of time past, in the hope that they
may help them cultivate a better future.

And again for my wife, Betty—
whose daily cultivations continue to give me hope.

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CONTENTS

Preface 6

1 Introduction:
The Problematic Aesthetics of Fordism 10

2 Modernism and the Model T:
The Misplaced Development of the Machine Aesthetic 24

3 Displaced Dreams of Wholeness:
The Depression-Era Retreat of Modernism 120

4 Efficiency and Fantasy:
The Bifurcated Architecture of Postwar Technocracy 190

5 Revolt Against the Machine:
The 1960s and the Death of Modernism 250

6 Disney Goes Downtown:
Post-Fordism, Postmodernism, and the Collapse of
Spatial Segregation 310

Index 396
NO NAME IS MORE EMBLEMATIC or evocative of the changes suffered by societies in the twentieth century than Ford. This mark of a man, a company, and a car was for much of the century the foremost sign of modernity, as both a promise and a threat. As the producer of the first affordable automobile, the Model T, Henry Ford promised to bring to masses of consumers the essential freedom of modernity—mobility. But as the father of mass production, he threatened to simultaneously enslave these masses in skillless, repetitive work along the assembly lines that produced their cheap vehicles of freedom. During the last century, the word “Fordism” came to stand for a new economic system that encompassed this contradictory couplet of autonomous consumption and heteronomous production. But, as the Italian Marxist Antonio Gramsci realized, it also stood for a new cultural system—new ways of thinking about, living in, and seeing the world—that sought to cope with, accommodate, and overcome the problematic schism at the heart of the Fordist economy. This study focuses on the effect of this contradiction on one part of the culture of Fordism—the art of architecture, one of the most important aesthetic pursuits in the new economy.

Fordism and the Visual Order
Fordism transformed the visual order and sensibilities of society through its revolutionary mass-production process, the defining principle of which was the subordination of all ends to the efficiency of means: what was produced was secondary to how it was produced. Cheap, quick production process required, above all, standardization of products. If automakers, for example, manufactured many models, their general-purpose machinery would have to be adapted to different models by highly skilled workers, who were not only expensive but also independent. Ford decided to produce one standardized, unchanging car, the Model T, allowing him to use specialized machines that required only unskilled workers. He built the pace of their labor into the machines themselves; especially into the assembly lines, which moved at a speed that gave workers a bare minimum of time to perform their tasks.

Ford's revolutionary production process took its toll on the aesthetics of early automobiles, however. The craft production process that preceded mass production had lavished hundreds of hours of skilled labor on car bodies, molding them into stylish, curving forms that were hand-varnished in a wide variety of colors. But the production of curved panels and varnish finishes was
INTRODUCTION

difficult to mechanize, so following the dictates of efficiency, not aesthetics, Ford body engineers designed a Model T that eliminated curves and chromatic variety. The result was a flat, rectilinear body mechanically painted in one color, black. And since there was little time along speeding assembly lines for the detail work of fit and finish, Model Ts were thrown together with abrupt transitions and crude joints, producing a crude, fragmented appearance.

By 1924, sixteen years after the Model T's introduction, Ford had flooded the world with ten million copies of this black, square, undecorated, fragmented car, comprising a full half of the autos existing on the planet. The visual impact of these cars alone on the American landscape was substantial, but it was increased exponentially by masses of other consumer goods—telephones, clothing, cameras, clocks, furniture, sewing machines, electric irons, dishes—that were similarly standardized and mass produced following Ford's model. Mass production created a new look that was synonymous with modernity, a look dominated by standardization, repetition, rectilinearity, and lack of ornamentation. It thus consolidated a visual order of efficiency and instrumentalism that had been emerging in the United States for some time.

The objects that increasingly dominated the vision of Americans in the 1920s announced loudly that they were tailored for use, not ostentation. Products were designed not for the aesthetic contemplation of the elite but for the efficient use of the masses. And the efficiency that these new consumer goods exuded was one not only of ultimate use but also of initial manufacture. If goods had to be stripped of decoration, curves, and color to produce them cheaply and bring their prices down to a level affordable for common folk, then so be it, as long as their usefulness was not impaired. Prosperity for all took precedence over beauty for the few. Thus, for many the appearance of these mass-produced cars and other products became symbolic of freedom and democracy, either as realized fact or idealized aspiration.

The visual order of Fordist instrumentalism was not confined to consumer goods but also spilled over into the built environment. The emerging economy of mass production and mass consumption demanded new spaces—new factories to produce commodities, new stores to sell commodities, new homes to consume commodities, and new roads to drive the quintessential commodity of Fordism, the automobile. To quickly and cheaply satisfy the voracious appetite of the new economy for commodified accommodations, many of these spaces were themselves mass-produced. New construction methods were invented that employed unskilled workers to quickly assemble standardized, factory-made materials into the new spaces of commerce. Not surprisingly,
then, these buildings often shared the instrumental look of mass production's most famous exemplar, the Model T. This was especially true of the factories of mass production such as Ford's Highland Park plant in Detroit, which was designed by industrial architect Albert Kahn (1869-1942) for no other end than to provide a bare-bones, efficient building-machine for the manufacture of the bare-bones, efficient automobile-machine. Like the Model T built in it, the plant was a rectilinear and largely undecorated repetition of standardized industrial parts.

Emergence of the Machine Aesthetic

It was to these American factories and the mass-produced machines coming out of them that European architects of the interwar period looked to create a new architecture, a modern architecture for the modern age. In 1923 the Swiss-born architect Charles-Édouard Jeanneret (1887-1965), who was known by the pseudonym Le Corbusier and would soon become a leader of the modern movement, embraced the mass production of housing, declaring the house a machine for living in that should be designed and manufactured like Ford's Model T. He illustrated his argument by printing photographs of automobiles and American factories, including Ford's Highland Park, declaring that the engineers who built them were the true artists of modern society. Their work exuded beauty and harmony because it was driven by the economic law of utility. American architects, on the other hand, worked in "styles," erecting historical souvenirs that wasted money and had no place in the efficiency-driven machine age.

Le Corbusier and other European architects thus used the instrumental look of mass production pioneered in the United States to develop a new aesthetic for modern architecture. Variously labeled the machine aesthetic, the International Style, or *Neue Sachlichkeit* (German for "new objectivity"), this architectural aesthetic eventually became almost synonymous with modern architecture. There were, of course, other architectural styles that also claimed the right to be called modern—expressionism, art deco, streamline moderne, etc. But by about 1950 advocates of the machine aesthetic had successfully monopolized the label. Their modernism mimicked the look of mass production in several ways, as can be seen in the photo of Le Corbusier's Villa Stein, built in 1927. Incidentally, the car in front is the architect's own, parked there specifically to emphasize the aesthetic similarities between the house and a mass-produced car. It is not a Model T, however, but a French car, a Voisin. Nevertheless, several similarities are evident. First, and perhaps most
obvious, is the house’s absolute absence of decorative detail—just flat, smooth, unadorned surfaces, as if it had been stamped out on Ford’s gigantic metal presses. Second, the Villa Stein, like the Model T, is insistently monochrome, but the single color is white, not black. White was the preferred color of many modernists, for it symbolized the pristine purity they were seeking and also made their forms stand out in the sunlight. Third, the lines of the house are rigidly rectilinear—even the roof is flat, in defiance of the traditionally peaked form. Finally, as in mass-produced sedans and the factories in which they were manufactured, the windows of the Villa Stein are arranged in continuous strips of glazed openings that wrap around the structure, interrupted only by supporting posts and mullions. This house is thus the epitome of a machine for living in, modeled on the most advanced production process in the world—American mass production.

Le Corbusier’s Villa Stein certainly looks mass-produced, but its looks are deceiving. The smooth, white, continuous facade looks like a monolithic frame of poured-in-place, reinforced concrete, the type European modernists praised in American factories like Ford’s Highland Park. But in reality it is composed of hand-laid brick and concrete block that was cemented, plastered, and painted to look like this industrial material. The Voisin car parked in the garage of the
villa was not mass-produced either. It is a luxurious, custom-made, highly finished vehicle that was designed by the architect André Noël-Lelmont. In Le Corbusier's France of 1927, as in most of the rest of Europe, industrial building materials were rather scarce, and mass-produced automobiles were absolutely nonexistent. The techniques of mass production pioneered in the United States in the first decade of the twentieth century had yet to be adopted in European industry by the end of the third decade. In Europe, mass production was not a reality but an aesthetic dream, an unrealized ideal.

While European modernists were dreaming of a future they had yet to achieve, American architects were dreaming of a past they had already surpassed. In the land where mass production was an established fact, there was no aesthetic movement that venerated the forms of the machine. During the same period in which Le Corbusier and other Europeans idealized the mass-produced Model T as a thing of beauty, Americans were ridiculing it as the epitome of ugliness. To be sure, Americans celebrated the mass-produced Model T, but for its low price and utility, not its beauty. As their incomes increased in the mid-1920s, more and more Americans traded their ugly, utilitarian Model Ts for autos with sleek, stylish curves and decorative embellishments that covered over all signs of standardized mass production. Similarly, American architects pioneered mass-production building techniques, but they generally concealed these under historic styles or organic ornamentation on all but the most utilitarian buildings. While the European avant-garde was exposing simulated machine forms as part of a movement to promote mass production, American builders and manufacturers were covering over the real look of mass production to please increasing demanding consumers. Thus, mass production as a cultural ideal and aesthetic did not emerge in synchrony with mass production as an economic system. In Europe the aesthetic considerably preceded the economy, while in America the aesthetic lagged decades behind, with modern architecture becoming influential only after the Second World War.

**A Class Model of Aesthetic Development**

This disjuncture between mass production and the machine aesthetic based on its products serves as a warning against accepting a simplistic reflection model of the relation between economy and culture. The history of architectural aesthetics in the early twentieth century reminds us that the relation between a society's economic system of production and its cultural system of symbols is much more complex that the some simplistic Marxists suspect. What they
INTRODUCTION

often forgot is that economy and culture are not things that mechanically influence each other like natural forces, behind the backs of human beings. Both exist in the realm of social relations and affect one another through the actions of the humans who participate in them—these actions, however, are constrained by the structure of their relations to one another. To understand the contradictions and disjunctures between economic production and cultural aesthetics, it is necessary to map the influence of the relations of one sphere on the relations of the other. In this study I follow the Marxist insight that class relations of the economic sphere are generally primary and thus condition the relations under which architects in the cultural sphere produce their aesthetic creations. However, these cultural relations cannot be reduced to artists' class interests that are imported into and directly reflected in their work, as postulated by some Marxist instrumentalists who see culture as merely ideology.

Developing a more complex model, both Marxist literary critic Fredric Jameson (b. 1934) and French sociologist Pierre Bourdieu (1930–2002) argue that the influence of class on culture is indirect and unconscious. For these scholars, a particular type of economic structure creates problems or contradictions that shape the experiences of all living within it. Artists unconsciously grapple with and seek to resolve these contradictions in their aesthetic forms, but the nature and type of these resolutions are shaped by their class positions and conflicts with other classes in history. An artist's class and its struggles provide the cognitive limits to her forms by rendering her unable to conceive of aesthetic resolutions that contradict her real class interests. Bourdieu calls these unconscious cognitive structures that shape an artist's productions a "habitus," a set of durable, embodied dispositions inculcated by early socialization in a particular position in the class structure. These class-specific habitus give rise to specific cultural tastes, which in turn influence the forms of art that people produce and consume. Thus, in advocating or creating a particular aesthetic, an artist unconsciously and symbolically asserts the superiority of her class over others in society. Bourdieu calls such cultural acts "symbolic violence," while Frederic Jameson calls them the "political unconscious." Both, however, agree that all artistic productions intervene symbolically in the social struggles of the day, but these political interventions are most often unintentional and unconscious. Bourdieu and Jameson also agree that aesthetic form cannot be explained simply by the artist's class and its unconscious interests. One must also take into account that class's changing relations to class opponents in a contest for power. Like the moves in a game of chess, actions in class conflict are largely determined by the positions and strategies of one's
opponents. Nothing less than a full-scale, historical study of the changing class conflicts of a period can yield an explanation of the aesthetic forms that symbolically respond to and seek to resolve them.

The emergence of a machine aesthetic in Europe rather than the United States must thus be explained by the different class structures and class conflicts of these regions. In America, the new mass-production economy revolutionized not only production methods and the visual order but also class relations and conflicts. Ford’s de-skilling machines and assembly lines reduced the skill differentials within the working class and leveled it to a homogeneous mass with similar wages, working conditions, and interests. The economies of scale demanded by these methods also produced huge, centralized factories like Ford’s Highland Park and River Rouge, which concentrated thousands of workers into close proximity and facilitated their communication and organization. In other words, mass production also created the proletarian masses, which quickly began to pose a threat to the class power of its capitalist creators.

By 1913, the year that the assembly line was introduced, Ford had already faced an attempt to organize his workers by the radical anarcho-syndicalist group the Industrial Workers of the World. This, combined with the informal resistance presented by worker turnover, absenteeism, and output restriction, motivated Ford to make a drastic move countering this class opponent early in 1914—the introduction of the Five Dollar Day. This program promised to almost double the average daily wage of his workers, allowing them to participate in the culture of mass consumption that the economy of mass production was creating. In return, however, Ford demanded that his workers adopt a new, consumption-based lifestyle of sobriety and stability at home that supported the discipline and docility he demanded at work. And to enforce this trade-off of autonomous consumption for heteronomous production, the company created the Sociological Department, a personnel department staffed with middle-class social workers, ministers, and psychologists charged with investigating and cajoling workers into the stable, consumption-oriented lifestyle that Ford demanded.

Ford’s Sociological Department illustrates another sea change that mass production instigated in American class structure—the creation of a professional-managerial class of corporate employees to help contain the threat posed by proletarianized workers to capitalist employers. The initial revolution of mass production had already created new corporate positions for managers, engineers, and technical professionals, who centralized the knowledge and
INTRODUCTION

skills confiscated from workers through the new machinery. Now Ford and other mass-producers added to them a layer of social professionals to patch up the human damage done by mass production with corporate-administered programs known in the day as "welfare work." Most of these programs aimed to create a realm of consumer autonomy in workers' leisure hours to compensate them for the heteronomy and monotony of their working hours, thus containing the incipient class conflict against Fordism.

In order for consumption to provide substitutes for lost freedom and individuality, its products had to help workers forget the Fordist labor responsible for their loss. Such soothing amnesia was impossible, however, as long as mass-produced consumer goods carried with them into the domestic retreat the visual reminders of the oppressive workplace, and this was exactly what the instrumental look of products like Ford's Model T did: the rigid rectilinearity was a reminder of the unbending regimentation of work; the fragmented appearance recalled the fragmented and degraded division of labor; and the drab, black finish was reminiscent of the forced monotony of effort. Consequently, as the class bargain of higher wages and consumption in exchange for worker acquiescence to production took hold in the 1920s, consumers increasingly demanded dissimulating product designs that disguised the marks of oppressive labor under unified and individuating surfaces. Sales of Ford's utilitarian T declined, while those of the superficially integrated and differentiated models of General Motors rose. To implement its new policy of aesthetic deception, mass-production corporations like General Motors had to add to their growing bureaucracies a new knowledge-based profession—industrial designer. As it became clear during this period that appearance, not substance, sold things, corporations also began to employ other aesthetic professionals such as ad illustrators and copywriters to lend their wares a semblance of beauty. And to cater to consumer demands that the ugliness of standardized and heteronomous mass production be disguised, corporations also employed architects to design their public buildings. The corporate headquarters building increasingly became a monumental advertisement, designed by an architect to project the image of a business anxious to meet consumer demands for excitement, glamour, and individuality. Many of these artistic professions had, of course, been established before the emergence of the consumer society of the 1920s. Corporate demand for their services transformed them, however, not merely by increasing their numbers but also by integrating them into business bureaucracies, where profits—not aesthetic standards—were the measure of success.
Intraelass Conflict and Aesthetic Autonomy

This transformation of art in America alerts us to the fact that a class analysis of aesthetics is insufficient if it is confined to the major classes recognized by traditional Marxists, such as aristocracy, bourgeoisie, and proletariat. Bourdieu has insightfully argued that the dominant bourgeois class is itself divided into two fractions that are often at odds. One is the group that is generally thought to solely constitute this class—those who own and control capital, or money invested in profit-making enterprises. Bourdieu labels this fraction the economic bourgeoisie and concedes that its major resource—economic capital—makes it the dominant fraction of the dominant class. The other fraction he labels the “cultural bourgeoisie,” which is engaged in the production of art and culture and whose major resource is cultural capital, or assets of the mind such as knowledge, taste, and education. Bourdieu argues that a society’s culture and aesthetics are determined not merely by interclass relations between the major classes but also by the intraclass relation between these two fractions of the bourgeois class. There is an inherent potential for conflict and contention between them, because each struggles to make its kind of capital the basis for the social distribution of power and wealth. The economic fraction believes that money should rule, while the cultural fraction is vehement that knowledge should play this role. When a specific field of art is autonomous from the money-making demands of the market and governed by its own cultural standards, its artists generally produce aesthetic forms that reflect the interests and struggles of the cultural bourgeoisie and are potentially antagonistic to the economic bourgeoisie. It is my argument that the International Style of modern architecture was such an aesthetic, for its technological and rational forms idealized the cultural capital of the knowledge professions and symbolically challenged the rule of moneyed industrialists. But when many American artists and architects went to work for Fordist industries, they lost this autonomy and began to cater to the monetary demands of their corporate employers. Because the class bargain of higher wages for workplace discipline made workers important consumers in mass markets, making money required that corporations and their aesthetic professionals cater to worker demands for products and buildings that aesthetically obscured, not displayed, the technology and instrumental rationality of work. Consequently, the beginnings of an American machine aesthetic in the early twentieth century were quickly quashed by architects working for corporate clients, who gave the masses historical or moderne decoration that provided the obfuscation and entertainment necessary to placate their incipient revolt against Fordist work.
In Central Europe, by contrast, the machine aesthetic in architecture took root and flourished because both the interclass and intraclass conflicts were different. Here the aristocracy persisted into the twentieth century, providing a powerful opponent to the economic bourgeoisie and its struggle for dominance. In most of Europe, industrialists compromised with aristocratic power, making them weak and opponents of the Fordist modernization of industry pioneered in America. The cultural bourgeoisie of managers, engineers, and intellectuals thus found no home for their modernizing ambitions within regressive European businesses. Consequently, they mounted an independent push for modernization, a technocratic movement that vehemently juxtaposed the rationality and objectivity of their knowledge to the venality and selfishness of moneyed industrialists. In the aftermath of the First World War this movement gained momentum, especially in Central Europe, where workers’ movements toppled Old Regimes and installed democratic states. The professional-managerial class, along with some factions of the workers’ movement, looked to Fordism as the solution to the problems of these societies. The architectural proponents of the machine aesthetic led the aesthetic wing of this technocratic movement, glorifying in their forms the technology of mass production and the instrumental rationality on which it rested. But because capitalists were still reluctant to modernize, these modern architects and other professionals allied with social-democratic state managers to mount a state-led industrial rationalization program modeled on Fordism. This program promised workers increased consumption, but unlike in America, this consumption was delivered through the state, not the market. Thus, workers’ buying power had little effect on the aesthetics of consumer goods, especially housing, which was provided in the form of state-financed worker apartments. Because state patronage gave the architects of these worker estates autonomy from the market, they were able to employ their machine aesthetic, which symbolized their own technocratic interests rather than worker demands for escape from Fordist work.

**Fordism and Modern Architecture: An Overview**

This misplaced origin of the machine aesthetic, which is treated in chapter 2 of this study, was only the beginning of the complex and circuitous relation between Fordist mass production and modern architecture in the twentieth century. After this powerful beginning in Europe in the 1920s, the machine aesthetic suffered an international setback in the 1930s, as revealed in chapter 3. As the Great Depression seized the world economy, the promise of mass
prosperity through Fordism lost its allure, along with the modern architecture that symbolized it. The collapse of mass consumption gave birth to deep doubts about the system of mass production that it legitimated, and ultimately instigated popular movements of the left and right that were fueled by desires for collective unity and control over the economy. In America, strong capitalist opposition displaced popular revolt into futuristic dreams of a technological utopia. In Germany, however, an antiquated class structure diverted popular dreams of wholeness into nostalgic longings for a fictitious past. Both political programs found aesthetic expression in a rejection of modern architecture, in its moderne and International styles. In the United States this rejection gave rise to an aesthetic of romantic modernism, which was supplemented by neoclassicism in state buildings and nostalgic populism in individual housing. In Germany, popular longings for a premodern past were aesthetically expressed in neoclassical monumentalism for the Nazi state and a völkisch aesthetic for public housing. But Nazis supplemented these reactionary styles with romantic modernism in their mass-production programs, of which automobilization was especially important.

After this serious retreat in the 1930s and early 1940s, the modernist machine aesthetic triumphed internationally in the 1950s, as the Fordist system emerged from the Second World War stabilized by state demand management. Chapter 4 tells the story of this dual triumph of Fordism and modernism. Even America, which had previously rejected the International Style, now embraced the severe machine aesthetic of Mies van der Rohe for the urban headquarters of Fordist corporations, due to changes in the structure and geographic distribution of classes. The postwar emphasis on economic planning in government and industry shifted the balance of class power from entrepreneur-owners to technocratic managers and professionals, whose interests were symbolized by the instrumental rationality of the machine aesthetic. And working Americans also became more accepting of modern architecture in urban centers as they moved away to the new suburbs. There builders mass-produced single-family homes that accommodated popular tastes by covering the reminders of mass production with historical decoration. Other parts of the suburban culture of consumption, especially those associated with automobiles, adopted a more modern aesthetic, but one that disguised the harshness of the machine under futuristic fantasies of a technological utopia. Americans tolerated technocratic modernism in their urban workplaces because they could escape to this entertainment aesthetic in their leisure lives. In postwar Europe, however, the slower consolidation of Fordism and its bifurcated aesthetic created the space for an
architecture of opposition that rejected both insular modernism and nostalgic historicism.

As chapter 5 reveals, however, modern architecture’s triumph was short-lived, coming under attack in the tumultuous 1960s as the institutions of Fordism fell into crisis. The intensification of the entertainment aesthetic in this decade led to the public exposure of the deceptions of mass consumption, and industry’s attempts to address this problem undermined mass production. In the fields of art and architecture, the influx of a youthful cohort of new producers with new habitus increased competition and the pressure for innovation. Thus, young architects rejected established modernism, and found an sympathetic audience in a broad populace challenging the Fordism that it symbolized. These architectural rebels criticized the International Style as elitist, meaningless, environmentally destructive, and technologically obsolete, then pioneered alternative aesthetics to remedy these problems. Against modernism’s elitism, they offered a populist aesthetic; against meaninglessness, a historicist aesthetic; against environmental destruction, a natural aesthetic; and against technological obsolescence, a technological expressionism. These counteraesthetics of the 1960s, several of which drew inspiration from America’s automotive culture, provided the innovations from which a postmodern architecture was constructed in the last quarter of the century.

Beginning in the early 1970s continuing social struggles resulted in the dismantling of Fordism and the gradual construction of a new system of post-Fordism, the topics of chapter 6. This regime of production and consumption greatly increased the flexibility and mobility of capital, thus drastically restructuring both the classes and landscapes of capitalist societies. A new cultural bourgeoisie of symbol manipulators grew in power as the industrial working class was decimated by the movement of production to low-wage areas. Post-Fordism spatially concentrated this new cultural bourgeoisie in a few global cities, along with legions of low-paid workers to serve them. This new economic regime transformed architecture by creating both new clients and new problems. Cuts in public-sector spending, especially for urban areas, forced the majority of architects into the private-construction market, thus undermining the autonomy of the field. There they encountered the dual ideological demands of the new cultural bourgeoisie struggling for dominance on two fronts. This new class sought to convince the restless working class of their democratic intentions by offering images from popular culture, especially automobiles. At the same time they sought to assert their cultural superiority to the old bourgeoisie by treating this popular content in high-art forms. These
dual demands produced the double-coded aesthetics of the new postmodern architecture, which combined high and popular art and was epitomized by the buildings of Disney's new entertainment venues. However, as post-Fordism became stabilized and its dominant class more confident, the largely backward-looking aesthetic of postmodernism was replaced by the more forward-looking architectural aesthetic of deconstructionism, which boldly celebrated the post-Fordist world of hypermobility and fragmentation. These economic and architectural changes were epitomized by the tragedy of September 11, 2001.

These chapters thus trace a complex story of economic and aesthetic change that began with automobiles and eventually revolutionized architecture—twice. "From autos to architecture" describes not only the direction of an aesthetic influence but also a slogan under which architectural revolutionaries remade the twentieth century and laid the groundwork for its successor.

NOTES


