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The MODERNE in the U.S.
1920-1941

David Gebhard

"...invincible, triumphant, the machine goes on, gathering force and knitting the material necessities of mankind ever closer into a universal automatic fabric; the engine, the motor, and the battleship, the work of art of the century." Jules Verne in 1870? No! This was Frank Lloyd Wright speaking in Chicago in 1901. Here, through Wright, one can dramatically sense the magnetic attraction of the machine as fact and as symbol. Nor has this romantic image of the machine lost its fascination as our current high art and architecture so aptly attest. Historians, social critics, and others have incessantly reminded us (as if we were not aware already) of the impact of the machine on our everyday lives. But what has been overlooked is the equally significant impact of the machine as symbol. As a symbol the machine impinges on each of us with more directness and force than the machine as fact. It would be difficult to find any aspect of our contemporary world which has not been conditioned by (or is a reaction to) the machine as symbol. In painting and sculpture the machine has sometimes entered, direct and unashamed, as in the work of the Dadaists in the teen years or in the self-destructive machine of Jean Tinguely in the late '50s and '60s; more often the machine has been subtly expressed - from Cubism to contemporary Hard Edge and "Environment sculpture." In architecture the machine aesthetic

Morgan, Walls and Clements.
Thomas Jefferson High School, 1936,
Los Angeles, California.
THE MODERNE IN THE U.S.

has – at least as a symbol – provided the basis for all 'new' movements of this century. Nor has the machine itself been unaffected by its own image (or images), for the visual impact of the packaging of the machine is as important if not more so than the function of the machine.

With the pre-eminence of Henry Adam’s Dynamo as the emblem of our era, it should not surprise us that every movement of our century which wished to be considered new and progressive has sought to embrace the machine as its own special symbol. What is surprising is that those looking in on these movements have failed to see that the world of the machine as fact and the world of the machine as symbol are more often than not two quite distinct worlds. Thus Reyner Banham was correct when he noted that the International Style architects of the ’20s were more involved with a new packaging than with an actual utilization of the machine. In the long run, though, Banham’s complaint missed the point, for he failed to make the essential distinction between the machine as symbol and the way in which the machine is directly utilized in a building. As early as 1931, Philip Johnson pointed out that the architecture of the International Style (which he referred to as 'Post Functional') was significant, not because it was functional but because it symbolically expressed the machine. To understand, to appraise, and to criticize the International Style we must see it for what it was, namely a style, a fashion, a specific method of symbolic packaging.

It is equally a mistake to see the history of 20th century architecture which we have all been exposed to – from the Pioneers of Nikolaus Pevsner, to Sigfried Giedion’s Space, Time and Architecture – as anything more than a handsomely designed historical construct. The single linear view of Pevsner’s and Giedion’s history with its heavy musty Ruskinian moral overtones was as much a mode of packaging (of the ’30s) as the movement and the buildings themselves. The exclusive relegating of the machine and of machine aesthetics to the International Style and its progeny constitutes one of the most impressive sales pitches of our century, one which even Madison Avenue would find it difficult to match. This adroit ‘snow job’ was so effective that it has been extremely difficult to experience buildings representing other architectural points of view without feeling tinges of moral guilt.

Fortunately that which became vital in the late ’50s and early ’60s – namely ‘Pop’ and an admiration for the commercial vernacular – has at least partially freed us from the moral restraint of the International Style and its ideology of functional moralism. The way that historical information is manipulated to form constructs was noted by Henry Russell Hitchcock in 1936 when he wrote, 'Now the criticism of that work of the past may be frankly interested again, we must accept that its direction is determined by some motivation in the present, and that it should seek to reveal both the essential qualities of the art of the past and the particular relevance of different phases of that art at different moments in the present.'

It is difficult for us today to swallow the Hollywood Western ‘good guy’ versus the ‘bad guy’ view of the architectural movements of the ’20s and ’30s upon which we have so long been fed. By turning the moral arguments of the Internationalists back upon themselves, Banham paved the way so that we could see that this mode was a style, that it was a form of packaging as all past styles have been. Thus we are now free to sample other stylistic containers of the ’20s and ’30s. We are slowly beginning to sense that the architecture of the period revivals was not really an empty eclecticism devoid of merit. These buildings were as expressive of the period as the International Style itself. Nor did the character of this period architecture remain static, for the period buildings of the ’30s exhibit a personality quite distinct from those of the preceding decade.

Architecture which was labelled modern in these two decades encompassed points of view far more diverse than just that of the International Style. In addition to the International Style, there were those few buildings (and, in most cases, projects) which sought out a direct correlation between constructive machine technology and its symbolic expression; then there were those buildings that could loosely be labelled Expressionistic - those that attempted to assert the emotive quality of the machine aesthetic. Finally there was that style variously labelled as Moderne; Modernistic; Art Moderne (and now recently labelled ‘Art Deco’). All four of these modern modes – the International Style, the Constructivist Machine style, the Machine, Expressionist style – drew upon and expressed the world of science, technology, and the machine for their visual forms.

The International Style – with its set aesthetic of the pristine white stuccoed volumetric box, generally suspended above the landscape on stilts, with its horizontal ribbon windows – was known in the United States almost exclusively through photographs and drawings published in architectural journals and books. Even the most way-out work in the US - that of R. M. Schindler and Richard J. Neutra – was, like the European work of Le Corbusier or Mies Van der Rohe, known to Americans primarily through the printed page. The number of pure International Style buildings realized in the United States before 1941 was extremely small.

Even more scarce were examples of the second modern mode – Constructivist Machine architecture. All of R. Buckminster Fuller’s designs for the Dymaxion house, his apartment skyscraper deliverable by dirigible (1927–30), shared the reality of the printed page with the futuristic work of Buck Rogers. Kocher and Frey’s experimental metal houses (1932–35) were – like Gropius’ experimental prefabricated house, at the Weissenhof, Stuttgart (1927) – technologically inventive ideas packaged
in the International Style. More oblique in its reference to the machine, to technology, and to science was Machine Expressionist architecture, traversing the wide range between Mendelsohn's early streamlined design, to Wright's jagged angularity, to the make-believe world of the Dutch and German Expressionist architects.

While period revival architecture and the various styles of the modern were always treated as architecture (good or bad), such was not the case for most of the commercial vernacular architecture which by the end of the '30s came to dominate so much of the American scene. Only a critic-historian of Henry Russell Hitchcock's stature, could feel secure enough to leave the world of high art and see what was going on in the realm of low art. In commenting on the programmatic world of 'Brown Derby' architecture, he wrote in 1936, 'The combination of strict functionalism and bold symbolism in the best roadside stands provides, perhaps, the most encouraging sign for the architecture of the mid-twentieth century.' We have had to wait though until the '60s for the writings of Robert Venturi, Denise Scott Brown, and Charles Moore to sense how vital the programmatic architecture of the '20s and '30s is for our contemporary scene.

The commercial vernacular of these decades has been made relevant today through its earlier transformation into contemporary sculpture and painting and presently in its transformation into architecture. The Moderne is only now beginning to enjoy such a transformation. Now that the passion for Art Nouveau is slowly fading, the Moderne, as historically the next mode, will certainly come into its own. Intellectually the ground has already been broken, for now only a smile is evoked when one reads in the Introduction to the 20th Century Design from the Collection of the Museum of Modern Art (1959), 'Even such sincere but unfortunate manifestations as "modernistic" furniture, which in the '20s, imitated the stepped contours of the skyscraper, are not eligible for inclusion.' One could perhaps buy this pronouncement in 1934 when the Museum of Modern Art held its famous exhibition 'Machine Art', but today such an assertion seems empty and pretentious. In Europe and America this new sympathetic awareness of the Moderne has been reflected in two exhibitions 'Les Années 25' held in 1966 at the Musée des Arts Décoratifs in Paris, in 1969 'Kem Weber and The Moderne' at the University of California, Santa Barbara; in three recently published books: Giulia Veronesi's Style and Design 1900-1929 (1968), Bevis Hillier's Art Deco (1969), and Martin Battersby's The Decorative Twenties (1969).

While the American Moderne, like that of the countries of Europe, derived much of its vocabulary from the 1925 L'Exposition Internationale des Arts Décoratifs et Industriels Modernes held in Paris, it eventually developed into something quite different from that of Europe. From its very beginning the

Robert W. Derrah, Coca Cola Company, 1937, Los Angeles, California.
Americans closely associated the style with one specific machine, that of the transportation machine. In the '20s the symbolic kinship was with the ship and the auto, by the late '30s and '40s, the Moderne was almost exclusively tied to the airplane. The second specifically American aspect was the appearance of the industrial designer as the figure, who by the mid '30s, came to dominate the design scene. The Bauhaus talked about the integration of the designer into industry - the Americans accomplished it. And the American industrial designers were so successful that by the '30s nearly every aspect of the American visual world was affected by their predilection, whether the new model car, the streamlined hotdog stand, or the jazzed up child's tricycle - and all this being accomplished, it should be noted, during the materially scarce years of the Great Depression.

One additional aspect strikingly differentiated the United States Moderne from that of Europe. By the late '20s the Moderne had become an accepted architectural style which was embraced by almost all of the commercially successful architects: those architects who in the public eye were the leaders of the profession. The battle to establish modern architecture in the United States was not then primarily a conflict between the proponents of historic period architecture and the Moderne, but rather it was a knock-down and drag-out affair between two modern styles - the International Style and the Moderne.

The American affaire Moderne readily divides itself into two phases - the Zigzag Moderne of the '20s and the Streamlined Moderne of the '30s - the first reflecting the dominance of the triangle and 'T'-square coupled with stylized classic derived ornament, and the second reflecting the French curve and compass. A similar gradual transition was taking place at the same time in Europe, only the European curvilinear did not become as exclusively tied to an aerodynamically inspired streamlining. Thus Aldous Huxley, writing in 1930 noted that, 'The straight lines and jagged angles of a few years ago have given place, wherever circumstances demand a less puritanical treatment, to undulations and to curves.'

Though writers on the Paris exposition of 1925 noted that 'Art has found a place for the discoveries of the 20th century scientist . . . and that parts of the exhibition . . . looked like a city from Mars, or something akin to H. G. Wells,' its immediate impact was in the area of applied decorative ornament, rather than the reorganization of basic forms. The rapidity with which American designers and architects took up the new decorative motifs of the Moderne is truly remarkable. By 1927 they were a common ingredient in architecture, furniture, book and magazine layout, and in advertising. If one recalls that the '20s mark the period of the final pre-eminence of the Parisian Beaux Arts in the United States, one is provided with at least a partial explanation of why it was so readily accepted - for anything from Paris came with authority.

What were the characteristics of this Moderne ornament? It was conceived of as an appliqué independent, not integral, to the building. It might be applied as a sheathing over parts of a structure, but its function of sheathing never hid its primary existence as ornament. The patterns themselves and the way in which they were related was linear and two-dimensional. All of the patterns were kept close to the surface, never deeply penetrating into nor projecting far out of it. Many of the individual motifs were simplified versions of classical patterns: paired spirals, sea shells, leaves, and flowers. These were often coupled with fragmented circles, zigzags, triangles, double triangles, hexagons, complex patterns of interpenetrating open and closed triangles, etc. Classically inspired human and animal figures were flattened and often delicately elongated. But no matter what the motif or combination of motifs might be, the dominant quality was the sharp linear angularity of the total design. Lines as such, particularly groups of three lines, were used as a decorative motif on everything ranging from buildings to tableware. All of the decoration was purposefully repetitive and all of it conveyed the feeling that if it were not produced by the machine it should have been.

In the realm of three-dimensional forms the cube and the rectangle predominated. Where two or more volumes were used in a composition, each retained its own separate existence. While the objects of Moderne design - whether buildings or furniture - appeared bulky (especially compared to the light lacy quality of the products of the International Style) they were not massively heavy in form or detail. Surfaces tended to be plain, smooth, and simple. Richness of surface was almost never tactile, but was expressed through the internal character of smooth surfaced material - the grain of rare woods - or of machine smoothness of new materials such as Bakelite or Vitrolite. As Huxley remarked, 'Modern simplicities are rich and sumptuous; we are Quakers, whose severely cut clothes are made of damask and cloth of silver.'

The '25 exposition in Paris was, of course, not the only source for the early Moderne. All four of the modern architectural movements borrowed heavily and directly from avant-garde sculpture and painting. The precision machine-like angularity (curves and circles as well) of the Moderne were related to or derived from a variety of sculpture and painting sources ranging from classic French Cubism to the work of Franz Marc, Fernand Léger, Amédée Ozenfant and Amedeo Modigliani. The work in the late teens of the Dutch de stijl group, particularly Théo van Doesberg and Piet Mondrian, and of the Bauhaus painters, Wassily Kandinsky and Paul Klee (in his geometric paintings) provided a non-objective vocabulary which was continually drawn upon. Dadaism too, with its love/hate affair
John and Donald Parkinson, Bullocks – Wilshire Department Store, 1928, Los Angeles, California.
with the machine, and Surrealism with its pseudo-scientific jargon contributed their share to the visual language of the Moderne. The de-personalized sculpture of Constantin Brancusi and of Alexander Archipenko; the vertical slab sculpture of Kasimir Malevich and of George Vantongerloo could readily be adapted to design for furniture and buildings. The smooth and suave abbreviation of the human form by Elie Nadelman, particularly the female, became the in-thing by the end of the '20s for advertising and showroom display. The jagged angularity of much of the work of Kurt Schwitters or of the stage set for Rudolf Wiene's film, The Cabinet of Dr. Caligari (1920) create much of the same atmosphere as the early Zigzag Moderne.

The machine symbol came to America not only through European artists, but directly through Americans who had participated or who were influenced by the European avant-garde experience. The sharp staccato-like angularity of the paintings of the teens of John Marin and Joseph Stella immediately come to mind. The short-lived New York Dada affair (1915-1923) of Francis Picabia, Marcel Duchamp, Man Ray, and of Morton Schamberg has more to do with finding a pictorial or object equivalent to the machine than, strictly speaking, with Dada. The American Immaculates of the '20s, particularly Charles Sheeler and Charles Demuth, show how at ease the American artist could be with the machine. Stuart Davis went further in the '20s and '30s for not only was the machine lovingly embraced, but our commercial vernacular environment emerged as a creative source to be drawn upon.

Like the early Cubists and Expressionists - and perhaps inspired by their example - the Modernists enriched their vocabulary by including elements from a variety of cultural traditions. Many geometric design patterns and conventionalized renditions of human and animal forms were derived from European folk art. African Negro art and the general theme of the jungle were common ingredients of the Modern - especially in textiles and in wallpaper designs. The one plant more than any other which came to signify the Moderne was the cactus. The cactus, as well as a number of curvilinear and geometric motifs, most likely came from the American Southwest and the Pre-Columbian culture of Mexico and Central America. The discovery in 1922 of the Tomb of Tutankhamen added a tinge of ancient Egyptian flavour often expressed through the use of the sphinx.

The architectural background of the American Moderne was equally diverse and complex. While the angular brittle quality of early Moderne architecture shared points in common with Dutch and German Expressionist architecture of the teens and early '20s, its source existed right at home; in the American Eastlake Style and the Queen Anne Revival of the 19th century; in the heavily articulated products and buildings of the American Arts and Crafts Movement (1900-1915); and finally in the work of Frank Lloyd Wright and other members of the Prairie School. Wright's preference for jagged sharp angular form was strongly asserted not only in his Prairie buildings (and his pre-1900 work) but even more so in his designs for leaded glass windows, screens, mosaics, and the printed page. The circle as a counter theme to the purely rectilinear occurs in Wright's work in the leaded glass windows of the Coonley house (Riverside, 1908) and again in the murals of his famous Midway Gardens (Chicago, 1914). The height of angular decorative patterns was contained in the 'mysteriously inspired' designs of Claude Bragdon. Closer in spirit to the European were some of the terracotta designs of George Grant Elmslie and the advertising designs of William Gray Purcell. One of the most common motifs associated with the Moderne - that of three horizontal parallel lines (often as the upper terminus of a surface plane) - was in common use by Wright and Purcell and Elmslie long before 1920. The symbolic association of Prairie architecture with the machine has already been indicated in the quotation from Wright's 1901 talk at the Hull House. The popular mind readily accepted this analogy. Wright's Robie house (Chicago, 1908-09) was referred to as a steamship on land and his Gilmore house (Madison, 1908) was caustically called the 'airplane house'. Purcell and Elmslie in their writings continually drew attention to the similarity of their architecture to that of Pullman cars or steamships. Nor should one overlook similar sharp linear qualities found in the Gothic revival architecture of the first two decades. The 'American Perpendicular' received its first strong assertion in Cass Gilbert's Woolworth Tower (New York, 1913). Howell and Hood's Tribune Tower (Chicago, 1924) stands midway between the Gothicism of the Woolworth Tower and the vertical stripe architecture of Hood and Howell's Daily News Building (New York, 1930).

Before the '20s had set in, the United States was already drawing upon her own 'Pueblo' Southwestern Indian heritage and that of the Pre-Columbian world of Mexico and Peru. Features of Wright's Midway Gardens (Chicago, 1914), of his Imperial Hotel (Tokyo, 1915-22), and above all his Barnsdall house (Los Angeles, 1917-20) freely borrowed from Mayan, Zapotec, and Aztec architecture. R. M. Schindler's unrealized project of 1915 for the Martin house at Taos, New Mexico, shows that Wright was not alone in such borrowings. Both of these architects were to delve even deeper into the Pueblo and Pre-Columbian traditions in their work of the '20s. Although both the Pueblo Revival and the Pre-Columbian Revival really got going in the '20s, there were inklings to be found in the preceding decades in the Los Angeles work of both Sumner P. Hunt and Silas R. Burns and of Charles F. Whittlesey.

While America's own Mission (1890-1915) and later Spanish Colonial Revival (1915-1930) may
Several skyscrapers of the '30s stylistically express the vertical packaging of the '20s. Shreve, Lamb and Harmon's Empire State Building (New York, 1931) was already 'old hat' when it was completed and even Rockefeller Center by Reinhard and Hofmeister; Corbett, Harrison and MacMurray; and Hood and Fouilhoux (New York, 1931–39) had more to do with Goodhue of the '20s and with WPA Moderne than with the new Streamlined Moderne which came to dominate the '30s. As a fashionable garment to clothe a lofty high building these vertical striations seem more in sympathy with the skyscraper as a lofty tower than the horizontal banding of the International Style.

The thin linear angularity of the Zigzag Moderne cropped up as well in the 1920's California work of
Frank Lloyd Wright, of Lloyd Wright, and of R. M. Schindler. The narrow groups of vertical windows of Frank Lloyd Wright’s concrete block Storer house (Los Angeles, 1923) was expanded to become a total wall pattern in the Lloyd Jones house (Tulsa, 1929). A delicate angular linearism occurred in Wright’s proposed houseboats for Lake Tahoe (1922) and again on an enlarged scale in two skyscraper projects of the ’20s: that for the National Life Insurance Company (Chicago, 1924) and the St. Mark’s Tower project (New York, 1929). Lloyd Wright’s work followed a similar course, from his vertically detailed Derby house (Glendale, 1926) to the perpendicular skyscrapers of his projected Civic Center for Los Angeles (1925). Schindler’s connection with the Moderne can be seen in the way he broke wall surfaces into agitated, over-lapping linear patterns. The angled planes of Schindler’s Loves house (Eagle Rock, 1923), like Frank Lloyd Wright’s Desert Camp (near Chandler, Arizona, 1927), comes remarkably close to the spirit of Zigzag Moderne ornament.

In looking over the several forms of the ’20s it is remarkable how a closely identical angularity was universally expressed in all designed objects during the ’20s. In interior design the skyscraper furniture of Paul T. Frankl and of Kem Weber emulate on a reduced scale the play of volumetric cubes and rectangles of the architecture. Compared to furniture produced by the Internationalists during the ’20s, the designs of the Moderne seem traditionally oriented. The constructivist basis of the furniture of Breuer, Stam, Le Corbusier, and Mies Van der Rohe actually came far closer to fulfilling the doctrinaire principles of the International Style than the buildings designed by these architects. The Zigzag Moderne furniture was in its essentials a repackaging of previous forms. Much of the furniture in wood of the early Modernes looked back to the turn of the century Arts and Crafts. The idea that simply by repackaging, the old might be made new, reinforced the feeling of many that design was fashion. ‘Indeed it was chiefly in connection with fashion,’ Hitchcock wrote in 1928, ‘that Moderne furniture features began to appear in America along with the clothes, accessories, and perfumes of the Paris dress-makers.’

While the exponents of the early Moderne were fond of pointing out the new materials used in their designs – chromed tubular metal, glass (clear and black), Vitrolite and Bakelite – most of their designs were in wood. While the Modernists did on occasion use new materials, most of their furniture displayed exotic (and therefore by implication) expensive woods such as ebony, amboyna, zebra wood, peroba, and satinwood, or the surfaces were finely lacquered in black, red, silver, or gold. Whether lacquered or veneered the emphasis of the Moderne was on the surface – the skin – which defined the volume. The inner workings, i.e. the structure, etc., was in almost all cases hidden from view. In striking contrast to Arts and Crafts furniture which suggested the anonymous, the Moderne interior or the Moderne piece of furniture was emphatic in making one aware that it was a designed object.

This self-consciousness of design contrasts rather sharply with the form of machines – i.e. the ship, the car, and the airplane of the ’20s – which seem to assert that their form was a natural result of functional needs. Except for this one factor, the most popular machines of the ’40s, i.e. the transportation machines, were similarly amazing to the products of the Modernists. Like the furniture, the transportation machine was composed of individual parts, each of which was emphatically declared. The smokestacks and the deck cabins of a steamship were kept distinct from the hull; the wings, the tail, the rudder, and even the motor and the cowling of an airplane were visually separate from its fuselage. While in the cars of the period, the independent visual existence of the wheels, the motor, the radiator, the fenders, the horns, the cab, the bumpers – even the smaller elements such as the doorknobs, wheel bolts, and radiator caps – maintained their separate existence. Different colors, painted lines, and changes of materials from painted surfaces to chrome or canvas were used to subdivide larger volumes such as the cab and the hood. The refrigerator of the ’20s with its separately declared doors, hinges, knobs, legs, and circular motor on top and the household stove with its emphasis on its individual parts are just two more examples of how the ’20s wished to package their machines and machine products.

The atmosphere of design which permeated the ’20s was equally reflected in the visual attire of the boy-girl flapper with her visually separate shingled hair and tube-like dress; in the layout of comics, of books, of magazines, and above all of advertising. The play of the angular and curvilinear – derived from the high art of Nadelman, Leger, and Brancusi – were the high mode in advertising of female and male attire. New ‘modern’ type faces came to the fore: Futura, Crow Modern, Normandia, Fashion, Bernhard Gothic. All were developed in this decade.

In the best public relations tradition the Zigzag Modernes of the ’20s were able to create a convincing image of their work as being progressive and contemporary. It remained, though, for the ’30s to transmit this image into the futurism of a Buck Rogers’ world. While it certainly can be argued that the grim reality of the Great Depression made it easier to sell the Futuristic Streamlined Moderne, still it is likely that it would have come about anyway, regardless of the economic conditions of the time. The selection as a symbol of a single transportation machine – the airplane which was the most futuristic operational machine of all, was already made by the late ’20s. The first inklings of streamlining were beginning to show up in transportation machines. With the newly emerging
profession of industrial designers taking over from the amateur designer—engineer, a new visual form had to be created—not only to help sell the product, but even more to help establish the presence and the personality of the industrial designer himself. In order to sell himself, the new industrial designer had to get rid of his art-oriented image and what better way to do this than to establish a close relationship between himself, his products, and the futurism of the machine.

The 1933 'A Century of Progress Exhibition' in Chicago closely mirrored the transformation of the Moderne from its Zigzag phase of the '20s to that of the Streamlined of the '30s. Some of the buildings at the 1933 exposition were a stripped classical garment (the Illinois Host Building being a good example). Others carried on the Zigzag predilection of the '20s: the Hall of Science, the Hall of Religion, and the Travel and Transportation Building. Several cautiously expressed the new streamlining: the Ribbon Casino, the Communication Hall, and the Agricultural Building. By 1934–35, designers, architects, and theoretician-critics had almost universally lined up against the earlier Zigzag Moderne. As early as 1927 Thomas E. Tallmadge wrote, 'The curves, disks, spirals, triangles, and other geometric forms which are the earmark of modern decoration will surely not abide with us for another five hundred years.'

The high art élite among the opponents of the Zigzag Moderne were the Internationalists personified in the United States by the Museum of Modern Art. The bulk of the anti-zigzags were either fully or lukewarmly committed to the second phase of the Moderne—that of the dynamic Streamlined. The internationalists vigorously battled on both fronts. In the introduction to the catalogue which accompanied the 1934 'Machine Art' exhibition at the Museum of Modern Art, Alfred Barr Jr, wrote, 'The problem in America has not been the conflict against a strong handicraft tradition but rather against a "modernistic" French machine-age aesthetic.' At the same time he disclaimed the development of America of 'a desire for "styling" objects for advertising. Principles such as "streamlining" often secure homage out of all proportion to their applicability.' Sheldon Cheney in his 1936 book Art and the Machine fully agreed with Barr's denunciation of the earlier Moderne, but he disagreed with Barr's aversion to the Streamlined. In looking back on the 1920s, Cheney wrote, 'America was introduced...to that shallowness...to that seductive thing called "art moderne" which became a source of much confusion.' After disposing of the Zigzag Moderne, he went on to note that 'The airplane, with its symbol of the streamlined, is the most conspicuous object of the new age.' This being the case, it was perfectly logical for the Streamlined to be used as a symbol. 'As an aesthetic style mark, and a symbol of twentieth century machine-age speed, precision, and efficiency, it has been borrowed from the airplane and made to compel the eye anew, with the same flash-and-gleam beauty re-embodied in all travel and transportation machines intended for fast going.'

Norman Bel Geddes, who more than any other single individual came to stand for the Streamlined, expressed a similar view when he wrote, 'Today, speed is the cry of our ear...' Still Bel Geddes, like all industrial designers, always clothed his design predilections in rational 'scientific' garb. The application of scientific aero-dynamic principles—so he argued—underlay all of his streamlining for transportation machines. He provided his own defense when he pointed out that '...a distinction must be made between surface qualities and structural qualities...; though the two must never be separated in the design process.'

As good public relations, the attempt to rationally explain the new aesthetic sounded fine although in fact it often became a bit thin. W. B. Stout pointed out in an article in Scientific American in March, 1934, that the findings of the wind tunnel could not be considered as an adequate scientific reason for the design of the car to emulate the airplane. His view, though, was swayed under by a literal barrage of pro-streamlining articles published in such diverse magazines as Esquire, Scientific American, American Mercury, and of course in the low-brow magazines such as Popular Mechanics. The real argument for the new style, as Bel Geddes indicated, was that the packaging needs have nothing directly to do with the structure and the machine it houses (although it should never contradict it). Totally dissimilar to the Zigzag Moderne design of the 1920s was the preference of the Streamlined to organically contain all the elements within one—or the fewest possible number—of volumetric components. The sheer curved surface, ovoid in form, was the ideal. Here all elements could be contained within one continuous form. In discussing the new Hummobile "Skylark" for 1939, F. A. Whiting Jr., the editor of the Magazine of Art, wrote that, ... many elements previously treated separately and applied here and there outside the basic shell are now either closed away or designed not to interfere with the sweep of the forms.'

Hitchcock writing on the Moderne in 1928 fully foresaw that the Zigzag phase of the '20s would be modified by America's industrial designers and that it would become the style in the '30s. While the curved motifs of the early Moderne and the occasional use of the curve and the horizontality of the International Style form the direct source for the Streamlined Moderne of the '30s, the first inklings of the Streamlined as an expression of the machine goes back to the teens. The symbolic suggestion of the transportation machine and of speed occurred between 1910 and 1920 in the theoretical drawings of Eric Mendelsohn, Antonio Sant'Elia, and even in a few of Kem Weber's pre-1921 drawings. Sant'Elia's streamlined citiscapes
with their curved and continuous surfaces and their ovoid or teardrop shapes are closely related not only to the Streamlined Moderne but equally to the futurist city of Hugh Ferriss. Sant’Elia’s drawings for the future city were not at all well-known in the US during the ’20s and ’30s (nor were Weber’s, which were never published), while the drawings of Mendelsohn were often reproduced during these years. Aldous Huxley in a 1930 article ‘Puritanism in Art’ illustrated a number of Mendelsohn’s drawings as a counter-attack against the International Style. Mendelsohn, J. J. Oud, and others, had used curved surfaces in their designs of the ’20s, but this was generally looked upon as near heresy by the strict Internationalists. A similar use of the curved façade continued on in Europe in the 1930s but this use of the curve was not symbolically related to the streamlined (and the ‘dynamic’) as they were in the United States.

Another powerful source – albeit indirect – for the streamlined and its implication for the future were comics and science fiction – both in an ideological as well as in a visual sense. Though the world of science fiction with its futuristic predictions goes back to Poe, Verne and Wells, it did not fully inject itself into the popular world until the 1920s. It was in 1926 that Hugo Gernsback established his widely read magazine Amazing Stories and by 1929 he had coined and made popular the term ‘science fiction’. The comic strip, ‘Buck Rogers, 25th Century AD’, conceived by John Dille and drawn by R. W. Calkin, was created in 1929. This was followed in 1934 by ‘Flash Gordon’ and in 1938 by ‘Superman’. The crescendo of science fiction was eloquently realized in the pandemonium which occurred in Orsen Wells’ epic radio production of H. G. Wells’ War of the Worlds in 1938. A casual perusal of cartoons published in the popular and even the high-brow magazine pointedly illustrated how concerned and involved America was in science, technology, and the machine – both present and future.

All through the ’20s the curve was a recurring theme in high art. Picasso’s and Braque’s neo-classic paintings of the ’20s bear more than a casual relationship with Leger’s stovepipe figures and shapes. Such traditionally oriented sculptors as Brancusi, Lachaise and the Americans Manship, Flannagan, and Nadelman abbreviated their forms into a single smooth package – a package which eliminated or minimized the diversity of secondary elements in a fashion identical to the single dominant shape of the streamlined car or train. Whether representational or neo-objective, the curve asserted its dominance not only in surrealist paintings of the late ’20s and ’30s, but also in the work of the ‘American Regionalists’ – Benton, Hopper, and others.

The future, though, belonged not to the practitioner of high art but to a new breed – the industrial designers. The American industrial designer was the 20th century answer to William Morris’ lament of the separation of the machine and the artist. It perfectly fulfilled the dream that all ‘progressive’
European and American designers had had from the 19th century on. Here indeed was the Bauhaus ideal realized. (The only reason the masters of the Bauhaus could not accept it was that its styling was different, i.e. it was not high art.)

The union between industry and art came about in the closing years of the '20s. All of the major industrial designers, 'officially' established their offices at this time: Norman Bel Geddes in 1927, Raymond Loewy in 1929, Henry Dreyfus in 1929, Walter Dorwin Teague in 1926. These New York-oriented designers were joined at the same time by Kem Weber and Paul T. Frankl on the West Coast. By the early '30s the industrial design professionals included other figures: Harold van Doren, Otto Kuhler, and Russel Wright.89

Those involved in the new marriage of industry and art can be pigeonholed loosely into three groups. First there were the technologists - the popular science idols most elegantly personified in the baroque salesmanship of Buckminster Fuller. Fuller, and to a certain extent, Frederick Kiesler were side liners (i.e. they posed as god-like theoreticians of the new movement). Second were the Buck Rogers' futurists - those such as Norman Bel Geddes, who, while they designed for industry, were associated in the public mind with the new millenium of the machine age of the next century. Third were the new packagers - those who went out and really sold their goods. Here one would find Raymond Loewy, Walter Dorwin Teague, Harold van Doren, and Henry Dreyfus.

Though seldom stated, the aim - or at least the result - of the products of these designers, was to divert one's attention away from the object itself (i.e. the machine, the structure, and the workings of a building) to a symbol of the object - in this case - the transportation machine. As Frankl wrote in

1928, 'Simple lines are modern. They are restful to the eye and dignify and tend to cover up the complexity of the machine age. If they do not completely do this, they at least divert our attention and allow us to feel ourselves master of the machine.' Four years later in 1932 he noted that the line had assumed a specific form, that of the curve which was equated with the streamlined, and that this had been accomplished by designers who have introduced into our consciousness new forms that express and eventually come to symbolize speed. In a perceptive fashion Frankl answered the question of why (especially in the early depression years) the new fledgeling industrial designer had been able to sell himself — because he saw that successful styling implies progressive restyling.

It is surprising to note that the symbol of the Streamlined — the airplane — did not itself become a commonly streamlined product until 1933–34. While there were streamlined airplanes as prototypes in the '20s, they were in no way the norm. The only place in the late '20s where one could truly find the air populated by streamlined airplanes was in illustrations for science fiction stories and in the comics. Bel Geddes' streamlined 'Flying Wing Aircraft' dates from 1929; two years before he had conceived both a streamlined ocean liner and streamlined car (Car #1).

Many automobile ads of the '20s suggested by association the symbolic kinship of the car and the airplane, but it wasn't until '31 that several streamlined cars were actually created. The most famous of these was Buckminster Fuller's 'Dymaxion Car'; equally way-out were Bel Geddes' Motor Car #8 and several designs for trucks and buses by Loewy. In 1933 Carl Breer designed the 1934 Chrysler 'Air Flow' with its single dominant body package, sweeping tail lines, slanted windshield, and skirted wheels. The Hupmobile and La Salle of '34 were aerodynamically streamlined in a milder way. In '35 the streamlined, V-fronted grill Lincoln Zephyr was produced; and in the following year the great classic of streamlining — the Cord — designed by Gordon Buehrig was on the scene. By 1937 all of the mass produced American automobiles were streamlined.

Bel Geddes' argument that even the ship could practically benefit from streamlining was realized in fact by the lukewarm application of streamlining to many ocean liners (especially of the deck cabins and the smokestack) and to the full-fledged public acceptance of the new Moderne in the Puget Sound ferryboat Kala Kala. Even more in need of a new image were the railroad passenger trains. What was sorely needed — the industrial designers convincingly
argued — was a new streamlined styling to ‘. . . dramatize the spirit of speed and power . . .’ of the train. The idea of the streamlined train and even the construction in Europe of a prototype goes back to the 20s. But it was in the 30s that the streamlined train came into its own, not only in the United States but elsewhere as well. Loewy could write with joy that the new 1936 Burlington passenger car with its stainless steel sheathing and smooth airfoil surfaces provided ‘. . . a glimpse of the future . . .’. Bel Geddes produced a series of designs for passenger trains between 1931 and 1933 which went far beyond anything actually realized in the 30s. Kühler designed the moderately streamlined The Rebel in 1934 for the Mobile and Northern. This was followed by his Hiawatha for the Milwaukee Road in 1935. Loewy brought forth a number of designs between 1934–1937 for the Pennsylvania Railroad, the best known of which was the Broadway Limited. Equally well advertised were Henry Dreyfus’ The Mercury and The 20th Century Limited, both for the New York Central. Finally, for the New York World’s Fair of 1939, Walter Dorwin Teague projected a train for a monorail system which in its bullet-like form was a pure Buck Rogers rocket-ship.

Minor machines and products slowly began to find themselves repackaged in the new streamlined image. As late as 1930 the radio and its cabinets still reflected the stepped, sharp angles of the Zigzag Moderne of the 20s, but by ’32 Russel Wright and others were restyling them to reflect the futurism of the new era. Plastic camera boxes were streamlined by the mid ’30s and they were followed by streamlined refrigerators, washing machines, stoves, bathroom scales, room fans, toasters, and even mobile trailer homes. Children’s playthings (including baby carriages) had to be restyled because, as one critic pointed out, ‘Streamlining is legitimate in the tricycle because the younger generation expects the latest modernity in its playthings.’

Architecture too, succumbed to the enticement of the Streamlined as a symbol of the future. Horizontality and the nautical flavour of the International


Style was fully taken over by the Streamlined Modernists. ‘The horizontal line’, wrote Frankl, ‘Characteristic of our present day civilization, has been taken over by the engineers. The conquest of space, will be symbolized in aesthetics through the horizontal line, the expression of speed and our time.’ The Streamlined Moderne carried on and amplified the hygienic, impersonal machine aesthetics of the previous decade. Lewis Mumford, in an article entitled ‘The American Dwelling House’ strongly argued that the ideal which should be aimed for in the contemporary house ‘. . . is to be found in the modern hospital.’ The actual materials used by the Streamlined Moderne were almost identical to that of the Internationalists — smooth stuccoed
surfaces (suggesting concrete), chromed metal parts, plastics, glass (particularly glass bricks), linoleum, etc. Since this second phase of the Moderne, like that of the '20s, was a conscious style, it was taken over with ease by the successful businessmen-architects. As a style-appliqué, it could be applied to a basically Beaux Arts classical building. The 'Neo-Babylonian' WPA architecture of courthouses, post offices, power distribution stations (of the TWA) and airport terminals borrowed just enough from the Moderne to make themselves modern. Horizontal rows of windows of glass brick, steel railings, black Vitrolite panels, and exposed metal detailing were the style details used to effect this transformation. The shift in fashion was felt by all but a few of the large architectural offices. Raymond Hood (with Godley and Fouilhout) abandoned the soaring verticality of his work of the '20s for the horizontal in his McGraw-Hill Building (New York, 1929–1930). Even though William Lescaze asked, 'Why should a fixed thing be streamlined?' he with George Howe managed quite well to streamline the public banking floor of the Philadelphia Savings Fund Building (Philadelphia, 1932).²¹

The second phase Moderne house, with its flat roof, curved projecting bays and wings, steel railings, and glass brick windows was, as with so many other designed objects, fully realized by Bel Geddes before 1930. Variations on this mode of architectural styling were carried on through the '30s by Edward Stone, Howe and Lescaze, and Raymond Hood (d. 1934). The plans of most of these houses remained traditional, only their surface packaging was glitteringly Moderne. The major modern figures of American architecture – Wright, Schindler, and Neutra – felt the strong urge to streamline. The most sophisticated streamlined building of the '30s was Wright's Administrative Building for Johnson Wax Company (Racine, 1936–39). It has, as Reyner Banham has pointed out, '... a very strong sense of industrial styling... with its curved walls' floating bridges, and curved bands of glass tubing.'²² Neither Schindler nor Neutra abandoned their commitment to the angular, but the streamlined curve crept into their works; particularly in their overstuffed, built-in furniture; in occasional curved façades; and in glass brick walls.

In the late 1930s a number of important Streamlined Moderne buildings were constructed in Southern California. Visually the most prominent of these were John C. Austin and Company's (with O. B. Hanson) NBC Building (Hollywood, 1939):
Lescaze and Heitschmidt’s CBS Radio Building (Hollywood, 1937–38); Albert Martin and S. A. Marx’s May Company Department Store Building on Wilshire (Los Angeles, 1940); and Stiles O. Clements’ Coulter’s Department Store on Wilshire (Los Angeles, 1937). Motion picture theatres, large and small, found the futurism of the new style just what they needed to attract the theatre-goers. S. Charles Lee’s Academy Theatre (Inglewood, 1939), with its interpenetrating cylindrical volumes, glass bricks, etched glass doors, and applied bands of chromed steel is a virtual encyclopaedia of Moderne forms and details.

The two fairs held just before World War II, the New York World’s Fair (1939–40) and San Francisco’s Golden Gate Exposition (1939) should have provided the final impetus to establish the Streamlined Moderne as a new American national architecture.7 The Moderne was completely in; it dominated the industrial design world and in architecture there was no serious contender. At that moment (1939–40) even the International Style looked somewhat dated and ‘old hat’. But the unity and the dominance of the Streamlined Moderne – particularly in matters architectural – did not reassert itself after 1945. There was an obvious feeling that a new image, a new fashion, was needed. With the exception of the streamlined chrome-plated automobile which continued on in the post-World War II years, the ‘in’ design either turned to the style features of the International Style (i.e. constructivist metal, plywood and plastic furniture of Charles Eames) or to a new symbol of non-design for industrial products.

Was it the reality of World War II – with, in fact, its realization of so much of science fiction in the development of the bomb, faster than sound jets and of the rocket – which made people less interested in the Streamlined as a symbol of the future? Did the post war years of the ‘40s and ‘50s, with their newfound economic stability and the affluence of an ever increasing middle class, make the here and now more significant and real than the 25th century of Buck Rogers? (It is interesting to note that both Buck Rogers and Flash Gordon sank from popularity and disappeared after the war.)

For well over two decades (1945–68) the Moderne of the ‘20s and ‘30s was regarded or referred to with derision. With the advent of ‘Pop’ and ‘Op’, with our present fling into the commercial vernacular, we are apparently in the mood to visually and intellectually respond to this 20th century episode of design.

References:
1. Edgar Kaufmann and Ben Raeburn, Frank Lloyd Wright: Writings and Buildings, Meridian, New York, 1960, p. 59
11. A few of the buildings of Schindler dating from the ‘30s could be loosely considered within the framework of
the 'International Style'; but the only true Internationalist in the United States was Neutra. Others such as William Lescaze, A. Lawrence Kocher, Albert Frey, and Charles Shillowitz played on the borderline between the International Style and the Moderne. Henry Russell Hitchcock and Philip Johnson in The International Style: Architecture Since 1922, Museum of Modern Art, New York, 1932, include the work of six American individuals and/or firms; of these only the buildings by Neutra, Kocher, Frey are, strictly speaking, examples of the International Style. One senses that the other American work was included to suggest that the 'new architecture' was not totally foreign to the United States.


18. The exhibition Machine Art held at the Museum of Modern Art in 1934 established the style—a commitment from which this institution has never deviated. See the catalogue: Machine Art (with an introduction by A. H. Barr, Jr.), Museum of Modern Art, New York, 1934.


20. The specific American symbolism of the transportation machine as the sign of the machine has already been indicated in the 1901 quotation from Wright. Other American architects, such as William Gray Purcell, often returned to this theme. The fascination with the machine also occurred the attention of the short-lived New York Dadaists and the late ‘Immaculate’ painters of the '20s.


23. The professional architectural journals in the United States accepted the French Moderne with open arms. It was also a frequent subject for illustration and discussion in the art magazines and in the larger metropolitan newspapers. Two important volumes on the subject published during the period were Leon D’Aubigny, Modern French Decorative Art, The Architectural Press, London, 1926; and Howard Robertson and F. R. Yerbury, The Examples of Modern French Architecture, Scribner’s, New York, 1929. A popular volume on the subject was Katharine M. Kahle’s Modern French Decoration, Putnam’s, New York, 1930.


26. Frederick Kiesler suggested several of the sources for the Moderne (including Malevitch and others) in his Contemporary Art Applied to the Store and its Display, Brentano’s, New York, 1930.


32. The visual lightness of the buildings and the furniture of Purlieus and Elmslie constitute the closest parallel to the American Moderne of the '20s.


34. Particularly important are the series of covers designed for the Alexander Corporation of Philadelphia by William Gray Purcell and John Norton. These were produced between 1917–1918.

35. The term ‘American Perpendicular’ was applied to the late Zigzag Moderne skyscrapers in an article in the New York Times, May 8, 1927, sec. 4, pp. 4–5.


42. Machine Art (Introduction by A. H. Barr, Jr.), p. 16.

43. Ibid., p. 12–13.

54. The theoretical drawings of Kem Weber are undated. His wife feels that they predate 1921, the year in which he associated himself with the Barker Bros. in Los Angeles.
57. The humor of the 'Mechanical Incrusted on the Living' (specifically in regard to the machine) was beautifully conveyed in the 1930s in the cartoons of Reuben L. (Rube) Goldberg.

Note: A history of comic strips written by Dr. Zimmermann of the Berlin Akademie der Künste will be featured in the next issue of *aag*. Ed.