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TOWARD A UNITY OF THE CONSTRUCTIVE ARTS

BY N. GABO

In its present state the relationship between architecture and art cannot be clearly defined. Nevertheless this problem is not an insoluble one. Certainly it is not a problem peculiar to our period alone, but one that has arisen many times in the history of architecture and art. It seems to me to have been quite satisfactorily solved in the past; why, then, should not our own generation find its solution for our own time?

Architecture was always the product of a highly developed state of society. Only in those periods of human history which attained a high social organization and social consciousness was there an exactly defined architecture. The period in which we are now living has anything but an exact or definite social organization or consciousness. Architecture, as well as art, has always passed through two stages of development: the stage of ideas and the stage of achievement. To reach the stage of achievement, art and architecture need the collective encouragement of a society; they are the expression of a collective mind. On the other hand, to be effective ideas in art and architecture need a latent ideal. The architecture of our time has not yet reached the stage of achievement, we are still living today in the stage of ideas. The key to the solution lies in the question of what our ideal is.

Even a superficial survey of our time would convince us that the ideal of art and architecture can be no other than the ideal which animates the whole spirit of our intellectual researches. These researches are directed toward finding a way out of the obvious state of spiritual and social anarchy in which we now live. Our towns are overcrowded, our streets are narrow, our dwellings are decayed; we would be heading for a hopeless pessimism if we were not aware that, from the beginning of the twentieth century, the younger generation of architects and artists has been indefatigably striving and working for a remedy and release from the unfortunate inheritance of the preceding century. It is even possible to state that they are not working in vain for they have succeeded in reaching a clear ideal which is leading them in a straight and constructive direction. This ideal is to create a dignified frame for a more perfected social and spiritual life conducted and based upon stable universal principles.

The younger generation of artists, the "abstract and constructive artists" have exactly this ideal. There is no difference between the ideal of a constructive art and the constructive functional architecture of today. It is clear that this is the point from which to set out on a search for the answer.
to the question: "What is the relationship between art and architecture today?" We must avoid the mistake made by our predecessors who considered art as something to be applied to architecture. The relationship between constructive art and constructive architecture is by no means that of adaptation, since neither one should serve the other. History offers many illustrations to prove that such a point of view is erroneous. Such a relationship is a sign of degeneration in art and architecture. For instance, the clear exemplification of the last century when architecture was architecture in name only, merely a conglomerate of more or less complicated, more or less naïve, planless, disconnected buildings of an occasionally decorative stylishness, or a deliberately skillful ugliness. All this stylelessness, planlessness and ugliness was not the fault of the art and architecture of that century but the fault of a styleless, planless and ugly time when no one knew what he wanted and everyone felt that he knew more than the other because someone was supposed to have known it before. Such a period could not possibly produce architecture; it could only produce a supreme instance of how architecture should not be done. It is no wonder that the inner contact between art and architecture at the end of that century completely disappeared.

There are other examples that show the true relationship between art and architecture. When we look at the epochs which have left us great architecture we see a complete unity between the two. A caryatid in the Erechtheum, the statue of Athena in the Parthenon, the Sphinx in front of the pyramids, are as truly architecture as any purely architectural building is sculpture. A fresco of Pompeii, an ikon in a Byzantine temple, or a sacred image in a Gothic church, is as much a part of the wall on which it is placed as the wall itself is part of the image. It was not deliberate intention which brought the art and the architecture of those epochs to such a unity, but the guiding spirit, the constructive ideal of their time which enabled the artists and the architects to arrive at this accord.

Likewise in our time, a contemporary architectural construction, constructive architecture, is not intended to be a formalistic enterprise with a design to fit a chosen volume or form. A piece of constructive architecture must be an organism fully grown from within. It is above all a construction in space, erected from the inside, devised and organized according to the inner dynamics of all the events and all the forms of action connected with the life of that organism. The constructive architect plans his edifice from a central inner point where the most essential part, the human body, is placed. From this point all the vital projections radiate toward the exterior. Constructive sculpture bears the same characteristics for it is a manifestation of the same concept of space. A constructive sculptor no longer tries to force his images into a given, static scheme. He tries rather to materialize the images of his inner impulses, projecting them from one vital central point in space and making them radiate toward the outside in an open, free and unlimited volume, so that the final lines of these projections form the organic skin of an imaginary organism.

Since there is a basis for a common spirit in present day art and architecture, we can be confident that these two artistic disciplines have every chance to advance hand in hand. Furthermore, the constructive architecture of today cannot ignore the necessity of art or consider it as a superfluous element. One of the most important bases of the constructive architecture is its pure functionalism. But function in architecture has esthetic as well as material and technical aspects. A building is more than a dwelling place; it exists in space and, as such, it acts in space and has an influence on the emotions of the human beings. As soon as the constructive architect, who is a consistent functionalist, realizes this esthetic function of his architecture, a close cooperation between constructive artists and architects will become inevitable.
Constructions in space
Our whole way of living has become dependent upon industrial production. This is true as regards the forms of contemporary life as well as the earning of our livelihood. What made the industrial development possible? Industrial development only became possible after the abolition of guild restrictions. The corporations (guilds) originated as a protection to citizens against the feudal system. Each guild had a well fixed administration and definite regulations. At first there were but few guilds; for example, in Paris of the thirteenth century, there were about a hundred. But the guilds grew rapidly in number. The reason for this was the increasingly complicated division of labor as well as the interest the state had in foundling new guilds, whose privileges were only granted by the king after the payment of very high taxes. The exclusiveness of the guilds continued to grow. Merchandise, composed of materials which belonged to the sphere of more than one guild, could only be furnished by masters who were members of the particular guilds producing the component parts. The public was entirely in the hands of the guilds. The producers could raise prices ad libitum. New inventions not born in the spirit of handicraft but based upon new scientific discoveries, could either not be made known at all or only under a variety of guises. Due to their complicated mechanical manufacture, the new processes cut more and more into the rights of diverse guilds. The difficulties which confronted the inventor of printed wallpaper in the last years of the eighteenth century are typical.

March 17, 1791

"La proclamation de la liberté du travail."

This meant that every French citizen is given the right to select a profession, his work or a trade according to his desires and can pursue it wherever he chooses. It is in the proclamation of the liberté du travail—the freedom of trade—and in the almost simultaneous granting of a protection of patents (1790-1791) that the development of industrial production on the continent lies. England had long ago taken the lead. Its revolution had been over in the seventeenth century, there were about a hundred. But the guilds grew rapidly in number. The reason for this was the increasingly complicated division of labor as well as the interest the state had in foundling new guilds, whose privileges were only granted by the king after the payment of very high taxes. The exclusiveness of the guilds continued to grow. Merchandise, composed of materials which belonged to the sphere of more than one guild, could only be furnished by masters who were members of the particular guilds producing the component parts. The public was entirely in the hands of the guilds. The producers could raise prices ad libitum. New inventions not born in the spirit of handicraft but based upon new scientific discoveries, could either not be made known at all or only under a variety of guises. Due to their complicated mechanical manufacture, the new processes cut more and more into the rights of diverse guilds. The difficulties which confronted the inventor of printed wallpaper in the last years of the eighteenth century are typical.

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The first "Exposition des produits de l'industrie" on the Champs de Mars in Paris was opened in September 1798. It was more than nine years after the abolition of guild restrictions that the first industrial exposition was organized. What formerly was suppressed and discouraged was now furthered and well cared for. Economy, industry and invention: "Ces arts n'avaient pas pu encore se développer à cause des entraves sans nombre. Mais, la liberté les venant... Sous l'égide de la liberté, les arts étaient appelés à un brillant avenir." A truly new spectacle was to be offered to the people and this was to occur in the same place for which all national festivals had taken place since the beginning of the revolution, namely, in the Champs de Mars. Only a few weeks earlier the Medici, the Venus of Medici and the Apollo of Belvédère were exhibited here. General Bonaparte had brought them back from Italy. The first exposition des produits de l'industrie was supposed to fill out the last days of the same revolutionary year, which ran to end September 21.

The extent of this enterprise, which was the beginning of that vast movement of exhibitions during the nineteenth century, was rather modest: 110 exhibitors. The exhibition not only contained articles of luxury but also articles of daily use, such as wallpapers, sand-blocks, wallpapers, textiles, cotton-threads produced by machinery, and the principle of the exhibition, of placing products, industrial products, in the foreground, which was developed here for the first time in history, held undisputed significance for more than a century. The festive character was likewise maintained as long as the great expositions remained an event and a focus which were able to influence the development of industry.

Eleven expositions were organized in France from 1798 to 1848. In their development, and the slow but steady conquest of each branch of industry, one can discern the beginning of our present-day tendencies. Number of participants: in 1798—110; in 1806—1,122. They are followed by the Napoleonic wars.

Exhibitions of World Trade and Industry. A condition for the national exhibitions of industry as arranged especially in France during the first half of the past century was the official abolition of the compulsory obligation to belong to a guild. A condition for World Exhibitions (or Universal Exhibits as they were at first called) was the principle of Free Trade. There was no reason for lining up the products of the whole world unless these products could be bought the world over, unchecked by customs barriers, contingents, import or export prohibitions. In the form it took at that time, Free Trade was the product of the liberal conception of economy: free communications, free trade, improvement of production and performance through competition.
London. The First World Fair. Hardly two years after the greatest French National Exhibition of Paris 1849, the Exhibition of World Industry was opened at the Crystal Palace in London's Hyde Park on May 1, 1851. At once the number of exhibitors increased fourfold. How was it possible to create that gigantic organism, for which no precedent and no experience existed, within such a surprisingly short period? The English themselves were surprised by their success. The event may be explained partly by the fact that the development of more than half a century of industrial work had matured suddenly and was ready for a performance of such proportions. It is evident that even in a country of great caution and tenacity, developments can occur by leaps and bounds. But this is certainly not a satisfactory explanation. There was a force behind that exhibition's formation that accomplished things that had never been done before.

Unlike the French exhibitions, initiative and financing came from purely private sources. The principle of the exhibition was to be: to line up world production for comparison, stimulation and instruction. It followed, in outline, the last French exhibition and included: 1) Raw materials, 2) Industrial equipment: Machinery and Inventions, 3) Finished products, 4) Art (Applied art and sculpture, but no paintings).

The genesis of this first great exhibition permits a deep insight into the courage and spirit of enterprise in the years preceding and after 1850, although it is impossible to give a detailed description of it in this summary. Briefly, the exhibition was held under the patronage of Prince Consort Albert. Sir Henry Cole, expert and official, cooperated with him. Gottfried Semper, a young German architect who had left Germany because of his political convictions, worked with Sir Henry Cole.

What were the aims of the exhibition aside from increased exports which resulted precisely a year later? The Prince Consort replied to that in 1850: "None will doubt that we are living in a most remarkable period of transition, laboring forestally toward that great aim indicated everywhere by history: the union of the human race... Gentlemen, the exhibition of 1851 shall give a vivid picture of the stage at which humanity has arrived in the solution of that great task."

A competition for the building of the exhibition was without result in spite of 233 entries. In May 1850 the prize jury itself worked out a project—a brick structure with a large domed hall—which was also ruled out. Then a contractor submitted the project of a garden builder, Joseph Paxton (1801-1865). After its construction contemporaries declared that "this Crystal Palace will mark a new style in building, a revolution in architecture."

The fact that a project of such extraordinary audacity was not shoved aside as fantastic gives us an insight into the power and self-confidence of that period. The promoters began work without a business-like contract, without any down-payment, or any legal obligation on the part of the Commission. Building time: survey began—end of July 1850; construction started—end of September 1850, opening—May 1, 1851.

The impression: "We see a fine network of lines without any clue to line up world production for comparison, stimulation and instruction. It followed, in outline, the last French exhibition and included: 1) Raw materials, 2) Industrial equipment: Machinery and Inventions, 3) Finished products, 4) Art (Applied art and sculpture, but no paintings)."

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tenth group, distributed over all parts of the Exhibition, must be ascribed to Le Play's influence. Its title was: "Objects which shall especially serve the improvement of the physical and moral standards of the nations . . . " A methodical collection of low-priced furniture, clothing, foodstuffs from all parts of the world was included, as well as model apartments for factory workers in town and country, the progress of education, etc. At that period France led Europe for the last time. The success of the exposition could not be questioned. The number of visitors was more than twice that at the first London and Paris enterprises of this kind. Its size was four times that of the Exhibition of 1855, and instead of the deficit of that time, a profit of 2,300,000 francs was made.

Philadelphia. Not because of the first appearance of America as a factor in the field of world trade, Not an imitation of Paris or London. A new principle is put into effect: The division into pavilions, a principle that was followed afterward in Chicago 1893, in Paris 1900, and from then on regularly. The reason is the increasing scope and specialization of industry which demands segregation into single buildings. All buildings at this exhibition still preserved a sympathetic and primitive colonial style and, with the exception of the Art Pavilion, were built of iron, glass and wood.

Paris. The position the whole Champs de Mars was taken up by 56 main buildings. This led to an extension beyond the Seine river and the erection of the Trocadero. The exposition was to show the world that France was carrying on in spite of the defeat in 1870. Eiffel had his hand in the huge glass-covered buildings with their projecting blinds. The great halls of machinery which stretched back at a right angle to Eiffel's projecting hall, introduced a new principle of construction and anticipated 1889. "The acme at this time was contributed by the Orient with the art of Japan and China." (Lessing, 1878.) Stronger than ever before, eastern products of ancient handicraft were placed side by side with cardboard pianos and those characteristic luxury pieces from the cabinet makers of Faubourg St. Antoine. New methods were shown by England. "The English are beginning to form their objects purely according to modern principles of construction. After having rid themselves of the memory of older traditions . . . " (Lessing, 1878.)

Paris. Creatively progress from 1878 to 1889 was so tremendous that visitors were stirred to the utmost by the boldness of the Eiffel tower and the Halle des Machines. The 300 meter (1,000 ft.) tower, built in 17 months, and the Galerie des Machines with a length of 420 meters (1,400 ft.) and a span of 111 meters (370 ft.) attained a standard which has since been unexcelled. 1889 is the culminating point and the end of the development. This time again, the program was not devised by architects. It remained, as it should, in the hands of theoreticians. Sociologist and Ex-Minister Jules Simon was responsible for the theme section of the exposition—"The History of Labor and Industry" (L'Histoire du Travail). He well knew that it would be a mistake to stress enlightenment: "The visitor does not come to study science; while he does not dislike instruction through entertainment, the main thing he is trying to find is distraction and relaxation." (L'Exposition de Paris 1889, vol. III, p. 98.) The bazaar, the street in Cairo took the place of serious oriental participation. The success of the "Rue du Caire" with its donkeys imported from Egypt competed with the success of the Halle des Machines. In 1900 that "Rue du Caire" became a medieval village "Vieux Paris" and will be part of a town even in 1937—"Quartier Regional."

Chicago. As we saw the great buildings of 1889, not bound by time and place, must have been full of hopes. Prophetic words were spoken: Here come new times, a new era is dawning. Fundamentally Frantz Jourdain and Octave Mirbeau, who spoke these words, were right. But not for the moment. The Chicago World's Fair of 1893 consciously turned away from the spirit expressed by the great constructions of 1889. Not Eiffel's spirit dominated the "marble" pavilions on Lake Michigan, but the spirit of the Paris Academy. Nobody would have expected a "Halle des Machines" behind the cupola of Santa Maria della Salute, combined with a palladian portico and the facades of the Place de la Concorde. The influence of this exposition upon American city architecture can hardly be overestimated.

Paris at the end of World Expositions in their customary sense. Industry had become a matter of course: it is no longer a sensational feature for exhibitions. Besides, it has become so specialized and is covering so much ground that it cannot be confined into the frame of a single exhibition. The "Palais des Machines" of 1889 still stands, but its interiors are altered, and a hall has been added, the "Palais de l'Electricité," where artificial waterfalls are illuminated electrically at night. Electricity on a grand scale is the theme of this exhibition.

The main part of the exposition is situated on the now classic Champs de Mars. The Esplanade des Invalides is added and the two are connected by the Street of the Nations. Its palaces are built in the style considered nationally significant for the exhibiting country. Germany is represented by late medieval town halls, other countries by Baroque and Renaissance buildings. Outside the city, in the Vincennes forest, agriculture and forestry are shown. The system of pavilions has become prevalent, as in Chicago 1893. A new building material is being used—reinforced concrete. But it is no longer apparent. It is hidden by the stone facades of the Grand Palais and the Petit Palais.

Decadence usually seems to be connected with signs of fatigue. The decadence of expositions is demonstrated by an indifference which surprised contemporaries. Big industry led the way. In London 1851, Paris 1867, Philadelphia 1876, Krupp's giant guns were the sensation. When Berlin, after 1900, intended to hold the first German World Exposition, it was this same Krupp who declared that he "needs no exhibition publicity and that therefore the organization of such an exposition must be regarded as useless and without purpose." The exposition was not held.

Special Exhibitions. The Period that follows is one of specialized exhibitions. They had been in existence all through the century, but now these shows, appealing to certain groups only, occupy the front rank. The International Electricity Exhibitions of Brussels of 1925, Barcelona 1927, International Fur Exhibition, Exhibitions for Health and Hygiene, Press Exhibition (Pressa, Cologne) and others. In addition there are annual showings by those industries appealing to the public at large. Again Paris is the center.

In the Salon de l'Automobile, Salon de l'Aviation, Salon du Radio, etc. Since the World War, Trade and Sample Fairs became more and more popular.

New Beginnings. As soon as industrial production lost its eruptive power, a need was felt to make up for the neglect in the treatment of human problems. It began at the periphery with an improvement in taste. After the London exhibition of 1851, Semper tried, with good examples, to readjust the taste of the industrialists which had completely grown out of bounds. Various slogans were distributed until around 1900 a definite reform was noted in the field of applied art. The individual and the time were to be harmoniously united. It is clear that applied arts in this connection interest us because they are closely allied with the private surroundings of man. The need for new forms appears first in the small object, the piece of furniture, the house, then in the organism of the community and the general mode of living. That is the point we have arrived at today. For example, the repeated attempts of the Darmstadt art colony after 1901 are more important than the entertainment provided by the various industrial exhibits shown at World Expositions after 1900.

Darmstadt 1901; German Exhibition of Applied Arts, Dresden 1906; the foundation in 1907 of the "Deutsche Werkbund" and its two most important events, Cologne 1914 and Stuttgart 1927; the Swedish Exhibition, Stockholm 1930—all these are steps toward giving form and backbone to our present-day uncertain way of living. The next stage in this development is clear: The problem of harmoniously uniting man and time cannot be superficially treated. We must from now on tackle the modes and standards of living in their entirety.

Do exhibitions still possess vitality? An entirely new type of exhibition, corresponding to changed circumstances, is developing. Fragments of it will be found in three sections of the Paris World Exposition of 1937. That type of exposition is no longer interested in a "thematic" alignment of production. It very consciously takes as a starting point the needs and desires of man, subjects everything to that principle. Because the question that touches peoples and nations most deeply today is not: "How and how much can we produce?" but "How can we manage not to lose control over production?"
habitation

Project for a folding mobile house by Alfred Claus. Wood cabin in Bergen designed by H. Elte.
HOTEL GOOILAND AT HILVERSUM BY J. DUIKER
The Hotel Gooiland and the A.vro broadcasting station were the last contributions of Duiker before his death. Its open plan, rooms with terraces overlooking a raised garden, its wide unobstructed view permitted by the fan-shaped exterior court and a happy fusion of the outdoors and the enclosed space are characteristic features of this building.
APARTMENT HOUSE IN PARIS
BY JEAN GINSBERG AND FRANCOIS HEEP

Present obsolete system of city planning often reduces urban architecture to a facade problem. A typical example is the above building with fifteen two-room apartments facing street and court. Here partitions and openings are designed to give a certain illusion of space.
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