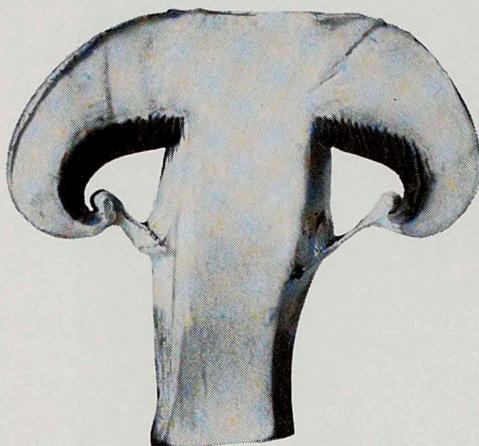


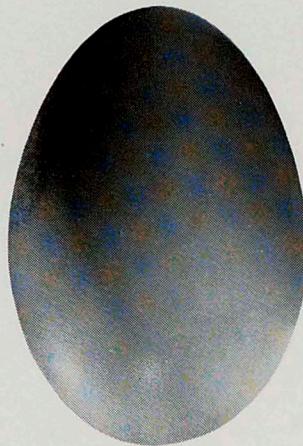
OZENFANT

UPON BEAUTIFUL FORM OR DO YOU LIKE

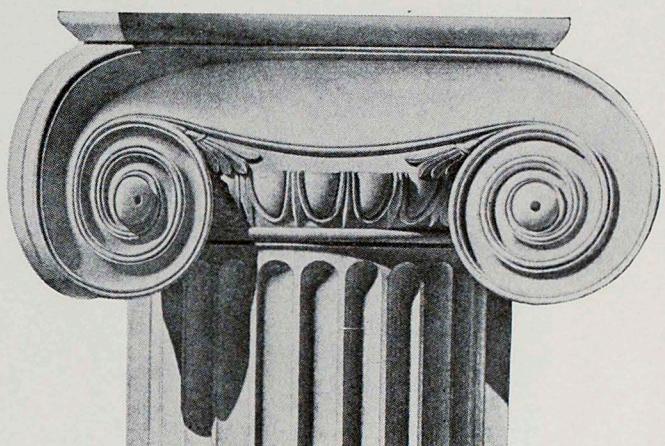
Mushrooms?



Eggs?



Snails?



This mushroom is not bad

but art often does better than nature

Too much incense and too much nonsense have left us almost unable to say what the word "beauty" means.

Besides, the word beauty has been so often misused in unworthy associations, that most intelligent people hesitate to use it at all.

However, if there are forms which appear beautiful to us we must believe that there is such a thing as beauty.

Mr. But: But no two men are alike so beauty must be a relative term. —Men are not alike, not quite alike, but much more alike than different. Proof: Have you noticed in the country, in the mountains, in the woods, at the seashore, where there are millions of flowers, plants, stones and shells of all kinds, everyone picks the same flowers, fills his pockets with the same stones and the same shells: the beautiful ones.

Mr. But: But why?

—Because everyone feels a need for beautiful forms, a basic human need. The artist's role in society: to produce beautiful forms. Beautiful art is made of forms for which we feel an instinctive need.

Mr. But: But we sometimes collect monstrosities; curiously ugly objects.

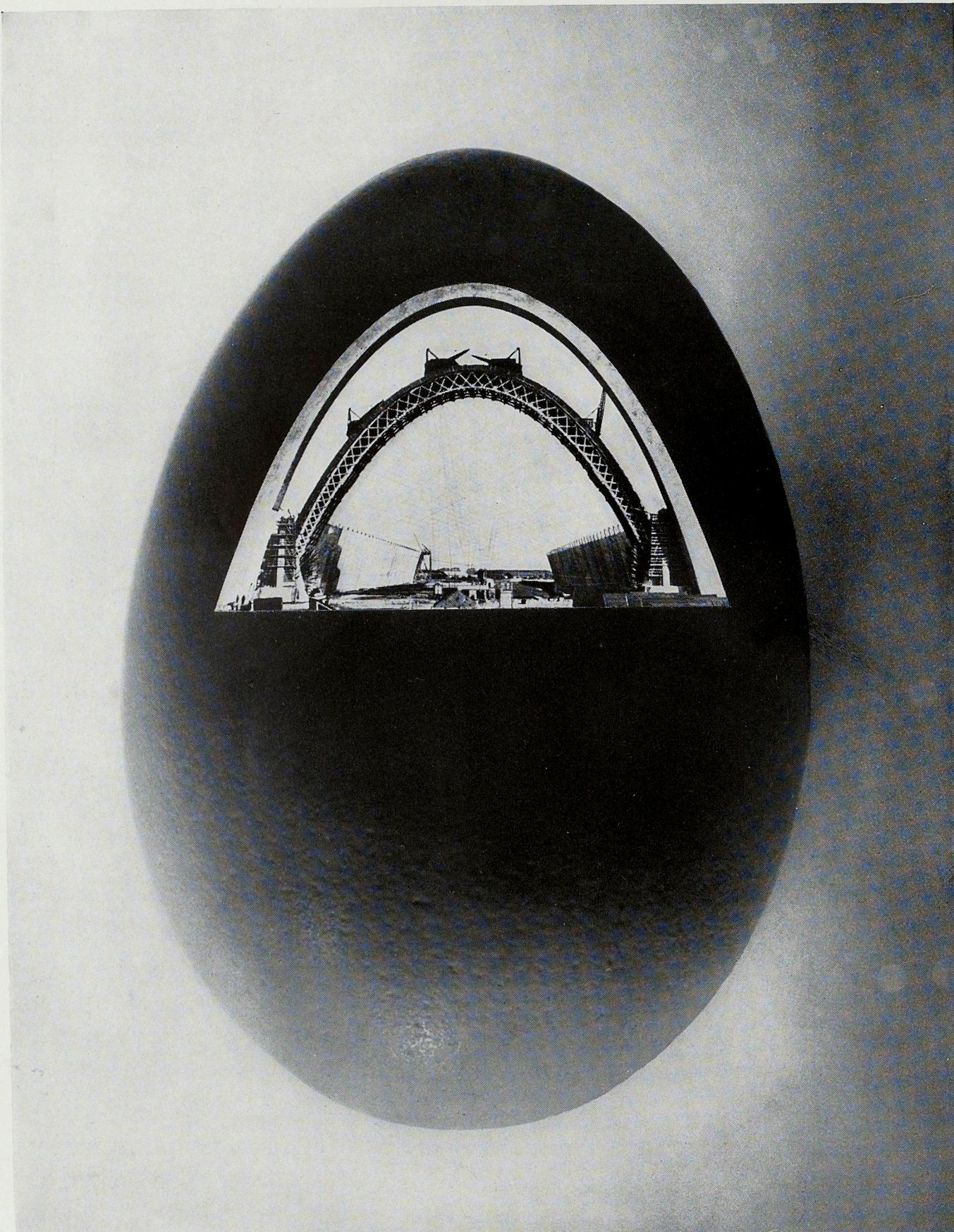
plus

MAY

3

Editors: Wallace K. Harrison, William Lescaze, William Muschenheim, Stamo Papadaki, James Johnson Sweeney. Typography and layout: Herbert Matter.

NATURE AND THE ENGINEER



Two engineers: the hen and Mr. Freyssinet. (Hangar of Orly)

—Certainly: there is also art in ugliness, very fashionable today. It gets its strength simply from running counter to our normal desires. But all the great expressions in art, the Sumerian, the Egyptian, the architecture of Greece and Rome, certain examples of contemporary architecture and good Negro sculpture are based on the satisfaction of our need for beautiful forms.

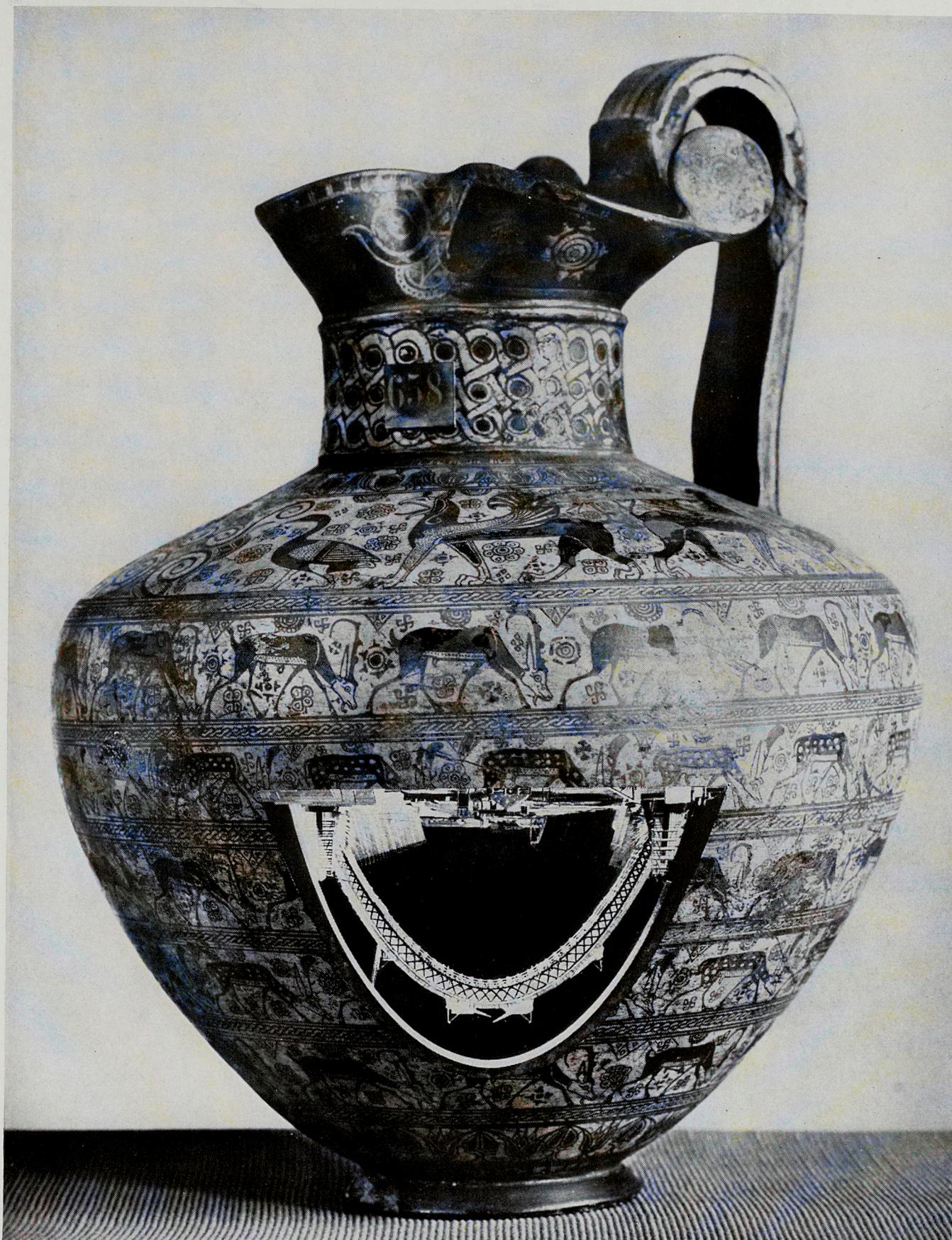
Mr. But: But this means that beautiful forms are beautiful if they answer normal, natural desires in us?

—Yes. These desires are the bases of the great art in all periods in all places.

Mr. But: But how do we recognize a beautiful form?

—By looking at it. There are beautiful forms and ugly forms as there are good odors and bad odors. To be sure, certain depraved tastes enjoy ugly sights and nasty smells. To test the quality of a form, you need only ask yourself if you would be tempted to pick up a shape of this sort at the seashore—if you would want to put it in

THE ENGINEER AND ARTIST



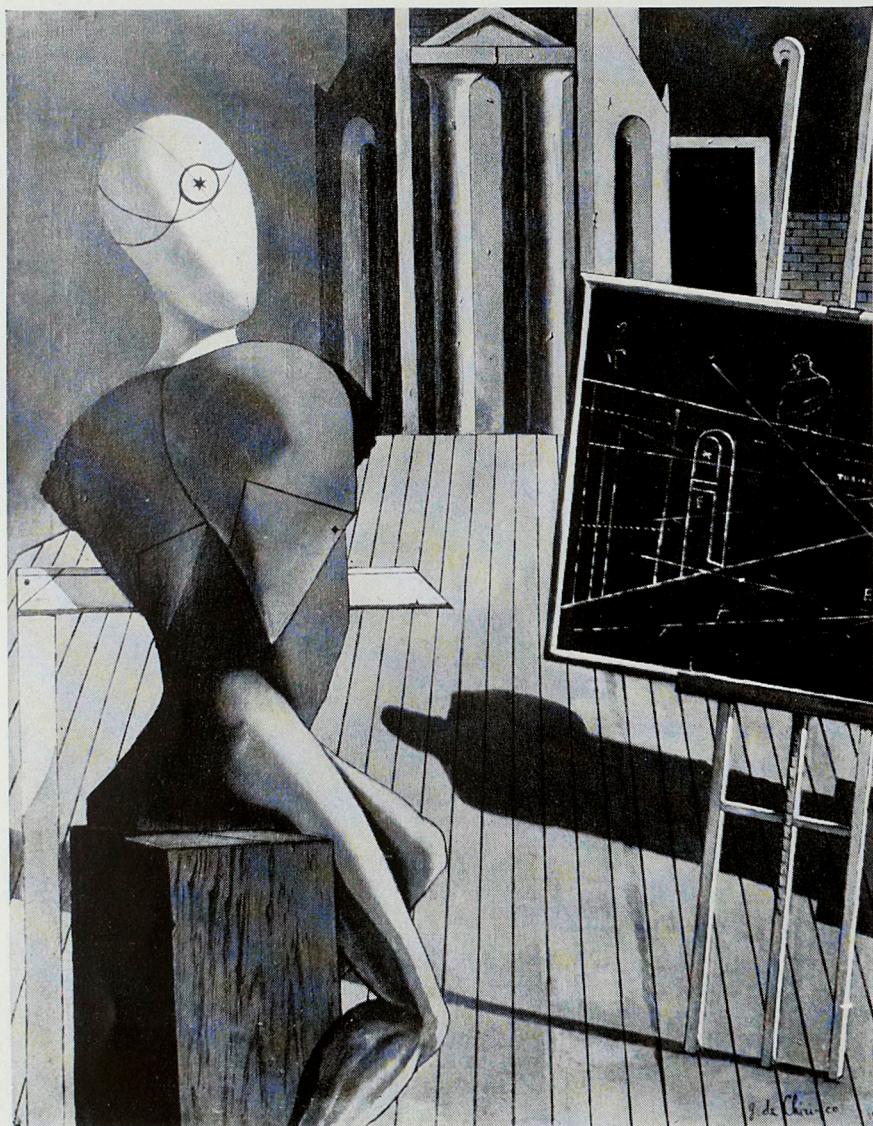
The work of the potter and of the engineer is often beautiful because neither is free: technical necessities restrict their liberty. Fortunately, For the abuse of liberty leads to anarchy of "forms," consequently to anarchy in the work itself.

your pocket. If these facts, simple as they are, were always kept in mind, a real step toward the understanding of art would be made: the most beautiful works of art are a result of the symphonic organization of beautiful forms. And a beautiful form is a beautiful form no matter how it was produced—by nature, or by the artistic or mathematical imagination.

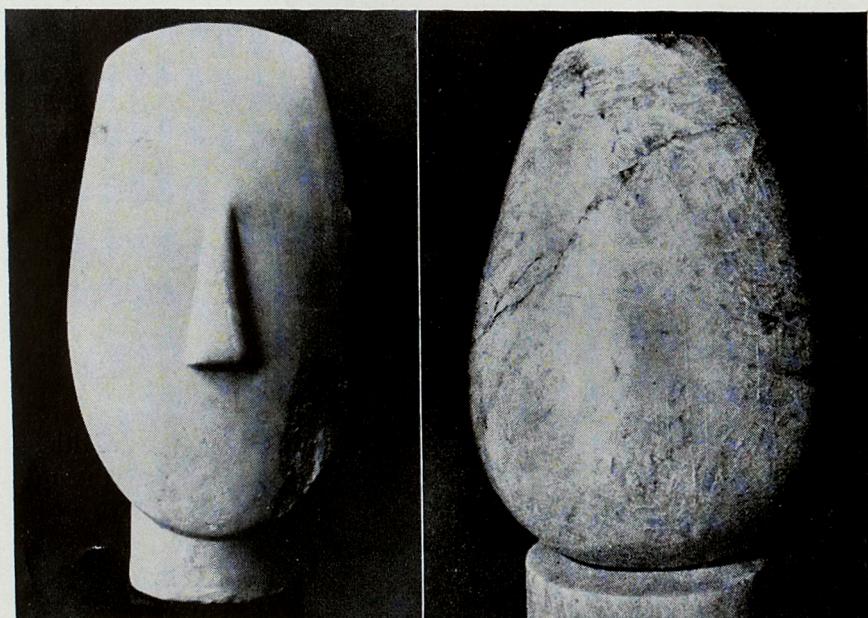
I do not ask the snail, or the genie of the mushroom, the hen, and Mr. Freyssinet if they are artists—they satisfy

my need for beauty. The rest is merely a question of title. Forms that express resistance, tension and growth are usually beautiful; they make us feel the functioning of forces, and forces are nature. The form in nature expressing resistance (the egg), or growth (the snail), or the same forms employed in painting or sculpture, no matter what "body" they make a part of, have the power to put us in communion with nature by making us feel and understand its functioning, its life.

THE EGG-THEME IN ART: EXAMPLE



Chirico 1917.



Cycladic sculpture, bronze age.

Brancusi 1922.

WHY HAVE ARTISTS CHOSEN THIS THEME?

1st. BECAUSE THE EGG-FORM IS A BEAUTIFUL FORM.

2nd. BECAUSE MAN HAS AN INSTINCTIVE LONGING FOR COMPLETENESS. AND THE EGG-FORM SATISFIES THIS NEED: IT GIVES US A FEELING OF THE COSMIC TOTALITY.

LITANY

THERE ARE UGLY IDEAS AND BEAUTIFUL ONES.

THERE ARE UGLY ACTS AND BEAUTIFUL ONES.

THERE ARE PLENTY OF UGLY PICTURES AND SOME BEAUTIFUL ONES.

THERE ARE UGLY WOMEN (TOO MANY) AND BEAUTIFUL ONES.

THERE ARE UGLY MACHINES AND A FEW BEAUTIFUL ONES.

THERE ARE MANY UGLY MACHINE-MADE OBJECTS AND SOME VERY BEAUTIFUL ONES.

THERE ARE MANY MORE THINGS STILL, NEITHER UGLY NOR BEAUTIFUL: NIL.

OF A GENERATIVE THEME FORM

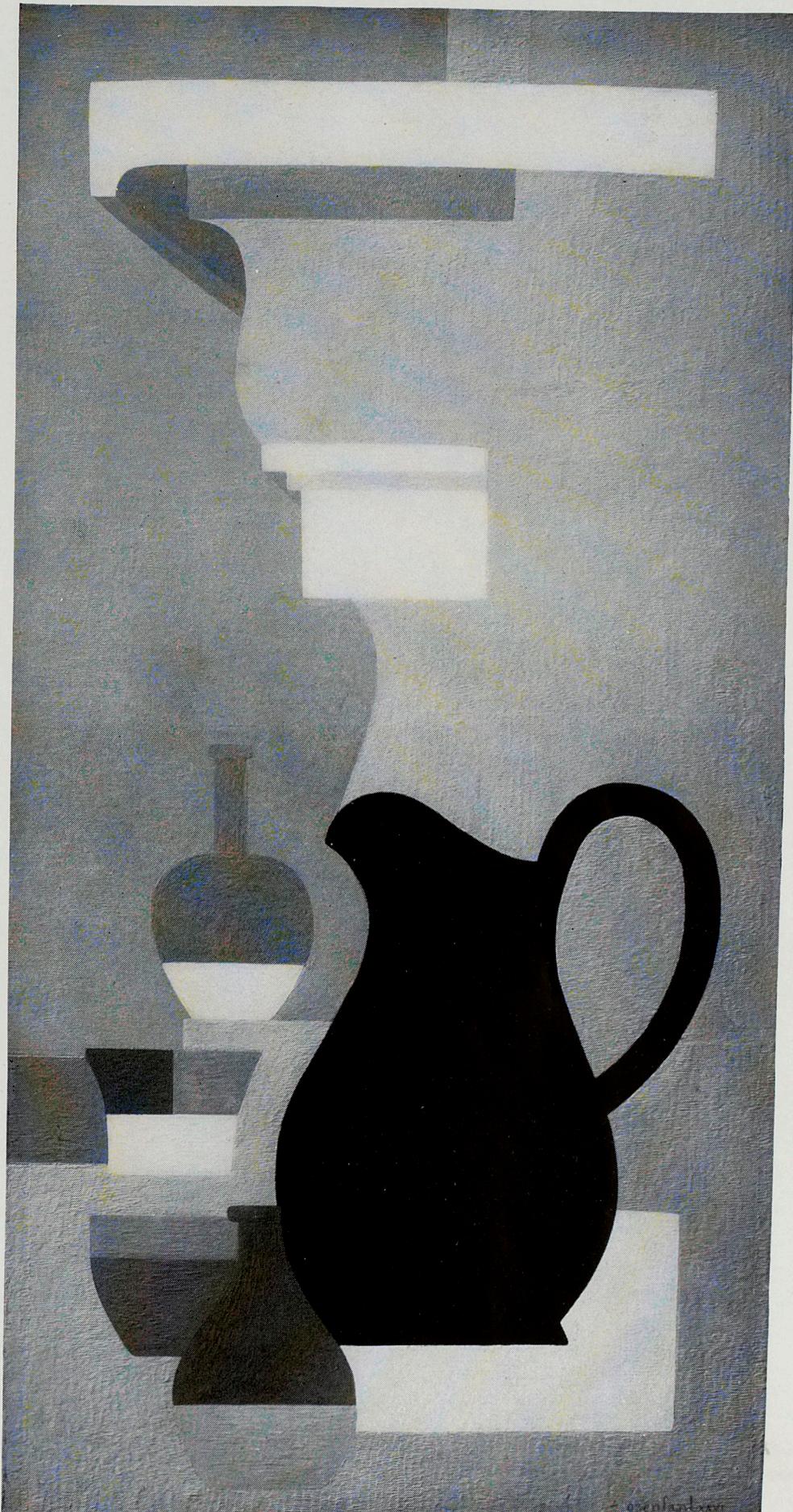
WHAT IS ART?

A WORK OF ART OUGHT TO BE DETERMINED BY AN ELEMENTARY FORM-LAW, A SORT OF PRIME GENERATIVE CELL WHICH GIVES A WORK ITS ORGANIC EXISTENCE—GIVES IT CHARACTER. THAT IS WHY WORKS OF NATURE, OR OF OUTSTANDING ENGINEERS APPEAR TO HAVE SOMETHING IN COMMON WITH WORKS OF ART. THEY ARE ORGANIZED BY THE TECHNICAL REQUIREMENTS OF CONSTRUCTION. THAT IS TO SAY THEY ARE DETERMINED IN THE FIRST PLACE BY A MATHEMATICAL FORM WHICH IS EVENTUALLY TRANSLATED INTO A "MATERIAL" FORM.

BUT ONE DUTY OF ART IS TO BRING VARIETY INTO UNITY WITHOUT DESTROYING ANYTHING OF THE UNITY: THEME AND VARIATIONS. TRUE FOR ALL ART IN ALL PERIODS.

IF HUMANITY HAS CHANGED, IT HAS CHANGED VERY LITTLE IN ANYTHING THAT CONCERNs ITS SENSIBILITY AND ARTISTIC PSYCHOLOGY: THE PROOF IS THAT EVEN PREHISTORIC WORK OF ART GIVES US SATISFACTION. THIS CONSTANCY IS VERY FORTUNATE; WITHOUT IT ART WOULD BE MERELY A FASHION—GOOD ONLY FOR ONE SEASON. ART ON THE CONTRARY PLAYS OVER A KEYBOARD OF HUMAN CONSTANTS.

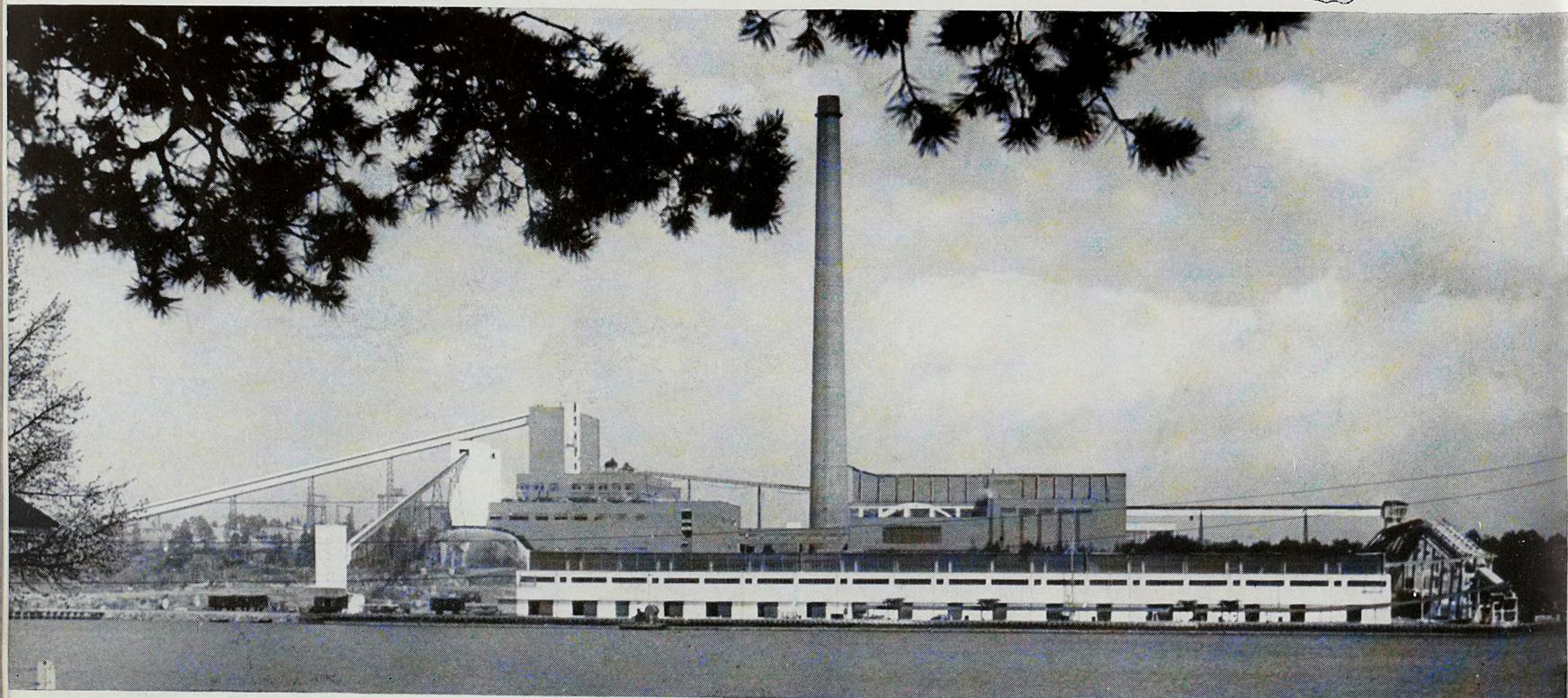
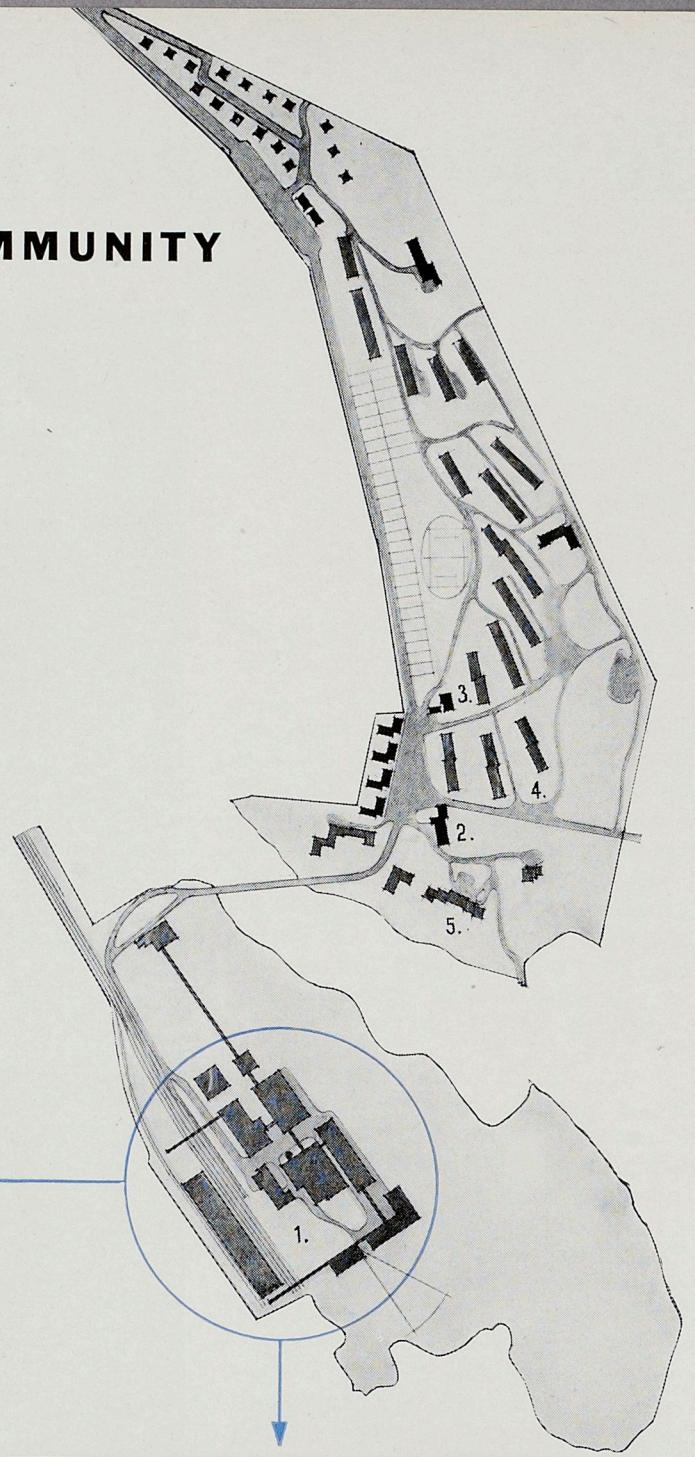
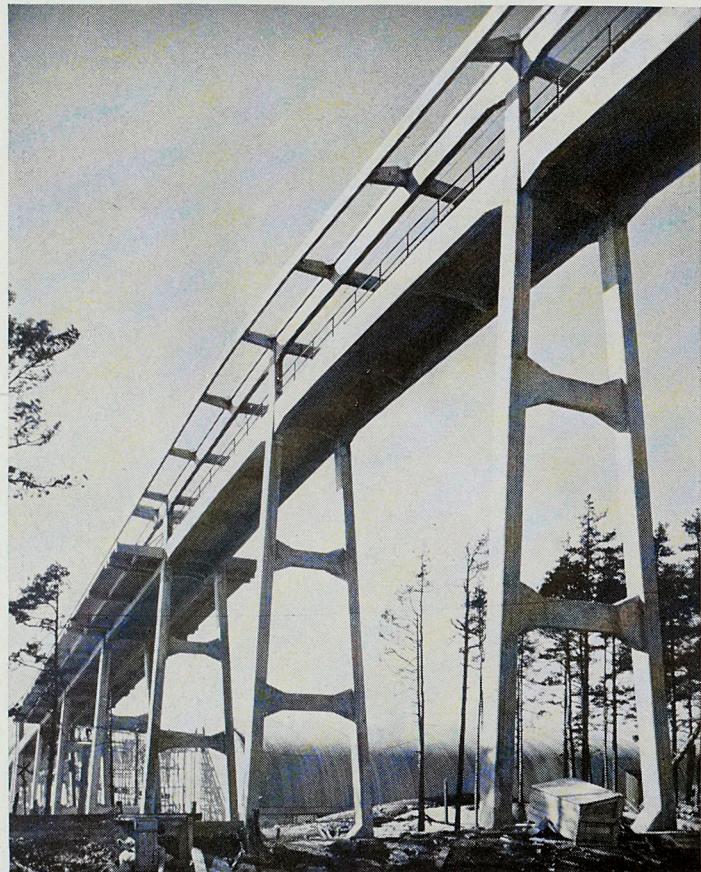
THERE ARE TWO KINDS OF ENGINEERS:
1st THOSE WHO ARE SATISFIED TO EMPLOY A USEFUL FORM.
2nd THOSE WHO ARE ABLE TO INVENT A FORM AS BEAUTIFUL AS USEFUL
—YOU MEAN THAT A GREAT ENGINEER SHOULD ALSO BE AN ARTIST?
—YES. AND AN ARTIST OUGHT ALSO TO BE AN ENGINEER. THE MORE, THE BETTER



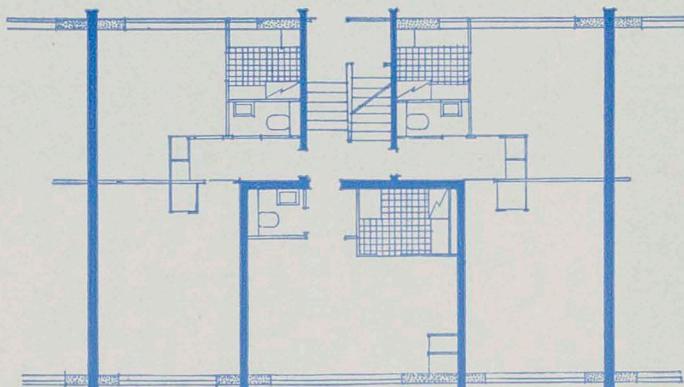
MURAL PAINTING BY OZENFANT (1926),
OR "FIND THE EGGS."

SUNILA: FACTORY AND COMMUNITY

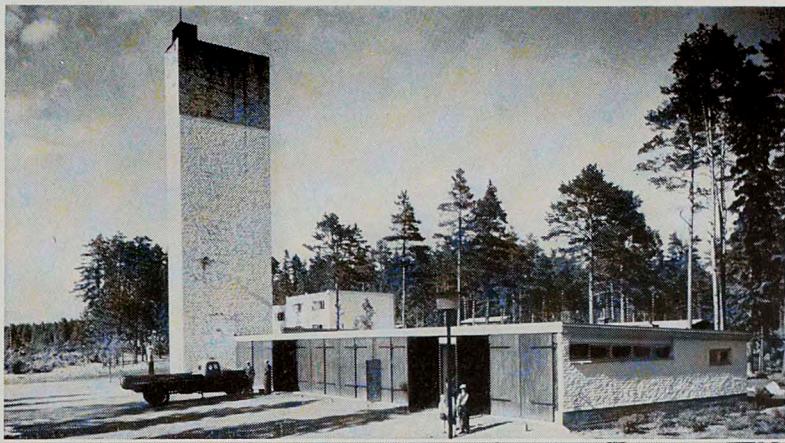
By Alvar and Aino Aalto



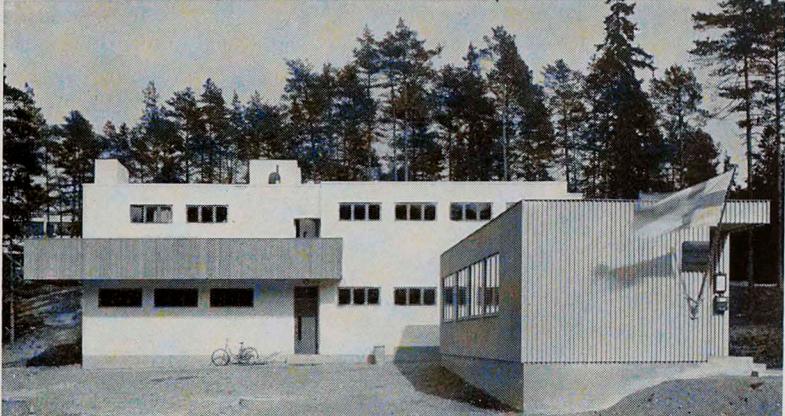
The Sunila pulp mill (1) is on the island of Poytinen, in the south of Finland, at the head of the Kymi river, down which timber is floated from many central waterways. The factory buildings, mostly of reenforced concrete, house the process of cleaning, cutting the wood, pulping and rolling. A power house, a chemical plant and the administration building complete the unit. The entire housing of managers, engineers (5), foremen and workers (4) is on the mainland where a central heating station (2), Finnish baths (3) and a shopping center are provided. The foremen and workers are housed in two-story buildings, located in groups on high, rocky ground, overlooking low land given to individual gardens. Each building contains 24 two- and one-room units.



4



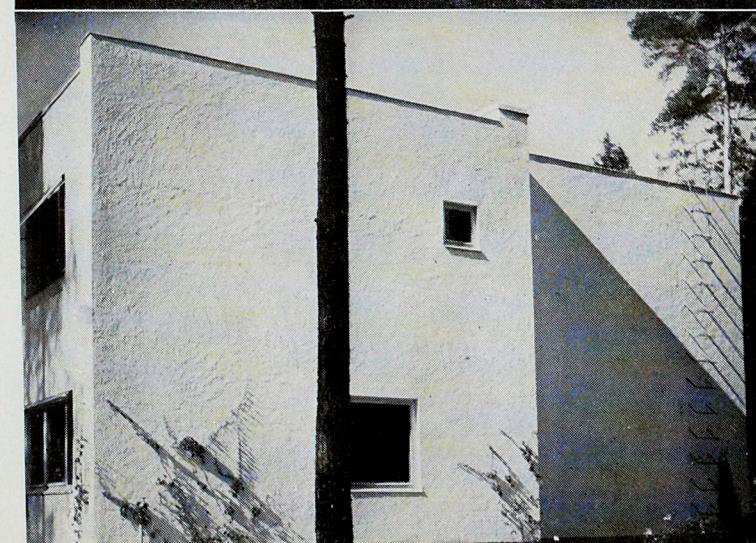
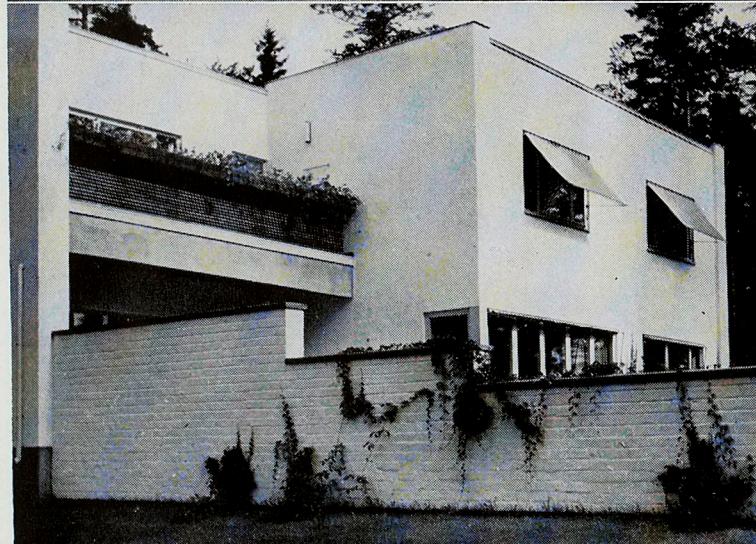
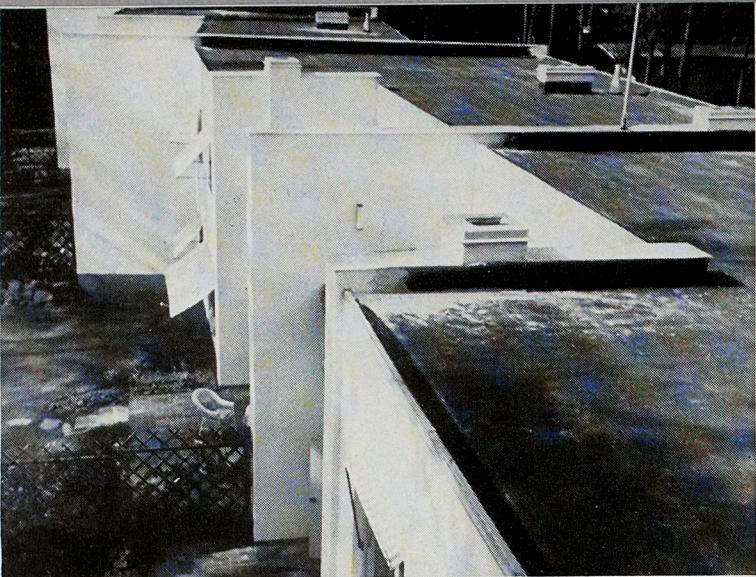
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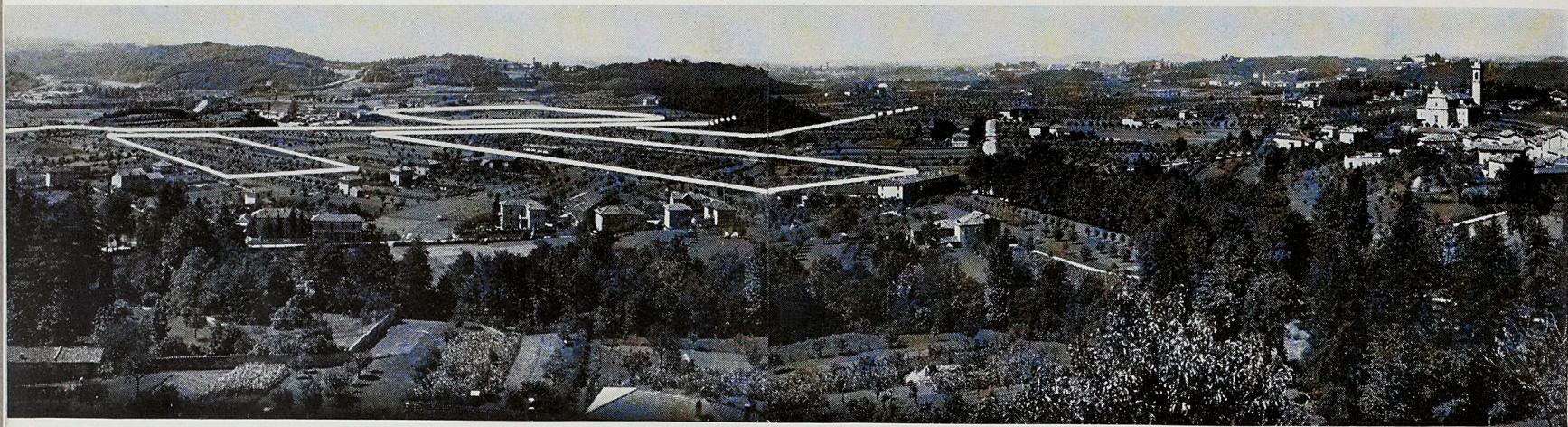


Five row-houses for the engineers, covering 13,068 sq. ft., are planned to provide a maximum view and privacy. Each house has a small vegetable garden near the entrance and an enclosed lawn at the rear. The construction here is the same as in the workers' houses: bearing party walls and frame exterior walls.



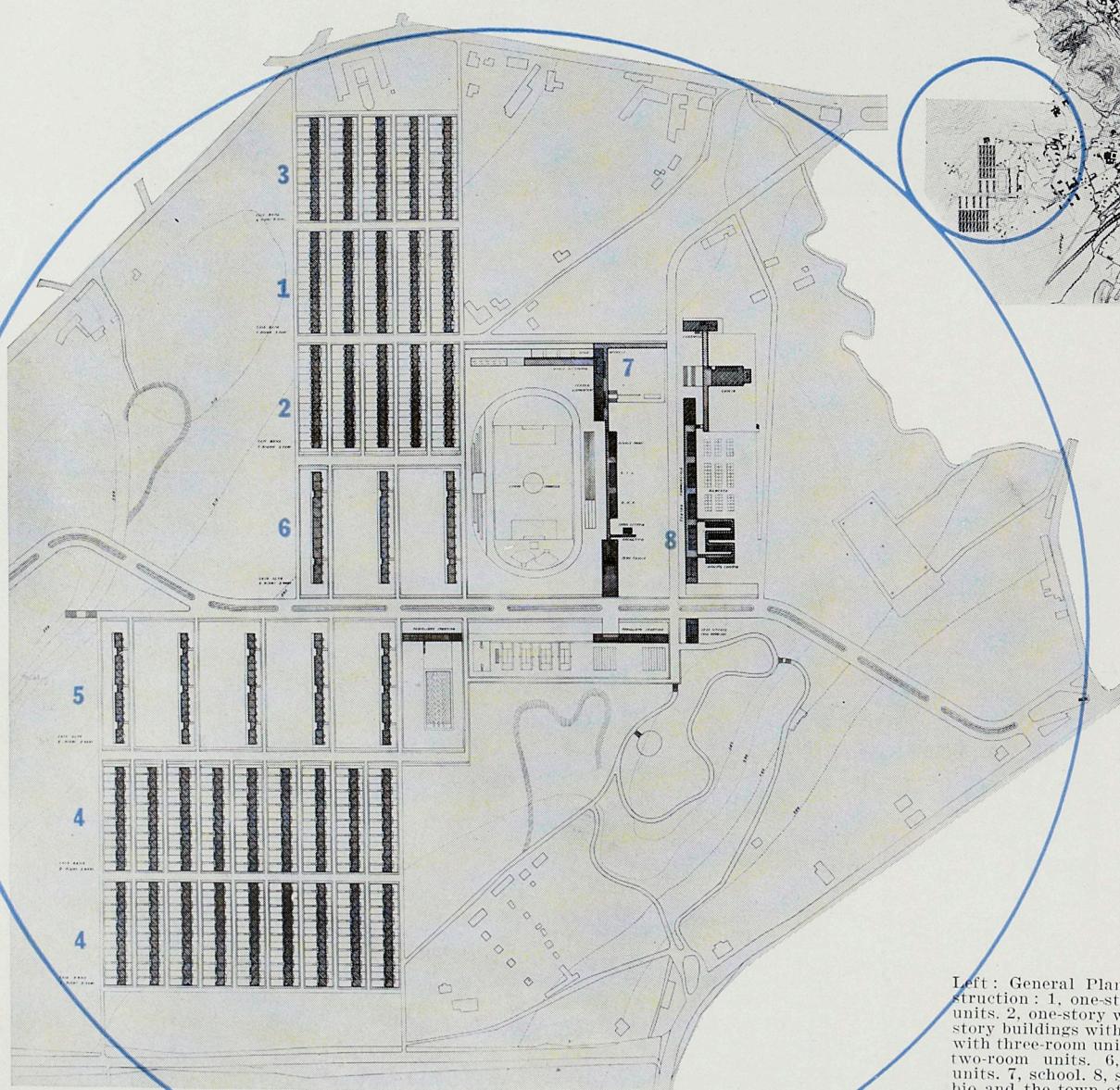
The architect Alvar Aalto



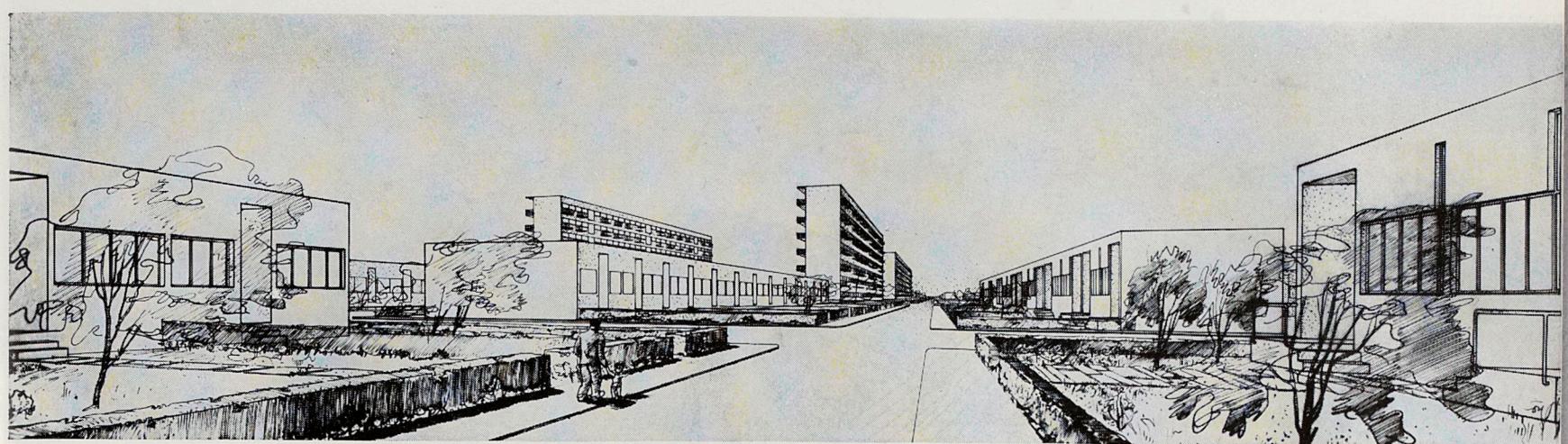


REBBIO A SATELLITE TOWN FOR INDUSTRIAL WORKERS

By A. Sartoris and G. Terragni

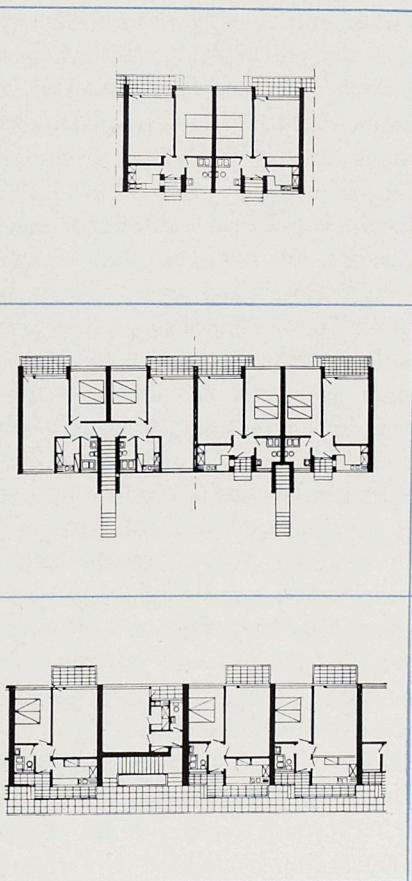


Left: General Plan of the section under construction: 1, one-story buildings with two-room units. 2, one-story with three-room units. 3, two-story buildings with two-room units. 4, two-story with three-room units. 5, six-story buildings with two-room units. 6, six-story with three-room units. 7, school. 8, shopping center. Above: Rebbio and the town of Como.



two-room units

Total area of land: 65,100 sq. ft. Total area of land: 25,026 sq. ft. Gross area of building: 9,881 sq. ft. Gross area of building: 8,202 sq. ft. Number of units: 87 Number of units: 28 Area lost for walls, terraces and stairs: 49.2% Area lost for walls, terraces and stairs: 27% Net area per unit: 335 sq. ft. Net area per unit: 379 sq. ft.



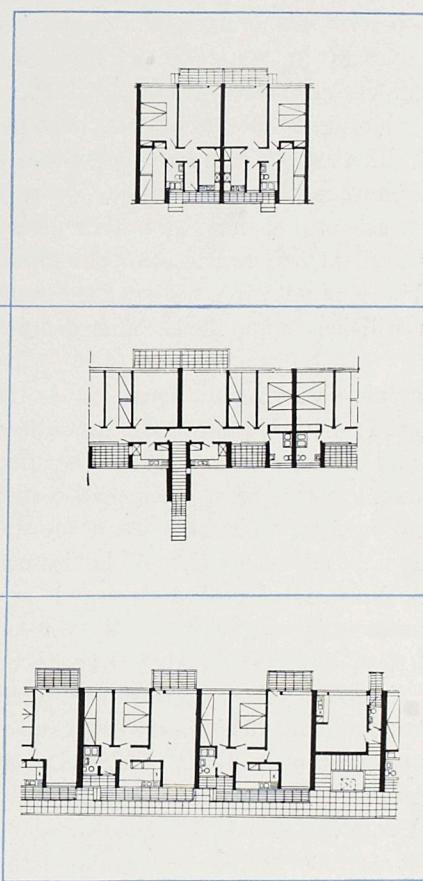
three-room units

Total area of land: 25,026 sq. ft. Gross area of building: 8,008 sq. ft. Number of units: 14 Number of units: 14 Area lost for walls and terraces: 24.57% Area lost for walls and terraces: 24.57% Net area per unit: 365 sq. ft. Net area per unit: 365 sq. ft.

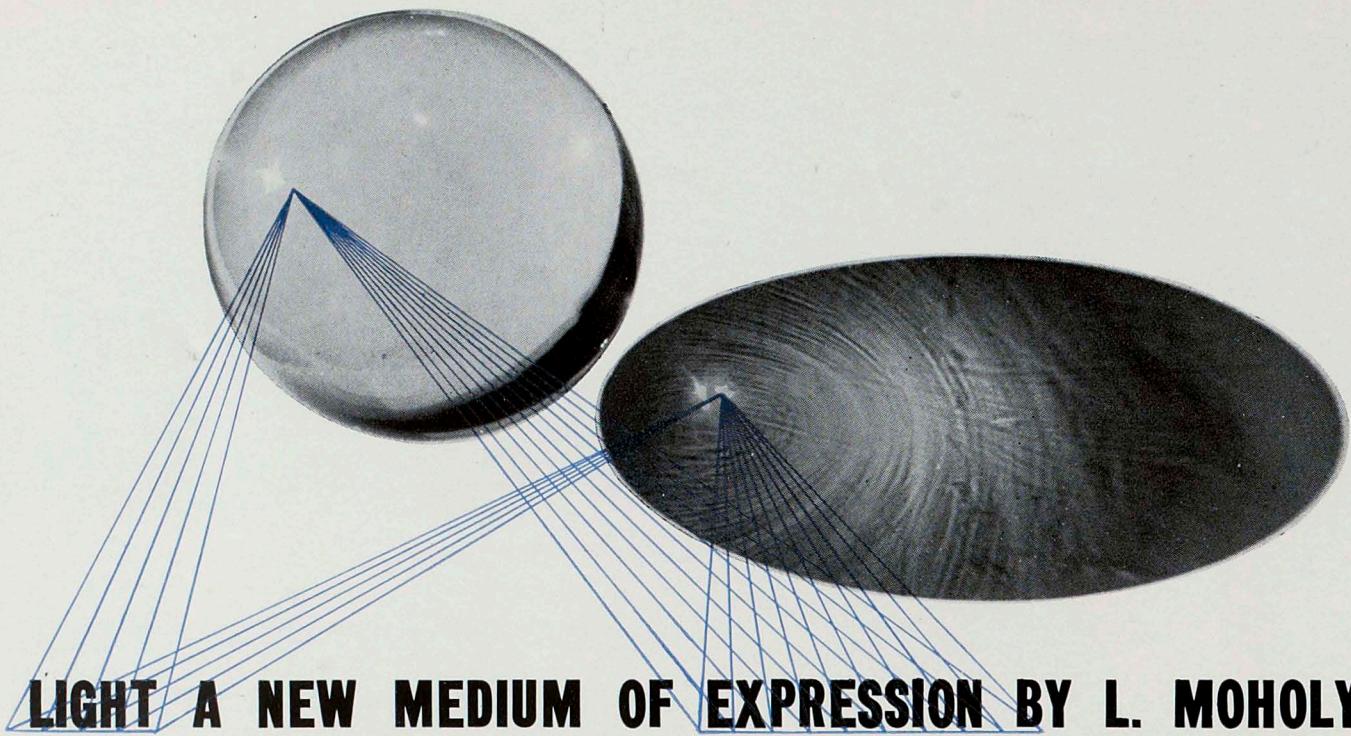
one story

two stories

six stories



The plan of Rebbio at its present stage provides 1,429 housing units of two and three rooms. It includes a community hall, theater, church, kindergarten, elementary and vocational school, a stadium, swimming pool, hospital and shopping center which will also serve the neighboring communities. Orientation of houses: East-West. Distance between two rows of low houses: 71 ft.; between six-story buildings: 170 ft. Each housing unit has a private garden facing west, 36 ft. deep. Future expansion of Rebbio is provided west of its shopping center.



LIGHT A NEW MEDIUM OF EXPRESSION BY L. MOHOLY-NAGY

"Painting With Light" is an old chapter of human activity. We have documents about antique illumination for theatrical performances in which colored glasses, prisms, etc., were used. Centuries later the magic lantern appeared—fireworks, the light effects of the baroque opera; and, later still, different projects for a color organ. Today, in light, from photography to television, we have more sources for a new art form than at any other period of human history. But unless we learn to clear our minds of the old, traditional ideas of painting, not even the work of talented painters will reach the level of a genuine artistic creation.

It is the general opinion that manual painting is the peak of optical creation. Its basic significance is that different pigments reflect and absorb certain parts of the spectrum. So far as pigments possessed these qualities they were used for the creation of an optical illusion which was actually similar to the light effects which solid bodies performed. Such a three dimensional object showed, if normally lighted, a plastic shape through its lighter and darker shading, and the painter had only to imitate the different surfaces of the solid object by mixing different pigments. However, this manual effort never could repeat the same radiant effect because the direct reflection of the object had always a more intensive value. We call the procedure of traditional painting "mixture by subtraction." The term implies that each new mixed color will be darker than the previous color by itself. This can clearly be seen from watercolors. Each layer darkens the previous one; in other words "it subtracts light." However, besides these primary pigments there are three other primaries, the light primaries, and in the new art of painting with light, they are going to play an important part. They are the red, green, and blue of the spectrum. We call the mixture of light primaries "mixture by addition" because, contrary to the case in pigments, the resultant color is lighter

than each of the component colors. We can see this when we throw different lights from different filtered projectors on one spot of a screen. A mixture by addition of green and red lights creates yellow. However, the mixture by subtraction of green and red pigments produces not yellow but an olive brown.

As early as the close of the last century the pointillist painters, Seurat and Signac endeavored to create an impression of radiant yellow sunshine by the use of thickly sprinkled red and green pigment particles on the canvas. They adduced in support of their theory evidence of a discovery made in 1869 by Ducos du Hauron that the human eye splits the colors of the spectrum, red and green, into minutest points producing a yellow to the vision. Aristotle, also, knew that colors in juxtaposition will mix in the retina when seen from a distance. We find this principle applied in painting as early as the Florentine and Venetian pictures of the fourteenth and fifteenth centuries. Fra Angelico and Botticelli used a first layer of thin coloring for the figures of their paintings, for instance green, and then covered this green surface with innumerable fine red lines; the result was an infinitely spiritualized whitish-yellow flesh color.

Rubens used the optical energy of the "turbid" medium in order to obtain flesh colorings and transparent blue shadows which could not be produced by mixtures of pigment. Rubens painted on a white ground thickly sown with black lines—making the outlines and deeply shaded portions of his model in brown and going afterwards over the whole with a creamy, translucent, pinkish white. The result was a radiantly transparent orange rose, a perfect flesh color with bluish transparent shadows.

Goethe gave us the physiological explanation for all this in his anti-Newtonism theory of coloring in which he established that black through a "turbid" medium appears as blue and light gives us yellow-orange up to yellow-red.

"Turbid" means layers of transparencies or translucencies.

But not only the Old Masters worked in this way, employing subjective results of optical effects; Van Gogh, applied color so thickly that the pigment appeared as a relief; the brush strokes created shadows and the edges of the strokes were touched by light. Thus light and shadow was drawn into the picture as a determinative, qualitative factor and an effect was obtained similar to that aimed at by the Florentine.

Cézanne carried this research work one step further. He was less interested in the representation of radiant surfaces than in the subtle qualities of colors to perform movements forwards and backwards, up and down, centrifugal and centripetal, etc. He created with these a new spatial representation as well as a new painting quality.

A psychological experiment made at the University of Wisconsin gives a clear explanation how color is able to change sizes. Black, white, yellow, green and blue cubes of the same sizes have been shown each beside the other. The white cube appeared to be the largest, black to be the smallest. Yellow was larger than green, and blue was smaller than green. The same phenomenon can be expressed otherwise. The white cube, being the largest, appeared to be the nearest to the spectator, the black, being the smallest, appeared to be the furthest away from him. This means that if a painter would use these colors he would be able to change their experimental characteristics with certain manipulations. The constructivists' work often offers the example that black for instance stands in front of white, etc. The after images and the subjective changes in the neighbor colors, are valuable means to the painters' spiritual craftsmanship. For example, the upper part of a black plane can appear bluish if beside it a yellow plane is placed; the same black below can simultaneously appear reddish if a green plane is placed beside it.

As yet the psychological and physiological experiences of color have not been sufficiently integrated with the physical laws of light by painters, sculptors, architects, commercial artists and publicity men.

In fact, all color harmony systems concerning the pigments differ from one another, all defining a different number of colors and with them the complementary pairs. Newton speaks about seven colors; Goethe, Schopenhauer about six; Ostwald about eight, and Munsell about ten. Goethe defines the primary complementaries as: yellow-redblue. Blue-redyellow, purple-green. Ostwald defines them: yellow-ultramarine, iceblue-orange, red-seagreen,

violet-leafgreen. Munsell: yellow-purpleblue, blue-yellow-red, red-bluegreen, redpurple-green, purple-greenyellow. Newton mentioned only once a complementary pair: gold-indigo. Still the fundamental laws of perception of color are an inborn attribute of every human being. In other words the appreciation of color depends upon the general psychological fact that man answers every color with its contrast, with its complementary. Our eyes react to red with green, to yellow with blue and so on.

But until today we were not able to define the complementary color pairs with an absolute exactness. The old masters interpreted the complementary colors individually. That is to say, in spite of the fact that almost all classical paintings were made with complementary color contrasts: red-green and blue-yellow, they show slightly different tones of the complementaries. It even seems as if the personal achievement of a painter depends upon this individual modification of the law of the complementary colors. Now we have to reckon with the extensive use of electric light as a source of illumination. Since the spectrum of this light differs from that of sunlight, the well known effects of color harmony undergo various transformations. We learned from Goethe that objects lit by colored light produce shadows in their complementary color. For instance, if an object is lit with red light, its shadow becomes green.

One may ask now—is it possible to do anything artistic with the purely physical complementaries or do we have to continue with the subjectively interpreted daylight effects alone? I believe it is possible, but the purely automatic harmonies which are no longer created by pigments but by light projection will probably have to undergo a process of step by step development of artistic appreciation. We are so accustomed to the old form of manual painting that we are not yet able to see that later painting may become a "machine painting" without lowering its spiritual level. The technique as part of the creative process is only important insofar as it must be controlled at every stage of production. Besides this, it does not matter at all whether the result itself is achieved by manual or machine operation.

Of course the pedagogic value of the manual pigment painting will not be denied. But this painting will be no more the only art expression. Photography is already a proof. We have to observe its form, its creative process, the superimposition and mirroring, the innumerable lens and prism effects, the mechanical and chemical distortion of the surface, the light flooded planes, the "chiaroscuro"

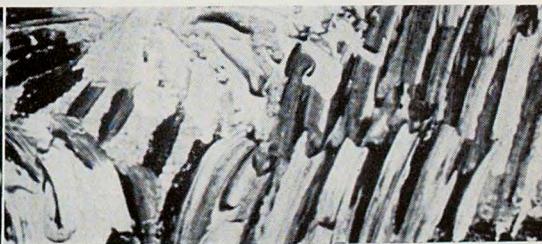
CEZANNE



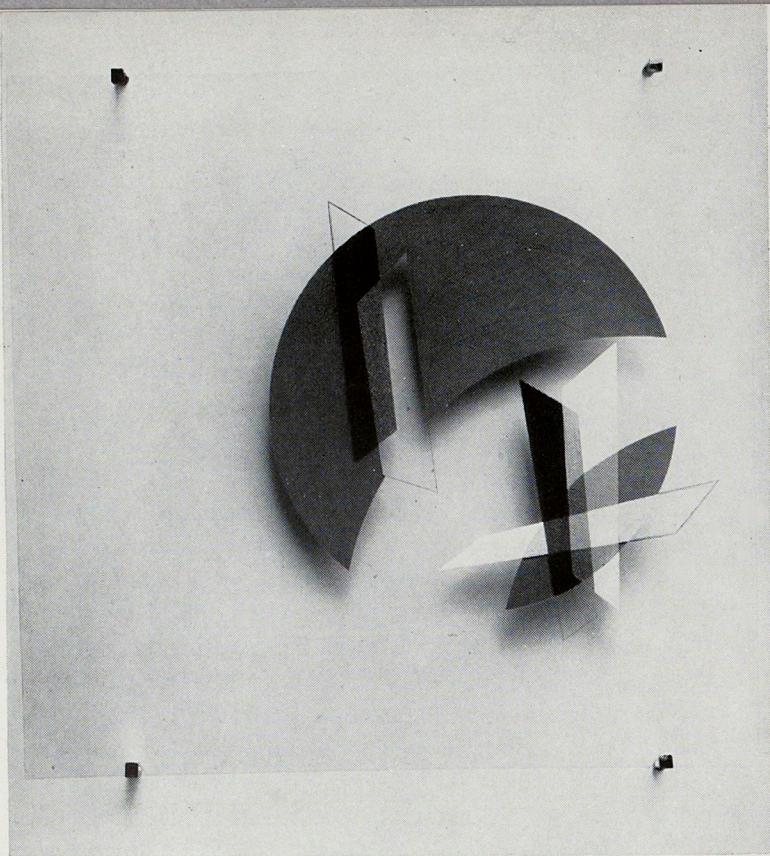
SEURAT



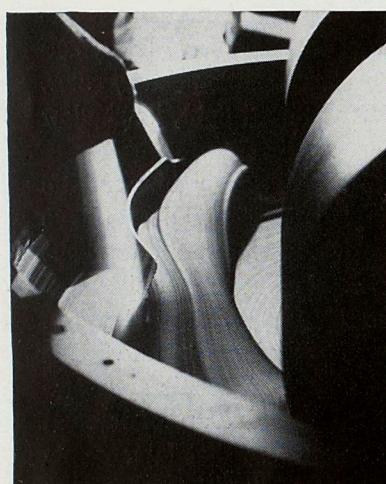
VAN GOGH



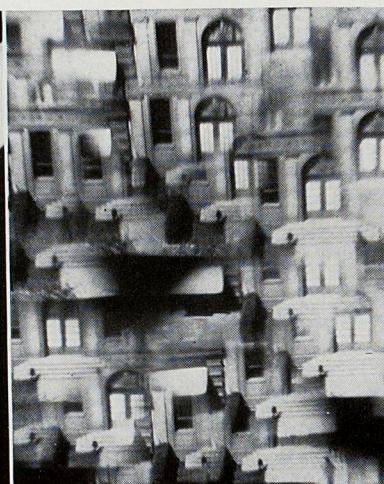
Three examples of surface treatment with pigment.



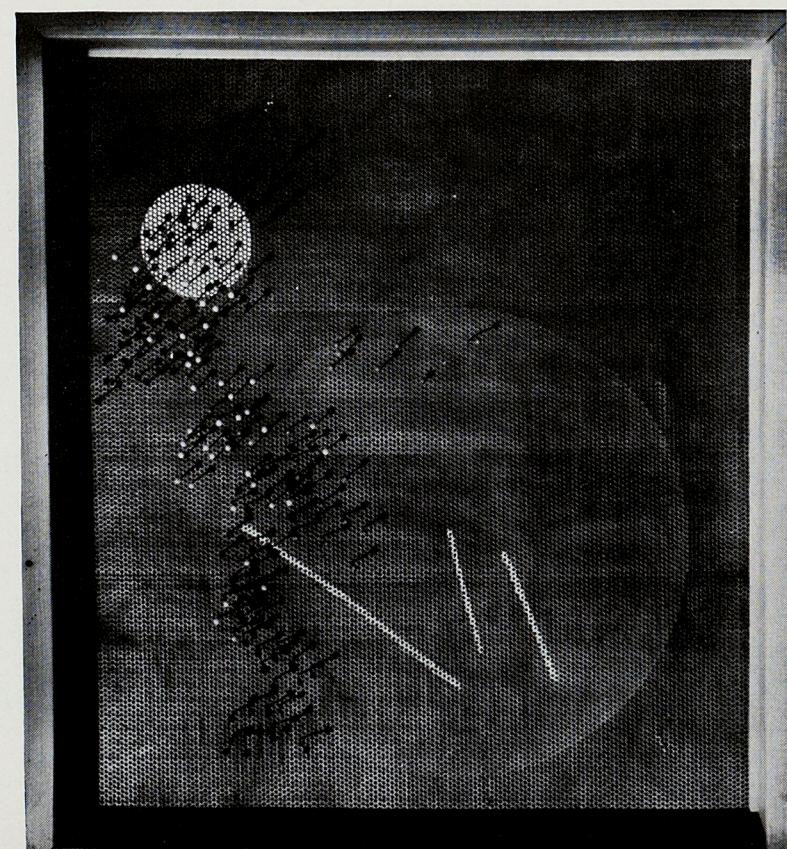
L. Moholy-Nagy: Construction



Hans Finsler: Chocolate Manufacturing. Photograph with prism.



Atom photograph



L. Moholy-Nagy: Pin Picture, 1935

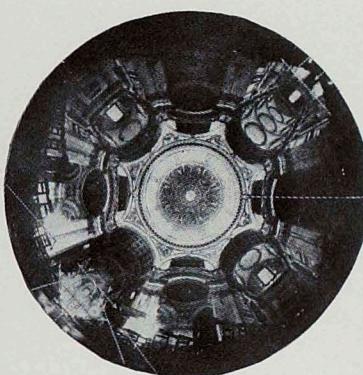
in the finest gray graduation. Then we know that our wish to express ourselves with optical means can only be satisfied by a thorough knowledge about light. We must become familiar with colorimetry, wave lengths, purity, brightness, excitation of light, and with the manifold possibilities of the artificial light sources. Optical illusions, changes in size, automatic complementaries, surrounding effects of negative shapes, of hue, chroma and value are already in use. In addition we experiment with polished surfaces, with transparencies and trans-lucencies which allow a combination of pigment and direct light effects.

The next step will be the conscious use of reflexes, solid and open shadows, mirroring refraction with prism and grating, polarization and interference of light.

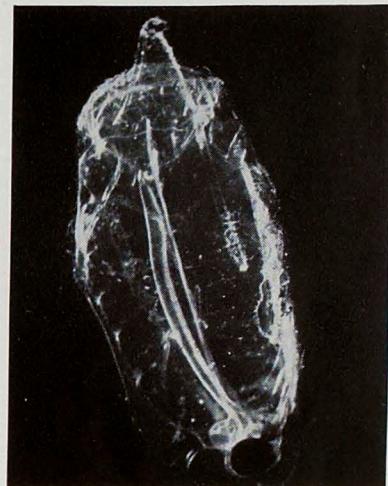
Since the Eighteenth Century many persons were working in this direction: Pater Costel, Hoffman, Rimington, Serjabin, Hirschfeld-Mack, Thomas Wilfred and Alexander Lazzlo. They all have experimented in the color organ. Viking Eggeling has been the pioneer for the abstract film. There should be mentioned also other fore-runners of light display: gigantic light parades of battleships, projectors, search-lights, skywriters, changing light-pictures, floodlight, luminescence, phosphorescence, ultra-violet, infrared, cathod, and polarized X-rays.



Superimposition of ten photographs



Fisheye camera photograph



Sea animal

The work of the future lies with the light engineer who is collecting the elements of a genuine creation. Great technical problems will be solved when the intuition of the artists will direct the research of engineers and technicians.

It is premature to go into details yet. But one thing is clear—that forthcoming experiments, the study of the physiology of the eye, the physical properties of light and the introduction of new technical means with their “automatic” and “mechanical harmony” will play a very important part.

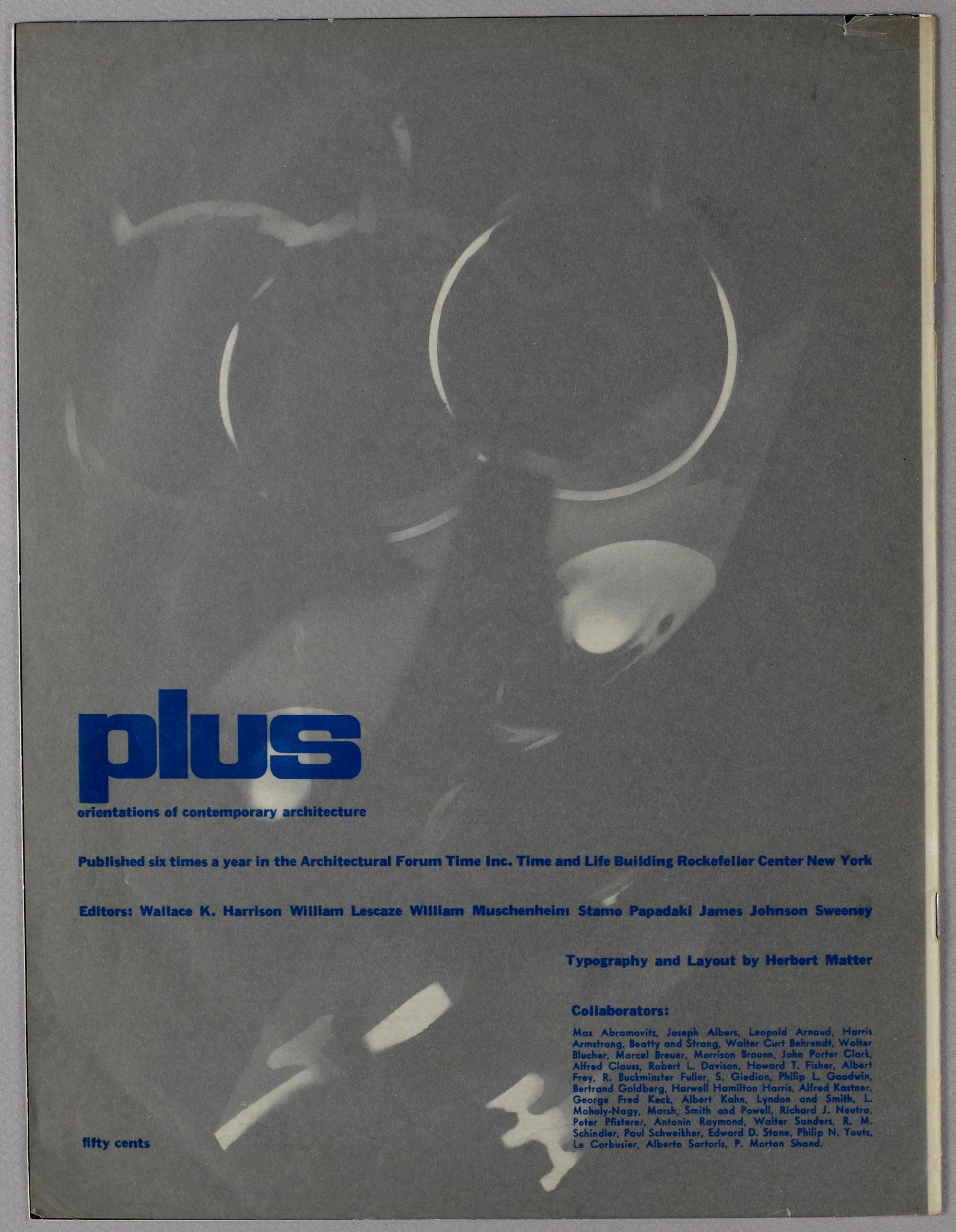
Consequently we must never cease observing the simple or rich phenomena of light and color which are offered by the daily routine at home and on the stage, in the street and in the laboratory—in our physical and chemical apparatus.

Finally—it seems to me that we should direct all our efforts like the Dadaist Raoul Hausmann toward the creation of an optophonetic art which one day will allow us to **see music and hear pictures simultaneously**.

Next page: Photogram by L. Moholy-Nagy.







plus

orientations of contemporary architecture

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