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Transparency:
Literal and Phenomenal**

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'Transparency,' 'space-time,' 'simultaneity,' 'interpenetration,' 'superimposition,' 'ambivalence': in the literature of contemporary architecture these words, and others like them, are often used as synonyms. We are familiar with their use and rarely seek to analyze their application. To attempt to make efficient critical instruments of such approximate definitions is perhaps pedantic. Nevertheless, in this article pedantry will be risked in an attempt to expose the levels of meaning with which the concept of transparency has become endowed.

According to the dictionary definition, the quality, or state, of being transparent is both a material condition—that of being pervious to light and air—and the result of an intellectual imperative, of our inherent demand for that which should be easily detected, perfectly evident, and free of dissimulation. Thus the adjective *transparent,* by defining a purely physical significance, by functioning as a critical honorific, and in being dignified with far from disagreeable moral overtones, becomes a word which from the first is richly loaded with the possibilities of both meaning and misunderstanding.

A further level of interpretation—that of transparency as a condition to be discovered in a work of art—is admirably defined by Gyorgy Kepes in his *Language of Vision:* 'If one sees two or more figures overlapping one another, and each of them claims for itself the common overlapped part, then one is confronted with a contradiction of spatial dimensions. To resolve this contradiction one must assume the presence of a new optical quality. The figures are endowed with transparency; that is they are able to interpenetrate without an optical destruction of each other. Transparency however implies more than an optical characteristic, it implies a broader spatial order. Transparency means a simultaneous perception of different spatial locations. Space not only recedes but fluctuates in a continuous activity. The position of the transparent figures has equivocal meaning as one sees each figure now as the closer now as the further one' (1).

By this definition, the transparent ceases to be that which is perfectly clear and becomes instead that which is clearly ambiguous. Nor is this meaning an entirely esoteric one; when we read (as we so often do) of 'transparent overlapping planes,' we constantly sense that rather more than a simple physical transparency is involved.

For instance, while Moholy-Nagy in his *Vision in Motion* continually refers to 'transparent cellophane plastic,' 'transparency and moving light,' and 'Rubens's radiant transparent shadows' (2), a careful reading of the book might suggest that for him such literal transparency is often furnished with certain allegorical qualities. Some superimpositions of form, Moholy tells us, 'overcome space and time fixations. They transpose insignificant singularities into meaningful complexities...The transparent quality of the superimpositions often suggest transparency of context as well, revealing unnoticed structural qualities in the object' (3). And again, in commenting on what he calls 'the manifold word agglutinations' of James Joyce, or the Joycean pun, Moholy finds that these are 'the approach to the practical task of building up a completeness from interlocked units by an ingenious transparency of relationships' (4). In other words, he seems to have felt that, by a process of distortion, recomposition, and *double-entendre,* a linguistic transparency—the literary equivalent of Kepes' 'interpenetration without optical destruction'—might be effected, and that whoever experiences one of these Joycean 'agglutinations' will enjoy the sensation of looking through a first plane of significance to others lying behind it.

Therefore, at the very beginning of any

enquiry into transparency, a basic distinction must be established. Transparency may be an inherent quality of substance, as in a glass curtain wall; or it may be an inherent quality of organization. One can, for this reason, distinguish between a literal and a phenomenal transparency.

Our feeling for literal transparency seems to derive from two sources: from cubist painting and from what is usually designated as the machine aesthetic. Our feeling for phenomenal transparency probably derives from cubist painting alone; and a cubist canvas of around 1911 or 1912 would serve to illustrate the presence of both orders, or levels, of the transparent.

One may be skeptical of those too plausible explanations of cubism which involve the fusion of temporal and spatial factors. As Alfred Barr tells us, Apollinaire 'invoked the fourth dimension... in a metaphorical rather than a mathematical sense (5); and here, rather than attempt the relation of Minkowski to Picasso, it has been considered convenient to refer to somewhat less disputable sources of inspiration.

A late Cézanne such as the *Mont Sainte-Victoire* of 1904-06 (Fig 1) in the Philadelphia Museum of Art is characterized by certain extreme simplifications. There is a highly developed insistence on a frontal viewpoint of the whole scene, a suppression of the more obvious elements suggestive of depth, and a resultant contracting of foreground, middleground, and background into a distinctly compressed pictorial matrix. Sources of light are definite but various; and a further contemplation of the picture reveals a tipping forward of the objects in space, which is assisted by the painter's use of opaque and contrasted color. The center of the composition is occupied by a rather dense gridding both oblique and rectilinear; and this area, apparently, is buttressed and stabilized by a more insistent horizontal and vertical grid which introduces a certain peripheric interest.

Frontality, suppression of depth, contracting of space, definition of light sources, tipping forward of objects, restricted palette, oblique and rectilinear grids, and propensities toward peripheric development are all characteristics of analytical cubism. In these pictures, apart from the pulling to pieces and reassembly of objects, perhaps above all we are conscious of a further shrinkage of depth and an increased emphasis which is now awarded to the grid. We discover about this time a meshing together of two systems of coordinates. On the one hand, an arrangement of oblique and curved lines suggests a certain diagonal spatial recession. On the other, a series of horizontal and vertical lines implies a contradictory statement of frontality. Generally speaking, the oblique and curved lines possess a certain naturalistic significance, while the rectilinear ones show a geometrizing tendency which serves as a reassertion of the picture plane. Both systems of coordinates provide for the orientation of the figures simultaneously in an extended space and on a painted surface; while their intersection, their overlapping, their interlocking, and their building up into larger and fluctuating configurations permits the genesis of the typically ambiguous cubist motif.

As the observer distinguishes between all the resultant planes, he may become progressively conscious of an opposition between certain areas of luminous paint and others of a more dense coloration. He may distinguish between certain planes to which he is able to attribute a physical nature allied to that of celluloid, others whose essence is semiopaque, and further areas of a substance totally opposed to the transmission of light. And he may discover that all of these planes, translucent or otherwise, and regardless of their representational content, are implicated in the phenomenon which Kepes has defined as transparency.

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The double nature of transparency may be illustrated by the comparison and analysis of a somewhat atypical Picasso, *The Clarinet Player* (Fig 2), and a representative Braque, *The Portuguese* (Fig 3), in each of which a pyramidal form implies an image. Picasso defines his pyramid by means of a strong contour; Braque uses a more complicated inference. Thus Picasso's contour is so assertive and so independent of its background that the observer has some sense of a positively transparent figure standing in a relatively deep space, and only subsequently does he redefine this sensation to allow for the actual lack of depth. With Braque the reading of the picture follows a reverse order. A highly developed interlacing of horizontal and vertical gridding, created by gapped lines and intruding planes, establishes a primarily shallow space, and only gradually is the observer able to invest this space with a depth which permits the figure to assume substance. Braque offers the possibility of an independent reading of figure and grid: Picasso scarcely does so. Picasso's grid is rather subsumed within his figure or appears as a form of peripheral incident introduced to stabilize it.
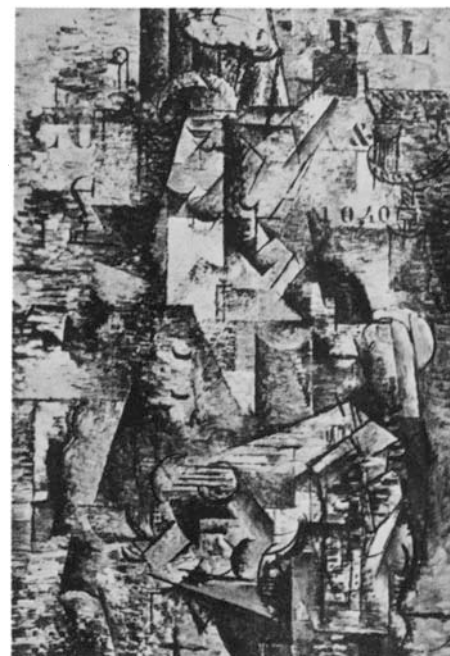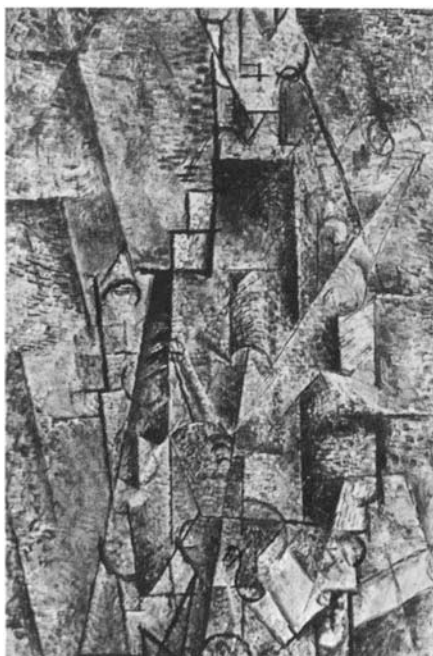
In the first we may receive a pre-vision of literal transparency, and in the other, of phenomenal transparency; and the evidence of these two distinct attitudes will become much clearer if a comparison is attempted between the works of two slightly later painters, Robert Delaunay and Juan Gris.

Delaunay's *Simultaneous Windows* of 1911 and Gris' *Still Life* of 1912 (Figs 4, 5) both include objects that are presumably transparent, the one windows, the other bottles. While Gris suppresses the physical transparency of glass in favor of a transparency of gridding, Delaunay accepts with unrestricted enthusiasm the elusively reflective qualities of his superimposed 'glazed openings.' Gris weaves a system of oblique and perpendicular lines into some sort of corrugated shallow space; and in the architectonic tradition of Cézanne, in order to amplify both his objects and structure, he assumes varied but definite light sources. Delaunay's preoccupation with form presupposes an entirely different attitude. Forms to him—e.g. a low block of buildings and various naturalistic objects reminiscent of the Eiffel Tower—are nothing but reflections and refractions of light which he presents in terms analogous to cubist gridding. But despite this geometrizing of image, the generally ethereal nature of both Delaunay's forms and his space appears more characteristic of impressionism, and this resemblance is further reinforced by the manner in which he uses his medium. In contrast to the flat, planar areas of opaque and almost monochromatic color which Gris invests with such high tactile value, Delaunay emphasizes a quasi-impressionistic calligraphy; and while Gris provides explicit definition of a rear plane, Delaunay dissolves the possibilities of so distinct a closure of his space. Gris' rear plane functions as a catalyst which localizes the ambiguities of his pictorial objects and engenders their fluctuating values. Delaunay's distaste for so specific a procedure leaves the latent ambiguities of his form exposed, without reference, unresolved. Both operations might be recognized as attempts to elucidate the intricacy of analytical cubism; but where Gris seems to have intensified some of the characteristics of cubist space and to have imbued its plastic principles with a new bravura, Delaunay has been led to explore the poetical overtones of cubism by divorcing them from their metrical syntax.

When something of the attitude of a Delaunay becomes fused with a machine-aesthetic emphasis upon physical substance and stiffened by a certain enthusiasm for simple planar structures, then literal transparency becomes complete; and it can perhaps be most appropriately illustrated by the work of Moholy-Nagy. In his *Abstract of an Artist* Moholy-Nagy tells us that around 1921 his 'transparent paint-

ings' became completely freed from all elements reminiscent of nature, and to quote him directly: 'I see today that this was the logical result of the cubist paintings I had admiringly studied' (6).

Now whether a freedom from all elements reminiscent of nature may be considered a logical continuation of cubism is not relevant to this present discussion; but whether Moholy did indeed succeed in emptying his work of all naturalistic content *is* of some importance, and his seeming belief that cubism had pointed the way toward a freeing of forms may justify the analysis of one of his subsequent works and its comparison with another post-cubist painting. Moholy's *La Sarraz* of 1930 (Fig 6) might reasonably be compared with a Fernand Léger of 1926: *The Three Faces* (Fig 7)

In *La Sarraz* five circles connected by an S-shaped band, two sets of trapezoidal planes of translucent color, a number of near horizontal and vertical bars, a liberal splattering of light and dark flecks, and a number of slightly convergent dashes are all imposed upon a black background. In *Three Faces* three major areas displaying organic forms, abstracted artifacts, and purely geometric shapes are tied together by horizontal banding and common contour. In contrast to Moholy, Léger aligns

his pictorial objects at right angles to each other and to the edges of his picture plane; he provides these objects with a flat, opaque coloring; and he sets up a figure-ground reading through the compressed disposition of these highly contrasted surfaces. While Moholy seems to have flung open a window on to some private version of outer space, Léger, working within an almost two dimensional scheme, achieves a maximum clarity of both 'negative' and 'positive' forms. By means of restriction, Léger's picture becomes charged with an equivocal depth reading, with a value singularly reminiscent of that to which Moholy was so sensitive in the writings of Joyce, and which, in spite of the positive physical transparency of his paint, Moholy himself has been unable to achieve.

For in spite of its modernity of motif, Moholy's picture still shows the conventional precubist foreground, middleground, and background; and in spite of a rather casual interweaving of surface and the elements introduced to destroy the logic of this deep space, Moholy's picture can be submitted to only one reading.

On the other hand, through the refined virtuosity with which he assembles postcubist constituents, Fernand Léger makes completely plain the multifunctioned be-

havior of clearly defined form. Through flat planes, through an absence of volume suggesting its presence, through the implication rather than the fact of a grid, through an interrupted checkerboard pattern stimulated by color, proximity, and discrete superimposition, Léger leads the eye to experience an inexhaustible series of larger and smaller organizations within the whole. Léger's concern is with the structure of form, Moholy's with materials and light. Moholy has accepted the cubist figure but has lifted it out of its spatial matrix; Léger has preserved and even intensified the typically cubist tension between figure and space.

These three comparisons may clarify some of the basic differences between literal and phenomenal transparency in the painting of the last fifty years. Literal transparency, we notice, tends to be associated with the trompe l'oeil effect of a translucent object in a deep, naturalistic space; while phenomenal transparency seems to be found when a painter seeks the articulated presentation of frontally displayed objects in a shallow, abstracted space.

In considering architectural rather than pictorial transparencies, inevitable confusions arise; for while painting can only imply the third dimension, architecture

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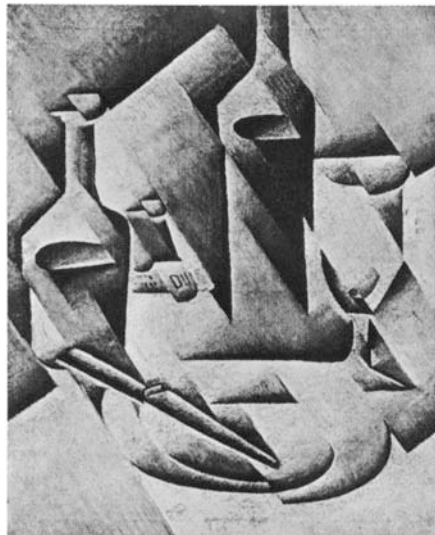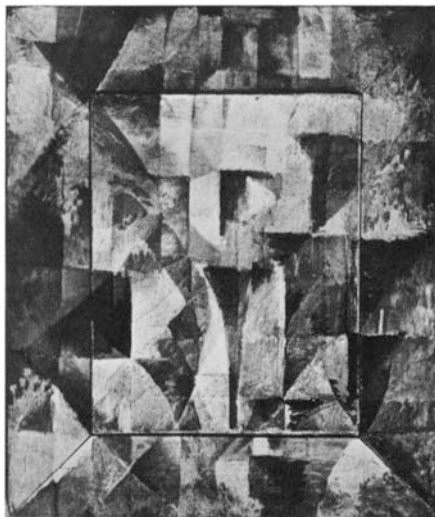
cannot suppress it. Provided with the reality rather than the counterfeit of three dimensions, in architecture literal transparency can become a physical fact. However, phenomenal transparency will, for this reason, be more difficult to achieve; and it is indeed so difficult to discuss that generally critics have been willing to associate transparency in architecture exclusively with a transparency of materials. Thus Gyorgy Kepes, having provided an almost classical explanation of the manifestations we have noticed in Braque, Gris, and Léger, appears to consider that the architectural analogue of these must be found in the material qualities of glass and plastics, and that the equivalent of their carefully calculated compositions will be discovered in the haphazard superimpositions produced by the reflections and accidents of light playing upon a translucent or polished surface (7). And similarly, Siegfried Giedion seems to assume that the presence of an all glass wall at the Bauhaus, with 'its extensive transparent areas,' permits 'the hovering relations of planes and the kind of 'overlapping' which appears in contemporary painting'; and he proceeds to reinforce this suggestion with a quotation from Alfred Barr on the characteristic 'transparency of overlapping planes' in analytical cubism (8).

In Picasso's *L'Arlesienne,* the picture that provides the visual support for these inferences, such a transparency of overlapping planes is very obviously to be found. There Picasso offers planes apparently of Celluloid, through which the observer has the sensation of looking; and in doing so, no doubt his sensations are somewhat similar to those of a hypothetical observer of the workshop wing at the Bauhaus. In each case a transparency of materials is discovered. But in the laterally constructed space of his picture, Picasso, through the compilation of larger and smaller forms, offers the limitless possibilities of alternative readings, while the glass wall at the Bauhaus, an unambiguous space, seems to be singularly free of this quality (Fig 8). Thus, for evidence of what we have designated phenomenal transparency, we shall be obliged to look elsewhere.

Le Corbusier's villa at Garches, almost contemporary with the Bauhaus, might fairly be juxtaposed with it. Superficially, the garden façade at this house (Fig 9) and the elevations of the workshop wing at the Bauhaus are not dissimilar. Both employ cantilevered floor slabs, and both display a recessed ground floor. Neither admits an interruption of the horizontal movement of the glazing, and both make a point of carrying the glazing around the corner. But now similarities cease. From here on, one might say that Le Corbusier is primarily occupied with the planar qualities of glass and Gropius with its translucent attributes. Le Corbusier, by the introduction of a wall surface almost equal in height to his glazing divisions, stiffens his glass plane and provides it with an over-all surface tension, while Gropius permits his translucent surface the appearance of hanging rather loosely from a fascia which protrudes somewhat in the fashion of a curtain box. At Garches we can enjoy the sensation that *possibly* the framing of the windows passes behind the wall surface: at the Bauhaus, since we are never for a moment unaware that the slab is pressing up behind the window, we are not enabled to indulge in such speculations.

At Garches the ground is conceived of as a vertical surface traversed by a horizontal range of windows; at the Bauhaus it is given the appearance of a solid wall extensively punctured by glazing. At Garches it offers an explicit indication of the frame which carries the cantilevers above; at the Bauhaus it shows somewhat stubby piers which one does not automatically connect with the idea of a skeleton structure. In this workshop wing of the Bauhaus one might say that Gropius is absorbed with the idea of establishing a plinth upon which to dispose an arrangement of horizontal planes, and that his principal con-

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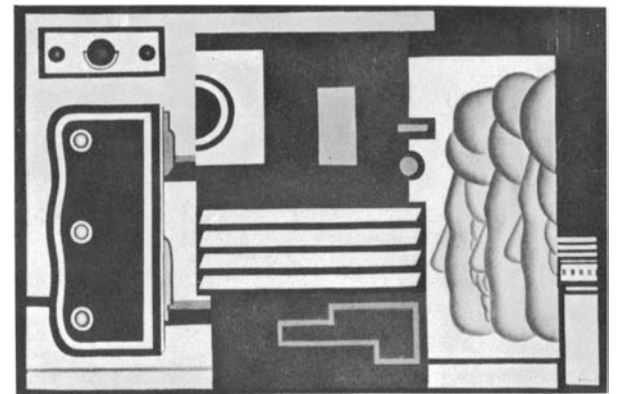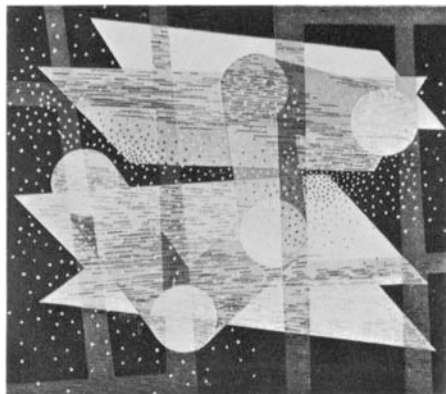
cern appears to be the wish that two of these planes should be seen through a veil of glass. But glass would hardly seem to have held such fascination for Le Corbusier; and although one can obviously see through his windows, it is not precisely here that the transparency of his building is to be found.

At Garches the recessed surface of the ground floor is redefined on the roof by the two freestanding walls which terminate the terrace; and the same statement of depth is taken up in the side elevations by the glazed doors which act as conclusions to the fenestration. In these ways Le Corbusier proposes the idea that immediately behind his glazing there lies a narrow slot of space traveling parallel to it; and of course, in consequence of this, he implies a further idea—that bounding this slot of space, and behind it, there lies a plane of which the ground floor, the freestanding walls, and the inner reveals of the doors all form a part; and although this plane may be dismissed as very obviously a conceptual convenience rather than a physical fact, its obtrusive presence is undeniable. Recognizing the physical plane of glass and concrete and this imaginary (though scarcely less real) plane that lies behind it, we become aware that here a transparency is effected not through the agency of a window but rather

through our being made conscious of primary concepts which 'interpenetrate without optical destruction of each other.'

These two planes are not all; a third and equally distinct parallel surface is both introduced and implied. It defines the rear wall of the terrace and the penthouse, and is further reiterated by other parallel dimensions: the parapets of the garden stairs, the terrace, and the second-floor balcony. Each of these planes is incomplete in itself or perhaps even fragmentary; yet it is with these parallel planes as points of reference that the facade is organized, and the implication of all is of a vertical, layerlike stratification of the interior space of the building, a succession of laterally extended spaces traveling one behind the other.

This system of spatial stratification brings Le Corbusier's façade into the closest relationship with the Léger we have already examined. In *Three Faces* Léger conceives of his canvas as a field modeled in low relief. Of his three major panels (which overlap, dovetail, and alternatively comprise and exclude each other), two are closely implicated in an almost equivalent depth relationship, while the third constitutes a *coulisse* disclosing a location which both advances and recedes. At Garches, Le Corbusier replaces Léger's

concern for the picture plane with a most highly developed regard for the frontal viewpoint (the preferred views include only the slightest deviations from parallel perspective); Leger's canvas becomes Le Corbusier's second plane; other planes are either imposed upon, or subtracted from, this basic datum. Deep space is contrived in similar coulisse fashion with the façade cut open and depth inserted in the ensuing slot.

One might infer that at Garches, Le Corbusier had indeed succeeded in alienating architecture from its necessary three-dimensional existence, and in order to qualify this analysis, some discussion of the building's internal space is necessary.

On first examination this space appears to be an almost flat contradiction of the façade; particularly on the principal floor, the volume revealed is almost directly opposite to that which we might have anticipated. Thus the glazing of the garden façade might have suggested the presence of a single large room behind and it might have inspired the belief that the direction of this room was parallel with that of the façade. But the internal divisions deny this statement and instead disclose a principal volume whose primary direction is at right angles to that which might have been presumed, while in both principal

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and subsidiary volumes the predominance of this direction is conspicuously emphasized by the flanking walls.

The spatial structure of this floor is obviously more complex than it appears at first, and ultimately it compels a revision of these initial assumptions. The nature of the cantilevered slots becomes evident; the apse of the dining room introduces a further lateral stress, while the positions of the principal staircase, the void, and the library all reaffirm the same dimension. In these ways the planes of the facade can be seen to effect a profound modification of the deep extension of space which is now seen to approach to the stratified succession of flattened spaces suggested by the external appearance.

So much might be said for a reading of the internal volumes in terms of the vertical planes; a further reading in terms of the horizontal planes, the floors, will reveal similar characteristics. Thus, after recognizing that a floor is not a wall and that plans are not paintings, we might examine these horizontal planes in very much the same manner as we have examined the façade, again selecting *Three Faces* as a point of departure. A complement of Léger's picture plane is now offered by the roofs of the penthouse and elliptical pavilion, by the summits of the

freestanding walls, and by the top of the rather curious gazebo — all of which lie on the same surface. The second plane now becomes the major roof terrace and the coulisse space becomes the cut in this slab which leads the eye down to the terrace below. Similar parallels are very obvious in considering the organization of the principal floor. For here the vertical equivalent of deep space is introduced by the double height of the outer terrace and by the void connecting living room with entrance hall; and here, just as Léger enlarges spatial dimensions through the displacement of the inner edges of his outer panels, so Le Corbusier encroaches upon the space of his central area.

Thus throughout this house there is that contradiction of spatial dimensions which Kepes recognizes as a characteristic of transparency. There is a continuous dialectic between fact and implication. The reality of deep space is constantly opposed to the inference of shallow space; and by means of the resultant tension, reading after reading is enforced. The five layers of space which throughout each vertical dimension divide the building's volume and the four layers which cut it horizontally will all from time to time claim attention; and this gridding of space will then result in continuous fluctuations of

interpretation.

These possibly cerebral refinements are scarcely so conspicuous at the Bauhaus; indeed, they are attributes of which an aesthetic of materials is apt to be impatient. In the workshop wing of the Bauhaus it is the literal transparency that Giedion has chiefly applauded, and at Garches it is the phenomenal transparency that has engaged our attention. If with some reason we have been able to relate the achievement of Le Corbusier to that of Fernand Léger, with equal justification we might notice a community of interest in the expression of Gropius and Moholy-Nagy.

Moholy was always preoccupied with the expression of glass, metal, reflecting substances, and light; and Gropius, at least in the 1920s, would seem to have been equally concerned with the idea of using materials for their intrinsic qualities. Both, it may be said without injustice, received a certain stimulus from the experiments of De Stijl and the Russian constructivists; but both were apparently unwilling to accept certain more Parisian conclusions.

For seemingly it was in Paris that the cubist 'discovery' of shallow space was most completely exploited, and it was there that the idea of the picture plane as a uniformly activated field was most entirely understood. With Picasso, Braque,
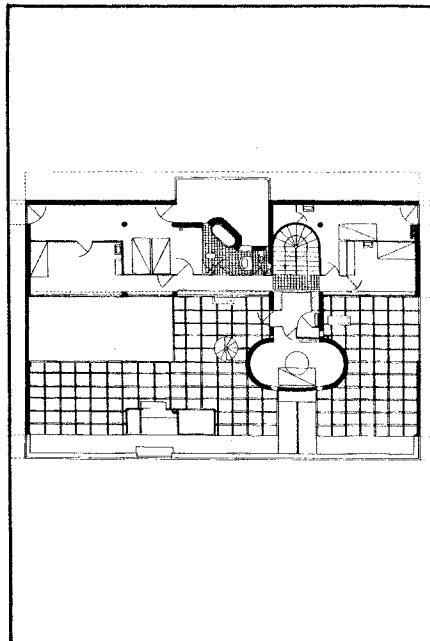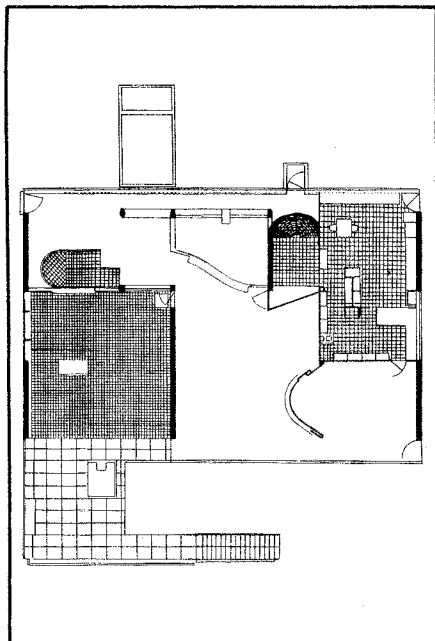
Gris, Léger, and Ozenfant we are never conscious of the picture plane functioning in any passive role. Both it, as negative space, and the objects placed upon it, as positive space, are endowed with an equal capacity to stimulate. Outside the Ecole de Paris this condition is not typical, although Mondrian, a Parisian by adoption, constitutes one major exception and Klee another. But a glance at any representative work of Kandinsky, Malevich, El Lissitsky, or Van Doesburg will reveal that these painters, like Moholy, scarcely felt the necessity of providing any distinct spatial matrix for their principal objects. They are prone to accept a simplification of the cubist image as a composition of geometrical planes, but are apt to reject the comparable cubist abstraction of space. For these reasons their pictures offer us compositions which float in an infinite, atmospheric, naturalistic void, without any of the rich Parisian stratification of volume. And the Bauhaus may be accepted as their architectural equivalent.

Thus in the Bauhaus complex, although we are presented with a composition of slab-like buildings whose forms suggest the possibility of a reading of space by layers, we are scarcely conscious of the presence of spatial stratification. Through the movements of the dormitory building, the administrative offices, and the workshop wing, the first floor may suggest a channeling of space in one direction. Through the countermovement of roadway, classrooms, and auditorium wing, the ground floor suggests a movement of space in the other. A preference for neither direction is stated, and the ensuing dilemma is resolved, as indeed it must be in this case, by giving priority to diagonal points of view.

Much as Van Doesburg and Moholy eschewed frontality, so did Gropius; and it is significant that, while the published photographs of Garches tend to minimize factors of diagonal recession, almost invariably the published photographs of the Bauhaus tend to play up just such factors. The importance of these diagonal views of the Bauhaus is constantly reasserted—by the translucent corner of the workshop wing and by such features as the balconies of the dormitory and the protruding slab over the entrance to the workshops, features which require for their understanding a renunciation of the principle of frontality.

The Bauhaus reveals a succession of spaces but scarcely 'a contradiction of spatial dimensions.' Relying on the diagonal viewpoint, Gropius has exteriorized the opposed movements of his space, has al-

lowed them to flow away into infinity; and by being unwilling to attribute to either of them any significant difference of quality, he has prohibited the possibilities of a potential ambiguity. Thus only the contours of his blocks assume a layerlike character; but these layers of building scarcely act to suggest a layerlike structure of either internal or external space. Denied the possibility of penetrating a stratified space which is defined either by real planes or their imaginary projections, the observer is also denied the possibility of experiencing the conflict between a space which is explicit and another which is implied. He may enjoy the sensation of looking through a glass wall and thus perhaps be able to see the exterior and the interior of the building simultaneously; but in doing so he will be conscious of few of those equivocal sensations which derive from phenomenal transparency.

Le Corbusier's League of Nations project of 1927, like the Bauhaus, possesses heterogeneous elements and functions that lead to an extended organization, and to the appearance of a further feature which both buildings have in common: the narrow block. But here again similarities cease, for while the Bauhaus blocks pinwheel in a manner highly suggestive of constructivist compositions, in the League

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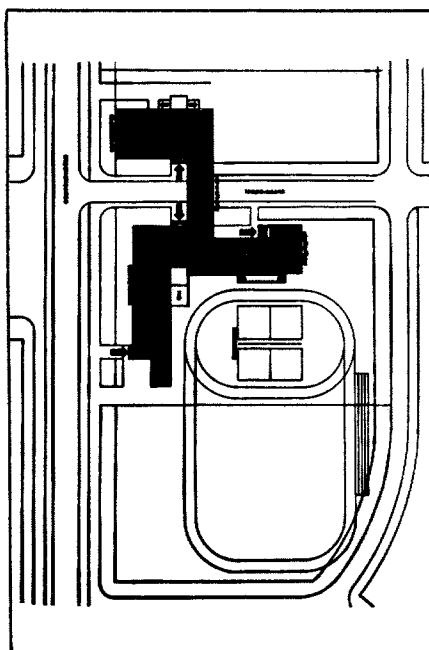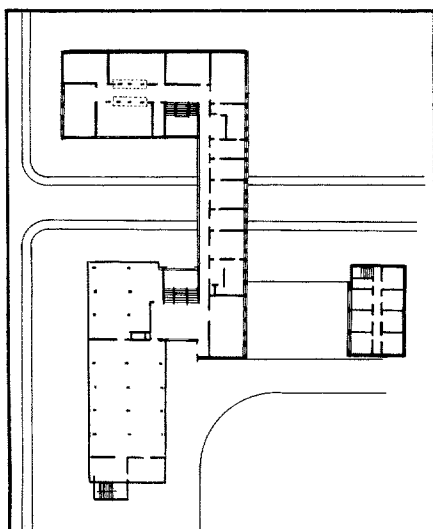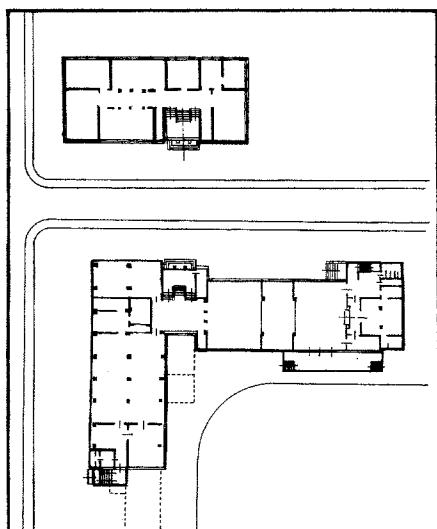
of Nations these same long blocks define a system of striations almost more rigid than that at Garches.

In the League of Nations project lateral extension characterizes the two principal wings of the Secretariat, qualifies the library and book-stack area, is re-emphasized by the entrance quay and the foyers of the General Assembly Building, and dominates even the auditorium itself. There, the introduction of glazing along the side walls, disturbing the normal focus of the hall upon the presidential box, introduces the same transverse direction. The contrary statement of deep space also becomes a highly assertive proposition. It is chiefly suggested by a lozenge shape whose main axis passes through the General Assembly Building and whose outline is comprised by a projection of the auditorium volume into the approach roads of the *cour d'honneur* (Fig 13). But again, as at Garches, the intimations of depth inherent in this form are consistently retracted. A cut, a displacement, and a sliding sideways occur along the line of its major axis; and as a space, it is repeatedly scored through and broken down into a series of lateral references — by trees, by circulations, by the momentum of the buildings themselves—so that finally, through a series of positive and negative implications, the whole scheme becomes

a sort of monumental debate, an argument between a real and ideal space.

We will presume the Palace of the League of Nations as having been built and an observer following the axial approach to its auditorium. Necessarily, he is subjected to the polar attraction of its principal entrance. But the block of trees which intersects his vision introduces a lateral deflection of interest, so that he becomes successively aware, first, of a relation between the flanking office-building and the foreground parterre, and second, of a relation between the crosswalk and the courtyard of the Secretariat. And once within the trees, beneath the low umbrella they provide, a further tension is established: the space, which is inflected toward the auditorium, is defined by, and reads as, a projection of the book stack and library. While finally, with the trees as a volume behind him, the observer at last finds himself standing on a low terrace, confronting the entrance quay but separated from it by a rift of space so complete that it is only by the propulsive power of the walk behind him that he can be enabled to cross it. With his arc of vision no longer restricted, he is now offered the General Assembly Building in its full extent; but since a newly revealed lack of focus compels his eye to slide along this facade, it is again irretrievably drawn

sideways, to the view of the gardens and the lake beyond. And should the observer turn round from this rift between him and his obvious goal, and should he look at the trees which he has just left, the lateral sliding of the space will only become more determined, emphasized by the trees themselves and the cross alley leading into the slotted indenture alongside the book stack. If the observer is a man of moderate sophistication, and if the piercing of a screen or a volume of trees by a road might have come to suggest to him that the intrinsic function of this road is to penetrate similar volumes and screens, then by inference the terrace on which he is standing becomes not a prelude to the auditorium, as its axial relationship suggests, but a projection of the volumes and planes of the office building with which it is aligned.

These stratifications, devices by means of which space becomes constructed, substantial, and articulate, are the essence of that phenomenal transparency which has been noticed as characteristic of the central postcubist tradition. They have never been noticed as characteristic of the Bauhaus, which obviously manifests a completely different conception of space. In the League of Nations project Le Corbusier provides the observer with a series of quite specific locations: in the Bauhaus
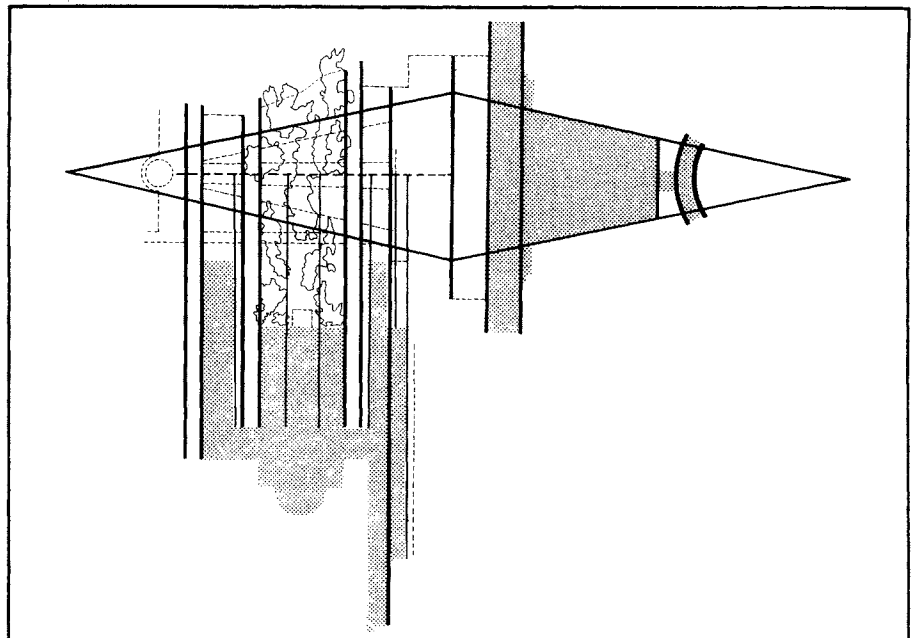
he is without such points of reference. Although the League of Nations project is extensively glazed, such glazing, except in the auditorium, is scarcely of capital importance. At the Palace of the League of Nations, corners and angles are assertive and definite. At the Bauhaus, Giedion tells us, they are 'dematerialised.' At the Palace of the League of Nations space is crystalline; but at the Bauhaus it is glazing which gives the building a 'crystalline translucence.' At the Palace of the League of Nations glass provides a surface as definite and taut as the top of a drum; but at the Bauhaus, glass walls 'flow into one another,' 'blend into each other,' 'wrap around the building,' and in other ways (by acting as the absence of plane) 'contribute to that process of loosening up a building which now dominates the architectural scene' (9).

But we look in vain for 'loosening up' in the Palace of the League of Nations. It shows no evidence of any desire to obliterate sharp distinction. Le Corbusier's planes are like knives for the apportionate slicing of space. If we could attribute to space the qualities of water, then his building is like a dam by means of which space is contained, embanked, tunneled, sluiced, and finally spilled into the informal gardens alongside the lake. By contrast, the Bauhaus, insulated in a sea of amorphic outline, is like a reef gently washed by a placid tide.

The foregoing discussion has sought to clarify the spatial milieu in which phenomenal transparency becomes possible. It is not intended to suggest that phenomenal transparency (for all its cubist descent) is a necessary constituent of modern architecture, nor that its presence might be used like a piece of litmus paper for the test of architectural orthodoxy. It is intended simply to give a characterization of species and also to warn against the confusion of species.

1 Gyorgy Kepes: *Language of Vision*
2 Moholy-Nagy: *Vision in Motion,* Chicago 1947; pp 188, 194, 159, 157
3 Moholy-Nagy: *op cit* p 210
4 Moholy-Nagy: *op cit* p 350
5 Alfred Barr: *Picasso: Fifty Years of His Art,* New York 1946; p 68
6 Moholy-Nagy: *The New Vision and Abstract of an Artist,* New York 1947; p 75
7 Gyorgy Kepes: *op cit*
8 Siegfried Giedion: *Space, Time, and Architecture,* Cambridge, Mass 1954; p 491 and p 490
9 Siegfried Giedion: *op cit* p 489; and S. Giedion: *Walter Gropius,* New York 1954; pp 54-55

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