ORIGINS AND DEVELOPMENT OF ARCHITECTURAL PERCEPTION

HELEN MARIE BÜHRMANN

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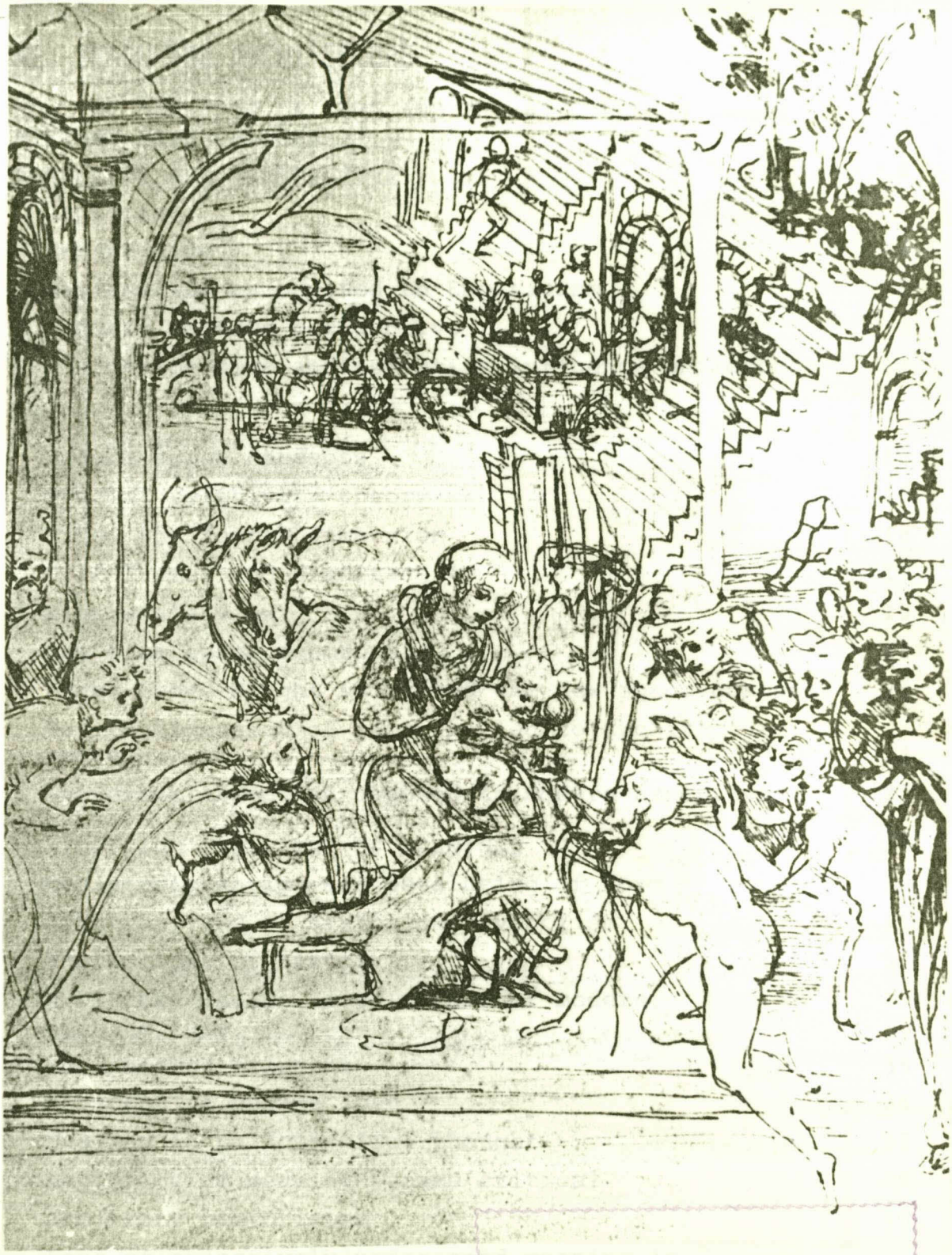

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INTRODUCTION

This study aims to demonstrate that the method the human mind uses to structure order has particular significance on the choices made in the creation of architectural form. That the nature of order as conceptualised by man may influence the ultimate base, the *Archimedean point* of philosophy and in particular how it then concerns architecture. Furthermore, that certain events, situations and choices have influenced the way modern man perceives the order of the universe to reveal itself; which changed philosophical attitudes, with regard to the development of architecture. It appears that two basic means of conceptualising order have occurred in the history of civilisation, namely the aspective and perspective methods of cognition. The very nature of the method man uses to structure order in the process of cognition seems to deter= mine how ultimate reality is perceived, which in turn influences the structure of epistemology and man's general intellectual orientation. The possibility of identifying these two methods of conceptualising order, namely the aspective and perspective views, provides a possible explanation for the confusion, fragmentation and contradiction, which characterises contemporary architecture; and in this manner exposes the reasons for the absence of general standards and criteria, a situation that appears to be unique to our own time, and in direct contrast to the past.

To elucidate the nature of perceptual cognition, pertaining to order, extensive reference has been made to the historical roles these two approaches have played in shaping architecture; particularly with reference to concepts concerning the relation= ships of objects and occurrences in time and space. Further= more, this study has led to the necessity of investigating how ideas, events and choices in recent history have interacted with each other and succeeded in establishing a vastly different culture, that gave a new structure to society, compared to historical precedent. This situation appears to have affected the way man views his world; which therefore became manifested

in the assumption architects have made in the formation of their concepts pertaining to architectural theories and ideologies. This field of study may appear to elude precision, as concepts are seldom clear or precise with respect to artistic creativity. Often men may work with assumptions which, when rendered articulate, are seen to be conflicting; or it may occur that concepts and ideas are often active in practice long before they are identified in writing by theorists. Further= more, theories and ideologies contemporary architects have proposed, appear to be at variance with the architecture they have designed in practice.

In planning this investigation concerning the ordered structure of man's cognition and its influence upon architecture, the author has not merely been guided by academic or historical interest, but has been concerned with contemporary reference; thus giving brief historical portraits of certain key concepts which illustrate the vicissitudes of the aspective and perspect= ive in our Western culture. Furthermore, setting the ideas and values pertaining to the aspective over and against those related to the perspective, and in this manner attempting to elucidate and pinpoint that which may be lacking in the con= temporary situation. In order to shed more light on the apparent failure of Modern Architecture to provide objective values and meanings to the built environment, a particular function archi= tecture filled so adequately in the past, particular attention has been given to the value-structure and the related methods of decision-making in architectural design. Thus this thesis seeks to contribute some measure of clarification of, and insight into, this phenomenon, by postulating a new basic pre= mise that allows a general investigation of the factors that have contributed to the present situation in architecture. All human activities could be covered in a study of this nature, which has made it necessary to confine the investigation to a field more directly relevant to architecture, although in doing so, certain factors excluded could prove fruitful in a more detailed study.

CHAPTER 1

TIME, SPACE AND ARCHITECTURE

"I will not rest until there is nothing left that is for me only word or tradition, until everything is a living idea."

Goethe, Rome, 27 June 1787

The Modern Movement radically changed our vision, approach and attitude to architecture. It has revolutionised our design vocabulary and established architecture as a profession. It altered the relationship of the built environment to our culture. In many respects this movement manifested aspects diametrically opposite to those which had been prevalent prior to its development. To appreciate the implications of these tremendous changes and their consequent influence, it will be necessary to examine these aspects relative to historical precedent, and in comparing, to establish a method of evaluation.[1]

Prior to the Modern Movement we find only rare instances of known unacceptability of current architecture as, for example, the Amara art in ancient Egypt.[2] Contrary to this situation the Modern Movement was born out of the rejection of historical precedent and has itself been under criticism since its inception; this has continued until the present day.

"Architecture, design and all the arts, when they are valid, express the motivating social forces of their time, as well as the enduring values of our culture."[3]

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1 Tafuri, M., *Theories and History of Architecture*, pp. 227-237.
2 Smith, R. W., Computer helps scholars re-create an Egyptian Temple, *National Geographic*, Vol. 138, No. 5, 1970, pp. 648-655.
3 Smith, R., *Supermannerism. New attitudes in Post-Modern Architecture*, p. XXIV.

Generally speaking, this Hegelian philosophy as stated, is regarded as valid. Particularly as architectural historians and archeologists have given us such a clear picture of the link between the manifestation of an architectural style and the social, cultural, philosophical and climatic conditions prevalent at a given time, which is adequately illustrated by Banister Fletcher, Sigfried Giedion, Pevsner and many others.[4]

The expression of a homogeneous culture, a shared attitude, specific climate conditions and geographic situation, resulted in distinctive architectural styles. The synthesis of all the aspects of man, at a certain time, created unique expressions of form and shape in architecture, relevant and apt to such a situation.

This no longer prevails in our western culture; the link between architectural expression, culture and environmental influences has become obscured. Architecture has become the expression of the subjective approach of the architect and client, rather than the expression of a cultural heritage, objective values, philosophy or environmental conditions,[5] nor has there deveveloped a clear, general theory or philosophy with regard to Modern Architecture. On the contrary, numerous ideologies have appeared determined by, as Geoffery Broadbent calls them, the *taste makers*[6] or by personal adaptations of one of these ideologies. Although many theories may be loosely grouped as, for example, the International Style or Post-Modern, yet each ideology is separate in its approach and expression.

However, we may still regard the concepts of architecture as an expression of the spirit of an epoch as valid, although we realise that Modern Architecture is an expression of vastly different values and aspects from those that had created architecture in the past. How this came about and why

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4 Scruton, R., *The Aesthetics of Architecture*, p. 53.
5 Brolin, B. C., *Failure of Modern Architecture*, pp. 88-103. See Chandigarh of Le Corbusier.
6 Broadbent, G., Profile 23, Neo-classism, *Architectural Design*, Vol. 49, No. 8-9, 1979, p. 1.

architecture is the expression of such a changed situation, is of particular interest in this study. Attention is given to aspects, events and choices which have changed and appear to have exercised an influence on contemporary architecture.

HOW THE CONCEPTS OF TIME AND THE ATTITUDES TOWARDS HISTORY HAVE CHANGED

The concepts of time and history have been interpreted and used in many ways since the beginning of civilisation. Speaking about history we generally mean a continuous methodical record of events, a systematic account of natural phenomena.[7] The word "history" in Greek means an investigation or an inquiry, to find out the truth. Its method is a rational examination of evidence.[8] In seeking an explanation of the truth, the distinction must be made between scientific truth and historical truth. Scientific truth may be described as being about the frame of nature, the context (parts that precede or follow a passage and fix the meaning)[9] while historical truth is about the content[10] (constituent elements of a conception, substance of cognition). History concerns itself with a record after the event and does not assume prediction, it can say nothing in advance of observation and can set no dogmatic limit, to the choice of style or aim of the architect. He may use history, a code, or tradition, or ancient dogma to substantiate his theory or idea, but history does not predict.[11] Meanings related to architectural form are historically created, derived from precedent but history does not establish these meanings; actions of people do, history only records them.

Allsopp points out that architecture without an awareness of history, as a traditional heritage, has an unchanging quality of the craft tradition. When the awareness of history appears, it becomes, not a fetter to the past, but a way of escaping it.[12]

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7 Concise *Oxford Dictionary*.
8 Allsopp, B., *The Study of Architectural History*, p. 15.
9 Concise *Oxford Dictionary*, p. 259.
10 Steadman, P., *The Evolution of Design*, quoted from Kneale, W. C., *Demarcation of Science*, p. 224.
11 Scruton, R., *op.cit.*, p. 55.
12 Allsopp, B., *op.cit.*, pp. 11-14.

> *"Seeing has a history of its own and the discovery of historically differentiated visual levels must be considered the most basic task of the art historian."*[13]

To be able to become historically aware, requires a linear concept of time, the beginning and end sequence of events. Historical time presupposes a distancing in sequence on the part of the observer. This concept is directly opposed to the concept of time that is cyclical, which has no fixed point; as when a section of time is removed, made independent and enclosed, so that the beginning and ends are linked, and the cyclical form of time emerges. When one circle is placed by the next, their relationship with the complete course of events, is no longer seen.[14] The perspective view as opposed to the aspective view, this point may be illustrated by the Greek view as opposed to the Egyptian view.

ASPECTIVE AND PERSPECTIVE

Aspective and perspective are expressions of perceptual atti= tudes, which are fundamental and part of the standpoint from which man regards his world.

The Egyptian culture survived for more than 4 000 years[15] in such a way that a unified character remained discernable in all their artistic endeavour, throughout this time, expressed with great consistency. Schäfer isolates one of the factors to which this may be attributed. He maintains that a funda= mental intellectual orientation, an expression of a perceptual attitude was responsible and accounted for this situation. This attitude he calls *geradvorstellig*, [16] which will henceforth be translated according to Emma Brunner-Traut as aspective,[17] a view based on frontal images.

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13 Schäfer, H., *Principles of Egyptian Art*, p. 80, as quoted from Wolffin, H., *Kunstgeschichtliche grundbegriffe*, 1915.
14 Brunner-Traut, E., *Epilogue, Aspective*, from Schäfer, H., *Principles of Egyptian Art*, pp. 432-433.
15 Schäfer, H., *op.cit.*, p. 3.
16 Brunner-Traut, E., *op.cit.*, p. 428.
17 *Ibid.*, p. 428.

ASPECTIVE

Aspective aims at true representation of only the object or image, whereas perspective depicts the object in relation to space in which the object is found. These views relate to perception of how all phenomena present themselves as forms and occurrences in space and time. Aspective sees individual phenomena, relatively close-up, each separate; it does not measure it against the space it occupies, Depth perception, as in the perspective view, does not exist. Aspective excludes space and time as inessential. This exposes the cyclical nature of time in which events lose their relationship as a complete sequence. There is no fixed reference point, each event is separate. It is especially suited in expressing eternal recurrence, seasonal, religious or rhythmic repetition of events. It appears timeless and characterises constancy. Space is seen as being the space inside an object, not as an illusion of depth. Distances are characterised by overlapping planes or layers.

The Egyptians were unaware of the fact that other peoples lived in their country at a time before them,[18] therefore creation was to them boundless in time and space. Their aim was to overcome this and achieve order out of chaos. But they had no measure or method to give a fixed point to create a linear time concept. Of this concept they were unaware. To overcome this they delimitated time as in the cyclical concept, and with space they separated the known from the unknown by flat planes. The discovery of geometry allowed them to calculate space, as in a cube, by its imaginary inner sur= faces.[19] Space stands as an absolute, it cannot correspond to perspective centered space, where all the lines converge or radiate from a vanishing point and so become dynamic. The aspective view, of observing phenomena separately and independently, caused every rule, event, new knowledge to be stated absolutely firmly, without modification or in relation to the next, so without changing it. Although the Egyptians realised that a time had existed before their own creation,

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18 Schäfer, H., *op.cit.*, p. 31.
19 Brunner-Traut, E., *op.cit.*, pp. 438-439.

they reckoned time by beginning afresh with each new king. Closed periods stand next to each other.[20] Scientific thought to them consisted in evaluating it, grouping it into categories without relationships. Once a norm or rule was established it was retained independently.

> *"The Egyptians' decisive perception is the boundary, and this boundary is the boundary of their knowledge."*[21]

The holistic view, which allowed for the fitting of phenomena into an ordered world, did not exist. Order was achieved by separating the known from the unknown.

PERSPECTIVE

The Greeks developed their intellectual orientation from an aspective to a perspective view. They started depicting objects not as they truly were, but as they appeared correctly in relation to the space around and behind them, in which they appear, correct to the human eye, even if it meant depicting them without their true measurements.[22] An ordered concept of front and back. They observed phenomena in the context in which they appeared and their relationships, in reality with each other. This concept gave the fundamental origin of the linear time concept, and space was now seen as around objects as well as inside objects. The development of Greek perspective may be traced by observing what was initially known as *shadow painting*[23] before the true concept of perspect= ive was arrived at, and foreshortening was discovered. The discovery of linear time concept accounts for the large scale interest that the ancient Greeks manifested in clocks and calenders. This new time concept allowed the idea of history to emerge. Homer had only been a saga and epic writer who had lacked the essential qualities of history, whereas Herodotus could now record history more as we regard it today. Further= more, he used the Athenian law court technique to test evidence of past events.[24]

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20 Schäfer, H., *op.cit.*, p. 370.
21 Brunner-Traut, E., *op.cit.*, p. 444.
22 Schäfer, H., *op.cit.*, p. 87.
23 *Ibid.*, pp. 272-273.
24 Allsopp, B., *op.cit.*, p. 15.

The new awareness of perspective allowed the development of logic, inductive and deductive reasoning; conclusions arrived at by arguing logically from a premise to a conclusion, as these concepts require a linear idea of continuation from a fixed point. Greek science became rational and as such, influenced their architecture, as Allsopp writes:

> *"It did provide an absolute foundation for the theory of design by relating architecture to the scientists' concept of an ordered world, constructed out of elements which bore true proportional relationships to each other."*[25]

The Greeks integrated their rationality in their perspective view, even using mathematical methods to obtain visual correct= ions as seen on the Parthenon.[26] In this way they combined the rational and empiric approaches. Doxiadis shows how important Greek religious sites were laid out around the human participant, who thus became central to the place, at the point where he crossed the threshold of the Sacred precinct.[27] From these points certain angles were used to determine the placing of buildings, not at random, but to obtain particular visual, perceptual perspective effects. The Greeks had arrived at a new *threshold* in human awareness. Only when this threshold has been reached can knowledge be argued by a historical method. It is seeing as a whole instead of in isolated segments.

This legacy initiated by the Greek civilisation marks a new development in man. All pre-Greek art must be seen in the light of representation of the artist by mental images which, in their view, summarise the essential physical character of the objects depicted as opposed to their appearance in perspective. The distinction lies in the fundamental way in which life is viewed; perspective ordered view as opposed to aspective frag= mented view. These two fundamental views may be aligned with the two streams of the dualistic philosophic attitudes of the

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25 *Ibid.*, p. 18.
26 Banister Fletcher, A., *History of Architecture*, p. 134.
27 Doxiadis, C. A., *Architectural Space in Ancient Greece*, pp. 3-5.

twentieth century: The Rationalistic view as described by Descartes as opposed to the Empirical approach of Burke and Hume.[28]

RATIONALISM AS OPPOSED TO EMPIRICISM

The Rationalists regard reality as composed of absolute truth, irrespective of the perceptual qualities of the human senses, not as you perceive it perspectively, but as it really is; that the world consists of absolute truths throughout time.

An Empirical view, of sensory perception, is as you see and perceive it, and allows for the transient nature of time. Perspective is an important quality in creating order to sense perception. The depicting of reality as absolutely eternally true, the Rationalistic view, or the depicting of it as valid through sensory perception, changes the view of the artist. The time-space relationship changes. Absolute truths that are eternally true, do not have a fixed relation= ship with space or time, create an aspective view. The sensory perceptual view requires an ordered world of reality, ordered, in relation to a fixed point in time and space, to make sense and this requires a perspective view. However, it must be noted that the subjective view of Empiricism becomes fragmented, lacking in communication on the objective level, thus dissolving into an aspective view, as shown by the Formalistic art theory, which is unrelated to perspective, time or space or any meaning. Modern rationalistic architecture is related to the manner in which an object is depicted by its essential physical character; not by its meaning or the manner in which it is viewed by man from a perspective perceptual attitude. All that is left is the abstract concept of absolute truth, in the aspective view, cut off from reality as perceived by man.[29] Rationalists have long since tried to express their architecture by returning to the classical Greek style, in an attempt to achieve order, logics and reason,[30] using mathematical theoretical rationalism

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28 Broadbent, G., *Design in Architecture*, Chapter 3.
29 Jencks, C., Irrational Rationalism : The rats since 1960 in *The Rationalist*, Sharp, D., *ed.*, p. 210.
30 Broadbent, G., Neo-classism, *Architectural Design*, 1979, Vol. 49, No. 8-9, pp. 4, 5.

to achieve this, with or without classical features. What they did not realise was that without the concept of perspective they were doomed to failure, perspective being the fundamental prerequisite for the success of classical Greek architecture. But by an attitude of exclusion, relying only on absolute truths they remained isolated from the realm of the perspective way of viewing. Jencks comments on the rationalistic view as follows:

> *"Such autonomy is possible only under extreme and artificial conditions: when the perceiver abstracts himself in time and space from the building, brackets off the contextual setting and concentrates on the distortions of the language itself."*[31]

These concepts of space and time illustrate an aspective view as opposed to the perspective view reflected in Greek, Roman and Renaissance art and architecture:

> *"Perspective, which reproduces visual impressions faithfully, basing itself on the visual image built into the structure of the human eye, and far from avoiding foreshortening, seeks it out."*[32]

The Empiric view remained closer to the perspective conceptual view until it degenerated into subjectivism. 'Rationalistic' architecture is related to how an object is depicted by its true[33] essential physical character, not by its meaning or how it is viewed by man from a perceptual perspective attitude. It has eclipsed and destroyed history and meanings related to historical experience and perspective, it is aspective. The perspective view implies that man sees from a particular view= point and gives a near and far in space and time, and thus a proper sequence of forms in space as perceived by the senses of man, and logical in linear time, with man being the viewer.

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31 *Ibid.*, p. 214.
32 Schäfer, H., *op.cit.*, p. 269.
33 Norberg-Schulz, C., *Meaning in Western Architecture*, p. 354. The illusive, allegorical image was replaced by the true image in science as well as in art, in the 19th century.

ARNHEIM REJECTS PERSPECTIVE

At this point the distinction must be made between the way Arnheim views perspective and the meaning donated to it in this thesis. Arnheim maintains that we must not cling to the conceptual dichotomy that there are two fundamentally different ways of seeing the world, either seen "as it is", or that all the conditions of perspective are acknowledged, due to the fact that no radical "either or" exists in human visual perception.[34]

This may be perfectly true from a psychological point of view, but it does not take into account the development from an aspective view to a perspective view in the awareness of man, as happened in the Greek situation, nor of how a child develops in a similar way, as shown by Schäfer.[35] Therefore, the situation may be clarified by observing that Arnheim works from a psychological point of view and that Schäfer's point of view implies that perspective, as opposed to aspective, is a basic fundamental intellectual orientation and not related to the biological structure of the eye or psychological relation= ships. These are philosophical standpoints. The perspective perceptual attitude is a basic method of seeing nature as a whole as opposed to seeing it in isolated parts, which implies the necessity of the concept of linear time, and seeing in an ordered sequence of near and far, before perspective and fore= shortening may be practised in art and architecture.

The difference between Arnheim's psychological approach and Schäfer's philosophical approach may be clarified as follows: psychology investigates facts, while philosophy studies con= cepts.[36] Although both these aspects are concerned with human experience, psychology attempts to isolate human experience into scientific fact, which by itself is doomed to erroneous knowledge without taking basic philosophical attitudes into account, as Arnheim has done.

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34 Arnheim, R., *The Dynamics of Architectural Form*, p. 113.
35 Schäfer, H., *op.cit.*, p. 335.
36 Scruton, R., *op.cit.*, p. 2.

In this manner, Arnheim actually describes aspective viewing of architectural environments that he had experienced in old European towns, without being aware of the philosophical implications:

> *"One can interpret and enjoy the experience as a sequence of unexpected vistas, stimulating in their variety and not predetermined by a recognizable map of overall order. Such an environment is in the nature of a texture rather than a design; it is held together by its homogeneity, which refuses to assign to any element a particular place determined by the structure as a whole."*[37]

Which is in complete contrast to the method by which Dioxadis describes the way Greek holy precincts were to be viewed from a vantage point, to include all the buildings in perspective order, one related and ordered to the other in the space as a whole. Arnheim admits, however, that under special historical conditions the sculptor's spatial conception overcame the basic Cartesian framework as of Egyptian sculpture, and was able to invent freely, a development that could be studied, according to him, in Classical Greece.[38] He goes further to maintain that deviations from the basic two dimensional structure are very difficult to visualise, because the human eye receives flat images in two dimensions, and therefore flat vertical sections and plans are suitable and conform to man's limitations of sight.[39] By this statement he discounts the ability of the human mind to organise visual impressions in perspective in spite of his visual limitation, and consequently exposes his own aspective view.

HOW PERSPECTIVE AND ASPECTIVE INFLUENCE PHILOSOPHY

Perspective and aspective are two different methods the mind employs to achieve order in the process of creating concepts, with regard to perception and understanding all things real and unreal, and must therefore influence philosophical

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37 Arnheim, R., *op.cit.*, p. 115.
38 *Ibid.*, pp. 57-58.
39 *Ibid.*, p. 59

attitudes. Philosophy assumes an order in all things as it concerns itself with the concepts that man holds with regard to reality, general causes and principles of things. It is only from this assumption that philosophy is then able to move to determine an *Archimedean point*,[40] the ultimate base from which all further philosophical reasoning ensues, which by its very nature and character then determines all subsequent argument and upon which the final conclusion will rest. There= fore the very nature of the method used to determine order in the mind of man must influence the ultimate base of philosophy, the *Archimedean point*.

> *"The sudden leap to perspective is part of the general transformation of man's relation= ship with the world ... Perspective presupposes a different ranking of man in the cosmos, that he takes up a different position."*[41]

To illustrate how order is conceptualised by man, one may use the following description that Yona Friedman provides.[42] Firstly, man identifies an object or aspect, he then esta= blishes the uniqueness of such an object or aspect and finally establishes the *relationships* of that which he has identified. The method in which these relationships are established in the process of achieving order, concerns this study. Two basic epistemological orders have revealed themselves in the history of civilisation, the aspective and the perspective view of conceptual cognition of order.

Aspective order reveals order as perceived by separating the known from the unknown, each known facet is then grouped separately, without sequential links, each seen alone as it really is, close up, without being influenced by other facets or groups, without the necessity or means of establishing a hierarchy of importance. Perspective order implies that as each facet becomes known, it is placed in an order of sequence

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40 Kalsbeek, L., *Contours of a Christian Philosophy*, pp. 56-61.
41 Brunner-Traut, E., *op.cit.*, p. 427.
42 Friedman, Y., *Towards a Scientific Architecture*, p. 25.

with regard to the contents of all the facets already known; thus each influencing the other, demanding sequential links and a hierarchy of importance; each part fitting correctly within the whole is an inherent quality of this method of viewing order. "Placing in perspective" implies simply a hierarchical value structure related to all things and aspects of ultimate reality, inclusive of such vital aspects under discussion in this study of time concepts, historical incidents, attitudes, concepts of space, depiction of drawings and the ordering of design value decisions.

SPACE

> *"Space is therefore the product of an interaction between the organism and the environment in which it is impossible to dissociate the organization of the universe perceived from that of the activity itself."*
>
> J. Piaget, *The child's construction of reality*

Space concepts have changed during the course of history. Space was first seen as the contents of a container, aspect= ively as in ancient Egypt, which developed into concepts where space is seen around objects that are placed in ordered visual sequence and perspective, which applied to ancient Greece and later to the Renaissance. The Medieval conception of divine space with flat floating arrangements, as seen depicted in their artistic approach,[43] is aspective by nature, also shown by the fragmented use of space in Gothic towns, which were not developed in an ordered pattern, but at random each individually, each new part just added on without changing the previous one, giving the impression of many fragmented spaces. The Renaissance perspective in the fifteenth century came as a complete revolution to the Medieval conception of space:

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43 Giedion, S., *Space, Time and Architecture*, 1949, p. 31.

> *"Perspective was not the discovery of any one person; it was the expression of a whole era."*[44]

From the time of its rediscovery, no hesitation can be observed in its application in both art and architecture; each work of art was considered in this light, as perfectly ordered without anything being able to be added or taken away. Later used as a tool to achieve visual impact as in Piazza Campidoglio of Michelangelo and Bernini's Piazza Obliqua in front of St. Peter's.

The spatial organisation of the Baroque became influenced by the idea of infinity in a linear sense, as an indefinitely extended perspective, through the infinite in the field of mathematics, as a basis for calculations. For the first time in history, gardens and highways were incorporated, as all essential parts of the architectural composition and were placed by this means in direct and obvious relation with un= ending extension of space. Versailles is one of the great examples of such a creation.[45] The total effect stood as a model of the Baroque universe and retained this character= isation of infinity. The revival period of architectural styles was not particularly concerned with new space concepts as it was a time of pattern book architecture. However, as Giedion states:

> *"In the nineteenth century perspective was misused, which led to its dissolution."*[46]

In his diagnosis he seeks a cause for its dissolution, but one may alternatively consider that the cause was the disintegration of viewing life perspectively, caused by the circumstances at that time, due to the accumulation of knowledge and the great social, economic and political changes that had taken place, which led to the confusion of values. Life was of necessity, now, to be viewed aspectively in order to separate the known from the great unknown.

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44 *Ibid.*
45 *Ibid.*, p. 43.
46 *Ibid.*, p. 368.

MODERN SPACE CONCEPTS

The first new concept of aspective space may be seen mani= fested in the Cubist movement in painting at the turn of the century. The significance of this movement was that a new approach of spatial representation had become evident. Cubism did not seek to reproduce the appearance of an object as seen from a vantage point; it went round the object. Cubism breaks with perspective and in doing so dissects objects and sees them simultaneously from all sides. This contemporary approach wanted to get away from the single point of reference as considered in perspective:[47]

> *"The advancing and retreating planes of cubism, interpenetrating, hovering, often transparent, without anything to fix them in realistic position, are in fundamental contrast to the views of perspective, which converge to a single focal point."*[47]

This is a basic aspective way of viewing space, by overlapping planes and is very similar to the ancient Egyptian concept, but added to this concept came the Baroque concept of space extended infinitely, which became combined in the modern spatial concept. The filled container of aspective space is allowed to flow out as if it possessed some consistency like liquid, gas or radiation.

> *"The Modernist adherence to universal or fluid space had strong appeal. However the ebbing of space past the grid columns and beam, past asymmetrically placed partitions, and out of the glass wall robbed it of a certain energy and power found in traditional architecture."*[48]

The Barcelona Pavilion of Mies van de Rohe perfectly illustrates this concept, where the flowing space is directed by flat planes in Rietveld's Schröder Home at Utrecht, 1924, the cube of the house illustrates the way the house expands in a proliferation of fly-away planes with the smooth neutral

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47 *Ibid.*, p. 370.
48 Introduction, *Progressive Architecture*, Vol. 62, No. 3, 1981, p. 74.

surfaces of a Mondrian painting.[49] This is a very striking example of the new ideas of space in modern aspective, the space as the content of an object, expanding and held by flat planes. Moshe Safdie's Habitat, Montreal 1967, with its built-up closed boxes, placed in apparent disorder, each separate box with its own enclosed space, as a whole gives the impression of a *crazy ziggurat*.[50] This example too expresses the aspective nature of space, each separate and next to each other as contained interior spaces, but without apparent connections, without the order of perspective. No matter how you view it, it still gives that same character. Portoghesi illustrates the radiating concept of flowing space.[51]

Space becomes negatively defined by a grid or framework to allow maximum flexibility by partitioning planes in flowing space, as in Le Corbusier Domus, or in the Berlin Gallery of Mies van der Rohe. Frank Lloyd Wright describes the destruct= ion of the box to allow the space to flow out.[52] Only if one primarily considers space as contained within an object, as in aspective space, only then can one conceive of letting it out. One may not agree with Giedion about the spatial concepts that he describes in *Space, Time and Architecture*, about the spatial concepts of Egypt, Sumer and Greece[53] and later about his dismissal of the Renaissance and other periods, but his description of modern spatial concepts is very apt when he describes them as follows:

> *"The third space conception set at the beginning of this century with the optical revolution that abolishes the single viewpoint of perspective.*
>
> *This had fundamental consequences for man's conception of architecture and the urban scene. Space-emanating qualities of freestanding buildings could again be appreciated. We recognize an affinity with the first space conception."*[54]

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49 Banham, R., *Age of the Master*, p. 68.
50 *Ibid*, p. 144.
51 Norberg-Schulz,C., *Existence, Space and Architecture*, pp. 66-68.
52 Wright, F. L., *The Future of Architecture*, pp. 21-22.
53 Giedion, S., *Space, Time and Architecture*, p. Lv, 1970.
54 *Ibid.*, p. Lvi, 1970.

This quotation describes a modern aspective view, by abolishing perspective and returning once more to pre-Greek concepts of space. This is a vastly different concept of space that allows objects to be fitted into it perspectively, as the following quotation taken from Plato, concerning space, illustrates:

> *"The mother and receptacle of all created and visible, and in any way sensible things."*[55]

The concept of space flowing out of a container does not allow for the concept of viewing space perspectively. Perspective space is perceived as space being everywhere, a receptacle of all things; matter, objects and structures thus penetrating space, and as such, space is defined passively. On the other hand, Modern aspective space is positively identified as being active, in the sense of flowing or radiating; it therefore has an active connotation in the consciousness of the designer. This view is diametrically opposite to the perspective view that considers the structure as the dominant active feature and space the passive.

SPECIAL RELATIVITY THEORY

Einstein's Special Relativity Theory evolved from the astonish= ing discovery of the physicist, Albert Michelson, that the speed of light proved to be absolutely independent of the motion of the earth.[56] The conclusion arrived at by Einstein from this hypothesis was that 'Time' in a moving frame does differ from time in a rest frame.[57] For a fast moving object even the flow of time should be affected, making its clocks and atomic processes run slow. Time becomes relative to speed. The nineteenth century physicists, on the contrary, had inherited a vague concept of 'absolute time' (absolute space as well) that could be traced to common sense physics of the Greeks. As, for example, Aristotle states: *"The passage of Time is current everywhere alike and in relation*

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55 Arnheim, R., *op.cit.*, p. 9.
56 Bergamini, D., The Universe, *Life Nature Library*, Eday, M. A., (*ed.*), p. 171.
57 Bernstein, J., *Einstein*, p. 56.

to everything", and further, that: *"Absolute true and mathe= matical time, of itself, and from its own nature, flows equably without relationships to anything external, and by another name is called duration."*[58] Of this Newton was in no doubt; he, however, made a distinction between *common time* measured by clocks and absolute time which existed only in the consciousness of God. In Newtonian Physics, by going fast enough, one can always catch up with a light ray, so that the speed of light would differ in states of relative motion. To avoid this paradox, Einstein was forced to abandon absolute time.

TIME, THE FOURTH DIMENSION

The four dimensional space concept was developed from Einstein's Relativity Theory by a German mathematician, Minkowski. This was simply, that space has the three dimensions of length, breadth and height, the fourth constant being time, by which it is perceived in reality. Newtonian absolute time does not need a frame of reference as time appeared to need it now; relatively in reality. Having proved his theory mathematically, Minkowski gave a lecture in 1909 on *Space and Time* which publicised these new concepts of relativity. He begins with his much quoted and misunderstood statement:

> *"The views of Space and Time which I wish to lay before you have sprung from the soil of experimental physics and therein lies their strength. They are radical. Henceforth space by itself and time by itself, are doomed to fade away into mere shadows and only a kind of union of the two will preserve an independent reality."*[59]

This statement was completely wrongly interpreted by writers of science fiction, novelists, poets and philosophers, who came to the conclusion that somewhere in this four dimensional frame one may move back and forth into the future and past. Unfortunately nothing like this is true. We are each attached

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58 *Ibid.*, p. 73.
59 *Ibid.*, p. 95.

to our own proper frame of time in as far as the Relativity Theory is concerned. The future remains the future and the past is still the past. Only linear time allows one to understand relativity, to any degree, at all.

TIME FRAMES AND SIMULTANEITY

However, the consequence of this misinterpretation is of interest in so far as people generally accepted the obviously incorrect fictitious nature of relativity in the time space concept. This erroneous concept was further strengthened by the mass media of radio and television. Films and television in particular, could transport man from one space time frame to another, in a short time span, each frame viewed as independent segments. Photography too lends itself to this method of viewing.

> *"The time experiences of the film give expression to the fascination of 'simul= taneity', that one man may experience different unconnected and irreconcilable things in one and the same moment or different things happening at the same time in places completely isolated from each other."*[60]

The fragmentation of time concepts, of placing arbitrary time frames together, but in separate phases, has become acceptable. The classic four-dimensional example is Disneyland. Here one may be transported from one space time frame to another, in a fictitious fantasy world. Millions of people visit these places every year. Leading one to assume that the popularity of Disneyland may be ascribed to the way modern man views his world, acting as a substitute for art. Disneyland reflects a truly modern aspective view of the world. Although each time frame is viewed, each in its own context perspectively, all the time frames are separate and independent of linear time and perspective, joined by circles, put together as in cyclical time, by recurrent events,[61] an aspective view of time in the modern sense.

EINSTEINS'S VIEW

It must be stressed, however, that Einstein did not view life in this way. He maintained that:

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60 Hauser, A., *The Social History of Art*, Vol. 4, pp. 230-231.
61 Brunner-Traut, E., *op.cit.*, p. 433.

> *"It is the aim of science to establish general rules which determine the reciprocal conceptions of objects in time and space."*[62]

and further:

> *"The more man is imbued with ordered regularity of events, the firmer becomes his conviction that there is no room left by the side of this ordered regularity for causes of a different kind."*[63]

In the general Relativity Theory Einstein saw no merit in clinging to the abstract idea that space is laid down in straight lines and rules by the theorems of Euclidean Geometry. To him space should not have any geometrical properties except those imposed on it by the presence of matter.[64] Norberg-Schulz thus explains the position:

> *"The ancient concept of unified space, there= fore, was split into several 'spaces' : con= crete physical spaces (micro, everyday and macro), and abstract mathematical spaces invented by man to describe the former with a greater and lesser degree of approximation. The theory of relativity carried us even further, substituting the former idea of lumps of matter in three-dimensional space with a series of events in four-dimensional space-time."*[65]

Further he adds to these abstract concepts another concept of space, namely the emotional relationship of our environment, explaining that this aspect of man needs and requires existential meanings related to space so as to bring order into this world of events and actions. Most of man's actions comprise a spatial aspect. Space, therefore, is not a particular category of orientation, but an aspect of any orientation.[66] This aspect has been largely absent from Modern Architecture and

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62 Bernstein, J., *op.cit.*, p. 20.
63 *Ibid.*
64 Bergamini, D., *op.cit.*, p. 172.
65 Norberg-Schulz, C., *Existence, Space and Architecture*, p. 10.
66 *Ibid.*, p. 9.

Norberg-Schulz maintains that it should form part of the architect's task to create through history, meaningful spaces to allow man to find existential meanings in space.[67] The problems preventing this ideal from being realised may be attributed to ideas surrounding modern space concepts, which are primarily caused by the manner in which perspective has been rejected.

NEW TIME SPACE CONCEPTS

Perspective cognition allows a holistic hierarchical ordered system of objects in space and time, integrated in an ordered cosmos, in accordance with the concepts of Einstein.[68] Zevi, however, interprets Einstein's ideas that events are localised, not only in time, but in space as well, which to him implies that space is free, open and constantly in progress and move= ment.[69] Modern space concepts have tried to bring time into space through continuity, flowing and open space. 'The free plan', the principle of flexibility and fluidity, movement from space to space was an idea of expressing time in spatial sequence.[70]

The very concepts of space which Bruno Zevi so enthusiastically advocates are the very reason for the inability of Modern Architecture to achieve the existential meanings, so strongly recommended by Norberg-Schulz. To obtain these meanings one needs a repetition of ordered form, a style, in a linear sequence in history, in a perspective ordered view. But Modern Architecture is aspective as Bruno Zevi himself so eloquently sums up by calling it anti-perspective.

> *"Anti-perspective three dimensionality developed alongside Expressionism and especially with Cubism when an object was no longer observed from a privileged viewing point, but dynamically from innumerable points of view."*[71]

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67 *Ibid.*, p. 114.
68 *Vide*, p. 20.
69 Zevi, B., *Modern Language of Architecture*, p. 53.
70 *Ibid.*, p. 52.
71 *Ibid.*, p. 71

He goes further to maintain that the 'free plan' throws off the ball and chain of perspective, which, according to Zevi, is the dominating principle of the Modern vision in Architect= ure.[72] The rejection of history and the complete break with the Classical Architectural code created the necessity to move away from the whole concept of perspective and linear time in the Classical sense and explain the following extract:

> *"The knottiest problem confronting the modern architectural language was of surmounting the Renaissance perspective vision. To solve it Le Corbusier reverted to a classical language that predated perspective."*[73]

Scruton verifies this statement in the following extract when he maintains:

> *"Villa Savoye is peculiarly appropriate to the age of relativity, being quite literally a construction of space time; his evidence for this is the remarkable fact that the villa may not be compre= hended from any single point of view."*[74]

This exactly confirms the concept that aspective architectural language was reinstituted in the Modern Movement. This primitive way of viewing the world does not further an idea of order seen in relation to the whole, but only to isolated images. The listing by Zevi of requisites to determine whether and to what degree an architect is modern, reinforces this idea, namely of: Dissonance, anti-perspective, three-dimensionality, cantilevers, space in time, reintegration and four dimensional decomposition, asymmetry.[75]

FRANK LLOYD WRIGHT INITIATED THE NEW SPACE CONCEPTS

Thoughts on concepts of space in architecture were seldom spoken about or considered prior to the nineteenth century. Hegel, in a series of lectures in 1820 about the Philosophy of Art, first started using the term in connection with buildings

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72 *Ibid.*, p. 182.
73 *Ibid.*, p. 102.
74 Scruton, R., *The Aesthetics of Architecture*, p. 54.
75 Zevi, B., *op.cit.*, pp. 7-72.

when he speaks of limiting and enclosing a defined space. This notion was further spread by the disciples of Heinrich Wölffin through the western world.[76] But it was Frank Lloyd Wright who first started exploiting the practical possibilities of the new spatial concepts.

> *"The reality of the building consisted not in the four walls and the roof but inhered in the space within, the space to be lived in. That idea is an entire reversal of all pagan 'classic' ideals of building whatsoever."*[77]

This he reinforces from the concepts of Lao Tze who had lived 500 years B.C. when the Chinese civilisation still aspired to an aspective view. Chinese perspective only appears about the time of the birth of Christ.[78] In a later statement, Frank Lloyd Wright defines space as follows:

> *"The continual becoming, invisible fountain from which all rhythms flow to which they must pass: Beyond time and infinity."*[79]

This idea of constancy and of the infinite, too, equally represents an aspective view and cyclical time. Wright even goes further in using motives of Mayan, and other primitive cultures in his architecture.

Although Frank Lloyd Wright's spatial concepts may be appre= ciated as aspective, the articulation of his designs, on the contrary, are marked and dominated by his ideas of organic unity. He manifests this concept in creating holistic designs which exhibit a hierarchical value structure, for example the Priarie houses and Falling Water where the hearth acts as a dominant feature, from which all the rest of the building is ordered as a whole; in this sense F. L. Wright is not aspective.

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76 Collins, P., *Changing Ideals of Modern Architecture*, p. 286.
77 Wright, F. L., *Future of Architecture*, p. 226.
78 Osborne, H., *Aesthetics and Art Theory*, p. 77 and Schäfer, H., *op.cit.*, p. 273.
79 Wright, F. L., *op.cit.*, p. 323.

FOURTH DIMENSION OF TIME APPLIED TO ARCHITECTURAL SPACE

The fourth dimension of time was given to the idea of flowing space and of the observer moving in this space, viewing architecture from many different frames in movement.[80]

The idea that the fourth dimension to space was a development in awareness from three dimensional perspective space is not justifiable, due to the erroneous application of the Einsteinian time concept and in the arbitrary selection of movement and flowing space as personification thereof. The movement away from perspective once more limited the spatial concepts to the aspective. The linear time concept as Collingwood explains in relation to mathematical abstract thinking, is not compatible.

> *"The past consisting of particular events in space and time which are no longer happening, cannot be apprehended by mathe= matical thinking because mathematical thinking approaches objects that have no special location in space time, and it is just that lack of spatio-temporal location that makes them knowable."*[81]

To understand these aspects it may be necessary to separate them as in aspective thinking to make sense at all, but perspective requires a holistic concept of order to be perspective.

Theoretical rationalism of pure abstract thinking related to eternal mathematical scientific truths, valid for all time, places these truths in a location without space-time character= istics by declaring them valid for all time.

The problem is, thus, that the fourth dimension of time cannot with validity be given as movement to buildings, as they are stationary, and it can only really apply to events. Thus the idea of the fourth dimension in architecture led to the

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80 Collins, P., *op.cit.*, p. 290.
81 *Ibid.*, p. 289, quoted from Collingwood in *Philosophy of History*.

idea of several standpoints of spatial experience of the observer in movement. The confusion may be clarified by appreciating that time as a dimension, is by nature different to the dimension of distance, although both are required to localise an event, which one may appreciate, bears the qualities of both time and space. But space itself although localised in time, consists only of the three dimensions of distance, namely height, breadth and width; time only defines the when of the existence of such a space defined. Space does not move in the sense that time duration moves. Time is another dimension only, and provides more information to the three dimensionality of distance, but in itself has a different character to the dimension of space, and cannot simply be added on to it.

> *"Now as to the concept of space, it seems that this was preceded by the psychological simpler concept of place. Place is first of all a small portion of the earth's sur= face identifiable by a name ... a sort of order of material objects and nothing else."*[82]

A simple description by Einstein of perspective order of objects in space, which is far cry from the modern architectural concepts of space.

It seems necessary to note that aspective thinking precedes the actual use of aspective spatial concepts. The interpre= tation of Einstein's concepts into aspective spatial concepts was due to the already present aspective concepts which came from other causes. These spatial concepts cannot be laid solely at the door of Einstein's theories.

PRE-GREEK ASPECTIVE OPPOSED TO MODERN ASPECTIVE

The difference between the modern aspective view and Egyptian view must be noted in this respect. Egyptian architecture remained unchanging, and constant in character, due to the unself-conscious nature of its tradition, and the application of the aspective view. The modern view, on the contrary, is self-conscious in that it conceived of an ideology and then used certain concepts to illustrate and realise these ideas in its spatial concepts.

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82 *Ibid.*, p. 289.

Modern architecture placed itself above the concept of history[83] and used constantly changing viewpoints to achieve a timeless= ness, a non-history by being constant in its ever changing and inconsistency of original creativity. This appears a paradox but the results are the same, the ideal of achieving timelessness. The problem is, however, that the modern world is aware of perspective and uses it in specialist fields of interpreting knowledge, but each in its own special field. Modern architecture is constantly trying to avoid perspective by constant change. Pre-Greek aspective view did not need to suppress perspective, linear time or history. It was unself-conscious in being unaware in its expression of constancy in cyclical time, whereas modern aspective is self-conscious and needs to reinstate itself constantly. This clarifies Tafuri's claim that the death of history and the devalueing of the object, contributed to the ambiguity of form[84] and the meaning= lessness created by constant change in Modern Architecture.

The irony of the situation appears to be that the Modern Move= ment in professing to be honest and original by rejecting his= torical precedent, was just as guilty of 'borrowing' as the Revivalist; they only went further back in history to primitive concepts.

Relativity commonly interpreted, removed the criteria of measuring against something, as for example the past or future, the result= ant picture of reality thus lacks the dimensions of depth, the differentiation of foreground and background as seen in per= spective.[85] The Modern Movement and the accompanying ideologies of purist architecture were formulated by an educated elite. Their view and interpretation of architecture is aspective, which differed with the interpretation which appealed to the public, by being too abstract and intellectual; the public preferred the fantasy of the aspective which used perspective in isolation, as seen in Disneyland. Another example that

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83 Tafuri, M., *op.cit.*, pp. 30, 91, 12.
84 Tafuri, M., *op.cit.*, Chapter: "Modern Architecture and the eclipse of history", pp. 11-78.
85 Schäfer, H., *op.cit.*, p. 441.

carries the same concept is to be found in Las Vegas. Here one may choose to go to a restaurant, hotel, gambling hall, decorated in different cultural ideas or in different time frames as one chooses, each meaning understood independently.

The whole concept of modern aspective view of space and time, makes it clear that the fragmentation of time frames and the concept of continuously moving space unrelated to a particular viewing point, is not conducive to viewing the world holistic= ally or fitting all the aspects in an ordered way as they are viewed separately and close-up. This problem is depicted in the chaotic situation we find in the divergent ideologies in architecture, the lack of meaning in form and the crisis of general criteria as each building is viewed and evaluated separately, in relation to function and program. To change these factors one needs to change the basic way in which the world is viewed, from aspective to perspective perceptual view.

HISTORY AND THE VALUE OF MEANINGS

The actual concept of history as we know it today began to emerge due to the development of the linear concept of time, and awareness of viewing life from a perspective viewpoint in ancient Greece. The concept of history related to architectural design did not become evident prior to the end of the fifth century B.C. Before this the Greeks had worked under the aegis of the past as a craft tradition, and not in the light of history.[86] However, the awareness of historical thinking created more scope for originality according to Allsopp. He maintains that the old orders were handled more freely and that the Doric order was criticised and this allowed for the appearance of a new order, the Corinthian, which was designed rather than evolved. This we know from Vitruvius.[87] The Greeks, however, did not regard history as a science, due to

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86 Schäfer, H., *op.cit.*, p. 275.
87 Allsopp, B., *op.cit.*, p. 18.

its transient nature, but as a mere collection of empirical facts. The scientific awareness of fact had emerged, but the dualism that characterises later historical epochs had not become evident. Science and non-science were unified in mathematics.[88] Roman historians like Livy neither dif= fered from, nor were more historically aware than the Greeks. The traditional crafts tradition was still in operation as in Greek society. The Romans used history in the sense that they adopted the Greek cultural heritage, the quality of which they felt they lacked.

> *"The Romans thought of the past heritage in terms of authority and the present in terms of practicality."*[89]

The Romans were capable of great inventiveness, but their structures were clad with a web of historical, venerable Greek architectural forms. The Greek concept of perspective was adopted as seen reflected in their art. The time after the fall of the Roman Empire was characterised by a longing for past glories. The time of strife, pestilence, political instability and cultural disintegration allowed little time and money for the development of new concepts. Medieval scholars thought that in their age of faith, it was incumbent upon them to interpret the past entirely in terms of the Divine Plan.[90] Although they were aware of the linear time concept, they introduced the concept of closed historical periods or epochs which tend to be aspective, by the nature of their isolated divisions. The idea of historical periods in history led to the idea that there are different styles in architecture, related to them. This in turn led to the possibility of adopting other styles from other cultures in history, which subsequently happened during the Renaissance.[91] However, the oppressive conviction that the day of Judgement

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88 Collins, P., *Changing Ideals of Modern Architecture*, p. 21.
89 Allsopp, B., *op.cit.*, p. 21.
90 It must be noted that "mythical time" and "time after death" as eternity, too, reflects an aspective view as understood from Schäfer and does not reflect linear time concepts.
91 Collins, P., *op.cit.*, p. 30.

would occur in the new year of the year 1000 A.D., may account for the slow development during the Middle Ages and the sudden leap subsequent, as seen in the remarkable achievement of Durham cathedral within 93 years after the turn of the tenth century. The example shows that a tremendous advance in architectural technique had been achieved. The unself-conscious crafts tradition may be generally regarded as accountable for the ability of Medieval society to develop a new architectural expression after more than a thousand years. It had developed from Roman architecture, the writings of Vitruvius being still available,[92] but nevertheless had become a largely independent style over the centuries, by means of the unself-conscious craft tradition, which allowed for the inclusion of all aspects of human life, used spontaneously. Although the craftsmen were educated, as required by the guilds, they were no scholars in a theoretical sense. History, architectural theory and the development of the criteria of good taste were the field of scholars, the study of which was vested within the church and nobility.

The conditions of comparative stability and affluence during the fifteenth century allowed for more time to acquire know= ledge, and the subsequent advent of the Renaissance. The very word "Renaissance" suggests[93] history. It meant the rebirth of classical civilisation. The interest and accumulation of knowledge and the awareness of history at the onset of the Renaissance, fostered curiosity in antiquity, and led to the discovery of ancient philosophers and their teachings. The architect and artist at this time were in contact with these teachings at the Court of The Medici in Florence; they too, began studying ancient architecture and rediscovered the antiquities of Rome and the theories of Vitruvius. The historical knowledge of architecture freed the architect from the traditional norms and codes, as used in the Middle Ages. The Middle Ages had initiated the concepts of historical styles,

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92 Harvey, J., *The Medieval Architect*, p. 20.
Cloag, J., *The Architectural Interpretation of History*, p. 243.

93 Allsopp, B., *op.cit.*, p. 38.

the Renaissance acted upon it and chose a style to fit their new theory, used and adopted it, to suit their own require= ments. This break with the unself-conscious traditionalism had far-reaching effects as Tafuri writes:

> *"From the moment Brunelleschi institutional= ised a linguistic code a symbol system based on superhistorical comparison with the great example of antiquity, to the time when Alberti, feeling dissatisfied with the mythical his= toricism, began to explore rationally the structure of that code and its syntactical and emblematical values: in this period the first attempt of modern history to actualise historical values as a translation of mythical time into present time, of archaic meanings into revolutionary messages of ancient 'words' into civil actions, burnt itself out."*[94]

DEHISTORICISATION AND DEVALUEING OF FORM

Tafuri points out the result of using an arbitrarily chosen style. It meant the dehistoricisation of form; quotations and allusions were used to build a new reality, which is not a development in the awareness of history, but a use of history to illustrate an idea or ideology. The use of history had become self-conscious in architecture. This concept conditioned the entire historical span of architectural his= tory from the Renaissance up to the Modern Movement. The Modern Movement continued along these lines only in so far as it discarded historical allusion and used a new value system as an allusionistic quotation to substantiate the ideologies of its theories, by using particular types of forms to illu= strate its ideology. The idea of Brunelleschi that it is possible to use the principle of 'arbitrary selection' in shaping architectural form implied the following:

> *"History, according to this conception, cannot be represented by a continuous line, but, rather, by a broken line defined by an arbitrary yardstick, that decides, each time, its values and goals."*[95]

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94 Tafuri, M., *op.cit.*, p. 14.
95 *Ibid.*, p. 16.

The idea of using historicism as an ideological support, instead of historical, traditional development, cuts off the links of the past and re-offers something else, instead: the ideology. This gave rise to an anti-historical code in its true sense.[96] A further consequence of this idea, that appears in Renaissance architecture, can be explained as follows: Of necessity, the new style became based on scholas= ticism, and not on the traditional codes and values of the cultural history; therefore theorists were necessary to establish the new way of design, which was subsequently mani= fested in the writings of Alberti, Sangallo, Vasari and Palladio. They wrote, not only for the architect, but to educate the client as well.[97] The use of history as an ideological value, and the use of forms as carriers of secular revolutionary concepts, allowed for the use of other ideological values and forms to carry revolutionary concepts in the Modern Movement. The death of the traditional symbolism denoted to an object resulted; by re-using forms self-consciously in another content and meaning, in discrediting the content of the form related to the object and so eliminated the classical, historical concept of the meaning related to objects and sym= bols.

ARBITRARY USE OF HISTORICAL SYMBOLISM

The Renaissance was an attempt at a heroic resurrection of antiquity, which had been lost in the Dark Ages. Since then historical symbolism has been arbitrarily used to rekindle revolutionary spirit;[98] a striking example is the Neo-classical architecture of the Third Reich, just as Hitler borrowed the "heil" from the Roman Salute.

> *"The discovery of the infinite extendibility of historical reference is one of the great discoveries of the cinquecento."*[99]

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96 *Ibid.*, p. 24.
97 Allsopp, B., *op.cit.*, p. 40.
98 Tafuri, M., Discordant Harmony from Alberti to Zuccari, *Architectural Design*, Vol. 49, No. 5-6, 1979, p. 36.
99 *Ibid.*, p. 44.

From now on absolute cultural values no longer rule the symbolic structure of artistic activity. From now on architectural styles are characterised by the concept of arbitrary choice. The vast scope opened up for choice by the architect, posed the following problem: which values now determine his choice of style, or which style suits his ideology? The crisis of anti-historicism and anti-symbolism marks the crisis of meanings and values of architectural objects and elements, which had come about and eventually resulted in the eclipse of history by the Modern Movement. History now becomes a broken line and not a linear concept. It has lost its perspective structure of placing objects and events in the correct order in space and time. All this is again confirmed by Vittorio Gregotti in his book *Il Territorio dell Architectura*, in the following quotation:

> *"Not so much, then, the research of cause and effect of that historical fact, but the research of the relation structures of the entire system in which the events take place ... implies the concept of an historical space that is no longer in perspective, in which time cannot be conceived as a uniform succession."*[100]

The type of historicism that chooses architectural style, elements or objects indiscriminately and arbitrarily from history, implies an aspective approach. As this method releases the object from being viewed in its place in the right time sequence and historical perspective, it destroys the conceptual meanings associated with certain forms and styles created historically, resulting in the death of the traditional concept of art and promoting the development of the Formalistic Art Theory, which so strongly influenced the Modern Movement in architecture.

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100 Tafuri, M., *Theories and History of Architecture*, p. 54, quoted from Gregotti, V., *Ill Territorio dell Architectura*, p. 139.

> *"In order to explode towards the future, one drowns in a sea of empty and disposable symbols, pure fragments of decomposed order, only usable in absurd collages."*[101]

THE ECLIPSE OF HISTORY

Historical architectural styles had betrayed ideology by being too arbitrary, according to the modernists; so to build a new history, the Modern Movement placed itself above the very concept of history, declaring itself completely free from historical perspective. However, as Tafuri points out, this was but a logical consequence:

> *"The anti-historicism of the modern 'avant-gardes' is not, therefore, the result of an arbitrary choice, but the logical end of a change that has its epicentre in Brunelleschian revolution, and its basis in the debate carried on for more than five centuries by European culture."*[102]

The whole symbol system had been discredited on arbitrary values, the content of the object destroyed, history had betrayed by being forced into an ideology. The only way open was to eclipse it, thus further reinforcing the aspective concepts in modern society, that each architectural object and element has meaning only in relation to each individual building separately, not as part of an ordered concept. The whole ambiguity of meanings to forms and architectural elements finally becomes a collage of elements, thus Jencks alleges of the 'Plug-in-City' of Peter Cook and Archigram:

> *"Because what Archigram was essentially doing was a consciously borrowing (stealing) images from any or every possible source and the turning them into urban forms, a method of 'ad hoc' addition where theft remains clear for everybody to admire."*[103]

But here one may appropriately quote Lewis Mumford in saying that:

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101 Tafuri, M., *Theories and History of Architecture*, p. 31.
102 *Ibid.*, p. 30.
103 Jencks, C., *Modern Movements in Architecture*, p. 291.

> *"What went wrong with the dreams of a truly modern style in architecture which would express the realities of our age? only, says a noted critic, that they came true."*[104]

The concept of ambiguity, rejection of values and meanings and constant change, all led to, what Jencks maintains of the 'Plug-in-Cities' of Archigram; 'Control Choice' of Peter Cook, and the 'unhouse' of Banham, as in the following:

> *"As for the philosophy, it moves very con= sistently from such ideas as flow, movement expendability to metamorphosis, change, plug in to consumer choice, freedom and individual emancipation."*[105]

The concept of rejecting meaning related to history and linear time allowed an ambiguity of meaning pertaining to form, and in this manner enforced constant change, and created aspective time, timeless in never creating traditional meanings; leads to throw-away aesthetics, Pop and Camp movements and the ad hoc collages, by borrowing, at random, any form that the individual personally prefers for the sake of change.

This situation allows Mumford to speak as follows about *"an architectural generation absorbed in exploiting newness."* Further in speaking of the *new generation*, the *new world*, the *new politics*, and led Mumford to say:

> *"... history, we thought, began and ended with ourselves, and we expected the new to last for ever, as if the will to change itself would remain for ever."*[106]

Mumford further asks if the victory over tradition served the needs of human beings and answers:

> *"But during the past quarter century blight and confusion has fallen upon modern architecture."*[107]

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104 Mumford, L., *Architecture as a Home for Man*, p. 149.
105 Jencks, C., *op.cit.*, p. 298.
106 Mumford, L., *op.cit.*, p. 151.
107 *Ibid.*, p. 151.

ARBITRARY CHOICE, A PRINCIPLE OF MODERN ARCHITECTURE

The result of these conditions was that *caprice and random happening* became a principle of current design, and the trends towards disposable container space capsule reveals its com= pulsive irrationality, according to Jencks. All these state= ments merely reinforce the consequence of the ambiguity of choice, the cult of constant change and the eclipse of history, which all reveal a truly modern aspective view of the world. Mumford ends by appealing once again to restore man to the central position, and restore his perspective way of viewing the world of an ordered universe.

RENAISSANCE ORNAMENT

At this stage it is important to note the difference between the new awareness of the perspective viewpoint of the Renais= sance and the use of arbitrary historical symbolic forms of antiquity, as a means of establishing a revolutionary archi= tecture,[108] which led eventually to the eclipse of history and the devaluation of the contents of the object. The difference may be illustrated in quoting from Alberti, where he distinguishes between Beauty and Ornament: *"Beauty was harmony and concord of all parts achieved in such a manner that nothing could be added or taken away"*, (perfect order). Ornament was an additional brightness and improved Beauty.[109] Ornament had been chosen from a previous style, but the perfect ordered harmony expressed the perspective concept of order in the universe:

> *"The answer lies in the new scientific approach to nature which was the glory of Italian fifteenth century artists. It was the artists headed by Alberti and Leonardo, who had a notable share in consolidating and popularizing the mathematical interpretation of all matter. They found and elaborated correlations between the visible and intelligible world ... architecture was regarded by them as a mathematical science which worked with spatial units: parts of that space for the scientific interpretation of which they had discovered the key in the laws of perspective."*[110]

108 Tafuri, M., *Theories and History of Architecture*, p. 30.
109 Wittkower, R., *Architectural Principles*, p. 33.
110 *Ibid.*, p. 29.

Art had now been raised to the level of a science by its exemplification of mathematical laws.[111]

Broadbent points out that Renaissance as opposed to Greek science, was Empirical; they observed what was happening in the real world, which they tested against reality, a hypothesis which was based on mental images of what we know of the real world.[112]

PERSPECTIVE BECAME LOST

The perspective view of life of perfect order and harmony had not developed in Byzantine or Gothic periods; only the three dimensional representation had remained as Schäfer explains, perspective being partially asleep.[113] Schäfer points out that perspective is in need of a stimulus to develop, as it is not a natural way of thinking about images as he illustrates by children's drawings and examples from primitive cultures. Some special sense of awareness has to develop in the mind to acquire the perspective view. No people in the world have arrived at the viewpoint of perspect= ive perceptual cognition without the Greek influence.[114] The Greeks achieved a unique development in the awareness of man. In ancient Greece as in the Renaissance era, the con= cept of perspective and the related linear historical con= cepts did not come about without protest from the theoretical rationalists. In Greece, Plato contested the use of perspect= ive on the basis of science. He maintained it was deceiving and distorting of reality.[115] During the Renaissance, Descartes, the true rationalist, was antagonistic to historical studies as being not scientific enough. His pure rationalistic methods, however, contributed in encouraging a more scientific approach to the assessment of historical fact.[116]

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111 Schäfer, H., *op.cit.*, p. 274, and Giedion, S., *Space, Time and Architecture*, 1949, p. 31.
112 Broadbent, *op.cit.*, pp. 51-57.
113 Schäfer, H., *op.cit.*, p. 274, and Giedion, S., *op.cit.*, 1949, p. 31.
114 Schäfer, H., *op.cit.*, p. 369.
115 *Ibid.*, p. 87.
116 Collins, P., *op.cit.*, p. 31.

DUALISM IN PHILOSOPHICAL THOUGHT

The dualism in philosophical thinking may be traced to the basic concept of how reality is viewed; independently, or in context with its place in space and linear time, which broadly speaking, crystallised in the Rationalistic and Empiric views.

The Renaissance concept of an ordered universe perspectively viewed by man, was expressed in mathematical perspective, unified by numbers, ratios, musical harmonies and proportion. Reason and nature were observed as a unified phenomena as Alberti professed. This proved to be absurd according to Tafuri, due to the fact of having made ambiguity their choice, as a method of expressing architecture by the use of forms from historical classical antiquity. The tension is evident in Mannerist architecture, and reflects this situation, and is summed up in the following quotation:

> *"In this matter, architectural theory becomes an alibi to cover by far the most dramatic discovery made by Mannerist architecture: the fictions and conventional nature of the postulate which had tied the ultimate meaning of the cosmos to the Creation of Man in human= ist thought."*[117]

The adherence to canonical rationalistic rules as opposed to the use of empiric functional observation, emerged as a con= sequence of the ambiguity of their choice. One other aspect presented itself and increased the tension, namely that *"perspective barred religious art wholly from any access to magical experience"*.[118] Theological and Platonic views had become polarised and presented themselves as opposites, which further increased the tension in Mannerist architecture. Michelangelo plays games with classical elements and per= spective in the Laurentian Library and Piazza del Campidoglio. The absurd ambiguity of choice and the illogicality of basing absolute mathematical rules upon this ambiguity, is aptly illustrated by his work. Michelangelo further attempts to

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117 Tafuri, M., Discordant Harmonies from Alberti to Zuccari, *Architectural Design*, Vol. 49, No. 5-6, 1979, p. 41.
118 *Ibid*, p. 43.

reconcile the dualism of Platonic and Theological thought by means of sensory perspective as seen in the foreshortening of Biblical figures in the Sistine chapel and the Pieta, where Mary is on a larger scale than Christ, to compensate, in order to achieve visual perfection in viewing perspectively. True perspective cannot be achieved by a pure Empiric view without rationalism.

> *"Slowly with tacit consent of the artists themselves, the great libertarian heritage of rationalist, humanist thinking was falling into ruin."*[119]

This happened due to the unsolved situation of the basic philosophical attitudes, and the use of an arbitrary selection of form in illustrating architectural ideology.

The tremendous impact of the Renaissance revolutionary concept of perspective upon the Medieval church must have, by its nature, created shock waves throughout society. The concept that one must either be a Rationalist as initiated by Platonic and Aristotelean philosophy, or an Empiricist, arose from the development that Platonic Rationalism is opposed to the theo= logical way of thinking, which during the Renaissance started manifesting itself in the opposing attitudes of the church and the scientists. Unfortunately this situation has persisted into the twentieth century, as Teilhard de Chardin[120] and J. C. Smuts in *Holism and Evolution*, try to bridge so valiantly. The idea that the world must consist and be seen from either a Rationalistic or an Empiric point of view, has led to some confused thinking from the Renaissance onwards. This separa= tist view further reflects the aspective view; one person may use one approach for science, the other for religion and art, each in its own frame, separate without influencing each other. This tension between Rationalism and Empiricism was first formulated in the notes of Leonardo da Vinci.[121]

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119 *Ibid.*, p. 44.
120 Teilhard de Chardin, P., *The Phenomenon of Man*,
121 Tafuri, M., *op.cit.*, p. 43.

The endless vistas of the Baroque combined with extreme Empirical approach of visual delight and persuasion, were formulated on mathematical principles or organisation.[122] In painting and in architecture the impression of infinity (infinite in a linear sense) as an indefinitely extended perspective, may be seen in the Baroque architecture with gardens included in unending extensions of space; for example Versailles.[123] The idea of the "image" which came with the Counter Reformation set a new approach, allowing the Rationalism and Empiricism to appear to dissolve in decorated hedonism.[124] The use of mirrors in the Rococo style gave a heightened effect of perspective by actually including the observer himself in the image of illusion created by the endless reflections in the mirrors, as had been initiated in Versailles Hall of Mirrors. This extreme view became overdone and artificial, giving rise to a doubt= ing of the senses, of the content and meaning of forms and objects. Recourse was taken to Rationalism by reinstating pure Greek classicism in the Neo-classical revival.[125]

AMBIGUITY OF MEANING BECAME CRITICAL

The problem of the ambiguity of meaning related to form, and how and what to choose, had become critical in about 1750. Whatever architects now produced would be measured against the architecture of the world, due to the accumulation of archeological and historical fact. Architects began to lose their nerve and looked for roots in antiquity, for an architecture so basic and fundamental in its nature that nobody could challenge it. The idea of returning to first principles in accordance with Rationalistic views as laid down by Descartes, appealed to them, and consequently led them to the "primitive hut" of Vitruvius. The essence of architecture, they considered, consisted of the column, beam and pedimented roof. Searching in history, the best example appeared to be the Doric classical example. This idea was

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122 Norberg-Schulz,C., *Meaning in Western Architecture*, p. 287.
123 Giedion, S., *Space, Time and Architecture*, 1970, p. 43.
124 Tafuri, M., *op.cit.*, p. 44.
125 Broadbent, G., Neo-classicism, *Architectural Design*, Vol. 49, No. 8-9, 1979, p. 4.

originated by Abbe Langier (1753), namely that to think in first principles was to think in Classical Greek Doric.[126] Neo-classicism had by the eigtheenth century, based its theories on the authority established by Stuart and Revett, who had completed first hand studies of ancient Greece. Neo-classical architecture was concerned with recovering the original appearance of classical buildings, becoming an architecture of pattern books of historical antiquity. The Ecole de Beaux Arts, propagator of this concept, as a result, concerned itself primarily with good composition. Neo-classical revival was not based upon the concept of a perspective view of life, but on an arbitrary choice of style to illustrate the ideologies developed by historicism.

> *"The Neo-Classical was a thorough misunder= standing, it was a projection back through Rationalist Spectacles of the 18th century, to what true classical ought to have been like. But those 18th century Rationalist Spectacles, of course meant that Neo-Classic= al was actually a new thing, in its own right."*[127]

The same may be applied to all the revival styles, using history to illustrate an ideology. The problem was, however, that the context and meaning of forms had been betrayed and confused.

ARBITRARY HISTORICISM

The Romantic Movement was a reaction of sentiment against reason, of nature against artificiality, of simplicity against pompous display, of faith against scepticism[12] of the upcoming middle class against classical taste of nobility after the French Revolution. Although the Gothic Movement had never really died in England in an unself-conscious tradition, the revival style, however, initiated the self-conscious adaptation of the Gothic tradition for the use of architectural expression of the Romantics. The whole idea of rejecting Classical Rationalism found itself being illustrated in Neo-Gothic architecture.

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126 *Ibid.*, p. 5; Frampton, K., *Modern Architecture, a Critical History*, p. 14.
127 Broadbent, G., Neo-classicism, *op.cit.*, p. 6.
128 Pevsner, N., *Outline of European Architecture*, p. 350.

Neo-Classicism itself was a direct intentional reaction against the 'excesses' of the Baroque, just as nineteenth century Eclectism was a reaction against the sterilities of Neo-Classicism, and the twentieth century International Style a reaction against the excesses of Eclectism, and Post Modern against the Rationalism of the International Style of the Modern Movement. Once an alternate style had been esta= blished by breaking with the Classical language of architect= ure, by adopting Neo-Gothic, the way was open for the use of any style, for example, Oriental Rococo (Royal Pavilion of Nash), or Renaissance Revival (Paris Opera House by Carnier in 1861). The merging of styles on an arbitrary basis now further led to the confusion of the meaning of objects and architectural elements and the devalueing of meaning in the Eclectic styles. The new building tasks imposed on the architect by the Industrial Revolution and capitalistic, economic structure made demands that could not be satisfied by using models from antiquity. Architects needed some other 'first principles' to help them determine the overall form of buildings. They found these in the Rationalistic Philosophy, and especially the cubes, cones and spheres of Descartes, were discovered.[129] Examples may be seen in the work of Boullée and Ledoux, who then forced buildings into these 'pure' forms. The endless search for new ways of illustrating ideology had become exhausted historically, and the desire to find new forms of use, resulted in turning to technology as a symbol of the new age; technological forms had never existed so abundantly before, and it appeared such an obvious answer.

> *"Machinery contains in itself the factor of economy, which makes for selection. The house is a machine for living in."*[130]

LOSS OF OBJECTIVELY UNDERSTOOD MEANING IN ARCHITECTURE

In the past, architecture was formed and shaped by all the aspects of man influencing it, in an unselfconscious tradition, which created certain styles, uniquely by this situation, by

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129 Broadbent, G., Neo-classicism, *op.cit.*, p. 5.
130 Le Corbusier, *Towards a New Architecture*, p. 100.

reigning current influences. Since the Renaissance, man has attempted to take an ideology and shape and select forms to fit it, self-consciously. This complete turn-about has resulted in the confusion of meanings related to forms and architectural language. While the Classical language of architectural form was used, it still retained a measure of understanding, but with the rejection of traditionalism, we find a complete break with style of a known quality. The plurality of meanings that have taken its place do not have sufficient repetition in creating valid meanings.[131] Today meanings are forced into forms that give an ambiguity of meaning. Each ideology offers a solution, each separately resulting in a variety of solutions, each bearing its own separate intentions, making more and more meaningless archi= tecture.

PROFUSION OF IDEOLOGICAL SUPPORT

The following quotation of Scott written in 1914, expresses the situation in the eighties just as aptly, particularly with the advent of the new Eclecticism of the Post Modern Movement:

> *"I soon realized that in the present state of our thought, no theory of art could be made convincing, or even clear, to one not already persuaded of its truth. There may, at the present time, be a lack of architect= ural taste; there is, unfortunately, no lack of architectural opinion.*
>
> *Architecture, it is said, must be 'expressive of its purpose', 'expressive of its con= struction' or 'expressive of the materials it employs', or 'expressive of the national life' (whether noble or otherwise) or 'expressive of a noble life' (whether national or not) or 'expressive of the craftsman's temperament, or the owner's or the architect's', or on the contrary 'academic' and studiously indifferent to these factors. It must, we are told, be symmetrical, or it must be picturesque - that is, above all things, unsymmetrical. It must be 'traditional' and 'scholarly', that is, resembling what has already been*

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131 Norberg-Schulz,C., *op.cit.*, pp. 390, 422.

> *done, by Greek, Roman, Medieval or Georgian architects, or it must be 'original' and 'spontaneous', that is, it must be at pains to avoid this resemblence or it must strike some happy compromise between these opposites and so forth, indefinitely."*[132]

The separatist plurality of ideology perfectly expresses the modern aspective view, each on its own, without apparent links or meanings. The aspective nature of modern architectural meanings has developed partially due to its self-conscious nature as opposed to the Egyptian situation where architecture was practised in an unself-conscious tradition. Today it is manifested in many new fragmented concepts, each separate, whereas in ancient Egypt each separate idea was used inde= pendently without influencing the established code. Jencks reinforces this when he points out that the Modern Movement in architecture does not present itself in a consistent, true style, but has a plurality of styles as a *"series of dis= continuous movements"*[133] and further that *"it is the historian's obligation to search for the plurality of creative movements and individuals where he can find them, and elucidate their creativity".*[134] Jencks further maintains that historians are trained to look for historical links and so assume that they must exist, but that this is not necessarily true of the Modern Movement, due to the plurality of expression in this movement. By elucidating an awareness of the necessity of a new way of looking at Modern Architecture he reinforces the fact that they rejected the historical view of perspective, thus becoming fragmented, discontinuous and without historical links; thus he clearly illustrates the aspective nature of the Modern Movement in architecture.

> *"This inconsistency, which also existed in many other architects, brings out the problem of classification, traditional, historical continuity in a very acute form."*[135]

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132 Scott, G., *The Architecture of Humanism*, p.vii (Preface).
133 Jencks, C., *Modern Movements in Architecture*, p. 13.
134 *Ibid.*, p. 27.
135 Jencks, C., *Architecture 2000*, p. 38.

LOSS OF LINEAR DEVELOPMENT IN ARCHITECTURE

The perpetual original creativity, and subjective ideological attitudes of the architects of the Modern Movement creates discontinuous and separatist architecture, making it impossible to apply the conventional linear concept of history, since they can't be placed in watertight categories, let alone styles, as Jencks shows in his book on the *Modern Movements in Archi= tecture* (Table 1). The situation does not lend itself to perspective categorical order, nor a linear sequence. That is why Jencks takes recourse to words such as 'multivalent' and that it is best to analyse an event or building critically only, for its internal relationships.[136]

Banham too points out that modern architecture is not a neat chain of causes and effects, nor is it a simple strip cartoon that proceeds tidily from frame to frame.[137] He therefore finds difficulty in placing buildings in an order. He is forced to use what he calls *"non-systematic arrangement"* and he states that the masterworks of architects *"makes them perpetually rewarding and perennially unclassifiable"*.[138] Both these writers clearly illustrate the problems of viewing Modern Architecture by traditional, linear, historical methods and emphasise that a different method must be found, to enable one to understand the development of the Modern Movement. The very problems these writers elucidate, point to the diffi= culties in trying to force cyclical time into linear time of history, confusing the aspective with the perspective.

By the end of the eighteenth century the vast accumulation of knowledge, the development of technology from the advances made by science and the changes in the social, political and economic aspects, created a situation in which the individual finds that there are so many things he does not know, nor even can hope to know in one lifetime. This situation has forced man to use an aspective method of viewing life to enable him to cope,

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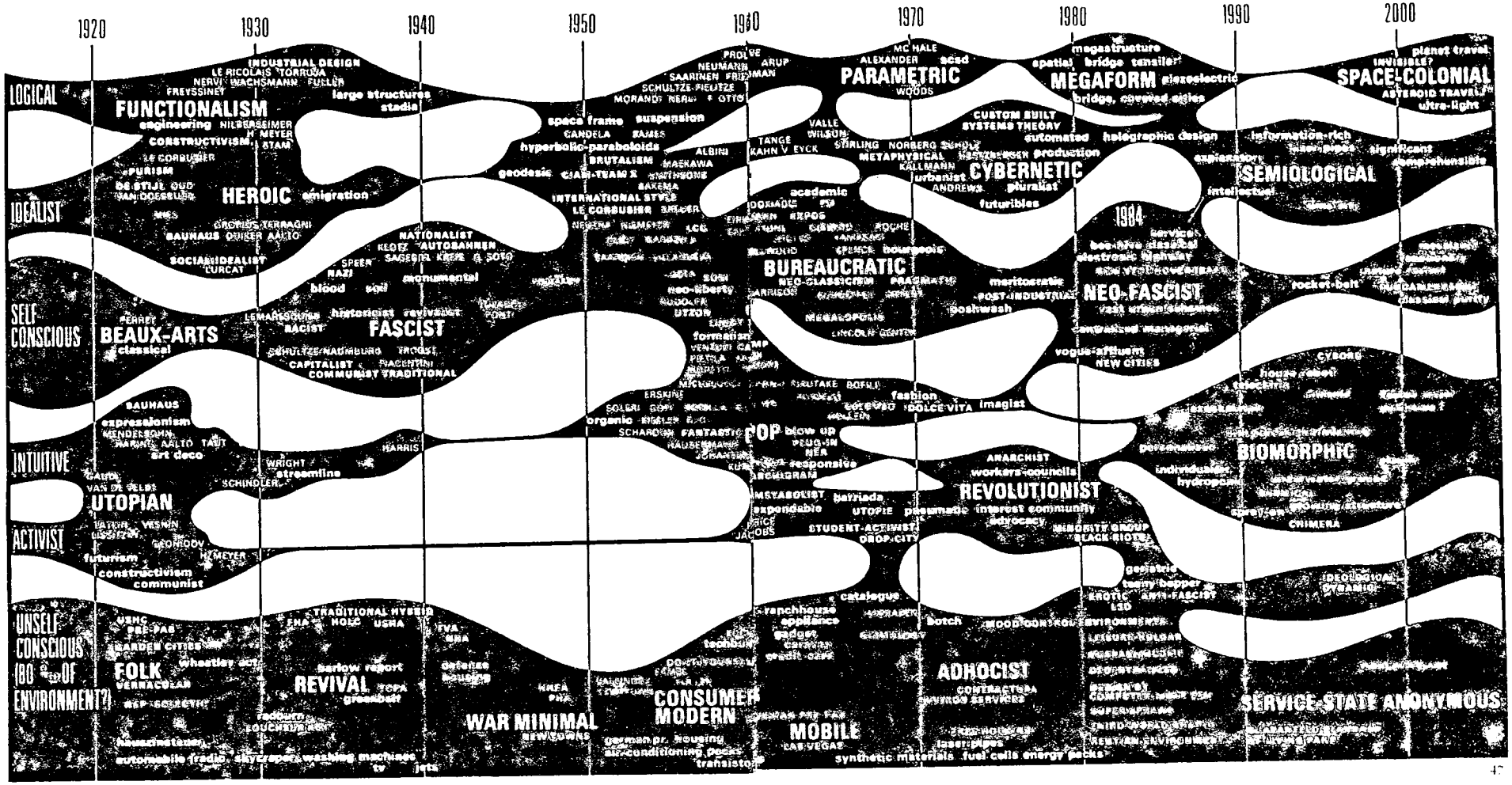
136 Jencks, C., *Modern Movements in Architecture*, p. 13.
137 Banham, R., *Age of the Masters*, p. 65.
138 *Ibid.*, p. 65.

TABLE 1 A METHOD FOR DETERMINING MAJOR MOVEMENTS IN MODERN ARCHITECTURE



46 47

Charles Jenck's attempt at categorising Contemporary Architecture, based on the structural analysis outlined by Claude Levi Strauss, but without the claim of completeness which he made. Jencks maintains this evolutionary tree comprehends the two kinds of time: reversable or irreversable, structural and creative, cyclical and one way.

SOURCE: Jencks, C., *Architecture 2000*, p. 47.

becoming a specialist in a particular field to earn a living in our industrial society. To make sense at all, man was forced to select portions of knowledge, even if they did not necessarily fit together, or form a complete view. The aspective view is an attempt to separate the known from the unknown in segments. This is the first development in coping with the situation of the twentieth century, and it may be hoped that the perspective view may develop from this. Architects did not create this situation, they were victims of it and were moulded and forced to concede to it, and so once more expressed the spirit of the time by their plurality of ideology and inability to view architecture perspectively.

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CHAPTER 2

THE SLOGANS OF THE FRENCH REVOLUTION

The great changes during the eighteenth and nineteenth centuries resulted from the new concepts that had developed by that time, and that so greatly influenced all aspects of the existence of man. The accumulation of knowledge, particularly in science, after the discoveries of Galileo, the hypothesis or model system initiated by Kepler and the theories of Newton, eventually led to new technological possibilities as exploited by the Industrial Revolution. The distribution of knowledge by the invention of the printing press, allowed new concepts to be widely circulated. Towards the middle of the eighteenth century Voltaire gave a new essence and character to history.[1] Voltaire maintained that the general nature of the world was *"change"*, either by evolution (the Darwinian concept is not intended here) by that he implied gradual change, or, alternatively by sudden change, revolution. Change merely for the sake of change and the quest for the new and original, initiated a new concept in the world. The idea of sudden change, revolution, greatly influenced man; once revolution came to be seen as a possibility, it became a reality as the French and Russian revolutions bear witness. Furthermore, Voltaire gave an awareness to cultural history related to political and other events, and not just history, as exclusively political. He was very critical, exposing myths ruthlessly, and advocated a rational attitude towards history as opposed to fanaticism and romanticism. He concerned himself with establishing authentic origins of facts in an attempt to achieve perfection. His rationalism may have influenced the swing to a rational approach in architecture in Neo-Classical revival and later the influence in seeking new values in the Enlightenment. Voltaire was instrumental in teaching us that history applies to all the facets and aspects of

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1 Collins, P., *Changing Ideals in Modern Architecture*, p. 31.

civilisation.[2] The whole panorama of the history of the world became available to the architects which soon showed the way to Eclecticism. The tremendous interest in anthropology and archeology further encouraged the Eclectic Movement by pre= senting so many choices to the architect. The growth of know= ledge and the awareness that undesirable conditions could be changed, resulted in the French Revolution, whose creed may be summed up in the slogans of *Liberté Égalité* and *Fraternité*.[3] These concepts crystallised into a new way of looking at the world. These ideas heralded the vast changes that took place in all spheres of human life and that started changing to that which we know today.

FREEDOM

> *"Happiness is freedom and freedom is courage."*
>
> Pericles

The new concepts of freedom contributed the most to the changes that manifested themselves in the nineteenth and twentieth centuries. Many new and revolutionary ideas developed as a result of the accumulation of knowledge, but the idea of freedom twists itself like a golden strand of idealism, through them all. Freedom has dominated most ideological concepts during the last 200 years. Freedom of conscience, of speech, of press, of thought, led to ideas of freedom in social, moral, religious, economic and political structures, and so the whole structure of life changed. The importance of this concept cannot be over-stressed, and may be appreciated by taking into account how many have fought and died for freedom, and how many evils have been committed in its name and used as justification of fanatical causes. J. C. Smuts maintained the following in his Rectorial address at St. Andrew's University, Scotland, which characterises the general intellectual climate of that time:

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2 *Ibid.*, pp. 31-34.
3 Norberg-Schulz,C., *Meaning in Western Architecture*, p. 356.

> *"Inner freedom and harmony of soul, social freedom and equality before the law as foundations of the state: international freedom in the rule of peace and justice: these should be creative ideals of the new age, instead of the sterilising repressions of the past, and still more sterilising tyrannies which are forging new shackles of the human spirit."*[4]

THE CONSEQUENCES OF THE NEW CONCEPTS OF FREEDOM

The initial ideal of political freedom led to a chain of events that are still reverberating to our present day. The demo= cratic political system based on freedom and equality, one man, one vote, destroyed the age-old feudal system and brought about a new social structure through a change of political power. The democratic system gave individual freedom, and freedom of action to man, which allowed a new economic system to emerge, the *laissez faire*, Capitalistic system. Anybody could now acquire wealth by personal endeavour. Consequently great economic growth and accumulation of personal wealth resulted. The self-made man appeared, creating a new type of client for the architect, demanding new types of buildings, as, for example, industrial and commercial buildings. The cost benefit structure became related to buildings, bringing with it a new aspect to architecture. Commercial advertisements a by-product of capitalism, made new demands on design in architecture.

The church and nobility lost their power, bureaucracy and private wealth took their place as client to the architect, changing the character of the demands made upon architectural design. The cultured nobility with its educated taste made way for the common man, not necessarily cultured, nor with an educated taste.[5] New technological inventions developed from advances made in science, and coupled with the Capitalistic system, brought about the Industrial Revolution, and the accompanying population explosion, and the vast sprawl of the

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4 Smuts, J. C., *Freedom*, p. 33.
5 Mumford, L., *Culture of Cities*, p. 144, and
Pevsner, N., *An Outline of European Architecture*, p. 376.

industrial city with its sociological, ecological and architect= ural problems.[6] The fact that man was free from being bound to a class in society, freed him from an imposed cultural back= ground, and consequently money and power became important. Freedom from dogma, culture and tradition, rejected history and destroyed the idea of seeing things in historical concept and perspective. The idea that each must be free to do as he thinks fit and create according to his own subjective feeling, became perfectly acceptable under these circumstances. Each architect could now be free to develop his own ideology:

> *"To suddenly free the observer from custom by teaching that there is always the possibility of a jump toward new dimensions, that the present order can and must be upset, that everyone must take part, simply by their daily actions, in this permanent revolution of the order of things.*[7]

The concept of ambiguity of form,[8] gave rise to the idea of allowing the viewer to give his own meaning to it, consequently the idea that objective symbols and meanings are not necessary in a free society.

> *"With an increasing understanding of the principles of open symbolism, even the more particular forms of the past could become part of the pluralism of formal structures which developed after the second world war."*[9]

Norberg-Schulz expresses the opinion that to understand the Bauhaus and Functionalist architecture in general, it is necessary to grasp its ideal of freedom as well as its idea of order, as the Bauhaus simultaneously wanted to free the individual's power of self-expression and to develop an objective aesthetic standard, based on scientific knowledge. They rejected all ideas of historicism and traditionalism and

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6 Mumford, L., *op.cit.*, Chapter 5.
7 Tafuri, M., *Theories and History of Architecture*, p. 91.
8 *Vide* p. 30-42.
9 Norberg-Schulz,C., *op.cit.*, p. 388.

searched for new ways of original expression.[10] The Functionalists believed that participation in the modern world calls for individuals, who have become free of preconceived ideas and sentimental attachments. Gropius did not accept the word 'style', but preferred the term 'method'.[11] Style can only be established by a traditional code. The concept of unbridled freedom from history has taken its toll and has particular significance in architecture. Primarily it rein= forces the aspective view of life. Without the discipline of accepted traditional, hierarchical values and the ordered repetition of style, which allow for associate meanings, a new architectural language could not come into being. This state is deplored by Bruno Zevi,[12] who claims that it is essential that we must codify modern architectural language, because critical judgements are made both in the profession and in architectural schools, without standards. What he has not taken into account, however, is the self-conscious ambiguity of choice and the very aspective nature of the Modern Movement, that it does not lend itself to a comprehensive language, due to the constant originality of the perpetual *avant-gardes*, the plurality, subjectivism and individualism that are separate and aspective. Norberg-Schulz calls for a meaningful environment as an essential part of a meaningful existence, but as he sums up:

> *"Today we experience a pluralism of manifest characters. All the existential possibilities experienced during history are at our disposal, but either we are blind to them or we select one narrow set of meanings, believing that we have discovered absolute truth."*[13]

ASPECTIVE PLURALISM AND FRAGMENTATION

The whole architectural scene has exploded into a multitude of scattered parts and visual chaos.[14] This danger of an environment without objective public meanings, that each architect expresses his own free subjective opinion, free

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10 *Ibid.*, p. 359.
11 *Ibid.*, p. 372.
12 Zevi, B., *The Modern Language of Architecture*, p. 3.
13 Norberg-Schulz,C., *op.cit.*, p. 434.
14 *Ibid.*, p. 390.

interpretation of what he considers the correct way of designing, does not lend itself to creating an understandable architectural language with meanings accessible to the common public. This is a confirmation of the loss of public meaning on the part of architecture, a loss felt particularly at the level of linguistic communication.[15] This has given rise to one of the greatest problems related to Modern Architecture, namely, that it is not understood by the general public, due to its pluralistic, subjective, aspective nature. The rejection of cultural values, the eclipse of history, ordered perspective and the devaluating of the object have further added to the confusion of meanings.

FREE SOCIETY

The whole Utopian concept of the Enlightenment was of a free society. This idea has contributed largely to creating this confused situation in architectural theory and philsophy, which is aspective in its pluralism, fragmentation, specialisation and subjectivism. Norberg-Schulz writes as follows:

> *"The new scientific outlook was closely related to a new idea of freedom. Enlightenment philosophy opposed the power of convention, tradition and authority, and the centralized and hierarchic system of the Baroque age gave way to a multitude of interacting equal elements. The slogan liberté, égalité, fraternité defines the new ideal well. A profound psychological change resulted, while the Baroque attitude may be characterized by the word 'persuasion', the Enlightened man concentrated on sensation. Accordingly the illusive, allegorical image was replaced by the natural 'true' image in science as well as in art."*[16]

This quotation sums up the way freedom and science together resulted in creating the aspective view and attitude which so influenced architectural thought and resulted in the new attitude to space, form, function and subjective, creative architectural ideologies. The *'true'* image is of particular importance in aspective viewing and further reinforced the

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15 Tafuri, M., *op.cit.*, p. 173.
16 Norberg-Schulz,C., *op.cit.*, p. 354.

aspective nature of Modern Architecture. The new ideal of freedom, combined in the creation of the ambiguity of meaning and the subjective expression, claimed in the name of indivi= dual freedom, finally brought the whole concept of aesthetics and art to its knees by finally allowing it to be completely alienated from public acceptability. Art became an expression of the élite lonely man and as Hauser states:

> *"However much talk there is about supra-temporal aesthetic norms, of eternally human artistic values, of the need of objective standards and binding conventions, the emancipation of the individual, the exclusion of all extraneous authority, a reckless disregard for all barriers and prohibitions, is and remain the vital principal of modern art."*[17]

The great danger in rejecting all dogma and binding convention, tradition and codes becomes manifested in the loss of values. Social, cultural and moral values related to the existential meaning of man were lost and all that was left to fill this void, was the logical objective truth of science,[18] which by its very nature could not pertain to non-scientific aspects of man.[19] In this new age of reason, the search for new values and the new concept of 'truth', of how things really were, was to free man from deceptions of how they appeared, and of ordered perspective.

DEVELOPMENT OF MODERN ART

Dr. Rookmaaker outlines how these new concepts developed during the Enlightenment, and influenced the various steps and decisive choices made by the Modern Movement in art, which subsequently influenced architecture. These steps were not made in isolation, but came from society generally. They depended on the world view developed during this time, particularly with regard to values and suppositions in the Age of Reason, which consequently shaped our present day culture. The roots of contemporary culture are bound by these principles and express the consequence.

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17 Hauser, A., *The Social History of Art*, Vol. 3, pp. 143, 144.
18 Tafuri, M., *op.cit.*, p. 173.
19 Note the aspects as of Dooyeweerdt, Kalsbeek, L., *Contours of a Christian Philosophy*, p. 100.

> *"What was at stake was man's insight and knowledge of reality."*[20]

We find a change in the manner in which reality is viewed from an ordered perspective view to an aspective view, as Rookmaaker illustrates, even though he does not regard it in this light, his description is most apt. Initially the Expressionists believed that perception should be governed by reason, in order to give a rational structure to perception, in searching for the new truth. In the work of Seurat and Cézanne and attempt was made to achieve a synthesis of ration= ality and perception, but as Rookmaaker points out, the freedom of expression had achieved a prior claim. With Expressionism the pendulum swung completely to the side of the freedom of the artist, the freedom of man to create out of himself; unhampered by the demands of naturalness,[21] and sought a new art against all tradition, against deadness. Their aims were for a direct expression of their own subjectivity a new means of representation; they wanted a new 'truth'. There appeared an almost primitive quality as if bypassing the veneer of civilisation, they were drawn to primitive art as if it were a kindred spirit.[22] This is further illustrated by Gauguin, when he expressed so eloquently:

> *"So what was necessary, without bypassing all the efforts already made and all the research even scientific research, was to think in terms of complete liberation; to break windows even at the risk of cutting one's finger. From now on the next generation is independent and free from any fetters:- it is up to them to resolve the whole problem."*[23]

This problem was subsequently *resolved.* It marked the end of an era, and from now on the art became subjectively free and consequently senseless and absurd, especially with regard

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20 Rookmaaker, H. R., *Modern Art and the Death of a Culture*, p. 62.
21 Interpreted in this sense to mean three dimensional perspective.
22 *Ibid.*, p. 106. An art predating the perspective awareness.
23 *Ibid.*, p. 91, quoted from *Racontars d'ain Rapin*, 1902.

to meanings, as Rookmaaker points out. Gauguin and the Expressionists could surely not have realised these implications, their initial intention had been a search for meaning in striving to regain truth and reality, but the artist became lost in this development, due to the subjectivism of the senses, and as a result of the concept of unbridled freedom. Husserl, prior to the first world war, wrote the following:

> *"To get rid of all traditional ways of thinking, to recognise all the spiritual fences that shut off the horizon of our thought and pull them down, to get hold of completely new philosophical problems in the complete freedom of thought that has resulted from breaking down all the fences and opening up new horizons - all this is hard to achieve. But nothing less is required ... what is necessary is a completely altered approach, different from the natural way of thinking."*[24]

The new way was opposed to the conventional way; and so they discarded history, linear time and perspective, and reverted to pre-Greek concepts. This was the result of the way Husserl had advocated. The results were unpremeditated and ended in the modern aspective view of pluralism, subjectivism and separatism.

CUBISM AND LOSS OF MEANINGS

Rookmaaker states with regard to the Cubism of the early twentieth century, that the concept of Renaissance space, with its per= spective, depth, foreground and background, is discarded in this movement, as seen particularly in the work of Picasso, who depicted space with no depth, nothing in front or behind.[25] The decisive step had now been taken and art was to be shown in universals, naturalism being discarded, symbols and tradition no longer had any meaning, the only way open was abstraction. Even time became lost in this method of presentation, a house, a tree or a place became universalised and so it became impossible to discover even the season of the year, or which place it was. Without depth, perspective, time and natural

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24 *Ibid.*, p. 111 quoted from *"Ideen zu einer reinen phänomeno= logie und phänomenologischen Philosophie*, 1913.
25 *Ibid.*, p. 116.

order, art had now become completely aspective. Art, according to Rookmaaker, took one further step, after having lost its own way in subjectivism, it maintained that there were no universals and no absolutes, it became absurd, non-sensical and without meaning. This was the direct result of adopting absolute freedom of expression. They now depicted the absurd in maintaining what the '*new*' truth was, that there was no truth. These concepts may be seen in Picasso's work. The Dada Movement in Zurich, 1917 went even further to break all taboos, norms of art, all sacred or non-sacred tradition, a nihilistic creed of disintegration, showing the meaninglessness of western thought, art, moral and tradition; and attempted to show how absurd all these things were.[26] Expressionism, abstract art, Cubism and Dada, with their new methods of depicting reality and freedom, and their search for the abso= lute in subjectivism, negated values and turned the whole culture of art into the absurd.

INFLUENCE OF MODERN ART ON ARCHITECTURE

In this age of Enlightenment and freedom, rationalism was highly valued and the use of mathematical geometry may be seen in the work of the Cubist Movement, and in the work of artists like Mon= drian and Paul Klee and Kandinsky, who show how geometry and mathematics were regarded as rational and absolutely true. Many architects who were participants of the Modern Movement in architecture, were interested in painting or painters them= selves like Le Corbusier, Van Doesburg and Moholy-Nagy. Rietveld's Schröder house was called a cardboard Mondrian.[27] The tremendous influence of modern art on the Modern Movement in architecture may be appreciated when noting how many abstract artists were part of the Bauhaus staff, Paul Klee 1921, Oskar Schlemmer 1921, Wassily Kandinsky 1922 and L. Moholy-Nagy 1923. The successive appointments of these men marks the strong tendency toward the abstract movement.[28] The Bauhaus was well known throughout Europe in circles where the elements of con= temporary art were being sought, and as Giedion maintains:

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26 *Ibid.*, p. 130.
27 Banham, R., *Age of the Masters*, p. 68.
28 Giedion, S., *op.cit.*, p. 419 (1949).

> *"The work of the Bauhaus can be grasped only when the conception behind modern painting has been understood."*[29]

Le Corbusier's houses show an identity with the spirit of modern painting as seen in his paintings and the houses at Pessac.[30] The failure of this housing scheme at Pessac, as explained by Philippe Boudon[31] may now be understood in relation to the loss of values related to form and the concept of free subjectivistic approach that did not satisfy the common public, as it had no meaning for them, so they changed these houses.

Giedion gives us a clear account of how contemporary art in= fluenced the whole Modern Movement in architecture,[32] initially by the enthusiasm of the Brussels Centre of Contemporary Art, which had encouraged the publicising of artists like Cézanne, Seurat and Van Gogh. Giedion quotes from an anonymous essay, published in *L'Art Moderne*, as follows:

> *"Art is for us the contrary of every recipe and formula. Art is the eternally spon= taneous and free action of man on his environment for the purpose of transforming it and making it conform to a new idea."*[33]

This quotation expresses the attitude of the *avant-garde* artistic circles at the inception of the Modern Movement of architecture. Cubism led directly to the application of new spatial concepts in architecture and as Giedion maintains:

> *"Cubism breaks with Renaissance perspective. It views objects relatively: that is from several points of view, no one of which has exclusive authority."*[34]

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29 *Ibid.*, p. 421.
30 *Ibid.*, p. 434.
31 Boudon, P., *Lived-in Architecture*, Le Corbusier's Pessac revisited.
32 Giedion, S., *op.cit.*, pp. 229, 230, 231 and pp. 367-382 (1949).
33 *Ibid.*, p. 230.
34 *Ibid.*, p. 369.

This concept illustrates the rejection of a hierarchy of values inherent in perspective, due to this concept that values have no relative importance and are all the same, depending only on how you look at them is an aspective view, with each value standing alone and separate, and depending on which one you wish to use, which one is important to you personally. In this way the artist and observer has the freedom to choose his own viewpoint. The very idea that all values are the same and free of relative importance, destroys the concept of values, if all values are the same, there are no values and consequently related meanings in art and architecture.

FREE EXPRESSION IN ARCHITECTURE

Ray Smith, in his book *Supermannerism*,[35] traces the course of Modern Architecture in a similar way to Rookmaaker's diagnosis of the Modern Art Movement, but without the condemnation. The chapters in his book on Permissiveness and Chaos, Ambiguity and Invisibility, Wit and Whimsey, Camp and Pop, Superscale and Superimposition, and User's Systems and Adaptibility to change, illustrate and show an awareness of the similarity of the development of art and architecture, the way freedom of expression led to the subjectivism and devaluating of meaning. Ray Smith maintains that much of the work done since 1960 by the Supermannerists has been exciting, youthful and brilliant, but that the profession has become divided upon the value thereof, and are in two minds about it; 90 per cent against, 10 per cent for the Supermannerist.[36] The strongest criticisms against the new design were that its aesthetic implications were to *"glorify subjectiveness and purely personal expression"*[37] which, in any case, had been going on since the inception of the Modern Movement, as manifested in the Bauhaus, but to the more serious minded architects, the strange and twisted humour of the Supermannerists, particularly Camp, Pop, Superimposition, Layering, Ambiguity, Invisibility and Super= scale was unacceptable. This was going too far:

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35 Smith, R., *Supermannerism*.
36 *Ibid.*, p. 323.
37 *Ibid.*, p. 325.

> *"This superficiality indicates an inability to formulate any appropriate new architect= ural principles."*[38]

They maintained that architecture cannot entirely be based on humour, but in reality its transitory nature, ambiguity, invisibility and humour was masking the lack of values. This situation was the outcome of the concept of freedom that had been accepted since the start of the Modern Movement, both in art and architecture. The question is not as Smith implies, a question of accepting or rejecting professional rejuvenation, but a question of values and order. The claim of the Post Modern designers of obtaining a richer, more ela= borate, complicated effect through historical allusion, devious planning and manipulation of scale in architectural meaning, still does not return architecture to an ordered sense of perspective or a hierarchy of values, but stresses further the concept of freedom by using arbitrary objects and elements to express an ideology; which has in any case been going on since the Renaissance, only now with less meaning by the incorporation of absolute freedom of choice. The trends of superscale, ambiguity, invisibility, Camp and Pop are a develop= ment in architectural design inspired and similar to Surrealism in art. Surrealism had its inspiration in the Dada Movement and abstract art.

CONFUSION OF MODERN ART

Mondrian and others were creating very rational, very formal art, but the deep abyss looming ahead was entered into by the Surrealists, the fear, the agony, despair and absurdity are amply demonstrated in the work of De Chiriro, Escher and Salvador Dali.[39] Now perspective is demonstrated as having no contents, something filled only with meaningless objects. De Chiriro and Escher have illustrated in their eerie paintings, perspectives full of meaningless ambiguity, fear and disorient= ation of order. Dali shows the destruction of linear time with his bent clocks and other weird objects, all demonstrating

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38 *Ibid.*, p. 325.
39 Rookmaaker, H. R., *op.cit.*, p. 143.

the sadness of this return to a more primitive aspective view= point, in defiance of the known perspective order. Ray Smith notes how this movement corresponds to ambiguous architect= ure, how alienation and disorientation is reflected in the designs of Supermannerists.[40]

FREEDOM FROM VALUES

These manifestations in the western culture in art and architect= ure show the way that the concept of undisciplined freedom has led to the characterisation of the work by erotic symbolism, irrationality, absurdity, alienation, ambiguity, disorientation and black humour. The philosophy of contradiction, complexity and ambiguity of Venturi and the Supermannerists as described by Ray Smith, all express the same syndrome, but with less emphasis on the horrific and sadistic but, nevertheless, imbued with irrationality, absurdity, humour and ambiguity.

The following articles, too, illustrate the same concepts, and show the destruction of values in architecture. Robin Evans writes:

> *"An-Architecture facilitates action. It ought to be the human analogue of continuous creation from a void."*[41]

Chris Fawcett describes the absolute destruction of all values by modern Japanese architects who, having based their advanced ideas on the western architectural code, have gone one step further and released themselves from every conventional con= cept of architecture. He describes several architects and their attitudes, among them, how Monta Mozuna built his anti-dwelling:

> *"The anti-dwelling is also a black box. There is a small exit just opposite the entrance and in its shadow. This shadow opening coincides with the amorphism of being lost in the labyrinth."*[42]

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40 Smith, R., *op.cit.*, pp. 139, 130.
41 Evans, R., An-Architecture. *Architectural Association Quarterly*, Volume 2, No. 1, 1970, p. 58.
42 Fawcett, C., An Anarchists' Guide to Modern Architecture, *Architectural Association Quarterly*, Vol. 7, No. 3, 1975, p. 43.

The destructive horror of this type of architecture had its seed in the concept of being released from every conventional concept of architecture.

DESTRUCTION OF VALUES

Rookmaaker makes it clear that the undisciplined freedom led to the destruction of values, which could not, or have not been found, and that the fine arts have now been replaced by an aesthetic of imagination and new techniques in advertise= ments, magazine layouts and graphic designs. Even scientific drawings, he maintains, have become more human and alive in comparison with the purer form of art,[43] and the élitist intellectual artist is breaking down the real democratic and liberal freedom in which each man may think for himself. He maintains the following:

> *"Modern art in its more consistent forms puts the question mark against all values and principles. Its anarchist aims of achieving complete human freedom turn all laws and norms into frustrating and deadening prison walls; the only way to deal with them is to destroy them."*[44]

He further condemns this attitude to creativity by the following statement:

> *"They live in anticipation of a new world, an anarchist world, a world of absolute indi= vidual freedom. The French Revolution stood for liberty, equality and fraternity; in the revolution of today it is called 'free= dom', the end of privilege and licence and love and love, love!"*[45]

Schuurman shows how the rationalistic attitude, guided by human autonomy, placed man himself at the centre of the universe guided only by absolute reason. The problem came when the Enlightenment aspired not only to understand the world by the light of reason, but to reshape it according to the dictates of reason. On the basis of autonomous free reason a technological scientific society was constructed.

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43 Rookmaaker, H. R., *op.cit.*, p. 195.
44 *Ibid.*, p. 161.
45 *Ibid.*, p. 213.

> *"Man's reason is absolutized on the basis of his claim to autonomous, absolute freedom. Scientific logical thinking is pried loose, a priori, from its integrated place in life and set apart in a sovereign position of its own."*[46]

The result has been that an unyielding determinism threatens to end freedom in shaping man's culture, once man allows science to serve as a means of mastering his future. The adherence to absolute scientific *'truths'*, data and statistics, as values to determine the future, allows no room for the creative inventive imagination of man and the productive ability of the mind as a product of free reason. When science itself becomes of prime value, it rules and subjects freedom once more to slavery. Therefore, one may conclude that a delicate balance must be maintained in conserving free= dom from the onslaught of the contemporary concepts of science, the arts, and for that matter, politics, whose ideas of absolute, total freedom is devoid of values, and tends to destroy the very ideal that freedom initially aspired to, and to which freedom may be said to have contributed in the advancement and progress of man. The appeal that is made in this discourse should be seen in the light of an appeal to preserve the concept of free= dom, through the reinstatement of the discipline that places the values of all the aspects of man in a proper hierarchy, in ordered perspective. By regarding the concept of scientific truths as a prime value or the idea of undisciplined freedom a prime value, we bring about a subjective expressionism that discards all social, cultural, ethical and moral values. This outlook discards the holistic perspective view, and allows the aspective view to be reinstated. The concept of unbridled, total freedom of action and reason has led to the dissipation and dissolution of freedom as an asset to mankind, leading to confusion and ambiguity of values, which has been so clearly manifested in art and architecture.

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46 Schuurman, E., *Reflections on the Technological Society*, p. 12.

EQUALITY

Equality was one of the slogans propagated by the French Revolution, and has particular appeal for the underprivileged and untalented. Liberty and equality are not always consistent with one another. Resolving this issue has led to bloody wars and major political and economic changes, since the French Revolution, as described by Milton Friedman in his book *Free to Choose*. Architecture, too, did not escape the influence of this popular slogan. Friedman shows how three different interpretations of equality influenced the social, political and economic situations.[47]

EQUALITY IN THE EYES OF GOD

Initially equality meant simply equal in the eyes of God. This concept allows personal equality, but does not maintain man as being identical. Within this concept man was free to live in accordance with natural evolutionary principles of development, in striving for improvement and excellence. Each could live his life to his own choosing, his own values, religion, culture, lifestyle and taste. This situation requires respect for the right of the individual's freedom to differ without imposition. Furthermore, this concept allowed for a hierarchy of social and cultural values to exist and consequently different architectural aesthetic choices, based on these values. This situation existed in America and Western Europe in the nine= teenth century.

EQUALITY OF OPPORTUNITY

The second concept of equality was namely that of equality of opportunity, interpreted as being a *'career open to talents'*. Nobody should actively be prevented from using his capabilities to pursue his objectives by arbitrary obstacles of birth, nationality, colour, religion, sex or any other irrelevant characteristic whatever. Nothing should hamper him, except his own ability. This concept does not contradict the ideals of freedom, it nevertheless had a striking influence upon Modern Architecture. This concept of equality led to the

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47 Friedman, M., *Free to Choose*, pp. 159-181.

embarrassment of recognising ethnical, cultural and other differences.[48] The Modern Movement in architecture solved this problem by simply ignoring or rejecting them; this situation was further promoted by the adoption of the scientific design method, which, in its search for universal truths, anulled the traditional, ethnic and cultural differences of man. Marcel Breuer, one time teacher at the Bauhaus, maintains the following:

> *"Instead of family traditions and force of habit we employ scientific principles and logical analysis."*[49]

Serge Chermayeff illustrates this situation in the following extract:

> *"Now, we have no possibility of this kind of gradualism and continuity of either culture or of a technical kind. We must plan instead. Cultures are being politically and technically upset, humanity is being rede= ployed, the rate of technical change has become the measure of the new world, not its art."*[50]

The initial Utopian concepts of a free, equal society held so dearly by the Functionalists and the Bauhaus, and propagated in the Heroic period, reinforced the necessity of not only rejecting traditional and historical values but cultural values as well.[51] Le Corbusier eloquently confirms this general ideal when he writes:

> *"All men have the same organism, the same functions*
> *All men have the same needs."*[52]

Fitch points out in his book on Walter Gropius, that Gropius and the adherents of the Modern Movement never intended to

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48 Goodman, R., *After the Planners*, p. 200.
49 Breuer, M., Where do we Stand?, *The Rationalists*, Sharp, D. (*ed.*), p. 86.
50 Chermayeff, S., Random Thoughts on the Architectural Condition, from *The History, Theory and Criticism of Architecture*, Wiffen, M. (*ed.*), p. 27.
51 Norberg-Schulz, C., *Meaning in Western Architecture*, pp. 358-372.
52 Le Corbusier, *Towards a New Architecture*, p. 126.

establish a style, but preferred to call it a method of tackling each architectural problem according to its own peculiar con= ditions unbiased, original and elastic. It is rather sad and comic that this great man,Gropius, tried to disentangle himself from semantic snare, to no avail. Fitch explains:

> *"For whenever any group of men agree upon a common method of accomplishing common tasks, a common system of expression (i.e. a style) will ultimately appear. Ours is the first period in history to be embarrassed by this cultural certainty."*[53]

By the exclusion of certain aspects of man, particularly culture and tradition, an architecture of exclusion evolved[54] and so, as a result we find a singular type of architecture, created from several different ideological standpoints, that neverthe= less may be grouped under the title of the *'International Style'*; based on scientific design analysis and methodology. This style with its total disregard of cultural and traditional values that differentiate man, spoke volumes in the cause of equality and epitomised the rejection of cultural distinctions. The desire to discard all preconceived ideas[55] and the rejection of ornament[56] further encouraged a more unified stylistic characteristic; by exclusion they equalised Modern Architecture into this style. The scientific system further contributed to this situation by studying man through scientific, psychological and socialistic methods; culture did not come into it.

The return to cultural distinctions and vernacular architecture, once more became popular with the publication of *'Complexity and Contradiction in Architecture'* by Robert Venturi.[57] Vincent Scully in the introduction to this book describes how much resentment Venturi's ideas have caused:

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53 Fitch, J. M., *Walter Gropius*, p. 13.
54 Norberg-Schulz,C., *op.cit.*, p. 388.
55 *Ibid.*, p. 387.
56 Banham, R., Adolf Loos: Ornament and Crime, Sharp, D. (ed.), *Rationalists*, p. 27.
57 Venturi R., *Complexity and Contradiction in Architecture.*

> *"It is significant in this regard that Venturi's ideas here so far stirred the bitterest resentment among the more academic minded of the Bauhaus generation - with its utter lack of irony, its spinsterish disdaim for popular culture but shaky grasp of any other."*[58]

Jencks calls the whole movement that returns to historical, cultural, traditional and vernacular analogies, *'Post Modern Architecture'* but condemns the manner of strange contradictions in which these analogies are used, which almost destroys their true context in history and tradition, showing a marked duality, or conscious schizophrenia,[59] thus exposing the dilemma of meanings as opposed to the question of equality. Brolin points to the question of equality in the development of the Modern Movement:

> *"To bolster their architectural theories, early modernists had assumed that sub-cultured differences were disappearing and that industrial societies throughout the world were merging into one homo= geneous type."*[60]

In 1927 Gropius had encouraged universal minimum standards for housing in anticipating the impending equalisation.[61] Brolin further illustrates how Le Corbusier's design of Chandigarh, by ignoring cultural requirements, had consequently been a failure.[62]

EQUALITY OF OUTCOME

The third concept of equality according to Friedman, namely *'Equality of outcome'* and *'Fair shares for all'*, are modern slogans of equality created by Marxist ideologies. This con= cept of equality differs radically from that of the previous two concepts. To reach this desired situation, somebody must be in charge of the sharing process to achieve equality, which impinges on the liberty of the individual,[63] not only on

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58 *Ibid.*, p. 15
59 Jencks, C., *Post Modern Architecture*, p. 6.
60 Brolin, B. C., *Failure of Modern Architecture*, p. 68.
61 *Ibid.*, p. 65.
62 *Ibid.*, Chapter IV.
63 Friedman, M., *op.cit.*, p. 166.

his personal property but his ability to excel and improve himself and so his creative freedom.

Broadbent points out how Constructivism and the *'avant-garde'* architecture collapsed in Russia after the revolution, not only due to the lack of technology, but suggests that it was the case of the architecture that was good enough for the aristocracy was now good enough for all society, emerging from serfdom, in the equalising process.[64] This concept of equality thus inhibits creative development and erodes the concepts of freedom. The slogan of equality dominates that of freedom in Marxist orientated societies, whereas freedom characterises capitalistic societies.

SOCIAL EQUALITY AND ARCHITECTURE

The initial Heroic concept of the Modern Movement was bound within the concept of social equality which led to the moral obligation on the part of the architect to contribute in solving the social problems of society. The confusion of political equality with architecture still persists in certain spheres to this day as may be testified by the paper delivered at the 1981 Architectural Congress by Righini.[65]

Jencks shows the danger of revolution, and how the *'Activist'* tradition believes that the exploitation of the so called oppressed worker by the ruling class must be abolished by means of revolution. When this does not solve the housing or any of the other economic, social or political evils besetting society, a counter revolution becomes necessary and so on, till a complete state of anarchism prevails.[66] The question of the moral issue of the poor and oppressed exploits the architect. Equality promotes the aspective in as much as no single value may be placed above the other, no hierarchy may be used, as all is equal, each value thus becoming alone and separate, and not part of an integrated whole, and thus aspective.

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64 Broadbent, G., Neo-Classicism, *Architectural Design*, Vol. 49, No. 8-9, p. 54 (1949).

65 Righini, P., Architectural Education in a Developing Society. S.A. Institute of Architects, Architectural Congress, Durban, 1981 (Unpublished).

66 Jencks, C., *Modern Movements in Architecture*, p. 81.

Equality must ultimately lead to *'sameness'* and lack of quality and distinction in architecture. The discarding of tradition and culture brought with it the timelessness of the aspective, and the break with historical linear development. The Post Modern Movement in architecture, and the reinstating of his= torical, cultural, traditional values and the vernacular, becomes a search to restore that which had been ignored and lost. Clearly this remedy applied arbitrarily, cannot in it= self constitute a solution, should the linear concept of time and perspective not be reinstated as well. The perpetuation of historically extended equally arbitrary choices to architect= ural form, cannot by itself be of any use in establishing lost values, as the aspective situation will only be aggravated. The more fragmented and arbitrary, the more aspective it becomes. The natural growth of historical, traditional and cultural values in a linear time concept may rather constitute a solution.[67]

THE NEW CLIENT

Equality destroyed the ordered social structure that had existed prior to the French Revolution. The disappearance of the nobility destroyed the noble patron as client to the architect. The new client was the product of free enterprise of the capitalistic economic system, or a representative of the state. The newly rich and rising bourgeois after the French Revolution rejected the classical taste of the nobility and replaced it with the Romantic Movement, bringing with it the ensuing results of subjectivism, emotionalism, sentiment and genius, that so profoundly influenced modern art and architecture.[68] The French Revolution and the development of the Romantic Movement in the arts marks the end of a cultural epoch in which the artists and architects had appealed to society for acceptance. As Hauser states of the Romantic Movement:

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67 Gapp, P., The Excitement is Building, *Express*, June, 1981, p. 28.
68 Hauser, A., *The Social History of Art*, Vol. 3, p. 57.

> *"Their work brings them into a constant state of tension and opposition toward the public; certainly, groups of connoisseurs and amateurs are constantly being formed, but this formation of groups is in a state of endless flux and destroys all continuity in the relationship between art and public."*[69]

Hauser points out the lack of continuity and the endless state of flux that had resulted in the attemps at equalisation of society, which had brought about the rejection of all classical values and tradition. This state of confusion and loss of values promoted the aspective by its lack of continuity, constant change and subjectivism. When all values are equal, perspective cannot exist, as perspective essentially requires a hierarchy of values related to the whole and that should not be equal and separate.

BROTHERHOOD AND MORALITY

After the French Revolution, and the consequent disintegration of the power of the nobility, the new leaders of society who were the emancipated middle class, had to establish their own authority, not only politically but culturally as well. One of the methods used to achieve cultural leadership was to exploit the moral issue. They discredited the nobility as decadent, licentious, frivolous and extravagant and upheld the hardworking morally virtuous middle class as the ideal alter= native.[70] Coupled with the slogan of *'brotherhood'*, the stage was set for an age when a social consciousness became a necessary part of cultural awareness. Man was now deemed responsible for the plight and circumstances of his fellow man. The expression of this concept may be noted in Western culture by the general abolition of slavery and the Philantropic societies, in Great Britain and America.[71] These altruistic sentiments reached their full implication in the Marxist ideology of the sacrifice of the few for the many underprivileged and needy

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69 *Ibid.*, p. 144.
70 *Ibid.*, p. 58.
71 Frampton, K., *Modern Architecture, a Critical History*, pp. 21, 22.

people. This question of morality and *'brotherhood'* was greatly to influence the spread of Modern Architecture as well as its basic creed. Due to this climate of deep concern for his fellow man and the Utopian concepts of a free, equal society, it became incumbent on the architect to achieve this state of affairs. Therefore, man was very prone to be influenced by appeals made to his moral sense of righteousness. This dream of a Utopian society was the guiding ideal for the intellectual at the time of the inception of the Modern Movement in architect= ure. The call to morality was used extensively in the battle to establish the concepts and ideologies of the New Architecture, as, for example, this appeal made by Walter Gropius:

> *"We should cry out in shame against these wastes of ugliness when walking through our streets and cities! Let us face it! These drab, hollow, meaningless factories in which we live and work will leave behind a mortifying testimony to the spiritual fall from grace of our generation."*[72]

When Adolf Loos wrote his now famous essay on *'Ornament and Crime'* in 1908, he described ornament as something immoral and disgusting. Banham points out how he initiates the aspect of morality into architectural aesthetics and states the following in connection with this essay:

> *"It brings the reader up with a jerk and sets his shock responses jangling. This essay was probably the first appearance of that moral tone that was to characterize the writings of the 20's and 30's."*[73]

MORAL RESPONSIBILITY

According to Banham, Loos singlehandedly defeated centuries of ornamentation by artists and architects; for this appeal to have been successful, it must have polarised the expression of the moral and cultural climates of that time. Banham further points out how the Masters of the Modern Movement had with appalling arrogance forced their followers to accept moral

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72 Fitch, J. M., *Walter Gropius*, pp. 14, 15.
73 Banham, R., Adolf Loos: Ornament and Crime, from *The Rationalists*, Sharp, D. (*ed.*), pp. 27-30.

responsibility for virtually the whole of the human environ= ment.[74] Consequently the vision of the modern architect became infused with a sense of moral superiority. Truth and honesty became synonymous with desirability and beauty: truth of construction, truth of materials and truth and honesty of form and function.[75] Fought on this battleground of honesty, integrity and truth, Modern Architecture was bound to achieve a hearing. By proclaiming all architecture based on tradition as immoral, if used to build contemporary archi= tecture, and declaring only Modern Architecture as morally correct, it blackmailed the public into using an ideology against their own preference as Brolin states:

> *"The disillusionment with Modern architecture came about because architects imposed their own values on a public that did not share them."*[76]

Furthermore the inevitable consequence of the unprecedented growth of the Industrial age and population explosion, brought with it pollution, slums and generally conditions unfit for human habitation.[77] These conditions became generally associated with the Eclectic styles of the Revival period. The multiplicity of the new building tasks could not be executed within the limitations of only one of these styles and the consequent use of several styles irrelevant to function, purpose or meaning, thus led to a confusion of architectural expression. Therefore it was not strange at all that these conditions, coupled with the climate of *'brotherhood'* and morality, led Henri van der Velde to describe the situation in 1890 as a moral problem.

> *"The real form of things is covered over. In this period the revolt against the falsification of forms and against the past was a moral revolt."*[78]

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74 Banham, R., *Age of the Masters*, p. 5.
75 Brolin, B. C., *Failure of Modern Architecture*, p. 45.
76 *Ibid.*, p. 8.
77 Mumford, L., *Culture of Cities*, pp. 143-222.
78 Norberg-Schulz,C., *op.cit.*, p. 332 quoted from Giedion, S., *Space, Time and Architecture* , 1949, p. 228.

H. P. Berlage in 1890 gave expression to this state of almost universal dissatisfaction when he said:[79]

> *"Our parents and grandparents as well as ourselves have lived and still live in surroundings more hideous than any known before ... lying is the rule, truth is the exception."*[80]

Viollet-le-Duc spoke of *"the physical and moral requirements we have to satisfy"*.[81]

Ruskin's *Lamps of Truth* bids us:

> *"Leave your walls as bare as a planed board, or build them of baked mud and chopped straw if need be, but do not roughcast them with falsehood."*[82]

Although truth and beauty have often been linked, Brolin main= tains, it was with the Modern Movement in architecture that the architect became infused with a sense of moral superiority. It became honest to use materials in their natural state, to show structure on the exterior of buildings and to be under a moral obligation to cure social and urban problems created by the Industrial Revolution.[83] Le Corbusier stated his attitude in the following:

> *"A question of morality; lack of truth, we perish in untruth."*[84]

MISSIONARY ATTITUDE

Unfortunately this moral obligation on the part of the architect became imbued with a sense of self-righteousness; a *'missionary attitude'* as Brolin describes it. The architect saw himself as a moral saviour of society, as so aptly illustrated by Le Corbusier in *Towards a New Architecture* and in the general creed of the Functionalists and the Bauhaus.[85] This attitude

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79 Giedion, S., *op.cit.*, p. 227 (1949).
80 *Ibid.*, p. 226 (1949).
81 Brett, L., *Parameters and Images*, p. 39.
82 *Ibid.*, p. 39.
83 Brolin, B. C., *Failure of Modern Architecture*, p. 16.
84 Le Corbusier, *Towards a New Architecture*, p. 17.
85 Norberg-Schulz,C., *op.cit.*, pp. 372, 359 and Le Corbusier, *op.cit.*, p. 250.

of selfrighteousness and intellectual superiority based on morality, brought about the following situation:

> *"... the ideology of Modern architecture has tended to deal with how people should live rather than how they do live; it set out to redefine social as well as aesthetic values."*[86]

Goodman reinforces this concept when he criticises architects as follows:

> *"As professionals came to perceive them= selves as keeper of a cultural monopoly, they came to feel a unique sense of power shaping people's environments."*[87]

Frank Lloyd Wright, while warning of the dangers of this missionary attitude, maintains it necessary:

> *"But I know well how dangerous the missionary is ... but for an architecture to come to social being in this sense of an organic architecture, we who practice it must inevitably become missionaries to a certain extent."*[88]

Hauser explains how the architect had become alienated from the approval of society by the Romantic Movement and its ideals of subjective free expression and individual intellectual elitism.[89] But the moral intellectual climate required the architect to justify his actions on moral grounds. This situation created a problem on the grounds of how to determine the wants and needs of society. Historical, cultural and traditional values had been rejected in favour of scientific data, data which appeared to be more and more difficult to obtain, but in spite thereof, morality triumphed, as Brett sums up:

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86 Brolin, B. C., *op.cit.*, p. 61.
87 Goodman, R., *After the Planners*, p. 158.
88 Wright, F. L., *The Future of Architecture*, p. 230.
89 Hauser, A., *op.cit.*, p. 144.

> *"Architects know where they stand - shoulder to shoulder with Karl Marx. 'It is the artist's privilege, they have been taught, to give the public what it does'nt know it wants'. All accusations of arrogance derive from this claim."*[90]

The architect, as Charles Jencks states, claimed to be the 'know better'[91] and to justify his designs on moral grounds, no matter how inapt or irrelevant it was to the problem to be solved. Goodman, in his book *After the Planners*, discusses the alienation of the architect from the actual desires and values of the users of his buildings, and how little they are taken into account. The simple idea of shaping buildings on needs and wants becomes problematic when one may morally declare that the user is not in a position to know what he could want, and that the architect, being educated in this field, would know better. The sum total of these aspects of moral self-righteousness, subjectivism, intellectual élitisms and the disregard of public opinion, allows Bruce Allsopp to make the following accusation:

> *"The diseases which most inhibit architects from producing humane architecture are arrogance which is the inability to sympathize, snobbery which is the failure to communicate with 'ordinary' people and technical incompetence which is the failure to do what people need."*[92]

The commercial requirements created by the Capitalistic economic system, the *'cost benefit structure'*, could not always be identified with the ideals of morality of the creed of the Modern Movement. Architects were forced to compromise as Charles Jencks explains in the following:

> *"Here we find a strange but unnoticed deflection of Modern architects 'role as Social Utopian', for we will see that he has actually built for the reigning powers of an establishment, the*

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90. Brett, L., *op.cit.*, p. 3.
91 Jencks, C., *op.cit.*, p. 31.
92 Allsopp, B., *A Modern Theory of Architecture*, p. 44.

> *commercial society; and this surreptitious liaison has taken its toll, as illicit love affairs will. The Modern movement, con= ceived in the 1850's as a call to morality, and in the 1920's (its Heroic Period) as a call to social transformation, found itself unwittingly compromised first by practice and then by acceptance. These architects wished to give up their role as 'tailors' to Society and what they regarded as 'corrupt ruling taste' and become instead 'doctors', leaders, prophets or at least midwives to a new social order. But for what order did they build?"*[93]

The danger of using morality in justifying ideology introduces the problem of ethics into aesthetics. The *'missionary'* attitude of self-righteousness further removes the architect and alienates him from the ruling cultural climate, at a given time, and brings about an intellectual élitism and places the architect alone and separate, which once more exposes another factor of the aspective nature of modern society.

Allsopp declares that the aesthetic confusion resulting from accepting social responsibility by modern architects has un= fortunately resulted in obscuring the basic aim of architecture; and that, what is good and bad should not be a question of moral ethics, but a qualitative assessment in distinguishing good and bad architecture aesthetically. That primarily the responsibility of the architect lies in the quality of the work, and that the degree of fitness lies in conceiving a perfect design solution and not the appropriateness of the ethical implications.[94]

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93 Jencks, C., *The Language of Post Modern Architecture*, p. 26.
94 Allsopp, B., *op.cit.*, pp. 10, 11.

CHAPTER 3

THE INFLUENCE OF CAPITALISM ON ARCHITECTURE

Capitalism has had a long history as it follows the vagaries of civilisation. Trade and barter dates far back into primitive societies, the striving for profit has always been present in western civilisation. The original structure of capitalism underwent fundamental changes in Italy in the course of the thirteenth and fourteenth centuries. The revival of economic life started here earlier than in the rest of Europe. By the beginning of the Renaissance, free trade, the first banking system and the emancipation of the middle class had taken place.[1] The idea of expediency cal= culation and planning developed to replace the more primitive striving for profit, rationalism, which at the very onset, was more or less present now became absolute.[2] Free com= munities such as Florence, Verona, Milan and Venice developed economies based on equal rights for their trading citizens; a class struggle ensued as a consequence of this shift in economic prosperity and a powerful middle class developed.[3] The principles of unity and rationalism, as expressed in the spirit of all Renaissance culture are reflected in their economy; they developed an organisation of labour, new trading methods, the credit system and the double-entry book-keeping method, and further developed their methods of government, diplomacy and warfare.[4]

There is nothing that expresses the economic philosophy, since the Renaissance, better than this materialistic approach which assessed man according to his achievement and his output of work according to its value in money, the wage. The more or less artisan quality of earlier urban economy became commercialised, they recognised the principle that values of

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1 Hauser, A., *The Social History of Art*, Vol. 2, p. 10.
2 *Ibid.*, p. 19.
3 *Ibid.*, p. 13.
4 *Ibid.*, p. 12.

goods change with demand, so that an element of speculation became evident, which exposed the changeable nature of market prices, depending on supply and demand. This was in contrast with the *'just price'*, the concept that the value of a commodity is inherent in it and so fixed.[5] The market during this time was still determined by demand as opposed to our modern economy in which supply becomes prominent, necessitating advertisement and promotion. But one may observe that it was in this com= petitive spirit that the whole range of Renaissance and Baroque art emerged and that the awareness of perspective became redis= covered. In the sixteenth century, when Charles V established his autonomous rule in Italy, the centre of the world trade shifted from the Mediterranean to the West. This shift was a result of the Turkish menace, the discovery of new sea routes and the development of the oceanic nations as economic powers; as a result the age of early capitalism came to an end and capitalism began on a large scale. Small undertakings based on individual craftsmanship were rendered out of date and gra= dually large scale industrial undertakings appeared and the purely financial business became evident, economic activity became remote from production.[6] Small works were incorporated into larger units, directed by capitalists who devoted them= selves to increasingly pure finance. By the time the Baroque culture had been established and the centralised state govern= ments had taken over the power from feudal communities and the church, capitalism had developed large banking systems and corporations, as for example the East Indian Company in Holland. The Stock Exchange further manifested how capital becomes divorced from production; a powerful middle class controlled this vast resources of capital. However, the restrictions and taxes imposed by the powerful monarchies, frustrated these capitalists. To rid themselves of these restrictive powers, the middle class capitalists were of the greatest protagonists of the principles of the French Revolution, in order to achieve freedom in their economic activities.

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5 *Ibid.*, p. 20.
6 *Ibid.*, pp. 99, 100.

MODERN CAPITALISM

The philosophy of the Enlightenment contained two fundamental concepts, that allowed the modern economic structure of capi= talism to be established and to flower during the nineteenth century. These concepts were: the individual's right to freedom and the belief that hard work would ultimately culminate in success. The capitalism of Modern economy, of the western world began with the introduction of the principle of *'laissez faire'*; this ideology of economic liberation became established by this idea of individual freedom. The tremendous increase of knowledge that had developed since the Renaissance, culminated during this age, as seen in the great progress made by science and technology, that gave man reason to believe that he had the ability to discover the natural laws of all phenomena by hard work and application. Purpuseful activity and hard work came to represent a means to secure the achievement of the individual and so we find the self-made man becoming a character= istic product of that time.[7]

CAPITALISM AND ARCHITECTURE

Architecture was profoundly influenced by the advent and sub= sequent development of our modern economic structure. The Industrial Revolution received more impetus from the availability of capital that could now be used without restriction, and used for the practical application of technology in the production of goods, which could then be sold on the free market at a profit.[8] The development of industry brought new building tasks for the architect and new methods and materials to build with. The *'cost benefit'* structure of the capitalistic system created a host of new commercial buildings, built with the aim of profit or to conduct profit in mind. The nature of the client changed, a new type of client emerged: that of an investor. Coupled with the vast increase of knowledge, the advancement of technology, the increased industrialisation and capitalisation, the age of specialisation set in. The increase

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7 Norberg-Schulz,C., *Meaning in Western Architecture*, p. 354.
8 Hauser, A., *The Social History of Art*, Vol. 3, p. 52.

in food supplied due to new improved scientific agriculture and the importation of food from developing countries, brought with it the population explosion and all its accompanying building tasks.[9]

COMPETITIVENESS

Capitalism not only personified individual freedom and right to economic progress, it promoted the *'ideal'* of equal opportunity which consequently brought about vast social changes. Prior to the development of free enterprise, capital and wealth belonged to the state, church, landed nobility and banking corporations. The triumph of the French Revolution and sub= sequent democratic innovations throughout the western world, destroyed the feudal system and replaced it with a free capital= istic system that gave the right to the individual to competitive free trade.[10] This aspect of *competitiveness* on the open free market is the one aspect of capitalism to generate the most criticism. The fact that this system sifted the able and capable from less able caused an upheaval in society, by re= locating and reshuffling the middle, lower and upper classes, causing insecurity and opposition to the established order in society, particularly by those that had become superseded by others.

> *"This myth of untrammelled individual freedom was, in fact, a democratisation of the Baroque conception of the despotic Prince: now every enterprising man sought to be a despot in his own right, emotional despots like the romantic poet: practical despots like the business man."*[11]

Mumford goes further to condemn the competitiveness in the capitalistic system as *'productive avarice'* and he states that the aggressive desire to increase wealth of individuals became the only guiding principle of this system. Pointing out all the evils that he maintained resulted in a consequence of capitalism. Hauser, too, spoke against competitive individualism as follows:

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9 Frampton, K., *Modern Architecture, a Critical History*, pp. 21,22.
10 Hauser, A., *op.cit.*, Vol. 3, p. 54.
11 Mumford, L., *Culture of Cities*, p. 145.

> *"The Middle Ages, with all its relics, its corporative spirit, its particularistic forms of life, its irrational, traditional methods of production, disappears once and for all, to make room for an organization of labour based solely on expediency and calculation and a spirit of ruthless competitive individualism."*[12]

The hard reality of individual freedom must by its nature, in political, economic or any other sphere, of necessity allow a competitive spirit. The upheaval in society that ensued, and the resultant insecurity, first manifested itself in the attempts of the bourgeoisie to establish cultural leadership in the new democratic societies, that had even= tually developed after the French Revolution.[13] They revolted against and rejected the classical culture of the nobility, in their struggle to establish themselves as cultural leaders of society. To achieve this, they propagated the Romantic Movement of: individualism, sentiment, liberism, originality and the subjective creative genius and in so doing, rejected any term of historical and linear development that may be found in the traditional normative systems.

> *"The Romantic Movement becomes a war of liberation not only against academics, churches, courts, patrons, amateur, critics and masters, but against the very principle of tradition and authority."*[14]

ALIENATION OF THE INTELLECTUAL

The intelligentsia who had initially come from the bourgeoisie, and who had been the vanguard of the middle class, and who had paved the way for the French Revolution, had based its concepts of the ideal human on a free progressive personality unrestrained by convention and tradition. These ideals set the stage for the development of the Romantic Movement and the establishment of a free economy. However, after the Revolution, when free capitalism had firmly established itself, it succeeded in producing the *nouveau riche*, a new commercial upper class. The intelligentsia then, however, deserted this middle class.

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12 Hauser, A., *op.cit.*, Vol. 3, p. 53.
13 *Ibid.*, p. 143.
14 *Ibid.*

Hauser explains that this emancipation could only have been caused by the process of specialisation, a process of abstraction caused by the Industrial Revolution, which abolished relation= ships between strata of society and different professions and provinces of culture.[15] The alienation of the intellectual from an established social class and its tenuous economic position, caused it to turn in jealousy and hatred on the wealthy middle class, the class of its origin. This destructive criticism turned its own dynamic renewal to anarchy. Since about 1848, the intelligentsia thus has become an element of revolt, and has begun to champion the working class, as a result of its own social insecurity, and when the occasion so offers, plots and schemes to propagate anti-capitalistic revolution. The bitter fight against the bourgois conventions has turned into an obsession.[16]

> *"The protest of the idealists against the reduction of man to 'homo economics' was the eternal protestation of the romantic 'philosophy of life'."*[17]

THE BOHEME

Supporting the poor honest, struggling artist, against the so= called hypocrisies and injustice of the established order, the intelligentsia now formed an unbridgeable gulf between the creative genius (the artist) and ordinary men. The artist became an elite misunderstood intellectual whose isolation was not only intentional but commendable by the intelligentsia. These men were now obliged to be eccentric in dress and con= duct to establish the image of the artist as a *'boheme'*.[18] Commercial success and the image of the creative genius did not go hand in hand during the nineteenth century. The necessity of pleasing public taste had now been completely destroyed, alienation from society was complete. The creative man, to comply with his image, that had been brought into life by the elite intelligentsia and the Romantic Movement, became cut off from all linear traditional and established norms and

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15 Hauser, A., *op.cit.*, Vol. 4, pp. 125, 126.
16 *Ibid.*, pp. 127, 128.
17 *Ibid.*, p. 101.
18 *Ibid.*, pp. 178-182, 190.

lost all its support, he was dependent on himself, had to seek help within himself, an object of infinite importance and infinite interest to himself and so became subjective, in= trospective and emotional.[19]

MULTIPLE IDEOLOGIES

To be original the artist was obliged to choose arbitrarily some theory or other, and as he had cut himself off from esta= blished traditional norms, the more revolutionary and against the established order the better. He then used that theory as an ideology, declared it a universal truth for all time, twisted it into a moral obligation and his following was assured. He now avoided competition by creating an ideology alone and separate, but nevertheless obtained recognition and success. These ideologies usually are exaggerated single concepts of some aspect of man or other; for instance in politics it may be: 'Pacifism' or 'Black Power', Communism or Fascism; in art it may be Impressionism, Surrealism, Pop or Camp; in architecture Functionalism, Expressionism, Organic, Social Utopianism, Structuralism; in philosophy Nihilism, Rationalism, Empiricism or a host of other things. The pro= fusion of isolated ideologies, attitudes, or philosophies characterises all aspects of man, each being a facet or frag= ment of the whole picture of reality; there appears to be no unity or unifying concept and this illustrates the modern aspective nature of society. Each protagonist is prepared to fight for and defend his particular cause and standpoint by demonstrating, by writing copious propaganda in its defence, or even by using active revolution to subject or force others to acknowledge and accept their particular ideology.

This summary illustrates briefly how the upheaval in society, its insecurity, its rejection of the competitiveness in a free capitalistic system, became one of the reasons for the aspective nature of modern society. The unity of an integrated hierarchical ordered system of life expressed in the cultures

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19 *Ibid.*, p. 144.

of the past gave way to a pluralism of many equally valid meanings. The fragmented pluralism of ideologies, each developed alone, individually and separate without influencing each other, perfectly illustrates the aspective. There is no hierarchical value structure as related to the whole perspective of reality, as in unified systems, nor is there a linear development: these ideologies stand alone and are in constant change and flux. One may find ample evidence of the fragmentation and profusion of ideologies in architecture. Norberg-Shulz points out this situation in the following extract:

> *"The Modern Movement has been the only living architectural force since the Baroque epoch and the Modern Movement has from the very beginning tended to pluralism."*[20]

He further maintains that the whole architectural scene has exploded into a multitude of scattered parts which is usually described as *'visual chaos'*.[21] Manfredo Tafuri describes the situation in the following way:

> *"But in the period we live in, mystifications and brilliant eversions, historical and anti-historical attitudes, bitter intellect= ualisations and mild mythologies mix them= selves so inextricably in the production of art that the critic is bound to start on an extremely problematic relationship with his accepted operative practice, particularly in considering the cultural tradition in which he moves."*[22]

Tafuri continues further to illustrate this point:

> *"In our case, facing so many explosions of intricate movements, agitations, new questions, and the resulting multiform and chaotic pano= rama of architectural international culture in the seventies..."*[23]

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20 Norberg-Schulz,C., *op.cit.*, p. 424.
21 *Ibid.*, p. 390.
22 Tafuri, M., *Theories and History of Architecture*, p. 1.
23 *Ibid.*, p. 2.

Jencks in his book *Modern Movements in Architecture* explains how he had to adapt a method to describe modern architecture, which was necessary due to its pluralistic nature:

> *"Opposed to both the 'Zietgeist' theory and the single strand theory, this study of recent architecture postulates a series of discontinuous movements and treats this pluralism with different methods in different chapters."*[24]

Roger Scruton writes on aesthetics in architecture and claims one may not overlook the confused situation in architectural theory:

> *"... the confusion of architectural theory seems to me so great that no philosophical enquiry can refrain from engaging with its arguments."*[25]

The problem with this fragmentation of ideology is not so much a question of the individual validity of the fragments as many may be perfectly valid,

> *"... but rather that their partial truth can be so easily made to work as if it were entirely right",*[26]

and furthermore it is the question of their being fragments, representing only facets of the whole, and often in conflict or contradictory to each other, and mostly unrelated. This aspective situation naturally becomes reflected in the visual expressed form in architecture. Norberg-Schulz gives the explanation of the visual chaos as a purely functional one that simply arose from demands made upon it by a capitalistic society as stated in the following:

> *"The exhibition, finally represented the economic values of the new capitalistic society, and the factory and the office building, its productive forces. In general the multitude of building tasks show how the*

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24 Jencks, C., *Modern Movements in Architecture*, p. 13.
25 Scruton, R., *Aesthetics in Architecture*, p. ix.
26 Jencks, C., *Architecture 2000, Predictions and Methods*, p. 13.

> *integrated and hierarchical forms of life of the past had given way to a pluralism of equally valid meanings which interacted in various ways."*[27]

This statement is obviously a statement of prevailing circum= stances in our modern capitalistic society, but this is not the only reason why the integrated forms of the past have given way, the pluralism of ideologies, too, have contributed to this situation, but in particular one may point out how the development of separatist ideologies have caused the frag= mentation of aspects as single entities, and how architecture has been influenced by it. Giedion maintains that all he had been able to do, was to trace incompletely, in fragments, an image of our period.[28] Venturi too, in his argument to promote complexity, points out how orthodox modern architects choose which problems to solve, and that they advocate the *'exclusion of elements'*. Venturi in his particular ideology at least recognises the validity of all facets of reality, what he calls for, is an architecture of *'inclusion'*.[29]

ARCHITECTURE OF EXCLUSION

Jencks uses the term *'univalence'* for an architecture created around one (or a few) simplified values. The example he so eloquently quotes, is that of the glass and steel boxes of Mies van der Rohe, as the single most used form in modern architecture, used irrespective of its environment or appro= priateness to function:

> *"Yet in the hands of Mies and his disciples this impoverished system has become fetishised to a point where it overwhelms all other concerns."*[30]

Jencks asks the question: How could an architect justify such inarticulate buildings? He maintains the answer lies in an ideology which celebrates process, and symbolises the new technology of building materials to the exclusion of all

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27 Norberg-Schulz,C., *op.cit.*, p. 328.
28 Giedion, S., *Space, Time and Architecture*, p. 645 (1949).
29 Venturi, R., *Complexity and Contradiction in Architecture*, p. 24.
30 Jencks, C., *The Language of Post Modern Architecture*, p. 15.

other considerations; when one aspect of architecture over= rides all other considerations it becomes a fetish, and in this manner loses the code, language and meaning of building architecture. This may be illustrated in the chapel-boiler house confusion as seen at the Illinois Institute of Techno= logy campus, Chicago, designed by Mies van der Rohe. Jencks points out how the boiler house looks like a cathedral and the chapel like a boiler house.[31]

> *"So we see the factory as a classroom, the cathedral is the boiler house; the boiler house is a chapel and the President's temple is the school of architecture."*[32]

The example of Mies van der Rohe is an obviously easy one con= cerning technology. Harry Seidler, Marcel Breuer and Le Cor= busier can be seen as examples of architects using Nervi's perfect structural designs to illustrate a single expression of honesty of structure, in building. The rejection of all historically associated symbolism may be seen as an ideology, too, that excluded aspects of man, and the opposite trend of using historicism, for its own sake only. The inclusion of arbitrarily chosen ornament and symbols from a historical eclecticism, too, may become a fetish, if it uses eclecticism as a single value. Lewis Mumford strongly condemns this situation:

> *"If Modern architecture is not to continue its disintegration into a multitude of sects and mannerisms - international stylists, empiricists, brutalists, neo-romantics and what not - it must rest on some principles of order."*[33]

Mumford sees the situation that created this disintegration of ideologies as an inability to understand human values, but one of the reasons why human values are not understood, could be that the reality of all the aspects of man as a whole, in

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31 *Ibid.*, pp. 16, 17.
32 *Ibid.*, p. 17.
33 Mumford, L., Architecture as a Home for Man, essays for the *Architectural Record*, Davern, J. M. (*ed.*), p. 185.

a unified perspective concept, cannot be understood. Circum= stances have led the architect into the isolation of the aspective way of perceiving order, the whole is obscured. Mumford's final plea illustrates the point well:

> *"Yes: dare to be fully human: dare to put wisdom above knowledge and love above power, the imperfect living whole above the perfect but lifeless part."*[34]

THE "COST BENEFIT STRUCTURE" IN CAPITALISM

> *"Do not do unto others as you would wish they do unto you. Their tastes may not be the same."*
>
> George Bernard Shaw
> for Revolutionaries

The modern capitalistic system is based on the principle of *laizzes faire*, but its aim is undoubtedly profit. The ideal that all could have part of the profit, was initially believed, it was felt that all men, given the opportunity, would triumph equally. This assumption was made by excluding the factor that all living things in nature are not equal or the same, even in one species.

> *"The whole optimism of the Enlightenment was bound up with this belief in the self regulating power of economic automatic adjustment of conflicting interests."*[35]

FUNCTIONALISM

The economising action, the cost benefit, in capitalism is obvious. Economy meant efficiency and more profit, which meant more profit to reinvest. The economising action thus attempts to eliminate everything that is not useful or necessary in a practical way. Therefore we find the concept of *utilitarianism* becoming important with the growth of capitalism. The elimination of all that was not strictly necessary brought

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34 *Ibid.*, p. 209.
35 Hauser, A., *op.cit.*, Vol. 3, p. 56.

about the ready acceptance of a simplified practical archi= tecture and the idea of stressing the utility of the building, and so the idea of *functionalism* was born. This widely publicised ideology of the Modern Movement in architecture was particularly successful in combating the eclectic styles of the nineteenth century.[36] Furthermore it was in accordance with the rejection of all historical and traditional architect= ure. Consequently all ornament could be removed in the name of utility and functionalism.[37] However, what started as being a response to the cost benefit structure of profit in capitalism, ended with the application of utility as an ideology, often at variance with this principle of cost saving in practice. Brolin points out how simple lines and unadorned surfaces create the necessity of finishes, details and joints to be more perfect than if it could be hidden by decoration, ornament or standard mouldings. Therefore simplified lines become ultimately more expensive.[38]

THE POVERTY OF FUNCTIONALISM

Scruton points out that although there is a sound principle behind the theory of functionalism, the utility of a building is one of its essential properties. What he fails to see is how the slogan *form follow function* can become a reality, how it can be expressed in architectural form. He uses the Pompidou centre to consider what *'function'* a building should express, the activity of the building or the activity of the purpose of the building. To use functionalism as a theory of universal validity, surely becomes arbitrary, a large part of architectural experience becomes ignored by the functionalist doctrine.[39]

Lewis Mumford points to the problem and explains that unfor= tunately mechanical functionalism has tended to absorb expression in modern architecture. To presume that the values of utility are in every instance the only prevailing ones, have mistakenly

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36 Brolin, B. C., *Failure of Modern Architecture*, pp. 16, 17.
37 Brett, L., *Parameters and Images, Architecture in a Crowded World*, p. 41. Here we find a typical example of an ideology twisted into a moral obligation by Adolf Loos, *Vide* p.70.
38 Brolin, B. C., *op.cit.*, pp. 24-35.
39 Scruton, R., *The Aesthetics of Architecture*, pp. 40-43.

allowed the economy of means, utility and energy saving to become expressed in architecture, in the form of mechanical functionalism, to the exclusion of all the other aspects of man.[40] This explanation demonstrates once more how the aspective concept of order was applied to a single facet of capitalism and developed it into an ideology on the strength of which it claimed a universal truth, but when seen as relating to the whole, it is only a partial truth. Osborne expresses the following opinion with regard to functionalism:

> *"The habit of mind which regards works of art as artefacts made to serve a purpose, culminating in the Greek theory of art as part of a wider theory of industry or manufacture, implies a functionalist theory which recognises no fundamental distinction between fine and the useful arts. If this is combined with a conscious connection between art and beauty, it leads naturally to a functionalist theory of beauty."*[41]

Osborne stresses, however, that the Greeks never maintained that if a thing was well designed to serve the purpose for which it was intended, it would therefore be beautiful.[42] It is a modern architectural concept that suitability of an intended function is a guarantee of visual beauty. The inherent quality of usefulness or, as Vitruvius expressed it, *'commodity'* in architecture, appears to have influenced architects to acknowledge this aspect of architecture at a time when fine arts were developing the Formalistic art theory, proclaiming art as an autonomous creation. Even when one claims that suitability of purpose is a condition of anything to be beautiful, but not a guarantee, the problem still remains as to which purpose or function it must serve, all aspects or which particular aspect. Therefore one may rather agree with Scruton when he uses the more encompassing word of *appropriateness*,[43] as this allows for the incorporation of all the aspects of man and does not restrict it to a single facet only of utility of function.

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40 Mumford, L., *Architecture as a Home for Man*, pp. 154-160.
41 Osborne, H., *Aesthetics and Art Theory, an Historical Introduction*, pp. 23, 24.
42 *Ibid.*, p. 25.
43 Scruton, R., *op.cit.*, p. 33.

MONETARY VALUE

Hauser aptly states how all spheres of modern life became dominated by money:

> *"All rights, all power, all ability are suddenly expressed in terms of money. In order to be understood, everything has to be reduced to this common denominator."*[44]

But the value of money related to commodities and money to money, itself becomes unstable. The fluctuations of markets, inflation, investment and withdrawal of capital and all the related affairs of the stock exchange, create great uncertainties. Inherent in the capitalistic system is the principle of supply and demand. Markets are therefore of great importance and directly related to the consumer. Initially commodities were supplied on demand, but with the development of modern capitalism and industry, the supply of goods, services, entertainment, becomes available prior to demand, and are offered for sale. This situation demands promotion and advertisements to sell the commodities that are available to the consumer. The theory of functionalism relates to ideas of utility, cost saving and hard work.

IMAGERY AND COMMERCIALISM

> *"No puritanical movement can ever be popular. Imagery is fun..."*[45]

Therefore functionalism does not accommodate the idea of leisure, pleasure or reward in the realm of imagery, that the salesman wishes to import to the consumer, to entice him to buy. This aspect of *'cost benefit'* was totally ignored by functionalist architecture. Venturi suggests that the imagery associated with *'pleasure zone'* architecture, *'is a lightness'*, a quality of being in an oasis in a perhaps hostile context; the heightened symbolism gives an idea that the consumer assumes a new role. In Las Vegas there is the most extreme example of *'pleasure-zone'* architecture: one may imagine oneself a

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44 Hauser, A., *op.cit.*, Vol. 4, p. 8.
45 Brett, L., *Parameters and Images, Architecture in a Crowded World*, p. 121.

centurion at Caesar's Palace, or a ranger at the Frontier, or Aladdin in Arabia, instead of just an ordinary person from some ordinary city, doing some ordinary work. Therefore, growing parallel and often contrary to the idea of the pure functionalistic theory in architecture, we find architecture of imagery and lightness, symbolic of pleasure to the consumer, to encourage sales of commodities offered. This type of architecture combines all sorts of symbols and signs of allusion and comment on the past and present, of the commonplace or of old clichés.[46] All commercial buildings are related to the idea of profit, to sell or rent floor space, goods, services or pleasure, and the cost factor related to the return on the money invested. Efficiency and cost benefit in planning, advertisement value and upkeep are of prime importance in all buildings financed by private enterprise. The only buildings less influenced by this idea of profit are institutional or low cost housing financed by government bodies. But economy or means, getting the best value for your money expended, remains a principle even at this level.

NEW TYPES OF BUILDINGS

Capitalism coupled with the growth in industry and knowledge, creates a host of new building tasks never dreamt of before.[47] Jencks categorises the types of buildings the architect was expected to build: buildings for monopolies and Big Businesses, international exhibitions and world fairs, consumer temples and churches of distraction, factories and engineering feats.[48] Jencks, too, gives expression to the dualism in Modern Archi= tecture and the inherent antagonism between consumerism and functionalism in architecture. Functionalism and Heroic architecture initially dreamt of at the onset of the Modern Movement by necessity become influenced by the demands made by the cost benefit structure of a consumer society.

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46 Venturi, R. *et al.*, *Learning from Las Vegas*, p. 53.
47 Norberg-Schulz,C., *op.cit.*, p. 328.
48 Jencks, C., *Language of Post Modern Architecture*, pp. 26, 28, 31.

> *"Societies kept worshipping at their old altars, with diminishing faith, and tried to incorporate the new values at the same time. The result? Ersatz culture, a carricature of the past and future all at once, surreal fantasy dreamed up neither by the avant-garde nor tradition= alists and abhorent to both of them."*[49]

By "Ersatz"[50] architecture, Jencks means buildings which externally appear to belong to the Modern Movement of functional architecture, with all the technological amenities that ensure comfort, but the interiors are styled in some or other old-world style, Rococo Gothic, Second Empire, Roman, or any com= bination of all these styles.

> *"The formula of ancient style and modern plumbing has proved inexorably successful in our consumer society, and this Ersatz has been the major commercial challenge to modern architecture."*[51]

DUAL CODING

This type of fragmentation of architectural codes, becomes expressed once more in an eclectic language. The choice of style is wide open and arbitrary to the designer concerned with this type of consumer appeal as opposed to the strict utilitarian ideology of functionalism. The duality of ex= pression, this schizophrenia in contemporary buildings has been caused by the elite attitude held by the purist architect of the Modern Movement, by his abstract application of utility as a single value and by refusing to concede to the practical demands made by the consumer market relationship, or the supply and demand structure in capitalism, thus allowing this aspect to develop spontaneously without professional sanction from the majority of modern architects. There exists an unbridgeable gap between these two codes, the elite code and the popular code, the professional and the traditional, the modern and the vernacular expression.[52] The consumer society demanded a commercial architecture, which the purist utilitarian

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49 *Ibid.*, p. 37.
50 Lapidus, original Ersatz architect of Penta Hotel London, 1972.
51 Jencks, C., *op.cit.*, p. 12.
52 *Ibid.*, pp. 130-131.

architecture of the Modern Movement could not give, with its lack of ornament and abstract coding.

> *"We had a difficult, highbrow architecture which lacked centrality in its ambient culture, an architect's architecture which failed (even when it tried) to establish communication with society either as it is or as it ought to be."*[53]

Jencks tells us that some architects have accepted this inevitable situation as, for example, Robert Venturi and those who follow the same school of thought, expressing the following idea: that the city sprawl of the western world is the result of the process of a free capitalistic society. Therefore, this process is the consequence of the true demands and restraints of a contemporary architecture, but that the purists of Modern Architecture persist still in producing what they call the Megastructures of architecture, and therefore they contradict themselves by producing architecture not responsive to the actual demands of society:

> *"They do not recognise the image of the process city when they see it on the strip, because it is both too familiar and too different from what they have been trained to accept."*[54]

Table 2 compares the duality of the two opposing codes that have developed in architecture as expressed by Venturi, Scott Brown and Izenour in *'Learning from Las Vegas'*. The urban sprawl responded to the cost benefit in free capitalism, which included the consumer as a necessity, whereas the classical Modern Architecture as expressed in the Megastructure, expresses the ideology developed on the basis of utility and functionalism to the exclusion of other aspects.

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53 Brett, L., *op.cit.*, p. 119.
54 Venturi, R. *et al.*, *op.cit.*, p. 119.

TABLE 2 COMPARISON OF URBAN SPRAWL WITH MEGASTRUCTURE

Urban Sprawl	Megastructure
Ugly and ordinary	Heroic and original
Depends on explicit symbolism	Rejects explicit symbolism
Symbols in space	Forms in space
Image	Form
Mixed media	Pure architecture
Big signs designed by commercial artists	Little signs (and only if absolutely necessary) designed by "graphic artists"
Auto environment	Post- and pre-auto environment
Cars	Public transportation
Takes the parking lot seriously and pastiches the pedestrian	"Straight" architecture with serious but egocentric aims for the pedestrian; it irresponsibly ignores or tries to "piazzafy" the parking lot
Disneyland	Piazzas
Promoted by sales staff	Promoted by experts
Feasible and being built	Technologically feasible perhaps, but socially and economically unfeasible
Popular life-style	"Correct" life-style
Historical styles	Modern style
Uses typological models	Uses original creations
Process city	Instant city
Broadacre City	Ville Radieuse
Looks awful	Makes a nice model
Architects don't like	Architects like
20th-century communication technology	19th-century industrial vision
Social realism	Science fiction
Expedience	Technological indulgence
Expedient	Visionary
Ambiguous urban image	Traditional urban image
Vital mess	"Total Design" (and design review boards)
Building for markets	Building for Man
This year's problems	The old architectural revolution
Heterogeneous images	The image of the middle-class intelligentsia
The difficult image	The easy image
The difficult whole	The easy whole

SOURCE: Venturi, R., Scott Brown, D. and Izenour, S., *Learning from Las Vegas*, p. 118.

POST MODERN AND THE ECLECTIC FRAGMENT

The whole Movement, that acknowledges the public consumer code of commercial architecture, may be identified as the *Post Modern* Movement in architecture. Aptly named by Jencks, it implies the dual coding, it speaks a language at two levels, at one and the same time.[55] The irony of the *post*, the after of the modern, is the dilemma in meaning, and describes the situation well, the confusion that resulted in the rejecting of tradition by the Modern Movement and the arbitrary use and allusion of associated mythical meanings and cultural tradition by consumer commercial architecture, that had emerged parallel in contemporary cities. However, the acceptance of this type of architecture by the elite intellectual has given Post Modern architecture a new selfconscious dimension.

> *"Thus the Post Modern architect by name is, as my litany insists, indeliby schizophrenic, tainted with a sensibility of Modernism which he will not throw off, yet picking up eclectic fragments where he wants."*[56]

The notion of fragments becomes important, perfectly expressing the aspective perceptual method of creating order, for example, the work of Stern and Graves shows the use of fragmented motifs lifted arbitrarily from Baroque and Edwin Lutyens.[57] Their space contains the modernist idea of space extended or flowing with no edge, but containing or controlling it by a *'layering'* of planes. This is a feature seen in Welchester Residence, Armonk, New York, designed by Stern, and in Kresge College and Italian Piazza, New Orleans, of Charles Moore. The use of historical, cultural or traditional allusion becomes trans= lated into flat planes; the use of those planes are familiar in classical Modern Architecture but with Post Modernists it becomes angled planes, curved planes, punctured planes or segments of planes. Perspective and eclectic ambiguities and mystery abound throughout intellectual Post Modernism. Jencks further illustrates the aspective of time and space as follows:

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55 Jencks, C., *op.cit.*, p. 6.
56 *Ibid.*, p. 123.
57 *Ibid.*

> *"It suspends normal categories of time and space, social and rational categories which are built up in everyday architecture and behaviour, to become irrational or quite literally impossible to figure out. In the same manner Post Modernists complicate and fragment their planes with screens, non recurrent motifs, ambiguities and jokes to suspend our normal sense of duration and extent."*[58]

Fragmentation, layering and ambiguity of form abounds in the application of the self-conscious Post Modern by the intellect= ual elite architects. This type of architecture illustrates this characteristic even more vividly than the architecture of the purist Modern Movement. Each fragment of eclecticism stands alone and separate unrelated to a linear development.

THE COMMERCIAL MONUMENT

Charles Moore interprets the idea of monumentality in the following context: a monument being an object whose function is to mark a place, that this act of marking is a public act of recognition by members of society which possess it.[59] On the strength of this definition he claims that in Modern America monumental public or civic buildings that had existed in the past no longer exist in modern cities. He points to the failure of the Neo-Classical Baroque town hall of San Francisco, the Gilroy town hall, the Marin County centre of Frank Lloyd Wright and the high rise civic structure in Los Angeles. None of these places are associative of a public civic place in the way that Disneyland and other such centres are. Modern economy have provided a new place for civic activity.

> *"Thus the opulence and effort involved in the San Francisco, Gilroy and Los Angeles City Halls both seem to come to very little in the public mind, lacking as they do any activity which elicits public participation."*[60]

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58 *Ibid.*, p. 124.
59 Moore, C. and Allen, G., *Dimensions*, p. 105.
60 *Ibid.*, p. 114.

This activity now becomes evident according to Moore in Disney= land, a place which has become a whole public world, full of sequential occurrences, whose diversity, with unerring sensi= tivity, is keyed to the kind of participation which, without embarrassment, people apparently crave.[61]

> *"The skill demonstrated here in recalling with thrilling accuracy all sorts of other times and places is, of course, one which has been developing in Hollywood throughout this century."*[62]

Disneyland is directed at the imagery of the *'pleasure zones'*, in an innocent procession of discontinuous experiences, created by men who had profit in mind, which has, according to Moore, become the new public monument. The revival styles that were associated with marking public monuments of civic import= ance politically, do not apparently occur any more. These buildings have now adopted the more abstract coding of the Modern Movement when necessary.

> *"But the kind of monumentality that occurs in places when the Establishment requires a building more important than other buildings in places of special importance never occurred."*[63]

The Free State Tower in Bloemfontein's new civic building, too, points to the same phenomenon, where civic monumentality of public participation has become obscured in the coding of a modern functional office block architecture, combined with a subsidised Opera House serving the culturally aware minority. Thus it now becomes a prestige symbol, but not a public building of monumental civic participation of all society as the nature of Disneyland exhibits, as Moore pointed out. This part of activity of society has become provided with the com= mercial structure, whose nature necessitates the development

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61 *Ibid.*, p. 117.
62 *Ibid.*, p. 118.
63 *Ibid.*, p. 123.

of a sensitivity to public acceptability, a knowing of how to present a public monument at a profit. The aspective character of fragments of Disneyland allows the identification of man in a pleasure context and reflects the aspective nature of modern society. Society rejected the pure utilitarian aspective exclusive and abstract architecture of the Modern Movement, but responded to the economic aspective coding of allusion and associated ideas of Disneyland.

ADVERTISEMENTS AND SIGNS

Prior to industrialisation and high finance, capitalism was practised in a system where the demand of commodities determined production, as opposed to the supply system of today where goods are supplied and are then sold by promotion and advertise= ments. The world of advertising belongs to this realm. Billboard advertisements and commercial signs all aim to persuade the consumer to act in a manner profitable to the salesman. Therefore, the visual code must appeal to the general public, it must be clearly understood, or it could not serve its purpose. The intellectual élite architects of the pure Modern Movement decry this type of commercialisation as rather common, *'ugly and ordinary'* and wishes it did not exist.[64] Commercial signs, too, serve another purpose in the contemporary environment; while the integrated order of culture and society were expressed in a universally understood visual code, in the built environment, there was no necessity for separate sign systems. The abstract élite coding of the pure modernist architecture, rejecting the visual, associated, traditional, cultural or pragmatic symbols, demands a separate common sign coding. Man needs billboards and signs to tell him where to eat, park his car, what to buy and where. The only way he knows that certain shed-like buildings, surrounded by parking lots are supermarkets, are by the billboards out= side; similar situation to the boiler-house-chapel confusion of associated visual meanings to form, as Jencks points out; this situation necessitates signs.

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64 Venturi, R., *op.cit.*, pp. 105, 129.

THE COMMERCIAL SIGN CODE

The ordinary commercial street or "strip", found in most modern western capitalistic cities, is a kaleidoscope of signs, creating a visual chaos if the symbolic content is not under= stood.[65] The competitiveness becomes expressed in the highest, biggest, boldest or most eye-catching sign as witnessed in Las Vegas.

> *"The forms of the building are visible but remain secondary to the signs in visual impact and symbolic content."*[65]

The commercial visual code may be common but it is far from simple, in that it allows for subtle indication of differences in quality and price, elegant or casual and all the overtones necessary to clarify itself. At night the neon lights create a fantasy by negating the architecture and illuminating the sign. It is of interest to note the aspective nature of billboards and advertisements and commercial signs. Each has its own separate meaning, even if it is depicted and pre= sented in perspective. They do not relate to an ordered system, they are separate, flat planes layered in space. They are unrelated in scale or in presentation of ideas. They present an image of ideals and dreams and happenings related to cyclical time rather than linear time.

CAMP AND POP

Ray Smith writes about the aesthetic squalor of advertising in the 1950-60's in America and its collision with the arts:

> *"What was awful and offensive to the sophisticated eye was the corny garish= ness of American consumerama - the commercial art, advertising, and huckstering that gave things the wrong priority."*[67]

Artists, then, instead of rejecting it, as in the past, became determined in their hideous fascination, to make the so called artifacts of the undesigned, uncouth, philistine everyday culture better, and to do so was to make fun of it. Ray Smith

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65 *Ibid.*, p. 116.
66 *Ibid.*, p. 117.
67 Smith, R., *Supermannerism*, pp. 160, 161.

explains. He defines this movement as Camp or Pop. They take the ordinary objects found in so called common culture, use, twist and change them to arrive at a design which they believed fused high or fine art with anonymous, popular low design.

> *"At the opening of the decade there was an architectural tradition of looking at common materials for their intrinsic design merits, and using them out of context of their original intended uses."*[68]

The interest in vernacular architecture also bolstered a new vision of the ordinary in an attempt to create a continuity of development. But then these were used in architecture as arbitrary and self-conscious choices as seen in some of Venturi's architecture. They use superscale to express the commercial or vernacular motifs; as Ray Smith points out, the idea was old but the scandalising effect of using it out of context was new. *"Venturi used common things in an uncommon way."*[69] Once more exposing the self-conscious application of form,by the Post Modern architect.

> *"Finally, the process of extraction utilized the fragment, the abstract, took it out of context and blew it up to scale, changed its colour, its perspective or its weight, its texture, its materials."*[70]

Ray Smith concludes that the architects in their Camp and Pop, with the reversals of the public ordinary things in real environments, have shown that they have not yet mastered the valuable lessons from the commercial world of Disneyland. Self-conscious applications of these examples are too remote, detached, they are glazed and impersonal, an architecture that appeals to the intellect, not the emotions.[71]

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68 *Ibid.*, p. 168.
69 *Ibid.*, p. 171.
70 *Ibid.*, p. 167.
71 *Ibid.*, p. 220.

Once more, this illuminates the problems architects have in their isolation of élite cultural specialisation, and the unbridgeable gulf that exists between the common code and the educated élite visual code. Expressing the common com= mercial publicly understood visual code in a way that is unassessable to the public. Thus exposing the problems that have become evident in Modern aspective society in establishing communication. Although an awareness that the commercial realm provided a common visual code, has come about in the 1970's in architectural circles, it still remains to be seen if the intellectual adaptation of this code will be understood by the common man.

HOW THE CLIENT/ARCHITECT RELATIONSHIP CHANGED WITH THE ADVENT OF MODERN CAPITALISM

> *"The architect must seek a father for his child. If King Charles II and his advisers had not been men of taste, Sir Christopher Wren might have continued to be a man of Science, but we should have had not St. Paul's. Milton created Paradise Lost without a patron; Greenwich Hospital could not have risen without one, nor most of the great and famous buildings of the past or present. Thus architecture is pre-eminently the art in which it is not enough to breed men of genius, there must be patrons too, and today the patron is the wide public, acting through its often puzzled and inexpert elected representatives."*[72]

Architects are usually commissioned and employed by clients who need special buildings and who can afford to pay for them. Traditionally architects were thus associated with the rich and powerful, the state, church and nobility and affluent business concerns such as guilds and corporations.[73] Since the modern *'liassez-faire'* capitalistic economic system was established with the development of industrialisation, the nature of the client has changed and became the affluent

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72 William-Ellis, C. and William-Ellis, A., *The Pleasures of Architecture*, p. 206.

73 Kostof, S., The Practice of Architecture in the Ancient World: Egypt and Greece, as from *The Architect*, Kostof, S., (*ed.*), p. 3.

businessman, industrial corporations, commercial enterprises and representatives of institutions of the elected democratic political system.

THE EDUCATED PATRON CLIENT

The client patron since ancient times has always represented the most highly educated social class in society, educated in the appreciation of beauty and good taste, bound by traditions and norms, developed over long periods of time and expressive of a homogeneous culture. He was not interested in the fantasies of subjective expressionism of individuals, as the situation has been since the advent of the Romantic Movement, but concerned with the appropriateness of the purpose and the quality of the work.[74] The client was in a position to choose what he wanted, as he not only had the money, but the power to dictate his choice. The architect was the artisan designer and the medium through which the wishes of the client were fulfilled. Only by the quality of his work and by pleasing his client was he employed at all. Schäfer points out how strong the actual personal influence of the Pharaohs was upon artistic and architectural work, to such an extent that their preferences may be observed, for example, the influence of Thutmose, Amenhotpe and Ramesses, as promotors of artistic movements, enables one to speak of work done during their particular reigns in more or less the same way as we speak of the Louis XIV style.[75]

Allsopp tells of how in Greek architecture, from earliest times, more than functional efficiency was required from the architect, it was understood his was a holy art governed by strict rules of practice, a social activity guided by objective criteria.[76] Greek architects have inspired great admiration throughout Western culture for many centuries, particularly the Parthenon has been cited as the personification of perfection. Pericles, ruler of Athens during the golden age of Greece, had a dream

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74 Osborne, H., *Aesthetics and Art Theory - A Historical Introduction*, pp. 1-12.
75 Schäfer, H., *Principles of Egyptian Art*, p. 61.
76 Allsopp, B., *The Study of Architectural History*, p. 17.

of making Athens a great city in more than one sense of the word, and that the glory of Athens should be revealed in a visible form. It is to his inspiration, insight and powers of persuasion that we owe the existence of these great buildings on the Acropolis. He employed the architect Ictinus and the master of works, Callicrates, but it was Pericles who, with his driving force and unflagging support, contrived to obtain the funds from the Senate to complete these structures.[77] Anthemius from Tralles, designer of the Great Church of Con= stantinople, the Hagia Sophia (537 A.D.), was renowned as a man most learned in the skilled craft of building in the Roman Empire. Procopius, a court historian at that time, points out in his writing, the importance of the client in building, by praising the discernment of Emperor Justinian who, out of the whole world, was able to select a man so suitable for this important task.[78]

John Harvey has shown how wrong the supposition was that Bishops or clergy had designed the great medieval Cathedrals and has proved that the Master Mason and Master carpenter were the architects, designers and constructors. He points out, how= ever, that the supervising role and the important design decisions were taken by the client or his clerk of works, who at this time were men of high social and intellectual standing, as for example Geoffrey Chaucer. Architectural theory and history were largely the study of patrons, not of the designers of architecture.[79] It was a system that produced excellent sacred architecture. Harvey goes further to maintain that Medieval architecture flowered during the thirteenth and fourteenth centuries, due to the fact that barbarous chieftains had intermarried with daughters from more culturally advanced communities, thus creating a more enlightened client.[80]

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77 Bowra, C. M., *Classical Greece, Time Life Book ed. Great Ages of Man*, p. 98.
78 Mac Donald, W. L., Roman Architects, in *The Architect*, Kostof, S. (*ed.*), p. 55.
79 Harvey, A., *The Medieval Architect*; Allsopp, B., *op.cit.*, p. 33.
80 Harvey, A., *op.cit.*, pp. 13, 14.

Only since the Renaissance has the architect become an intellectual scholar. To reproduce ancient forms in building and to promote the concept of Divine Order required scholarship to establish authenticity and validity of classical architect= ural antiquities. Writing treatises became equally important to educate the patron in accepting this new and revolutionary ideology in a then Medieval culture. Alberti wrote in Latin for his intellectual peers and addressed himself to the scholar and the cultural aristocrat. To Allsopp, the success of Alberti's work, confirms the fact that architects do not themselves control the way architecture will go:

> *"From the 15th to the 18th century the patrons of architects almost invariably required the kind of architecture which rested on the foundations of Alberti's theories reinterpreted, adapted, edited many times by Palladio, Vignola, Serlio, Scamozzi and others, but still, even in the Greek revival and French academics' neo-Classicism, essentially Alberti."*[81]

CLASSICAL EDUCATION WAS REJECTED

The nobility disintegrated with the practical implications of the slogans of the French Revolution of Freedom, Equality and Brotherhood, which had established political democracies and economic freedom in the western world. This situation allowed for the advent of the *'Self made man'*.[82] The money and the power fell into the hands of the emancipated middle class, to those who had the ingenuity and ability to achieve wealth or political power. The classical education of good taste with criteria based on canons and traditional norms were rejected by the emancipated middle class intelligentsia, who then attempted to established the Romantic Movement in all fields of culture. This Movement postulates subjective criteria and the rejection of all the established traditional values and norms.[83] The newly rich were not necessarily well educated or part of the intelligentsia as Pevsner points out:

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81 Allsopp, B., *op.cit.*, p. 40.
82 Norberg-Schulz,C., *Meaning Western Architecture*, p. 355.
83 Hauser, A., *op.cit.*, Vol. 3, p. 51.

> *"Moreover, the iron master and mill owner, as a rule self-made men of no education, felt no longer bound by one particular accepted taste as the gentleman had been who was brought up to believe in the rule of taste. The new manufacturer had no manners, and he was a convinced individualist. If, for whatever reasons, he liked a style in architecture, then there was nothing to prevent him from getting his way."*[84]

Education had become freely available in western culture by the nineteenth century. Knowledge had increased many times, but the classical education of the past had become the exception to the rule. In general, specialisation in one field or another has become a necessity for man to qualify himself to earn a living in today's capitalistic industrial society. The dif= ferences that manifest themselves in different specialities, particularly between client and architect, create vastly dif= ferent value scales and tastes,[85] leading to many problems in establishing functional and other objectives in deciding on a building program by the client and architect. The new analytical scientific system postulated by the Modern Movement, of not taking anything on trust, but solving each problem by its own requirements and purpose, necessitates the establish= ment of a program.[86] But the architect may become greatly frustrated in obtaining sufficient or correct information to achieve this objective, as Banham points out, it takes uncommon measure of agreement between architect and client before funct= ional problems can be identified.[87]

LOSS OF HOMOGENEOUS CULTURAL OBJECTIVES

Prior to the French Revolution, clients and architects shared the same cultural objectives, priorities and purpose and these objectives could be established without any difficulty. The perspective hierarchical value system, based on a homogeneous cultural objective, disappeared due to the specialised fields of education, the consequence of rejecting classical education

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84 Pevsner, N., *An Outline of European Architecture*, p. 376.
85 Boyle, B. M., Architectural Practise in America 1865-1965 - Ideal and Reality, *The Architect*, Kostof, S., (*ed.*), p. 322.
86 Rapoport, A., *Human Aspects of Urban Form*, see chapter 6.
87 Banham, R., *Age of the Masters*, p. 26.

by the intelligentsia and to the Romantic Movement and the often total lack of education in cultural matters by the *'nouveau riche'*, in the new industrial and free capitalistic system. This resulted in a situation in which communication becomes very difficult. When ethnic and cultural differences are present in countries with plural societies, it becomes even more aggravated. This situation clearly demonstrates the difficulties the architect encounters with regard to his client in an aspective situation, where each holds his own and separate views, values and criteria. Banham describes this situation as follows:

> *"But where clients were committees of politicians, medical men and others not (alas!) normally open to constructive debate, such communication as took place could be relevant to everything (tax payers' money, medical hierarchies etc.) except the functions that really mattered."*[88]

The architect stands alone in our modern society, concerning architectural knowledge and taste. His client no longer shares his views, nor is he able to discriminate as to quality or good taste as in the past. The architect no longer has a compatriot in his client. This aspective situation must have a profound influence on architecture, particularly with regard to quality, not only aesthetically but from a functional aspect as well.

In ancient Egypt the separate classes in society exposed the aspective nature of their society. The gulf is seen between the lower classes and slaves and that of the priests and nobility, between the educated and wealthy and the under privileged and uneducated. But the architect, in ancient Egypt, was initiated in the holy rights and norms of architect= ure and belonged to the wealthy educated society. Imhotep was revered as a scribe, astronomer, magician and healer.[89] In learning and taste he was the compatriot of the client, as a consequence the quality of the work was consistently maintained, even if there was little growth and change.

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88 Banham, R., *op.cit.*, p. 26.
89 Kostof, S., The Practice of Architecture in the Ancient World: Egyptian and Greece in *The Architect*, Kostof, S. (*ed.*), pp. 3, 4.

A BREACH BETWEEN CLIENT AND ARCHITECT

The concept of total freedom and the Romantic Movement, propa= gating individualism and originality, further alienates the artist and so the architect from society:

> *"Art ceases to be a social activity guided by objective conventional criteria and becomes an activity of self expression and a medium through which a single individual speaks."*[90]

The artist ceases to think it necessary to please society and no longer regards it necessary to submit to the ruling taste of society, and thus we find the architect regarding the taste of his client with suspicion and holding his own taste in esteem above that of his client, a complete reversal of the situation prior to the French Revolution. Allsopp draws our attention to the fact that architecture is the art and science of building man's environment and there is inevitably a dialogue between what man wants and what architects can con= ceive, and what the client will accept and pay for, unless the architect pays for it himself.

> *"No matter how strong an ivory tower the architect may construct, the client end of the partnership is bound to be con= ditioned by the laws, customs, exigencies, economics, prejudices, follies, politics and fortunes of society in which he lives."*[91]

The complex situation arising from the modern capitalistic society in determining who is the client, as exposed by Charles Jencks (see Table 3). He shows the private architectural production (operating largely before world war one) where an architect at least knew his client personally and possibly shared his values and aesthetic code, and his way of life. The same identity exists today, on a modest scale: the "Handmade House" controlled by the inhabitant, or other small projects, but the architect remains accountable to the client.

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90 Hauser, A., *op.cit.*, Vol. 3, p. 144.
91 Allsopp, B., *op.cit.*, p. 21.

TABLE 3 A DIAGRAM OF THREE SYSTEMS OF ARCHITECTURAL PRODUCTION*

		SYSTEM 1 — PRIVATE private architect / client is user	SYSTEM 2 — PUBLIC public architect / client and users differ	SYSTEM 3 — DEVELOPER developer architect / client and users differ
1	ECONOMIC SPHERE	Mini-Capitalist (restricted money)	Welfare-State Capitalist (lacks money)	Monopoly-Capitalist (has money)
2	MOTIVATION	aesthetic ideological / inhabit use	solve problem / user's housing	make money / make money to use
3	RECENT IDEOLOGY	Too various to list	progress, efficiency, large scale, anti-history, Brutalism, etc.	Same as System 2 plus pragmatic
4	RELATION TO PLACE	local architect / client user in place	remote architects / users move to place	remote and changing draughtsmen / absent clients
5	CLIENT'S RELATION TO ARCHITECT	**Expert Friend** same partners small team	**Anonymous Doctor** changing designers large team	**Hired Servant** doesn't know designers or users
6	SIZE OF PROJECTS	"small"	"some large"	"too big"
7	SIZE/TYPE OF ARCHITECT'S OFFICE	small partnership	large centralised	large centralised
8	METHOD OF DESIGN	slow, responsive, innovative, expensive	impersonal, anonymous, conservative, low cost	quick, cheap, and proven formulae
9	ACCOUNTABILITY	to client-user	to local council and bureaucracy	to stockholders, developers and board
10	TYPES OF BUILDING	houses, museums, universities, etc.	housing and infrastructure	shopping centres, hotels, offices, factories, etc.
11	STYLE	multiple	impersonal safe, contemporary, vandal-proofed	pragmatic cliché and bombastic

*Clearly the influences are multiple and tied into the economic sphere.

SOURCE: Jencks, C., *Post Modern Architecture*, p. 12.

The second and third columns in Table 3 refer to how a great deal of architecture is produced today. It is either produced for a public welfare agency, which lacks enough funds to carry out the socialistic intentions of the architects, or is funded by gigantic investments for correspondingly gigantic buildings. This type of production is simply to solve some particular problem and to make money. The architect is the 'hired servant' and knows neither the client nor the users.
The whole enterprise is too big as Jencks points out, and impersonal, and he illustrates this situation with Illich's Law of Diminishing returns as a parallel to architecture and that it could be formulated as follows:

> *"... for any building type there is an upper limit to the number of people who can be served before the quality of the environment falls."*[92]

The large architectural offices necessary for the production of these buildings allow the whole concern to become too remote from the client and user. The question of whose taste and values determine the character, aesthetics and function of the building or building complex becomes increas= ingly difficult to determine.

> *"In short, buildings today are nasty, brutal and too big because they are produced for profit by absentee developers, for absentee landlords, for absent users whose taste is assumed as clichéd."*[93]

Goodman points out how great the problems are that have been created in the industrial city, with its slums and poor people, and that this situation cannot be solved by a method of impersonal planning, where the client is the state and the users the poor and underprivileged. This applies to both capitalistic and socialistic governments, in capitalism many people control the capital, in socialism only one as the representative of the state controls it.

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92 Jencks. C., *Language of Post Modern Architecture*, p. 12.
93 *Ibid.*, p. 14.

CHAPTER 4

INDUSTRIALISATION

A great new epoch has begun.
There exists a new Spirit.
Industry, overwhelming us like a flood
which rolls on towards its destined ends,
has furnished us with new tools adapted
to this epoch, animated by the new Spirit.

Le Corbusier

Industrialisation marks and illustrates one facet of the vast changes that have taken place in civilisation during the last 200 years, creating new social and cultural values and mani= festing the advances made in technical know-how. One can hardly consider the Modern Movement in architecture without associating it with the development of industry and technology; the new materials industry supplied, the accompanying new structural techniques, the building services and facilities technology provided, the architectural concepts allied to science; function= alism and the machine in architectural aesthetics, that emerged in response to the new industrial age: all these become irre= vocably associated with Modern Architecture.

"The idea of solving problems of building on an innovative technical level has been the hallmark of 20th century architecture. It goes with the dream of the infinite universal space."[1]

THE INDUSTRIAL REVOLUTION

The development and growth of industrialisation cannot be marked by a specific date, that allows one to state exactly when the Industrial Revolution commenced.[2] Hauser calls our attention to the fact that the Industrial Revolution does not signify a new beginning, that it is the continuation of a development which had already started at the end of the Middle Ages. The divorce of capital and labour, the organisation of goods

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1 Huxtable, A. L., The Troubled State of Modern Architecture, *Architectural Design*, Vol. 51, No. 1-2, 1981, p. 15.
2 Cowan, H. J., *The Masterbuilders*, p. 237.

production had been known for centuries. Specialisation had already become evident in the Baroque period as, for example, the efficient businesslike organisation in the production of art in the Studio of Ruebens.[3] However, the mechanisation of industry, the large scale production with vast capital sums involved, saw that by the end of the eighteenth century, a new world had emerged as a consequence.

Industry on a large scale needs an organisation of labour, capital investments, raw materials and suitable markets. Large sums of money had become available by the development of a wealthy middle class at the end of the fifteenth century, and wealth that had formerly been invested in landed property slowly became transformed into commercial and banking capital. It was, however, from 1760 that industrial undertakings have become a proper investment, and a new type of capitalist, the industrial leader, emerged.[4]

The geographic discoveries, the new and improved sea routes, led to colonisation of vast tracts of land in the new world, and a tremendous increase in trade, which, particularly in Britain, resulted in an accumulation of wealth that became available for investment in industry and preconditioned a situation for the dramatic growth of industrialisation.[5] The establishment of colonies provided not only valuable markets for goods, it provided raw materials needed for production. The utilisation of new land, and the scientific methods applied to agriculture and the subsequent increase in food production, marked a sudden drop in mortality, due to the improved standards of nutrition and medical techniques, thus giving rise to an unprecedented growth of the population.[6]

POPULATION EXPLOSION

The enormous population explosion occurred in all developing countries throughout the world; in England the population in= creased from nine million in 1800, to forty five million in 1930,

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3 Hauser, A., *A Social History of Art*, Vol. 2, p. 206.
4 *Ibid.*, Vol. 3, pp. 52-55.
5 *Ibid.*, Vol. 3, p. 52.
6 Frampton, K., *Modern Architecture, a Critical History*, p. 21.

in France from twenty seven million to sixty six million, in the United States from five million to one hundred and thirty three million.[7] A global movement of people was the result of two types of initiatives, the desire for land and property by a land-hungry people from an overcrowded Europe and the other dislocation of people occurred as a result of the growth of industrialisation and its need of a large labour force. Thus an enormous increase in population took place in the indus= trial centres.[8] The increased population in turn created new markets, which old production methods could not satisfy, thus demanding the necessity of mechanisation and technical improve= ments, and stimulating a mass of new inventions.[9] The market place, availability of raw materials and labour see the develop= ment of certain centres into sprawling industrial complexes. Many writers have written anti-industrial social criticisms and Utopian architectural tracts that have contrasted unfavour= ably conditions of the industrial towns of the nineteenth century with Medieval villages.[10] Cowan, however, suggests that country life during the Middle Ages was less attractive than in the new industrial cities,[11] that filth, ignorance and poverty had kept the mortality rate very high during the Middle Ages. The populat= ion explosion in itself may be seen to manifest Cowan's theory, the fact testifies for itself, more people survived.

URBAN GROWTH

The number of urban centres multiplied and expanded and extra= ordinary changes in scale took place in the mass of building, vast structures were constructed for industrial and commercial use, and an enormous amount of new housing was needed; the demand for new buildings exceeded anything known before. Growth was phenomenal.

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7 Frampton, K., *op.cit.*, pp. 20-21; Mumford, L., *Culture of Cities*, p. 147.

8 Cowan, H. J., *op.cit.*, p. 238; Manchester had 10 000 people in 1581, by 1881 it had grown to 517 649 people.

9 Hauser, A., *op.cit.*, Vol. 3, p. 52; Giedion, S., *Space, Time and Architecture*, pp. 99, 100 (1949).

10 Frampton, K., *op.cit.*, pp. 42-48. Hauser, A., *op.cit.*, Vol. 4, pp. 103-108. Mostly philantropic tracts and treatise to promote Utopian Socialistic ideologies. Ruskin, Pugin, Morris, Carlyle, etc. Revealing the concepts of historicism prevalent at that time.

11 Cowan, H. J., *op.cit.*, p. 239.

> *"Man built in haste, and had hardly time to repent these mistakes before they tore down their original structure and built again."*[12]

People flocked to the cities to be part of the new economic prosperity and fill the newly formed jobs created by industry. The newcomers could not wait for new quarters, they crowded into whatever was available, and vast urban makeshift resulted, makeshift piled on makeshift. These *shanty town* makeshift slums still plague developing countries to this day. The volatile growth led to the transformation of old neighbourhoods into slums, and also to jerry-built houses and tenements, whose main purpose was to provide rudimentary shelter within walking distance of the industrial centre.[13]

The scramble for raw materials and sources of energy resulted in the mining industry developing, exploiting and polluting the countryside and creating further disruptive social conditions.[14] The situation deteriorated as far as humanitarian principles were involved. Toffler declares Karl Marx incorrect in attributing these evils to the capitalistic economic structure, and states that these problems are associative with industry and plague all industrial countries irrespective of their economic structure.[15]

THE DEVELOPMENT OF A SOCIAL CONSCIENCE

The principles of individual freedom, the break with tradition and custom, the disrupted social structure all lent themselves to a state of exploitation of land resources and labour.

> *"The same disintegration took place in every other part of the city's culture: it is effectively symbolized in the new architectural forms."*[16]

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12 Mumford, L., *op.cit.*, p. 148.
13 Frampton, K., *op.cit.*, p. 21.
14 Mumford, L., *op.cit.*, pp. 151, 152. Mumford explains in detail the evils of mining and the subsequent development of the most benighted cities on earth.
15 Toffler, A., *The Third Wave*, p. 55.
16 Mumford, L., *op.cit.*, p. 198.

Mumford explains the eclectic styles of the nineteenth century as a junkheap of discarded styles, cut off from the cultures that had given them rational meaning,[17] thus agreeing with Tafuri's claim that the object in architecture had been devalued when it lost its place in a linear development and that this resulted in the disruption of its symbolic content.[18]

ARCHITECTS INVOLVED WITH SOCIAL ASPIRATIONS

The appalling conditions in the slums of the industrial cities stimulated a social conscience, a call to ethical principles to alleviate these conditions. Benevolent societies and local authorities became aware and responded to this situation around 1864 and began attempting to upgrade these conditions.[19] Housing for the worker had always been solved by the worker himself in the past history of civilisation,[20] now for the first time archi= tects become involved. In 1844 working-class flats were designed by Henry Roberts in London,[21] and consequently architecture became intertwined with the social aspirations of the poor and the whole question of morality and ethics became important in architecture.

Nobody knew how to design and plan for the new industrial age, for the working class and the new complex structures of industry. The Romantic ideals had destroyed established criteria,[22] the scientific discoveries allowed only for the factual and mechanical aspects to be handled; consequently recourse was taken to what people *ought* to like on moral grounds.[23] The strength of an ethical criterion is its claims on an authority superior to the aesthetic or any other considerations as it applies to all pur= poses and actions what so ever.[24] Geoffrey Scott maintains:

> *"Its motive was to assert the human reference of art against the empty cult of abstract technique."*[25]

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17 *Ibid.*, p. 201.
18 *Vide*, pp. 30-32.
19 Frampton, K., *op.cit.*, pp. 21, 22.
20 Furneaux Jordan, R., *A Concise History of Western Architecture*, p. 335.
21 Frampton, K., *op.cit.*, p. 21.
22 Hauser, A., *op.cit.*, Vol. 3, pp. 143-144.
23 Brolin, B. C., *The Failure of Modern Architecture*, pp. 15, 61.
24 Scott, G., *The Architecture of Humanism*, p. 127.

UTOPIAN IDEALS

The architectural and town-planning theories flowered into a series of Utopian ideologies. Frampton describes the historical sequence and development of these planning theories; Hausmann's renewal projects of Paris (1853); Daniel Burnham's gridded city of a new Chicago (1909) and Howard's Garden City (1898).[26] Utopian concepts have become embodied in architectural theory since the Neo-Gothic revival and the Arts and Crafts Movement,[27] which eventually culminated in the theories propagated by the Functionalists and the Bauhaus, by Gropius, Le Corbusier and other propagators of the Modern Movement in architecture:

> *"It is the question of building which is at the root of social unrest of today; architecture or revolution."*[28]

This method was used in promoting the Modern Movement against tremendous opposition,[29] and was primarily bound with this question of finding a solution to the unfavourable social con= ditions created by industrialism. Norberg-Schulz sums up:

> *"Here we touch upon the very core of the Functionalists' creed: that the social and human problems of our time are to a large extent the products of a false and deficient environment, and that man's conditions may be improved through a new architecture which reconquers true and fundamental meanings."*[30]

THE FAILURE OF RIGID UTOPIANISM

These ideals were part of the optimism about the perfectability of man and his social and political systems that prevailed at the beginning of this century.[31] C.I.A.M. (Congress Internationaux d'Architecture Moderne) was founded in 1928 to search for principles to deal with the practical tasks, such as social dwelling and the urban environment. The subsequent failure of these rigid Utopian ideologies to solve urban conditions in

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25 *Ibid.*, p. 128.
26 Frampton, K., *op.cit.*, p. 23-28; Brolin, B. C., *op.cit.*, pp. 60, 61.
27 *Ibid.*, pp. 42-50. *Vide* Romantic Legacy, pp. 183, 184.
28 Le Corbusier, *Towards a New Architecture*, p. 250.
29 Brolin, B. C., *op.cit.*, p. 15.
30 Norberg-Schulz, C., *The Meaning of Western Architecture*, p. 359.
31 Huxtable, A. L., The Troubled State of Modern Architecture, *Architectural Design*, Vol. 51, No.1-2, 1981, p. 10.

industrial cities is demonstrated by the failure and demolition of the Pruitt Igoe housing scheme constructed on the most pro= gressive ideals of C.I.A.M. and award winning design of the American Institute of Architects (1951).[32] Goodman, too, argues against, what he terms, the arrogant repressive programs initiated by planners, architects, politicians and corporate leaders, in the cause of solving what has been termed the *urban crisis*. He, however, concedes that these disastrous results may not have been intended:[33]

> *"In our own lifetime modern architecture has been hailed and it has failed - as an instrument of social salvation."*[34]

Architects sought to *modernise* man, to bring him into *harmony* with the times.[35] Brolin maintains that although the ideal of creating a new architecture based on moral and technical scientific principles, to bring the advantages of the industrial age to the people, was an admirable goal, the way the proponents of the Modern Movement attempted it, however, has been destruct= ive.[36] They inflicted their elitist intellectual moral attitude on the *'deprived' 'suffering'* working class.

> *"The idealism of the functionalists too often demands that they provide what ought to be needed, even at the expense of what is actually needed."*[37]

THE ESCAPISM OF UTOPIANISM

The Utopian idealism that so strongly influenced Modern Architects, is in part a legacy from the Romantic Movement, that had yearned for irresponsibility and a free life, free from suffering and frustration. In the escape into Utopia, the fairy tale, the mysterious haven, is the dream of freeing life from the tormenting dialectic of all historical being and its indissoluble contra= dictions; it thus offers a wish fulfilment of dreams and

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32 Jencks, C., *The Language of Post Modern Architecture*, p. 9.
33 Goodman, R., *After the Planners*, p. 51.
34 Huxtable, A. L., *op.cit.*, p. 9.
35 Brolin, B. C., *op.cit.*, p. 61.
36 *Ibid.*
37 Broadbent, G., Design in Architecture, p. 83, quoted from *The International Style*, Hitchcock and Johnson (1932), p. 8.

fantasies. However, this severance from earlier ties and values forces the individual to refer back to himself, and his subjective intellectual feeling, which then becomes of prime importance.[38] Taking into account the legacy from the Romantic Movement and the prevailing social conditions associated with the Industrial Revolution, it becomes clear how Utopian idealism became such an important factor in the ideals of the Modern Move= ment in architecture. However, this escape into the unreal and realm of dreams, was implemented by the individual architect's own subjective concepts of Utopia, which did not necessarily correspond to that which was necessary to solve the problems of the real world; and proves that the critics were justified in condemning the methods of the implementation of Utopianism.[39] Utopian dreams are unrelated to the linear time concept, they belong to the timelessness of mythical dreams, fairy tales and cyclical time.

> *"Mythical time is like a snake biting its own tail, it stands for zero and for endlessness, but is itself neither of them; rather it is the everpresent form of time which, because it has no fixed point in the present and is therefore not linked to the world of today, knows no yesterday or tomorrow - except within its own circular form."*[40]

Utopian ideals, with a subjective mythical character, allow no hierarchy of objective values and no sense of perspective and reflect a way of escaping the order that had prevailed in the classical sense.[41] Giedion points out how the demand of moral= ity too awakens a new approach to architecture, by rejecting historical precedent and responding in a manner consistent with the awakening of the technological industrial age, by adopting utilitarian functionalism: *'fitness of purpose'*.[42] Architects, thus believing a new approach to architecture was necessary to solve the problems of the age, turned to rational scientific methods.

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38 Hauser, A., *op.cit.*, Vol. 3, pp. 163, 165, 167.
39 Scully, V., *American Architecture and Urbanism*, pp. 254-255.
40 Schäfer, H., *Principles of Egyptian Art*, (*ed.*) Brunner-Traut, E., p. 440.
41 Hauser, A., *op.cit.*, Vol. 3, pp. 143, 157.
42 Giedion, S., *op.cit.*, pp. 25, 26.

> *"In fact in the 'age of science' those having access to symptomatic knowledge are often regarded with awe and assumed to have a monopoly on moral authority, if not on truth itself."*[43]

Giedion maintains that the ideals of Le Corbusier in *Towards a New Architecture*, were shared by a whole generation of architects, they believed that the new tasks of the age could only be solved in a similar way to that of mechanised industry, by strictly rational scientific methods.[44]

THE INFLUENCE OF SCIENCE

The application of science to industry marked a great change in civilisation. Although the principles and theories in science that form the basis of our technological age have long been known: Cowan tells us of the use of steampower by the ancient Greeks.[45] But the demand for its application to industry only became evident in the eighteenth century. Philosophers and scientists in the spirit of the Enlightenment became willing to look at problems from first principles[46] producing great changes in all branches of science, industry, mechanics and structure. Invention became stimulated throughout all social strata, every= body was inventing, by men of all nations and walks of life and this led to the industrialisation of almost every human pursuit.[47] The tremendous success achieved by scientific inventions permeated society and changed the attitudes of people.

DEVELOPMENT OF INDUSTRY

The great change manifested by industrialisation in the order of civilisation became marked with the inventive idea of supplanting human and animal muscle power with mechanised power and machine tools. Arkwright used water power to drive the spinning wheel in 1769,[48] but it was the application of steam power to machines that eventually led to the use of fossil fuels as a new source of

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43 Jencks, C., *Architecture 2000*, p. 105.
44 Brolin, B. C., *op.cit.*, p. 51; Giedion, S., *op.cit.*, p. 152 (1949
45 Cowan, H. J., *op.cit.*, pp. 16-20.
46 *Ibid.*, p. 221.
47 Giedion, S., *op.cit.*, pp. 99-100 (1949).
48 Cowan, H. J., *op.cit.*, p. 241; Frampton, K., *op.cit.*, p. 29.

energy,[49] which formed the basis upon which the whole Industrial Revolution relied.[50] On this technological base a host of industries have been created. It brought machines together in interconnected systems under one roof to create the factory, and ultimately, the assembly line within the factory. From these factories poured millions of identical products, shirts, shoes, automobiles, watches, soap, appliances, anything and everything man needed, wanted or did not want. The door to mass production had been opened.[51]

Iron and steel production became a major factor in industry to provide all manner of products, machines, material for railway lines, bridges and eventually new building methods.[52] Following the lead of iron bridge construction,[53] millowners initiated the use of iron trusses and columns in industrial buildings in order to gain large open spaces and to perfect a more fireproof system.[54] The pioneer work in iron and steel structure, stimulated the use of iron in a large variety of new buildings, railway stations, exhibition halls, libraries and factories. The frame structure allowed for non load bearing infill panels to be used, which brought about the use of large areas of glass in these new designs — Palm House Kew Gardens 1845; Lime Street Station, Liverpool 1849; Paxton's Crystal Palace, London 1851; Dutert and Contamin's Gallerie des Machines, Paris 1889.[55] Concurrent with this development the use of reinforced concrete emerged, undergoing intensive development between 1870 and 1900,[56] and thus necessitating engineering principles and related theory to both iron and concrete structures.[57] This growth of

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49 Toffler, A., *op.cit.*, pp. 39, 40.
50 Thomas Newcomen Steam Engine 1712; James Watt's adaptations 1789, Cowan H. J., *op.cit.*, p. 29.
51 Toffler, A., *op.cit.*, pp. 39, 40.
52 Giedion, S., *op.cit.*, Part III; Frampton, K., *op.cit.*, Chapter 3.
53 First iron bridge by Derby 1779, Coalbrookdale; Frampton, K., *op.cit.*, p. 29.
54 Frampton, K., *op.cit.*, St. Katherins dock 1829, Telford; William Strutt, Mill Building 1792, Cowan, H. J., *op.cit.*, p. 248.
55 Frampton, K., *op.cit.*, pp. 32, 33.
56 Frampton, K., *op.cit.*, pp. 36, 37; Giedion, S., *op.cit.*, p. 256. Smeaton's Eddystone Lighthouse 1774, Hennebique's monolithic reinforced concrete joints 1892, Perret's Rue Franklin 1903.
57 Cowan, H. J., *op.cit.*, p. 22. By the end of the nineteenth century it was possible to determine most statistically determined structure.

specialisation sees the separation of engineering from the architectural profession into a specialised field of its own. The foundation of the Ecole Polytechnique in Paris 1795 served to emphasise the growing division.[58]

THE INFLUENCE OF TECHNOLOGY

However, from about 1850 people became directly influenced by industrialisation, sanitation, processed goods, mechanical transportation, progress which has continued unabated to the present day, that sees the most sophisticated plug in appliances, computers and space voyages. Previously communications and travel had been limited to the speed of horses; today they now have progressed beyond the speed of sound with air travel, and communication at the speed of light.[59] Scientific know= ledge and technical know-how increased out of all proportion to other spheres of culture, and, its success assured, it provided the basis of all sources of infallible information and the gateway to universal progress.[60]

> *"The fundamental conceptions of the time were themselves dictated by the scientific invest= igations for which it become distinguished. Every activity of life, and even the philosophy of life itself, was interpreted by the method which, in one particular field, had proved so fruitful."*[61]

Schuurman declares that people believed that man and the world could come to self-fulfilment and consummation through the use of modern technology, and by the nineteenth century, when the material fruits of the alliance between science and technology began to mature, this belief in progress extended its influence to include the masses.[62] People believed that technological know-how, assisted by economic efficiency, would bring cultural progress.[63] Impelled by this tradition science flowered during the Industrial Revolution and produced a miraculous inventive

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58 Frampton, K., *op.cit.*, p. 30.
59 Sagan, C., *The Cosmos Connection*. Sagan maintains technical progress must reach some level of saturation, as, similary for example, communications have been limited to the speed of light.
60 Schuurman, E., *Reflections on the Technological Society*, p. 32.
61 Scott, G., *op.cit.*, p. 94.
62 Schuurman, E., *op.cit.*, p. 11.
63 *Ibid.*, p. 21.

technology, which reflected the real spirit of the age, which had developed in the realm of thinking and research and resulted in a vast accumulation of knowledge. But the realm of the non-measurable, the non-scientific, lagged behind, and cultural traditions were slow to develop.[64]

> *"Feelings could not keep up with the swift advances made in science."*[65]

THE RIFT BETWEEN SCIENCE AND CULTURE

The specialisation of knowledge in all departments of human activities manifested itself in the industrial age, and was particularly accentuated in separating aspects of a scientific nature from aspects of a cultural nature. The realms of art and feeling, as opposed to fact and science, became divided. Giedion speaks against this:

> *"Scarcely anybody can escape the unbalanced development which it encourages. The split personality, the unevenly adjusted man, is symptomatic of our age."*[66]

The unity with science and the other departments of human activity no longer exists, as it existed in the Greek and Renaissance culture. Leibniz used the philosophy pertaining to a unified holistic universe, a cosmological starting point to discover Calculus, from the general to the particular,[67] whereas modern science dismantled the components into fragments, then attempted to synthesise, a total reversal of the previous situation. Therefore it:

> *"... placed an extremely heavy emphasis on our ability to dismantle problems into com= ponents; it rewarded us less often for the ability to put the pieces back together again. Most people are culturally more skilled as analysts than synthesists. This is one of the reasons why our images of the future are so fragmentary, haphazard - and wrong."*[68]

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64 Giedion, S., *op.cit.*, pp. 13, 14 (1949).
65 *Ibid.*, p. 14.
66 *Ibid.*
67 *Ibid.*, p. 16.
68 Toffler, A., *op.cit.*, p. 141.

ANALYTICAL SCIENTIFIC METHODS USED IN ARCHITECTURE

Giedion and Toffler expose the aspective nature of the contem= porary situation. The subsequent problems that ensued as a consequence of using science to solve the acute problems of the industrial society are related to the fragmentary, divided and thus aspective method employed. Modern science specialises and analyses into compartments which develop an aspective method of creating order, as opposed to the holistic perceptual method used in the perspective, by seeing the particular as part of the whole. The Modern Movement in architecture eventually aligned itself unrestrainedly to scientific methods and the idea of *'starting from the first principles'* to which the teachings of the Bauhaus testify.[69]

> *"There was to be a new order, a new visual language to which scientific experimentation would discover the 'objective' facts on which would be based 'rational' design."*[70]

Jencks points out that there has not been a *modern* architect who had not appealed to what he terms a *universal law* or a *scientific truth* at some time in his career.[71] Steadman calls our attention to the misconceptions in modern design research which were:

> *"... the prevalent notions that to apply scientific or rational thinking in design must in some sense involve making the design process itself 'scientific'."*[72]

SCIENTIFIC MEASURES

Not only was architectural design subjected to scientific methods, but all the aspects of man became measured by scientific methods, architects believed that it was necessary to use scientific data in decision making, which resulted in attempts made to subject the immeasurable aspects of man to scientific analysis:

> *"Every aspect of things which eluded mechanical explanation became disregarded, or was even forced by violence into mechanical terms."*[73]

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69 Frampton, K., *op.cit.*, Chapter 14, pp. 123-129.
70 Boyle, B. M., Architectural Practices in America 1865-1965, in Kostof, S. (*ed.*), *The Architect*, p. 322.
71 Jencks, C., *Architecture 2000*, p. 105.
72 Steadman, P., *The Evolution of Designs*, p. 2.
73 Scott, G., *op.cit.*, p. 94.

Scientific data becomes all powerful as universal truths and scientific analysis the approved method of designing. Jencks explains, however, that this scientific method becomes an attitude of *"divide and conquer"*, and how architectural problems are identified and broken down to the smallest elements or parameters, cleansed of semantic weighting or cultural over= tones, to free the designer of preconceptual bias. But a problem then arises when all the parts are to be synthesised into a design, which he maintains then becomes a very difficult feat to accomplish, namely that of translating each subset into a physical model.

Scientific data, separated into each subset, does not give an automatic hierarchy of values, nor does this fragmentation deter= mine the proper arrangement or recipe, nor can the hierarchical order automatically be established. Only a sense of perceptual perspective of order can bring the subsets together again to a meaningful physical model.

Modern science is aspective when it divides and categorises each part into more specialised fragments, using data to establish universal truths as if for all time. Each field of science is separate and unrelated to each other, or the whole, and no hierarchy of order can exist as each belongs to itself only, and in this way cannot be integrated into a whole system.

THE INTELLECTUAL DEVELOPMENT

Rationalism had suffered a severe setback with the advent of Romanticism. However, as a principle of science and practical affairs it soon recovered from this onslaught, although the realm of art still carries this legacy,[75] and architecture with its artistic alliance does not escape its influence. The dualism and division between the theoretical rationalism of science and the irrational sentiment of subjective feelings, developed in art, clearly manifest themselves. Giedion expresses this

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74 Jencks, C., *op.cit.*, p. 105.
75 Hauser, A., *op.cit.*, Vol. 3, p. 155. Vide chapter 5.

situation as the schism between thinking and feeling which is revealed in our age,[76] thus exposing once more another facet of the aspective situation, that modern man finds himself in.

Hauser points out the lead technical achievements had gained over intellectual development, subsequent to the Industrial Revolution. Technical development spurred on by prosperity, became so rapid that the human mind had no time to keep pace with it. Moreover the scientific methods of starting from first principles eliminated the independent masters in crafts= manship, that could have contributed to the transformation of the traditional crafts methods and knowledge to mechanical pro= duction. Therefore a disturbance in the balance in the relation= ships between the technical and intellectual development arose,[77] and illustrates the break in an ordered linear sequence, between craft-produced objects and machine production. The formation of the Bauhaus ideology illustrates the need felt of unifying art and technology.[78] However, the initial craft-orientated attitude of the Bauhaus eventually became supplanted by a purely scientifically orientated ideology and of starting from first principles.[79]

DISCONTINUOUS DEVELOPMENT

The break in the development of craftsmanship is illustrated by Steadman. He recalls that certain features in wagon building, used traditionally, had no known explanation, the craftsman knew them to be necessary, but knew not the origin or reason why they were necessary.[80] When knowledge of this nature was lost, a new design vocabulary had to be found all over again by science, by calculation and experiment, which naturally affected the quality of processed goods. An equivalent example may be found in the history of shipbuilding; in the design of the new steel-constructed steam ships; the traditional forms of old timber vessels were disregarded. As a result, early experiments in the 1820s led to disaster, ships overturned on launching and had to be balanced by concrete ballast.[81]

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76 Giedion, S., *Space, Time and Architecture*, pp. 12,13. (1947).
77 Hauser, A., *op.cit.*, Vol. 4, p. 110.
78 Gropius, W., *The New Architecture and the Bauhaus*, p. 51.
79 Wingler, H. M., *op.cit.*, p. xviii to p. 10.
80 Steadman, P., *The Evolution of Design*, p. 234.
81 *Ibid.*, p. 235.

THE LACK OF DISCRIMINATING TASTE

Initially scant attention was paid to the quality of machine production and industrial design from an aesthetic and intel= lectual point of view. Anything seemed possible with machines, and imitation of craft design from previous ages amazed the buying public. The imitation and lack of quality occurred not only due to machine mass production, but also to the *nouveau riche* of the new consumer society who clamoured for more and more elaborate ornament, as a tangible sign of wealth, as a status symbol, and in order to support their bid to supplant the nobility of the previous age.[82] But these people lacked the discriminating taste and classical education of the nobility.

> *"Uncouth people, rich speculators who had made a lucky gamble, ruthless factory organizers who pushed their way to the top, ambitious men, avarice men, the Napoleons of the factory, and counting house; people innocent of humane self control as a diapered baby, pushed themselves into the established ranks."*[83]

Pevsner, too, explains how the new manufacturers had no manners, were selfmade men of no education, did not feel themselves bound by rule or taste, as the gentleman had been, were convinced in= dividualists; they built in a style they felt pleased them. The Eclecticism and associated symbolism of Romanticism, with its nostalgic fantasies, gave access to the varieties of style and associated values, these were the only values accessible to the new ruling class, and Eclecticism flourished.[84] The Bourgeois hid their hybrid origins in a fashionable society, each attempting to outshine each other in ostentatious, in= discriminate, pompous and extravagant taste. Aesthetic appre= ciation belonged to the educated intellectual connoisseur, who did not possess the money to create big enough markets for goods of a high quality.[85] The new tendencies that had started manifesting themselves in the artistic realm, had broken with

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82 Brolin, B. C., *op.cit.*, p. 20.
83 Mumford, L., *op.cit.*, p.
84 Pevsner, N., *An Outline of European Architecture*, p. 376.
85 Hauser, A., *op.cit.*, Vol. 4, pp. 51-58.

public taste which had never before met with so little approval. Therefore the tendencies in taste and production, which dominated on account of the monetary success and those developed in artistic fields, referred to two different sets of fact.[86] The elite intellectual taste and the common public taste allowed two visual aesthetic codes to develop.[87]

THE CHANGED SOCIAL STRUCTURE

The structure of society had disintegrated and not only the wealthy lacked taste, all levels of society became alienated from cultural activity. The brakes of tradition and custom had been lifted and no new objective standards, criteria or order of beauty had been established in their place.[88]

> *"Life loses its stability and continuity: all forms of institution are dislocated and always shifting."*[89]

The worker became alienated from production in the industrial system, and only took part in a fragment of the whole process, a small cog in the production method. Work had shifted from the fields, craftsman workshop and the home to the factory and the office; the integrated life disappeared. Working place, living place and leisure places were separated and zoned, life was lived in fragments, each part alone and separate from the rest.

> *"The individual goes under before the march of production; he is devoured by it."*[90]

Toffler points out how the Industrial Revolution, the collapse of institutions of cultural value, broke down the structure and meaning in the lives of men.

> *"Individuals need life structure. A life lacking in comprehensible structure is an aimless wreck. The absence of structure breeds breakdown."*[91]

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86 *Ibid.*, Vol. 4, p. 159.
87 Vide Chapter 5, pp. 154-159; Chapter 3, pp. 92-94.
88 Mumford, L., *op.cit.*, p. 155.
89 Hauser, A., *op.cit.*, Vol. 3, p. 53.
90 Giedion, S., *op.cit.*, p. 99.
91 Toffler, A., *The Third Wave*, p. 383.

THE DEVELOPMENT OF THE CULT

The sudden shift of social ground marks contemporary life, the smudging of roles, status distinctions and lines of authority are always changing. Above all the break of the thought system, the *'indust reality'* has shattered the world image and the system of order most people had possessed previously, conditions appear, to them, as chaotic and anarchistic. To the loss of order must be thus added the loss of meaning.[92] To this situation Toffler ascribes the appearance of the *cult*. In order to provide a structure in a chaotic world, it becomes necessary to find a fixed point of reference, and to provide this necessity the *cult* is offered as a substitute for order in today's structureless, chaotic situation in society. The exact pinned-down context of the cult message is almost incidental:

> *"Its power lies in providing synthesis, in offering an alternative to the fragmented blip culture around us."*[93]

It relieves the stress of knowledge and confusion, and in this manner appears to provide an order. The meaning of the cult, however, is tragically enough, seldom the truth of reality. These cults or ideologies, are most often, only a partial truth or cover only a facet of man's existence, but market the idea that they are the sole truth. This single-minded version of reality passes as the whole truth, and anyone on the outside of accepting it as such, is deemed either misinformed or satanic.[94] In this manner Toffler aptly describes the aspective nature of the modern industrial society; how the overload of knowledge, the too many free choices in a structureless society of shifting values have created a meaninglessness in the life of man. His only way to cope with the situation is to take recourse to the aspective means of structuring order, to separate the equally valid meanings and group them into segments, each aspect separately and apart. In the modern idiom it is to use the *cult* or ideology to give meaning and order to the confusion, each separate and apart and only a portion of reality when seen in the whole perspective. Toffler and Jencks acknowledge the

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92 *Ibid.*, p. 384.
93 *Ibid.*, p. 386.
94 *Ibid.*

necessity of synthesis to provide a better society, but synthesis is only meaningful and only offers a solution when a hierarchy of values is determined in the ordered whole, which is inherent in a perspectively structured world. The aspective only sees a part close up and finds difficulty in achieving synthesis, and groups segments loosely without a hierarchy of values. Modern and Contemporary Architecture does not escape this frag= mentation of cults and ideologies. The order and consensus that the Modern Architecture seemed ready to establish in the thirties is still far to seek, proclaims Mumford, the need for continuity is denied, each separate project is treated as an essay of abstract design without affiliation to other work of the period, or even to the architect's own previous designs, and architecture is, in fact, in a profoundly unsatisfactory state, almost as chaotic and irrational as the political situation of the modern world.[95]

MECHANICAL STRUCTURALISM AS A BASIS OF MODERN FORM

The pre-occupation with mechanical structure as an aesthetic consideration being one of the ideologies that inspired and influenced the Modern Movement, merits particular attention, due to the powerful influence which it exercised upon the execution and aesthetic direction of modern and contemporary architecture. Beneath the belief in modern architecture lay certain pre-occupations about the nature of civilisation, the most central of which was the belief in mechanical progress.

> *"We have been living in a fool's paradise, so far as we took for granted that mechan= ical progress would solve all the problems of human existence by introducing man into the brave new, simplified, automatic world of the machine."*[96]

THE NEW SYMBOLISM

The turn-about from Romantic Historicism and symbolism inherent in Eclectic architecture, to the apparent simplicity of the Modern Movement, appears at first to represent two opposite

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95 Mumford, L., *Architecture as a Home for Man*, p. 180.
96 *Ibid.*, p. 181.

poles of thought. But once it becomes clear that the symbolism of Eclecticism was simply substituted for the symbolism of mechanical progress, the turn about appears easily explained. The growing conviction that science paves the way to human progress thus inevitably came to provide architecture with a new symbolism, and the ideological and moral justification that accompanied the switch to this new symbolism, merely clouds the salient fact that it reveals the same attitude found in Eclect= icism, both of which manifests the same Romantic spirit of association to an arbitrary symbolism of form, an aspect of Historicism.

> *"Not poetry but science, not sentiment but calculation, is now the misguiding influence."*[97]

Mumford is of the opinion that Modern Architecture crystallised the moment people realised (or thought) that the other modes of symbolism could no longer speak to modern man, and that on the contrary the machine had something special to say to him. But, unfortunately in the act of realising such an ideal, the mechan= ical function tended to absorb *expression*, or in the more fanatical minds, to do away with the need of it. Therefore, when the Modern Movement renounced the use of so-called antiquated symbols, they thought they could renounce every manner of symbolism. Unfortunately the actual effect of stripping architecture down to building a structure and a function, was to make the machine itself a symbol of veneration as if it was the sole meaning of life.[98]

AN ART FOR ART'S SAKE

Scott recognises the influence that materialistic and mechanical sciences had on philosophy and aesthetics, but points out how, on the other hand, art tended to claim for itself a separate consideration; especially in an age of specialisation the field of scientific study tended to separatism, thus the realm of art withdrew into a sphere of autonomy and demanded exemption from any values but its own. *Art for art's sake* became a matter

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97 Scott, G., *op.cit.*, p. 94.
98 Mumford, L., *op.cit.*, pp. 154, 157.

typical of the scientific age. Each of the arts retreated to discover its own essence. Architecture, founded as it is on construction, discovered in this aspect a field in which purely scientific description would be satisfied, which could easily be converted into ideals of the engineer.[99]

STRUCTURALISM

The influence of scientific thought, reinforced the Romantic ideals, gave Medieval Architecture superior prestige, due to the Medieval pre-occupation with problems of construction, as seen in the great Medieval Cathedrals.

> *"Thus the Gothic, remote, fanciful and mysterious was at the same time exact calculated, and mechanical, the triumph of science no less the incarnation of romance."*[100]

The Renaissance architects regarded structural considerations subservient to aesthetics, they did not consider it necessary to *express* the structural properties of a building as being more important than aesthetic considerations. Therefore, Rationalism, developing concurrently with the Romantic Movement, too, rejected Renaissance architecture, and attempted to claim the essence of architecture from Classical Greek. Laugier (1753) was rational in this sense, and sought to apply Cartesian or an equivalent method to the design of architecture; he believed that essentially architecture consisted of the beam, column and pedimented roof, which he found in the Greek Doric.[101]

Both in the Greek and Gothic, every detail confesses a construct= ive purpose, thus by regarding, *'architecture is construction'*, as valid, the allusion to either of these styles would satisfy, thus paving the way for the eventual discarding of historical allusion, by replacing it with the mechanical symbolism of the scientific rationalistic principles of construction, motivated on the grounds of moral authority, a legacy of Romanticism.

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99 *Ibid.*, pp. 95, 96.
100 *Ibid.*, p. 97.
101 Broadbent, G., *Design in Architecture*, p. 73.

Labrouste, who had studied at the Ecole de Beaux-Arts, further developed structural rationalism by using exposed iron struct= ure[102] in the Biblioteque Nationale (1860-8). The Romantic principles of structural integrity were developed in the Arts and Crafts Movement, Art Nouveau and Jugendstil producing architectures based on the naturalism and structuralism of the Romantic Spirit, and so we find architects such as Guimard, Horta, Macintosh, Gaudi, Olbrich and others. However, Viollet-le-Duc provided more than just a moral argument, and attempted to work out a body of principles; he proferred rationalism as its method and Gothic as the model.[103] He gave not only models but a method which would theoretically free architecture from Eclectic irrelevancies of Historicism. Thus he served as an inspiration to the *avant-garde* at the end of the nineteenth century.[104]

> *"In architecture there are two necessary ways of being true. It must be true according to the programme and true according to the methods of construction. To be true according to the programme is to fulfil exactly and simply the conditions imposed by need; to be true according to the methods of construction, is to employ the materials according to their qualities ... purely artistic questions of symmetry and apparant form are only secondary con= ditions in the presence of our dominant principles."*[105]

THE ULTIMATE TRIUMPH OF STRUCTURALISM

Structural emphasis found expression in all the divergent architectures of the nineteenth century, conferring an urgency and importance to it, so that its principles thus ultimately triumphed and found true expression in the Modern Movement. Behrens, Gropius and Meyer,[106] who initiated the new factory design, using the new materials with the accent on structuralism.

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102 Frampton, K., *op.cit.*, pp. 18, 19. The Neo Classical Movement may be divided into the Romantic Neo Classical School of Schinkel and the Structural Classicism of Labrouste.

103 Aillagon, J. J., Violet-le-Duc and the Role of the Architect, *Architectural Design*, Vol. 19, p. 29.

104 Frampton, K., *op.cit.*, p. 64.

105 *Ibid.*, p. 64 as from Violet-le-Duc, E., *Entretiens sur L'architecture 1863-72.*

106 Behrens, A. E. G., *Factory 1907*; Gropius and Mayer, *Fagus Factory 1910*; Pevsner, N., *Sources of Modern Architecture*, pp. 176-177.

Mies van der Rohe, Broadbent points out, became an extreme example of rational design. He succeeded in building a Laugier-like architecture of columns and beams, eliminating the pedimented roof, avoiding even the walls by filling the spaces with glass panels. Farnsworth House (1950), Crown Hall (1955)[107] Honesty of construction dominates Modern Architecture as seen in the work done by Le Corbusier, Marcel Breuer, Frank Lloyd Wright, Harry Seidler, Oscar Niemeyer and a host of other designers. Banham points out that one of the common properties of all modern architecture is that it took advantage of the new constructional methods, materials and techniques that developed in the industrial age.[108]

FALLACY OF STRUCTURALISM

Geoffrey Scott argues against what he calls the fallacy of mechanical structuralism; that it had been taken for granted that structural integrity and structural vividness were one and the same thing. That structure should appear beautiful if it was scientifically correct may not necessarily be true. The scientific truth of structure does not automatically provide pleasing architecture.[109] This may be demonstrated by comparing the Golden Gate bridge and the Bay bridge in San Francisco, the Golden Gate far excels in delight and beauty.

> *"The art of architecture studies not structure in itself, but the effect of structure on the human spirit."*[110]

The excitement of the new materials and structural possibilities emerging from the development of technology in the industrial age, inspired architects to create beautiful original structures, as particularly demonstrated by Luigi Nervi in collaboration with architects such as Harry Seidler, and Marcel Breuer, and others. One may not deny the value of these achievements. Nevertheless, Scott aptly expresses the problems of using

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107 Broadbent, G., *op.cit.*, p. 73.
108 Banham, R., *Age of the Masters*, p. 40.
109 Scott, G., *op.cit.*, p. 97.
110 *Ibid.*, p. 120.

rational technological structuralism as an all-prevailing or sole value in achieving aesthetic excellence in architecture, should human values not be taken into account. Thus he appeals for the incorporation of a wider range of values. Although structure aims at *firmness*, architecture is only achieved should the structure at the same time provide *delight*.

> *"Structure, then, is on the one hand, the technique by which the art of architecture is made possible; and, on the other hand, is part of its artistic content. But in the first case it is subject to mechanical laws purely, in the second to psychological laws. This double function, or double significance of structure is the cause of our confusion."*[111]

Mumford sums up the situation when he proclaims that if structure does not delight the eye and inform the mind, no technical audacity can save it from being meaningless.[112] However, the aspective attitude does not necessarily appreciate this situation, as he sees each facet separately and independently and, as Bloomer and Moore point out, a fundamental distinction is evident between an attitude that treats architecture as an applied science and one which treats it as a more holistic art.[113] The distinction lies in the aspectively structured mind as opposed to the per= spectively structured mind, a distinction that allows for the inclusion of all the values and aspects of man to be applied to architecture, as opposed to only one. Furthermore, it becomes clear that this essential property in architecture does not suffice to define the whole nature of architecture. It is aspective to claim construction, a single value, as the only criterion of architecture.

Since the Romantic Movement, the artistic realm has been dominated by the individual's claim to freedom of expression, thus making it subjective by nature. Subjective aesthetic appreciation implies that no rules of aesthetic judgement may be publicly and

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111 Scott, G., *op.cit.*, p. 119.
112 Mumford, L., *op.cit.*, p. 154.
113 Bloomer, K. C. and Moore, C. W., *Body Memory and Architecture*, p. 21.

objectively discovered. But if there should be no rules of aesthetic judgement, there can be no rules for aesthetics in building, and so no architectural norms of evaluation, besides those of function and stability; which thus exposes the aspective nature of modern architecture with its accent on functionalism and structuralism.

TECHNOLOGY AND MODERN ARCHITECTURE

> *"... the indiscriminate worship of technology and the machine, expressed itself not only in an uncritical belief in mass production and the economics of scale, but also in the naïve belief that technology could provide the architect with any material, shape, or climate he wanted."*
>
> Mac Ewen

There is no doubt that industrialisation and the new technology played a major role in creating Modern Architecture, not only in providing new materials, which consequently allowed the creation of new and daring structures, but it also provided a host of services unheard of prior to our age. The enthusiastic support given to technological innovations by the Modernists, with regard to these services, had the result that the cost of these services is often higher than the cost of the structure itself.[114]

> *"Technology, which was assigned a key role in Modern Architecture, can solve almost any problem if one is prepared to pay the cost and to disregard the consequences."*[115]

THE IMPORTANCE OF TECHNOLOGY AND MODERN ARCHITECTURE

To the Modern architect technological innovation was an important aspect to be exploited in the implementation of the new visual aesthetic experience, as well as a means of providing greater comfort and efficiency in buildings. Technology was a means of controlling nature, and a means of freeing the designers from the age old restrictions and parameters of climate,

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114 Cowan, H. J., *Science and Building*, p. 19.
115 Mac Ewen, *Crisis in Architecture*, p. 19.

structural limitations and topography; these factors thus became of little importance and were disregarded by the Modern Movement. Le Corbusier, of necessity, conceded to sun control after initial failure, which was the result of overheating by excessive sun penetration. He invented the idea of sun screens, as an integral part of the building. These are still known by the French name 'brisé soleil'. However, as Cowan points out, these screens have not always fulfilled their purpose.[116]

Air-conditioning had developed from early investigations to improve and control adverse conditions in factories, mines and ships.[117] Once internal climatic control became a reality and a feasible proposition, architects seized upon this solution as a means of freeing architectural expression from the constraints of climatic conditions, and paid scant attention to the principles of thermal properties of building materials. Lifts and elevators freed the architect from the constraints of height, allowing the feasibility of unheard of highrise structures. Electricity allowed artificial control of lighting and a host of other technological services in building, similarly freeing the designer from the necessity of daylight lighting and other constraints.

LIGHTWEIGHT STRUCTURES

Furthermore, tremendous advances in decreasing the weight of structures have been made since the turn of the century,[118] which coupled with the use of glass as infill-panels, achieved a further emphasis on the lightness of the structural frame in accordance with the new experience:

> *"Our fresh technical resources have furthered the disintegration of solid masses of masonary into slender piers, with consequent far-reaching economies in bulk, space, weight, and haulage."*[119]

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116 Cowan, H. J., *op.cit.*, pp. 227 and 228.
117 *Ibid.*, pp. 221, 242. In Los Angeles, First Air Conditioner in a building, 1928.
118 *Ibid.*, p. 220.
119 Gropius, W., *The New Architecture and the Bauhaus*, p. 25.

GLASS

The popularity of using large areas of glass has been evident ever since the Crystal Palace was acclaimed a marvel of industrial construction and as such much admired, not only for its innovative structural quality, but for the ingenious use of glass.[120] Glass attracted many designers of the Modern Movement. Its use facilitated the execution of the new spatial concepts, and accentuated the honesty of structure and by emphasising its light= ness. Glass became an important feature of the Modern Movement and has remained so to this day, developing from the Fagus Factory (1911) and the Bauhaus Buildings (1926) of Walter Gropius; the Turbinenfabrik (1908) of Peter Behrens, Johnson Wax Co. Building, Wisconsin (1949) of Frank Lloyd Wright, up to our present day architecture of the Willis Faber Offices (1975) and Portman's Bonadventure Hotel, Los Angeles, and so on. But it was Mies van der Rohe who was the master exponent of glass and steel, whose slogan of "less is more" was mainly responsible for the popular= isation of all glass structures so prominently displayed in Chicago and New York.

POOR THERMAL QUALITIES

The poor thermal qualities of the modern structural materials, the lightweight infill-panel, the large areas of glass, made building services a vital factor to assist in controlling the internal environment. Many contemporary buildings would be obsolete without technological assistance. Prof. Cowan points to some spectacular errors made in creating thermal environment by the modernists, as a result of disregarding these factors in favour of the new aesthetic. Le Corbusier (1933), built the Salvation Army Hostel, Cité de Refuge. It was pleasant in the winter, but a disaster in summer. Owing to the large expanse of glass, sunshades had to be erected and windows replaced, and refitted with opening sections. Farnsworth House was built by Mies van der Rohe, but the client, Dr. Elizabeth Farnsworth, described it as unfit for human habitation and started legal proceedings against him.[121]

Brolin, too, elucidates the problems encountered by Modern Architecture in Sanaa, Yemen, with regard to thermal insulation, weathering and ventilation as opposed to the advantages evinced

120 Cowan, H. J., *op.cit.*, p. 218.
121 *Ibid.*, p. 225.

by traditional structures.[122] The "green house" effect, created by using large areas of unprotected glass or glass curtain walls, and the high energy costs involved to rectify this situation, still did not deter Modern architects from using this type of *'visual continuity'* in their architecture.[123] Buildings gobble up more than a third of the energy used in the United States.[124]

> *"There is some truth in the claim that function and technology play a part in style decisions, but it begs the question to stop there. We should realize that the blandness of Modern Architecture is far less a product of function or technical necessity than it is of arbitrary choice."*[125]

So often the failures of Modern Architecture are blamed on the technological aspect associated with it. However, technology merely responded to the demands made on it, to cost and profit, which both the public welfare sector and the private sector made upon it. The manner in which technology was employed in build= ings was the result of aspective thinking. Demands were made on technology to solve problems created by modern design ideals, as for example the use of large areas of glass. However, these problems were often solved at high cost, or by creating a new problem in some other way.

This exposed the inability of designers to appreciate the situation and the consequences of their actions as a whole, the solution to one problem creating a new problem in another sphere, and so forth. Mac Ewen points out how tower and slab blocks were designed without knowledge of their influence on the micro climates they would create; he calls them *'technological dinosaurs'*. The fuel and energy required to maintain their internal climate and vertical circulation has become prohibitively expensive, and the pollution they discharge unacceptable.[126] Furthermore, although such buildings may solve spatial problems in expensive

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122 Brolin, B. C., *The Failure of Modern Architecture*, pp. 104-109.
123 Cowan, H. J., *op.cit.*, p. 229.
124 Gore, R., Conservation, can we live better on less?, Special edition of the *National Geographic*, Feb. 1981, p. 36.
125 Brolin, B. C., *op.cit.*, p. 44.
126 Mac Ewen, *op.cit.*, p. 22.

city zones, yet they create tremendous traffic congestion. The flat roof, a symbol of Modern Architecture, still persists to this day and remains a half-solved technical problem but this has proved no deterrent to its use.[127] An integrated approach to design problems cannot exist with such aspective thinking.

Furthermore, Modern Architecture professes to be practical and functional, but denies its very basic ideals when it is prepared to sacrifice standards of practicality of thermal requirements and so on, for a visual experience. This dichotomy, too, reveals its aspective nature, by considering each facet in isolation and its inability of finding an integrated means of dealing with the design problem.

It must be noted, however, that in the decade of the seventies a new awareness manifested itself with regard to energy saving. The pressure created by the oil crisis and high energy costs, has made architects more aware of the necessity of energy saving, and caused them to start looking anew at vernacular architecture in search of past solutions.

This tendency has brought with it a new awareness of cultural associations and meanings to forms, and has sparked off the Post-Modern movement. However, this new awareness cannot con= tribute to improving the situation, unless such an awareness may be integrated into the whole, in a proper hierarchy of values as found in perspective thinking.

MACHINE AESTHETIC

Although one may argue with Huxtable's statement, that the acceptance of the Modern Movement came about as a result of the combination of technology and economics, that these factors managed to do that lessons in taste and morality could not do.[129] But that the machine profoundly influenced Modern

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127 *Ibid.*, p. 20.
128 Gore, R., *op.cit.*, pp. 43, 44.
129 Huxtable, A. L., *op.cit.*, p. 9.

Architecture, there may be no doubt. Machines held a magical appeal for the mind and eye in an age that worshipped perpetual progress; minds were stunned by the feats and ingenuity con= trived by machines. People were captivated by the delicacy, grace and precision of their geometric beauty,[130] as for example, the Eiffel Tower, Maillart's bridges, Paxton's Crystal Palace, Garnier's Exhibition Hall, the new Railway Stations and so on. The Modern Movement hero worshipped the engineer, his word was a law, until fairly recently, because he was thought to be dealing with scientific truths.[131]

> *"Working by calculation, engineers employ geometrical forms, satisfying our eyes by their geometry and our understanding by their mathematics; their work is on the direct line of good art."*[132]

In addition, machines epitomised the essence of efficiency and economy. Modern Capitalism and Industrialism had emphasised the importance of solving purely functional problems economically, and had demonstrated the success of the functional ideal in the progress made by machines.

> *"Functionalism has been based on the opposed principle, namely the reduction of all expression to utility or to the process of fabrication."*[133]

Machines symbolised functionalism for the Modern architect, the idea of uncluttered form, the efficiency of production, and as a result, the aesthetic qualities of the machine and engineering feats became desirable. The Machine - like associations to functionalism were connected to objects and forms that resembled Machines, whether these objects were functional or not.[134] Both Le Corbusier and Frank Lloyd Wright expressed an interest in Machine forms.

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130 Brolin, B. C., *op.cit.*, pp. 48, 49.
131 Mac Ewan, *op.cit.*, p. 21.
132 Le Corbusier, *Towards a New Architecture*, p. 26.
133 Frampton, K., *Modern Architecture, a Critical History*, p. 10.
134 Brolin, B. C., *op.cit.*, p. 33.

> *"A new sense of beauty seen in the Machine-age, characteristic of direct simplicity of expression, is awakening in art to create a new world, or better said, to create a world a new."*[135]

Le Corbusier equally stressed the value of machines and engi= neering structures to Modern Architecture:

> *"The airplane is the product of close selection.*
>
> *The lesson of the airplane lies in the logic which governed the statement of the problem and its realization.*
>
> *The problem of the house has not been stated.*
>
> *Nevertheless there does exist a standard for the dwelling house.*
>
> *Machinery contains in itself the factor of economy, which makes for selection.*
>
> *The house is a machine for living in."*[136]

THE MACHINE PERFORMS A SINGLE TASK

The salient fact which was not considered by the Modern architects was, that the Machine had a sole purpose to perform, a *'single task'*. These architects, however, assumed that the successes of the Machine could simply be transposed into architecture, by the same rational methods, and that the same principles and practical values, that were valid for machines would be valid for architecture.[137] By this decisive step, they alleged that the whole essence of architecture, as traditionally accepted, was no longer true. They rejected all traditional and historical values, meanings, criteria, parameters by assuming that architect= ure performed a *'single task'* similar to the machine. The con= cept that architecture performed a *'single task'* is aspective thinking, the very idea of aligning architecture with a machine destroys the holistic approach to architecture, when it is seen in the Hegelian sense, that it is the product of a culture, the time and development of man at a given moment, his philosophy and religion, and of all the facets of man.

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135 Wright, F. L., *The Future of Architecture*, p.197.
136 Le Corbusier, *op.cit.*, p. 10.
137 Brolin, B. C., *op.cit.*, p. 48.

THE ALLUSION IS FOUND IN THE MECHANICAL WORLD

Modernists discarded all cultural and symbolic associations to form,ornament, to every impractical addition, by ruthlessly scrutinising every aspect, even beauty, rationally, and if no scientific or functional justification for it is found, discarded it. Pevsner points out that an appreciation of the machine and its possibilities in itself was not new, and that it could be found here and there in all countries and in all the decades of the nineteenth century, but that it ultimately took the Modernist, to use it as a new visual aesthetic.[138] Prior to the Modern Movement we may find that the new materials of industrialisation were used in the classical manner, as for example, iron in Victorian architecture, giving to these new forms a unique place in the linear historical development of form, albeit from classical heritage. The Modern Movement with its functional machine aesthetic, was unable to appreciate such a unique development, it had discovered a new allusion, as Sant 'Elia's *Messaggio'* illustrates:

> *"In the same way as the ancients took inspiration for their art from the elements of nature, we - materially and spiritually artificial - must take inspiration from elements of the brand new mechanical world we have created."*[139]

By identifying itself with an architecture that models itself on a technological reality, the Modern Movement revealed its own rejection of a historical continuity of art, as a concept related to old values.[140]

> *"Obviously, an object without historic value lives only in the present. And the present, with its contingent and transient laws, completely dominates its life cycle: the rapid consumability of the object is built-in from the very first stage of planning."*[141]

Images of the future conceived by Archigram, *Control and choice* (1967), *'Instant city'* (1969) by Peter Cook, *'Plug in City'*, (1964) by Don Herron, *'Walking city'* (1963) and the *'un house'*

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138 Pevsner, N., *Sources of Modern Architecture and Design*, p. 170.
139 Sant Elia's Messaggio as from Tafuri, M., *Theories and History of Architecture*, pp. 32, 33.
140 Tafuri, M., *op.cit.*, pp. 41 and 43.
141 *Ibid.*, p. 40.

of Reyner Banham;[142] all bear witness to the extremes machine aesthetic ideals could go to, in the imagination of men and the total lack of understanding by these idealists in providing for all the aspects of man. This sort of aspective thinking disregards the social content, the artistic content, the cultural content and the financial content, but to name but a few of the aspects impoverished by the acceptance of a total machine aesthetic:

> *"We today know that the machine represents only a fragment of the human spirit."*[143]

To use one facet of architecture as an all-encompassing ideology, makes the finished object incomplete, fails to do justice to other human values, and reflects the limited approach of aspective thinking.

SPECIALISATION

Specialisation is a particular characteristic of contemporary society. Several factors contributed to the demand for more and more specialisation in all fields of study as well as for greater specialised technical and professional competence. The overload of knowledge evident since the Enlightenment, has made it impossible for one person to absorb all the available knowledge, consequently specialisation has become an imperative to the advancement and extention of knowledge and competence. Furthermore, the dualism in philosophical thinking which had become marked since the advent of Romanticism, has brought about different philosophical bases for particular aspects related to culture, as well as for different fields of study, thus en= couraging the trend to specialisation. Industrialisation further contributed to this situation, as the factory demanded a new type of working system conditioned by mechanical methods and requiring a strict division of labour; as a consequence of which, the worker had to become a specialist of necessity. Large corporations and industrial undertakings all require a

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142 Jencks, C., *Architecture 2000*, pp. 96, 94, 59.
143 Mumford, L., *Architecture as a Home for Men*, p. 154.

corporative division of labour. Thus the modern industrial structure demanded that man should become a trained specialist in one field of endeavour in order to make a living. In this manner the general classical education of the past was no longer thought of as a practical necessity.

> *"Industrialization, as we have seen, broke society into thousands of interlocking parts ... It broke jobs into fragments, it broke families into smaller units."*[144]

THE PROBLEMS RELATED TO SPECIALISATION

Buckminster-Fuller makes us aware of a particular phenomenon in the education of specialists. He maintains that society calls out the brightest students, persuades them to obtain higher degrees of qualifications in a particular field of special= isation. However, these men eventually find themselves isolated in their own special field of study, and discover how little any other human being could possibly know of what is going on in their respectively unique area of specialisation. Furthermore, they find themselves unable to communicate effectively with one another regarding their respective specialisations, and in this manner prove themselves unable to integrate their findings com= prehensively to the advantage of society.[145] Therefore society found they needed integrators to organise these special fields of study and of competence into a comprehensive working orga= nisation, either in commercial, industrial or research under= takings. But the only ones left to become the managerial inte= grators, were the *'dull'* ones. So, when it comes to wide-scale undertakings, theoretically society leaves the organisation and decision-making to the very dullest, left over from the edu= cational system's selective process of culling. Buckminster-Fuller blames this dilemma for the continuing and increasing development of world crises.[146]

Contemporary culture reveals philosophical attitudes different in many respects from the culture that had existed prior to our own. The Renaissance and the Baroque age regarded existence

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144 Toffler, A., *The Third Wave*, p. 75.
145 Buckminster-Fuller, R., *Utopia or Oblivion*, p. 49.
146 *Ibid.*, pp. 49, 50.

from a cosmological point of view, from the general to the particular, a perspective approach; whereas today, our culture, rooted as it is in specialisation, takes its point of departure from a large number of specialised disciplines and goes on from there, an aspective view; and, as Giedion points out, a very difficult, more precarious condition and less certain to end in success.[147] However, in the circumstances, it is the route that present realities force us to take.

> *"This situation is a curious one: our culture is like an orchestra where the instruments lie ready tuned but where every musician is cut off from his fellows by a sound proof wall."*[148]

Giedion very aptly demonstrates the consequences of the aspective situation, of the inability of specialists to communicate. Each specialisation has adapted its own philosophical base, developed its own methods, established its own principles, from which it moves to determine its own special sphere of knowledge.

> *"The 19th century, with its worship of special= ization tolled the knell of the amateur. Specialization became a religion, each branch with its own founder, master and attendant authorities, its schools and institutions as temples and its qualifications conferring priestly unction. History, geography, sociology and psychology attained these heights. The exact sciences did likewise."*[149]

SEPARATISM IN AREAS OF KNOWLEDGE

In this manner the chief areas of knowledge and disciplines, with their particular methods, detached themselves from the whole body of knowledge in the way it had been known prior to contemporary culture. Today physics and history are so far removed from each other that the physicist does not even grant any validity or truth, in the way he knows it, to the disciplines of history.[150] Theology finds principles in the pure sciences unacceptable. Art and science find themselves delegated ~~into~~

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147 Giedion, S., *Space, Time and Architecture*, p. 17, 1949.
148 *Ibid.*, p. 17.
149 Aillagon, J. J., Violet-le-Duc and the Role of the Architect, *Architectural Design*, Vol. 50, No. 3-4, 1980, p. 26.
150 Popper, C., *Poverty of Historicism*.

into opposite poles of thought. This situation thus creates a truly aspective man. Should he speak of physics he would be concerned with a particular set of philosophical principles, but if he should consider art or history, each of these would require a totally different set of values, principles and standards completely isolated from each other. These sudden switches, from one philosophical standpoint to another, as related to different specialisations, are part of contemporary life and most people are unaware of the paradox involved or the implications thereof. The aspective man is so used to fragmentation, he regards it as a perfectly normal situation, and the aspective implication and limitations thereof, he is unable to appreciate. He does not perceive the whole of reality; he is only aware of the unrelated fragments of reality, an incom= plete world.

> *"Some unpredictable event may change this situation, and all these isolated, drifting efforts may coalesce at once into an inner sureness. In this moment our period will master reality."*[151]

One may appreciate, however, that should the perspective method of structuring order, which implies the holistic principle and a hierarchy of values, be reinstated and regarded as vital, and become once more the basis of perceptual order; then and only then, may the *'unpredictable event'*, that Giedion longs for, be realised and in that moment our period will master reality.

THE UNIVERSAL MAN

Totally opposed to the specialised man of the twentieth century, is the universal man, the product of the Renaissance perspectively orientated culture. Count Castiglione expresses this ideal in his *'Courtier'*. The courtier, he says, should be agreeable in his manner, graceful, a good causeur, and a good dancer, yet strong and fit, well versed in the pursuits of chivalry, riding, fencing and jousting. At the same time he should read poetry and history, be acquainted with Plato and Aristotle, understand all the arts, and practise music and drawing.[152]

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151 Giedion, S., *op.cit.*, p. 651, 1947.
152 Pevsner, N., *An Outline of European Architecture*, p. 183.

Leonardo da Vinci probably came closest to living up to this ideal, he was painter, architect, engineer and musician and one of the most ingenious scientists of his time and, above all, enchanting in his personal ways.[153] Similarly the ancient classical Greek society gave equal respect to mental and physical prowess, because they believed that the ideal life could only be spent in the pursuit of excellence in all things, a perspective view of man as a whole being. Therefore the com= plete man would be equally able as an athlete, philosopher, judge, poet, diplomat and soldier. Sophocles was not only a general, but at different times imperial treasurer, diplomat, priest and playwright.[154] Plato, in the *'Laws'* stresses the contrast between education which enhances the whole personality and a mere training in professional skill. Hauser expresses the following as characteristic of the Greek attitude:

> *"Its kalokagathia, its all round training of bodily and spiritual powers, its contempt for all narrowing specialization and one-sides expertise, proclaim an essentially unprofessional ideal."*[155]

THE PENALTIES OF SPECIALISATION

The penalties of specialisation are not hard to find; problems occur related to communication and integration, synthesis, organisation, determining hierarchical value structure as related to the whole problem, the unbalanced man, to mention but a few of the penalties.

> *"If one is not to sacrifice the ability to produce a general survey one must have some knowledge of as many areas as possible, apart from being a master in one's own restricted field; not to do so is to remain ignorant of everything except one's own speciality, and in some circumstances to be generally uncouth."*[156]

Although education has become freely available in most contemporary Western societies, it is of a vastly different nature to that practised by society prior to our era. The sooner the individual

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153 *Ibid.*, p. 183.
154 Bowra, C. M., Classical Greece, from the *Great Ages of Man*, p. 27.
155 Hauser, A., *op.cit.*, Vol. 1, p. 104.
156 Schäfer, H., *op.cit.*, p. 80 quoted from Burckhardt, I., *Weltgeschichtliche.*

is able to become competent in one special field to fill a particular useful place in society, and to become economically viable, the better. Education that develops and enhances the whole personality is deemed of lesser importance. For this reason highly educated men could be found extremely ignorant in fields outside their own speciality. Discrimination and good taste, is thus not a general quality related to modern education, but belongs only to those who specialise in such an activity. Consequently critics must be found within a particular field of specialisation. But as Deasy points out, the specialised professions are bound together, forming a sub-society, speaking a common language, which is only partly understood by outsiders. Although this sense of unity and isolation has certain benefits to the professional man, it poses certain problems for the client and those outside such a profession.[157] William J. Good, a sociologist at Columbia University, maintains that a profession as such is able to exercise a substantial degree of control over the selection of its members, by establishing standards of education and performance and by influencing legislation relating to this profession. It is largely a result of this unity that professions as a whole, enjoy larger incomes as well as special status and privileges, than average occupations in the containing society do. Prof. Good further points out that specialisation is not in all respects beneficial to society:

> *"The client does not usually choose his pro= fession by measurable criterion of competence, and after the work is done, the client is not usually competent to judge if it was properly done ... indeed, the professional group requires its own control over its members precisely because its judgements do not coincide generally with those of clients. As a consequence, its members need the protection of the professional community and will submit to its demands."*[158]

This statement is further amplified by studies done by Prof. Good, to show the vast differences in the value structures between architects and non-architects, which, according to him, are manifested due to the *'mind bending'*[159] process of specialised

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157 Deasy, C. M., *Design for Human Affairs*, pp. 143, 144.
158 *Ibid.*, p. 144.
159 *Ibid.*, p. 147.

education. The problems concerning those divergent value structures, methods and lack of proper communication, create innumerable difficulties pertaining to establishing what the client actually wants, with regard to establishing the *'program'* necessary in modern architectural design, as Banham aptly points out:

> *"It takes an uncommon measure of agreement between architect and client before functional problems can even be identified."*[160]

PROFESSIONALISM

Prior to the nineteenth century, society had been divided into classes as a consequence of birth; craftsmen were bred into such an estate, as were nobles and so on. The nineteenth century saw the birth of professionalism.[161] Society then invented rules, myths and laws accompanying each of these pro= fessions. Although architects have been known by name and fame since the Renaissance, they were men of the humanist, per= spectively orientated tradition, with a broad education and ability.[162] In accordance with modern specialisation archi= tecture, too, decreed itself a profession. Aillagon points out, however, that architects themselves had chosen an extremely difficult problematic basis on which to define their profession. They define its specific character in terms of an absence of specialisation, or rather in the coming together, in their field, or multiple unrelated specialities, a very difficult option in a century where economic development and the logic of liberation encouraged a division of labour and ever-increasing specialisation.[163]

> *"The profession that seem to slip through this net of certainties: that of the architect."*[164]

In contrast to the lawyer, the doctor or the engineer, the architect stands midway between such divergent specialised disciplines as that of science and art. Today architects think they are artists and believe they are scientists, and yet desire

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160 Banham, R., *Age of the Masters*, p. 26.
161 Aillagon, J. J., *op.cit.*, p. 26.
162 Pevsner, A., *op.cit.*, p. 26.
163 Aillagon, J. J., *op.cit.*, pp. 26-29.
164 *Ibid.*, p. 26.

to be practical as well. Consequently the question of the education of the architect remains unresolved. The Bauhaus demonstrated and brought forward the inner strife of the artists, scientists and workshop personnel.[165] Ever since then innumerable attempts have been made, by commissions of inquiry and eager criticism of the profession itself, to purify the system, either to more specialisation or to some aspect missing in the curriculum. But by its very nature architecture requires a broad survey with regard to all the aspects of man and thus finds great difficulty in adjusting to a specialised and aspective culture. It does not lend itself to be tailored to fit a particular speciality. Much of the criticism levelled at the architectural profession may be seen to stem from this aspective situation of which architects have unwillingly become a victim.

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165 Wingler, H. M., *The Bauhaus, Weimar Dessau Berlin Chicago*, p. 141.

CHAPTER 5

THE ROMANTIC LEGACY

> *"Not only do we inherit the wreckage of past controversies, but these controversies themselves are clouded with the dust of heroic combats, and loud with the battle cries of poetry and morals, philosophy, politics and science."*
>
> Geoffrey Scott,
> *Architecture of Humanism.*

The word *Romantic* was derived from the *Romances* of the Middle Ages, which concern the cycles of story and legend that had existed in vernacular Medieval *Romance* languages, which there= fore imply the suggestion of something fanciful, strange and unusual as related to Medieval chivalry. The term Romantic established itself during the course of the eighteenth century as a means of expressing literary and art criticism, but in its present usage, it is usually applied to art objects or movements of any age or period, that display certain character= istics and attitudes, that emerged during the eighteenth and nineteenth centuries, towards all the arts.[1] The intention of Romanticism may be seen to be deliberately in contrast and opposed to the Classical cultural heritage. Osborne sees their differences in attitude reflected in the following manner:

> *"Perhaps the core of difference may best be expressed by saying that while the ideal of Classicism is presented as a possible one, and one according to which man and society can be moulded by orderly stages towards an improved condition, the Romantic artist pits himself against a basically hostile environ= ment and envisages the unattainable, an ideal beyond the possibilities of human adaptability."*[2]

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1 Osborne, H., *Aesthetics and Art Theory*, p. 131.
2 *Ibid.*, p. 131.

ROMANTICISM, A REVOLUTIONARY MOVEMENT

This study is not concerned with the Romantic Movement as such, but with the ideas which emerged in the course of its develop= ment; ideas which are of significance to, and, in fact, revolutionised the theory of art and aesthetic appreciation, and its influence upon architecture. The key ideas that emerged, may be indicated by such words as: genius, creativity, originality, emotion, expression and sentiment. Although Romantic art is no longer practised, many assumptions that took root at this time have survived and flourish with unsuspected vigour in our current attitude towards art and aesthetics;[3] and these have, to a large extent, contributed to, and reflect the aspective situation prevailing in the Modern cultural milieu.

The Romantic Movement was of great historical importance. Hauser maintains it was of epoch-making importance, and that it repre= sents a most decisive turning point in the history of the European mind.[4] This Movement may be seen developing as a result of the new attitudes emerging during the Enlightenment; the concepts of freedom, the individual's right to express him= self, and furthermore, the political and social upheavals created by the French Revolution.

> *"Romanticism was an ideology of the new society and the expression of the world view of a generation that no longer believed in absolute values, could no longer believe in value with= out thinking of their relativity, their historical limitation."*[5]

After the French Revolution, and the disintegration of the nobility who had been the leaders in good taste and culture, a new system of values in art and culture, was established by the emancipated middle classes of the new free democratic societies which had replaced the old. To establish themselves they propagated the Romantic attitude in opposition to the Classical taste of the nobility.[6] Post-Revolutionary Romanticism reflects a new

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3 *Ibid.*, p. 132 and Brolin, C. B., *The Failure of Modern Architecture*, pp. 55-56.
4 Hauser, A., *Social History of Art*, Vol. 3, p. 155.
5 *Ibid.*, p. 162.
6 *Ibid.*, p. 57.

outlook on life and above all a new interpretation of artistic freedom. Although pre-Romanticism had allowed the genius to deviate from the rules, Romanticism proper denied the validity of objective rules of any kind. The Romantic Movement became a war of liberation against academics, church, courts, patrons, amateurs, critics and masters, against the very principle of tradition, authority and rules; and to a certain degree Modern Art may be seen as an outcome of this Romantic fight for free= dom.[7]

> *"All individual expression is unique, irre= placeable and bears its own laws and standards within itself; this insight is the great achievement of the Revolution for art."*[8]

INDIVIDUALISM AND FREEDOM

The Revolution incited the individual to revolt against society and everything between him and his own happiness. Romanticism pushed individualism and man's personal freedom to extremes. This type of subjectivism allows no objective criteria; it protests against the norms of the established order, and for that matter, against true ability: anything goes. By creating an elite subjective cultural world, the Romantics wanted to raise themselves to a new aristocracy, above the rest of men, at the expense of the existing order. Romanticism, being a revolutionary movement, attempted thus to break with the esta= blished norms and values of the classical. Classicism which had based its concepts of beauty on that of truth, that is, on a universally human standard controlling the whole of life, was to be replaced by an individuality proclaimed subjectivism.[9] The Romantic artist thus finds himself in a position of having to rely only on himself and his own subjective feeling. Further= more, to be rational was to be classical; to be free, to express himself without restraint was to be Romantic.

Individualism was not only a reflection of the new liberty, but also the protest against the levelling down process and deper= sonalisation of life during industrialisation.[10] Furthermore,

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7 Hauser, A., *op.cit.*, Vol. 3, p. 143, and *Vide* Chapter 2, pp.48-62.
8 *Ibid.*, p. 143.
9 *Ibid.*, p. 168.
10 *Ibid.*, p. 56.

a reaction against the undermining influences of Rationalism and the reformative tendencies of the Enlightenment.[11] Ration= alism, that had steadily progressed since the Renaissance and had been given a position of importance by the Enlightenment, suffered a most painful setback in its history with the advent of Romanticism. Not since the Middle Ages with its super-naturalism and traditionalism had reason, alertness, sobriety of mind, the will to exercise, and its capacity of self control, been thought of with such contempt. Although Rationalism as a principle of science and practical affairs soon recovered from the Romantic onslaught, European art has remained Romantic.[12] Hauser goes further and points out that there is no product of Modern Art, no emotional impulse, no impression, or mood of modern man that does not owe its delicacy, variety and sensi= tivity to the development of Romanticism.

> *"The whole exuberance, anarchy and violence of Modern art, its drunken stammering lyricism, its unrestrained, unsparing exhibitionism is derived from it. And this subjective, ego= centric attitude has become so much a matter of course for us, so absolutely inevitable, that we find it impossible to reproduce even an abstract train of thought without talking about our feelings."*[13]

LOSS OF PERSPECTIVE ORDER

The break with the Classical sense of order by the Romantics had far-reaching consequences. Classicism had based itself more or less upon the perspective sense of order; its rejection signified a different attitude to order. Due to the disrupted political, social and cultural conditions, man found himself once more up against an overwhelming insecure and unstable situation, which obscured for him the whole of reality in per= spective; reality appears to him unknowable and unconquerable, thus causing the aspective once more to become prominent in the way man structured order. Man could only appreciate fragments of ordered reality, close up and separate. This situation may

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11 *Ibid.*, p. 92.
12 Hauser, A., *op.cit.*, vol. 3, p. 155.
13 *Ibid.*, p. 156.

be illustrated in the Romantic attitude to nature. Scott explains how the emphasis on naturalness of Romanticism brought with it a different approach to nature. The Classical concept of nature had been an appreciation of, and the discovery of an underlying order and laws that govern all natural phenomena, whereas Romanticism thought in terms of nature as inconsistent, casual in appearance, violent in its manifestation of unleashed forces. Romanticism thus advocates a *natural* architecture to appear as if it was created by chance.

> *"But a 'natural' architecture so far from affording such practice to the eye, raises a prejudice against order itself; because whatever qualities a 'natural' architecture may possess are dependant on the negation of order."*[14]

Scott maintains that Romanticism had been the death blow to the Renaissance sense of order, and, one may add, once more introduced an aspective method of creating order. This type of *naturalism*, that art should appear as if created by chance, describes well the new self-conscious aspective, which even= tually becomes manifested in Modern Architecture. For example, the emphasis on the asymmetrical,[15] the *form follows function* and Kahn's expression of *what a thing wants to be.*[16] These aspects are diametrically opposed to architecture governed by an overall intrinsic sense of perspective, of an ordered whole that nothing can be added or taken away but to its detriment.

THE ARTIST'S BREAK WITH PUBLIC TASTE

In our century the idea of the artist separated from society has become common-place and therefore we assume it to have been the condition of artists throughout history, but this, in fact, was not the case. Vasari actually describes how the public and his fellow artists flocked to see Leonardo's paintings as

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14 Scott, G., *The Architecture of Humanism*, p. 70.
15 *Art-Nouveau* particularly expresses this *'naturalness'*.
16 Venturi, R., *Complexity and Contradiction in Architecture*, p. 19.

if they were attending a great festival.[17] Conditioned by the Romantic idea that the artist must set himself apart from society, a rebel, and that he betrays his individuality if he accepts the popular idea of beauty, has resulted in the modern attitude that expects the artist to conform to this image.[18] Thus the artist finds himself in a position of isolation, having to rely only on himself, and his own inter= pretation, as art has ceased to be a social activity guided by objective criteria and that art has become an activity of self-expression, creating its own standards by becoming a medium through which the single individual speaks.[19]

> *"The Revolution and the Romantic Movement mark the end of a cultural epoch in which the artist appealed to 'society', to a more or less homogeneous group, to a public whose authority he acknowledged in principle absolutely."*[20]

Peter Collins too, points to this contemporary situation:

> *"Whether or not social acceptability is a criterion of contemporary architecture is perhaps debatable, but it is certainly not a criterion of modern painting or sculpture. On the contrary, the less acceptable such works are to the masses, the more respected they are by the cognoscenti etc."*[21]

ARTIST IN OPPOSITION TO PUBLIC DEMANDS

Until the Romantic period it was regarded as irrelevant to what measure the public consisted of real connoisseurs, the artist and architect made it their endeavour to meet with the wishes of this public. However, in contrast, in the Romantic and Post-Romantic, as in our day, they no longer submit to the demands or taste of the general public. Their work is always in opposition to the public demand, and although groups are formed to support one or other ideology or movement, these

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17 Hauser, A., *op.cit.*, Vol. 2, p. 43.
18 Brolin, B. C., *op.cit.*, p. 56.
19 Hauser, A., *op.cit.*, Vol. 3, p. 144.
20 *Ibid.*, p. 144.
21 Collins, P., *Architectural Judgement*, p. 173.

are always in a state of change, thus all continuity in the relationship between art and the public is destroyed.[22] What had started originally by being merely a revolt against classical norms and rules, became a revolt against all external ties and an emancipation from all non-artistic, moral and intellectual theory. *Art for art's sake* becomes an ivory tower in which the artist has shut himself from all practical affairs.[23]

> *"One consequence of these changes was that beauty gradually ceased to be a communal idea and became an idea moulded very largely by a handful exceptionally endowed individuals."*[24]

LOSS OF OBJECTIVE CRITERIA

Hauser points out how Romanticism influenced art by putting emphasis on subjective expressionism and the original creativity of the genius, and in this manner it rejected all forms of extraneous institutionalism, rules, canons and traditions, which eventually resulted in art being alienated from society and even from itself:

> *"The most inexplicable paradox of the work of art is that it seems to exist for itself and yet not for itself; that it addresses it= self to a concrete, historically and socio= logically conditioned public, but at the same time wants to have no knowledge at all of the public."*[25]

Scruton expresses himself in proclaiming that artistic endeavour has become self-conscious in the pursuit of a particular audience and individualistic in its aims.[26] The artist has no acknow= ledged external ties and is incapable of committing himself to any, he feels himself to be defencelessly exposed to an over= whelmingly powerful reality.[27] The artist is thus coerced into an aspective method of creating order. The ordered perspective becomes barred to him, no standards, no objective

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22 Hauser, A., *op.cit.*, Vol. 3, p. 144.
23 *Ibid.*, Vol. 4, p. 18.
24 Osborne, H., *op.cit.*, p. 133. It is possible to question the exceptionally, as no objective standard exists to judge this statement.
25 Hauser, A., *op.cit.*, Vol. 4, p. 20.
26 Scruton, R., *The Aesthetics of Architecture*, p. 14.
27 Hauser, A., *op.cit.*, Vol. 4, p. 164.

values, no criteria or traditional norms, therefore no other means of creating order except by the aspective. Perpetuating these Romantic concepts of the rebel-artist, modernist architects rejected popular preference for the eclectic architecture that had dominated the nineteenth and early twentieth century architect= ure, and shocked their contemporaries by declaring the mansions of industrial barons ugly, while their factories were beautiful.[28] To break with the popular ideas, they took ordinary things out of context and created houses like barns, schools like factories, chapels like boilerhouses.

> *"Modernists, with their totalitarian and utilitarian leanings, crusaded against popular taste and what they called senti= mental design and 'fancy-dress architecture'."*[29]

SUBJECTIVE EXPRESSIONISM

The whole diversity of modern art and architectural ideology in part, stems from the rejection of popular preference; the self-conscious desire to create an opposing original work of art. Tafuri argues that when art becomes a purely subjective expression, all communications fail with regard to the meaning of the object. The observer finds himself as an interpreter of the medium only, the object is abstracted, it has lost its meaning.

> *"And as the critic, in the tradition of contemporary art, is nothing but a privileged observer, his position enjoys an even more accentuated ambiguity: from the position of committed collaborator he is pushed into the front row to witness, as silent accomplice, the show offered by an architecture continuous= ly splitting itself in an exhausting mirror game."*[30]

Tafuri further maintains that the object now becomes *relative* or ambiguous with regard to the meaning associated with it, and to the place where it belongs in history. They allude to something other than themselves, losing their semantic autonomy.[31] This phenomenon allows the architectural scene first to explode in a series of eclecticism, and then as expressionist collages.

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28 Brolin, B. C., *op.cit.*, p. 56.
29 Allsopp, B., *A Modern Theory of Architecture*, p. 43.
30 Tafuri, M., *Theories and History of Architecture*, p. 97.
31 *Ibid.*, p. 82.

RENAISSANCE TREATISE AS OPPOSED TO ROMANTIC THEORY

Scott claims that the Renaissance produced no theory of architecture; that it produced treatises on architecture, that Alberti, Palladio, Serlio and others, gave us rules and methods of designing, and how to create architecture in practice, as opposed to theories or principles.

> *"But the style they built in was too alive to admit of analysis, too popular to require defence. They gave us rules, but not principles. They had no need of theory, for they addressed themselves to public taste."*[32]

The Romantic Movement on the other hand, opposed public taste, and sought to justify and defend itself, in a profusion of theory, a legacy Contemporary architecture has inherited. Bruce Allsopp points out how today we find that most architects settle for a belief in developing what they call a *personal philosophy* of architecture. But that if this should be per= sonal and subjective only to them, and not expressed in terms objectively understood, the end product is an architecture that demands to be regarded and respected as autonomous, the work subscribes to no general principles and can only be explained in terms of the architect's own belief in its value.[33]

Romanticism tried to destroy the continuity of architectural development by attempting to replace Classicism with a mis= understood Medievalism. Once the idea of replacing the Classical became feasable, the way was paved to Eclecticism and the choice of style became completely open on an arbitrary basis, the object was devalued,[34] linear development interrupted and the architect became absolutely free to express himself: the modern aspective situation.

> *"The catastrophe for style was equally a catastrophe for thought. To this, without doubt, no small part of the existing confusion in architectural criticism may be traced."*[35]

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32 Scott, G., *op.cit.*, p. 37.
33 Allsopp, B., *op.cit.*, p. 1.
34 *Vide* pp. 30-32.
35 Scott, G., *op.cit.*, p. 51.

SUBJECTIVISM ANNULS PUBLIC CRITERIA

The Renaissance supplied a treatise based on objective, acceptable, practical and rational canons and norms based on a unified perspective world view. Opposed to this situation the Romantic Movement postulated theoretically irrational, subjective ideologies, each separate and alone, each attempting to justify its own action, and mostly covering only a facet of the whole of reality. Subjectivism opposes objective canons of assessment, which are the only means by which society may com= municate and express its acceptability. Subjectivism annuls the very existence of a possible means of establishing a public taste or a means of determining acceptability.

> *"How can there be a 'valid' critical judge= ment, when every rule or standard seems beset by the same liability to endless qualifications? It is not enough to say that it is all subjective, and that 'right' or 'wrong' are simply out of place. For as we have noticed, the whole structure of aesthetic judgement belies that facile subjectivism."*[36]

Romanticism broke with traditions, values and all objectively established criteria, and introduced subjective expression, in this manner destroying the link between the public's means of expressing its taste, and the taste of the artist or architect.

The rejection of public opinion and popular taste, and the elite attitudes developed by Modern artists become reflected in the attitude of the Modern architects,[37] as a result of the close contact they have maintained in the development of Modern art and architecture.[38]

NEEDS AND WANTS

Architecture, however, being by nature a practical art, required some means of determining design decisions for practical pur= poses. The esoteric and subjective attitude of Romanticism, barred architects from any aesthetic objective criteria. As a result, recourse was taken to establish *needs* and *wants* by

36 Scruton, R., *op.cit.*, p. 132.
37 Brolin, B. C., *op.cit.*, p. 14.
38 Pevsner, N., *Outline of European Architecture*, p. 413 and Wingler, H. M., *The Bauhaus, Weimar, Dessau, Berlin, Chicago*, p. 4.

scientific experiment, to find normative public opinion, thus leading to studies in psychology[39] and establishing data by social surveys and in general turning to science for analytical methods of design.

> *"The study of aesthetics seemed esoteric, unpredictable, and perhaps slightly deca= dent in its struggle to explain feelings and body reactions without advantage of precise experimental methods."*[40]

SCIENTIFIC METHODS

Using scientific methods seemed to architects an ideal solution to solving the problem of the conflicting viewpoints and plural= ist opinions held in the field of aesthetics. Therefore it was not surprising that the exponents of the Modern Movement in the early twenties found in the Gestalt Psychology, a found= ation for a rational non-arbitrary explanation for beauty,[41] thus conditioning the acceptance of the scientific design methods associated with the Modern Movement. Meeting the needs of the architectural program now determines the appearance of the building rather than aesthetic preference.[42] However, as Brolin points out the new aesthetic of the Modernist was not popular; the break with popular taste made it imperative that rules of a compelling moral force had to make this break with tradition, comprehensible and acceptable to the public.

> *"Although they theorized about visual art, they rationalized their visual choices in exclusively moral terms."*[43]

Rejecting public opinion, yet wishing to fulfil its needs and wants, led to a creed of maintaining it necessary, to give the public, in the name of progress, that which it does not know it wants.[44] Social Utopianism has become one of the great cornerstones in the propagation of the Modern Movement, particularly evident in the Bauhaus as expounded by Gropius and Hannes Meyer.[45]

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39 Bloomer, K. C. and Moore, C.W., *Body Memory and Architecture*, pp. 31, 32.
40 *Ibid.*, p. 31.
41 *Ibid.*, p. 32.
42 Brolin, B.C., *op.cit.*, p. 36.
43 *Ibid.*, p. 14.
44 Brett, L., *Parameters and Images*, pp. 3, 4.
45 Wingler, H. M., *op.cit.*, p. xviii and Pevsner, N., *Sources of Modern Architectural Design*, p. 170.

The cult of originality of the *'avant-garde'* movements con= tinually perpetuates the disregard of public opinion; as soon as a new trend in architecture becomes acceptable, by either the profession or the public, a new ideology appears, to speak in opposition.

THE DICHOTOMY IN MODERN ARCHITECTURAL THEORY

If one should consider this situation in context, a schizo= phrenic situation reveals itself. Now, on the one hand, architects wish to provide a social Utopia to satisfy needs and wants, and on the other hand reject public opinion and taste. Under the circumstances one is obliged to reject hypocrisy, therefore the only possible explanation appears to be that the modern architect has become an aspectively orientated man. He separates each facet of architecture and considers each of them only in its own context alone, without appreciating its influence upon the others. Aesthetics is subjective and in opposition to public taste, planning must be scientific, practical and accommodating to the needs and wants of the public, and moral authority is used to enforce this dichotomy.

> *"The cult of Romanticism that had already routed classicism in literature found in Ruskin its supreme champion in its invasion of architecture, and armed cap-à-pie with moral references, false analogies, fact-proof dogmatisms, he won a decisive and calamitous victory. Order, symmetry and a nice regard for mass, space, line and coherence which are implicit in classic design were denounced as pedantic, pompous, and pagan, and betraying intellectual pride ill becoming a democracy professing a Christian nature workshop."*[46]

The Romantic Movement made the artist, and therefore, aesthetics, a thing apart.[47] On the other hand Romantics wanted to, and believed they could, change and educate public taste. However, to achieve such an object the artist or architect would have to address himself to the whole public and not only some elite part of it. Objective and publicly accessible meanings and

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46 Williams-Ellis, C. and A., *The Pleasures of Architecture*, (1924), p. 39.
47 Brolin, B. C., *op.cit.*, p. 57.

values are the only way of giving to the public an accessible means of understanding aesthetics; Romanticism, however, destroys this link.

> *"And here one might begin to see just how inappropriate is our post-romantic conception of art to the description of the normal aesthetic judgements of the normal man, and how obscure are all the concepts, such as the concepts of expression, which have been used to elucidate it."*[48]

ORIGINALITY AND CREATIVITY

The idealism of Romanticism propagated the gospel of individualism, glorified the sovereign personality and elevated original creativity to the sublime.

> *"During the second half of the 18th century a revolutionary change took place; the emergence of a Modern Middle Class with its individualism and its passion for originality, put an end to the idea of a style as something consciously and deliberately held in common by a cultural community, and gave the idea of intellectual propriety its current significance."*[49]

The contemporary interpretation of creativity differs con= siderably from that held in the past. Contemporary thought couples the concepts of creativity and originality and makes them synonymous, whereas in actual fact they mean two different things. Brolin explains that the present connotation of *originality* in art, meaning, roughly, without precedent, dates from the beginning of the Romantic Movement: produced by some= thing or some person directly; underived, independent (1792) and; such as has not been done or produced before, novel or fresh in character or style (1756).[50] On the other hand *Creativity* may be understood as bringing something into

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48 Scruton, R., *op.cit.*, p. 17.
49 Hauser, A., *op.cit.*, Vol. 3, p. 32.
50 Brolin, B. C., *op.cit.*, p. 56. Extract as by Brolin from *Oxford English Dictionary*.

existence; giving rise to the existence of an object, and/or concept by human intelligence.[51] This connotation does not presuppose originality in the sense that it must be novel, underived, fresh in character. It is a creative act to make a chair, to bring it into existence, but it may be similar in character to many other chairs already existing, whereas originality refers to the novel or inventive characteristics. To illustrate a contemporary attitude with regard to the modern connotation of creativity one may quote the following definition of Donald Mackinnon as extracted by Broadbent:

> *"It involves a response or an idea that is novel or at the very least statistically infrequent. But novelty or originality of thought or action, while a necessary aspect of creativity, is not sufficient ... true creativity involves a sustaining of the original insight, an evaluation and elaboration of it, a developing in the full."*[52]

ORIGINALITY

If originality should be a necessary aspect of creativity, very little historical architecture and artistic endeavour will in this sense be creative. Once an original style or innovation had been established, often over a long period of time, archi= tects only improved on quality or created variations on the same theme. For people in antiquity, the middle ages and Renaissance to maintain that the artist expressed himself in an original subjective manner would have been trite, incom= prehensible, stupid and irrelevant.[53] During the Romantic Movement, originality, for the first time, became a necessary quality of great art.[54] The Romantic attitude to the creative genius has radically influenced our attitude to creative design and imputes to it the necessity of originality. Furthermore, the emphasis on originality becomes in part responsible for the rejection of historical, traditional or cultural precedent by the Modern Movement in architecture.

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51 Concise Oxford Dictionary.
52 Broadbent, G., *Design in Architecture*, as from Donald Mackinnon, p. 2.
53 Osborne, H., *op.cit.*, p. 134.
54 *Ibid.*, p. 133.

THE NECESSITY TO BE ORIGINAL

In the *Critique of Judgement*, Kant declared the genius as essentially original. Everybody, he says, is agreed on this point, that there is a complete opposition between genius and the spirit of imitation.[55] The architect must thus conform to the creed of originality, or finds himself in a position of being regarded as a person not having proper artistic merit, unless he produced and created something original. If he was imitative, or used traditional or normative canons, or if he followed the rules which defined beauty for society, he lacked originality and so became incapable of great art. Anybody who pandered to popular taste became a workman as opposed to an original creative artist.

> *"With this new emphasis on individuality came a similar emphasis on originality as a prerequisite for artistic greatness."*[56]

The Modern Movement condemns the popular Eclecticism of the nineteenth and the early twentieth centuries, declares it decadent and unoriginal, since it used patterns and rules.[57] The emphasis on originality in its own way propagates the idea of opposition to public taste, in fact, public taste becomes a measure against which originality may be exposed.

> *"According to this myth the artist is a lone genius who expresses himself in art, the public response to which is inversely proportional to its merit. This is rubbish!"*[58]

Giedion inadvertently gives a very apt interpretation of the Modern attitude to creativity in the following passage:

> *"Every scientist, every artist, is part of a long line of tradition. When he is a creative spirit, however, it is his function to go forward, beyond the limits of tradition, to explore what before him no one has known,*

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55 Osborne, H., *op.cit.*, p. 133.
56 Brolin, B. C., *op.cit.*, p. 56.
57 Norberg-Schulz,C., *Meaning in Western Architecture*, p. 322 and Giedion, S., *Space, Time and Architecture*, p. 226 (1949).
58 Allsopp, B., *A Modern Theory of Architecture*, p. 84.

> *no one has seen, no one has felt. By means of intuition, imagination, mystical impulse - what you will - he must open up new spheres of the unconscious. These spheres are dis= tinguished from the organization of the outer world in that their essential work is done directly, personally, without interference by any external power."*[59]

THE CULT OF ORIGINALITY

From these ideas of originality with regard to creative work, grew the new image of artists and architects, which so pro= foundly influences modern art and architecture. The *cult of originality*, the perpetual revolution of the *avant-garde* are derived from this Romantic concept.

> *"From being an integrated member of society working within the framework of traditional standards of excellence the artist becomes either a potential genius and therefore a rebel, or a potential imitator."*[60]

The cult of originality destroys established, publicly access= ible meanings. Allsopp explains that too much change affects people and destroys their sense of place, creates neuroses in the individual and in society, that the over-emphasis given to the value of originality should be considered in this context.[61]

Mumford, too, points out that creativity, to be assimilated, requires an underlying basis of order; that the most original form needs to be repeated, even if with modifications, if it is to be understood; and only in this manner can its value be observed by the user and the spectator.[62] Norberg-Shulz main= tains it essential for man to establish existential meanings with regard to orientating himself in an environment.

> *"It stems from a need to group vital relations in his environment, to bring meaning and order into a world of events and actions."*[63]

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59 Giedion, S., *op.cit.*, p. 647.
60 Osborne, H., *op.cit.*, pp. 133-134.
61 Allsopp, B., *op.cit.*, pp. 26-27.
62 Mumford, L., *Architecture as a Home for Man*, p. 184.
63 Norberg-Schulz,C., *Existence, Space and Architecture*, p. 9.

THE NEED FOR AN ESTABLISHED ORDER

Constantly changing, new and unrelated forms in the environment contradict the possibility of developing and structuring an environment with existential meanings. The cult of originality encourages a non-place, a place where man has to be in a state of perpetual re-orientation. Norberg-Schulz points out that a mobile world, which is not based on repetition of similarities in a stable system, would hamper human development.[64] Scruton, too, declares it necessary for man to have a *repeatable vocabulary* of recognisable form and detail with regard to architecture and the environment, in order to establish a public order; that a public order is an achievement of man, not just 'given' auto= matically, and that this achievement of order can only be realised when it is recognised. Any lapse into the cult of originality deters its establishment, when meanings are relative and sub= jectively pursued. To establish this order the designer must translate his intention or whatever design method, into terms that are publicly intelligible.[65] Scruton even goes further to maintain that a *merely functional*[66] building, a design that submits to the program as its only criterion, does not lend it= self to the imposition of public meaning. It appears to the world like an individualistic ego, pursuing its own aims, indifferent to the aim of all. It has no life or reality other than the individual original purpose which gave rise to it, and contains no imitation of the objective world of values beyond its own limits. In this manner Scruton describes the truly aspective nature of a functionalistic building, alone and separate from the public order. This sort of manifestation or originality and individualism leaves the observer an alien to the building. Scruton makes his argument very clear by demonstrating that the search for the *appropriate* in archi= tecture is a reasoned pursuit of ends; that if there is no public order, man's world is strange and hostile; while he may possibly appreciate individual original aims of individual people, he would find no trace of anything larger than their sum,[67] a description of an aspective world. Each meaning of

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64 *Ibid.*, p. 35.
65 Scruton, R., *op.cit.*, p. 250.
66 *Ibid.*, p. 3. Functionalism asserts that it is possible to appreciate the aptness of a building to its function.
67 *Ibid.*, p. 249.

the original creativity of the *functional design* is separate and alone, 'a sum larger' cannot exist. The perspective is thus bared to the cult of originality; meanings of objects cannot be placed in proper perspective to the whole, thus it not only expresses the aspective, but it also enforces it constantly.

> *"Like all decorative arts, architecture derives its nature not from some activity of representation or dramatic gesture, but from an everyday pre-occupation with getting things right, a pre-occupation that has little to do with the artistic intentions of romantic theory."*[68]

THE CONSEQUENCES OF THE CONSTANT ORIGINALITY

The cult of originality is part of the expression of the Modern aspectively orientated society. Inextricably it forms part of the selfconscious aspective phenomenon; of the eclipse of history, the devaluing of the object, of the revolutionary tendencies of our age, of always being up against the established order; the *avant-garde* of continual progress and change, seeking the illusive mythical never to be realised *Utopia*, and in this manner always tending to anarchy, and confusion, by undermining the conventional order, values and meanings. Furthermore, originality justifies itself as the ideal of individual freedom of action, expression and non-interference. The creed of the Bauhaus, of rejecting history as a fundamental requisite in design education,[69] and propagating the ideal of designing without preconceived ideas,[70] illustrates its a-historical character and places the emphasis on originality: to achieve a design without the taint of any prior claim to history. Jencks sums up the situation with regard to Modern Architecture as follows:

> *"The architect proceeds as the avant-garde does in any battle, as a provocateur. He saps the edges of taste, undermines the conventional boundaries, assaults the threshold of respectability and shocks*

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68 *Ibid.*, p. 259.
69 Wingler, H. M., *The Bauhaus*, Curriculum (1925), p. 107, and Gropius, W., *The New Architecture of the Bauhaus*, pp. 19, 71.
70 Breur, M., Where do we stand?, in *the Rationalist*, (*ed.*), Sharp, D., p. 85.

> *the psychic stability of the past by intro= ducing the new, the strange, the exotic and erotic ... Rather, it is combined with technical ultra-sophistication to break down accepted conventions and generate change."*[71]

CONSTANT CHANGE AND REVOLUTION

Constant change allows no means of criticism, perpetual revo= lution by originality allows only that its standard of criticism can be itself. The ambiguity of meanings which it creates, is the myth, and the eclipse of history sees the isolated happening of cyclical time as of the aspective. By being revolutionary it is self-conscious in its demand for originality. Tafuri sees contemporary architecture as being at the same time inside and outside historical tradition, steeped in it, yet beyond it, and that it appears ambiguously involved in a figurative revo= lution that is founded on the permanent opposition to every acquired truth; it turns its weapons upon itself. As Tafuri very aptly quotes Rosenberg in the following extract:

> *"Neither revolutionary art nor revolutionary criticism can get out of it: revolutionary art is a contradiction. It declares that art is art in being against art; and then tries to establish itself against itself as the soundest kind of art. It demands of the critic that he takes 'explosiveness' as an aesthetic principle and that he pro= tects this principle against being blown to bits by the 'conscious negation' of principles. At war with themselves, revolutionary art and criticism cannot avoid the ridiculous. Yet upon the contradiction of revolution depends life of art in this revolutionary epoch, and art and criticism must continue to embrace its absurdities."*[72]

Tafuri further points out how the contemporary situation sees demands arising for the establishment of a rigorous theorisation of architectural problems. This need is felt by a considerable number of people as, for example, Peter Collins, Christian Norberg-Schulz, Alexander, Asinow, and Aldo Rossi. Although

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71 Jencks, C., *Modern Movements in Architecture*, p. 239.
72 Tafuri, M., *Theories and History of Architecture*, pp. 3, 4 quoted from Rosenberg, H., *The Tradition of the New.*

each may express a different factor related to problems in the architectural discipline, it is, however, possible to find certain factors common to them all. There appears to be three basic motives for these demands: (a) The confirmation of the loss of *public meaning* on the part of architecture, (b) The need to check the meanings underlying the rapid transformation, whether planned or not, of the physical environment, and (c) The need to substitute for the vanished linguistic unity, an object= ive, logical and analytical method of checking planning.[73]

The crisis of meanings and objective criteria is the crisis of criticism in architecture, derived from the adherence to the legacy of the cult of subjective originality. Semiology's frantic search for meanings, and the resultant profusion of superfluous rhetorical exhortive messages, ideologies and justifications of ambiguity, all stem from the reluctance to relinquish the so dearly held concept of originality as a pre= requisite for artistic greatness.[74]

ORIGINALITY AND COMMERCE

Another factor must be considered in understanding the reluct= ance to relinquish originality, namely the advantages originality promotes in the competitive struggle in a modern capitalistic society. One may consider novelty as a powerful commercial weapon. Hauser points out how the spirit of contradiction, and the desire to attract attention by flabbergasting a public, could play an important role in getting publicity. The element of being a creative genius becomes a weapon in the competitive struggle; this subjective mode of expression is thus often only a form of self-advertisement.[75] Architectural profession= alism does not take kindly to blatant self-advertisement, and in the manner of originality this may be conveniently side-stepped. Not only is advertisement important in the professional struggle but to the commercially orientated client as well.

> *"As in the advertising copy of our period, the successful modern architect has been saying in effect 'and now a new taste sen= sation' or "You too can be years ahead with the latest model."*[76]

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73 *Ibid.*, pp. 172, 173.
74 *Ibid.*, p. 104.
75 Hauser, A., *op.cit.*, Vol. 3, p. 79.
76 Mumford, L., *Architecture as a Home for Man*, p. 180.

Mumford further points out how the search for new, sensational building materials and structural methods has been part of the desire to be original; how technology has been put to use by creating sensational forms and methods of construction.

The cult of originality expresses well the revolution and change that allows no objective values or criteria; of the self-conscious aspective situation with regard to aesthetic and architectural theory. Although originality was primarily initiated during the enlightenment as a means of looking at things from first principles, it has been carried to extremes and has inadvertently followed a course of self-destruction. Originality and inventiveness have immense value as a means of advancement to mankind, but is destructive as a value, for itself alone. Just to be different, original for its own sake, is, in part, responsible for the self-conscious aspective situation in our modern culture.

GENIUS

The concept of 'genius' as we understand it today is perhaps most characteristic of that which emerged during the Romantic age. Inspiration, since classical antiquity, was thought of as an invasion of the artist by an outside power. The old theory of inspiration was according to the idea that the poet or artist was a 'seer', a man possessed by power outside him= self, not his own; he underwent a metamorphosis at such a time. In the Romantic age the artist was no longer a man inspired by God, but he himself becomes elevated to the status of a hero, almost a God,[77] and the source of inspiration now appears to be in the unconscious part of the artist being.[78] Therefore it followed that a genius was regarded as a person with exceptional talent. Kant restricts genius to the domain of fine arts and calls it *exemplary originality*. These new concepts of the importance allocated to originality and genius,

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77 Osborne, H., *op.cit.*, pp. 140, 133.
78 *Ibid.*, p. 139.

inspired the faculty of invention, new discoveries in science and technology, as well as new directions in art and the use of different art mediums. All agree, however, that genius consists above all of invention, originality and creativity in a person. Thus the concept of a genius and the new value placed upon originality and ability were closely linked.[79] Genius became endowed with the following attributes: natural ability, special mental endowments, exalted intellectual power, instinctive and extraordinary imaginative power and above all, possessing creative and inventive capacity.

THE IMAGE OF THE GENIUS

The freedom of the artistic work, the compulsive striving for original self-expression allows an image of the genius to emerge as a psychological type, a person with an abnormally strong sense of vocation, who labours under the obsessive feeling of compulsion, has an anguished need to realise his latent capabilities or to discover some transcedental and inexpressible truth, that can only be shown in one art form or another. He strives for self-expression, to be himself; he searches for rightness, is harassed by external doubts and lives in the depth of subjective emotionalism.[80] Subsequently, it has been realised that this Romantic ideal of the genius is not restricted to a genius but may apply to people, artists or others, who, in fact, may not be a genius at all. Reality has shown that such a personality, which typifies a genius as thought of by Romanticism has no relation to, nor does it indicate the actual quality of the work produced. Although this ideal of a genius has become rather outlived, the notion of creative originality, subjective self-expression and indi= vidualism still dominates and is assumed in the modern artistic attitude, as well as in architectural circles. The elevation of the artist, the exaltation of originality, the special emphasis on the affective, and the importance attached to fiction and inventiveness, all may still be found in modern artistic thought, as this quotation from Walter Gropius may testify:

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79 *Ibid.*, p. 141.
80 *Ibid.*, pp. 141, 142. Picasso, Le Corbusier, Byron are typical examples.

> *"The artist is an exalted craftsman. In rare moments of inspiration, transcending the consciousness of his will, the grace of heaven may cause his work to blossom into art."*[81]

THE ARTIST AS A GENIUS

The notion of genius as a person with exceptional intellectual and spiritual endowment has come to be particularly associated with the artist and is considered the natural condition to which all artists aspire; that the artist genius possesses some special insight or sense into reality different from other men, has become an accepted idea and thus very closely connected with the necessity for originality.

> *"One was diligent. But genius is not diligence, as a very fallacious slogan claims. Genius consists not even in part of diligence, even although some men of genius may also have worked hard. Genius is genius, is grace, without beginning and without end. It is pro= creation. Genius is not teachable because it is not a norm but an exception. And yet as a leader it is always far ahead. It dashes ahead in some direction or in another direction. Perhaps today it is already in a place one hardly thinks of. For, with respects to dogma, genius is often heretic. It knows no principles except itself."*[82]

Thus Paul Klee gives an idea of genius as propagated by the Bauhaus, a pertinent legacy of Romanticism. The geniuses of the Romantic theory manifest themselves, not by following the rules or conforming to tradition, but by making their own rules and effecting a breakthrough; a notion accepted by subsequent and contemporary artists and architects, as sources of new possibilities and justifications of the perpetual *avant-garde*; rejection of historicism and the adherence to the cult of originality. The fine arts were regarded as essentially the product of genius. Kant expresses art to be possible

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81 Gropius, W., *Program for the Staatliche Bauhaus Weimar 1919*, as in Wingler, H. M., *The Bauhaus, Weimar, Dassau, Berlin, Chicago*, p. 31.

82 Klee, P., *'Bauhaus' Dessau*, Vol. 2, No. 2/3, 1923, in Wingler, H. M., *op.cit.*, p. 148.

only as a product of genius.[83] Osborne explains how imitation or anything even suggestive of the traditional in artistic work becomes the antithesis of the genius-like quality, necessary and consistent with the Romantic and contemporary theory of art. Furthermore, the genius becomes free of all external rules, norms and traditions; he is not supposed to keep them. Thus the idea of the *Boheme* develops, he must act and behave differently from the accepted social code in dress and in manner, or he would not be a respected artistic genius, but ordinary and mundane. This tendency to remoteness or withdrawal from practical life and firm social roots is very much a characteristic created by Romanticism. An unbridgeable gap opens between the genius and ordinary men, the artist and the public, art and social reality[84] and sees the emergence of our present day elitism in the artistic realm.

> *"The bad manners and impertinence of the bohemians, their childish ambition to embarrass and provoke the unsuspecting bourgeois, their frantic attempt to differentiate themselves from normal average men and women, the eccentricity of their clothes, their headdress, their beards."*[85]

THE ARTIST AS A REBEL

The leaders in the artistic sphere are now the antithesis of the gentleman of taste in the pre-Romantic era, he lives as an outcast, poor, unkempt, and unrecognised for his greatness. Hauser ascribes this situation to the deepseated desire of those who aspire to artistic creative work, to genius, in the sense of being different, rebellious and original; and to fight against everything traditional and conventional. Romanticism isolates the artist from the inartistic philistine in the sense of trying to be the elite of the new culture. We see this same attitude reflected in the Bauhaus tradition as Wingler describes to us in the history of the Bauhaus:

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83 *Ibid.*, p. 133.
84 Hauser, A., *op.cit.*, Vol. 4, p. 176; Vol. 3, p. 183.
85 *Ibid.*, Vol. 3, p. 183.

> *"What made the Bauhaus suspect in the eyes of the residents of Weimar was not only the novelty of its artistic conceptions, but most of all its social tendencies, which were labelled anarchistic. This prejudice was reinforced by the Bohemian conduct that characterized many of the students during the early Bauhaus period."*[86]

THE FREEDOM OF THE ROMANTIC GENIUS

Prior to Romanticism artistic creative work was a clearly definable intellectual activity, based on explicable and learnable rules of taste for both the courtly Classicist and for the Enlightenment. On the other hand Romanticism pro= pagates a mysterious process derived from such unfathomable sources as divine inspiration, blind intuition and self-expression. Classicism and the Enlightenment regarded the genius as having a higher intelligence, yet bound by reason, theory, history, tradition and convention; during the Romantic era he became the personification of an ideal characterised above all, by the lack of all these ties.[87]

> *"The genius is rescued from the wretchedness of everyday life into a dream-world of bound= less freedom of choice. Here he lives not merely free from the fetters of reason, but in possession of mystic powers which enable him to disperse with ordinary sense experience."*[88]

The genius is not only allowed to be totally free, he is allowed to be totally irrational. He does not reason, he does not observe, he merely *'sees and feels'*. The genius looses all external supports and becomes dependent only on himself, and can seek for help only within himself and so becomes an object of infinite importance and infinite interest to himself.[89] Therefore, self-expression and subjective emotion become his prime means of artistic realisation. He does not explain or reason, he feels and works on intuition, unconscious inspiration. He is not aware of, or he ignores, an order that could be imposed upon himself and his work, or that order could exist in the real world, except that which he 'feels' to be there.

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86 Wingler, H. M., *op.cit.*, p. 34.
87 Hauser, A., *op.cit.*, Vol. 3, p. 111.
88 *Ibid.*, Vol. 3, p. 111.
89 *Ibid.*, Vol. 3, p. 171.

THE ISOLATION OF THE GENIUS

The Romantic concept of a genius gives rise to an aspective personality. He is alone, different and original, therefore out of touch with the public order of society. He must be intuitive, aspiring to an inspiration, different, and opposed to practical reality of established tradition or pragmatic knowledge. He is not part of the real world and must be forever a step out of tune, and is thus separated from the holistic perspective order. In this manner he expresses subjectively only fragments of the happenings of the confused world. He is, however, a selfconsciously created aspective man, in the sense that he is a deliberate creation of a parti= cular outlook, and he consciously applies himself to conform with this image of an artistic genius.

It is not the author's intention to decry the merits of true genius, and therefore one may point to the very different manner in which Allsopp describes genius in the following passage when he refers to the quality of the Palace of Minos, the Parthenon, Santa Sophia, Chartres and so on up to the present day:

> *"It is that in each age architects of genius were able to bring together and crystallise the achievements of their people. These great works were never prototypes, never original. They came like fruit when the tradition was ripe for them."*[90]

THE INFLUENCE OF KANT UPON AESTHETICS

Kant's *Critique of Judgement* (1790) gave philosophical expression to some of the leading thoughts of the Romantic Movement, parti= cularly with reference to concepts related to genius, original= ity and aesthetic appreciation, all of which have had a pro= found influence upon our contemporary aesthetic theories. He gave logical articulation to attitudes which were prevalent at that time, and which have persisted into the twentieth century. He is regarded as the most powerful mind to have

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90 Allsopp, B., *Modern Theory of Architecture*, p. 67.

written on aesthetics in modern times. Kant concerned himself with the grounds of judgement, differentiating the basis of aesthetic judgement from the judgements we make about other things. He differentiates the aesthetic experience as a mode of direct awareness from all other forms of conceptual thinking.[91]

> *"The subject of aesthetics is as old as philosophy; nevertheless, it takes its modern form from Kant, who was the first philosopher to suggest that the sense of beauty is a distinct and autonomous employ= ment of the human mind comparable to moral and scientific understanding."*[92]

AESTHETICS BECOME BASED ON SUBJECTIVE FEELING

Up to this time in the history of Western thought, a work of art and natural beauty was judged either by the pleasure it gave; or its moral or educative effects; or its practical value; or intellectually, as the embodiment of certain approved and ordered principles. By rejecting all these grounds of judgement and, postulating that aesthetic judgement is separate and differently based, in a class of its own; Kant was breaking new ground, and changed the attitude with regard to aesthetic criteria. The 'feelings' of the observer became important, as he reflects upon the art work, and this tends to relegate the characteristics of the object depicted as being of little importance. Furthermore, beauty judgements are placed in a different class to that of cognitive judgements; as they refer to our feelings of satisfaction or dissatisfaction, and are therefore subjective judgements by definition.

Kant repudiates the intellectualism of the Classical tradition. It is *absolutely impossible* he claims, to find *principle of taste* of the form; that any object which possesses such and such properties is beautiful, aesthetic pleasure or displeasure cannot be determined by precepts and rules, and is subject only to subjective reflection. Furthermore, he repudiates all empirical grounds of proof or experience, to determine

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91 Osborne, H., *op.cit.*, pp. 113, 114.
92 Scruton, R., *op.cit.*, p. 1.

one's judgement of taste or preference.[93] Thus it concerns the subject (observer) and not the object (the art work) and in this manner Kant postulates the theory of *disinterested pleasure*. The following extract summarised by Osborne, elucidates Kant's attitude:

> *"Appreciation, Kant holds, is direct but non-conceptual apprehension. We hold an object in attention, become more and more fully aware of it, but without analysing it or classifying it theoretically, without thinking about it. We contemplate it in the attitude of disinterested attention. When we so contemplate a beautiful thing, the powers of perception are motivated and stimulated to a more than usually intense and harmonious activity; the object is such to allow them full scope to satisfy and sustain them. The signal that this is happening is the pleasure we feel in this full and unimpeded exercise of our faculties."*[94]

KANT'S INFLUENCE

The crystallisation of Kant's thoughts as related to aesthetic appreciation, appear to have had enormous influence on the modern attitude to aesthetics. His ideas propagated certain concepts of genius, subjective originality, which consequently brought about the disregard of public taste by the artist, as discussed previously in this chapter. Furthermore, the idea of *disinterested attention* removed aesthetics from the sphere of rational thought and in this manner allowed the ideas of impressionism, emotionalism and subjectivism to triumph in the realm of art. The object of artistic interpretation was lost and the feeling, mood or impression conveyed became more important. Thus meanings and values were eclipsed, a situation that led to the development of autonomous work; an art that is not assessed by external standards applicable elsewhere outside itself, but by standards that apply only to a particular art work.[95]

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93 Osborne, H., *op.cit.*, pp. 116, 117.
94 *Ibid.*, p. 130.
95 *Ibid.*, p. 185.

THE A-HISTORICAL DEVELOPMENT

The loss of meanings related to the object leads to the eclipse of history. Art for art's sake, as an autonomous creation thus finally denotes to art an a-historical value. In this manner we may describe the self-conscious aspective situation in the realm of art, created by the ideals of the Romantic Movement and furthered by Kant philosophy:

> *"They buy the peace and superiority of a purely contemplative attitude at the price of an understanding with the pre= vailing order."*[96]

Linear time was destroyed, for the artist and the objective order of a cosmic perspective does not exist in this attitude to art. All that remains is the individual's feeling, removed from reasoned concepts and expressed in an autonomous work of art, thus separate from the whole and aspective. The primitive quality, the collages and the two dimensionality of contemporary art, all bear witness to this aspective attitude. Hauser describes how art for *art's sake* became established. He maintains that it sprang from Romanticism in its struggle for freedom of expression. Furthermore, he explains Kant's influence, that the idea of autonomy in Kant's philosophy brings with it the 'disinterestedness' of art. Furthermore, the tendency to specialisation which became ascendant with capitalism and industrialisation, further promoted this situation,[97] and art became isolated. Hauser, too, shows how art became characterised by criteria of a purely passive contemplative attitude to life; that experience and hedonistic sensualism became standards of judgement for art[98] as opposed to intellectually ordered criteria.

> *"Aesthetic culture implies a way of life marked by uselessness and superfluousness, that is to say, the embodiment of romantic resignation and passivity. But it outdoes romanticism; it not only renounces life for the sake of art, it seeks for the justification of life in art itself."*[99]

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96 Hauser, A., *op.cit.*, Vol. 4, p. 19.
97 *Ibid.*, Vol. 4, p. 19.
98 *Ibid.*, Vol. 4, p. 170.
99 *Ibid.*, Vol. 4, p. 171.

Ultimately the situation developed into an art for artists and revealed how Kant's "disinterested attention" influenced modern aesthetic standards. This passive outlook, the acquiescence of the spectator of the receptive contemplative subject, invites an aloof standpoint and non-involvement. In short, aesthetics purely and simply, utterly devoid of values, criteria or standards, that could be publicly under= stood or that might be accessible to discussion by reasonable argument or to rational concepts. Art is thus isolated and allies itself with the intuitive, imaginative and emotional irrationality of human experience, and in this manner absolutely denies objective criteria, standards, values and meanings.

SCRUTON OPPOSES KANT

Scruton, however, argues the state of confusion resultant upon Romanticism and Kant's philosophical implications does not have to be inevitable. Kant's suggestion that the appreciation of beauty is a distinct autonomous employment of the human mind, the division of the mental faculties, of the mind, into theo= retical, practical and aesthetic sections, is refuted by Scruton. He demonstrates that the division between practical reason and aesthetic understanding is, in fact, untenable, and that the relationship between the two must be re-established or remain impoverished.[100] Furthermore, Scruton maintains that in accordance with Hegelian Philosophy, self-knowledge, far from being private introspection, is, in fact, a publicly accessible activity, as of one rational being among many. Happiness requires therefore the realisation of the self in a self-conscious world, and so experiencing oneself as part of such a world, and is in direct contrast to the private introspection of the modern aesthetic theory of self expression and private appreciation of art.[101] In accordance with the perspective world view, to reach the realisation of the self, one would engage in a public ordered world of human activity, with a rational hierarchy of values, whereas the self-conscious aspective view implies that it is introspective, alone and separate, devoid of contact with the outside world of objective values.

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100 Scruton, R., *op.cit.*, p. 1.
101 *Ibid.*, p. 244.

Scruton, however, points out that Kant was the first philosopher to point to the following truth that:

> *"To say how my experience is, I must say, how the world seems to me."*

Nevertheless, Kant felt that it is necessary to postulate a faculty through which sensation and concepts may be united: the imagination. In aesthetics Kant found the same faculty except that in aesthetics this faculty was *free* of the rules of understanding. Kant thus maintained aesthetic imagination and ordinary imagination as two separate processes. But Scruton maintains that thought and experience are in fact inseparable.

> *"There is no access to the experience, no way of classifying or describing it, except through the concept with which it is imbued."*[102]

AESTHETIC APPRECIATION : PART OF THE REASONING MIND

Although Scruton describes two types of perception, namely the literal and the imaginative, and that architectural aesthetic experience is found in the imaginative perception, he still makes it clear that imaginative experience may be modified by argument and by acquiring meanings of symbols, thus forming part of the reasoned mind and not free in the sense Kant implies. Aesthetic experience is peculiar to rational beings and essential= ly part of their understanding both of themselves and of the world which surrounds them. It is thus inevitable that it should issue criticism of its object and attempt to find in its object a premonition of some real and objective moral order. Scruton therefore denies the necessity of destroying the meaning of the object in artistic work or in fact the a-historical attitude in aesthetics. He claims that it is essentially part of aesthetic experience to understand the meaning of the object under scrutiny[103] and in this manner refutes Kant's philosophy on aesthetic appreciation. Publicly accessible meanings are important in Scruton's argument; he thus maintains:

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102 *Ibid.*, p. 77.
103 *Ibid.*, p. 72.

> *"It is only what is publicly accessible that can be publicly described and it is only what is publicly accessible that is important; nothing else, I should like to argue, can make any difference to our lives."*[104]

PERSPECTIVE AESTHETIC APPRECIATION

Scruton gives a very clear picture in his thesis on aesthetic appreciation of a perspectively orientated man as opposed to an aspectively orientated man who adheres to the Romantic legacy, Kant's aesthetic theory and the Formalistic art theory. He quotes Alberti, who considered that in matters of aesthetic choice one is dealing not with mere subjective opinion, but with a true rational capacity of the human mind.[105] Therefore Scruton argues that our experience of architecture and aesthetics is based on an act of imaginative attention to its object, and is essentially open to emendation in the light of reasoned reflection; that our preference means something more to us than mere pleasure or satisfaction, more than a satisfying of wants and needs; that it is the outcome of our thought and education: it is the experience of moral, religious and political feeling, of our entire attitude to life with which our identity is mixed,[106] and that is reflected in our choice of aesthetics, and governs our taste. Furthermore, Scruton argues, our taste is acquired through instruction, through the acquisition of knowledge and the development of values. Changes in taste are continuous and indeed inseparable from changes in our outlook on the world, therefore taste is as much part of our rational nature as are scientific judgements, social conventions and moral ideas.[107] The exercise of taste, and the imaginative transformation of experience are, in fact, one and the same thing.[108] The search for the *correct* experience is the cul= tivation of the *appropriate* in all its forms. But to find the appropriate is to search for the significance in building, as it is the discovery of principles through which the meaning of a building is regarded that ultimately determines the

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104 *Ibid.*, p. 78.
105 *Ibid.*, p. 132.
106 *Ibid.*, p. 105.
107 *Ibid.*, p. 106.
108 *Ibid.*, p. 133.

correctness or appropriateness thereof.[109] It is only through the sense of *meaning* in buildings that the judgement of taste may argue its full elaboration, and it is thus the meaning the observer must be brought to understand. Meanings are imbued in reasoned concepts, and it is concepts which enable us to distinguish things that are observably distinct and to formulate the facts that make them so.

Scruton describes in this manner, the aesthetic experience of a perspectively orientated person as opposed to the aesthetic experience decreed by the Romantics, Kant and contemporary formalism in art. A rational cosmic order is essentially part of Scruton's thesis as opposed to the introspective, confused world that denies in its subjectivism the inherent cosmic accessible order. Scruton thus gives us a possible contemporary attitude to a perspectively orientated aesthetic theory, in contrast to Kant whose ideas were utilised in expressing a self-consciously aspective aesthetic theory.

THE A-HISTORICAL DEVELOPMENT OF ROMANTICISM

Tafuri claims that Brunelleschi broke the historical continuity and development of form, by an arbitrary revival of classical forms and objects from antiquity, applied to a revolutionary concept in architecture.[110] Nevertheless, we may observe the adaptation and changes made to the classical form, in order to conform to the Renaissance ideal, therefore demonstrating a linear change and adaptation of forms with new meanings associated with them,[111] within the objectively understood classical code. The linear time concept, as related to perspect= ive, was not disrupted, the practical rationalism of the Renaissance world concept, allowed no room for escape from accepting reality in a perspective and historical content. The linear time concept was more or less preserved up to the development of the Romantic Movement. It was Romanticism that initiated the return of the mysterious mythical concept of time, thus revealing the cyclical nature of the Romantic time concepts.

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109 *Ibid.*, p. 138.
110 Tafuri, M., *op.cit.*, pp. 14, 15.
111 *Ibid.*, pp. 17, 18, 20. Borromini and Michaelangelo.

DUALISM IN PHILOSOPHY

Romanticism ultimately reveals the dualism and tension evident in philosophical standpoints since the Renaissance, which had been the Theological standpoint opposed to the Platonic view. Romanticism reveals the antithesis of two world views, a legacy carried to contemporary philosophy. The practical rational linear concept of structuring order in the perspective; as opposed to the theoretical mythical concepts of structuring in the aspective, lead to two diametrically opposite Archi= medean points in philosophy. Either the immanent, when the Archimedean point is seen within the cosmos, or transcendental, outside its boundaries.[112] Either order is structured on the basic supposition that the cosmos is knowable by man through its inherent order, seen as a whole and within that whole, as immanent; or that order of the whole cosmos is unknowable and that it is forever beyond the boundaries of the understanding of man to grasp it, thus order is structured in fragments, and the ultimate order is seen as transcendental, beyond and out= side the boundaries of the cosmos. Thus is revealed the dualism of the either/or of philosophical thought, namely the structuring of order, either the aspective or the perspective.

THE ESCAPISM OF ROMANTICISM

The anarchy and disrupted conditions in all walks of life after the French Revolution, once more saw the development towards the aspective which is manifested in the Romantic Movement. The Enlightenment and the revolutionary ideals encouraged the individual to cherish exorbitant hopes for the future. Romanticism expressed its disappointment and disillusionment by its desire to escape from the reality of the consequences of the Revolution.[113] Romantics took refuge in visions of the past or future, in order to escape the present, in a mythical, unreal interpretation thereof, where all dreams came true, and from which was excluded all the tensions between idea and reality.

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112 Kalsbeek, L., *Contours of a Christian Philosophy*, p. 56.
113 Hauser, A., *op.cit.*, Vol. 3, p. 166.

> *"The escape to the past is only one form of Romantic unreality and illusionism - there is also the escape into the future, into Utopia. What the Romantic clings to, in the final analysis, is of no consequence, the essential thing is his fear of the present and of the end of the world."*[114]

Pevsner tells us that the Romantic attitude was one of longing, and an antagonism to the present, a present which he saw as undesirable. The opposition to the present and immediate past goes through all utterances of the Romantic Spirit.[115] Scott maintains that Romanticism idealises the distant both in time and place; it is often retrospective, turning away from the present as being too familiar.[116] The fictitious life is chosen, because reality can never be as beautiful as an illusion, and to realise dreams would be to corrupt them with the harshness of reality.[117]

> *"The escape to Utopia and the fairy tale, to the unconscious and the fantastic, the uncanny and the mysterious, to childhood and nature, to dreams and madness, were all disguised and more or less sublimated forms of the same feeling, of the same yearning for irresponsibility and a life free from suffering and frustration - all attemps to escape into that chaos and anarchy against which the classicism of the seventeenth and eighteenth centuries had fought at times with alarm and anger, at others with grace and wit, but always with the same determination."*[118]

In this manner one may observe the development and acceptance of the timelessness of dreams and mythology as reality, and to the cyclical concept of time;[119] thus the aspective nature of Romanticism becomes revealed.

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114 *Ibid.*, Vol. 3, p. 155.
115 Pevsner, N., *An Outline of European Architecture*, p. 350.
116 Scott, G., *op.cit.*, p. 39.
117 Hauser, A., *op.cit.*, Vol. 4, p. 173.
118 *Ibid.*, Vol. 3, p. 163.
119 *Vide* pp. 116, 117.

THE DEVELOPMENT OF IMPRESSIONISM

About 1830 the foundations and outline of this century may be discerned, the new social order, the economic systems, and the inventive technology, as well as the contradictions and tensions that form so much a part of contemporary life, namely the dualism of the aspective and perspective methods of viewing the world. Romanticism was one aspect that revealed the new attitudes of the coming age. Development and change became so fast everywhere, in all spheres of life, that they appeared to have accelerated and removed from the past as if no links existed.

> *"Today we are faced with new situations, new ways of life as if we are cut off from the past."*[120]

From the time of the Revolution, the nature of man and society has appeared as if it were essentially dynamic, as if in an eternal flux of endless struggle, giving evidence to all appearances, of a merely transitory character. This apparent discovery by the Romantics forms an important contribution to the philosophy of our present age.[121] Everything stable and coherent has dissolved into metamorphosis and assumed the character of the unfinished and fragmentary, an aspective view of the world; a world in which transition and constant flux allows the only truth to appear to be in the impression of the moment.[122]

> *"An art in accordance with such a world will stress not merely the momentary, transitory nature of phenomena, will not see in man simply the measure of all things, but will seek the criterion of truth in the 'nic et nunc' of the individual."*[123]

Impressionistic painting expresses the fragmentary concept of time, the mood or impression of the moment, of the individual's subjective impression. Although this legacy of Romanticism strips the Romantic of the heroic, it still departs from reality

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120 Hauser, A., *op.cit.*, Vol. 4, p. 1.
121 *Ibid.*, Vol. 3, p. 161.
122 *Ibid.*, Vol. 4, pp. 159, 160.
123 *Ibid.*, p. 160.

in the same way. Hauser is of the opinion that Impressionism was the climax of the self-centred aesthetic culture of the Romantics, and signified the ultimate consequence of the Romantic renunciation of practical life. Impressionism is of importance to the architectural development of the *'avant-garde'* Modern Movement, due to the development of the simul= taneousness of viewing that had been initiated by Cubism, which so strongly influenced modern spatial concepts in architecture. The Impressionists, Cezanne and Gauguin, became the forerunners of Cubism, by relinquishing perspective and by creating the flat layering of planes and the new two-dimensionality in art.[124]

THE TIME FRAGMENT OF IMPRESSIONISM

Hauser is of the opinion that Impressionism reduces reality to a two-dimensional surface, it forgoes not only plasticity but also design, not only spatial but linear forms as well.[125] Impressionism was an important point in the history of art as it dissolved the world view, the whole of the perspective, and gave dominance to the moment, the fragment of time separately and aspectively. The uniqueness of the moment, that which had never existed before, or will again exist, became the basic experience of the nineteenth century.[126] The change in the conception of time, and hence in the whole experience of reality took place step by step. From Romanticism to Impression= ism and finally to the abstraction and timelessness of formalism in art, the whole spectra of the Modern aspective time concepts are revealed. Impressionism, and the mood of the moment, played a significant role. It expressed the time fragment of experience, but alone and removed from experiencing the whole of reality, and in this manner exposed its cyclical and aspective nature. It paved the way to the eclipse of history, to the timelessness of abstract art. The *now* was of importance as if it would be immortalised and thus it gave a significance to the fragment as opposed to the whole of linear time. It revealed the inability of such men to master the whole of reality in linear time, in the fast moving changes of our age.

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124 Cooper, D., *The Cubist Epoch*, pp. 19, 20.
125 Hauser, A., *op.cit.*, Vol. 4, pp. 159-165.
126 *Ibid.*, Vol. 4, p. 112.

ROMANTICISM AND HISTORICISM

The archeological recovery of antiquity by the Renaissance, introduced and made clear the ideological value of the symbolism of history, but it never confused the issue by multiple sub= jective analogy. The death of traditional symbolism, the desecration of contents became reflected in the heroic Utopian= ism of the first generation of Neo Classical architects, Tafuri claims.[127] Great advances were made in uncovering historical and archeological facts during the Romantic era. More was known of history than ever before; it became a time of aware= ness of Historicism.[128] However, the Romantic, despite all his appreciation of the past, judges his own time unhistorically; he does not grasp that it stands midway between the past and the future, and therefore he represents an indissoluble conflict of static and dynamic elements.[129] Thus is illustrated the aspective world view in conflict with the perspective world view.

> *"For, if romanticism, in fact, sees only one side of a total situation fraught with tension and conflict, if it always considers only one facet in the dialectic of history and stresses this at the expense of the other, if, finally such a one-sidedness, such an exaggerated over-compensating reaction, betrays a spiritual unbalance, then romanticism can rightly said to be called 'diseased'."*[130]

Romantics were fascinated by Historicism. Its literature imaginatively coloured historical periods in either attractive or repellent tones, this association turned into a symbolism related to a particular epoch.

> *"The Romantic Movement is a phase, precisely of this litary pre-occupation. It is the most extreme example of the triumph of the association over direct experience which the history of culture contains."*[131]

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127 Tafuri, M., *op.cit.*, p. 24.
128 Pevsner, N., *op.cit.*, p. 377.
129 Hauser, A., *op.cit.*, Vol. 3, p. 154.
130 *Ibid.*, Vol. 3, pp. 154-155.
131 Scott, G., *op.cit.*, p. 62.

FICTITIOUS SYMBOLISM

Pevsner maintains that the Rococo had reintroduced alien styles, but it was the Romantic who endowed them with senti= mental associations.[132] The Romantic divided architectural history into fixed stylistic epochs, the sections are each separate and related to a particular symbolism. They created an idealistic fictitious interpretation of a life style associated with a particular period. They praised Medieval life as a Utopia of religious and cooperative spirit, and condemned the Renaissance as pagan and worldly. Scott states that the catastrophe of style was equally a catastrophe of thought, and that it, without doubt, contributed largely to the confusion of architectural criticism.[133]

> *"What the Romantics would like to achieve is the impossible fusion of a present that is feared in the very moment in which it takes stable root in it; and a past that one refuses to read as such, whose sense one is frightened of: because the exact reading of the past would necessarily lead to the discovery of the sense of 'the today' that the Romantic eclectic artist tries desperately not to see. Therefore the real inability to put order into such an intricate, chaotic, even sordid, incurable, almost irrational matter, becomes pathos, becomes frantic, need to speak, to tell, to symbolise and institution= alise."*[134]

The subjectivity of freedom of expression developed by Roman= ticism marked the end of the objective symbolism of the Renaissance and further heightened the fictitious nature of Romantic Symbolism and the desecration of meanings related to forms and objects. Tafuri explains this concept from Hegel, who saw the end of the traditional concept of art, thus he prophesied its death. Hegel maintained that in Romantic art, everything had to have a place, every sphere of life, all phenomena. But on the other side it is the subjectivity of the artist that leaves nothing in its usual context, for the validity which it has for our usual way of looking at things, in an objectively real world.[135]

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132 Pevsner, N., *op.cit.*, p. 376.
133 Scott, G., *op.cit.*, p. 51.
134 Tafuri, M., *op.cit.*, p. 30.
135 *Ibid.*, pp. 28, 29.

CONFUSION OF SYMBOLS

> *"From a history that quarrels with the organic nature of Classicism therefore, to a history that tends to become the sole object of expression and exaltation: the accomplished revolution is decisive and irreversible. From then on absolute values no longer rule the symbolic struct= ure of artistic activity; it is the adventure of man that takes on the leading role, and claims the discovery of a new constructive nature of form directly related to perception, to fruition, to a mundane and contingent symbolism."*[136]

The fictitious, subjective association used to determine symbolism allows an eclecticism, of confused meanings related to form and objects, to emerge. Association and symbols are used to create a certain character, moods or feelings in buildings that the client or architect wishes to convey. Pevsner points out that generally speaking, such symbolism and associations were the only values in architecture access= ible to the new ruling class.[137] Furthermore, it should be noted how the commercial coding of architecture, particularly in America, still uses this symbolic coding. The Post Modern architecture, too, may be found in the same situation, except that the Post Modern architect subjectively distorts these associations of symbols and images, further adding to the confusion of meanings designated to objects.

> *"It was inevitable that Romantic criticism should neglect the Renaissance style. Its antiquarian enthusiasts found in it no free scope, because the field had already been well explored, the subject well formulated: they were revolted, moreover, by the uncon= ventional use which the Renaissance artists often made of classical design;"*[138]

THE A-HISTORICAL DEVELOPMENT

The concept of association of styles, the use of which in authentic forms, for other uses, destroys the traditional concept of style, by giving it many new meanings. It destroys the natural evolution of form, with the sense of historical

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136 *Ibid.*, p. 26.
137 Pevsner, N., *op.cit.*, p. 376.
138 Scott, G., *op.cit.*, p. 58.

styles in its authentic form to new uses. The desire of the Romantics to use only authentic form may be seen not only in the Gothic revival, but in the return of pure classical Greek in the neo-classical revival. The studies of Stuart and Revett of authentic ruins (1762) testify to the intensity with which these studies were pursued.[139] The development of the Neo-Classical style during the Napoleonic Empire, was largely a need to accommodate the new institutions and to represent and symbolise the new Republican State.[140] The American Neo-Classical styles and the German Fascist Neo-Classical are all manifestations of an Eclectic architecture of symbols associated with forms. Distinction must be made between the interest in Historicism, as seen in Romanticism, and a sense of history in a linear sense of perspective: it is not the same thing. Romanticism saw Historicism from as aspective point of view, the mythical cyclical nature of their time concepts was aspective. Eclecticism of the Revival period and Post Modern architecture is as much part of an anti-historical attitude as the Modern Movement, the other side of the same coin.

> *"It is the boiling magma of historical recollections that one can see the true subject of eclectic research."*[141]

Tafuri explains how close the allusion to historicism is to the allusion of the new scientific technology, as symbolised in the Modern Movement. In turning to science they symbolised the sacred truths of science, to create an illusion of being above the very concept of history. Historicism had betrayed by being too arbitrary.[142] The supplanting of the machine aesthetic as a stylistic crutch, with its theoretical justification, in the place of stylistic historicism with its literary justi= fication of allusion and associated symbols, are one and the same process. Both manifest the aspective situation, which had been revealed by Romanticism. The Modern Movement decreed

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139 Frampton, K., *Modern Architecture, a critical study*, p. 13.
140 *Ibid.*, p. 17. Tafuri, M., *op.cit.*, p. 26.
141 Tafuri, M., *op.cit.*, p. 29.
142 *Ibid.*, p. 30.

the validity of the sacred truths of science and starting from scratch with each new program of design, by an a-historical architectural methodology, and a non-historical teaching, history was eclipsed.[143] Thus with the Modern Movement in architecture the aspective attitude became part of the process and necessary to the design method.

MORALITY AND ROMANTICISM

The association of ideas related to the Medieval style, had particular appeal for the Romantics as opposed to the Renaissance which represented paganism to them. About 1835, in England, Augustus Welby Pugin (1812-1852) transferred the equation of Christianity and Gothic into architectural theory and practice.[144] Neo-Gothic appeared to symbolise a life of Christian devotion and co-operative spirit. In an age of Industrialisation and specialisation, a co-operative spirit, and hand-crafted objects appealed; furthermore they always rejected the present, so believed that pre-industrial goods were superior to anything made in their own time.[145] But as Romanticism was a reaction of sentiment against reason, of nature against artificiality, of simplicity against pompous display and faith against scepticism,[146] they found in the Medieval epoch the seeds of Utopia they desired, of a fictitious representation of Medieval life. The Utopian concept played an enormous role in the establishment and development of the Modern Movement in Architecture and its accompanying ideologies. The moral obligation placed on the architect, the dedication to work for the social betterment of man, are all based on the Utopian concept developed by Romanticism.

> *"The interest shifted, more and more, from art itself to the ideals of civilization."*[147]

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143 *Ibid.*, pp. 11, 12. Fick, J. M., *Walter Gropius*, p. 14.
144 Pevsner, N., *op.cit.*, p. 381.
145 *Ibid.*, p. 377. Frampton, K., *op.cit.*, pp. 42, 43.
146 *Ibid.*, p. 350.
147 Scott, G., *op.cit.*, p. 48.

MORALITY JUSTIFIES ARCHITECTURAL THEORY

Romanticism was essentially expressed in a literary movement, in which, one of its greatest achievements may be found in poetry. Romanticism created a great deal of written justi= fication on the choice of architectural style, on moral grounds, a legacy found manifested in the profusion of treatise, theories and ideologies, written at the inception of the Modern Movement and which has continued unabated to the present day.

Ruskin, around the middle of the eighteenth century, condemns Renaissance as pagan in its origin, proud and unholy in its revival and paralysed in its old age.

> *"But it is the moral nature of it which is corrupt."*[148]

A new temper is clear in architectural criticism, now a con= fused web of prejudice becomes associated with style. From this legacy are built the creeds of honesty of structure, materials and architectural expression.[149] The whole character of Romantic art was derived from historical antecedents and the moral condition and religious belief of the people. This one-sided, aspective interpretation of the Hegelian philosophy determined the attitude of generations of architects. The aesthetic became, above all, bound to an ethical fallacy.[150] Who made the art object was more important in criticism than the object itself.[151] Scott maintains the essential fallacy of Romanticism was, that it treated architectural forms primar= ily as symbolic.[152] The problem arises when architecture becomes a mirror to subjective literary preferences and literary distastes. There may be no doubt that this brought about a great deal of misunderstanding and clouding of aesthetic criteria. To say that ethical values do not form part of aesthetic appre= ciation would over simplify the matter, nor would it be valid. Appreciation of architecture, be it an intellectual function

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148 Scott, G., *op.cit.*, p. 121 quoted from Ruskin, J., *Stones of Venice*, Vol. III, Chapter ii, p. 4.
149 *Vide* pp. 128-134.
150 Scott, G., *op.cit.*, Chapter V, pp. 121-164.
151 *Ibid.*, p. 126.
152 *Ibid.*, p. 125.

of the mind, as Scruton alleges, the moral values such as truth and honesty would influence, bias the mind to distaste or appreciation.[153]

MORALITY CLOUDS AESTHETIC CRITICISM

However, allowing subjective moral sentiment as opposed to objective rational ethical values, to cloud aesthetic criticism, brought with Romantic criticism a great deal of overemphasis on morality applied to architecture and architects in the wrong context.

> *"The moral judgement, deceived by false analogy with conduct, tends to intervene before aesthetic purpose has been impartially discerned."*[154]

Pugin and Ruskin paved the way for the Pre-Raphaelite movement. The ideal was to create an art form derived directly from nature; an eminently anti-classical Romantic attitude. The second, craft-orientated, Medieval Romantic inspired movement, was the Arts and Crafts Movement of William Morris,[155] whose Utopian, socialistic doctrines based on Ruskin's work, influenced the ideals of the Bauhaus.

The initial *avant-garde* movements in architecture were formulated on the Utopianism of the Romantic Movement, the ideal city, the anti-classical, anti-rational and anti-utilitarian attitude, mingled with Christian reform; and oscillated between the denial of the actual historical reality of machine production on the one hand, and on the other a planned scientific, rational, functional Utopia.[157]

The Neo-Gothic Movement, the Pre-Raphaelites, the Arts and Crafts Movement, the Art Nouveau, all supported the return to a pre-industrial age, the Medieval way of life, and eventually revealed an art form derived from nature and not from the artistic conventions of Renaissance origin, and eminently

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153 *Vide* p. 180.
154 Scott, G., *op.cit.*, p. 158.
155 Rowland, K., *A History of the Modern Movement, Art and Architecture*
156 Wingler, H. M., *op.cit.*, p. 19.
157 Frampton, K., *op.cit.*, p. 9.

anti-Classical Romantic attitude, which was basically craft-orientated and deeply conscious of social reform.[158] In this same spirit the Bauhaus came into being, even the name recalled the idea of Medieval Masons Lodge,[159] although in time, its changing ideology implied that the teachings of crafts meant to prepare for designing mass-produced objects. By 1927 the Bauhaus designs were employed in industrial production.[160] The Bauhaus developed from an initial hostility to industry, to an eventual reconciliation with machine pro= duction, modern technology and scientific methods which it then totally embraced.[161] The Bauhaus aimed for the uni= fication of art with technology to satisfy the demands of the new age. The sudden decline of Art Nouveau may possibly be ascribed to the influence of science, which directed decorative art and architecture to more geometric and scientific lines, as developed during the short history of the Bauhaus.

The problem with the Utopian concept appears to be the time= lessness inherent in such an idea, a never to be realised dream. Utopianism expresses a cyclical concept of time and is thus aspective. Furthermore, it stresses the impractical nature of the aspective as it always professes what should or ought to be done on moral grounds, subjectively, instead of what could be done, to solve a problem, objectively in a practical sense.

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158 *Ibid.*, p. 43.
159 *Ibid.*, p. 124.
160 Breur furniture, fabrics by Gunta Hadler Stolzl and lamps by Marrion Brandt.
161 Steadman, P., *The Evolution of Design*, p. 139.
Jencks, C., *Modern Movements in Architecture*, p. 114.

CHAPTER 6

VALUE STRUCTURES AND DECISION METHODS

"Decision is intrinsic to all action involving valuation and choice."

John Dyckman

Ancient graphic remains, depicting a residential cluster at Catal Hüyük (6250 B.C.) and the plan of a house drawn on a clay tablet, at Tell Amar in Iraq, the ancient Eshnunna (3000 B.C.),[1] reminds us that even in such ancient times, buildings were conceived and represented graphically before they were actually built. To do this, such a person is obliged to make certain choices and decisions, concerning the size, shape, materials, structural method and detail of the proposed structure. Creativity involves the architect with alternatives and choices which necessitate decisions. The crucial idea in selection from the available alternatives must derive from one's view of reality. The perspective view opens alternatives on choice, decision making, that do not exist to the aspective view.

One presupposes that the designer's aim would be to select the optimum choice, under the circumstances and within the con= straints placed upon him. To achieve such an aim, would require the selection of criteria which would ensure the appropriateness of his choice.

"For it is within the framework provided by the notion of 'appropriate' that all the architects' problems are envisaged."[2]

VALUES DETERMINE ACTION AND CHOICE

However, the choice of suitable criteria for such a judgement would ultimately be found in the values the designer deems important. Values express themselves in what is right, fitting, appropriate and just, as opposed to desires which express mere

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1 Kostof, S., *The Architect*, fig. V, p. 19.
2 Scruton, R., *The Aesthetics of Architecture*, p. 24.

preferences. Values aspire to an end in view, to achieve an aim; and are that which one acts to gain or keep, and are, in fact, man's prime motivating power.

> *"Values are more significant, and have a kind of authority in practical reasoning that no mere preference would acquire. Not only do we feel called upon to justify them with reasons when necessary, we also learn to understand the world in terms of them."*[3]

A value is characterised not only by its strength and depth, but also by the extent to which it brings order to experience, therefore it may be supported, overthrown or modified by under= standing and reason.[4] Criteria will thus be determined by the value structure the designer employs in the creative design pro= cess. Norberg-Schulz maintains that to possess a system of values, means, that a person wants, and is convinced that the world ought to have, a certain structure.

> *"Values, therefore influence our choice of alternatives, they make our actions intentional."*[5]

However, the method man uses to structure order in the process of cognition, seems to determine how he ultimately perceives reality, which in turn influences the structural base of man's general intellectual orientation, and thus the terms in which he understands his world, namely aspectively or perspectively. In this manner the method affect the values he adopts, which determine the criteria he uses to establish the appropriateness of his choice; because only through these values does man learn to understand his world.

The aspectively orientated mind determines values related to different aspects separately, without links, does not connect these aspects to each other, thus he is unable to establish a hierarchical value structure related to the whole design or to appreciate how one value decision would influence, directly

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3 *Ibid.*, p. 32.
4 *Ibid.*, p. 32.
5 Norberg-Schulz,C., *Existence, Space and Architecture*, p. 38.

or indirectly, other aspects of the design, or, for that matter, the design as a whole.[6] The perspectively orientated mind, on the other hand, sees the whole, perceives these links and relationships, as related to all the other aspects, deter= mines a hierarchical value structure and appreciates that a particular value decision would influence the whole. Scruton points out that the optimum solution to a design situation would require that the relative importance of every component of the whole would be judged and the degree of satisfaction specified to them, thus the establishment of a hierarchical value structure related to the whole.[7]

MEANINGS ARE RELATED TO VALUES

> *"To say how my experience is, I must say how the world seems to me."*[8]

Norberg-Schulz declares that we interpret a situation relative to our system of values. That when we say that certain forms are *'expressive'*, it means they manifest higher objectives, which are based on our system of values. Furthermore, he points out that symbolic forms and expressive forms are synonyms, signifying that physical forms perceived or produced mediate a higher meaning; that this symbol-function is basic to human behaviour; that, without symbols, which concretise him as a value-orientated being in the world, man would be inexpressive.[9] Similarly Scruton maintains that the *'appropriate'* plays a part in bringing together values and purpose.[10] To do this a person must lift his experience out of the immediate and transform it into a sign of something universal, not only valid for the present but for some future need, as a means of comparison and evaluation in order to appreciate meaning. Hence, the need of man, as a rational creature, for the concept of the *'appropriate'*, a concept that would be applied directly to an experience and so to transfer

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6 A typical example being the adherence to the prescribed day= light factor in schools in Britain. This factor created glare, poor acoustics and problems with the control of the climate, but was adhered to regardless of these negative factors. Lawson, B., *How Designers Think*, p. 53.
7 Scruton, R., *op.cit.*, p. 32.
8 *Ibid.*, p. 75.
9 Norberg-Schulz,C., *op.cit.*, pp. 38, 39.
10 Purpose in this sense, meaning how to act.

it into a sign of permanent value.[11] Scruton argues further that our task, in other words out choice as to the appropriate, is acquired through instruction, through the acquisition of knowledge and the development of values.[12] Rapoport investigates the need for symbols in the environment and concludes that the role of symbols is to communicate the socio-cultural system, to give clues for appropriate behaviour. Generally speaking, the absence of symbols, in the environment and symbolic integration, may lead to breakdown and social pathology. Thus the need to have and understand how symbols work and how they communicate is critical.[13] Values are essential to understanding and inter= preting experiences, to express meaning, and are particularly related to symbols.

> *"Even the simplest building involves a series of decisions ... Man discovered that over and above satisfying his functional needs the decisions he made in designing a building created a relationship between himself and the building giving it a meaning."*[14]

Meaning in this sense may only be appreciated in relation to man's values, which Norberg-Schulz declares are vital to man in orient= ating and understanding his environment, for these existential meanings are established in relation to his values.[15] Further= more, values play a part in the process of practical reason, and so promote our actions, but they also enter into the process of reasoning whereby we justify action and judgements, not only to ourselves but to others.

> *"Without values, it would be hard to imagine rational behaviour."*[16]

Values are essential in our understanding and interpretation of experience and to express and appreciate meanings. Meanings, or semiology,[17] related to architectural form, can really only develop by association and accumulation of knowledge, created

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11 Scruton, R., *op.cit.*, p. 241.
12 *Ibid.*, p. 106.
13 Rapoport, A., *Human Aspects of Urban Form*, p. 325.
14 Allsopp, B., *A Modern Theory of Architecture*, pp. 5, 6.
15 Norberg-Schulz, C., *op.cit.*, p. 7.
16 Scruton, R., *op.cit.*, p. 114.
17 Semiology; a general science of signs.

in time, historically, thus by tradition. Tafuri tells us that the language of architecture is formed, defined and left behind in history, together with the very idea of architecture.[18]

> *"In any case architecture shows continually that the very basis of its existence is in the unstable balance between a nucleus of permanent values and meanings, and their metamorphoses in time."*[19]

In time, values and meanings were developed and stabilised into codes of architectural practice, establishing a system of ex= pectations to which one may refer as a means of evaluation or choice, and which is a product of mental and inter-subjective construction tied to the social and intellectual conditions of various historical moments.

RENUNCIATION OF TRADITIONAL VALUES

Historical precedent teaches us that apart from the development of the perspective from the aspective, in the way man views his world, which had occurred in ancient Greek society, other events and circumstances caused man to be influenced and to change the value structure generally held in a society at a given time. However, due to the extent of this particular field of study, it must unfortunately be sufficient to mention here only those changes which directly influenced the contemporary situation in architecture. Of particular importance was the renunciation of the traditional value systems of architecture in favour of the scientific analytical value system which occurred at the inception of the Modern Movement. The author makes a distinction between value structures, in the sense of those which motivate a decision, and, on the other hand, decision method, that which involves the actual process through which a decision may be arrived at. In this manner decisions are said to be derived from criteria based on either the traditional normative pragmatic system or from the scientific analytical system, whereas decision methods will be discussed in the context of the Rational and Intuitive methods respectively. Due to the magnitude of the

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18 Tafuri, M., *Theory and History of Architecture*, p. 228.
19 *Ibid.*, p. 178.

study of design methods and creative techniques, the choice of which is directly related to value structure, anyway, this field of study is not included in this discourse.

John Dyckman does not make the same distinctions as the author, but groups value structures and decision methods together in the following categories: Intuitive method, rational analysis and the traditional or normative.[20] Barclay Jones recognises only the decision methods of belief, reason and the scientific method,[21] and does not acknowledge value structures. Broadbent believes that architects use the following four distinct ways of generating form, which he describes as pragmatic, iconic, analogic and canonic.[22] Although none of these authors make the distinction with regard to value structures related to decision making, this study aims to demonstrate the importance of this distinction and the consequences brought about by the change of value structure initiated by the Modern Movement. The traditional normative system that derives values culturally and pragmatically established, through time, allows for the incor= poration of values related to all the aspects of man, the measurable and the non-measurable aspects, whereas the scientific analytical system is based only on singular values that reflect the absolute universal truths, scientifically established. This allows only the scientifically measurable aspects of man to be included. Furthermore, by changing the basic value structure of architecture, as related to the past, the whole essence of architecture was changed. Values and criteria applicable to architecture with normative traditional structure as seen in the past, were ruthlessly rejected, bringing a change to archi= tectural practice unprecedented in the history of civilisation. Not that historical precedent does not elucidate great changes in architectural codes, which are all found within the traditional normative value structure.

Tafuri points out how the revolution of method, conception of artistic production and social meaning were changed and revolution= ised by the Renaissance. But this revolution was a re-organisation

20 Dyckman, J., Planning and Decision Theory, *Journal of the American Institute of Planners*, Vol. XXVII, No. 4, 1961.
21 Jones, B., *Architect and the City*, *ed.* Wifflen,M.,p. 144.
22 Broadbent, G., *Design in Architecture*, p. 25.

and restructuring of linguistic material and methodological instruments already present and within the pre-existing architectural tradition.[23] This reconstruction and re-organisation of tradition created a revolutionary architecture, at that time, with new meanings and values, yet publicly under= stood. Even Greek art and architecture reveal a gradual pro= cess of adapting the perspective view to the architectural language, within the framework of traditional values and meanings. Modern architecture does not re-arrange or restructure existing traditional concepts but simply disposes of them and declares them nul and void, an a-historical and anti-traditional atti= tude.[24] In this manner a situation fraught with ambiguity, meanings unrelated to values, new unanswered questions and the resulting multiform and chaotic panorama of architectured inter= national culture, which demands an assessment of these present conditions,[25] was created.

THE NATURE OF THE VALUE

By changing the value structure, architectural decisions based upon the Modern Movement changed the nature of the value itself, as seen related to architecture. Scruton points to a very im= portant characteristic of values, namely that values do not dis= tinguish between the *'way it looks'*, *'what it means'* and *'what it does'*; these are inseparable. The appropriate in terms of value does not make these distinctions.[26] By changing the structure of values, by discarding and destroying this holistic approach as realised by traditional values, concerning all the aspects of man, the Modern Movement accepted only the value of scientific truth. In this manner, modernists attempted to dissect these values scientifically, in order to establish authenticity, under the guise of needs, wants, preferences or desires and functions. Furthermore, by always contesting values, by declaring a tradition of the new and original, they were al= ways upsetting established values, and breaking the link between meaning and form. Thus the meaning of aesthetic values in the terms Scruton defines as the *'appropriate'* can not exist, in the purely scientific analytical system; what it means, the way

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23 Tafuri, M., *op.cit.*, p. 208.
24 Tafuri, M., *Modern Architecture and the Eclipse of History* pp. 11-78.
25 *Ibid.*, p. 2.
26 Scruton, R., *op.cit.*, p. 35.

it looks and what it does are terms that fall apart and are separate. Thus the scientific analytical system does not only proclaim the aspective by the timelessness of the eternal uni= versal truth, but also by the manner in which it separates and breaks the links with the very quality of a value. Making aesthetic choices aspective destroys the very quality that determines the appropriate, namely the value. Traditional values can not be measured scientifically, they belong to the realm that incorporates all the aspects of man, not only the measurable. Upon these practical reality rest and in their holism they are vital to the perspective view of reality.

THE TRADITIONAL NORMATIVE VALUE STRUCTURE

> *"It is the property and business of design to appoint to the edifice and all its parts an appropriate place, exact proportion, suitable disposition and harmonious order, in such a way that the form of the building should be entirely implicit in the conception."*
>
> Alberti

> *"Man is the measure of all things, of the existence of the things that are and the non-existence of the things that are not."*
>
> Protagoras

Traditions have been used as norms in architectural decision-making ever since man realised the value of pragmatism in the art of building; and in addition, when he appreciated that significance and meanings may be derived from symbols related to the built form. The structure of values, based on norms established by tradition, is accumulated in time, through history and from experience; and is concerned with all the aspects of man in relation to his buildings. Early building methods were established, Broadbent maintains, by trial and error, by taking available materials and putting them together in such a way that seemed to work, that pragmatic design was the earliest way of building. Once a building type had been established, it was often used in the same way for thousands of years. Vernacular architecture is typical in that it uses available resources in terms of wood, stone, skin, earth and so on, to effect certain

modifications in the given climate, adapted to local custom.[27] Originality in the design of folk and vernacular architecture is minimal and differentiation is mainly a matter of building type, detail and craftsmanship.[28]

Experience teaches us to reject failure and to select factors and constants that ensure that they are the constituents of success. The vernacular code of values demonstrates how archi= tecture came to be related to people over a long span of time. Therefore certain architectural types are established in the conscious or the sub-conscious, these are images of proved solutions, experienced-based preferences of an architectural nature. These become contained in the mind giving significance and meaning to forms, architectural detail, acquired patterns and methods employed by craftsman and builders.[29] Legends, cultural traditions, ritual and social practice, too, create patterns that persist in building, thus creating fixed mental images of what would be appropriate for a particular building type. Broadbent defines such architecture as iconic.[30] Tafuri, however, explains that the establishment of a *'general grammar'* of architecture, is a Utopia; what one can do is recognise and describe syntaxes and *'codes'* useful as ideal types in histo= graphic analysis.[31] He adds that traditional values and codes change in relation to historical time, and can only be understood in relation to the particular time of its creation;[32] that they are the product of a mental and inter-subjective construction, tied to the objectively understood social and intellectual con= ditions seen as a whole which reflects the various historical moments.[33] From a common way of looking at reality, do values, meanings and symbols become related to architecture and in this manner become a means of visual communication.

UNSELFCONSCIOUS AND SELF-CONSCIOUS ARCHITECTURE

When these parameters and constraints are placed naturally on buildings in the process of their construction, to create norms, values and traditions, this situation may be identified as

27 Broadbent, G., *op.cit.*, pp. 27-29.
28 Allsopp, B., *op.cit.*, p. 6.
29 *Ibid.*, p. 56.
30 Broadbent, G., *op.cit.*, p. 30.
31 Tafuri, M., *op.cit.*, p. 228.
32 *Ibid.*, pp. 16, 17.
33 In this explanation Tafuri inadvertently advocates the linear time concept of the perspective.

'unselfconscious'. The unselfconscious tradition in archi= tecture prevailed until the inception of the Renaissance. From the moment the revolutionary concept was initiated by these architects, namely that of using arbitrarily selected historical architectural elements selfconsciously, as an ideo= logical support, a new approach to architecture was instituted, with regard to the way architecture is conceived. History of form, according to this conception, can not be presented by a continuous historical development, but a broken line, defined by an arbitrary yardstick, that decides each time its own goals and values.[34] Self-conscious architecture, once instituted, has remained with us ever since. Taking a particular form to fit an idea selfconsciously eventually culminated in the Modern Movement, which uses forms in an anti-historical manner, and which rejects all traditional precedent and values, these forms becoming an arbitrary selection based solely on individual ideology.

All architecture, produced by aspective cultures in the past was dominated by unselfconscious traditions, norms and values; which by their common objective nature had endowed consistent symbols and meanings to architectural objects, so that they were commonly understood; furthermore they reflected naturally a common way of looking at reality, and in this manner prevented fragmentation by subjective expression. The natural, unselfconscious tradi= tional code, gave a consistent character to aspective architecture of the past, as, for example, Egyptian and Gothic architecture.

The self-conscious attitude to design, namely that of using an analogy[35] to create form, in spite of its inherent nature to create fragmentation and pluralism, has not been a problem in this sense; on the condition that it reflected, and was based on, objective traditional values and norms derived from a homo= genous culture. The consistent character is retained by means of this unifying principle; objective values are communicated, criteria with respect to quality are retained and thus

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34 Tafuri, M., *op.cit.*, p. 16.
35 Historically derived or a-historical, selfconscious architecture is essentially analogous.

acceptability is assured, or at the very least, establishing acceptability becomes a possibility. In the perspectively orientated culture of the Renaissance, up to the Baroque, self-conscious architectural practice appeared not to have created a problem with regard to acceptability, and the inception of this different approach passed unheeded. Furthermore, the analogy used was based primarily upon the commonly accepted Classic code, the concept of perspective, the co-ordination of spaces, subordination of decoration to the laws of architectural organism, the rigorous control of form through proportional canons. These were not Brunilleschi's inventions, they were elements of pre-existing codes.[36]

> *"The problem of the passage from late-Gothic to Brunelleschian Humanism, for example, shows clearly that the ideal revolution of methods, of the conception of artistic production and its social meaning, depended on the re-organisation and restructuring of linguistic material and methodological instruments that were already extensively present in the figurative tendencies of fourteenth century Tuscany."*[37]

SELF-CONSCIOUS ASPECTIVE ATTITUDE

However, in an aspectively orientated culture that totally rejects traditional values, norms and meanings with regard to art and architecture, the analogy becomes directed by purely irrational, arbitrary, subjective stimuli. The self-conscious attitude to design, makes it very difficult to establish accept= ability or indeed find criteria to do so, when it uses as an ideological support or as a theoretical standpoint, subjective individual expression, originality as a necessity, and perpetual revolution;[38] and in this manner disregards objective values, traditional and cultural norms which are commonly understood. This situation, therefore, will then obviously degenerate into fragmented and discontinuous meaning related to form, with a plurality of ideological supports. It is thus the a-historical attitude and fear of preconceived ideas, that reveals, and marks the difference between aspective architecture of the past and the contemporary situation.

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36 Tafuri, M., *op.cit.*, p. 208.
37 *Ibid.*, p. 208.
38 *Vide* Chapter 5.

> *"And this applies also to contemporary art and architecture that have institutionalised, within artistic production itself, the con= cept of revolution; the perpetual overturning of linguistic links and of the system of meanings seems to be the ideal reference code for the 'Modern Movement'."*[39]

Broadbent speaks of crab shells used as creative inspiration by Le Corbusier in the design of Ronchamp, waterlilies by Frank Lloyd Wright in the Johnson Wax Factory, and that a good analogy is infinitely preferable to some inappropriate *'original'*.[40] What Broadbent fails to make clear, however, is the means of establishing the appropriate. Without traditional values, objective meanings and norms to provide a commonly acceptable standard, there remain no terms to verify the appropriate. Herein lies the fundamental problem with regard to criteria, concerning the modern aspective as opposed to the historical aspective situation, namely the absence of common values. The whole question of architectural standards, norms and values and the related symbolic meanings are bound within the traditional normative system established and understood historically.

> *"For it needs a standard of taste to create a style, and until there is a style there can be no associations to endow it with meaning."*[41]

OBJECTIVE CODE AS OPPOSED TO SUBJECTIVE IDEOLOGY

There are fundamental differences between a traditional objective code and an ideology subjectively proclaimed. Traditional codes are the reflection of an objectively understood way of inter= preting meanings and values architecturally. Whereas ideologies, particularly with reference to the contemporary architectural scene, are subjectively proclaimed standpoints of particular individuals, mostly underived from the common way of looking at things.[42] Mumford points to the victory of Modern Architecture over tradition and that as a consequence the guiding principle of modern design is based on the elevation of caprice and random happenings, its only value being in the denial of the very possibility of value.[43]

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39 Tafuri, M., *op.cit.*, p. 210.
40 Broadbent, G., *op.cit.*, p. 421.
41 Scruton, R., *op.cit.*, p. 174.
42 *Vide* Chapter 5, The Romantic Legacy.
43 Mumford, L., *Home for Man*, pp. 151, 152, 208.

> *"In properly rejecting antiquated symbols, they have also rejected human needs, interests, sentiments, values, that must be given full play in every complete structure."*[44]

SCIENTIFICALLY ESTABLISHED STANDARDS

Not that Modern Architecture did not aspire to gain standards; on the contrary, but what they chose was a totally different value structure to that used in the past, namely the scientific analytical system. Paradoxically it was the desire to eliminate caprice, arbitrary and irrational principles that directed their choice. However, they lacked the means to appreciate, that the universal truth of science, when used as an exclusive value, excludes the human aspects of man that are unmeasurable by scientific standards. Architecture is, however, by nature related to all the aspects of man, and requires norms for decisions in these spheres that are not measurable by scientific standards. In order to resolve these issues, ideological stand= points were required.

> *"Architecture is stifled by custom. The 'Styles' are a lie. Style is unity of principle animating from all the work of an epoch, the result of a state of mind which has its own special character. Our epoch is determining, day by day, its own style. Our eyes, unhappily, are unable yet to discern it."*[45]

Le Corbusier breaks with the linear time concept of traditional development and the perspective and so proclaims the cyclical, *'day by day'* concept and reveals the aspective necessity of structuring order. Codes and principles established tradition= ally by history and experience are vastly different in concept to scientifically based truths, inasmuch as they are applicable to things, but do not proclaim the absolute for all time, as scientifically established truths demand. Traditional norms and codes, on the contrary, are amenable to change and develop= ment. Modern Architects tried to understand and establish the validity of things scientifically, instead of the way things

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44 *Ibid.*, p. 155.
45 Le Corbusier, *Towards a New Architecture*, p. 84.

operate and work, the *'right fact'* instead of the *'right way'*. Avant garde ideologies have the tendency to ignore existing material,[46] and to declare themselves beyond contestation; they are always affirmative, absolute, totalitarian and radical,[47] their pronouncements have the nature of a scientific hypothesis, as if proclaiming a universal truth, the proof of which is, how= ever, conspicuous by its absence.

> *"They claim peremptorily to build a brand new context, taking for granted that their linguistic revolution not only implies but actually 'realises' a social and moral upheaval."*[48]

Bruno Zevi attempts to codify the new language of architecture created according to him by Le Corbusier, Gropius, Mies van der Rohe and Frank Lloyd Wright, and declares that the modern language of architecture is not the language of Modern Archi= tecture only, but a real system of communication of all creative architecture,[49] therefore absolute and timeless.

> *"Indeed, with tremendous effort and immense joy, we must strip away the cultural taboos we have inherited. We must track them down one by one in our minds and desanctify them. For the modern architect, the paralyzing taboos are dogmas, conventions, inertia, all dead weight accumulated during centuries of classicism."*[50]

THE ASPECTIVE NATURE OF THE SCIENTIFIC ANALYTICAL SYSTEM

The scientific analytical value system, if used exclusively and unrelated to the whole of reality in perspective, is aspective in denying all the aspects of man when it recognises universal truths only, in which time becomes infinite and cyclical. Popper describes the difference with regard to the validity of scientific truths as opposed to historical truth in the *'Poverty of His= toricism'*.[51] Although one may appreciate his standpoint with regard to the universal validity of scientific eternal truths, yet to exclude all the other aspects concerning man, which can

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46 Although Venturi has attempted to accept reality, yet he remains a-historical and aspective.
47 Tafuri, M., *op.cit.*, p. 104.
48 *Ibid.*, p. 104.
49 Zevi, B., *The Modern Language of Architecture* (Dust cover).
50 *Ibid.*, p. 7.
51 Popper, K., *Poverty of Historicism.*

not be subjected to such rigorous tests, on the ground that they are invalid, is to be impoverished and unbalanced in a truly aspective manner; which is of particular significance to architecture which needs values and norms that concern all the aspects of reality. Tafuri points out that due to the changeable historical character of art, that is, within its own time context and restraints, art and architecture do not allow criticism or decisions to be based on static and meta= physical conceptions, that in any case these *'truths'* would have to be checked and renewed as dictated by changing his= torical contingencies, and for this reason, all methods of architectural analysis based on a-historical criticism must be considered a phenomenon in need of historicisation.[52] Tafuri reveals here a perspective view. The intention of reaching a sort of *'architectura ex machina'*[53] and of constant and permanent principles outside historical change, is, in fact, a declaration of a completely aspective approach to architecture. Time then ceases to be linear and change becomes impossible.

Tafuri points out how the a-historical revolutionary architecture of the avant garde created a semantic crisis in architecture, that still weighs heavily on its development. It is no longer sufficient to base architecture on such *'open'* methodologies or on such fragmented ideologies.[54] The emergence of the *'language crisis'* in contemporary architecture stems ultimately from the fragmented, subjective, revolutionary a-historical ideologies of the avant garde architects, and is therefore a direct consequence of an aspective way of structuring order.

Traditional codes and values aspire to provide a practical means of achieving that which is appropriate in particular building tasks, whereas modern ideologies have the nature of providing a method of thinking about architecture, and fail to provide the practical doing part. Slogans are a common property *'form follows function'* (Sullivan),[55] *'less is more'* (Mies van

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52 Tafuri, M., *op.cit.*, p. 172.
53 *Ibid.*, p. 173.
54 *Ibid.*, p. 173.
55 Peter J., *Masters of Modern Architecture*, p. 19, taken from *Autobiography of an Idea.*

der Rohe),[56] *'architecture or revolution'* (Le Corbusier),[57], *'complexity and contradiction'* (Venturi),[58] *'let a thing be what it wants to be'* (Louis Kahn)[59] and so on. These directives are generally underlined by moral imperatives.

TRADITIONAL CODES

From ancient times traditional codes and norms have provided the means to do things architecturally. The *'Book of Foundation for Temples'* which the ancient Egyptians for thousands of years believed Imhotep let fall from the heaven,[60] had to be consulted on the specifications of an Egyptian Temple, and actually, how to build it. Greek architects are believed to have codified architectural traditions, although no Greek writing has survived. It is, however, self-evident that the proportion of general length to width was determined by convention, and so was the relation of triglyphs and Metopes in the Doric freeze, the lining up of the colonades and so on.[61] Each order carried its own conventions, its own angles with regard to placing,[62] and thus was only original, subjective and individual in the manner in which the architect manipulated conventional relationships. The traditional norms which Vitruvius decreed in the *'Ten Books on Architecture'* (25 B.C.), deduced from the current situation in ancient Rome, have survived to the present, and exhibit explicit directives:

> *"I have drawn up definite rules to enable you, by observing them, to have personal knowledge of the quality of both existing buildings and those which are yet to be constructed. All must be built with due reference to convenience, durability and beauty."*[63]

Although the five orders had lost their paradigmatic validity during the Middle Ages, it is inaccurate to assert that the rules of Roman design were of no interest to them, particularly

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56 Venturi, R., *Complexity and Contradiction*, p. 24.
57 Le Corbusier, *Towards a New Architecture*, p. 269.
58 Venturi, R., *op.cit.*, p. 23.
59 *Ibid.*, p. 19.
60 Kostof, S., *Architecture in the Ancient World : Egypt and Greece*, in *The Architect*, Kostof, S. (*ed.*), p. 6.
61 *Ibid.*, p. 23.
62 Doxiados, C. A., *Architectural Space in Ancient Greece*, p. 17.
63 Peter, J., *Masters of Modern Architecture*, p. 13; and Kostof, S., *op.cit.*, p. 28.

with regard to proportion.[64] Much of Gothic art rests on established tradition. Behind every architect stood the education of the lodge with its zealously guarded formulae of the trade, secretly held. It was no wonder then that no professional treatise was produced on the lines of that of Vitruvius.[65] However, the medieval city, as Lewis Mumford points out, *'was an omnipresent work of art'*.[66] The visual artistic heritage was a common everyday fact of existence. It took the revolution of the Renaissance and the dissolution of the Medieval lodges to bring forth new treatises. Alberti, Sangallo, Filarete, Raphael, Palladio and so on, provided definite principles, methods and examples of architectural design based on values and norms of Renaissance culture ob= jectively held.

> *"They gave us rules, but not principles. They had no need of theory, for they addressed themselves to public taste."*[67]

THEORY AS OPPOSED TO TRADITIONAL CODES

Alberti begins his treatise with technical preliminaries, drawings, and lays down rules how to design plans and ornament. Kostof refers to such treatises as pattern books.[68] The in= crease of knowledge, the a-historical development of historicism, the break with classicism by the Romantic Movement, all con= tributed towards promoting a new awareness with regard to the choice of traditional codes. Therefore the self-conscious analogy which demands a choice, becomes a problem, as the appropriate becomes relative to the traditional code you choose, which, in turn, thus finally rests upon your philosophical atti= tude. This situation led to the production of treatises, related to attitudes and moral justifications rather than to norms, codes and values which tell one how to do in a practical sense, rather than how to think in a theoretical sense. Pugin, Ruskin and Viollet-le-Duc all proclaim attitudes which would lead to determining choices with regard to traditional codes, as Ruskin, in the following extract, rejects Renaissance architecture:

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64 Kostof, S., *op.cit.*, p. 70.
65 *Ibid.*, pp. 85-89.
66 Mumford, L., *Culture of Cities*, p. 51.
67 Scott, G., *Architecture of Humanism*, p. 37.
68 Kostof, S., *op.cit.*, p. 121.

> *"It is base, unnatural, unfruitful, unenjoyable and impious. Pagan in its origin, proud and unholy in its revival, paralysed in its old age ... an architecture invented as it seems to make plagiarists of its architects, slaves of its workmen, and sybarites of its inha= bitants; and architecture in which intellect is idle, invention impossible, but in which all luxury is gratified and all insolence fortified; the first thing we have to do is to cast it out and shake the dust of it from our feet for ever."*[69]

The production of such theories, instead of codes, is a legacy inherited by the Modern Movement. The *'battle of the styles'* with regard to the choice of Gothic as opposed to Classical, significantly reflects this situation, as does the subsequent battle on the use of the Modern Method opposed to the traditional, as an analogy for design. Directives based on theoretical think= ing could only resolve these issues and debates; hence subjective ideological standpoints as opposed to objective practical codes, manifested the aspective situation that had developed. Wright tells how one must consider architecture as an organic unity, proclaims new spatial concepts and declares it honest to adhere to these ideas and dishonest to find one's analogy from history. However, he never suggests a practical method, the way Alberti, Palladio, or Vitruvius did, of how to do it. This was taboo, as originality as a creed triumphed in the revolutionary archi= tecture of the avant garde movements. "Let a thing be what it wants to be" emphasises Kahn, but the standard of value or cri= terion of the 'wants to be' remains a mystery.

The *'less is more'* of Mies van der Rohe, assumes an architecture of exclusion,[70] but what becomes *'more'* is obscure. Alberti by contrast, wrote of a universal art of building, a holism of intent and purpose, which consists in finding an exact and correct way of adapting and joining together the lines and angles which serve to define the aspects of building. Further he writes of the function of walls and apertures, the intricacies

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69 Scott, G., *The Architecture of Humanism*, p. 121 quoted from Ruskin, J., *The Stones of Venice*, Vol. III, chapter ii, p. 4.

70 Generally speaking a very aspective slogan.

of roof construction, effects of climate, rain and sun. He passes from the abstractions of a philosopher to the realities of the working engineer, and yet the ideas of what is *'appropriate'*, *'proportionable'* and *'decorous'* never cease to dominate his argument.[71]

> *'The constraints implicit in these notions (of Alberti) of the appropriate and propor= tionable permeate the entire practice of the architect and engineer, so that he cannot consider some problem of structure, say, and then solve the problem of 'appropriateness' independently. He cannot, that is, fragment his task into sets of connected 'problems' among which the requirements of aesthetics form only one. For it is within the framework provided by the notion of the appropriate that all the architect's problems are envisaged."*[72]

But as Scruton points out, in contrast, contemporary architects often speak of *'design problems'* and *'design solutions'*, as one would expect when values and methods are based on the scientific analytical system. Therefore, he maintains that as a rule, in that notion is held an attempt to banish aesthetic considerations entirely, or to treat them as one among a set of problems to be solved, either wholly or partially in the derivation of some ideal or *'optimal design'*. The design becomes a *'quasi-scientific'* mode of functional experiment. Aesthetic consi= derations are most often admitted not as part of the aim of the design but as its unpursuable by-product.[73]

> *"But the criterion of success lies not in any 'optimal solution' scientifically derived, but in the ability of rational beings to 'understand' the solution that is proposed. A 'solution' to a design problem will be satisfactory only if it presents, to those who live and work with the product, a suitable basis for their own practical understanding."*[74]

Scruton thus describes the necessary ingredients for architectural acceptability, and in this manner agrees with Norberg-Shulz,[75]

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71 Scruton, R., *op.cit.*, p. 24.
72 *Ibid.*, p. 24.
73 *Ibid.*, p. 25.
74 *Ibid.*, pp. 29, 30.
75 Norberg-Schulz,C., *op.cit.*, p. 38.

who points out how necessary existential meanings are for man to understand his environment. These meanings and values are acquired by experience and knowledge, commonly established through time, which the scientific analytical system does not accommodate, nor can the a-historical, revolutionary concepts of the Modern Movement include this facet of architecture.

The necessity for experience-based, traditional values have been recognised by certain architects. Bruce Allsopp advocates the use of *'formats'*, established by tried and tested design solutions.[76] Christopher Alexander proposes in his book *'The Timeless Way of Building'*[77] a *'pattern language'* of architecture, and the need to observe and determine by experience the pattern of particular acceptable architecture established by people through time. Both these writers thus propagate the necessity of establishing meanings derived historically and explain the practicality of these. Alexander actually provides examples of patterns. However, to employ history as a store of memories, historical fragments, to be revitalised as analogical props, would not constitute a solution, as this, too, would be aspective. The value of traditionalism, in the self-conscious design system to be useful and appropriate, needs a linear historical appreciation and the perspective attitude.

THE SCIENTIFIC ANALYTICAL VALUE STRUCTURE

> *"We must not say: Let us begin by inventing principles according to which we attempt to explain everything. We should rather say: Let us make an exact analysis of things."*
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> Voltaire

> *"The view that scientific knowledge is conditional, relative, and limited was never more needed than today."*
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> Egbert Schuurman

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76 Allsopp, B., *op.cit.*, p. 91.
77 Alexander, C., *The Timeless Way of Building*.

THE REJECTION OF TRADITIONAL NORMS AND VALUES

The normative traditional value structure came into disrepute, as a means of basing architectural decisions, as a consequence of the arbitrary selection of form based on historicism, as an analogical support. The increase of knowledge, since the Enlightenment, has provided the architect with a wide choice of historical style, to each of which historicism has attached a particular value structure.[78] It was with the advent of Romanticism and the possibility of discarding the classical code in architecture, that the question of traditional values became completely arbitrary. Furthermore, the disrupted social and political situation, the loss of homogeneous cultures,[79] since the French Revolution, all clouded the issue concerning decisions and choices based on the traditional value structure. The choice, as to the *'appropriate'* had become wide open and arbitrary.

The slogan of *'liberté, eqalité'* and *'fraternité'* further con= fused the issue; absolute freedom of choice, the disregard of cultural values with the desire for equality, added to the dis= repute of traditional values. The idea of revolution,[80] parti= cularly seen as a means to achieve a total Utopian solution, instead of gradual change to realise desired ends, further con= tributed to the rejection of the traditional value structure. The initial choice of the modernists to present architecture as a radically anti-historical phenomenon,[81] ultimately reveals the total rejection of the traditional normative value structure. However, no amount of rejection, on the part of these avant garde architects, would have achieved this, if they had not been able to supplant this value system with the scientific analytical value structure, as a basis for decision making in the design process. In their search for a new, pure, timeless, abstract style, as an expression of contemporary society, the modernist believed this could be achieved by taking recourse to the scientific system.

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78 Traditional codes were used a-historically as historical analogies.
79 Norberg-Schulz,C., *Meaning in Western Architecture*, pp. 356, 322.
80 *Vide* pp. 47, 48.
81 Tafuri, M., *op.cit.*, p. 11.

> *"In this age of steel and steam the tools with which civilization's true record will be written are scientific thoughts made operative in iron and bronze and steel and in the plastic processes which characterize this age, all of which we call machines."*[82]

Coupled with the phenomenal advances made in science and technology during the last century, modernists have become convinced they could find sure standards in the truths which the scientific system could provide, irrefutable truths upon which they could base their decisions with confidence.[83]

> *"A standard is established on sure bases, not capriciously, but with the surety of something intentional and of a logic controlled by analysis and experiment."*[84]

The a-historical movement, *'the death of history'*, still pre= sents itself as an element in the code of values conventionally referred to as the Modern Movement.[85] The choice the Bauhaus made, was symptomatic of the age; the rejection of historical values, seen in the light of the confusion prevalent at that time, was an obvious choice. Gropius decries the arbitrary reproduction of historic styles and advocates a progress from the vagaries of architectural caprice to the dictates of structural logic; and in this manner to seek expression of the life of our epoch in clear, crisply simplified forms.[86]

> *"A breach has been made with the past, which allows us to envisage a new aspect of architecture corresponding to the technical civilization of the one we live in, the morphology of dead style has been destroyed; and we are returning to honesty of thought and feeling."*[87]

Jencks points that it came about that in our age of science:

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82 Wright, F. L., *The Future of Architecture*, p. 73.
83 Bloomer, K. C. and Moore, C. W., *Body Memory and Architecture*, p. 17.
84 Le Corbusier, *Towards a New Architecture*, p. 126.
85 Tafuri, M., *op.cit.*, p. 64.
86 Gropius, W., *The New Architecture and the Bauhaus*, p. 44.
87 *Ibid.*, p. 19.

> *"Those having access to systematic knowledge are often regarded with awe and assumed to have a monopoly on moral authority, if not on truth itself."*[88]

Boyle tells how the arrival of Gropius in America influenced architecture; that it is not an exaggeration to say that ten years after his arrival, Gropius had made Harvard into the most admired school of architecture, not just in America but throughout much of the world.[89] By the 1960s, the typical approach to design, which characterised much of design taught at the schools of architecture, was based on the scientific analytical method.[90] Some of the consequences that resulted from using the scientific analytical value structure as a basis for decision-making in the design process, will be dis= cussed in the following discourse, as well as how these conse= quences aggravated and sometimes furthered the aspective attitude in the contemporary situation.

THE MEANING GIVEN TO TRUTH

The fundamental difference between the normative traditional value structure and the scientific analytical value structure, lies in the different attitude with regard to *'truth'*. Truth scientifically precludes validity to all that which may not be proved true by repeated experiment or which is not self-evidently so.[91] It claims that truth must be universally and absolutely true for all time. It therefore denotes a timelessness to scientific truths; they can not change with time. Such a concept is contrary to a linear time concept and the perspective attitude. Historical truth as a spatio-linear time concept, related to the traditional value structure, becomes, according to the interpretation of truth, scientifically defined, only personal interpretation; and truth with regard to historical knowledge and experience is in this way denied validity. The *'uncertain'* truths understood in relation to values, which are

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88 Jencks, C., *Architecture 2000*, p. 105.
89 Boyle, B. M., *Architectural Practice in America, 1865-1965. Ideal and Reality* from *The Architect*,(*ed.*) Kostof, S., p. 335.
90 Steadman, P., *The Evolution of Designs, Biological Analogy in Architecture and the Applied Arts*, p. 207; Jencks, C., *op.cit.*, p. 105.
91 Interview Prof. J. F. Botha (UOFS).

the basis of practical reasoning,[92] can therefore never be part of the scientific analytical value structure. All the aspects of man unmeasurable by scientific standards, are there= fore excluded. By excluding these aspects, by declaring that a *'truth'* beyond despute is the only truth, makes the man, who holds this view, declare the aspective; by proclaiming the timelessness to truth and by giving validity to only a part of the reality of man.

HUMAN ACTION

Although science makes it possible to foretell the results to be obtained by definite action, it leaves unpredictable two spheres, that of insufficient knowledge of natural phenomena and that of human acts of choice.[93]

> *"The sciences of human action differ radically from natural sciences. Authors eager to construct an epistomological system of the science of human action according to the pattern of natural sciences err lamentably."*[94]

Von Misses points out that experiences concerning human action differ from those concerning natural phenomena, in that they presuppose praxeological knowledge. He maintains that pure scientific methods are inappropriate for the study of praxeol= ogy,[95] economics and history. Omniscience is denied man, and that the most elaborate theory that seems to satisfy completely our thirst for knowledge, may one day be amended or supplanted by a new theory. Science does not give us absolute and final certainty and it can only give us assurance within limits of our mental abilities and the prevailing state of scientific thought. Von Misses in this manner states the perspective view of science. A scientific system is but one station in an endlessly progressing search for knowledge. Furthermore, Von Misses acknowledges the validity of the truths of traditions and values, history, economics, justice, aesthetics and so on. He, too, disclaims that science can contribute anything in establishing value judgements.

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92 *Vide* pp. 237-238.
93 Moore, P. H., *The Wisdom of Ludwig von Misses*, excerpted from Von Misses, L., *Human Action*, p. 22.
94 *Ibid.*
95 Praxis - accepted practice, custom, examples for practice.

> *"The theorems attained by correct praxeological reasoning are perfectly certain and incontestable, like correct mathematical theorems."*[96]

SCIENTIFIC MEASURES AND STATISTICS

These distinctions explained by Von Misses were not appreciated by the instigators of the Modern Movement in architecture. Value judgements concerning human action related to architecture, have become based on human *'needs'* and functions instead of values.[97] Psychology, sociology and a host of human sciences have attempted to establish the truth of human action on scien= tifically established standards. Scientific methods are advo= cated to analyse man himself, to dissect society.[98]

> *"The struggle to determine new laws of measurement for every aspect of archi= tecture was thus coincident with the founding of modern architectural thought."*[99]

Where scientific truths could not be established by scientific measurements, statistical probabilities came into use as a basis for decision making.[100] The nature of these statistical data allows the possibility of it being regarded erroneously as scientific truth. But as Von Misses points out, statistical data is only a means of presenting historical fact.[101] The pretension of statistical data to scientific fact is a fallacy and the *'truth'* thereof must surely be seen in the same way as that of history, in a spatio-time concept.

> *"In practical life nobody lets himself be fooled by index numbers. Nobody agrees with the fiction that they are to be considered as measurements."*[102]

Nevertheless statistical probabilities have become operative as a basis for decision making in the scientific analytical value structure. Social surveys made by sociologists, environmental

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96 Moore, P. H., *op.cit.*, p. 22.
97 Scruton, R., *op.cit.*, p. 30; Brett, L., *Parameters and Images, Architecture in a Crowded World*, pp. 38, 39.
98 Schuurman, E., *Reflections on a Technological Society*, p. 3.
99 Bloomer, K. C. and Moore, C. W., *op.cit.*, p. 21.
100 Schuurman, E., *op.cit.*, p. 3.
101 Von Misses, L., *op.cit.*, p. 24.
102 *Ibid.*, p. 24.

psychology and studies based on psychological observations, have taken the place of values based on the traditional normative value structure. Several authors agree with Von Misses with regard to the fallacy of applying the same methods to human actions as to the natural sciences. Broadbent maintains that it is difficult to see how experiments are valid in this regard:

> *"Clearly experiment has a great deal to offer in the development of building materials, structures and environmental control systems, and will continue to do so in the foreseeable future, but it is difficult to see how experiments involving people, whatever their value in supporting sociological, psychological or social hypothesis, can have any value in setting up standards for environmental design."*[103]

The experiment is a set of controlled observations under arti= ficial conditions in which certain variables are manipulated. Experiment is a fundamental tool of traditional research; these methods work on all physical objects, machines, engi= neering structures and so on. However, when employed in the study of human affairs and actions, difficulties appear; people refuse to behave like machines. The experiment or observation itself starts changing what people do. The ex= ternal environment acts as a whole, if you abstract any variable from the man-building relationship, like for example, taking people out of the natural environment and placing them in the laboratory. In this case you add to his experience, which changes his responses, as they always bring experience with them.[104]

Steadman, too, is extremely sceptical of a great deal of work done in architectural and environmental psychology and sociology. He maintains that certain features of artefacts, of their per= ception and how they are made use of by those who experience and employ them, are in principle beyond the reach of scientific predictions. The particular meanings attached to artefacts,

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103 Broadbent, G., *op.cit.*, p. 120.
104 *Ibid.*, pp. 120, 57, 101.

the aims which they serve, the way they are evaluated aesthetic= ally, and so, people's behaviour in relation to them, are all products of historical situations in which these objects or buildings are made, and are changed by new problems and responses which continually evolve in time.[105] Dyckman explains the problems related to social surveys, that the problem is that of establishing a value scale; the difficulty lies in deducing a social-value scale from individual values.[106] Canter, too, points out the problems concerning the scale as a basis for evaluating findings with regard to studies made in environmental psychology.[107] He goes further and elucidates how, in order to give an account of people's description of places, it is necessary to deal with a variety of *'places'* being described, by a variety of *'people'* using a range of *'descriptions'*. Each of these three variables contain within themselves numerous variables, giving a three-dimensional result within this three-dimensional description, an impossible task.

> *"The point, then is to emphasise that, whatever the particular research, there will always be the possibility of criticism from those who feel that an important facet has been ignored."*[108]

When too many variables are involved the structure appears too complicated, and no adequate methods appear able to extract significant data; as a result many of these variables may become eliminated, giving a distorted picture when related to the whole situation of reality. It therefore provides only a fragment of knowledge, and it does not provide a means of establishing its true validity in the way norms based on experience do. Computerised data may be plagued with the elimination of variables if the computer itself is unable to handle the variables.[109] Another very practical consideration to be taken into account with regard to statistical data related to human choice, is that it relies on the integrity of those who

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105 Steadman, P., *op.cit.*, p. 238.
106 Dyckman, J., *op.cit.*, p. 340.
107 Canter, D., *Psychology of Place*, p. 107.
108 *Ibid.*, p. 115.
109 Broadbent, G., *op.cit.*, p. 97.

compile it, as well as of those who answer the questions. Furthermore, people change their opinions, validity can then only be found in a particular historical moment, even should all the other conditions prove correct. The possibility exists that the data may be grossly misapplied, as data itself can not provide the fitting context in the environment as a whole in the design situation.

The statistical data provided by sociological and environmental psychological surveys, implies the typical man, woman and family. This average typical *'statistical monster'*, has no personal existence and can not defend itself or proclaim its own values,[110] but does fit neatly with Le Corbusier's claim:

> *"All men have the same organism,*
> *the same function.*
> *All men have the same needs."*[111]

Statistical data is aspective in revealing only a small fragment of knowledge with no links; furthermore, it creates a mythical average man, a man that can not change; and in this way attempts to provide an absolute truth. To regard such data, as obtained from surveys related to human action and choices, as scientific fact or as an absolute truth, may lead to gross errors by giving it a validity it does not possess.

> *"Modern man has been reduced to a statistic,*
> *he is lonely, he has lost his identity, and*
> *he has no real sense of belonging."*[112]

Substituting the statistical probability for the tried and tested traditional values disseminated the value,[113] for each facet has to be found out separately. To find out how some people prefer squiggles or straight lines or smooth stone to rough, may be to supply psychological facts, or to know how many favour green walls to pink and so on, as initiated by the *'Gestalt'* psychologists. But none of these fragments of

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110 *Ibid.*, p. 83 quoted from Hitchcok and Johnson, *The International Style.*
111 Le Corbusier, *op.cit.*, p. 126.
112 Schuurman, E., *op.cit.*, p. 8.
113 *Vide* pp. 201, 202.

knowledge can be substituted for a value as a means of guiding action of choice or determining aesthetic or other appropriate= ness. Needs are not synonymous with value. Man does not act to gain or keep a need, but that which he values. He may relinquish his life and all his needs for a value, such as freedom or religion or those he loves and so on. He will sacrifice that which he needs for that which he values. Archi= tectural aesthetics and acceptability is not a need but is based on values.[114] Measurement in design involves both quantities and qualities,[115] and the confusion arises when they are confused; values establish qualities; science esta= blishes quantities.

THE HYPOTHESIS

In all scientific methods the crucial factor rests with the hypothesis, in the self-conscious architectural situation, based on the scientific analytical system, the analogy or the ideology. The inductive view of scientific procedure suggests that from a simple accumulation and a patient observation of the facts of nature, or, if applied to architecture, of the needs and the functions, a pattern will emerge of its own accord and will impose itself upon the scientific observer or designer.

> *"Design is supposed to come from the nature of the problem simply by working on it. In a succession of projects students are supposed to acquire and develop an ability to design out of themselves. This makes criticism and teaching very difficult to the point where quality of design is a matter of opinion, some opinions being 'more equal than others' to borrow Orwell's famous phrase."*[116]

Dyckman points out that to discover the strategy proper to the inquiry, attention must be given to identifying the problem, so the scientist is always trying to discover the rules by which nature plays, and which reveal the scientist as the learner, who, on the acquisition of enough knowledge, forms a

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114 Scruton, R., *op.cit.*, p. 30.
115 Lawson, B., *op.cit.*, p. 49.
116 Allsopp, B., *A Modern Theory of Architecture*, p. 100.

hypothesis. The interpretation of probability and the place accorded it in one's explanation of the world, is at the foundation of evidence.[117] Steadman clarifies this situation as follows; what in fact happens *'as Popper has most forcefully urged'*,[118] is that the scientist, or, in our case the designer, so far from being a passive observer, himself imposes some hypothetical explanation, then tests it by means of experiment to see if it fits or until it fits. A picture of the modern design process is a cyclic one, moving between alternate phases of hypothesis and critical evaluation, a sort of *'feedback'*.[119] However, the origin of the hypothesis is in the whole body of relevant knowledge.

> *"The designer must first trace his design problem to its earliest functional origins and be able to find some sort of pattern in them."*[120]

First *'data'* is collected, assimilated into a *'programme'*, but meanwhile any *'preconceived idea'* or premature urges to shape the building or define the form is suppressed. Then through analysis, the designer is to find and determine in what form the logic of his analysis must be, "what the building wants to be". The paradox is, however, that the designer must pro= duce some design *'hypothesis'*, but one which like the scientific hypothesis, would have its origins in the collective knowledge the designer possesses about existing and past artifacts and their behaviour, thus preconceptions, or prestructures, are those which make the identification of the design problem and hypothesis possible, in the first place. The dichotomy of rejecting preconceived ideas and the necessity of these, in the scientific design situation itself, points to a contra= diction in terms, the illogicality of the rational scientific method.[121]

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117 Dyckman, J., *op.cit.*, p. 338.
118 Steadman, P., *op.cit.*, p. 206.
119 *Ibid.*, p. 181.
120 Alexander, C., The Theory and Invention of Form, *Architectural Record*, April 1963, p. 178.
121 Steadman, P., *op.cit.*, pp. 206, 207, 208.

THE ANALOGY

Brett maintains it was unnecessary and even harmful for the *'iconoclasts'* to do a great deal of background reading, for no matter how logically you set forth, the danger was still in the *'trafficking in imagery'*.[122] It is therefore at this point that the *'analogy'* or the design hypothesis must somehow be found in the self-conscious design process. As the system itself denies the means of finding the analogy, the subjective ideology or some arbitrary idea must guide this decision. The void created by rejecting traditional objective values, and the accompanying meanings, brings a new importance to the analogy. Peter Collins,[123] Philip Steadman,[124], Broadbent,[125] Geoffrey Scott,[126] to mention but a few, all in some way discuss the situation with regard to the creation of the analogy. The divergent themes in this field, prevalent since the inception of the Modern Movement, all point to the aspective situation created by the scientific analytical process. The plurality of ideology and analogy abounds in our contemporary scene.

> *"Design is not what it was for Alberti, a process through which aesthetic values permeate the entire conception of the architectural task, but rather a complex, quasi-scientific mode of functional experiment."*[127]

The experiment in the scientific system itself to achieve a result isolates a factor to prove or disprove; it, too, has to limit the variables. The results are thus always accompanied by certain conditions. To apply such information to the real world implies actions which are justified only in the practical sense, and therefore are related directly to values which may justify such actions. The scientific experiment is thus only part of the system seen in the whole of practical reality, and only becomes useful when understood as such. When architects speak of design problems or design solutions it is in such a notion that can either banish aesthetic consideration entirely

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122 Brett, L., *Parameters and Images, Architecture in a Crowded World*, p. 44.
123 Collins, P., *Changing Ideals of Modern Architecture.*
124 Steadman, P., *The Evolution of Design, Biological Analogy in Architecture.*
125 Broadbent, G., *Design in Architecture.*
126 Scott, G., *Architecture of Humanism.*
127 Scruton, R., *op.cit.*, p. 25.

or treat it as one of many problems to be solved either wholly or partially. In the scientific system aesthetics are often admitted not as part of the aim but as its unpursuable by-product.[128] When the basis of an aesthetic judgement, the value is removed, no amount of scientific truths can replace it, therefore architecture created in the scientific analytical value system, generally becomes aspective. The contribution of science to life does not consist in that it establishes value judgements, but in that it clarifies the conditions under which men must act.[129]

Science delights in isolating facts into more and more detail, and more specialised fields of knowledge; by its nature it deals with parts or segments of the whole, without paying attention to the whole or to the links, or how the parts fit into the whole. For this reason, too, it is aspective; unless it may be integrated into a perspective method of structuring order. Scientific rational architecture will always be con= sidering the fragment or the aspects separately and therefore be creating an aspective architecture.

THE PROGRAMME

It is the programme in the scientific system that is the important factor. What the client would like to be done which, generally speaking, implies the goal, becomes classified as the programme.

> *"... the challenge of the fundamental programme is what gets the architect started on the business of designing the building."*[130]

This document becomes the architect's basic term of reference and criterion in the design process. In absence of the norma= tive traditional objective criteria, this document stands good as such. How well the architect has solved the problem as stated in the programme, is the measure of the design, when the design is seen in the light of function and needs. How a problem

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128 *Ibid.*, p. 25.
129 Moore, P. H., *op.cit.*, p. 22.
130 Banham, R., *Convenient Benches and Handy Hooks*, as in *The History and Theory of Criticism in Architecture*, *(ed.)* Wiffen, M., p. 95.

is stated determines the solution.[131] Therefore how the programme is formulated, what is left in and what is left out, must in these circumstances determine the solution to the design problem. In turn, how the programme is compiled, will be based primarily on the directives of individual ideology of the architects and of the client. This system presupposes that it is possible to obtain the necessary information on scientific accurate facts; it therefore implies, as Dyckman states, *'the presumption of man to know enough'*[132] and to assess which of it is valid.

But the programme for an individual building stands alone, it is a subjectively compiled document based on personal ideology as its hypothesis, it is separate and does not allow objective standard to determine its structure. The programme reflects individual aims of individual people, the building will be a manifestation of architectural individualism, and the observer will see the building as alien to himself. This separatism by subjective aims, which denies objective meanings, is the consequence of the scientific system of functional architecture applied in the self-conscious design process and reveals its basic aspective nature.

LIMITED RESEARCH

The scientific method determines research as its method of pro= gress, experiment and statistical probabilities as a means to establish validity. However, modern and contemporary archi= tecture which uses the scientific method, is faced with a dilemma. It declares itself an a-historical movement, dedicates itself to achieving new, original solutions by rejecting the very concept of preconceived ideas.

> *"First, unlearn all secondhand ways of seeing and recapture the child's vision; then learn like a child to manipulate materials, shapes, colours, volumes."*[133]

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131 Prof. W. van Zyl, Lecture on Decision Theory, U.O.F.S.
132 Dyckman, J., *op.cit.*, p. 341.
133 Brett, L., *op.cit.*, p. 45.
Note how Schäfer points out the aspective nature of how a child structures order. *Vide* p.10.

Therefore research into historical precedent, even recent precedent becomes undesirable, and is seldom considered necessary. Research takes the form of establishing the workings and function of the building, methods of construction, materials and so on. The emphasis of the research is placed on the scientific validity of the programme, not to discover the pragmatic value of histor= ical precedent, nor to establish objective norms and values; it always has the structure in mind, and strives not to taint the information with preconceived ideas.[134] A new, original solution requires a type of limited research. The danger of an objective research, to the modernist, is the fear of bias, imitation and lack of originality. Research becomes a tool to discover only a partial set of facts concerning the programme. The Modern Movement has tried to make its design and decision methods scientific, but has not subjected the products of design to scientific study. Only a partial study is made, the whole has not been understood in our aspectively orientated thought.

The scientific analytical system as a means of decision-making creates the aspective method of structuring order in the human mind, because of its totalitarian attitude which declares the timelessness of truths of cyclical time. Furthermore, this method of fragmentation and specialisation of knowledge and information provides no links to the whole, nor can scientific information provide values. The arbitrary individually pro= claimed analogy and design hypothesis, too, reveals an aspective attitude. This system ignores or leaves out parts of reality pertaining to man's world by rejecting values based on uncertain truths of historical precedent and tradition. Being only a part of reality it cannot conform to the cosmological idea and holism of the perspective and so it ultimately reveals itself as aspective.

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134 Jencks, C., *Architecture 2000*, p. 105.

DECISION METHODS

> *"It is a well-known fact that all inventors get their first ideas on the back of an envelope. I take slight exception to this; I use the front so that I can include the stamp and then the design is already half done."*
>
> Ronald Emett

The distinction has been made with regard to value structures, and the manner in which the normative traditional and the scientific analytical value structure influence decisions made with regard to the architectural design process. How= ever, the actual method employed by the mind in decision-making must by its nature, also influence the decision. For this reason it appears that there may be a difference in arriving at a decision either by an intuitive method or by a rational method.

THE INTUITIVE METHOD

> *"Immediate apprehension by the mind, without reasoning, immediate apprehension by sense, immediate insight."*
>
> Oxford Dictionary

Intuition is a method the mind employs to make certain judge= ments, to express an opinion or choice, without conscious reasoning. From an architectural or design point of view, intuition may be employed as a means to creative choice, or to expressing feeling and emotion, or it may be found used as a means of appreciating or evaluating aesthetically as prescribed by modern aesthetic theories.[135] Intuition has become parti= cularly important to architectural design as a result of the ideas which the Modern Movement inherited and developed from Romanticism, concerning creativity, originality and genius.[136] The emphasis placed on fresh, novel and original solutions to

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135 Particularly as a consequence of ideas expressed by Kant.
136 *Vide* Chapter 5.

architectural problems, and the rejection of preconceived ideas and of all traditional values, place particular value on in= tuition in the creative process.

> *"Intuition is something we do not understand, but in the present context it is the power of creating, of creating what has never before existed in relation to the needs which have been apprehended."*[137]

Intuition as a means to creativity is a decision with regard to the choices open to the designer; however, the very important fact that it is choice without reasoning, without objective criteria and evaluation, has often been ignored by modern avant garde architects, in their quest for an original, revolutionary and a-historical architecture.[138]

> *"First there are those who contend that an architect, being an artist designs intuitively and hence judges intuitively, so that the merits of his work are incapable of assess= ment by Aristotelian, Cartesian or any other 'rational' method."*[139]

The very idea of artistic production as a faculty separate from the rational part of the mind lent to intuition an import= ance unknown prior to our age. The substitution of feeling for reason as the fundamental criteria for aesthetics, according to Osborne, originated a few hundred years ago.[140]

> *"... the Romantics increasingly regarded inspiration as a function of the sub= conscious, the non-rational, even automatic part of the mind."*[141]

Intuitive design, as a decision uncontrolled by criteria, standards objectively held, and commonly understood, brings with it subjectivism, fragmentation and independent solutions,

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137 Allsopp, B., *A Modern Theory of Architecture*, p. 15.
138 Phent, W., *Expressionist Architecture*, p. 198.
139 Collins, P., *Architectural Judgement*, p. 36.
140 Osborne, H., *Aesthetic and Art Theory, An Historical Introduction*, p. 105.
141 *Ibid.*, p. 139.

whose quality, rationality and appropriateness become question= able. For this reason a very confused situation may arise, should intuition be used as a sole means of judgement. Further= more, such an attitude creates an aspective situation, as it pro= vides different separate and subjective solutions, without the links provided by objective or commonly held criteria, or a holistic consistent means of evaluation with regard to the acceptability of these intuitive solutions.

Intuition is a very valuable asset in the creative and inventive process. However, when a particular solution can not be justified by experience, by relevance or by logic, it is in fact useless. Intuition may be applied to solving all sorts of problems; even in science intuition may play a role in establishing a hypo= thesis:

> *"Reason can not come into action until it has a hypothesis to work on ... (but) our hypotheses are presented to us by in= tuition."*[142]

These intuitive hypotheses are, however, then tested and evaluated by experiment and proof, the criterion is not intuition, and therein lies its value. Edward de Bono has extensively explained the value of intuitive thinking which he describes as *'lateral thinking'*[143] as opposed to rational thinking, or, as he calls it, vertical thinking in problem solving. Intuition is a manifestation of how the sub-conscious mind orders infor= mation fed into it, and upon which it then may be able to create a synthesis, possibly original or otherwise, appropriate or otherwise. To believe that experience, knowledge, understanding and skill play no role in an intuitive solution, would be to be blind to the fact that unless you feed the mind with necessary information, it could not possibly arrive at a solution.

> *"The creative thinker, however fortunate in his intuitions, must have learned thoroughly a considerable range of skills, habits, and capacities without which he could not begin to work."*[144]

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142 Asplund, H., Form Defeats Function, as from Toynbee, A., *Journal of the R.I.B.A.*,, March 1980.
143 De Bono, E., *The Mechanism of Mind*, p. 237.
144 Thomson, R., *The Psychology of Thinking*, p. 191.

Thomson maintains that the creative process involves prepa= ration, incubation, illumination, verification. Unless the proper information is fed into the subconscious mind, no amount of intuition could provide an appropriate solution. Nor can one expect an individual without training or knowledge to pro= duce an elegant appropriate design solution. Furthermore, *'illumination'* or intuition has no value without verification.

INTUITION AND MODERN AESTHETIC THEORIES

'Immediate apprehension by sense' as an interpretation of intuition fits in very well with modern aesthetic theories, such as those of: self-expression, art as an Emotional Embodi= ment, art as an Autonomous Creation and so on.[145] Most of these theories have in some way been influenced by Kant who believed that objectivity could not be introduced within an aesthetic argument. Aesthetic appreciation as subjective, non-conceptual apprehension, and intuitive, or as an apprehension by the sense, without reason, fits in well with such an ideology, and in this way objective standards may be ignored in such an aesthetic verification. Scruton, however, points out that it is necessary to achieve a publicly understood environment, which thus necessitates something like a repeatable vocabulary and recognisable forms; for this reason he advocates that the architect, in opposition to Kant's aesthetics, be constrained by a rule of obedience to that which is publicly understood.[146]

> *"He must translate his intuition into terms that are publicly intelligible, unite his buildings with an order that is recognizable not only to the expert but also to the ordinary uneducated man."*[147]

The need to establish commonly understood standards in architecture, becomes a recurring theme in this discourse, as a necessary part of establishing the perspective holistic view. Without objectively understood standards and criteria, no structure may be discerned as a whole, as each work is then alone and separate, enclosed in its own subjective, private, autonomous world and therefore

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145 Osborne, H., *op.cit.*, pp. 155, 184.
146 Scruton, R., *op.cit.*, p. 238.
147 *Ibid.*, p. 250.

aspective; links do not exist, parts are not related to each other, and no hierarchical structure of values can be esta= blished. Although creative thinking necessitates imaginative roving, or rearrangement by irrational methods or unconventional thought, these may all be a necessary part of intuition in the creative process. But as Thomson points out, to be of value, one needs the discipline of both the logical and the realistic attitude in order to achieve an appropriate result of such creative thinking.[148] Similarly Scruton points out that feelings are related to beliefs and values and as such may be justified and explained by practical reasoning.[149] Cutting off aesthetic feelings from reason, produced the aspective situation in the artistic realm; Giedion speaks of it as the *'split personality'*.[150] Contemporary scientists and artists have lost contact with each other and for this reason the inner stability of our time has been disturbed.

> *"The degree to which its methods of thinking and feeling coincide determines the equilibrium of an epoch."*[151]

From a perspective point of view one may be obliged to agree with this statement of Giedion's and for this reason one may appreciate that intuition must be qualified by reason, from a perspective point of view, to be of value, whereas the aspective would not require such a qualification.

> *"Though design is by nature imaginative and intuitive, and we could easily trust it if the designer's intuition were reliable, as it is it inspires very little confidence. In the unselfconscious process there is no possibility of misconstruing the situation: nobody makes a picture out of the context, so the picture cannot be wrong. But the selfconscious designer works entirely from the picture in his own mind, and this picture is almost always wrong."*[152]

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148 Thomson, R., *op.cit.*, p. 185.
149 Scruton, R., *op.cit.*, p. 238.
150 Giedion, S., *Space, Time and Architecture*, 1949, pp. 13-17.
151 *Ibid.*, p. 17.
152 Steadman, P., *op.cit.*, p. 182, quoted from Alexander, C., *Synthesis of Form*, p. 77.

Steadman quotes Alexander who points to the problems related to the intuitive method in the self-conscious design situation, which may produce intuitive solutions without sufficient infor= mation or traditional norms and values as criteria, all of which have contributed in creating the modern aspective situation.

THE RATIONAL METHOD

> *"Man has only one tool to fight error: reason. Man uses reason in order to choose between the incompatible satis= faction of conflicting desires."*
>
> Ludwig von Misses

When we speak of man as rational, we mean he is endowed with reason, and imply that he possesses an intellectual faculty that is able to draw conclusions from premises, experiences and situations. Reason may be understood as an ultimate given, and therefore can not be analysed or questioned by it= self. The only statement that can be predicted with regard to reason is that it is the mark that distinguishes man from animals and has brought about everything that is specifically human.[153] A distinction must be made between *'to reason'* and *'to rationalise'*. Reasoning attempts to reach a conclusion, a judgement or a decision; rationalising seeks to defend or justify an action with some cause or reason.

> *"The validity of rationalism as a basis for architectural criticism must surely depend on whether or not essential qualities of good architecture can be assessed by debatable judgement."*[155]

Peter Collins points out that critical evaluation through a rational approach to architecture is unacceptable to certain architects,[156] particularly as seen with regards to contemporary

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153 Moore, P. H., *op.cit.*, p. 21.
154 Collins, P., *Architectural Judgement*, p. 39.
155 *Ibid.*, p. 39.
156 *Ibid.*, p. 42.

aesthetic theories; they regard rationalism as useful only when considering structure, planning and materials; thus only applicable to the measurable scientific facets of architecture; all the other facets, to be decided upon, are delegated to the intuitive method. Furthermore, rationality and reasonableness, are used to mean different things to different people and differ in different specialised fields of knowledge. In the field of law judgement is based on how a *'reasonable man would act'*,[156] which implies a cultural bias for such an assumption. Cultural codes would determine different principles of rationality for a normal man. For a head hunter in the Amazon it would be per= fectly rational to be decapitating heads, for the Englishman this action would be most irrational, as even the death sentence has been abolished in England.

REASON

Dennis Sharp defines rationality as being agreeable to reason, reasonable, sensible, not foolish, absurd or extravagant.[157] When a person is agreeable to reason, reason in this sense may be defined as a cause as well as an intellectual faculty of the mind. If a cause or a reason be a fundamental requisite to being reasonable or rational, then two opposing viewpoints may be isolated; firstly, that of Descartes who argued for a unity of thinking, based on the fundamental facts of existence, without the necessity of confirmation by the senses, truth through know= ledge.[158] In contrast there is the opposing point of view, which stresses that all human knowledge is derived from experience, that no other knowledge is possible; the empirical view was developed by Locke and elaborated by Hume.[159] Rationalism as defined by Descartes led to the method used by all systematised scientific studies and in this way influenced the modern archi= tectural value structure.

> *"... that is to say, to avoid carefully precipitancy and prejudice and to apply my judgements to nothing but that which showed itself so clearly and distinctly to my mind that I should never have occasion to doubt it."*[160]

156 *Ibid.*, p. 42.
157 Sharp, D., *The Rationalists*, p. 1.
158 *Ibid.*, p. 1. *Vide* p. 8.
159 Broadbent, G., *op.cit.*, p. 60; Russel, B., *op.cit.*, pp. 214-229
160 Broadbent, G., *op.cit.*, pp. 59-60.

The idea of relating rationalism to the purity of truth, to the self-evident and scientifically verifiable truths, as Descartes defined, caused that those truths to be presumed to be the only truths suitable as a basis for rational thinking. The polarity in Empirical and Rationalistic thinking ended when Empiricism became stagnated; when Berkley maintained that if our world consisted of things perceived by our senses, how could we be sure that we perceived anything at all, except by our own concepts and sensations; how could we be sure that something existed unless we were looking at it.[162] Therefore Rationalism becomes allied to, and associated with scientific and self-evident facts and as such was used to discover sure standards for architectural decision-making by the Modern Movement, although Gropius denied that Rationalism was to be the cardinal principle of the New Architecture, that it was only its purifying agency.[163]

RATIONALISM AND ARCHITECTURE

It is the validity of the premise upon which a logical[164] reason= ing is based, that brings validity to the argument. Sound logical reasoning alone does not ensure validity, appropriate= ness, guard against error or bad judgement. Prof. Skolimowski maintains:

> *"Architecture is in a stage of crisis. This crisis is above all the crisis of validity. We no longer seem to know what counts as valid architecture, indeed what counts as architecture as such. The crisis of criteria of validity is ultimately the crisis of rationality."*[165]

Jencks, too, points to the fact that the principles relevant to Rationalism have been questionable and have had a deleterious effect on architecture in this century, producing for example, abstract form, endless right-angles and architectural *'truths'*

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161 Collins, P., *op.cit.*, pp. 107-119.
162 Broadbent, G., *op.cit.*, p. 61.
163 Collins, P., *op.cit.*, p. 38.
164 Logic is a formal method of reasoning developed by ancient Greek philosophers Aristotle, Socrates, Plato and so on. Russel, B., *Wisdom of the West*, p. 84.
165 Skolimowski, H., *Rationality in Architecture and in the Design Process*, in *The Rationalist*, ed. Sharp, D., p. 161.

which are supposedly universal.[166] Brolin, too, maintains that reason in architecture has been defined as an absolute in the Modern Movement.[167]

> *"Reason was an end in itself, made manifest in architecture and worshipped not only as a moral and aesthetic inspiration but as a quasi-religious ideal."*[168]

PRACTICAL AND THEORETICAL REASONING

However, rationality as applied to contemporary architecture, differs from that found in historical precedent. When the fundamental way of viewing life and reality changed from an aspective way to a perspective and back again, the ideas of rationality changed. These vicissitudes basically influenced the way truth and rationality are viewed. Therefore, at this point a distinction must be made between practical and theoretical reasoning.

> *"Now practical reason aims at practical knowledge at knowing what to do and feel just as theoretical reason aims at theoretical knowledge, knowing what to think or believe."*[169]

Bertrand Russel maintains that volition is called practical in the sense in which action is contrasted with the theoretical process of cognition and that these two words, *'theoretical'* and *'practical'*, must be understood in their original sense in Greek, being linked with *'seeing'* and *'doing'*. He states that the basic question of practical reason is this: how ought we to act?[170] Theoretical knowledge aims at trying to establish and apprehend reliable truths and must support proper truth as its proper aim. However, practical knowledge does not deal primarily with beliefs, but with actions and feelings, and therefore needs some proper substitute for the absolute truth; its ideal is success in action (or emotion), which may constitute the aim and reward of practical reasoning. It needs something that is *'appropriate'*

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166 Jencks, C., *Rationality in Architecture and in the Design Process*, in *The Rationalist,(ed.)* Sharp D., p. 161.
167 Brolin, B. C., *Failure of Modern Architecture*, p. 16.
168 Scruton, R., *op.cit.*, p. 26.
169 *Ibid.*, p. 240.
170 Russel, B., *op.cit.*, p. 242.

in the sense of guiding action and feeling; bringing together purpose and values, which are connected with the possibility of satisfaction. In one way it is subjective, for it concerns individual experience and feeling; but in another sense it is objective for it aims to justify that action, experience or emotion, by presenting reasons that are valid for others besides oneself.[171] For this reason practical reasoning may be rational, although in the strictest terms of theoretical Rationalism, with its necessary adjunct of absolute and self-evident truths, it may not be valid.

Clearly, in architecture, it is the needs of a rational man, a man endowed with reason, that must be catered for. There= fore both practical and theoretical reasoning must form part thereof. While the one is neglected only a partial satis= faction will result. In the Modern Movement only theoretical reasoning, as found in pure Rationalism, was applied to archi= tecture, when the normative traditional value system was rejected in favour of the scientific system.

REASON AND PERSPECTIVE

Perspective requires the balance and application of both these facets of rationalism, the theoretical and the practical. Once the pure theoretical rationalism excludes the validity of these axioms, standards and values, that present themselves as necessary in practical reasoning, it becomes aspective, it separates and aims to give validity only to part of reality. The concept of perspective is a very illusive concept to grasp by way of pure theoretical Rationalism, because such a discipline requires a strict regard for validity and has the inclination to demand perfect logical arguments. Therefore an argument based on pure Rationalism has the nature to be very convincing, but it can as easily allow logical consistency for the fragment as for the whole. The essence of perspective requires ultimately a broad overall survey of the whole of reality, a hierarchical value structure and a linear time concept, which thus necessitate not only theoretical rationalism but also, basically, practical

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171 Scruton, R., *op.cit.*, p. 240.

reasoning. As soon as the *'either or'* situation arises, the perspective diminishes. Pure theoretical rationalism has the nature of creating the *'either or'* situation and to diminish the sense of perspective, by always excluding some facet of practical reality, for the *'either or'* situation decides the basis of the argument on a single base. Pure theoretical Rationalism tends to destroy the sense of perspective, not only for the timeless quality of the truths upon which it bases its arguments, but also for its lack of values as a basis for practical reasoning; thus for its lack of holism and for its inability to create a hierarchical structure, as it finds no connection to all the parts as it does not acknowledge them, let alone place values upon them.

THE DEVELOPMENT OF PERSPECTIVE IN ANCIENT GREECE

Science and philosophy never developed in any civilisation prior to that of ancient Greece.[172] It appears that the whole question of reasoning in a consistent, logical manner developed with the advent of philosophy and science in ancient Greece. Russel maintains this development was the result of a passionate search for truth and beauty, and a decrease in the power of religion. Asking general questions, is the beginning of philosophy as well as of science, seeking an order in what to the observer looks like a string of haphazard fortuitous events. The first philo= sophers of Miletus were men of practical affairs and regarded philosophy as an intensely practical matter.[173] The idea of an underlying order, the cosmological idea, and the idea of commu= nicating ideas by logical means, and the linear concept of time developed here, as Heraclitus states.

> *"You cannot step twice into the same river, for fresh waters are ever flowing in upon you."*[174]

The lack of distinction between philosophy and science encourages the holistic cosmological concept, which is a requisite of the perspective as defined by Schäfer; seeing as a whole, ordered front and back, depth perception, the beginning and end of

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172 Russel, B., *op.cit.*, p. 11.
173 *Ibid.*, pp. 13-18.
174 *Ibid.*, p. 25.

things, deductive and inductive reasoning and a hierarchical value structure. Practical and theoretical reasoning were not polarised in ancient Greece. The *'either or'* was not apprehended, therefore the implication did not exist, as modern Rationalism implies, which is governed by absolute truth of knowledge and so, by nature, only theoretical reasoning.

> *"However, there is one way in which wisdom can be achieved, and that is by grasping the underlying principle of things. This formula is 'the harmony of opposites."*[175]

Only in such a manner can the perspective concept be preserved. Once practical reasoning is regarded as invalid, and theoretical reasoning as of Descartes is adhered to, exclusively, the perspective concept tends to disappear; only part of reality can be understood in such a manner as in the exclusively, scientific realm of today.

> *"The learning of many things does not teach understanding."*[176]

Although the perspective concept developed in Ancient Greece, it can not be said to have been true or consistent through-out their philosophy, as Plato, who regarded perspective as deceiving, states.[177] They were unaware of the boundary they had broken in the awareness of man, that had limited him, and they did not understand the value of their own development. Although they did regard man as the ultimate of creation.

> *"Many a mighty creature lived but none mightier than man."*[178]

RENAISSANCE PERSPECTIVE

The tremendous self-confidence of these Greeks was subsequently lost, and to re-emerge after the Dark Ages with the rediscovery of the perspective concept during the Italian Renaissance. The Renaissance is regarded as the age of reason; however, their

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175 *Ibid.*, p. 26.
176 *Ibid.*, p. 26. Heraclitus and Hegel agreed on this point.
177 *Vide* p. 36.
178 Russel, B., *op.cit.*, p. 35 taken from *Antigone*.

rationality has a different character compared with the rationality that is applied to contemporary architecture. The rediscovery of Classical Greek philosophy encouraged them to believe that there was a relationship between the certain truths of science, and the uncertain truths of the arts,[179] which is vested in the will of man and his creations.[180] They were convinced that this relationship could be found in the Pythagorean concept of *'all is number'*, the mathematical and harmonic structure of the universe and all creation.[181] The cosmological idea developed in the unity of their approach, and allowed the perspective to re-emerge. This situation does not generally prevail in our epoch, the unity has been lost, and the certain and uncertain truths, bear no relationship to each other.

Renaissance thought was matter of fact, businesslike, unromantic and realistic, according to Hauser, and developed into a sure= ness of man's power over his surroundings.[182] The emphasis on man is reminiscent of the optimism of Athens at the peak of her power.[183] The cosmological idea, the unity in their thought which was based on reality, brought with it a new out= look, the perspective view of structuring order, which is very evident in their art and architecture. Hauser explains that Renaissance art seen beside the artistic creations of the Middle Ages is always to be seen as an unbroken perfect whole however rich in its content, fundamentally simple and homogeneous, as Hauser describes in the following passage:

> *"Gothic art leads the onlooker from one detail to another and causes him, as has been well said, to 'unravel' the successive parts of the work one after the other; the art of the Renaissance, on the other hand, does not allow him to linger on any detail, to separate any single element from the whole composition, but forces him rather to grasp all the parts at one and the same time."*[184]

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179 Which may be regarded as the truths relating to the theoretical and practical reasoning respectively.
180 Russel, B., *op.cit.*, pp. 171, 184, 185.
181 Wittkower, R., *Architectural Principles*, pp. 16, 27.
182 Hauser, A., *Social History of Art*, Vol. 2, p. 6.
183 Russel, B., *op.cit.*, p. 185.
184 Hauser, A., *op.cit.*, Vol. 2, p. 8.

THE PERSPECTIVE ORDER

Only when it is appreciated that both theoretical reasoning and practical reasoning are part of reality, is it possible for a unified method of structuring order to be realised, as in the perspective view. The whole must be understood as being rational and consistent, even when all the facts are not known. Isolating, fragmenting or rejecting any part of reality per= taining to man, will lead to aspective thinking. It is only the perspective that will allow the mind to become free of the burden of the overload of knowledge, by providing a comprehens= ible whole in which any or all the parts may be integrated, in a hierarchical structure, rationally understood. As soon as the cosmological idea disappears, the aspective becomes dominant, the perspective can not survive fragmentation.

> *"The Universe is knowable, the ancient Ionians argued, because it exhibits an internal order: there are regularities in Nature that permit its secrets to be uncovered."*[185]

Although scientific rationalism originated and was the natural outcome of the perspective method of structuring order, yet when it started declaring that the only reality pertains to the universal truth, it destroyed the unified perspective con= cept that relates to all the aspects of man. The exclusion practised by Rationalism when based on scientific truths only, and applied to architecture, brings with it so much that has been criticised in modern architecture, namely its lack of scale related to man, its inhuman, cold and abstract nature, and its lack of meaning related to form, in fact its aspective nature. Rationalism is an invaluable tool to architecture, understood in the perspective sense, it is then able to reflect all that which is humane in architecture, so eloquently demonstrated by the Greeks and in Renaissance architecture.

It is interesting to note that the great discoveries and innovations made by the human mind were made during the epochs under the influence of perspective thinking. The whole

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185 Sagan, C., *Cosmos*, p. 175.

foundation of our Western civilisation, with its technological and scientific prowess, its vast accumulation of knowledge, rests upon these attainments that were accomplished under the influence of perspective thinking. (Refer to Table 4.) Rationalism as a method of making decisions in architecture is essential. However, the unfortunate way in which scientific rationalism was applied to architecture, has not only discredited rationalism, but has led to some misguided thinking and aggra= vated the aspective situation. It is only the rationality that includes the practical and theoretical, and which is found in perspective thinking, that may guide architecture to attain the position it once held with regard to acceptability: an enriched architecture of

"Commodity, firmness and delight" (Vitruvius).

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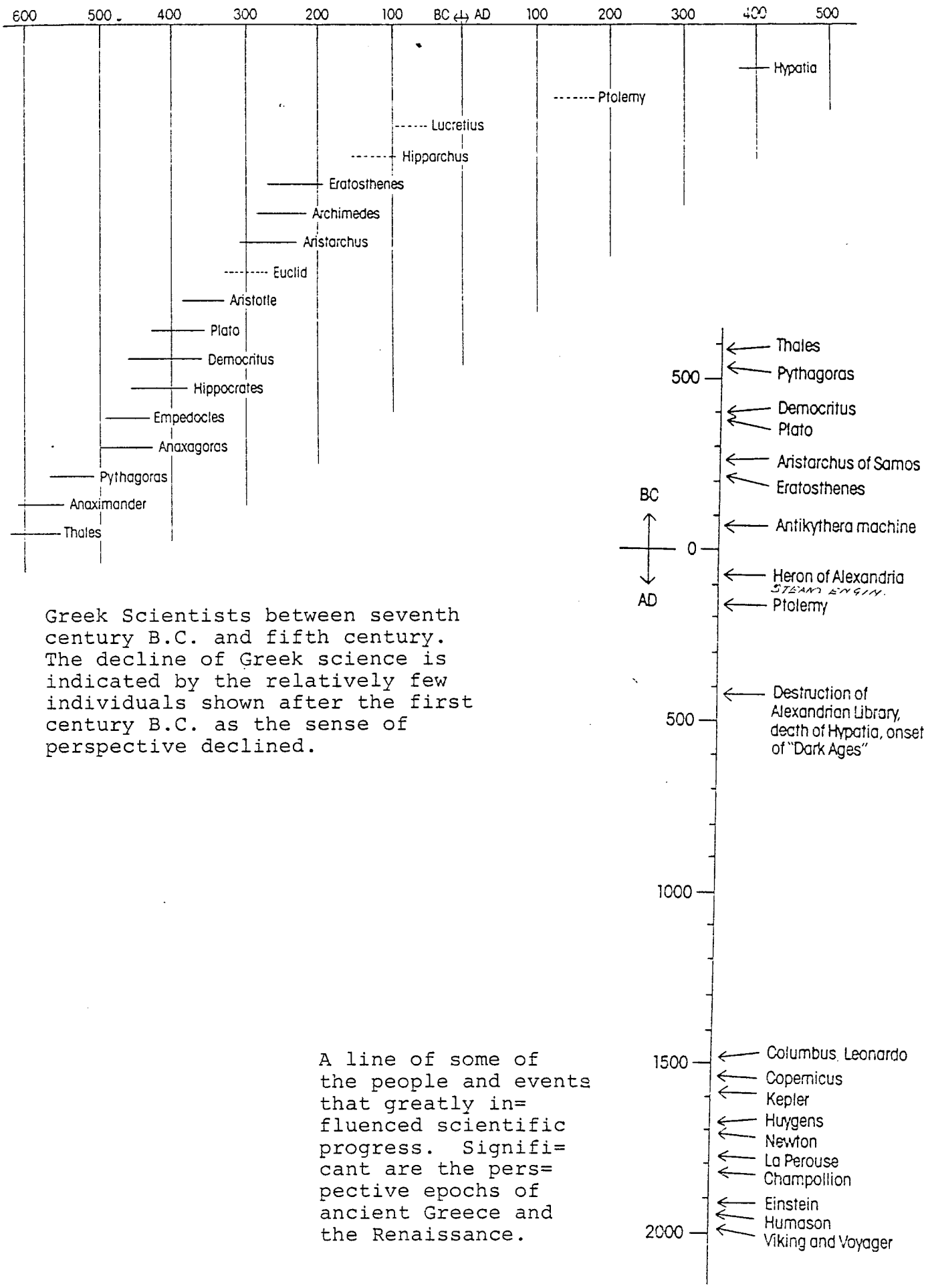
TABLE 4 INTELLECTUAL ACHIEVEMENTS



Greek Scientists between seventh century B.C. and fifth century. The decline of Greek science is indicated by the relatively few individuals shown after the first century B.C. as the sense of perspective declined.

A line of some of the people and events that greatly in= fluenced scientific progress. Signifi= cant are the pers= pective epochs of ancient Greece and the Renaissance.

SOURCE: Sagan, C., *Cosmos*, pp. 335, 187.

CONCLUSION

"We shall not cease from exploration
And the end of all our exploring
Will be to arrive where we started
And know the place for the first time."

T. S. Eliot

In the manner of perception of contemporary architecture, examination of the relevant information gathered for this study, the author has been led to a number of principle conclusions. Certain historical events, situations and choices led to changes which resulted in confusion and insecurity with regards to man's concept of reality. The overload of knowledge, the subsequent search for security in absolute truths; the in= fluence of revolutionary slogans and the consequent confusion and rejection of traditional values, all these, have influenced man to take recourse to a simpler method of structuring order in the mind, the aspective method; and in this manner allowed the perspective method to be partially lost. This situation has been reflected in all contemporary artistic production. For the last 200 years architects have been dealing in frag= ments, self-consciously using ideologies, allusions and analogies as a means to create form and detail; be it historicism, bio= logical, mechanical, mathematical and so on indefinetely. But in the case of the contemporary self-conscious aspective artistic production, one is faced with so many explosions, intricate move= ments, revolutions, perpetual originality and fragmentation, which has presented a chaotic situation; and as a consequence, critical evaluation has become a complex task.

To avoid being caught in the vortex of ambiguities, semantic irrationalities, subjectivism and present contradictions, it becomes necessary to find a means of demystifying this situation. It is for this purpose that the theory postulated in this dis= sertation, namely the perspective method, is presented as a means to evaluate historically the phenomena of our present a-historical fragmented cultural situation. The author has not intended to present a destructive critical method, but proffers the

'perspective' as a constructive means to explain this situation. Although this dissertation may be found by some to be an attack at the very root of dearly held ideals, however, in this sense it is not in any way new. So much verbal production has been concerned with the failures, problems and so called *'crisis'* of Modern Architecture, offering critical analyses and ideological support as an explanation or solution. However, presented here is no new ideology, or destructive revolutionary criticism in the same sense, even although certain misconceptions have been questioned; but presents a vital and positive means of changing and evaluating the situation, and a possible means of revital= ising architecture to a more meaningful and satisfactory role in our culture. Once the perspective as a method of conceptual= ising order is understood, it could reveal a new attitude to the old problems besetting modern and contemporary architecture; a new objective discourse may be possible, replacing the fragmentary, subjective criticism and condemnation.

Perspective is an awareness that develops out of the aspective method of structuring order by the mind, but to grasp its impli= cations may be elusive to the aspective man and in this manner be lost. However, once understood, the freedom of choice pre= sents itself, although there is no way to escape the consequence of such a choice. The perspective method presents the holistic view developed from the linear time concept - the cosmological idea; the aspective from the fragmented view of frontal images an unknowable universe and cyclical time. It appears, however, that the universe is always creating and synthesising unit structures whose ordered grouping produces natural wholes, this characteristic of wholes meet us everywhere and are possibly fun= damental in the universe. The subjective self-conscious aspective situation in contemporary architecture is contrary to this fun= damental principle. On the other hand the perspective postulates an attitude which allows for synthesis, a natural creation of links in the creation of *'wholes'*, in the environment; which then may be evaluated qualitively as to the appropriate. The perspective may be offered as a means of escaping the boundaries and limitations, needlessly placed by the aspective in the

production of art and architecture. Furthermore, the holism of perspective allows the links to be reinstated in terms of practical reason and objective values as Scruton advocates.

The a-historical contemporary situation causes Tafuri to seek a method of criticism in the historical sense. The perspective concept allows a fundamental means of such an evaluation, by appreciating and placing into context that which is aspective and a-historical, and that which conforms to the perspective of the ordered whole. The inability and confusion to explain the a-historical factor has led to a maze of contradictions which could possibly be resolved by the premise postulated in this dissertation. Furthermore, it frees evaluation and enables it then to determine the quality of the artifact or building by understanding the whole instead of becoming lost in judging only the fragment, such as structure, function, need and so on. Architecture to be aesthetically appreciable re= quires a life of its own, as a whole, a sum total larger than that of the parts or fragments.

The concept of the perspective gives a clarity to that which has been obscured in the value of the classical architectural heritage, its perspective holistic quality. Appreciating this fundamental quality of Classical Greek and Renaissance architecture, may free the concepts held on classical architecture from an over emphasis of symmetry,ornament and fragmentation. Although it must be clear that the depth perception of the perspective or the two-dimensional representation of frontal images of the aspective, can neither assure aesthetic quality. Only the objective values held with regard to the appropriate, which may be found in the holism of the perspective, would establish quality and reinstate acceptability as a factor in architecture.

It is common knowledge that the basis of much that is of value and which has stood the test of time in Western civilisation; philosophy, the arts, architecture and science, was created in the perspectively orientated Greek and later Renaissance societies. So much that is uniquely Western rests upon this particular ability, of structuring order in the perspective.

The appreciation of the perspective quality and its importance in the development of man's awareness may inspire its reinstate= ment as a means of conceptualising order, and in this manner allow the possibility of resolving the great problems besetting modern civilisation; not only in architecture, but in many other fields such as environmental protection, politics, sociology, economics and so forth. The implications of the theory postulated in this dissertation may be seen to be applicable to all the affairs related to humanity, and in the way they are understood, perceived and interpreted; thus has an influence that extends beyond the purely architectural. Architecture, however, will always reflect either an aspective or a perspective attitude, for it is in truth a reflection of the spirit of the time in which it was created.

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GLOSSARY

The following words have been used to define concepts in the manner indicated.

Acceptability
Worth accepting, pleasing, welcome, favourable reception, consent to receive, approval, partiality.

Archemedean point
A philosophical point of reference, a fixed point from which to proceed and upon which to base its ultimate support. Taken from L. Kalsbeek.

Aspective
A method of perceptual cognition, of structuring order. It describes a restricted viewing gaze directed at one particular part, and thus sees individual phenomena in relatively close-up view, delimitating one from the other, not moving outside its boundaries, and does not see them in functional relation= ship to the whole, or measure them against a foreground or background. The illusionary space in perspective represent= ation is *a priori* impossible, correspondingly the idea of time as an endless succession (linear time) is equally foreign to it, and may be generally said to exclude space and time as inessential. Taken from Brunner-Traut, E., Epilogue, *(ed.)*, Schäfer, H., *Principles of Egyptian Art*.

Avant-garde
Avant ... forward, advance; garde ... guard, vigilant. He who goes before; he who is vigilant to be in front, ahead of the times.

Camp and Pop
'Camp' is a basic attitude and is the singular humour of the mid-twentieth century. A detached aesthetic vision, which permits reversals of judgements, and irreverantly turns things inside out for perverse humorous ends. This is a basic technique of Mannerism, it looks and uses ordinary things in reverse.

Pop art recognises and accepts the visual environment of our ordinary daily life. It is the popular culture as opposed to the elite culture which motivates Pop art, although executed in the elite cultural manner. American *'consumerama'*, the commercial, inspires this movement, it tries to be vulgar, garish, trashy and honky-tonk in a sophisticated way. This movement developed during the 1950-60s. Taken from Ray Smith.

Cognition
Action or faculty of knowing, perceiving or conceiving.

Concept
Idea of a class of object, general notion.

Contemporary architecture
Although the use of the word *contemporary* strictly speaking refers to a personality and that contemporaneous would be more suitable, yet the expression contemporary architecture becomes commonly used to indicate all architectural work irrespective of style or origin, generally to imply at least work done in the last 50 years.

Cosmos, cosmological idea
The universe as an ordered, knowable and regular whole was called Cosmos by the ancient Greek philosophers, as opposed to Chaos. The cosmological idea is, that the whole of the universe and all it retains, are subject to an ordered regular= ity. This it accepts as a fundamental principle. (From this concept develops the perspective view.) Taken from Carl Sagan.

Epistemology
Pertaining to the theory of the method or grounds of knowledge.

Hierarchical
Successive grades; any graded organisation, from the most vital and important to the least important or least vital, related to the structure of the whole.

Historicism

This concept was derived from the Hegelian philosophy, that certain historical epochs exhibit certain distinct character= istics. However, historicism carries this distinction to extreme, of separating epochs into distinct time segments. Allocating to each a particular symbolic content in relation to moral, religious and ethic values, which then again colours the interpretation of all actions, events and artistic endeavours of such an epoch. Historicism finds difficulty in preserving the linear sequence of history, and in appreciating how certain epochs retain characteristics of previous ages and are formative of the next. Historicism believes circumstances only arise within a single historical period, that they do not persist from one to the other. For the purpose of this study, the salient characteristic of historicism that is of concern, is its aspective nature. The author maintains this because it divides epochs into separate segments of time, with the possi= bility that it may encompass and allocate fallacious symbolism to these historical epochs in a fixed manner, which in turn may cloud the truth of historical reality. Taken from Karl Popper and Geoffrey Scott.

Holism and holistic

In his criticism of holism Karl Popper maintains a fundamental ambiguity in the use of the word *'whole'*, and defines the following meanings:

(a) The totality of all the properties or aspects of a thing, and especially of all the relations holding between its constituent parts.

(b) Certain special properties or aspects of the thing in question, namely those which make it appear an organised structure rather than a *'mere heap'*.

Popper denies that wholes in the sense of (a) may be studied scientifically as opposed to (b), as found, for example, in the Gestalt theory. That in the sense of (a) only fragments may be studied, and that wholes in the sense of (a) can never be the object of any activity scientific or otherwise. In

Popper's point of view one may observe the aspective attitude. Opposed to such a decree the author wishes to postulate the possibility of recognising that the *'whole'* does exist from a perspective point of view; that holism in the sense of (a) of seeing the whole, does not obliterate the constituent parts and their relationships in the sense of (a) and that these may be seen in relationship to the whole. The meaning thus given to the term holism, in this discourse, imply that the whole may be discerned and furthermore that it is possible to place events, facts, objects or concepts in relation to the whole, and may be understood in relation to the whole, even if all properties or aspects of such a whole are not known. Further= more, the alliance of Utopianism with holism is denied in this thesis (in the sense that Popper decrees). Taken from Karl Popper.

Holism is the term coined as the fundamental factor operative towards the creation of wholes in the universe. This character of *'wholeness'* meets us everywhere and points to something fundamental in the universe. Taken from J. C. Smuts.

Modern Movements, Modern Architecture

Incorporates many ideological attitudes towards architecture, but may be seen to refer to architecture produced by architects that had rejected historical tradition and who base their design methods on a scientific system, and may possibly exhibit the following characteristic properties: simple geometric shapes and forms, unitary volumes wrapped in a thin, weightless skin of glass, plaster, et cetera. Has a puritan lack of articulating detail and displays concepts of transparency and spatial con= tinuity. Has an accent on modern technological structuralism. Taken from C. Norberg-Schulz.

Normative

Is used to mean a standard or principle, used as a base for decisions.

Percepts

Object of perception, a mental product, as perceived: apprehended by the human mind.

Perspective

A method of perceptual cognition of structuring order, a con= centrated or unified method of seeing or viewing as a whole a relationship in which parts of the subject are viewed by the mind as a whole. Art of delineating solid objects on a plane surface so as to give an impression of relative position, as the actual objects do when reviewed from a particular point. Therefore reproduces visual impressions faithfully, basing itself on the visual image received and built into the human eye, and which far from avoiding foreshortening, seeks it out. Appreciates how objects are fitted into space with foreground and background which necessitates the quality of sequence and a linear time concept to be understood.

Pragmatic

Dealing with facts of history with reference to their practical lessons.

Praxeology

Praxeology is a deductive system. It draws its strength from the starting point of its deductions, from the category of action. That men are purposively intent upon bringing about changes. Its statements and propositions are like those of logic, mathematics, *a priori*. Praxeology deals with the ways and means chosen for the attainment of such ultimate ends. Its object is means not ends. The only standard which it applies is whether or not the means choosen are fit for the attainment of the ends aimed at. Taken from Ludwig Von Misses.

Rationalism

Treating reason as an ultimate authority, a theory that reason is the foundation of certainty in knowledge. As a creed rationalism is based on the dictates of Descartes, who main= tains rationalism should be based on self evident and scientific truths.

Simultaneity

Suggests an "all at once" quality of elements to sustain them= selves and converge in our mind as contemporaneous events. Because simultanism supposes a non-casual reality, it is not bound expressively to beginnings or ends. There is no pro= gression in a linear sense of beginning, middle and end. It is standing still, a continuous present in which everything is taken together and always. This idea of holding conflicting propositions concurrently, is not premised on Hegelian dialectic. This idea is a cyclical concept of time and thus aspective, seen particularly developed in our modern times, albeit a sophisticated version thereof. Taken from D. Bell.

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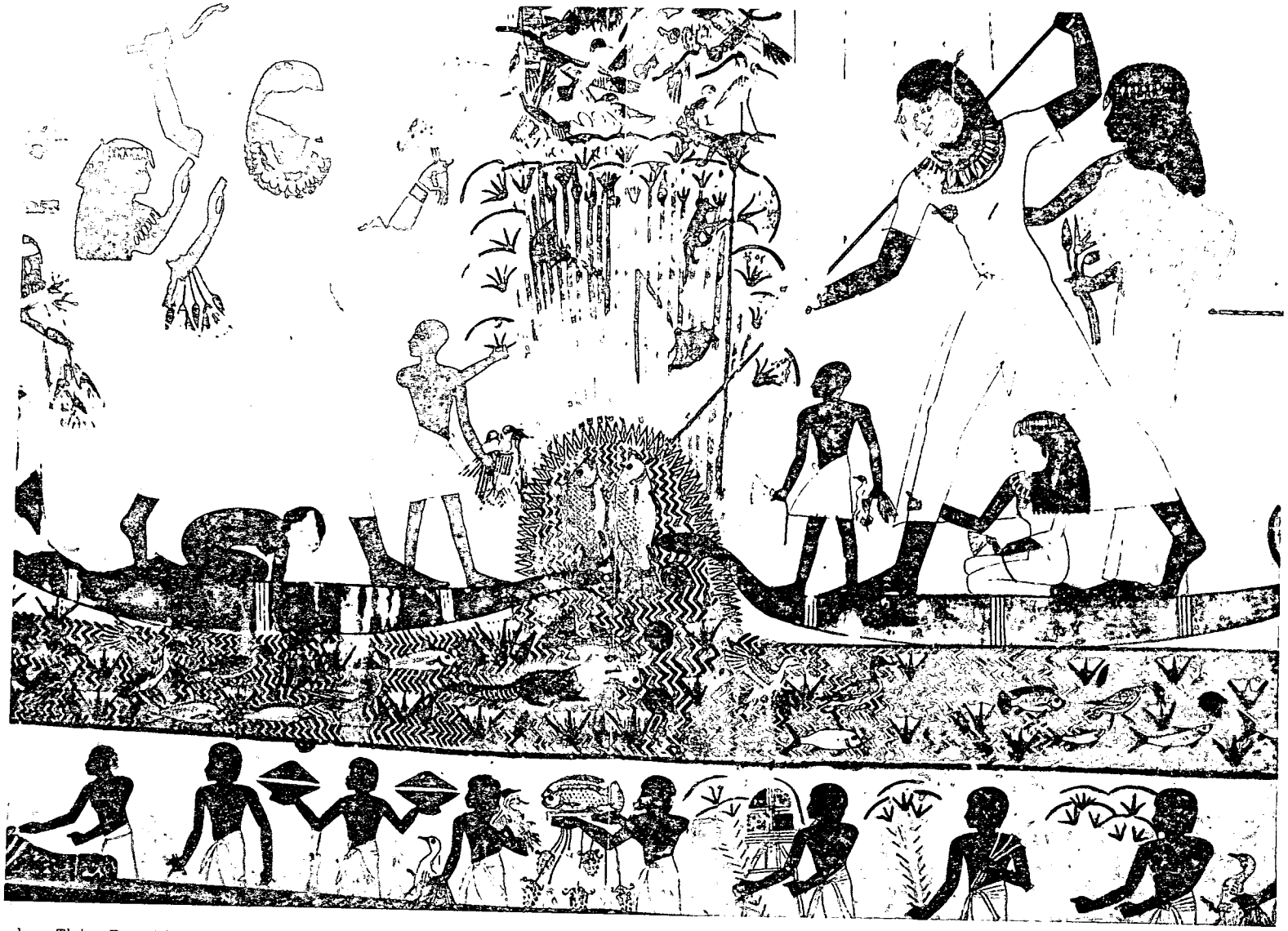
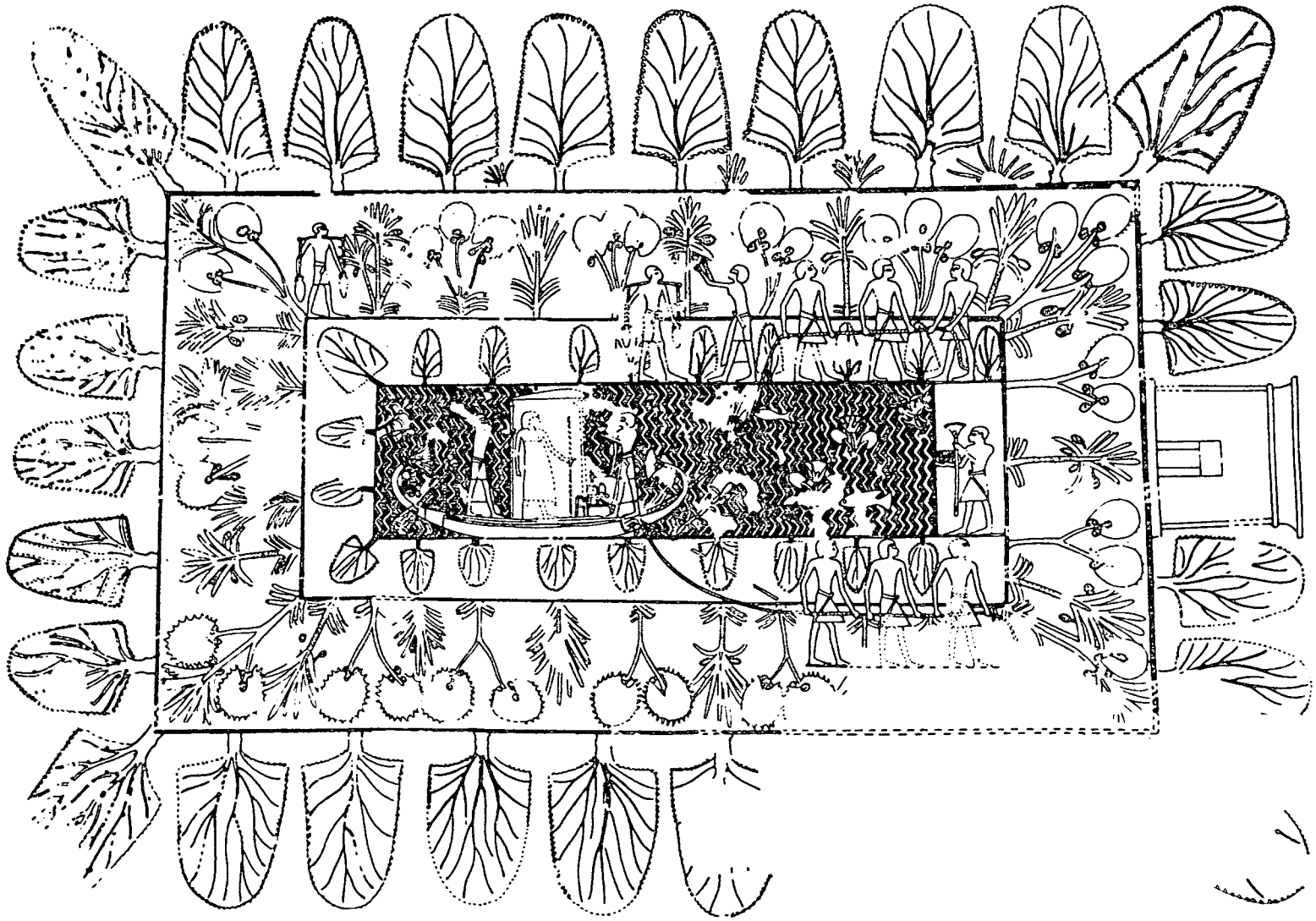
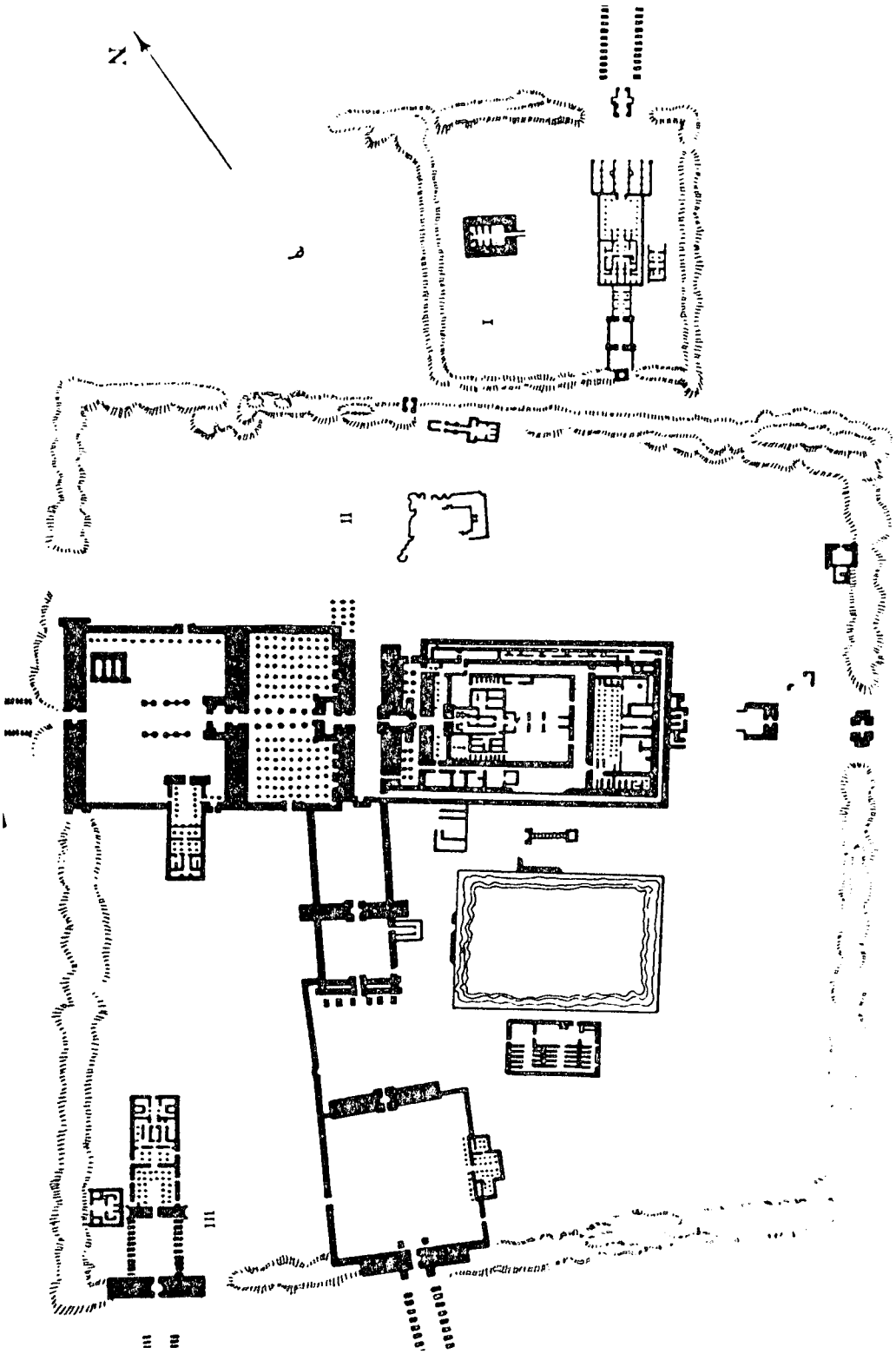


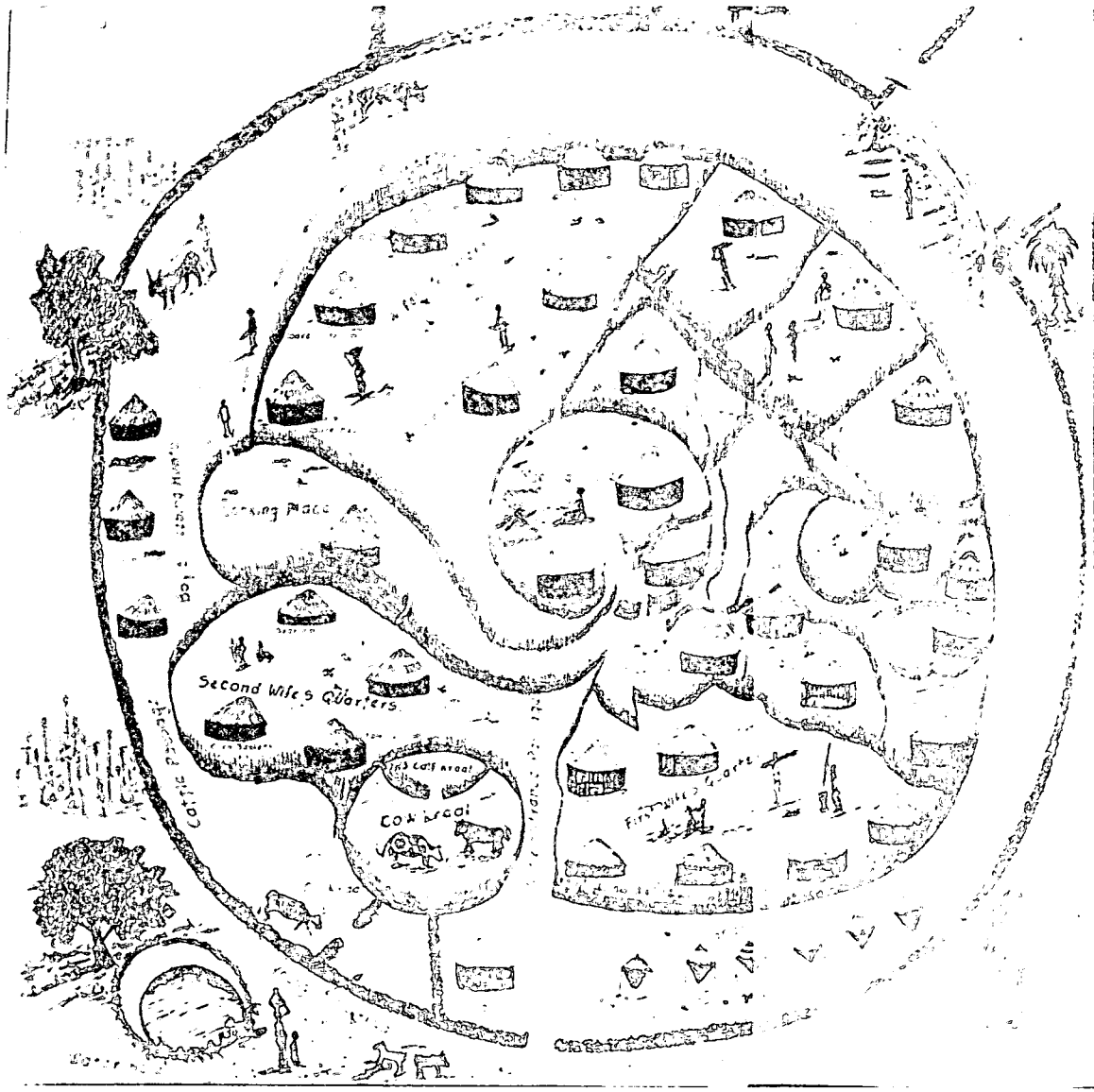
1. This Egyptian painting illustrates the aspective method of presentation, a style which is more concerned with the essential character of objects than with their appearance. The parts of the painting are depicted separately in relatively close-up view, without functional relationships to the whole. A Two dimensional representation without depth. Depth is presented by overlapping planes or layers.



2. A Egyptian Garden from 18th Dynasty, New Kingdom, depicts an aspective plan-elevational representation, the elevation flattened outwards but the figures are above each other, upside down to the trees. Each object was thus seen separately.

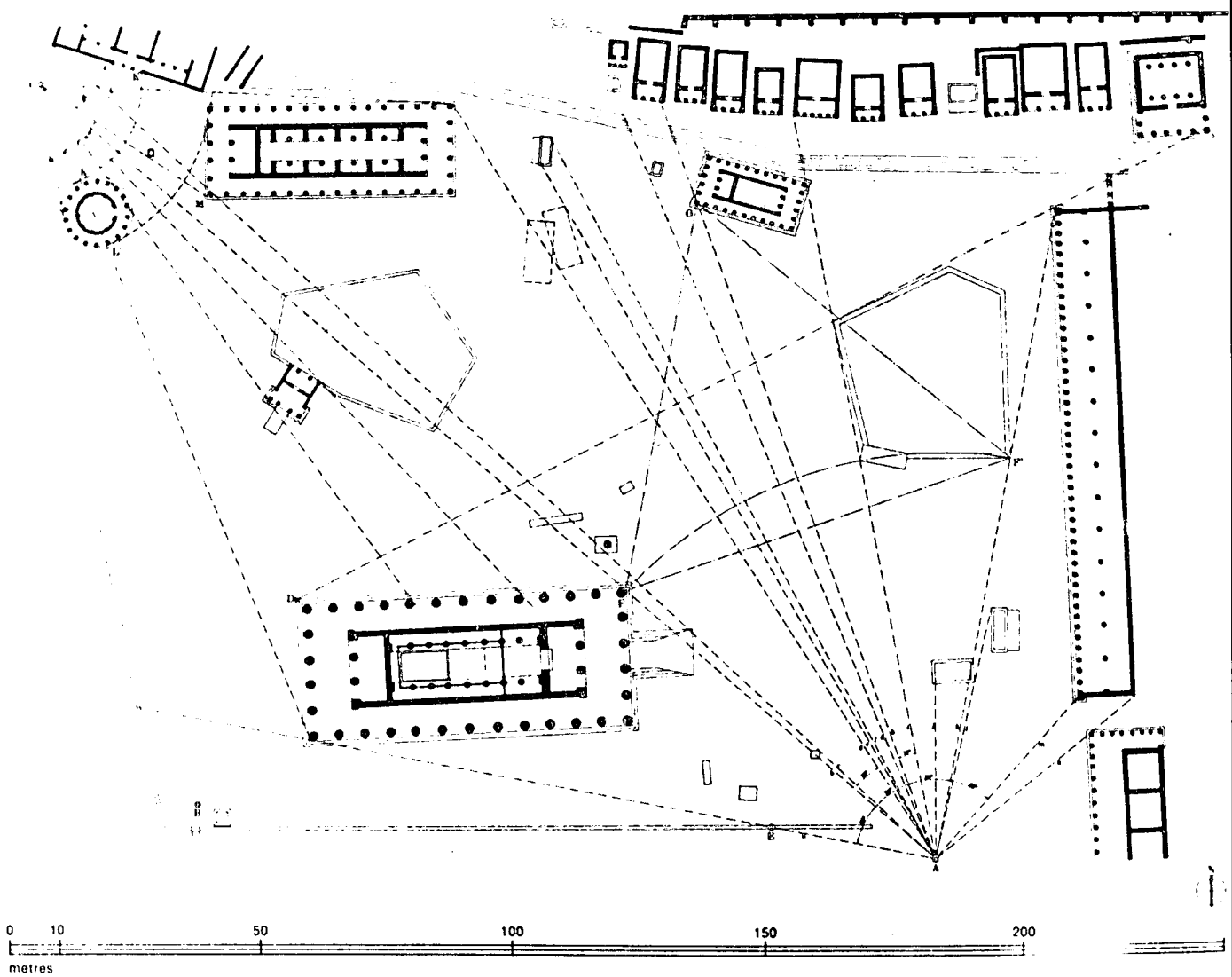


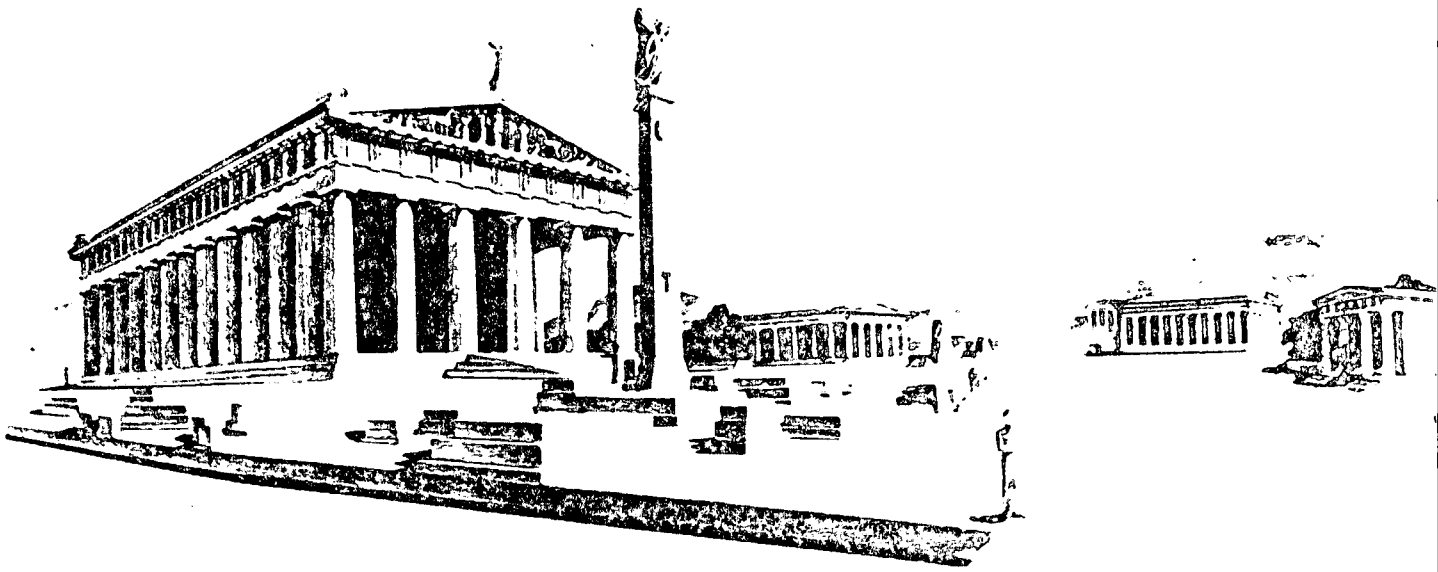
3. Egyptian Temple Karnak. Space was understood to be the contents inside an object which could be cal= culated from its inner surfaces. Known space clearly demarcated from the unknown by planes. This example illustrates how the pylons were layered planes, a method used to create depth.



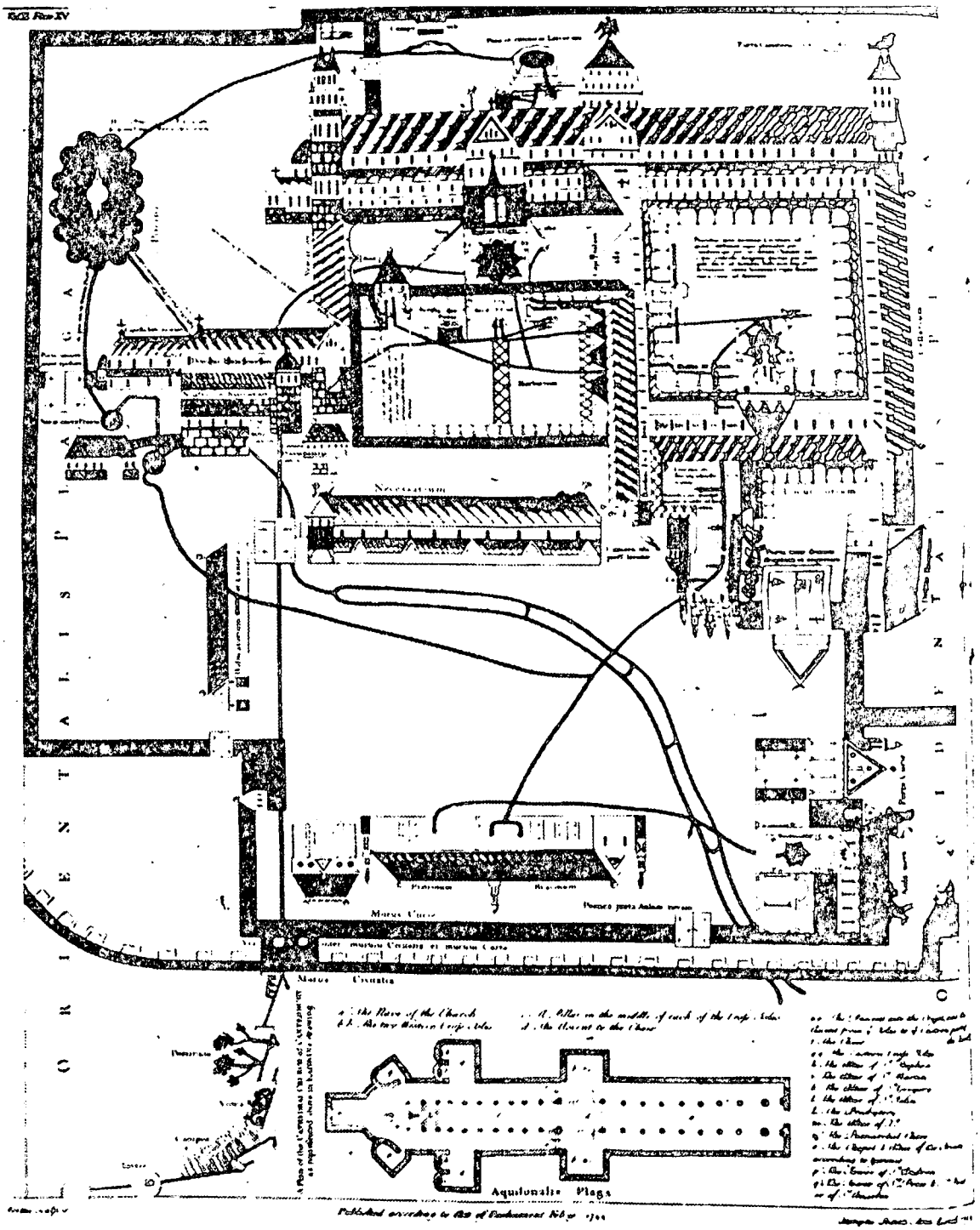
4. A plan-elevational drawing by an Ovambo. The aspective occurs in all cultures prior to, or which have not been influenced by the perspective view developed in ancient Greece.

5. The mosaic was found in the House of the Fawn, Pompeii. Taken from a painting attributed to Philoxenos of Eretria, 4th century B.C., indicates the high level foreshortening had developed in ancient Greece.

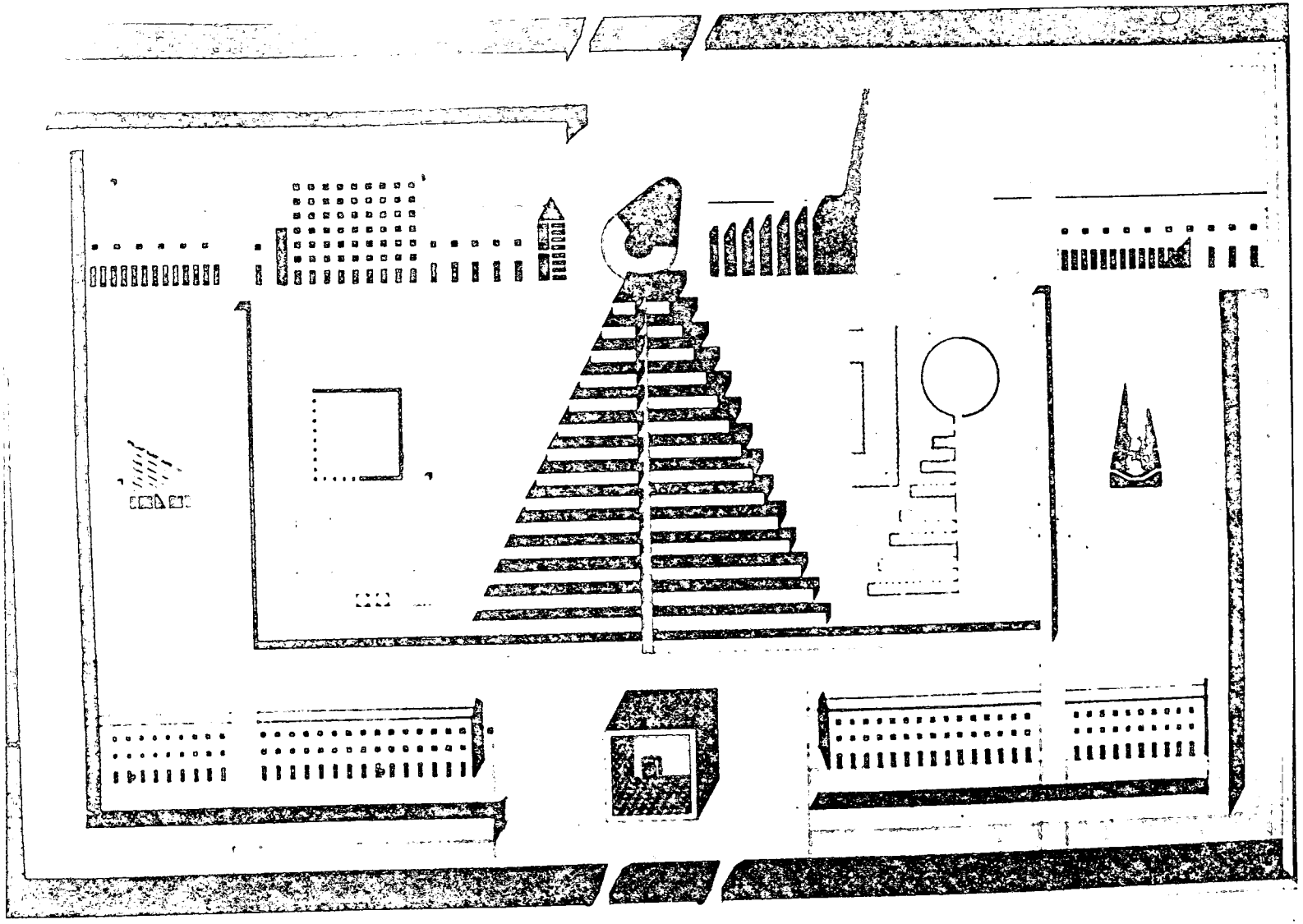




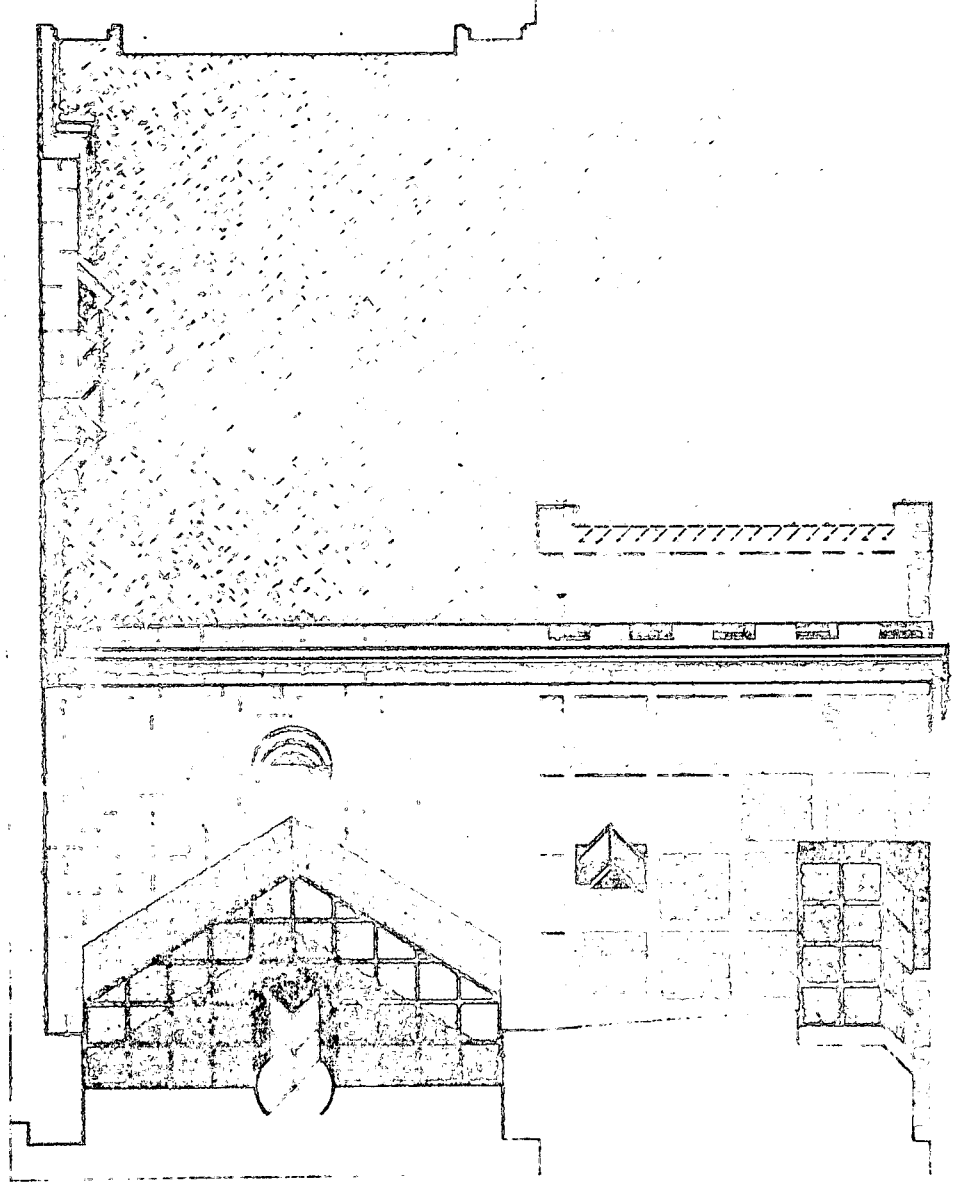
6. Olympia during Hellenistic period taken from Doxiadis. The ancient Greek system was total, all objects, man made or natural were taken into consideration. Buildings were placed obliquely to the viewer. All sight lines started from man's position in space, all angles of vision from the turning of his eyes, in order that he may view the composition holistically in perspective, completely in view or totally obscured.

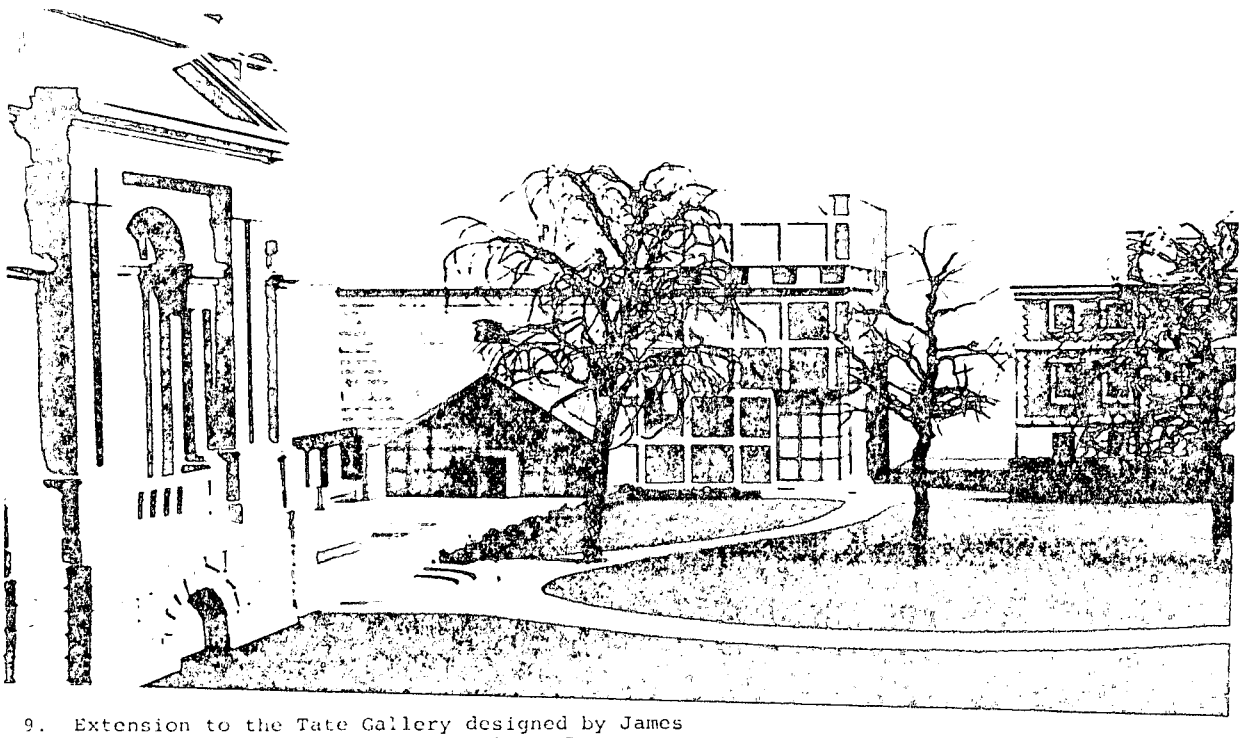


7. Gothic plan-elevation of the Cathedral and Monastry of Canterbury. An aspective presentation, the perspective was partially asleep during the Middle Ages.

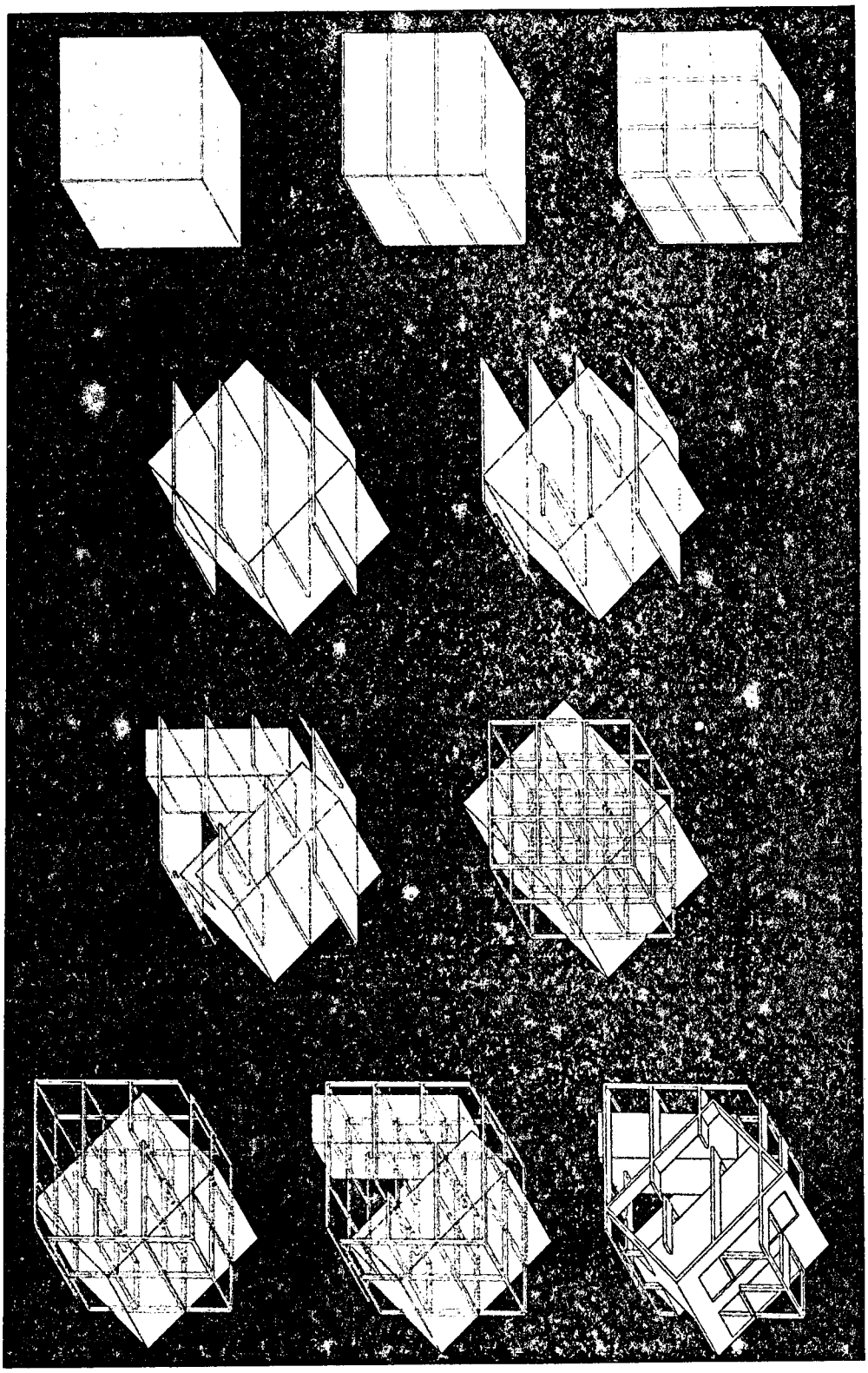


8. The Modena Cemetery, by Aldo Rossi, 1971.
The aspective view is revealed in the plan-elevation method of presentation.

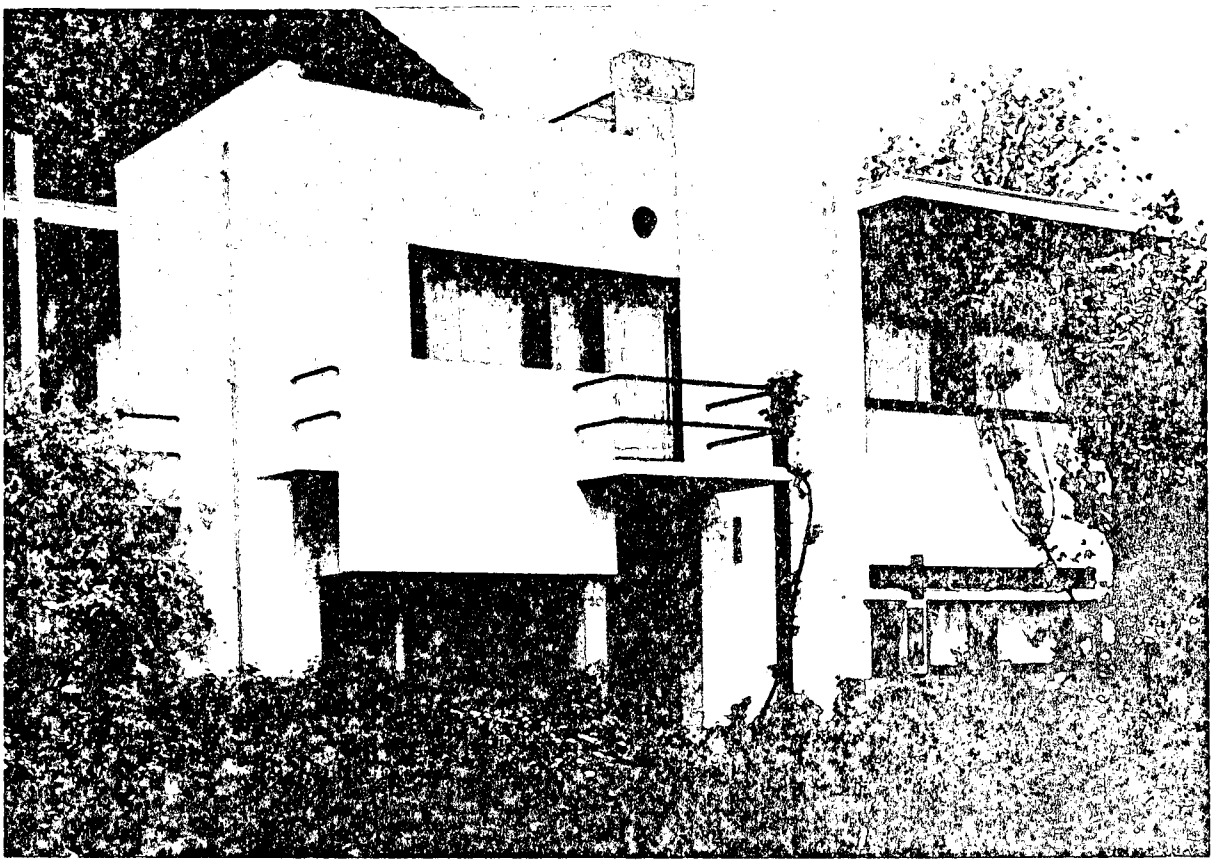


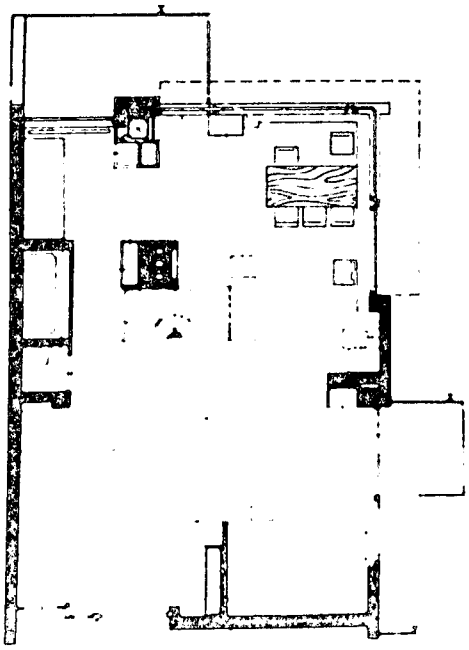


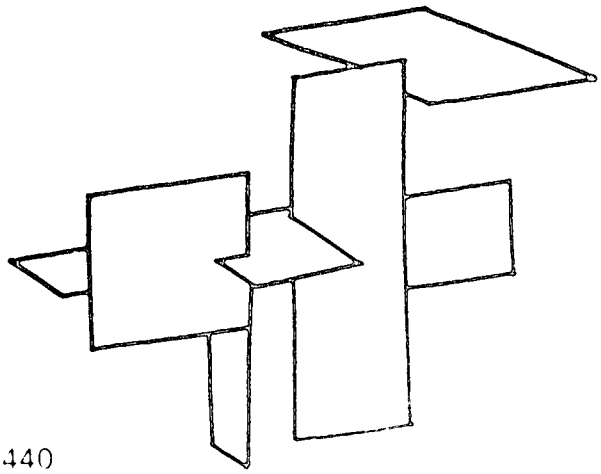
9. Extension to the Tate Gallery designed by James Stirling and Michael Wilford, 1980. This sort of plan, three dimensional elevation method of presentation is aspective. The arbitrary use of forms, windows articulation and historical fragments further emphasises the aspective and [illegible] to



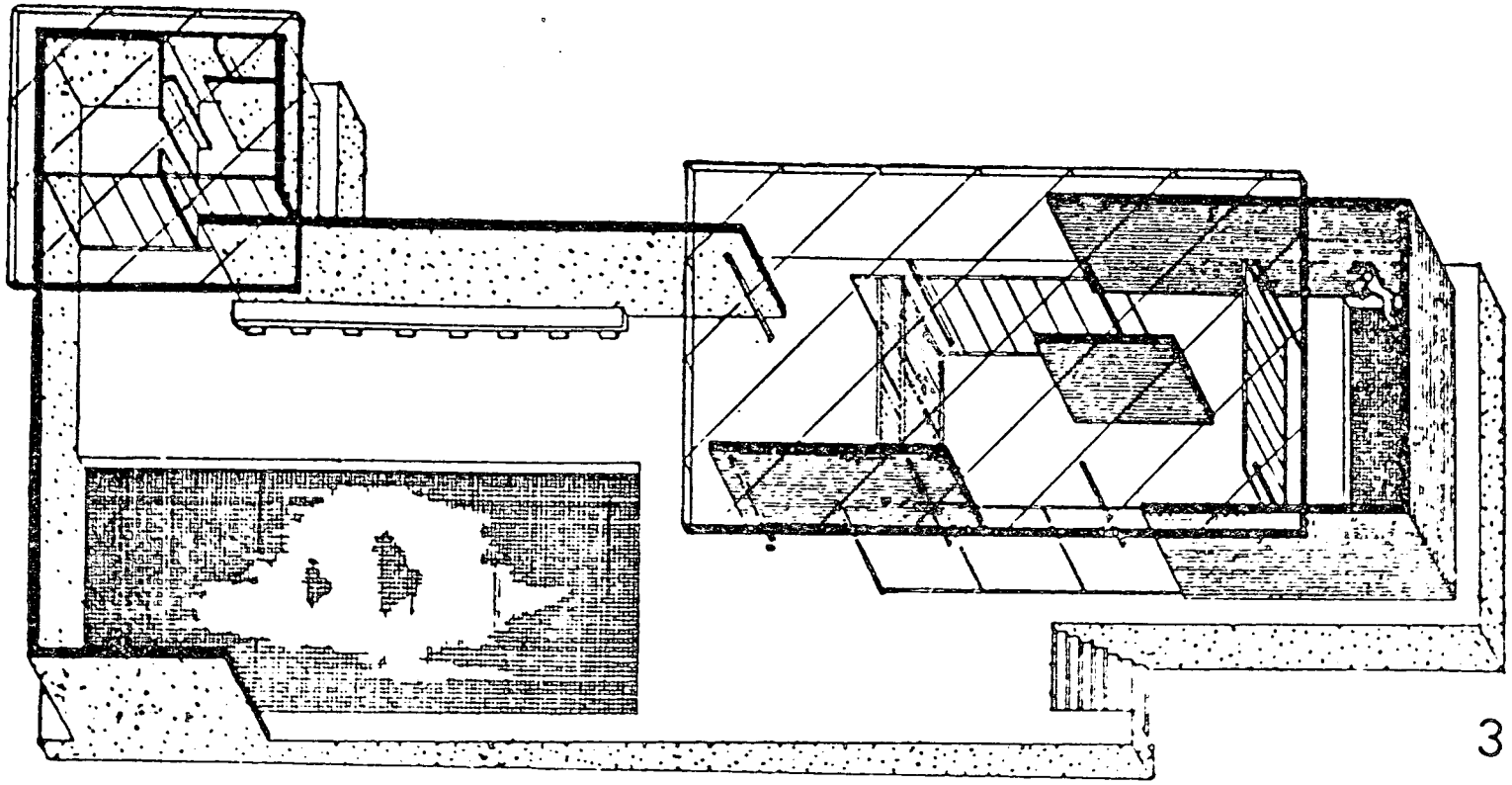
10. These drawings apparently generated the concept for House 3 for Robert Miller designed by Peter Eisenman. Isometric and axonometric are three dimensional but have nothing in common with the perspective, as they are based on true measurements, of how it really is not how it appears to the human eye. Consequently no consideration is given to the foreground or back= ground, nor an ordered sequence of front and back. The finished product illustrates the layering and integration of planes of the aspective.







11. Rietveld's Schröder House. This architectural com= position of exploded planes and spaces, proclaims the aspective spatial concept in a modern manner, of space flowing, bounded by planes.



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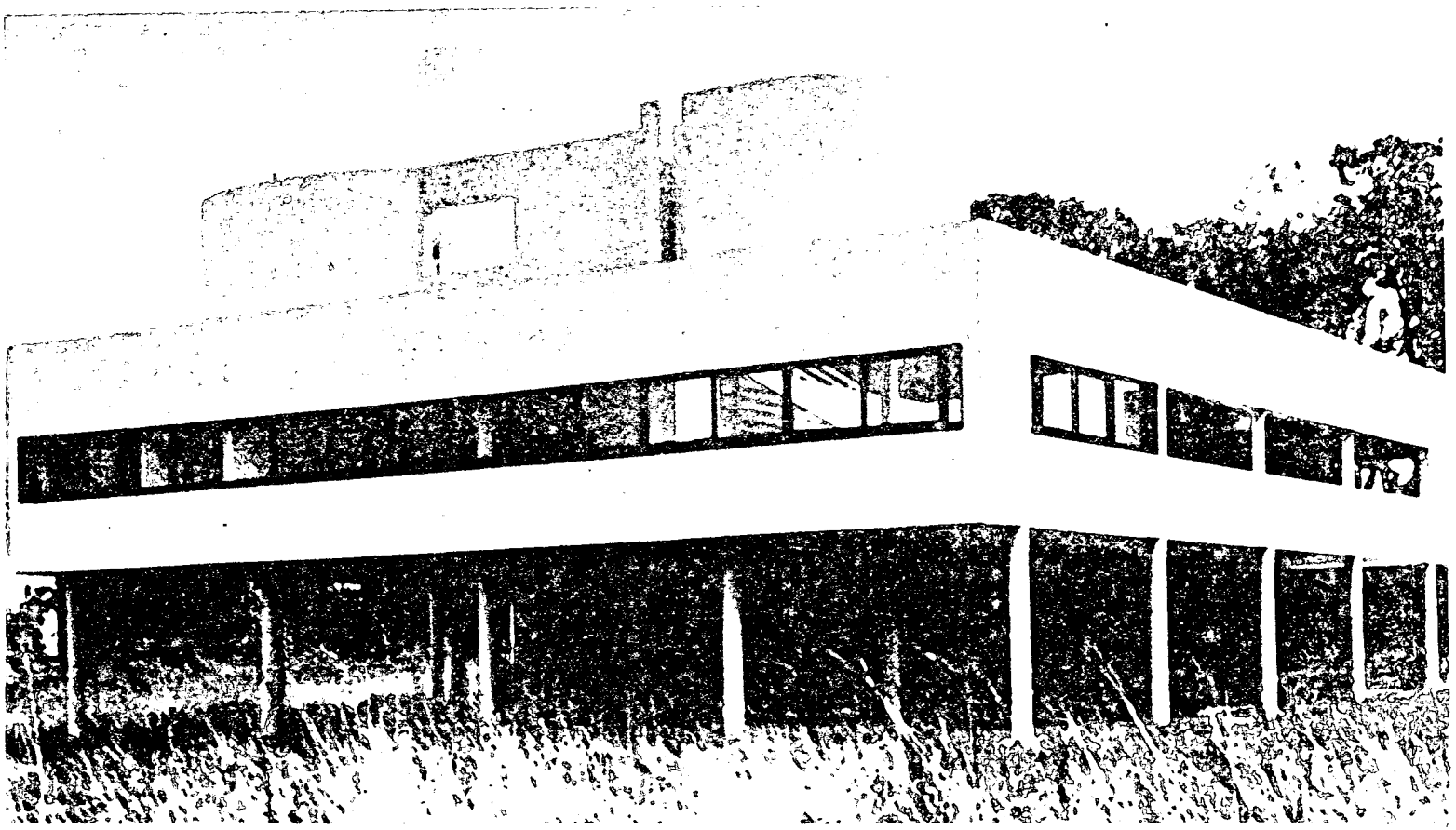
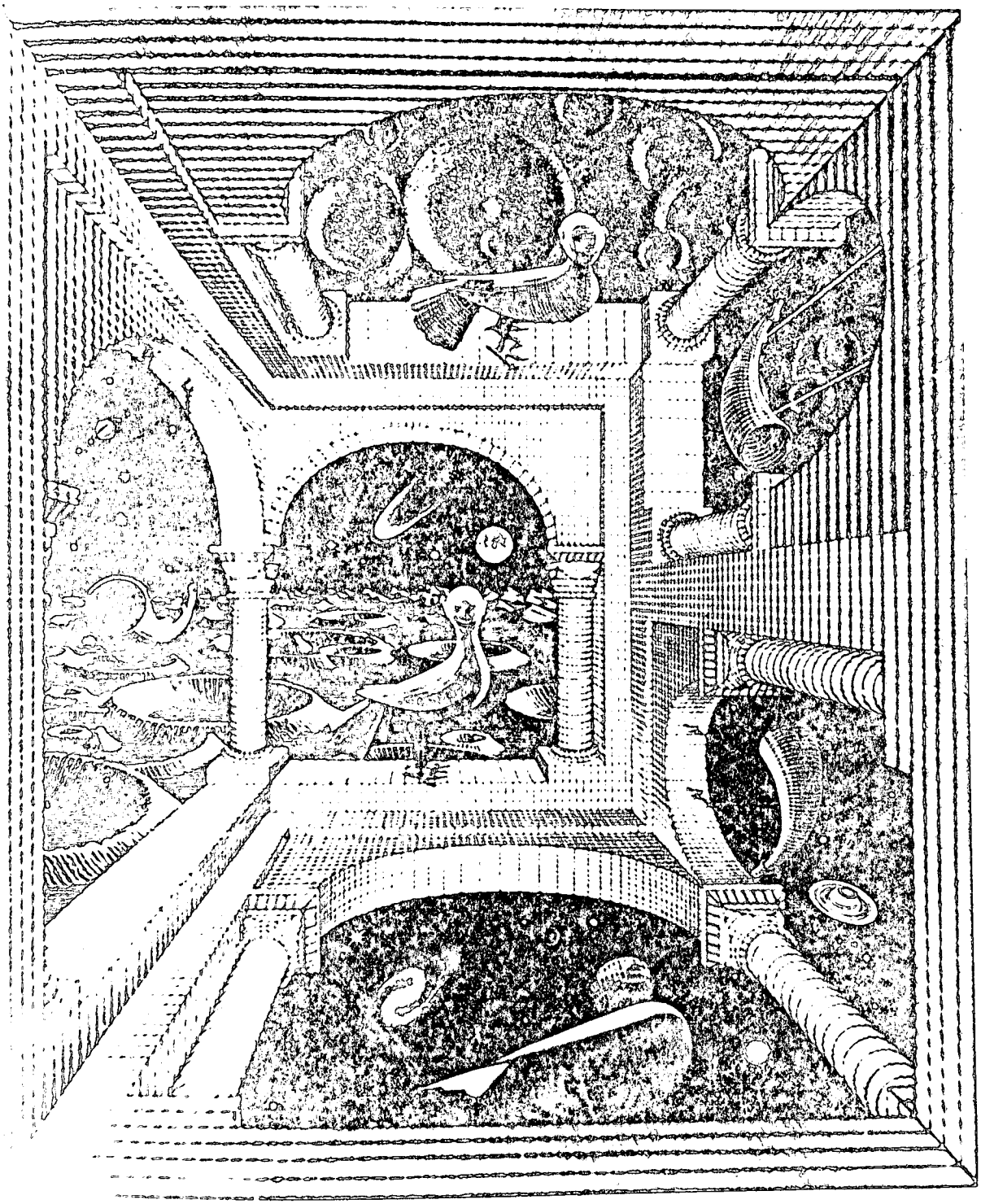
12. The Barcelona Pavilion designed by Mies van der Rohe. This classic example of modern spatial concepts, flowing space defined by planes, each plane alone and separate.



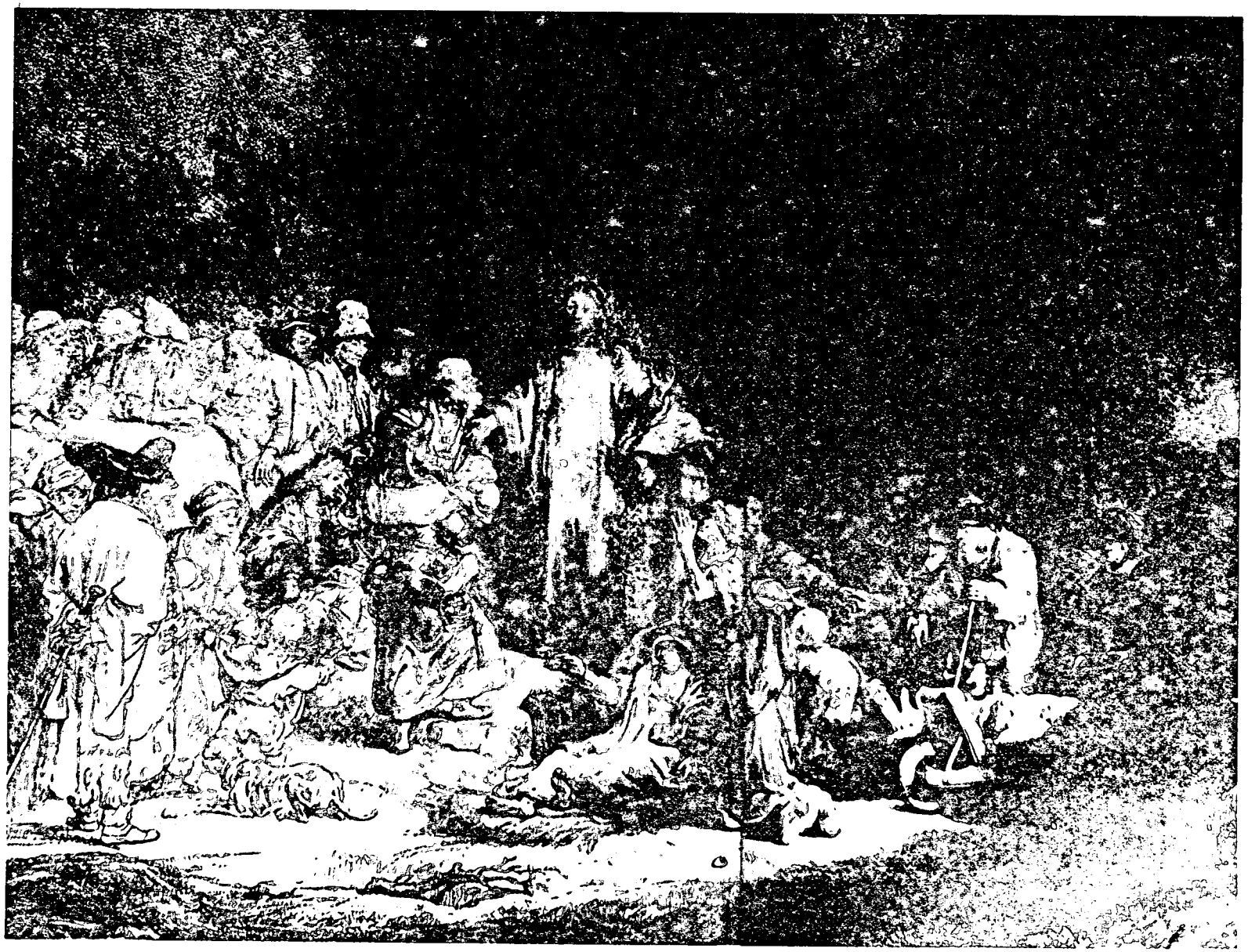
13. Villa Savoie by Le Corbusier. The interplay of forms and interpenetrating spaces and partitioning planes, allows this building the most perfect realization, by Le Corbusier, of a three dimensional Purist composition, and reminiscent of his own earlier paintings. The universalised and two dimensional character of Purism points to the aspective.

14. Pitcher and Violin by George Braque.
Cubism abandons all claims to be a representation of visual reality. The advancing and retracting planes, interpenetrating, hovering often transparent, without anything to fix them in realistic position are in fundamental contrast of perspective. The picture is largely flat, two dimensional and aspective.

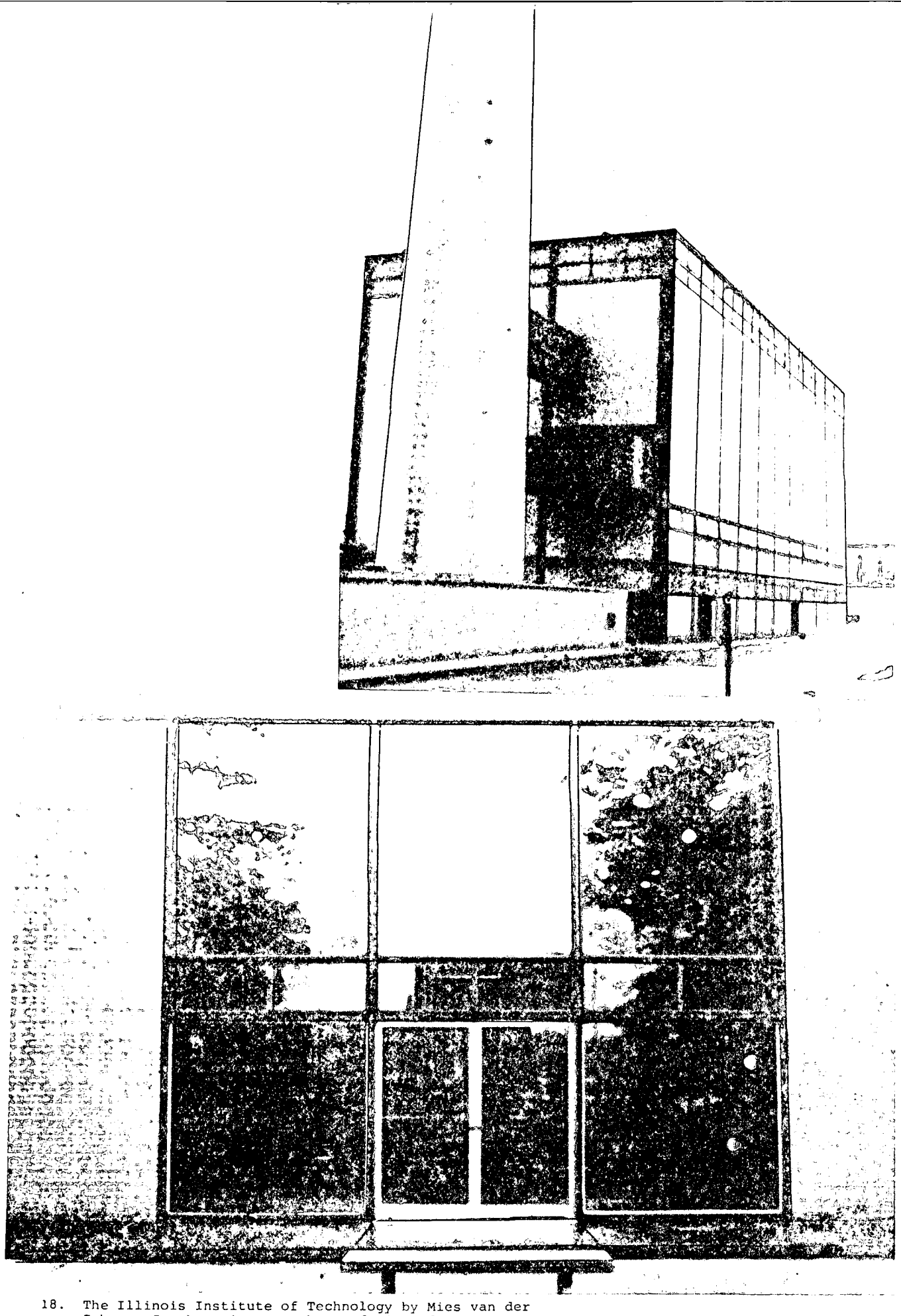


15. In this weired perspective by De Escher, he represents the geometrical perspective in such a manner that the parts are to be read separately and alone, therefore reveals a marked influence of the aspective method.

16. Drawings and collages with no apparent purpose or meaning, whose construction speak of chance, freedom from rules, to transcend the barriers of conscious violition, the irrational; was part of the Dada Movement. This collage of The Russian Cabaret by Kurt Schwitters illustrate this attitude.



17. Christ Healing the Sick by Rembrandt.
Rembrandt was particularly concerned the effect of light in producing the perspective effect. The tonal balance contributes to the holistic perspective quality of the work.

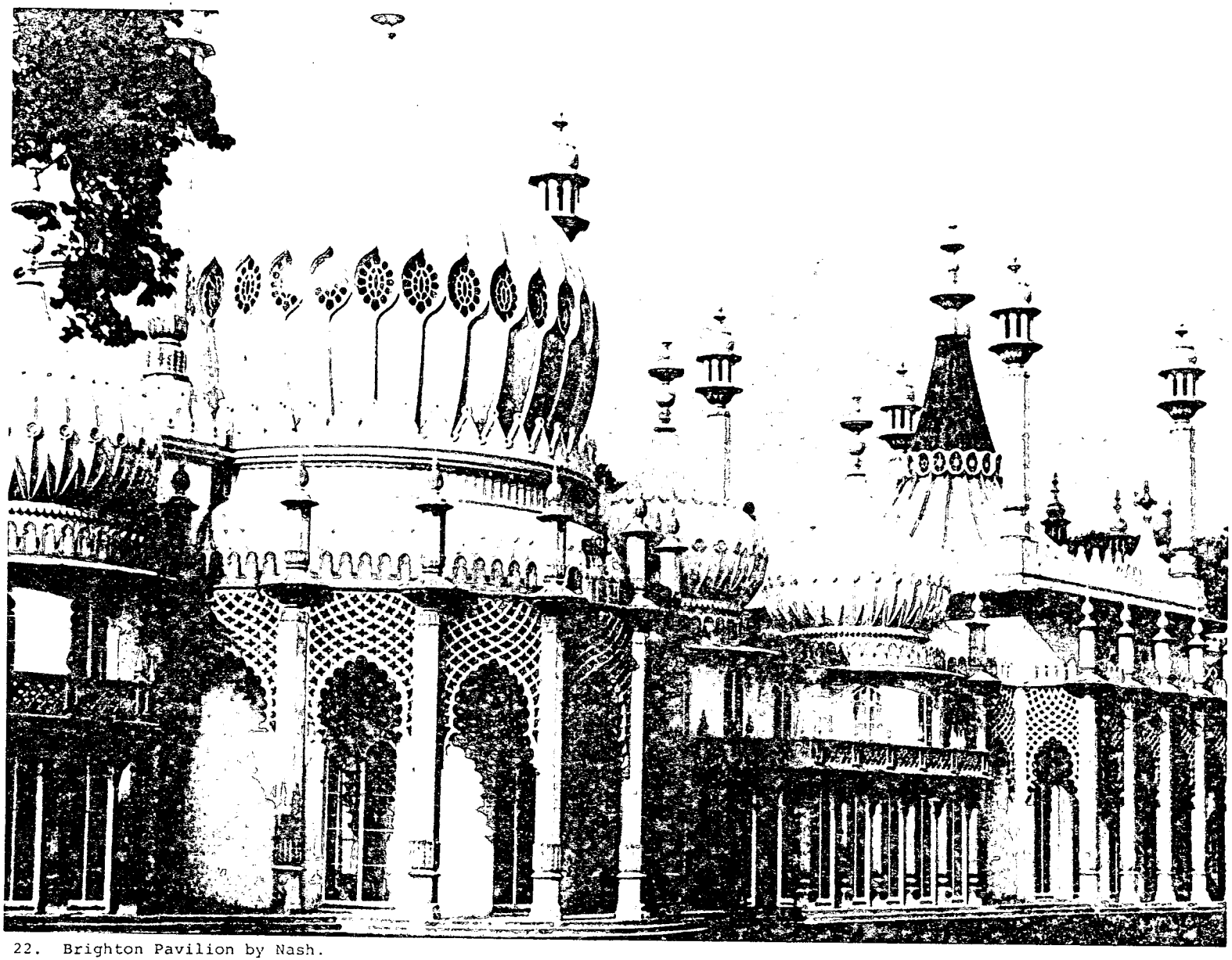


18. The Illinois Institute of Technology by Mies van der Rohe. Jencks points to the confusion of meaning. The Boilerhouse has the traditional form of a Basilica with the central nave and two side aisles, a regular bay system and the campanile to show this is a cathedral. The chapel on the other hand is a dumb box, blank on three sides and lit by search light windows, clearly, Jencks maintains, this is the Boiler House.

19. Las Vegas illustrate the common coding of commercialism. An eclectic coding easily perceived by the public, as opposed to the elite obscure eclectic coding of Post Modernism, and the lack of coding and signs of the Modern Movement.

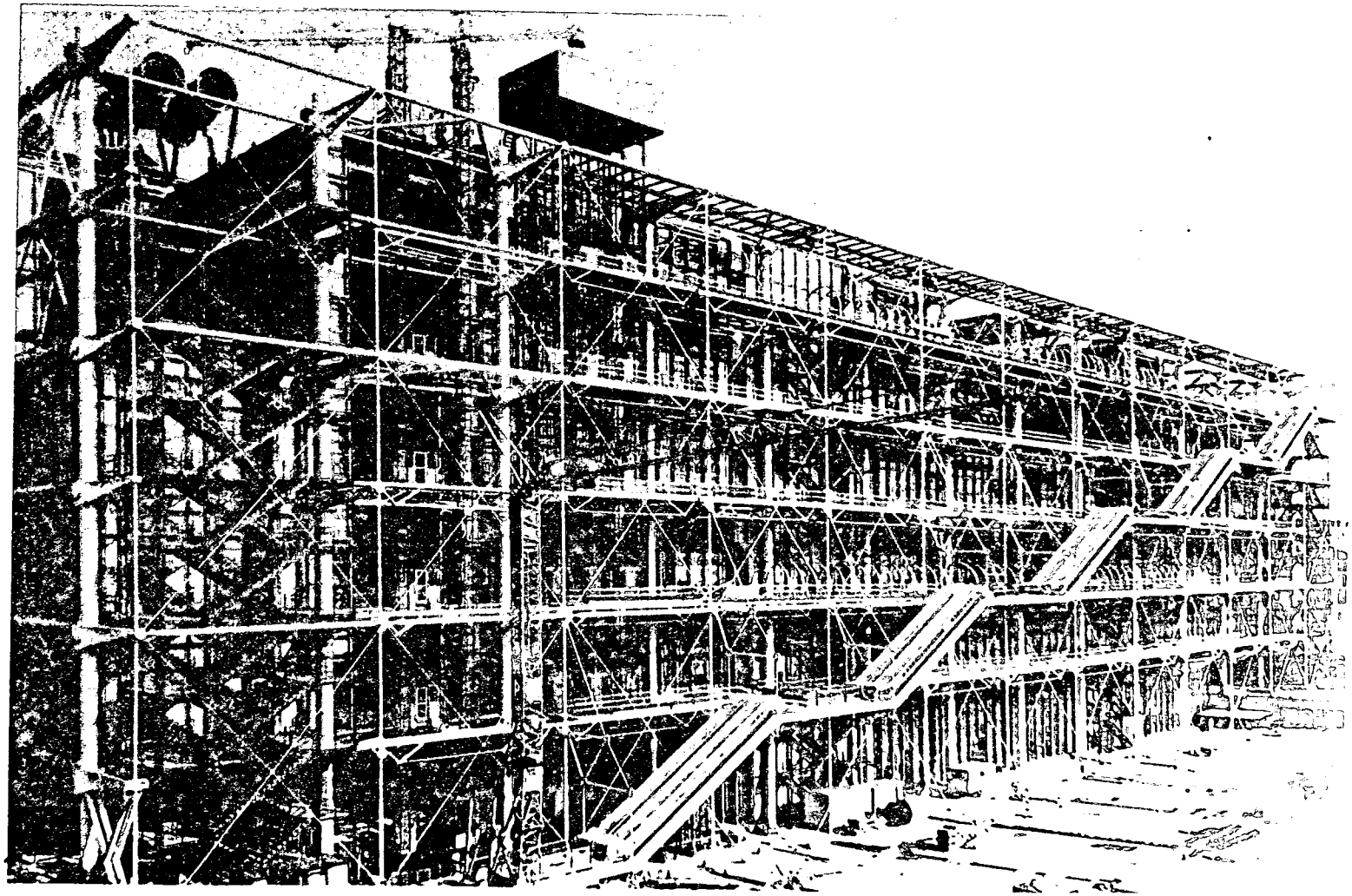
20. Within the literal eclectism of Disneyland the perspective concept is presented in all sorts of time fragments in the nature of cyclical time. This fantasy world is so popular with the public, and although realistic presented, the perspective concept, is but a memory.

21. Piazza d' Italia by Charles Moore.
The mannerist use of classical elements contrast strangely with the existing historical buildings and sqaures of New Orleans. The layering quality of the punctured planes, arbitrarily shaped and stopped, totally destroys the holism of the pers= pective. The aspective method used with the classical create a strange contrast in meaning.



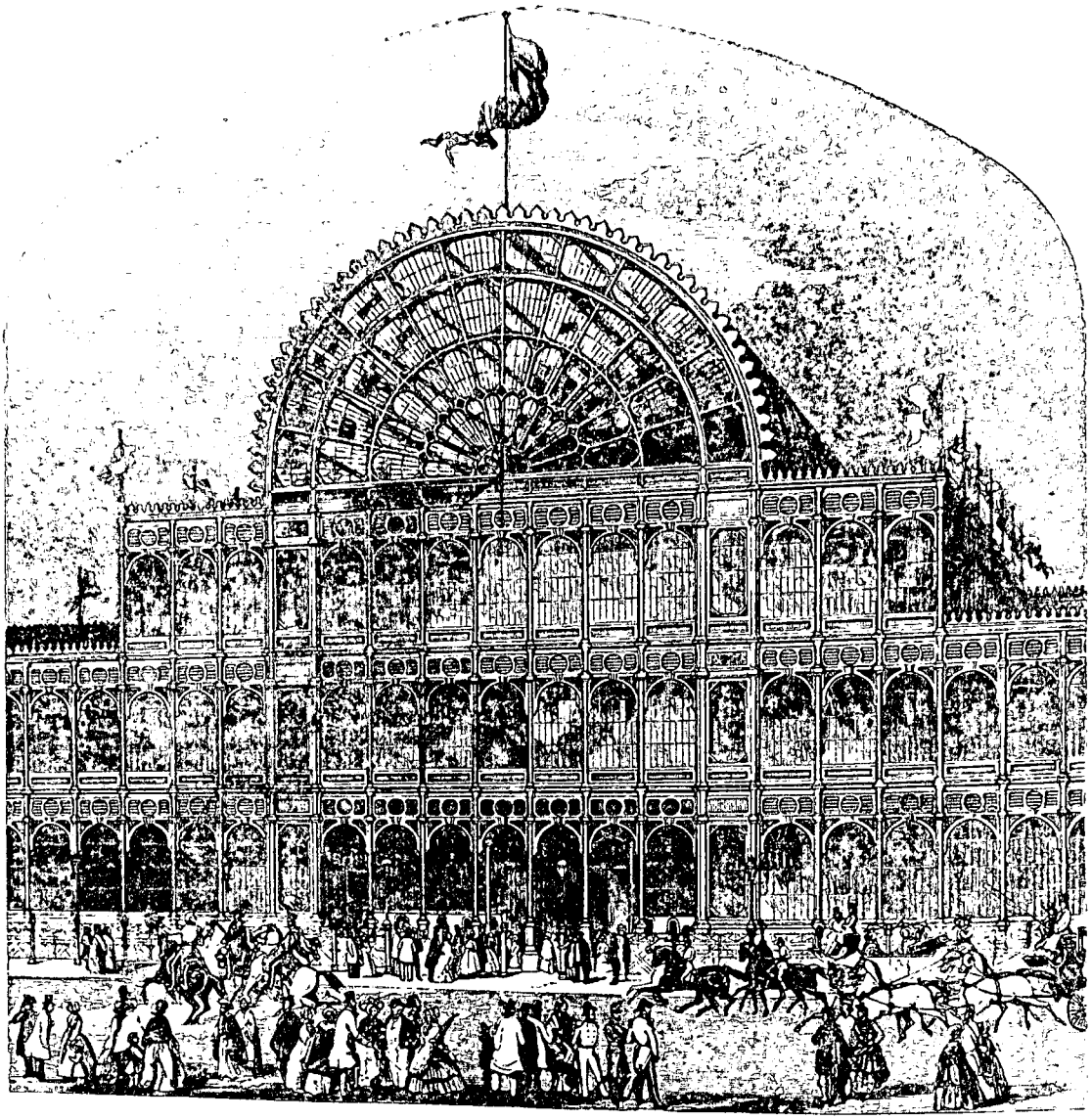
22. Brighton Pavilion by Nash.
Built for the Prince Regent as a fun palace.
This kind of eclectism speaks clearly and objectively, and the meanings are not obscured by an elite subjective coding as seen in Post Modern eclectism.

23. The Commercial Strip, Los Angeles.
The signs and billboards are flat planes in space unrelated to each other, layers of planes, creating an aspective order on the commercial strip.



24. Pompidou Centre by Rogers and Piano.
The technological image is carried through with conviction. The function it symbolises bears to question, The function of the building, or the building functioning?

25. London Slum, an engraving by Gustave Dore.
The unfit human conditions in industrial cities brought a cry to morality, and a social conscience to architecture by the Modern Movement.



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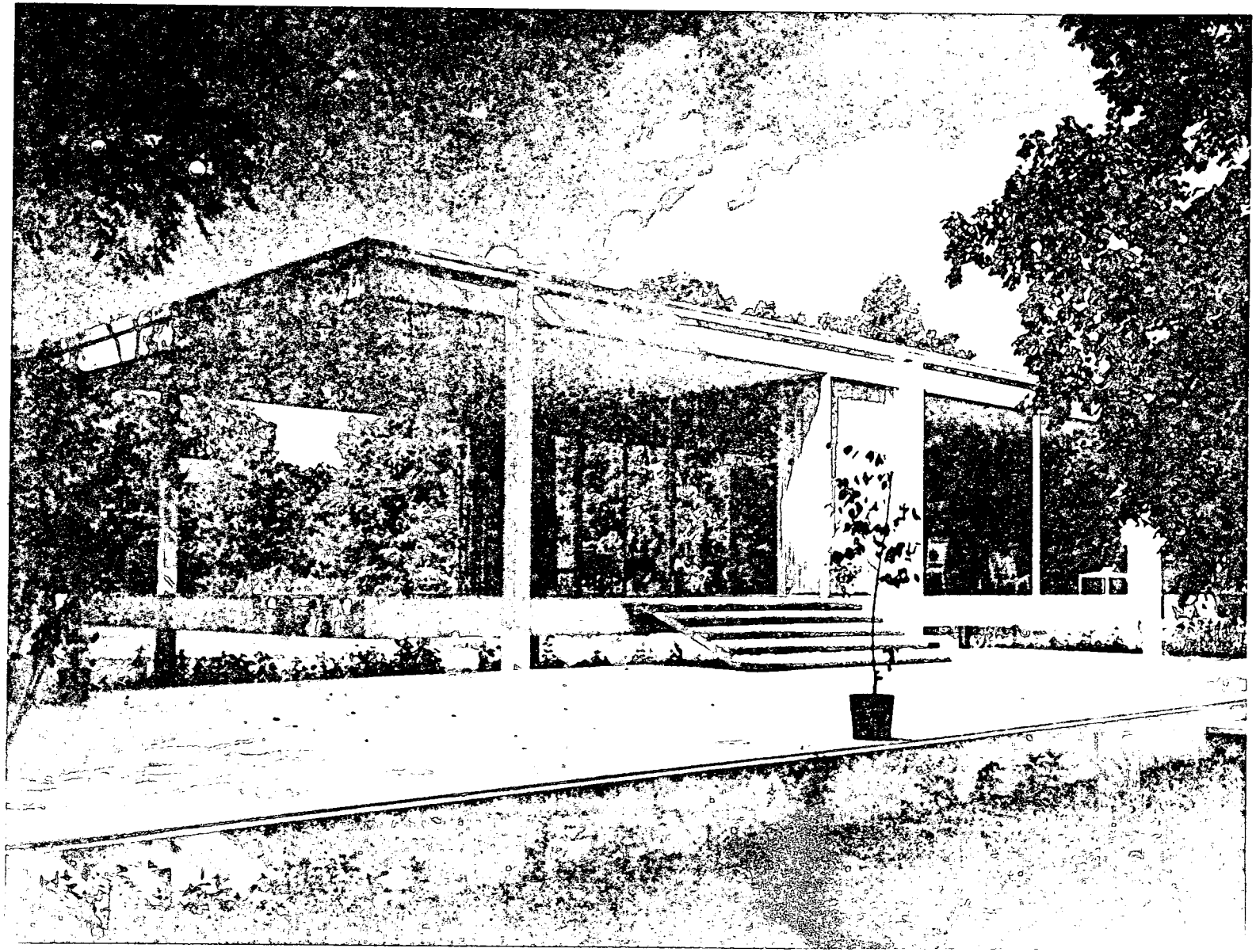
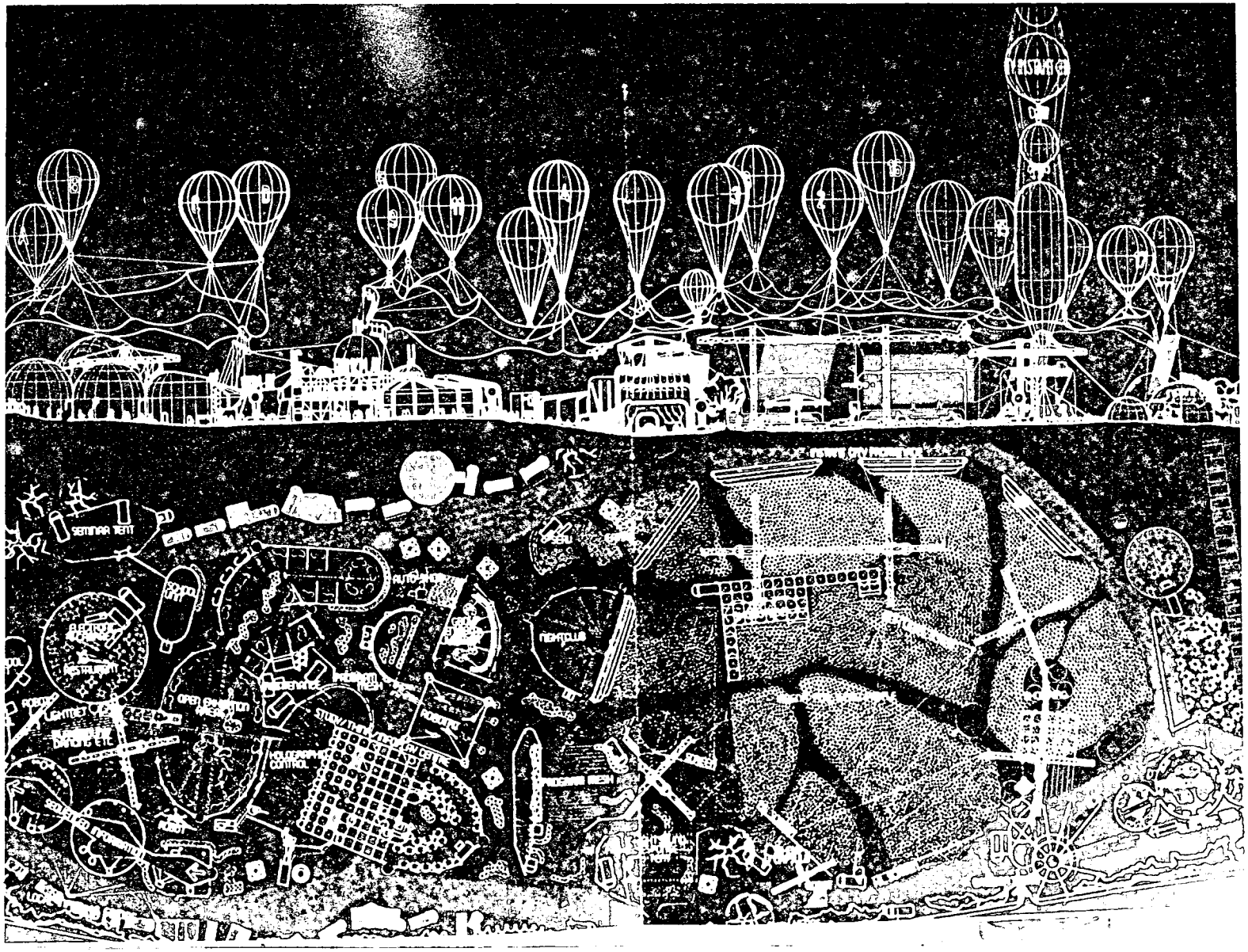
26. Crystal Palace by Paxton.
Although proclaimed by Modern Architects a symbol of honest structure and standardisation. They took aspectively from this structure what they sought, and excluded the aspects which did not suit them, namely the articulation, the fantasy world created for an exhibition, and the hierarchy of spaces.



27. Farnsworth House by Mies van der Rohe.
The owner of this house sued Mies van der Rohe, declaring it unfit for human habitation. The lack of privacy and climatic control was an unsurmountable human problem. This situation did not deter modernist to proclaim it beautiful and appropriate, an aspective attitude.



28. Instant City by Archigram.
The future city of dreams, which excludes the non-measurable aspects related to man, and places man as a organism that functions in a machine world.
An advance on Le Corbusier's concepts and an aspective attitude of exclusion.

29. Astrate Syriaca, 1877, by Dante Gabriel Rossetti. Rossetti depicts the Romantic attitude. This portrait is charged with a mysterious unfathomable forces. The figures exist in a space of mythical, cyclical time, which is not the practical realistic space of the Renaissance perspective, and therefore portrays the transition from the perspective to the aspective, as initiated by the Romantics.

30. Paul Klee, Runner at the Finishing Line.
The object is devalued, universalised and flattened, the feelings of the observer becomes important, sub= jectively and illustrates the aspective nature of Modern Art.

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SUMMARY

This dissertation demonstrates that the method by which the human mind structures order has particular significance on the choices made in the creation of architectural form. Further= more, the nature of order as conceptualised by man may influence the ultimate base, the *'Archimedean point'* of philosophy and in particular how it then concerns architecture. Certain events, situations and choices have influenced the way modern man per= ceives the order of the universe to reveal itself; and which in turn changed philosophical attitudes, with regard to the development of architecture. It appears that two basic means of conceptualising order have occurred in the history of civilis= ation, namely the aspective and perspective methods of cognition. The very nature of the method man uses to structure order in the process of cognition, seems to determine how ultimate reality is perceived, which in turn influences the structure of epistemology and man's general intellectual orientation. The possibility of identifying these two methods of conceptualising order, namely the aspective and perspective views, provide a possible explanat= ion for the different methods employed to interpret the qualities of space, different time concepts and consequently methods of pre= senting these concepts, both in art and architecture; and in= fluence the whole character of such artistic and architectural production.

Historical events, situations and choices have led to changes which resulted in confusion and insecurity with regard to man's concept of reality. The overload of knowledge, the subsequent search for security in absolute truths; the popularity and im= plementation of the slogan of the French Revolution, namely, *'liberté, eqalité and fraternité'*, and the consequent confusion and rejection of traditional values, accompanied by the changes wrought by the advent of Modern Capitalism and Industrialisation, all these, have influenced man to take recourse to a simpler method of structuring order in the mind, the aspective method, and in this manner allowing the perspective method to be part= ially lost. The perspective is an awareness that develops from the aspective method of structuring order by the mind, and to

grasp its implication may be elusive to the aspective man and in this manner be lost. The perspective presents the holistic view developed from a linear time concept, the cosmological idea; the aspective from the fragmented view of frontal images, an un= knowable universe and cyclical time. It appears, however, that the universe is always creating and synthetising unit structures whose ordered grouping produces natural wholes, this characteristic of wholes meet us everywhere and possible fundamental in the universe. The subjective self-conscious aspective situation in architecture is contrary to this fundamental principle. On the other hand the perspective order postulates an attitude which allows for synthesis and a natural creation of links in the for= mation of *'wholes'* in the environment which may then be evaluated by objective standards. The perspective may be offered as a means of escaping the boundaries and limitations needlessly placed by the aspective in the production of art and architecture. So much that is uniquely Western rests upon this particular ability, that of structuring order in the perspective. It is common knowledge that the basis of much that is of value and which has stood the test of time in Western civilisation; philosophy, the arts, architecture and science, was created in the perspectively orientated Greek and later Renaissance cultures.

This study aims to present a possible means to explain, firstly, the confusion, fragmentation, intricate movements, revolutions and contradictions that characterise contemporary architecture; secondly, the pluralism of its accompanying doctrines and ideol= ogies; thirdly, the lack of general objective standards and cri= teria, which have created a situation that appears to be unique to our time and in direct contrast to the past. This situation has brought about conditions in which acceptability has ceased to be an important factor in architecture. In order to pro= vide a possible explanation, the author has been led to present the theory postulated in this dissertation as a possible means to evaluate historically the phenomena of our present a-historical fragmented cultural, and therefore architectural situation.

The theory postulated in this study may be seen to have an in= fluence that extends beyond the purely architectural, but due to the confines of a study of this nature, certain factors have been excluded which could prove fruitful in a more detailed study.

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