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Architectural space in postmodern America: A case study about the constitution of space in the course of history and its cultural condition

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ARCHITECTURAL SPACE IN POSTMODERN AMERICA
A CASE STUDY ABOUT THE CONSTITUTION OF SPACE IN THE
COURSE OF HISTORY AND ITS CULTURAL CONDITION

by

ROLAND GASPERL, DIPL. ING.

A THESIS SUBMITTED
IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE

MASTER OF ARCHITECTURE

APPROVED, THESIS COMMITTEE:

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Houston, Texas
April, 1988
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1988
ARCHITECTURAL SPACE IN POSTMODERN AMERICA

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ABSTRACT

The main concern of this thesis is the establishment of a conceptual framework for the investigation of architectural space. Despite the common negligence in popular critique, my observation of current architecture in America shows both its dependency on, and evolution from, traditional space concepts (premodern and modern space) as well as its significance as a primary means of current architectural expression.

Based on the analysis of four museum projects (High Museum in Atlanta - Richard Meier, Aerospace Museum in Los Angeles - Frank Gehry, and two projects for the Ohio State University Center of Visual Arts; CVA - Peter Eisenman, and the CVA competition entry - Michael Graves) an attempt is made to extract common features that characterize present attitudes toward space. Finally, the spectrum of different interpretations which comprise a new, pluralistic system of ordering principles, is put in the context of broader cultural conditions. This correlation (spatial expression - social environment) gives evidence of the interdependence of architecture and common phenomena of the American culture.
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PROLOGUE

This prologue is not meant to be an introduction to the main concern of this thesis; architectonic space in America. However, being foreign to this country, and thus confronted with different cultural phenomena, I want to follow my personal curiosity by asking a few questions about the 'American Way of Life'. In my opinion, the very cultural context of the United States carries a variety of significant factors contributing to the shaping of its spatial environment. Therefore, I see this short deviation into cultural and social matters as an attempt to find some insights for my own spatial perception.

DOES THE AMERICAN DREAM STILL EXIST?

AUTOMOBILE

The American Car - it is more than a means to bridge the vast distances of this extensive land, it is the embodiment of the 'American Way of Life'. Without a driver's license, one does not even have an identity! As one views the preponderance of businesses popping up along the freeways and forming a major part of any landscape in capitalist America, one can somehow understand the power of the automobile in this country. The highway is a magnet for the concentration of services as well as suburban settlement. In its pervasiveness throughout the United States, the highway has also spawned the strip,
a truly American prototype made from gas stations, motels, and the 'drive-inAnything'. The highway has also created the iconography of the billboard, a medium ideally suited to the fast-paced automobile. The freeway is an expression of America's expansion and mobility. The thousands of mobile homes obliquely recall the covered wagons of the pioneers that came through not so long ago. They testify to the continued rootlessness of the people in this country. As one drives across this land, it is as if some kind of auto-hypnosis asserts itself. Describing the highway experience, Isherwood notes:

".... After all this is no mad chariot race - it is a river, sweeping in full flood toward its outlet with a soothing power. There is nothing to fear, as long as you let yourself go with it, indeed you discover in the midst of its stream-speed a sense of indolence and ease ..." 1)

And on the weekend, 'Saturday Night Fever' begins. Everybody drives in a long, colorful procession of cars up and down the main street. This resembles a kind of collective parade with people drinking and eating ice-cream. One cannot understand the screaming and shouting over the music in the air. The only cultural dynamic, the only moving element, is the car. The motorized identification of a fantasy; movie, worship service, love, and death take place in the car; one's whole life occurs as a drive-in experience.

AMERICA - A REALIZED UTOPIA?

America is the promised land of Modernism. It does not know the impediments of accumulated time. The United States of America embody the realized utopia. America's constitution is based on the twofold projection of mo-
ality into one's consciousness and the realization of radical utopias in work, habits and lifestyle. Here the real world is transformed into ideas and ideologies. It is believed that America is the realization of everything all others have always dreamed about: Law and justice, abundance, wealth, and freedom. This liberation leaves everybody in an undefined situation and in the heart of wealth and liberation there arises the question: What remains to be done when everything is available? This is the problem of America as well as the problem of the civilized world.

*The crisis of Europe lies in the impossibility of realizing historic ideals. In America, it is the struggle to retain the lasting values of the realized utopia.*

**THE MAIN AMERICAN FEAR: ONCE THE FIRE COULD GO OUT** 2)

The TV runs 24 hours a day, often in empty rooms. The downtown skyscrapers glow into the night, the teller machines give banking access around the clock, the 'Safeway' invites the shopper all night. There is no way that night or quietness might come over the city or that the technical process might come to an end. The artificial power of mankind must not be slowed down, and the cycle of nature must not be broken. Is this the luxury of a rich civilized nation watching, like the ancient hunter in the prehistoric night, that the fire does not go out?

Every new start thus contains a certain kind of looking back. The horizon does not appear in the future but is to be found in the fulfillment of already realized values. Progressivism leads toward a specific form of conservatism.
But the seemingly realized utopia gives evidence of its trivial reality. Everything follows the pattern of a primitive society. Technology, communication, and media industry develop wild and unpolished. This is the expression of America's boundless nature, which is also manifested in a primitive language and characters. Therefore, Andy Warhol's Pop-Art paintings easily succeeded in showing the banality of Campbell's tomato soup can.

A NEW REGRESSION

"Everything has to be protected, preserved and cut down. - *Obsessionate society.*

Save time. Save energy. Save money. Save our souls. - *Phobic society.*

Low tar. Low energy. Low calories. - *Anorexic society*

*It is strange but in this plentiness and abundance, saving, protecting and preserving becomes sheer necessity.....

.....This abundance leads to the resurrection of needs and poverty, which have to be banned by homeopathic disciplines. Otherwise, no explanation can be found for this diet, this collective dietetic behavior, for ecological control, for this castigation of body and lust. Everybody in this society is engaged in assuaging the temper of 'overeaten' gods suffocating with abundance. No doubt, one of today's main problems is to resist corpulence." 3)

The only item people are concerned with is the human body - not as object of lust, but as object of manic care. Body-building studios are booming, new sports are invented every other year, joggers have replaced strollers. Go for a hike - and you look suspicious. Disguise yourself as jogger, put on your jogging clothes, your dumbbells, your walkman - and you are accepted in this society.
"You can stop a bolting horse but do not try to stop a jogging jogger.....The jogger is the true saint and the protagonist of a new apocalypse.....The New York Marathon is a racket showing the end of the world.....A message without any content, reporting only the arrival measured only in terms of strain.....This symbolizes the testimony of a superhuman and useless effort;.....I did it.....The moonlanding belongs to the same category; We did it. Does the American continuously have to prove evidence of his life? A strange sign of a new fanaticism of a history-lacking society." 4)

No sex. No cigarettes. No drugs. No AIDS. - Restrictive society.

Nothing remains to be allowed in this society of freedom. Restriction follows flower power.

CONSUMPTION

Paradoxically, this saving concerned society still has to consume. Without consumption, saving turns into a false formula. Despite people's savings, the economic cycle persists and must continue in this economic superpower. I find myself in a throw away society marked by inferior quality products and planned obsolescence. In this play of demand and supply, consumption and production must go on. There is a paradox of high technology and minor quality. Progress and High Tech turn into banality when 'wonders' become common practice. To make progress understandable and usable for everyone, everything must be easy to use, 'idiot-proof'. High Tech gives way to applicability, interest in products gives way to use; High Tech products turn simple and naive. Everything is made possible. In the quest for mass consumption, luxury is made available to almost everyone. Consumption is based on no or low down payments. Lured by low-interest loans and easily available financial aid, everybody can afford almost everything. Here goes the In-
installment Theory: You can afford the product as long as you can afford the down payment or the monthly installments. Consume, save and try to get a good deal - American consumption philosophy.

SMILE

People in the streets smile; they do not smile at each other but perhaps for themselves. It is without second thought; it keeps one at a distance. It is an immunizing smile, all the better to promote the slogan:

"This country is good, I am good, we are the best! .....It is the same smile even Ronald Reagan promotes, culminating in all the self-confidence of the American Nation, pending to become the only principle of his reign." 5)  

This leads to the all covering simulation of reality and life, not asking about truth but concentrating on appearance and performance.

Facts on TV: Things seem to happen for this strange destiny alone. There arises the question if the world is made just for advertising, thus forming a new reality for itself The laughing people on American TV, whether laugh track or live audience, have replaced the choir of the Greek tragedy. Everything has to follow the 'dictum of Broadway'; the show must go on! Business has become show business. One of the great fascinations of America lies, at least for Europeans, in the movie-like qualities of American everyday life. The main task of the big movie studios was and is the promotion of the 'American Way of Life'. Hollywood, a unique American legend, has formed
America's stars, their idols and ideals. Even the numerous decorated sheds in the American landscape (Robert Venturi) have something to do with the two dimensional quality and appearance of a stage set.

American science-fiction movies of the last few years suggest one pause to consider a possible forecast of the future. Movies like 'The Day After' and numerous treatments of post-nuclear themes, set in a dark, moody landscape, draw a picture of deep disbelief in technical progress and societal order. The confused and of ethical values deprived man finds himself rootless, without orientation and hope. Forgotten are the optimistic utopias of modern metabolistic speculation.

Today to the slogan, "Do it! You can reach everything." you have to add "Save it!", even if it is just a false facade. While the numerous communications media and the example of the TV Evangelists testify to the banality and immanence permeating American society, so many universities raise new elites in their 'ivory tower' campuses. For the sciences and arts these differences prove to be responsible for the difficulties to communicate their standards to society at large.
NOTES


2) Baudrillard, J., Amerika, Matthes & Seitz Verlag, München, 1987, pp. 73-74, [my own translation]. In general, for the interpretation of present day American culture and society (my experience in America comprises my life in Houston, TX and Raleigh, NC for a period of more than two years as well as extensive travelling throughout the United States) I am deeply indebted to Baudrillard's book, which confirmed many incidents and circumstances, I have experienced in this country.

3) Ibid., pp. 59-60.

4) Ibid., pp. 33-35.

5) Ibid., p. 51.
Es war einmal ein Lattenzaun,
mit Zwischenraum, hindurchzuschaun.

Ein Architekt, der dieses sah,
stand eines Abends plötzlich da -

und nahm den Zwischenraum heraus
und baute draus ein großes Haus.

Der Zaun indessen stand ganz dumm
mit Latten ohne was herum.....

Christian Morgenstern
(Galgenlieder)
INTRODUCTION

For much of twentieth century architecture, universal, fluid space, and rational structure have been considered the main architectural concern. As modern critics suggest, modern architecture seems to be defined as 'the art of making space'.\(^1\) For modern architects, the notion of architectural space represents a clearly defined field of theoretical and practical concern, captured in Mies van der Rohe's dictum:

"Architecture is the will of an epoch translated into space."

But today, the International Style and Universal Modernism, dominant after World War II, which were predicated on the belief in linear progress, the standardization of production, and rational planning of spatial orders, have lost their aura of legitimacy and have come under increasing attack. Since 1960, profound changes have begun to undermine the myth of Universal Modernism, including the search for alternatives in all domains of cultural expression.

1. THESIS STATEMENT

After an identifiable succession of historical periods, it is inevitable to wonder about another emerging phase in architecture. The question of a new epoch was posed by the proclamation of the term Postmodernism, which despite all its controversy and semantic confusion has come to signify the current status of culture. Charles Jencks, in "The Language of Post-Modern Ar-
chitecture", reviews the development of the Modern Movement, analyzes its seeming death, and makes a case for an eclectic development of postmodern architecture. 2) I think that Postmodernism has to be understood as a complex, evolutionary movement in architecture as well as in the other arts. Though today's pluralistic approach is often contradictory and defies easy classification, the various schools of Postmodernism mark a fundamental process of change in their disbelief in the paradigms of Universal Modernism and in their search for a definition of new ways to interpret the world and formulate new concepts of order. (My use of the term Postmodernism is not meant as an endorsement or refinement of previous definitions, but is rather used to encompass a variety of attitudes, which I consider relevant in the search for new directions in architecture. 3)"

For my concern, there arise these questions: What happened to modern spatial attitudes? Is there a tacit agreement on modernist convictions or have they been assimilated or replaced by other priorities?

To clarify this concern, I want to make a brief comparison of two houses, one built in the modern tradition, and a recent example. Their differences will illustrate the questions at hand and the main concern of my thesis. The Farnsworth House (Mies van der Rohe, Fox River, Plano, Ill, 1946-1950) consists of a largely unobstructed clear span, single-story volume of universal space (fig.1). The glass-wall confined space precludes a simple division into distinct, separate areas. Architectural space, mainly defined by the floor
and roof slabs, expresses the ideal of an uninterrupted spatial field: The interior space is totally exposed to the surrounding landscape, yet elevated from the ground and continued by a podium, steps, and a terrace to the outside.

On the other hand, in the Cohen Residence (Morphosis Architects, Los Angeles, CA, 1980-1981) we find confined spatial types, each establishing its specific identity and a corresponding relationship to designated outdoor areas, which create a dialogue with topographic, hence, site-specific factors (fig.2). The main areas, expressed as a compressed vaulted volume and a pyramidal cube, are connected by neutral spaces, establishing a complex, spatial matrix and a rich experiential sequence of space. As we see, the flowing universal space, that was once the accepted convention of three-dimensional composition, is challenged by the conception of space as a closed static and well-defined entity. Today, the former enclosing membrane has taken on new mass, and the recognition of the figurative qualities of both mass and space has created a new sensibility for boundaries, which mark place and set up hierarchies of space, sequence, and activity.
However, the allusion to premodern concepts of space (that is, clearly defined, enclosed space) is, in my conviction, by no means a sufficient model to account for current attitudes toward the constitution of architectural space. Furthermore, today's concerns concentrate on the manipulation of modern and premodern concepts of space, which document the operation applied and comment on the present use of spatial attitudes. I believe that in looking at recent projects and buildings, we witness significant changes. I also believe that the appearance of new ideas represents more than a variety of style and fashion, and more than just a return to 'facadism' as favored by photography. Thus it is my intention to focus on the change in the sensibility toward space and its relationship to cultural conditions in America. Apart from my personal interest in the making of space, this thesis originated from my experiencing as a foreigner the new and strange surroundings of America. Despite the difficulties I face as an 'alien' coming to this country, this position also offers some advantages in identifying the impact of different and common phenomena of culture, which characterize today's American architecture. As I see the making of space directly related to issues of physical and cultural context, I want to limit my investigations in this paper to American influences and considerations of the conception of space in recent architecture. Yet, the primary intent of this paper is to consider spatial concepts to provide a broad perspective on architectural theory and practice and thus to contribute to a more comprehensive discussion of architectural matters. Though present day architecture shows a variety of spatial sensibilities, it is my conviction, and thus the hypothesis of this essay, that we can deduce new concepts and articulations of architectural space and can therefore ask the question:
What are the main convictions for the constitution of space today and how do they relate to broader issues of architectural discourse and to an expression of society?

I want to avoid mere stylistic discussion. I would rather focus on the volumetric articulation of space in architecture; although, by using a seemingly modernist point of view, I think it is important to clarify the restrictions imposed by modern space and to point to new emerging directions of spatial expression. Despite my concentration on space it should not be assumed, as it often has been by modernist critics, that architecture can be reduced to spatial relationships alone. In my opinion, the essentials of architectural manifestation lie in the articulation of the dialectics between interior and exterior, between form and space, and between enclosed and enclosing elements.

2. THESIS STRUCTURE

Having stated my principal hypothesis, I want to make a few remarks about the structure of the essay itself and explain the procedure of how I am going to approach the phenomenon of space in order to draw possible conclusions within a broader context of the architectural discourse. I want to start from the bias that space provides a framework for our perception as well as the conception of our world view.

Distinctions can be made between mental, physical, and social space, which are conceived, perceived, or experienced; thus their architectural interpretation leads to different modes of spatial notation; however, architectural space is not only the qualifier of our vision but also the perception of form, loca-
tion, and dimension. Ergo, the question we have to ask, is how these three spatial categories are manifested and how they relate to one another within the field of contemporary architecture. From these relationships we can conclude that space in architecture involves a wide array of inclinations. Although I want to focus on the spatial aspects of architecture, we have to consider related factors, such as ideas and ideological constructs, that influence them as well. Therefore, the investigation of current space concepts has to be understood as both a historical and a methodological endeavor to dissect the problems of space.

In order to respect a multitude of relationships, I structured this essay into three distinct parts. In the first part, I shall clarify the dynamics of architectural space and their interpretation in reference to other possible space concepts, so that we can establish a frame of reference for broader implications. As a rough approximation, we can state that today's architecture is concerned with its historical tradition as well as the continuation of modernist principles. In order to situate current work within a broader framework of space tradition (especially under the influence of modernist convictions), I will discuss premodern and modern space concepts and restate their architectural interpretation. Insofar as I assume current space to be shaped by preceding convictions, I shall examine the reactions to modern space and their applications in order to draw inferences which can be directly related to contemporary attitudes. It is with these understandings that I will proceed to examine current architecture.

In the second part of my thesis, I shall emphasize the analysis of current space
concepts demonstrated by the investigation of contemporary projects. I want to proceed from the particulars of specific buildings and projects to more general statements about the constitution and conception of space. I have limited my specific investigations to one building type, the museum, in order to get a consistent basis for the analysis of space as well as to draw comparisons between specific circumstances of the projects. Furthermore, I chose this type because I think that the museums of the last generation represent a significant expression of a wide range of contemporary space and best reflect socio-economical and cultural influences on architecture; therefore, I want to refer to the museum in general and to explore its significance in relationship to the spirit of our society. The case studies are:

High Museum, Atlanta, GA, Richard Meier
Aerospace Museum, Los Angeles, CA, Frank Gehry
Ohio State Visual Arts Center, Ohio, Peter Eisenman
Ohio State Visual Arts Center, Ohio, Competition Entry, Michael Graves

These case studies are not intended to be a representative sample because the mere range of different solutions precludes this. However, they are analyzed as unique architectural statements, as well as exemplars of a theoretical discourse related to operative ideologies of current design practice. For each of the selected museums I did a series of computer generated drawings in order to illustrate specific spatial features of their design. I used this mode of representation because current manipulation of space bears a direct
relationship to the operational input devices for the creation of a three-dimensional computer model of a building (see my dissection of the geometric manipulation of postmodern space). My intention is neither a simple compilation of projects nor an advocacy of any particular approach, but an attempt to contribute to the ongoing discussion of ideas which may form a basis for a significant spatial conception in architecture today. In the third and final part of my thesis, I shall analyze these museums and shall extract some common features which are essential for the interpretation of space today. In isolating these features of contemporary space, which I do not consider unique for 'our' time but valid through their stressed application, I shall address a spectrum of different interpretations that comprise a new system of ordering principles. Opposed to the reductivist Ethic of the International Style, aiming at the reduction of conflicting codes and a homotopic order, I see current attitudes toward space establishing complex relationships as a primary device of architectural expression. Furthermore, the attempt to confront the unity of traditional composition, imposing the investigation of disparate often contradictory elements, asks for a new, 'heterotopic' sensibility of order: the appreciation of a unity of heterogenous quality. As architecture is not merely a formal problem through its linkage to a moral and ethical view of society, it gives evidence of a pluralistic cultural condition. The confines of this paper do not allow me to deal with a comprehensive analysis of the cultural condition and ideologies in relation to the expression of architectural space. Nevertheless, in my conclusion I want to point to various possibilities of their interpretation and to show how the articulation of space relates to the postmodern discussion.
NOTES


3) Problems are apparent, if we consider the development of the term and its controversy; as we see in an 'irrational' reluctance by many architects to be paraphrased under this notion. I do not want to create another misleading-ism, it is more the expression of a comprehensive category for current architecture.

4) By means of the precedents of museums, I want to follow the historical development of space concepts from premodern to modern time, to make a valid statement of common characteristics of current space concepts. Considering the recent building boom, we could coin the 1980's as 'the decade of the museum'.

5) My subjective selection of these examples embodies distinctly different, but certainly not all prevailing interpretations of effects of late twentieth century culture and the human spirit. The wide array of contemporary attitudes toward space, even within the limitations of one building type, could be further developed by important contemporary examples, such as the Paul Getty Museum (a remake of the Roman villa-type, 1974, Wilson Ass.), the Hood Museum (Dartmouth College, 1981-85, Charles Moore), Venturi's ongoing museum design in Austin, various museum designs by Henry Cobb or Hardy, Holzman and Pfeiffer Ass., or the so controversial, proposed additions as for the Guggenheim Museum (Gwathney / Siegel, 1985-) and the Whitney Museum of American Art (Michael Graves, 1985-). Thus the discussion of four museums has to be an arbitrary selection in respect to the existing building boom (reflecting my own predisposition of relevant projects), and describe a necessary compromise in the expanse of my thesis.

6) For the generation of the three-dimensional modeling I used a Computer Vision Program (Personal Architect, version 2.11., 1986/87), which supplies various picture shading capabilities. Unfortunately, for the reproduction of these illustrations I totally had to rely on photographs of the monitor screen, because in the departmental computer laboratory were no plotting facilities available for this system.

7) In my further elaboration of this condition I shall refer to the terms of heterotopic iconographic, and syntactic formations (coined by Marc Angelil). In my opinion these best summarize systems of difference in the process of architecture and society alike.
3. ARCHITECTURE AND THE POSTMODERN DISCUSSION

The notion that architecture is a form of mass culture has become rather popular. According to theories of communication, architecture is understood for its strict informative value. Today, the emphasis has shifted from the creation or production of architecture to its communication and therefore to its consumption. The primary vehicle of populism seems to be the communicative sign, which seeks to evoke not a critical perception of reality, but rather the sublimation of a desire for direct experience through the provision of information. Its communicative meaning is directed toward large groups of people, confirming common attitudes and ways of life by meeting their expectations. Commenting on American Populism today, Kenneth Frampton notes:

"By scenographically simulating the profiles of classical and vernacular and thereby by reducing the architectonics and construction to pure parody, Populism tends to undermine the society’s capacity for continuing with a significant culture of built form." 1)

And the French philosopher Jean-François Lyotard has defined the postmodern condition as a kind of warfare of different language games against each other. 2) Therefore, one might be seduced into seeing recent architecture as a paradigm of discontinuity, where one language confronts another, and where cultural pluralism is celebrated as an end in itself. In general, Postmodernism is often associated with a popular escape into the world of entertainment; the combination of Pop-Art and Op-Art culture with the false patina of nostalgic Historicism. Certainly the false syndrome of 'anything goes' denies the recognition of val-
ue, and serves the ideology of easy consumption, which leads to abuse and trivialization of architectural means. However, one of the main contributions of Postmodernism has been the recognition of the need for symbolic content in buildings and the relationship of this content to familiar archetypes as a basis of a common understanding. We can say that the postmodern polemic is chiefly concerned with the meaning of architecture in reference to the individual and the problem of popular expression. The broad movement categorized under the catch-all term Postmodernism, proposes that buildings must evolve from the inclusion of familiar cultural and historical references articulated by a plurality of means. Postmodernism is often used to characterize eclectic architecture, which does not go beyond the nostalgic revival of classical form. At the same time, the critique of Postmodernism is narrowed down to a polemic, which does not consider any other connection to the past specifically to the history of architecture. Furthermore, its popular critique is often limited to the discussion of its surface appearance and the search for stylistic unity, and is marked by the suppression or exclusion of other issues. It would certainly be an error stamping Postmodernism as a merely decorative style of pseudo-historicism or escapist eclecticism, as if it covers only a superficial aspect of architectural endeavor. On the contrary, I believe that the appearance of new ideas in architectural theory and practice represents more than the offspring of style and fashion. Though today we are witnessing the explosion of a theoretical engagement in architectural principles, there is very little to be found about a comprehensive consideration of spatial attitudes. As reasons for this, I see the seemingly abstract nature of space in a prevalent materialistic world and the connected difficulties of its discussion.
But we also have to take into account the major mode of the dissemination of architectural thought through printed media. Whereas each architectural venture makes by its very nature a spatial statement, space eludes a two dimensional representation. Although Postmodernism seems to be largely involved in questions of form, symbols, and their semantic expression, I believe that ultimately a main concern of architecture is the constitution of space. In my opinion, the quest for a more communicative language of architecture has not only provoked an interest in forms, which make direct references to previous architectural modes, but also in distinct attitudes toward space as a means of organization and the expression of ordering principles.

Therefore, I want to make a plea for a more serious discussion, which has to go well beyond the prevailing debate about stylistic features of a building. I think it is a one-sided and pre-mature conclusion to denounce current attitudes as a collection of free-wheeling pluralism, ranging from regressive historicism to hermetic formalism. And despite the non-existence of an all-encompassing agenda, attempts must be made to investigate the serious efforts of architectural expression to re-engage cultural phenomena with campaigns of social emancipation.

Here I cannot deal with current architecture as a comprehensive project, nevertheless, I think that questions about space reveal a broader perspective, not only about theoretical issues and recent convictions in architecture, but also in relation to a broader cultural condition of today's American society.
NOTES


PART I

ARCHITECTURAL SPACE

IN THE COURSE OF HISTORY
I.1. SPACE IN ARCHITECTURE

Since ancient times, the intangible phenomenon of space has been an object of reflection in man's world view. The origin of the concept of space lies embedded in Greek thought. Early theories of space were based on Euclidean geometry, which defined space as infinite and homogeneous (fig.3). It was closely connected to the imagination of the universe and the construction of a cosmology (fig.4).

With the 20th century introduction of Non-Euclidean geometry and the theory of relativity, the concept of united space lost its universality. Therefore, 'traditional space' has to be understood as an abstract construct which comprehends only a part of our reality with a certain degree of approximation. Being aware of the different concepts of space existing in science and the many possible definitions of space ranging from economic, political, social,
or geographic space, it is my intention to focus on space in architecture in its own terms. I only want to draw analogies among different space concepts of scientific or philosophical nature, which I consider influential for the comprehension of architectural space. Thus, I want to limit my view of architectural space to something one can experience in terms of the object or building itself. Based on these observations, I want to speculate about ordering or classifying principles and their cultural implications for today's society. Man is probably incapable of a singular description of the world and therefore of himself. Today, the pluralist position sustains that experience is cumulative, and existence multifocused. Hans Sedlmayr in "Der Verlust der Mitte" pointed to the human problem of preserving man's identity. His argument, stated over 20 years ago, which talks about man's lost center and his difficulty of orientation, is manifested in today's architecture. Thus the position of an architect today is to achieve in his composition a particular complexity, which comprehends a multifaceted worldview, expressed in themes that can be understood to be part of a pervasive spatial and therefore an experiential logic. In general, the relationship of space and man's worldview not only includes man's particular experience, but moreover comprehends his existence as an expression of man's being in the world.

"Man's interest in space has existential roots. It stems from a need to grasp vital relations in his environment, to bring meaning and order into a world of events and actions." 1)

With this introduction of existential space, Norberg-Schulz wants to define space as a dimension of existence rather than a dimension of perception or thought (fig.5). As dwelling cannot be reduced to just a roof over our heads,
this view implies our identification and orientation in the world by transcending our material environment, therefore becoming part of a larger order (fig.6). On the other hand, architectural space is perceived in terms of its demarcation. Thus the phenomenon of architectural space is related to its boundaries and is defined in terms of experience, existing between its confining elements. The articulation of these terms depends on the conception of space and therefore carries various cultural implications. As Siegfried Giedion reminds us:

"The essence of architectural space lies in the interaction of the elements that confine it. The diverse ways in which these parts have been formed and related to one another is the substance of the history of architecture." 2)

I.1.1. FORM OF SPACE

Today space is considered by its nature as limitless and intangible. Space dissolves in darkness and evaporates in infinity. To become visible, space has to
be given physical limits in order to acquire form and boundaries through the intervention of man. In this respect, architectonic space can be seen as a willful accession to the limitless natural space around us. Architectonic space owes its definition to the mass of its limitation, which bounds the space from without. By contrast, the space we experience and relate to ourselves gets its definition from the activity of our senses, which determine its boundaries from within. Space can not be perceived without form, conversely, space creates the distance needed to perceive form. It is a matter of articulation how strong this relationship is. It determines the arrangement, its significance and the effect which contributes to an overall meaning. In general, form is monumental and introverted, space is non-monumental and extroverted. Though these are opposing terms, there is a direct relationship between form and space. The perception of space depends on the density of its demarcation, the quality of its boundaries, and the figural properties of the resulting shape. Considering the different nature of possible spatial demarcations - from the horizon, the natural space, the urban space, the building, and the wall, ultimately dividing between inside and outside, - there does not seem to be one single entity, but a variety of spaces that are superimposed, linked together or interpenetrating each other. Therefore, the creation of space always implies the demarcation of a specific place from a larger space. 'Built space' is a more or less defined part of this space and the boundary, the enclosure, is the concrete substance of architecture. It can also be called the spatial 'shell', which signifies the identity of its enclosure.
1.1.2. CONSTITUTING ELEMENTS OF SPACE

The void, or emptiness brought into being between walls, which is filled by experiential space can be called inside. The emptiness around the experience-space, occupied by the space of nature can be called outside. The mutual relationship of inside and outside are complimentary dimensions of space and ultimately dependent on the point of reference. Thus we can conclude that the duality inside-outside is one of the constituting factors of architectonic space. It implies both limited mass and limited space in its walls and the space between them. Both take on a form by virtue of their limitation. Thus, architectonic space can be seen as a property of space as well as form. The form of the mass is only perceptible when outlined against the void of space, and space can only reveal itself as form from the surface of the bounding mass. Thus the wall has a double-function; first as a bordering factor between inside and outside and secondly, as a solid mass, it acts as the limiting factor of void space. Therefore, two form-images coincide in architectonic space; the space duality of inside / outside and the form duality of solid / void.

1.1.3. BASIC SPACE CONCEPTS

Most considerations of architectural space are based either on man's perception or on the study of the grammar of Euclidean space. Different field theories try to define the organization of space by various three-dimensional patterns of geometric character. These concepts designate the spatial aspects as systems of interacting forces, which are independent of the position of the
observer and, so far as the relationships between objects are concerned, remain constant. Jürgen Joedicke makes a direct analogy to the physical field, which also consists of forces that ought to be balanced in a state of dynamic equilibrium.

"An initial definition of space would be the sum of the relationships between objects, or in more general terms, between points or locations. Space is the sum of relationships between various points." 3)

In the field of architecture he distinguishes two basic different conceptions of space (fig.7):

- space as a spatial container
- space as a spatial field.

"Space as an enclosed continuum, - the spatial container, - is characterized by high outer (peripheral) spatial density and by low inner (non-peripheral spatial density. The spatial field is characterized by low outer (peripheral) and low inner (non-peripheral) spatial density." 4)

But these two definitions, which describe opposing interpretations of space
hold true only to a relative point of reference depending on perception. Also Steven Kent Peterson refers to these two principal conceptions of space and compares them with the theories of modern physics of matter and antimatter, which postulate two antithetical universes obliterating each other in case of a coincidental meeting.

"Space is conceived as differentiated volume, identifiable in its configuration as form, discontinuous in principle, closed and static. Anti-space is the opposite. It is undifferentiated and ideally formless, continuous in principle, open and flowing. It is controlled, directed, or temporarily captured, but never composed." 5)

According to his analogy, modern space is anti-space, which destroys its opposite, traditional space, which is conceived as a formed and shaped figure. From this he draws his critique of the limited sensibility of modern space, which leads to the erosion and eventual loss of space itself.

"The traditional architecture of streets, squares, and rooms, created by differentiated figures of volumetric voids is by definition obliterated by the presence of anti-space." 6)

I.1.4. EXPERIENCE OF SPACE

Behaviorism attributes the phenomenon of the layered structure of experiential space as a matter of distances maintained between individuals in social situations. Edward Hall has classified them as public, social, personal, and intimate distances, signifying codified spatial demands. 7) The comprehensive experiential space that we involve in our existence comprises successive zones of human activities. Therefore, experiential space is structured into a succession of progressively larger spaces in reference to the human individual. It
includes *workspace, walking-space, and visual field*. The various zones of experiential space can be thought of as concentric, related to the perception of the individual *(fig. 8)*. As every space is inevitably central in respect to limitless natural space, these distinctions do not reveal direct figural configurations, but rather social structures which conform to the opposing terms of *public* and *private realm*. As privacy is part of a social contract, the coexistence of these contrapositions is part of a social imperative in any civilization. The composite nature of our experience finds its direct architectural consequences in the layered structure of cell, court and domain *(fig. 9)*. According to Van der Laan, a complete human habitat asks for a threefold demarcation of space and he demonstrates various possibilities for the juxtaposition of concentric zones in a series of diagrams.*
I.1.5. PERCEPTION OF SPACE

The perception of space involves a gradual construction in one's mind, for what Norberg-Schulz introduces the term 'space schemata' to define this phenomenon. It causes the relativity of interpreting the 'Euclidean' space construct which is solely based on the geometrical properties of space. In general, spatial perception is dependent on the relevant position of the observer and it changes as he moves through space. Since the early Renaissance, distance in space was conceived of as seen from a static viewpoint by means of the foreshortened perspective (fig.10,11). Whereas in the modern conception of space, interest is focused on the moving observer, space is absorbed by the mind in continuous dynamic movement. As movement plays a decisive role in the overall perception of space, the field of vision cannot be bound to a single viewpoint. Thus the space is conceived as experiential. Its physical sequence follows path, entrance and enclosure. The true meaning of "space,
time, and architecture", as defined in the modern conception of space, is movement, passage, and arrival (fig.12). As a consequence, we are able to define the full dimensions of space only through unique spatial sensations, which contribute to the total experience of space.

The spatial impression of a certain space, perceived through all our senses, can cause quite different reactions in different people, depending on a complex matrix of subjective variables (e.g. memories, tradition, culture). There always remains a degree of personal interpretation that defies overall definition. Rudolf Arnheim uses the term 'asymmetrical space perception' to describe the differences between abstract, spatial geometry and man's space-image due to sensory limitations and the distinction of the vertical by the force of gravity.9) The vertical acts as axis and as frame of reference for all other directions in space; it defines the horizontal plane (an approximation of the spherical surface of the earth) where no direction is spatially distinguished. Thus, the simplest model of man's existential space is a horizontal
plane pierced by a vertical axis. As an important consequence, architectural space can therefore never be considered fully isotropic. In "The Symbolism of Centric and Linear Composition", Arnheim compares two basic compositional systems and refers the configurations to the laws of physical nature that control the balancing forces and the interrelation of elements.\textsuperscript{10} Whereas in a centric system, a field of forces is organized around an internal center, the linear system of the Cartesian grid demonstrates beyond its geometry a pattern of forces, of linear vectors oriented toward external centers (\textit{fig.13}). Accordingly, he analyzes architectural elements on the basis of internal and external power-centers, and their relationship to centric and linear configurations of space. His contention is that the centric system stands for the concern of any defined entity, whereas the grid or linear system relating to external power-centers responds to such an entity. When interpreting architecture as a response to active forces, caused by nature or man's willful intervention, further connections can be detected, which influence architectural
composition in space. For example, the erection of mass in the vertical is dominated by the building’s response to the force of gravity. Facades, the building’s visual representation in the upright dimension, are often direct projections of the total structure of the building. On one hand they are rooted in the ground, referring to an external center, and at the same time, seen as a complete unity, they are organized around their own internal center. In general, when a center is underplayed it serves to emphasize the dominance of the Cartesian grid. In the horizontal plane the orientation of the Cartesian grid is determined by specific axes or given external targets. These organizing axes represent symbolic directions which unify a number of elements among themselves, relating them to a larger totality. In general, the axis or the path is based on the continuity of 'Gestalt', direction, or functional distribution. Due to the profound differences of up and down, the vertical has always been considered the sacred dimension of space (at least in Western cultural tradition), which determines the spiritual structure of man's imagination of the universe. While the visual spectacle in the upright dimension is essentially spiritual, the corresponding symbolism in the horizontal is essentially social. The horizontal plane signifies the social behavior, between active movement and rest. Similarities can also be seen in the persistent interpretation of light-sources, where you find a fundamental distinction between two conceptual axes of light; the vertical refers to the mythological realm, whereas the horizontal is considered as profane and interpreted in functional terms of lighting. Accordingly, the asymmetry of our space-image also affects the two-dimensional representation of space. Thus, the horizontal plan of a building, considered the primary level of human action, is a representation of
functional and spatial relationships, and the vertical section and elevation represents its appearance, coinciding with our visual image of space. This main difference is based on the principal dimension of action in the horizontal versus the visual field, oriented on the vertical dimension, where figural qualities of an object, like symmetry, are predominantly read in conformation to the vertical axis of space.

On the other hand, spatial geometry, concerning measurable, built artifacts, is independent of a particular viewpoint and provides an 'objective picture' of dimensions and the geometric relationships between architectural volumes. Certainly these patterns inform the character of a building in a very basic way, and by revealing principal differences between spatial geometry and architectural space through their implicit limitations, they provide a framework for the interpretation of any architectural work.

I.1.6. FIGURAL SPACE

The meaning of confined space is established not only by the quality of its confinement, but moreover by the shape of the void. The Functionalist doctrine, *form follows function*, provided a method for architecture without recourse to historical precedents and thus without the traditional concept of type.\(^{11}\) Functionalism seemed to provide a solution for each unique problem and was posed against the idea of a common structure that characterized a type. Since World War II, there have been several tendencies which have been disputed by the functionalist and mechanistic tenets of the so-called International Style and which sought to recover, in one form or another, the ar-
chitectural tradition. The recovery of architectural tradition, as we see in the work of Louis Kahn, tended to be either syntactic rather than iconic, or it derived traditional forms from the 'natural use' of traditional building materials, thus retaining its links with functionalist doctrine. But the theory of natural expression ignores the importance of conventional meaning throughout the history of architecture. Therefore, one of the symptoms of the reaction against functionalist doctrine has been a return to the use of stylistic elements borrowed from the past.

In order to present a comprehensive understanding of figural space today, I want to refer to the fundamental distinction between the notion of form as configuration with either natural or no meaning at all, and the notion of figure as a configuration, whose meaning is given by culture. In this sense Alan Colquhoun remarks:

"While the notion of figure includes conventional and associative meanings, that of form excludes them. While the notion of figure assumes that architecture is a language with a limited set of elements which already exist in their historical specificity, that of form holds that architectural forms can be reduced to an a-historical 'degree zero'; architecture, as a historical phenomenon, is not determined by what has existed before, but by emergent social and technological facts, operating on a minimum number of constant physiological and psychological laws." 12)

Recent tendencies seem to be motivated by a need to reintroduce the notion of figure into architecture and to see architectural configurations as already containing a set of cultural meanings. Therefore, we can speak of an attempt to restore the credibility of the figural tradition, and the refusal to reduce architecture to pure form. Today, the fundamental dialectic no longer seems to be that between form and function, but that between form and figure. As the
viewer is able to establish a relation between forms which he sees, and his own past experience, the meaning of figures becomes to a certain extent fixed, thus they become conventional types. From this understanding we can proceed to the conventional and archetypical reading of confined space and its interpretation.

1.1.7. MYTHOLOGY OF SPACE

The utilization of spatial mythology is a fundamental means of identifying, ordering and shaping space. The mythology of space embodies values inherent in the hierarchic treatment of space, and therefore it is essential in architectural composition, on a perceptual, as well as a conceptual level. Mircea Eliade writes in "The Sacred and the Profane" that at least for religious man, space is not homogeneous, some parts are qualitatively different from others. Built forms in Western culture appear as a manifestation of opposites; the sacred and the profane. The sacred was defined as the remaining unexplainable mysteries, the profane was viewed as the rational. The sacred location is a marked space, a conceptionalized center, intended as a representation of the cosmic order. It comprehends a meaningful composition and the existence of the profane ground is inherent to the identification of the sacred space. In traditional architecture, the concepts of these opposites were used to express the unifying belief in a transcendental power. For centuries, this distinction has dominated the description of man's relationship to his universe. The distinction sacred / profane is not necessarily religious but refers to the dialectic between man / nature, private / public, and in general to order
/ chaos. Of crucial importance for a spatial understanding is what Eliade terms the 'solution of continuity' between the sacred and profane realms. It is the break in space that reveals a fixed point and corresponds to sacred space. It provides orientation and thus a way for the world to be constituted. For example, the cross shape of Christian churches, with a dominant axis converged with a perpendicular axis, directly corresponds to aspects of mythology and cultural values, which is expressed in an fundamental understanding of this order. Today, lacking a unified cosmic worldview, the original inspirations of these references have been forgotten or denied. In the post-industrial city, the individual identity of man is no longer extracted from nature or from a fixed point in the universe, but from the structure of society itself. And in isolating a specific place, it is possible to return to meaningful values referring to the sacred and profane polarities. Translated into contemporary appearances the notion of making place is described by Marc Dilet with the categories of 'unique', 'uniform', or 'universal' space. ¹⁴ For this generalization, the presence, the denial, or the pure absence of the notion of a conceptualized center is the determining factor.

"In spite of an apparent fragmentation of the surrounding world, the spatial concepts of sacred and profane are transmuted into three categories that attempt to restate a formal coherence: spaces for the individual ('uniform space'), a space for human exchange ('universal space'), and places, housing the highest values ('unique space')." ¹⁵

'Unique space' refers to a clearly defined, exceptional identity given to a spatial form, which creates a conceptualized center. Shape, height, size, and specific qualifications of the design, like a cross-axis, symmetry, or special treatment of its boundaries, signify its special character. 'Uniform space' is
defined as a unit, repeated with similar characteristics implying a multiplicity of centers. Uniform space exists as a necessity and satisfies the human need for individual functions and shelter for activities. The prototype of uniform space is the house. Each house has its own center, and grouped with other units, it forms a community. Louis Kahn refers to this phenomenon with the term of a 'society of rooms'. Thus he makes an analogy of the articulation of a series of similar spaces to broader social implications of a democratic society. The hierarchical arrangement within the repetition of similar rooms refers to a different level of cultural or individual patterns, closely related to their designated functions. 'Universal space' is characterized by the absence of an implied center, it is non-specific and conceived for transitory use. Its form does not refer to a specific use, and objects may be added to adapt the generic field for specific activities. Universal space is thought of as a perpetual transition between exterior and interior, or between different parts. Whereas the first two categories depend on the conception of space with readable bordering conditions, the a-formal character of universal space refers to an uninterrupted floating spatial continuum. The consequences of the one-sided stressing of non-figural space can be seen in the numerous applications of the International Style. It often employs a non-directional structural grid as the only spatial articulation and device for its demarcation.

In general, all of these categories of space can be discovered in the analysis of most projects. The transcription of these spatial types in relation to their meaning constitutes our built environment, and embodies the secularization of a profound spatial mythology.
I.1.8. CENTRIC AND LINEAR SPACE

Dagobert Frey uses a concept of path (Weg) and goal (Mal) to describe spatial structures. Considering these archetypical motives of world experience, he wants to relate concrete architectural properties to the perception of man.

"The goal already contains the path as its point of reference, directional indicator and ultimate end. All architecture is a structuring of space by means of a goal or a path."  

His theory attempts to structure architectural space by means of human action, movement, and arrival. Their architectural expression can be found in the appropriate shapes of figural space, which enhance their functional purpose. Concerning the properties of clearly demarcated, figural space, centric and linear space describe the profound duality of human spatial experience. These are also two basic themes that dominate formal considerations in architecture. The organizational patterns, which follow these basic themes are divided into those that focus on a center and those that guide along a line in response to movement. The circle is a comprehensive pattern for centric figures, which prescribes the essential ideas of dome, square, cloister, and atrium (fig.14). Within longitudinal space, two basic configurations, the circulation spine and the serial progression can be distinguished, and imply directional movement and the sequential apprehension of space (fig.15). These archetypical themes form essential ways of making and organizing space. The persistence of these formal spatial patterns can be recognized beyond historical, stylistic or cultural boundaries. The configuration and composition of
principal themes enable us to reflect on social and cultural implications of order and man's recognition in his world. In traditional church design the two typological patterns of the centralized church and the linear channel of the basilica are clear examples of possible combinations. Similar principles apply to urban space with its streets, squares and courts as figural space within the urban fabric. The urban space also includes the concept of centrality versus movement and great axes which lead to important destinations on a larger scale, appealing to the view of its inhabitants.
NOTES


4) Joedicke, J., ibid., p.18.


6) Peterson, St. K., ibid., p. 91.


11) The main discussion of avant-garde architecture was the relationship between form and function. Function should give meaning to form, while form should express meaning. It was assumed that the meaning of architectural forms is the result of a natural expression.


17) Frey, D., ibid., p. 6.
1.2. PREMODERN SPACE

In "The Eternal Present-Beginnings of Architecture" Giedion structures the history of architecture as a succession of space conceptions, focusing on the development and the relationship of interior and exterior space. In his primeval space conception, objects were placed in limitless space without regard for a connection between exterior and interior space. First concepts were concerned with volumes, their relations to one another, as well as their interaction. Space is developed outward from the volume, the significance of space is directly linked to the outer experience. The elements of the first space conception, plane surfaces, volumes in space and the supremacy of the vertical were tied to a rigid social hierarchy and to cosmic aspects of man's world view. Doxiadis, investigating the group arrangements of ancient temple sites, finds a radial organizing system for the spatial relationships be-
The point of entry to a site signifies the vanishing point, from which radiating lines determine the corner positions of all buildings. Constant segments of the circular view determine the expanse of the buildings and successively close the view of vision (Doric order (fig.16) - Ionic order (fig.17) leaves one segment for the landscape connection). His investigations prove that the seemingly chaotic configurations of objects in space are related to a rigid perspective order, based on the perception from one single point. Thus, early space conceptions pay special attention to exterior space and to the placement of architectural objects in relation to one another. The coherence between buildings is maintained by the tension of angular, space defining planes. There are no primary connections between inside and outside, which are seen as totally different realms. Interior spaces are organized along internal axes, independent of the direction of exterior space. In later phases, as exemplified in the Imperial Fora in Rome, the interior organization is at the same time employed to define exterior space along parallel or perpendicular axes. The second stage of architectural development was marked by the concern for interior space and with the vaulting problem as an expressive structural tool.

“There were vaults from the time architecture began, but their powers of heightening religious and secular experience were not known until Imperial Rome. These powers appeared in conjunction with the symbolic relating of interior space to the cosmos, much as the powers of volumes in space (ziggurats and pyramids) were manifested in the first high civilizations.”

To the diversified modeling of exterior volumes by means of light and shade, came the development of simple barrel-vaults and domes into complicated systems of arches and vaults to direct internal lighting and to strengthen the
shaping of architectural space. The most significant change was the consideration of space as hollowed out of a solid mass, interior enclosed space. Both traditional concepts are dedicated to a more or less mechanistic combination of partial entities in Euclidean space (fig. 18). Paul Frankl was one of the first to use a rigorous conceptual scheme for the analysis of architectural compositions in terms of space. In "Principles of Architectural History", he employs a quantitative space concept to classify four phases of the post-medieval history of architecture. His emphasis lies on the spatial organization by means of addition and division of space elements as well as their figural arrangement into larger units, such as rows or groups (fig. 19). Within the four phases, he introduces a subdivision of religious and secular architecture, either perceived as one spatial totality, or a distinct succession of enclosed space cells; a distinction derived rather from the interior character than from its function. Frankl sees the development of the various phases driven by imminent style forces, which proceed by the action and counter action of 'polar
opposites'.

"In the first phase spatial forms are composed additively, no matter whether the problem is a centralized or longitudinal church or a secular building. In the second phase spatial forms are composed by division, no matter whether it concerns a Catholic or Protestant, centralized or longitudinal church, or a secular building. The separation of the third from the second phase is not marked by a change in the direction of style. Rather, the third phase stretches the given direction to its utmost conclusion.

In ecclesiastical architecture this extreme position is expressed principally by the creation of forms based upon infinitesimal calculus. In secular architecture it is expressed principally by fragmentation, by breaking the building into individual pavilions, and by opening these fragments to the infinite exterior space. The fourth phase is characterized by its independence of both polarities." 5

In the Renaissance there was no analytical separation of the elements of space and form. The Renaissance concept of perspective representation gives a definition of space providing location, direction, and a referential framework for the whole composition. The vanishing point of central perspective symbolizes the common origin of an underlying geometric order, and it also sug-
gests the image of 'Renaissance man', placed in its center (fig.20). The three-dimensional space of the Renaissance is the space of Euclidean geometry (fig.21). While the Renaissance composition may be understood as an addition of independent space cells, Baroque architecture works from a given totality and divides the overall appearance into depending elements. The Baroque Style aimed at a continuous, uninterrupted definition of urban space and rejected the isolated volumes of Renaissance architecture. Then the facade of a building not only enclosed interior space but also street and square. Thus, Baroque architecture is also characterized by the urbanistic void, which it is helping to shape. In late Baroque, architectural centers, directions and zones work together to form a dynamic totality. As Giedion points out, the concept of an open field, the blurring between inside and outside, is implicit in Baroque architecture and is extended into modern architecture by means of a progressive technology.

In general, premodern space is conceived as differentiated volume, identifi-
ble in its configuration as form - discontinuous, closed, and static. Its application is that of a serial composition. The width and shape of interior spaces were restricted by the mode and available techniques of spanning them. The height of the space was dependent on the thickness of its surrounding walls. Thus the traditional plan had a mutual relationship to its corresponding section, and in some way was a deduction of the vertical dimension. As space concepts derive from different world views, the underlying assumption of traditional space concepts was the finite universe of Cartesian geometric order, which could be interpreted through the harmony of simple geometrical ratios. The universe of space, interpreted in mathematical ratios was considered the presumed truth, the underlying order. The ideal city was the sacred realization of space and order (fig.22).
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5) Frankl, P., ibid., pp. 95-96.
1.3. MODERN SPACE

After the Copernican revolution, the universe could no longer be perceived as contained space. Instead, space becomes independent and related to the moving objects in a solar system which is open and infinite. Subsequently the notion of modern space developed as it was identified with nature and science, resulting in the reversal of city and nature. Geometry as a generalization of form becomes separate from a universal order of space, and is often used only as a neutral, referential grid (fig. 23, 24). With the surpassing of Euclidean geometry and Newtonian physics as a universal circumscription of the universe, modern concepts of space emerged. Their principal assumptions are the infinite universe, the continuum of space, the condition of pure probabilities and random events decipherable only through statistics. Modern space is conceived as a natural phenomenon, imagined as an a priori continu-
uum (similar to the field-theories of light and energy). It is ever present, un-touchable and abstract. The powerful influence of modern space is the as-sumption of modern space as an embodiment of nature. It has become a con-ditioned response, like the notion of ecology, neither space nor nature should be affected by man's presence and willful intervention. Modern space is em-bedded in the whole framework of contemporary society and its political im-plications. In some ways, the notion of modern space serves as an equivalent to an undifferentiated society of equals. Even the Jeffersonian grid, laid out over the United States, has been interpreted as an abstraction of democracy, as a metaphor of freedom and equality. ¹) In modern architecture, space is conceived as a free element in nature, as a found resource where the architect takes a slice out of the vast continuum. It is apparent that the foundation of modern space rests on the idea of a fluid, natural space. Modern space ap-pears indefinite, perceived only as the tension or direction in between things because the concept of the spatial field as a flowing continuum refuses to ac-cept a true inside. As a consequence, modern space appears empty, despite its animation. A primary concern for modern art and architecture is the mode of its perception, the appearance of form through movement and time. Mod-ern space becomes associated primarily with the observer rather than with the forms which create it. Its attributes are a 'free plan', and the literal inter-pretation of the inside as a continuation of the outside. Buildings are seen as objects within the infinity of space, raised off the ground to encourage the uninterrupted and continuous flow of space. As buildings became more utili-tarian in their organization, functional relationships were gradually shifted from the interpretation of exterior space to the organization of internal
space. As building form was no longer determined by external design, the shaping of exterior, urban space lost its value. The advent of the elevator, opening the vertical for easy access, fostered the segregation of internal organization and its relationship to exterior space. Thus Le Corbusier's concept for "The City in the Park" was not only an intentional departure from the tight block patterns of the traditional European city, meant to give new freedom and open space to its inhabitants, but also a natural outcome of modern spatial principles (fig. 25). Le Corbusier's landscape of the modern city has been built with the ideals of liberation through free flowing open space. The doctrine of the International Style, despite its urbanistic pretensions, was not urbanistic at all, rather, as stated in the first Bauhaus manifesto, its ultimate goal was the single, freestanding building. But what is more important, at least in this context, is the definition of exterior space as a left-over, as the necessary distance of two buildings to provide a sufficient angle of incoming light. Whether it was the 'Zeilenbau' or the free standing apartment tower as
a large scale urban element, special emphasis was laid on the single object building. As the effects of modern city planning are all around us, I want to concentrate more on internal spatial principles. For example, Amheim suggests that modern space is exclusively perceived as the background for the figure of mass, which is set in an inevitably natural condition. 2) Considering the American tradition, Frank Lloyd Wright made important attempts for a continuous transition between inside and outside. The directional wings of his houses are continued out into the landscape by terraces, porches and garden walls (fig.26). But they were always anchored not only to the earth but also around a static core (fireplace) in the center of the house.

In general, the relation between horizontal and vertical surfaces, as a basis for aesthetic responses, is one of the constituent facts in modern architecture. Theo von Doesburg shows a conscious recognition of the presence of this tendency. The De Stijl theory attempted to draw up a general code for architecture by means of the decomposition of discrete volumes (fig.27). Changing
the perception of space, the former cubic void of the premodern room was dismembered. The planes no longer form closed volumes, instead the space became fluid and flowing in a moving continuity. The static quality of Classicism was replaced by a dynamic vision. The constitution of volumetric space depends not only on the density of its enclosing elements but also on specific factors derived from properties of location and the conventional reading of enclosure. In the same way as the ceiling, as one confining plane, implies the reading of interior, so the edge conditions contribute especially to the image of a defined space. The example of the new Bauhaus (W. Gropius, Dessau, 1927) embodies an important means for the dilution of enclosed space. Here a classical principle, namely the structural articulation of the corner of a building is violated by the dematerialization of the edge condition (fig. 28). His building embodies the consequent realization of modern spatial principles by means of pure forms, exposed structure, and the honest expression of materials. Giedion praises its surface appearance with the transparency of over-
lapping planes, referring to the material condition of glass (the curtain wall), giving the impression of an uninterrupted spatial flow as far as possible. On the other hand Rowe and Slutzky, in their essay "Transparency: Literal and Phenomenal", attempt to refine the term transparency. They distinguish between literal transparency, generated by transparent materials and, as an analogy, phenomenal transparency, defined as the simultaneous perception of different spatial locations, generated by the relative reading of space confining elements (fig.29). Thus they remark:

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

It is not the connection between art and architecture, they are going to dissect, which is of special relevance here, but their differentiation and analysis of different approaches toward space in modern architecture. Whereas literal transparency (Gropius Bau) implies an unbound spatial field, phenomenal transparency, in the work of Le Corbusier, is generated by a semi-defined,
compressed, and ambiguous space through the adherence of successive, incomplete layers within an abstract spatial matrix. The multitude of planes create, in an act of mental comprehension, an oscillating ambiguity between the depth of field and the indication of shallow spaces in between. The 'promenade architecturale', an intrinsic feature of Le Corbusier's design strategies, controls the route toward and into a building, thus consciously structuring the spatial sequence. The horizontal and vertical layering, as a series of lateral, and successive frontalities, tie these principles of organization to the Renaissance perception of space (fig.30,31). But whereas premodern compositions were based on a fixed point of reference or the spatial sequence along axis and cross axis, modern principles comprise a multitude of directions, which contribute to a comprehensive experience of spatial sensations (fig.32,33). Le Corbusier, in his "Five Points of Modern Architecture", prescribed the means of modern architecture and the relationship of construction with modern spatial sensibilities. The freestanding piloti in the
gridiron framework takes all the structural load, which directly leads to the functional independence of skeleton and wall. In the *plan libre* the use of gridded and layered space is employed as a contextual device, to establish a homogeneous framework and to determine the nature of subsequent spatial gestures in reference to the alignment in space. The completely free composition and treatment of separate stories allows to introduce the interpenetration of outer and inner space. Thus, the observer is made aware of the layering of space by the alternate alignments of solid and void within the grid of columns. As a result, space is given a three-dimensional reality as an incremental extension of the grid, both vertically and horizontally. Le Corbusier uses partition walls to model interior space and employs curved staircases and organically shaped free objects for functional as well as expressive purposes. The *free facade* is a direct consequence of skeletal construction. Finally the *roof garden* presents an additional space relation, a surface that opens to the sky, which not only allows new relations to the outside but also provides a view of the architecture from above (e.g., Villa Savoye). But the technological progress from monolithic construction to the skeleton framework embodies only the means, not the immediate purpose of change in spatial considerations (*fig.34,35*).

Giedion places the problem of space at the center of the development of modern architecture. He attempts to give evidence and proof of a hidden unity, a secret synthesis in the consideration for the Modern Movement and concentrates on the tradition of modern architecture to show its interrelationship to science and art. He holds the classic conception of space, with its most constituent representation, the perspective, as one-sided and limited, arguing that
the essence of modern space cannot be grasped from a static point of view. In order to get to an exhaustive description, the observer must project himself through the continuous interpenetration of outer and inner space. Drawing the analogy to cubist painting, he notes:

"Thus, to the three dimensions of the Renaissance which have held good as constituent facts throughout so many centuries, there is added a fourth one time."  

He also relates the conception of space to the general development of man's image of the world:

"The process by which a spatial image can be transposed into the emotional sphere is expressed by the spatial concept. It yields information on the relation between man and his environment. It is the spiritual expression of the reality that confronts him. The world that lies before him is changed by it. It forces him to project graphically his own position, if he wants to come to terms with it."  

The idea of an absolute infinite space is questioned by relative spatial correlation eluding stereometrical description. Certainly, Modern Art and the Theo-
ry of Relativity have a common point of departure, namely that the phenomena do not exist in isolation, but relative to a situation or point of view. Modern space is associated with the observer, rather than with the forms creating it. Therefore, architecture is seen as a subjective experience and the relationship of isolated objects in an animated field are revealed primarily through the notion of the observer.

Bruno Zevi, following Giedion's notions, (though his view of space differs greatly from Giedion's articulation of space) defines architecture as the 'art of space'. The ideal, he formulated, is a continuous flowing space, freed from defined centers and from a distinction of inside and outside. Considering space as the ultimate protagonist of design, Zevi notes:

"It is in space that life and culture, spiritual interest and social responsibility meet. For space is not merely a cavity, void, or negative of solidity. It is alive and positive..."  

His agenda is to free the static spaces of traditional buildings to express a new, open world. Sophisticated spatial concepts, referring to simultaneity and interpenetration of space, have to be understood in this way. Zevi bases his theory on a particular perceptual scheme. Emphasizing the total spatial effect, he interprets architecture in a sense that any particular space location has to be given a particular character. The expression of time and space, from which he stems his principles of modern architecture, is the starting point.

"A room is entered, crossed and left and all this movement should be considered and provided for in design. What is the free plan, the principle of flexibility, moving partitions and fluidity from space to space? It is another way of expressing space in time and time in space."
In his book "The Modern Language of Architecture" Zevi goes even one step further and lays down seven principles or 'anti-rules' to codify a new language of architecture. In place of a classical language, formulated by the Beaux-Arts, with its abstract principles of order, proportion, and symmetry, he sets an alternative system of communication, which is characterized by the free interpretation of content and function, emphasizing differentiation and dissonance, a dynamic multi-directional vision. In the operational principles of listing or compiling an inventory of functions, he expects the critical rejection of classical rules, orders and conventions. The object is no longer observed from a privileged viewing point, but dynamically, from innumerable points of views. The result is a four-dimensional decomposition, best represented in the analytical syntax of the De Stijl. Space in time, his central argument, applies the volumetric techniques of cubism to the voids, in his view the vital spaces of architecture.

In general, the modern conception of space, which coincides with new sensibilities of architecture, is chiefly concerned about the relationship of inside and outside within a shapeless spatial field. It contains elements of both previous stages, it combines the emanating properties of volumes in space, as well as the modeling of interior space. Modern space focuses on the possibilities of dematerialization of solid volumes and the continuous flow between inside and outside.
NOTES


See also: Rowe, C., Slutzky, R., "Transparency: Literal and Phenomenal ... Part II", Perspecta 13/14, 1971, pp. 288-301.


7) Giedion, S., Space, Time, and Architecture - the growth of a new tradition, op. cit.

8) Giedion, S., ibid., p. 432.


1.4. REACTION ON MODERN SPACE - Premises for the Constitution of Current Space Concepts in the American Context

The most limiting assumption of modern space is that it can not be conceived as form and thus eludes man's intervention. Thus, current reactions on modern space have to be seen as an attempt to regain formal properties of space, in which space is seen as a confined volume. Since the 1960's there have been various attempts to renew city planning as a reaction against Le Corbusier's "Ville Radieuse", technocratic planning strategies and the resulting functional division of the city. Here I do not want to comment on the failures of modern city planning because there is a broad basis of agreed upon critique of their various shortcomings. ¹ In general, today's sensitivity to context is one of the main differences to the apprehension of modern space. As we have seen, Modernism signified space in a way where content was separable from a specific location, whereas Contextualism focuses on the importance of place and its environmental impact on the creation of architecture. In this sense, Norberg-Schulz's notion of place signifies the specific dimension of existential space, as a result of complex contextual relationships:

"A place is a space which has distinct character. Since ancient times the genius loci, or spirit of place, has been recognized as the concrete reality man has to face and come to terms with in his daily life. Architecture means to visualize the genius loci and the task of the architect is to create meaningful places where he helps man to dwell." ²

Thus, the emphasis on place in spatial design incorporates social, cultural, and regional dimensions of a specific location and architecture is conceived
of responding to its environment and enhancing the identity and sense of place. Therefore, first we have to ask, what comprises the American context in this respect, and what are the architectural responses to this environment? American architecture is often characterized by mimicry, repetition and illusion, as you can see in the contemporary American landscape of McDonalds, Texaco stations, and Tudoreshque condominiums. In order to understand the multifarious phenomena of American architecture, I want to refer to underlying patterns in the American landscape, which not only unfold the dynamics of this environment, but also tie them to a specific architectural heritage. From my point of view, these embody presumptions, which have direct influence on the conception of space and the imagination of place today. In the American city, the practice of dividing land according to an orthogonal grid system, led to the development of uniform physical patterns, that spurred specific building types such as the skyscraper in the former 'alphabet city'. The main device for American town planning is the gridiron pattern, where the street is interpreted more as a distributive element than as a defined spatial type. Dynamics of circulation have became the generator of urban form. The scale of American urban architecture, the presence of highway interchanges at the edge and heart of the city, and unique building types such as the civic center, the garden apartment, and the urban galleria are striking images of the contemporary American city (fig.37). In the country and suburbs, elusive factors such as the attraction to open space, the desire for private ownership of land, and the quest for health express an ideal in the American psyche. Thus, the American suburb in many ways summarizes certain unifying themes in American architecture. The suburb continues to be
the preferred setting of most citizens for the establishment of family and community by resolving the conflicting desires to live both close to nature and to draw income from commercial life in the city (fig.36). The development of the city, based on a strong sense of individualism, never carried a strong expression of communal space. Early examples, to find an equivalent to European conditions, like the New England green (New Haven) or the town plan of Savannah remain exceptions. American university campuses, which clearly show this kind of urban analogy, may be as equally derived from representations of a collective realm as they are from the direct precedence of monastic quadrangles. But these arcadian settings, whether they are in an urban context or not, find no or little resemblance within the American environment. A counterpart to European city preservation may be found in many contemporary city revival projects, especially around old marketplaces (New York, Philadelphia, Boston) or in the conversion of warehouse districts (Dallas, San Francisco). Thus, urban design as inversion, though often
restricted to the recycling of internal spaces, leads to a renewed appreciation of old city patterns. But it must also be said that the success of these projects is mainly based on their commercial involvement and depends less on their spatial structure than on the appearance of picturesque images. Open 'plazas' have been built as a substitute for a non-existent public realm but in most cases they lack the necessary urban density, structurally as well as functionally, for a coherent spatial experience. European public squares and piazzas have been transformed into parks and natural landscapes within the American city context. Here, parks and gardens are expressions of civic pride but they are also attempts to preserve nature within the city. The park often simulates rural settings to provide both contrast to the urban environment and accessible recreation through a spatially independent landscape within its perimeter. The proposed effect normally responds to the needs of the individual rather than to an expression of the collective.

Rather than touching on the social pathologies associated with the 'urban environment' (which would be equivalent to the European approach), I am interested in the various attempts to create semi-public spaces, ranging from the 'Ersatz-street' of the shopping mall to the vast atrium spaces of city-hotels (John Portman³), which give evidence of today's spatial expression of a quasi public realm. The introversion of former main street, by excluding exterior space and undesirable urban elements, creates a totally controlled, artificial environment as a simulacrum of original patterns. For example, when we compare the Galleria Vittorio Emanuel in Milano with the Galleria in Houston, the interior spaces are similar in profile, but their contextual approaches are totally different (fig.38). Whereas the historical precedent maintains and
reinforces the city grid, the suburban shopping mall is essentially anti-urban, ignoring the integrity of the city grid by the reversal of back and front. Public life has been turned from the outside in, which not only expresses a 'nostalgia' for public space, but also the urge for a clear demarcation of space itself, which rarely can be found in urban America. 4) 

As the meaning of place is based on its use and purpose, defined by psychological and social needs, the relationship between the individual and his environment is of special importance. Besides the actual context, there seems to be a major difference in the interpretation of a specific location as the response to man and society. For example, architecture implies for Charles Moore, besides its function as shelter, foremost a topographic claim. Moreover, the definition of location and marking of place, refers to the individual. Seeking for an answer to the increasingly bland and undifferentiated geography, he states:
"... houses must be special places within places, separately the 'center of the world' for their inhabitants, yet, carefully related to the larger place in which they belong." 5)

Since the early twentieth century, the countryside has been penetrated by the road or highway, leading to the development of an entirely unique and dynamic culture overlaid across static, rural America. The national system of highways has brought about a structure, meant to engage and capture the attention of the traveler. The motel, the gas station, and the drive-in building are unique institutions of the road and form America's most remarkable symbolic landscape. There we find the origin for collective experience with the architectural context: Besides the 'main street', it is the commercial 'strip' in America, which is of great importance for recent attitudes toward architectural space. 6) Today's increased mobility and the subsequent deprivation of the importance of place in American society certainly plays a decisive role in the change of common space concepts. 7) The apparent minor importance of a particular place implies a limited sensibility for spatial neighborhood relationships. Its logical consequence is the lack of designed exterior space. 8) Though the street and the square are not merely material phenomena, but rather a cultural expression, it seems that modern man does not participate in the potential of a collective expression. Some have already raised the question of whether there is any demand for a collective spatial manifestation in today's post-industrial society. 9) Moreover, it seems that social integration is achieved by cultural and political means; TV and technical communication have freed this society from direct human interaction (media such as TV are said to be more authentically public). The media provide access to information and commonly shared ideas, but without exposing the individual to the
obligation of participation; watching TV demands only a vicarious involvement ('potato people'). Here priority is accorded to the image and to the tendency to interpret the environment in exclusively perspective terms. I think that this development adds not only to the further alienation from reality, but also to the appearance of a fictional simulation of another reality.

In general we can conclude that the city turned from an expression of the collective into the aggregation of isolated, private icons of corporate America. The usual process of modern urban development treats buildings as isolated objects, sited in the landscape, which favors the proliferation of a universal, private, placeless domain. What emerges in most urban settings today is unshaped, vast, open space, promoting urban sprawl and suburbanization. Therefore, the modern American city is the most comprehensive embodiment of modern space principles. To take one example, today's Houston represents a typical pattern of many American cities without a distinct character of place (fig.37). In this environment, architectural practice seems to be determined by the driving forces of production, only permitting a compensatory facade to cover the realities of this system. In other words, architecture seems to be reduced to an art of packaging in order to facilitate its marketing. 10) Rather than facing a whole development of influences and architectural thoughts, I want to make a few remarks about spatial considerations in Europe and America, which clearly reveal their commonalities as well as differences in achieving a more meaningful architecture. In Europe, Neo-Rationalists have been focusing on the structure and meaning of the whole city as a collective form. Their critique of modern architecture stems from the destruction of the traditional city, and they are proposing the re-
establishment of a rational, physical fabric, based on the typology of persistent patterns in the development of the city. Vidler describes this development as the formation of a "third typology" which refers neither to an abstraction of nature, nor to a technical utopia, but rather to the traditional city as focus for its concerns:

"The technique, or rather the fundamental compositional method suggested by the Rationalists is the transformation of selected types - partial or whole - into entirely new entities that draw their communicative power and potential critical force from the understanding of this transformation." 11)

This return to the limits of architecture was initiated by Aldo Rossi's book "L'Architettura della Città" (The Architecture of the City) in 1966. His solutions are based on the idea of recovering the monument and collective memory to regain a group meaning (fig.39). The Italian discussion of typology re-establishes the structure of the original type, but rejects the myth of its origin in nature. In accordance with Enlightenment thought, type is considered a category of analysis which allows one to refer to what is commonly under-
stood. (This is similar to C.G. Jung's notion of archetype in its relationship to the collective memory.) Most importantly, architectural elements, while linked in an unbreakable chain of continuity, refer only to their own nature as architectural artifacts; their geometries are neither scientific nor technical, but essentially architectural - architecture speaking about itself. The logic of architectural form is derived from the definition of type based on the juxtaposition of memory and reason. In Rossi's view, the city contains the principles of the architectural discipline, and the proof of their autonomy is given by the permanence of types, despite changes of function, through history. Consider that urban morphology of Leon and Rob Krier, the city is seen as a coherent experience in terms of formal solutions; their special interest lies in spatial relationships based upon historical paradigms (fig.41-43). In their view, the city is understood as a built organism around a sequence of public spaces, which it necessarily creates around itself.

In general, great importance has been attached to the creation of a sufficiently strong public realm in physical and visual terms as the ordering principle of the city. The buildings of the city gain their meaning from various dialectics - those between private and public realm, the present and the past, and the morphology of solid and void. The city is considered as a whole, its past and present are revealed in its physical structure; it is in itself and of itself a new typology. Thus, we can say that this reaction on modern architecture is essentially a typological and spatial one, a search for an expressive language of spatial patterns, found in figural exterior space and in its relation to traditional architecture. In opposition to this European development, I want to examine Venturi's approach, whose theoretical work still plays a decisive role
41. Krier, Leon: Urban Space, Type 1. The Urban blocks are the result of a pattern of streets and squares, the pattern is typologically classifiable.

42. Krier, Leon: Urban Space, Type 2. The pattern of streets and squares is the result of the position of the blocks. The blocks are typologically classifiable.

43. Krier, Leon: Urban Space, Type 3. The streets and squares are precise formal types. These public rooms are typologically classifiable.
in the architectural discourse of today's America. By taking his lessons from the commercial strip, Venturi offers a model of an urban archetype, which embodies the diametrical opposite space conception of that indicated in neorational architecture. The strip in Las Vegas, seen in the broader context of the Nevada desert (a prototype of infinite, undefined space) is discovered as an appropriate phenomenon from which he derives the legibility of an architecture of symbols (fig. 44).

"In the architecture of abstract Expressionism, space is what displaced symbolism"  

As a consequence, his 'billboard architecture' derives its meaning from ambiguities, inherent in the symbolic nature of architectural form and from the contradictions arising from the juxtaposition of disparate symbol systems. Although he criticizes the intentional use of modern space, his propositions focus mainly on the formal and figural properties of signs and architectural elements, rather than on spatial implications for a change in urban design.
An example of Venturi's comprehension of context and spatial resolution is his addition to the Oberlin College Art Museum. It is a succession of transformed symbols and ironic images taken from the immediate context and is superimposed on the flat facades, in short, a decorated shed with an enhanced loft-like interior space. Although in his investigations the nature of exterior space becomes an unchallenged assumption and he limits his conclusions to the properties of the communicative value of form, his inclusivist approach was most influential for the reconsideration of interior space and its transition to the 'natural' space outside. Criticizing the flowing space of modern architecture, which was used to achieve the continuity of inside and outside, he notes:

"...the essential purpose of the interiors of buildings is to enclose rather than to direct space and to separate the inside from the outside......designing from the outside in, as well as from the inside out, creates necessary tensions, which help make architecture. Since the inside is different from the outside, the wall, -the point of change- becomes an architectural event. Architecture occurs at the meeting of interior and exterior forces of use and space." 16)

This shows not only the recognition of different spatial realms, but also his focus on the wall as a transitional element, to resolve the complexity and contradiction in architecture and to regain an expressive language of architecture. As Alan Colquhoun pointed out, both groups Neo-Rationalists in Europe and Neo-Realists in America refuse to reduce architecture to pure form:

"Both accept the figural tradition of architecture and its semantic connotations. ...Moreover, the referents are not those of the original tradition, where they were a set of ideas belonging to the culture as a whole, of which the language of architecture was an integral part. In the modern recovery of the tradition what is being referred to is the architectural figure as such." 17)
But whatever their commonalities are, European and American attitudes differ not only in their interpretation of exterior space, they also imply a different view toward architectural representation. Jorge Silvetti referring to the portrayal of reality, pointed out that the rationalist approach is concerned with the redefinition of the architectural language within its own body of knowledge, tested in the course of history, whereas American considerations tend to interpret reality as it appears.\(^{18}\) There, architectural 'truth' is defined in the historical process of architecture itself; here, 'truth' is derived from its appearance and its direct interpretation by man. Therefore, we can conclude that this architecture of expediency expresses a pragmatic view of the world and causes various consequences for the comprehension of space. In both instances, the urban settlement stands for the precedent of architectural design and the apprehension of space. However, the differences might not only be attributable to the differences between European and American context, but also give evidence of different ideological and cultural aspirations. Whereas in Europe, the traditional city has become the starting point for new urban design theories, in America, similar issues which originate from the consideration of urban morphology are investigated on different architectural scales. Besides urban renewal, it is only a very recent trend that communal buildings and large projects have begun to be integrated with broader issues of city planning and thus positively intervene into the structure of urban America (fig.40).

Finally, I want to look at the impact of recent urban design theories in general and their application to American circumstances. Because the comprehensive interpretation of the city reveals complex relationships of design factors,
it gives important insights for recent attitudes toward space. Here urban morphologies are considered not so much as a spatial reference but moreover as a source of design methods. In "Finding Lost Space", Roger Trancik argues for the integration of a dense urban fabric within a functional context of circulation, as well as for paying attention to the specific place:

"The integrated approach...would incorporate figure-ground, linkage, and place theories, giving clear structure to solids and voids, organizing connections between the parts, and responding to the human needs and unique elements of the context." 19)

He takes three different approaches to urban design; the direct spatial interpretation of the city, based on experiential principles of enclosure and patterns of solid and void, modern functional theories, providing efficiency of infrastructure, and the contextual interpretation of place (fig.46). By layering these distinctly different ordering principles, he provides a strategy in order to achieve an integrated urban design. 20)

To restate a different approach, Colin Rowe and Fred Koetter refer in their
book "Collage City" to composite patterns of the urban fabric, of streets and defined urban spaces, in opposition to the predicament of the building as a free standing object and its destructive impact on the continuity of the traditional city. Their distinction between space occupiers, exemplified by the object fixation of the modern city, and space definers, in accordance with the notion of public spaces in the traditional city, gives a clear example of different attitudes toward architecture and how they work in space. Based on this analysis, their theories of urban design refer to historic city models and compositional devices of Cubism, to achieve the density of a 'collage city'.

Such a consideration of the traditional city implies a variety of notions that had been temporarily lost. It brings with it a reconsideration of the fabric of the city, the notion of poché, and the public space as figural void (fig.47). But, by stressing collision, accidents, and compositional collage, it also expresses a sense of disbelief in any rigid, formal systems.

As we have seen in European developments, the emphasis on context led to a radical re-appraisal of urban design theory. In America, despite a renewed interest in contextualism, buildings are seen as isolated containers of interior space. Common spaces in between, which form the urban and social realm, are ignored. Casual leftovers rarely evoke any sense of containment or place. In contrast to the European approach, it seems that in America the various zones of experiential space are limited to the single building proper, respectively to the visual field of the horizon. Attitudes toward space are marked by the concentration on the representational form and the space-image, which appeal to human experience and the interpretation by the individual. And we can say that whereas in Europe essential forces in theory and practice of ar-
architecture focus on the loss of a collective realm, current trends in America originate from the individual and seek a meaningful architecture of communication. Due to the limited sensibility toward shaped exterior space, important consequences became internalized. In the form of analogies, urban morphology is transformed in scale and applied to the nucleus of the single building. Operational principles are based on the relationship of solid and void, the linkage of spaces and functions, the emphasis on place, and its combinatory interpretation by layering and collage. Architects, concerned with the cultural and emotional effects of their designs, seem to reject the ambiguous, abstract spatial configurations of the Modern Movement in favor of making 'places', which are clearly demarcated and well defined. They are rediscovering the value of enclosure and the definition of architectural space by making space readable through the use of formal circulation and sequentially articulated rooms. The recognition of figurally formed space as a medium of architectural manipulation has to be seen as a reaction against the abstract concept of modern space and its loss of formal capacity. Implicit in this argument is a reaffirmation of premodern ideas of space and a reintegration of a variety of architectural means into the shaping of space.
NOTES

1) It must not be forgotten that the destruction of the traditional city was done in the name of sublime ideals; the right of man to a brilliant life, to sun and to contact with nature. I think that the modern city generally does not reflect architectural intentions, but rather the prevailing view of technology, functionalist ideologies and economics.


6) The development of the false facade of former 'main street' to the billboard of today's roadside environment documents the architectural reaction. Compare Venturi's theories of the decorated shed!

7) In the last decades, technological progress changed the sensibilities of our vision, which went hand in hand with the change in speed, time, space, and size. (The term 'space age' even expresses modern man's shift, literally relating his world view to the universe which thus becomes reachable and profane outer space.)

8) The sudden change of the quality of neighborhoods in today's downtowns, as well as in suburban America, may be partly derived from this phenomenon.


10) In this sense, my further investigation does not represent broad trends in the American panorama of architectural work, but rather a 'state of mind' shared by 'elites', seeking to define a new architectural discourse, which nevertheless reveals a direct connection to the above stated circumstances of its formation.


17) Colquhoun, A., "Form and Figure", in *Essays in Architectural Criticism*, op. cit., p. 199.


20) Trancik, R., ibid., Chapter 6, pp. 219-234.

PART II

THE MUSEUM

FOUR CASE STUDIES
II.1. THE MUSEUM

II.1.1 BUILDING BOOM AND ITS CULTURAL CONTEXT

Despite the global economic crisis, one of the objectives of advanced societies is to increase and facilitate access to cultural commodities. The building boom which continues unabated results both from a new awareness of the museum as a vital part of community life and from the changes that have taken place in museum programs in recent years. Therefore, it is not surprising that the museum has emerged in the last ten years as one of the most fertile areas of new design and theoretical discussion. This phenomenon can be seen in Europe as well as in America, and we are witnessing the growth of international networks of major cultural centers and monuments of contemporary architecture. The identity and image of the museum is changing, for it functions as community center, school, shopping center, and often also as cinema. Apart from accommodating exhibitions, they make use of the entire spectrum of modern public relations media.

"Large fund raising dinners and gala dinners are becoming common place - the museum functions as an unusual sort of country club." ¹

The construction or expansion of a museum has become a means for establishing a 'cultural presence' and helping to shape an identity for the whole area. The various functions today's museum has to fulfill are significant signs of our post-industrial society. This typical expression of a society of information and postmodern culture, an escape into consumerism and emphasis on
entertainment, is a typically American one. These current attitudes have had such a strong impact that the new museum concepts have been re-imported to Europe (I.M. Pei, Grand Louvre, Paris 1983-).

Since its origins in the Enlightenment, the museum has been a typical institution for the public dissemination of culture. The first museums were 'temples of the arts' (in a Winckelmannian sense). The later ones were laboratories of classification and ordered taxonomies gradually developing toward a simple cultural spectacle of the masses. The transformation of museums from addressing an elite into social and cultural centers for the many has made them fiercely competitive and commercial. As Venturi indicates:

"In order to get a larger share of the market, by getting people in off main street, means museums have to be didactic to explain themselves - like the cathedrals of old." 2)

The museum is not only an example of architectural history or typology, but has to be understood as a mechanism within contemporary urban culture, capable of creating its physical appearance as well as the symbolic surroundings in which collective life develops. This mandate does not only concern the design of the museum, but also its urban and civic presence, its cultural role in society, and its symbolic significance. Museums exist to conserve the works of the present and the past. That is their foremost function, however difficult it may be to be carried out as a result of popular and political pressure. This preservation can take many forms. A very American solution, making contributions to museums tax deductible, fostered the growth of American museums and this could also be read as an essentially religious one; that works of art are morally beneficial! Thus the link between 'the good', 'the rich', and
'the powerful' seems to be reconfirmed.
The museum is, to a large extent, a deposition of icons. It expresses the need for belief in permanence and continuity.

"There is a thirst for going back to an earlier sureness that gives people a sense of being part of something still living, of other societies having survived traumas." 3)

Thus, it may be asked whether the whole museum boom is not really a manifestation of an attitude, in its obsessive interest in the past and its achievements, and an embodiment of lack of confidence toward the future. But at the same time, these large investments for the preservation of cultural achievements express a strong belief in the legacy for future generations. This is the same conflict architecture is confronted with in the discussion of valorizing the history of architecture and its relevance for today's- and tomorrow's society.

II.1.2. MUSEUMS AS MODERN DAY CATHEDRALS

Art and the temple have a long association. For most of history a great deal of art was in the service of religion. But the temple, church, or shrine has always been more than simply a religious building and container of art; it was a place of social significance open to the public as part of a ritual experience. The museum occupies a highly analogous role, which suggests some comparable expressions. Museums are in fact widely seen as modern day cathedrals; the biggest and most extensive institutions, whose authority has grown in direct proportion to disillusionment with religion and government.
Phillip Johnson remarks:

"Museums are the only symbol our money culture has left." 4)

It seems we are witnessing a curious reversal of patterns in usage. The cathedral more and more becomes the character of a frozen cultural monument, while the museum expands as a vital meeting place and center for social exchange. If the pursuit of culture has replaced the observance of religion, then the museum has to be considered having taken over the place of the cathedral. While attendance at church declines, the major museums have to deal with ever-increasing Sunday crowds (if people are not busy washing their cars on the front lawn). The architect's problem remains one of how to reconcile the conflicting demands of a building type that has replaced the cathedral as the high point of civic culture. It asks for a ceremonious architecture with an intimacy between the objects it displays and its ever-growing public.

II.1.3 TYPOLOGICAL CONVENTION AND THE INTERPRETATION OF SPACE

The typological debate and its influence as a critical as well as functional tool is hard to ignore. The current discussion is mainly occupied with the double nature of the type, its principle for architectural classification, as well as its individualism in the compositional process. Rather than dealing with a principal consideration of the notion of type, here I want to limit my view to the discussion of the institutional type, and to its apparent ties to the history of architecture. Its present use seeks both, to provide an alternative ordering of
form, based on the cultural conventions, and to break the link between form and function. Thus, the idea of typology can be interpreted as a construct in which the link between the systematic and the conventional limitations of architecture are expressed in their interdependence. The typological view of architecture allows architectural history to be viewed as a continuous, but changing record of public values and beliefs, communicated through the manipulation of known archetypes. The example of typology shows how architectural ideas and theories acquire the status of conventions through their endurance and use. The urge to categorize buildings in terms of their institutional use has been unbroken since the first architectural compendiums. Today, the recognition of the institutional building as public emblem of society expresses the conviction about the symbolic capacities of form. It depends on the experiential familiarity with the historical tradition of their functional predecessors. Thus, the recent attempt to return to the dialectic between type and programme certainly involves the explicit employment of generic historical precedent. Of utmost importance is the distinction between the program as compilation of explicit requirements and the institutional programme as representation of implicit requirements, including the general expectations of a public building. Investigating the meaning of the institutional type, Ellen Morris states:

"The programme converts into architectural form a more-or-less well-defined set of shared formal assumptions." 6

The notion of type can be used to support the transmission of cultural traditions through the expression of culturally laden forms, which would take precedence over an expression of individuality. In the same way, it affects the
transformation of cultural values, which would be understood by the public. But conventions must not be seen as another form of determinism; they are tested and changed in their relation to the whole cultural system as well as in their confrontation with empirical constraints. Taking a position of dependence of architecture and society, the institutional type can be seen as a schema of spatial articulation, which has been formed in response to a totality of practical and ideological demands. The type reveals basic spatial organizations and enduring patterns of structure. It includes the concept of boundary and architectural significance, as well as various ideologies of spatial structure as a whole. Persistent spatial types, such as circular versus longitudinal, may be found throughout history as well as in different cultures. In general, classical structure can be characterized by layered, centripetal space, conceived as figural entities, whereas modern structure is multifaceted, marked by centrifugal space with an interpenetration of inside and outside. The ethos of the 'Neue Sachlichkeit' and the general acceptance of universal space by the International Style abandoned or interrupted the tradition of the institutional type. For example, the work of Mies van der Rohe can be interpreted as an attempt to characterize generic space, and architecture is simply its articulation. His buildings are not defined by their use, but by universal space; the physical fragment of a continuous space in which the objects, serving the activities, are introduced only later (fig. 54). The conception of space as a spatial field takes precedence over any consideration of the traditional type. In this sense, Gandelsonas notes:

"The rules represented in classical architecture by the orders, the notion of beauty, and rational cartesian principles are abandoned and replaced with an ideology that stresses the importance of relationships rather than shapes,"
leaving architecture with a highly diffuse lexicon and a entirely new syntax."

And Colin Rowe, comparing Palladio's Villa Malcontenta of 1560 with Le Corbusier's Villa at Garches, showed that despite the differences of architectural conception, in the work of Le Corbusier there is a common structure to the traditional notion of type (fig. 48, 49). The comparison of the villa type demonstrates the commonalities and differences in spatial attitudes in an explicit way; both houses are seemingly organized about the same classical bay-rhythm and a similar syncopation results in the vertical dimension.9 His analysis gives evidence of the persistence of formal patterns, but the contrast of the Palladian centralization with the centrifugality of the Villa at Garches clearly reveals the difference in the spatial conviction and the transformation within this 'ideal villa' type. Today the growing interest in the notion of type coincides also with the shift to define architecture as a finite object in contrast to the open-ended spatiality of the Modern Movement. It is stated that the imaginative re-composition of these basic spatial ideas can provide a basis for
contemporary interpretations of the notion of type. But in contrast to the widespread development in Europe, based on the reconsideration of the city, current discussion in America seems to focus on architecture more on an object level. Similar issues are investigated on different architectural scales. There are also differences in the general consideration of type, partly depending on the different approach to history and tradition. The very cultural condition in America seems to favor studies which regard typology as a collection of easily appropriated icons.

"From this perspective, type is far from being an abstraction or a rational principle. Rather it is the cultural icon, that appears and circulates in society that is made identifiable and becomes, in turn, the represented symbol." 10)

For example, Venturi's reductive use of type-image is more concerned with recognition than with its formal structure. The Classic interdependence of the elements is avoided and single architectural elements take on the value of type images as an independent fragment within a broken structure. Architecture, which in the past had been conceived as a reflection of nature, turns now into an imitative art of itself, reflecting a fragmented and discontinuous reality. The interest seems to be focused on type as a historical precedent, and current design research overlooks the relationship between building typology and urban morphology. Typology is regarded only as a convenient repository of authoritative imagery to be transformed by personal creativity. In general, current trends in architecture can be interpreted in part as the reemergence of archetypes, or as a reintegration of architectonic conventions. It is a premise to the creation of an architecture of communication, an architecture of the image for a civilization of the image.
II.1.4. THE MUSEUM AS MONUMENT

Museums today are dramatic symbolic centers imitating the great European cathedrals that project a personality of grandeur, often totally out of proportion to the needs of the community. The most convincing argument in their favor is that museums increase the city's revenue prestige and tourist trade. The concept which synthesizes these figurative aspects of the buildings with concern for their urban role is that of a monument as a public and cultural center, revitalizing the city.\(^{11}\) The monumental character of the museum is achieved essentially in two ways. Either clear typological references are used to revive the temple of the muses or public and monumental character is expressed by quoting the idea of monumental spaces and configurations from historic examples, like the portico, the colonnade, or the dome. Interior spaces seek to retrieve the monumental and hierarchic character of the traditional museum. The respect for the place and urban environment shows the influence of contextualism; whether these are extensions relying on pre-existing architecture or new constructions, the landscape and the city are seen as positive and decisive references. But patrons now seek unique buildings to encourage civic pride and to attract attention. The building itself tends to become the principal object of value for the public being as interested in seeing the museum itself as the objects it contains. This may also be a reflection of the spirit of our time stressing a hedonistic, stage-set architectural preeminence.
II.1.5. THE MUSEUM AS TYPE

The passion of the collector and the acquisition of rare and valuable objects have existed since ancient times, but the typology specifically for the public art museum developed during the Age of Enlightenment, when it became one of the constituent institutions of the city. In the Renaissance, the significant differences between building categories was that ecclesiastical buildings consisted of composed unitary spaces, where secular buildings were agglomerated spaces perceived one after the other. The Renaissance palace became almost the prototypical museum plan because of the congruence of the essential museum activity. This is already apparent in L. Ch. Sturm's project for an ideal museum in 1704 and in Jean Nicolas Durand's influential plan for a museum, which appeared in his "Precis" of 1802-1809 (fig.50). This paradigmatic design consisted of a series of long galleries that surrounded four courtyards and a central rotunda. The spatial formats and structural proto-
types codified by Durand recur in design throughout the nineteenth century. So portions of the ideal plan, in its vast scale typical of idealized architecture of that time, gave inspiration to the Glyptothek in Munich by Leo von Klenze (fig. 51) and Karl Friedrich Schinkel's Altes Museum in Berlin (fig. 52, 53). Here, the prototypical museum plan, taken from Durand's compilations, is split in half. This transformation eliminates the side wings but retains the principal configuration of a central rotunda, peristyle, and symmetric courtyards. Although two stories high, he also kept the central rotunda for the appropriate exhibition of sculpture. With his stoa-like colonnade across the main facade and the 'grand stairs', he introduced another primary element in museum design. This long line of building typology can easily be followed into the twentieth century as the west wing of the National Gallery in Washington (J. R. Pope, 1941) confirms. Even the Guggenheim Museum (Frank L. Wright, 1943-1959) with its great central top-lit space suggests some spatial similarity. In contrast, the architecture of the Modern Movement re-
sponded, strongly influenced by a new interpretation of the work of art, by providing a universal shelter, a fluid space with maximum flexibility under a single roof, as expressed in Cullinan Hall, Houston (Mies v. d. Rohe, 1951-58) or in the National Gallery in Berlin (Mies v. d. Rohe, 1962-68) (fig.54). Louis Kahn returns design to its earlier typologies. He was concerned with the specific nature of individual institutions and expressed that nature through the ordering of the plan. In the Kimball Art Museum (Forth Worth, 1966-72) he returned to the vaulted gallery, providing room-like spaces with a sense of enclosure as in traditional museums. At the Yale Center of British Art (New Haven, 1969-77) he used a square module in a basic two courtyard plan providing flexibility and at the same time rejecting the totally fluid space of modernist museums (fig.55).

A radically different type that affected museum design was initiated by the great expositions, beginning with the Crystal Palace in London (1850-51). These were built for the display of objects, especially for manufactured
goods, but also for the temporary exhibition of works of art. It has often maintained that the building should be an efficient and self-effacing warehouse, a 'machine à exposer'. But for a long time the museums of history and natural sciences did not develop their 'own building' expression as you see in the Smithsonian Institute in Washington (Renwick, 1847-55) or in the construction of the twin museum of Art History and Natural History in Vienna (G. Semper/ Carl von Hasenauer 1872-89). Even if the existence of scientific museums is not new, their proliferation and public attraction forms a link with the spirit and desires of our times (Aerospace Museum, Los Angeles; Frank Gehry, National Air Space Museum, Washington D.C.; Obata/ Kassabaum, 1975), where neutral containers are employed to manage continuously changing objects as well as artifacts and large size machinery. Typology provides the comfort of being able to categorize. In the case of architecture, if we know the main characteristics we also have some clues for appropriate design. However, any historical survey of museum buildings would show a variety of plan forms as well as underlying assumptions about appropriateness. What matters in all these plans is not so much their geometric configuration (a common misunderstanding of the idea of type) as the relationship between spaces in terms of continuity and linearity, which directly affects the circulation routes and thus the functions of the museum. Each period has fixed its own interpretation of art and the relationship between the world of precious objects and its perception by society. So a study of a group of newly completed museums shows no more than our current preoccupations with this idea.
II.1.6. SPACE, LIGHT, AND DISPLAY

The first museums were often placed in palaces of the preceding period, which were planned on the basis of an enfilade of rooms. Significantly, the English word 'gallery' is used both for a particular kind of longitudinal space and for a room or building housing an exhibition. The Modernists rejected the long standing precedence of typology in favor of a universal solution based on advanced technology to fit all programs. Museum Architecture was thought simply to provide a maximum of space with the best possible lighting, resulting in completely glass-enclosed, neutral, box-like buildings with interchangeable interior walls. The more recent examples of museum buildings use more or less traditional rooms, particularly for paintings. For example, the Contemporary Art Museum in Los Angeles (Arata Isozaki, 1986) uses rectangular rooms with varying top lighting as the principal elements of his composition. Generally there is an attempt to compose the museum out of two kinds of spaces: Controlled, even subdued volumes for the display of objects, and more architecturally exuberant, highly manipulated spaces for entrance, primary movement, and specialized areas to express the new functional variety. This is presumably also rooted in the much more general hierarchic distinction between major and minor spaces, an architectural notion with a long ancestry and by no means solely associated with the museum as a type. To a great extent, museums are spaces for the circulation of the public, so that the relationship of entrance, lobby, corridors, horizontal, and vertical connections to the exhibitions constitutes a fundamental part of the building. Due to the diversification of museum programs there is a demand for a clear
spatial structure to enable the public to choose which rooms they want to see and which services they want to use. Most museums require a hierarchy of subdivision, whether permanent or temporary, and the relationship between spaces and the nature of the route visitors take will be dependent on the number of steps within that hierarchy. There has never been a consensus about the key issues of circulation, illumination or presentation. Corridors permit the visitor to bypass certain exhibitions and allow the temporary closing of individual galleries, while other concepts favor the direct passage through the exhibition areas, which may be organized sequentially (fig.56,57).

The typical museum experience is one of viewing images in sequences, that sequence being sensed by a walking observer meeting static objects. Gombrich has pointed out that "we do well to remember that relationships matter in art not only within any given painting but also between paintings as they are hung or as they are seen." But whether the path is tightly controlled or
relatively undetermined, our experience of an exhibition always has the nature of a mosaic built up in our minds as the result of serial viewing. Innovative elements of art itself show the close relationship to architectural expression through the demand of innovation in the spatial organization of art museums. The size of works by North American Abstract Expressionists, the spirit of Pop-Art, hyperrealistic objects, Conceptual Art, Video Art have all broken the traditional concepts and require new spaces in which to house them. Thus the architecture of museums is seen as being closely linked to the type of objects and artifacts that they display. The difference between the museum and the container or marketplace lies in the fact that its architecture has to complement and to function as a backdrop for the object on display. Today we seem to be motivated by some sense of authenticity in keeping the objects within an appropriate ambience. Contradictory goals must be met, the architecture must control the environment to enable both, the display and conservation of objects. After an increase of totally enclosed spaces illuminated by artificial lighting only, we find in recent museums much care in the design of openings and roof structures which combine natural and artificial light. The damaging effect of light on a variety of museum exhibits has the most direct impact on the design of the building.

Maybe the whole growth and exploitation of Postmodernism in America can be traced to a large extent in museum projects of the last generation. The museum as institution represents the collaboration of famous architects and wealthy patrons replacing the customary single family house somewhat as a barometer for architectural values and stylistic trends.
I think that a survey of current museums constitutes a panoramic view of the different discourses within which the architectural 'elite' operates. Ultimately, the museum is a synthesis of various significant aspects: culture, politics, mass tourism, the search for figurative value in architectural history, and the necessity for forms and spaces interrelating with the concepts of art, with history, with the public and its collective memory.

NOTES


5) The classification of buildings according to use and their institutional character was widely invoked by the French theoreticians of the 19th century. The model-books of the Beaux-Arts tradition give evidence of this codification. Nikolaus Pevsner's book "A History of Building Types" seems to be a recent response to such a functionalist position, although he makes no attempt to relate this study of types to any historical tradition.

6) E.K. Morris, "Architectural Type and the Institutional Programme", JAE 38/1, Fall 1984, p. 17.

7) The change of the idea of space to modern concepts can yet be seen in the drawings of plans by Durand. Although the type remains, it has been neutralized and converted into a mere geometric pattern, which gives evidence of the deterioration of the classic sensibility for figural space.


15) In my thesis I am dealing with well renown building architects of America that in my mind best represent the range of contemporary space concepts, from maintaining a certain hierarchy and order toward a volumetric disintegration and dissemination.
II.2. HIGH MUSEUM OF ART, RICHARD MEIER & Partners
Atlanta, Georgia
1980 - 1983

58. Axonometric View from Southeast, Preliminary Design.

II.2.1. PROGRAM

The new museum building of 130,000 square feet includes 52,000 square feet of exhibition space for permanent collections and temporary exhibitions. On the main floor are a cafe, a museum shop, members lounge, administration spaces, a board room, and a detached 200 seat auditorium. Educational spaces are located on the floor below the main level with a separate, covered en-
trance off Sixteenth Street. A ramp to three subsequent upper floor levels of exhibition space takes one roughly chronologically through the history of art. ¹) The various aspirations of the new High Museum in Atlanta may be best expressed through a statement of its director Gudmund Vigtel:

"We hoped for a building which would stand out by its design and craftsmanship, draw attention to itself, and beckon the visitor inside to enjoy the displays and activities." ²)

II.2.2. SITE AND CONTEXT

The building is situated on a gently sloping, almost square, corner lot, carpeted in grass behind old trees along Peachtree Street, between the concrete building of the Memorial Arts Center (the former location of the High Collection) and the Presbyterian Church, made out of red bricks (fig.59). This context places the museum in an important location for Atlanta's future development within a pedestrian oriented neighborhood (Peachtree Center,
Colony Square Commercial Complex). The entrance and principal facade are on Peachtree Street, adjacent to the Memorial Arts Center, and are set well back from the street to allow the old treeline to be preserved. The building is closed to the north and 'explodes' to the south, where there is a crumbling of parts rotated from the center outwards (fig.60). The priority of direction leads to a diagonal bisection of the square plan, distorting a classically balanced order. Except for the same building height, very little relationship to the adjacent Memorial center is made. There is no doubt that this museum is laid out as a freestanding monumental object contrasting with its surrounding environment. But the orthodox way, approached in the analysis of modern architecture, the integrated, contextual, versus the unrelated object building, does not appropriately describe this particular setting. Meier sees the design developed out of a series of responses to context. For him, not only were functional, programmatic, and typological concerns important but also the physical, social, and historical context of the city.

II.2.3. TYPOLOGY AND REFERENCES

"The High Museum of Art refers to the typological tradition of the Enlightenment and attempts to resolve the best of the old and modern notions of the art museum." 3)

In fact, a series of precedents can be drawn from his design. Meier's own reference to the Enlightenment is explainable in essence, not in style. Consistent with Enlightenment typology, he considers the content of architecture lying in its form and the overall shaping of its space. In the age of Enlightenment,
Euclidian geometry and Newtonian physics gave transcendent power to the use of pure form, equating it with reason. He asserts the primacy of reason over nostalgia and the picturesque in architecture. Although Richard Meier uses a modernist vocabulary of form, his intentions are much closer to the rational sensibilities of the Enlightenment than to the functionalist preoccupations of the Modern Movement in maintaining faith in the moral superiority of an architecture of reason, architecture conceived as the art of combining unadorned masses.

Investigating the constituent parts, you also find some similarities to the classical prototype: Schinkel's Altes Museum in Berlin. The central rotunda, surrounded by a two-court rectangular enfilade of rooms, is reinterpreted in the dominating semi-circular atrium versus the solid volume of its enclosing galleries. Within the heart of the museum, the memory of the rotunda remains. Meier has trimmed it down to a quadrant - modern incompleteness and fragmentation versus preindustrial wholeness. The former grand staircase behind
the colossal order of columns is expressed by the unique entry sequence of the High Museum.

To some extent the light filled atrium space is inspired by, and a commentary on, the central space of the Guggenheim Museum (fig.61). In the Guggenheim however, the ramp is made to double as a gallery. The continuous ramp, which causes a propelling motion, also involves a disquieting diagonality that clashes with contemplative viewing. In Atlanta, the separation of circulation and gallery space overcomes these problems while maintaining the virtue of a central space for the system of circulation (fig.62). In general, this new museum is a commentary on previous architecture; it is an architecture about architecture. Architectural fragments are taken from the modernist avantgarde, in particular Le Corbusier, by means of a conceptual collage (fig.63). They are placed one next to the other, sometimes grouped and made to collide with more recent ones. At the same time, a platonic clarity is evoked and cast into doubt by the use of freestanding detached fragments.
The perspective expression of its parts is reinforced by skewing volumes within the confines of the structural grid. Despite the variety of space manipulations, the building is mainly a centered, single entity where one always returns to the predominating atrium space.

II.2.4. THE PARTI AND ITS ELEMENTS

The design gains its power by the conflict of two orders. The principal layout is a large square in plan, which is divided into four quarters, three containing equal squares and one carved out to distinguish it from the others. The basic diagram is similar to his Museum of Arts and Crafts in Frankfurt, which is designed to complement a neo-classical villa as its centerpiece (fig.64). But the High Museum of Art takes the reversion to formal order one step further; Meier's generic gallery type has now become unequivocally four-square with one corner removed (fig.65,66).
"One senses a swerve in Meier's work at this juncture, away from what was surely an affinity for Neo-Cubist Baroque towards a more rigorous structural method ..." 5)

These three equal volumes which hold the corners of the building are bridged together to form the galleries. The 'missing element' is replaced by an atrium whose curving glass wall dominates the museum's principal facade as well as the space within. The expressive fourth quarter contains all the public functions: entry ramp, reception area, lecture theater, and the central atrium (fig.67,68). Despite the complexity of its form, the building is based on the simple device of a square rotated within a square. The absent fourth cube, the auditorium, is detached from the main mass and treated as a separate cubic volume (for reasons of security and access). It is placed at a 60 degree angle to the main body of the building and lit by a horizontal opening, marking the stage. The auditorium may be entered from within at the second level where a balcony access allows it to function as an integral part of the museum. However, its main level access is through a partially sheltered plaza be-
etween the convex wall of the atrium and the concentrically curved inner facade of the auditorium.

The changes the project underwent during its design are also quite instructive. In the earlier, collagist operations, structural members followed formal considerations, rather than forming a referential order of its own. In a further elaboration of the basic scheme, two orthogonal axes (slanted 7.5 degrees) were superimposed on the two rectangular axes of the main gallery spaces. These emerged at the outside with skewed stairs and other jutting volumes (fig.69). Thus, the elimination of the intervening canted plane that initially and deliberately disturbed the four-square parti reveals a crucial step (due to construction difficulties) in the rationalization of the diagram toward a more classical layout (fig.70). Also, the orthogonal configuration, first proposed for the skylight of the atrium, was transformed into a radial skylight reinforcing the quarter-circular shape of the atrium. The shifted and partially penetrated skylight volume for the stage of the auditorium, which
might have been a recalling of the general theme, was straightened out so that it can be perceived together with the auditorium more as one, single volume played against the curved atrium enclosure. Finally, the anchoring square entry pavilion at the beginning of the ramp was removed, which critics read as fragment and ideal in a sense that it maintained the memory of the 'exploded' form as well as its master order. 6)

II.2.5. DIALECTIC AND LAYERING

The complexity of the design incorporates a dialectic between 'ordered utopia' and 'disordered reality'. Meier expresses this dualism as a dialectic between frontality and rotation and a semantic confrontation between ideal grid and irregular shapes. There is also a dialectic between solid and void that occurs throughout the building, the entry sequence and interior circulation, the program and the site of the museum. Thus, the entry way disrupts the classical four-square symmetry of the plan, setting in motion a set of turbulent geometries, which successively inflect the architectural order. Inside a highly structured progression leads from public to more private spaces. The public architecture is open, dramatic, and powerful, whereas the galleries are more enclosed and modest in a play of closed versus open, and solid versus void. This distinction is made by the horizontal layering of the exhibition spaces against the four-story high single drum of the atrium (fig.71).

The public areas exist as platforms within the open space volume, as a layer between the two zones mediating between them. The separation of art and atrium and the layered configuration of the paths within the central space al...
allows the atrium walls to have windows which not only admit natural light but also offer framed views of the city. Half the length of the circulation ramp is inside the main atrium space. The other half runs along the outer curved wall of the atrium. Large windows provide framed views, both into the atrium and out to the exterior. Thus, the spatial sequence becomes the most important part, it dominates the museum experience and the works of art. Each floor is divided into a series of concentric vertical layers. It consists of an outer ring of circulation along the circumference of the atrium, the circulation ramp mediating between an inner wall, a quarter circle of void space, an inner band of galleries facing the atrium side walls, and an outer band of perimeter galleries making up the static volume of the main building (fig. 72). (The perimeter ramps of the atrium are compositionally fixed in place by radial beams from the apex of the quadrant to the circumference. The enclosing curtain wall of the atrium is separated from the freestanding structural framework on the outside of the building.) This progressive layering is rein-
forced by the modulation of incoming light.

II.2.6. PATH - SEQUENCE

The whole experience of the High Museum can be compared with a promenade through an architectural sculpture. The invitation into the realm of art begins at the street, best described sequentially. The entry-experience from the street is a processional path (fig.73). The movement toward the building is highly theatrical and well composed along a slowly rising ramp. It reaches out, becoming a ceremonial promenade in preparation for viewing the art within. The diagonal of the ramp anticipates, but also stands in opposition to, the interior ramp, which is the building's main formal and circulatory element (fig.74).

Approaching the building, the museum presents itself as a glamorous object, isolated from its surrounding. The granite base, which holds the support fa-
cilities, forms a horizontal datum for an intricate, pristine, white, object, almost floating over the green lawn. The surfaces are curved, broken to take the light and reflect it in an infinite variety of ways. The square-gridded contiguity of white porcelain enameled panels, used throughout for exterior cladding, has already become a hallmark of Meier's designs. The grid of the facade and the white color of the panels dematerialize the physical nature of the building, homogenizing its plasticity and allowing the contemplation of the forms as abstract entities to be appreciated for their aesthetic qualities alone. Along this path, the asymmetrical configuration is cancelled and you perceive the foreground volume of the atrium in perfect balance with the main L-shaped mass of the galleries. The long sloping ramp along a side wall leads through a freestanding portico that marks your passage from the street into the immediate sphere of the museum. You pass the subscription walls of the auditorium that by its location reinforces the entry and forms part of the processional sequence. As you get to the top of the ramp your path is blocked. If entering from the parking lot in the back, you follow a winding path around the curved facade, passing under the connecting bridge of the auditorium, also moving to the end of the ramp. The piano-shaped, curved element is the main entry and reception area. In order to enter the lobby, you are forced to turn almost completely around to look back across the entry sequence. Turning back again you move past the control desk, located in this low passage zone, to finally reach the central light-filled atrium. From this main level, the interior ramp splits either up to the main exhibition spaces or carves down to the educational facilities and the children's area. An elevator and stairs are alternative means of circulation. The main level of the atrium
serves for receptions as well as for public events. The vertical space of the atrium allows for a remarkable experience of an ever changing view of the same space from the ground- and the top floor of the building, thus contributing to the rich and ambiguous spatial experience. The sense of event that accompanies upward movement through the building is further heightened by glimpses around the partial screening of the gallery walls facing the atrium. Vertical views make for an unconventional way of perceiving and contrasting three different periods of art. Three stories of an inner and outer band of gallery spaces are packed to form one L-shaped volume, facing the central hall, which acts as the beginning and reference point of movement within the museum. The path always turns back to the space of the great hall. The three square 'towers', marking the major exhibitions areas, are naturally illuminated only by a single slot made out of glass bricks. The gallery spaces themselves are conceived as neutral, universal container, which are articulated, rather than enclosed by free-standing panel walls. A non directional grid of columns at twelve foot intervals indicates a fixed structural datum within the contained volume.

But there is also the traditional museum recalled through the enfilade of more discrete, room-like installations. In the permanent collection galleries, rooms within rooms modulate the scale and light of the overall space, thus allowing for a more intimate viewing of the exhibits. Dependent spaces are also modulated by lowered or latticed ceilings. Pierced walls or absent division panels enable multiple vistas and cross-references from the large corner galleries to their smaller collecting links. As you move through these spaces, square window-like cutouts line up framing views or revealing a row of col-
umns receding in perspective. Thus, visitors have, in addition to the changing perspectives of objects, a full panorama of the internal circulation and set views of the atrium and the outdoors.

Finally, the 20th century art galleries are located at the top level, where more flexible galleries may be combined with the generous loan exhibition spaces to accommodate even the largest 'blockbuster' shows. On the top floor, light from the atrium is supplemented by seven pyramidal skylights along the inner perimeter of the exhibition spaces.

II.2.7. LIGHT AND DISPLAY

Light of high intensity falls through the open space as a shadow pattern onto the freestanding white panels, which are set slightly off the load bearing structure to emphasize the screening effect of this partial enclosure. These walls are incomplete and allow daylight to penetrate so that the visitor is always aware of a greater presence, outside the more intimate galleries. One is even reminded of Rococo churches, where light also suffuses and dematerializes all parts of the structure.

The atrium opens toward the entrance, in such a way that the building is radiant during the day with the light reflected on its wall - and at night with artificial light that radiates from its center. (In fact, since the construction of the building, translucent panels had to be installed in the skylights, and neutral tinted glass has replaced clear glass in the atrium skylight to reduce the brightness of light thus enabling a common standard for paintings to be shown in the upper floor galleries.) The general and specific levels of illumi-
nation in exhibition areas are maintained by artificial means; a combination of recessed and track spot fixtures. Apart from its functional aspect, light is a symbol of the museum's role, which is conceived as a place of enlightenment and a center of the city's cultural life. The architect states:

"Light, whether direct or filtered, admitted through skylights, ribbon glazing, clerestory strips, or minimal perforations in the panel wall, is a constant preoccupation throughout: apart from its functional role as a place of aesthetic illumination and enlightened cultural values." 7)

Besides the functional role as museum, this emphasis on directing light and the multitude of surprising views are expressions of a brilliant command of shaping the complexity of space. As the whole building is intended to foster a contemplative appreciation of the museum's collection through a unique spatial experience, it provides a key to its architectural conception.
NOTES

1) The collection ranges from early American Art and French Decorative Arts to contemporary painting and sculpture on the top floor. This encyclopedic approach of acquisitions, similar to an art history book, is typically American.


II.3. AEROSPACE MUSEUM, FRANK GEHRY

Los Angeles, California
1982 - 1984

75. View from Southeast.

II.3.1. PROGRAM

The programmatic requirements presented to the architect were minimal as Frank Gehry states:

"I thought they were going to hang 10 planes in there and that was it." 1)

Since the program was not extensive, he was asked that the building itself should act as an exhibition, supplemented by several large aerospace arti-
facts. Thus, Gehry's task was not so much to build a museum, as to build an advertisement (or billboard) for a two stage plan, to attract enough public interest and to support the ambiguous plans in the fundraising of further development. Gehry's addition is conceived as the first phase of a project that will eventually incorporate the old armory building on its north side as a major part of the future Aerospace Museum (the tight budget would merely have brought the old building up to code). Gehry's 16,000 square feet museum consists of one single exhibition container for aerospace objects and incorporates a small museum shop and a semi-enclosed theater for various media presentations. It was designed to act as a frontis piece for the future Aerospace Museum as a whole, providing a common entrance to the addition and the old armory building. A narrow gap separates Gehry's museum from the old building, and provides a pathway to connect the complex to the IMAX theater and outdoor exhibitions in the north-east corner of Exposition Park. Today's addition is part of a larger scheme of improvements. The old buildings across the pedestrian mall that are part of the California Museum of Science are also to be embellished, with sculptural forms placed in front of them. Thus, the Aerospace Museum has to be considered as a fragment within the proposed overall context.

II.3.2. SITE AND CONTEXT

The Aerospace Museum is located in the north-east corner of Exposition Park, west of downtown Los Angeles, which houses a number of civic buildings including the Memorial Colosseum, the sports arena and a large rose-
garden. Exposition Park itself is an exception within the Los Angeles context. In anticipation of the Olympic Games in 1984, site improvements, including the installation of two new museum facilities, were undertaken. Three museums, Science and Industry, Health and Natural History, and Aerospace enclose a sunken rose garden in a Beaux-Arts balance. But the once understood values of symmetry and grand axes are now forgotten. The actual site for the Aerospace Museum extension is a narrow slot (65 x 200 feet) in front of a former armory, which together will function as one museum exhibition in a later phase of the project (fig.76). In spite of the importance of the site with the neighboring Colosseum, the museum rejects pomposity, and rather places the architecture of the surrounding in question (fig.77). Los Angeles projects an image of urban disorder that has evolved over time through the accumulation of disparate architectural languages, (Spanish Colonial, Art Decorative, Commercial Strip Development, Corporate America), but individually ordered fragments, layered one over the other. Gehry himself points to the
boulevard chaos to explain the impetus for his own reactive architecture.

"I get my inspiration from the streets", Gehry says, "I am more of a street-fighter than a normal scholar." ²)

All his recent projects focus on the manipulation of discrete architectural objects. Geometric solids and abstracted archetypical forms collide to form a single composition; the idea of collision illustrates the fragmented nature of contemporary life and culture. The museum is rooted both in its exceptional urban context and in its machine-like function, creating a suitable environment for the display of aerospace objects.

II.3.4. THE PROCESS OF DESIGN

Like a sculptor, Gehry refines the established elements—pushing and pulling them, colliding and collaging them into a volumetric assemblage. His spatial sequences can only be comprehended in models, which he uses as the primary design method, designing his buildings with a multitude of cardboard models. As study models, these experiments seem harmlessly sculptural. The vast monochromatic surfaces of the volumes of the museum did not make a transition from a schematic model into the built object. In the final architectural realization, the powerful effect of the apparent chaos or violent order becomes evident. In his specific treatment of building materials, Gehry’s work summons up an architectonic poetry out of unexpectedly, cheap materials and ‘unfinished’ interiors. He defamiliarizes these common place building products by presenting them in a new context, to estrange conventional responses. He lays bare the devices underlying the construction process (this is a notion,
which stands well in the regional tradition of the architecture of Schindler (fig. 78), Neutra, as well as the influential ‘case study houses’). Exposed stud and chain-link boxes have given way to more imposing sculptural volumes. The oblique walls are cast in concrete and rest on thick pilasters which are independent of the alignments of the walls above. The orthogonal walls are made of steel frames.

II.3.4. TYPOLOGY AND REFERENCES

Gehry’s Aerospace Museum is an uncompromising interpretation of the museum theme. The references for this addition may be found not in the typology of the museum but rather in the tradition of exposition-space; the concept of creating a container for objects on display. But this museum goes beyond a modernist concept fulfilling the functional requirements of housing an exhibition (e.g. compared to the National Air Space Museum in Washington,
D.C., Hellmuth, Obata and Kassabaum, 1971-75). Furthermore, in his design Gehry touches a broad field, which turns away from the abstraction of form of modern sensibility. Instead of merely copying historical details, he transforms them into an appropriate contemporary mode using minimalist forms and juxtaposing them with materials that defy the norm. He reinterprets and translates historical images and details into a contemporary idiom. A multitude of issues, not restricted to the rigor of signs, involves the whole building to communicate the narrative theme of the museum. In some ways, the interior recalls the authentic environment of aerospace objects like NASA's Johnson Space center in Houston with its facilities for training, assembly and display.

"The building is not only an anthology of images, but appears horizontally like a rocket or a three stage spaceship; in which each stage retains its identity as a spatial unit ....Thus the Aerospace Museum is definitely transformed into a 'flight' of architecture." 3)

Unconsciously one is reminded of airplane hangars and other images related to aerospace, such as exterior stairs and gangways. The sphere on the roof is installed for its formal abstract value of a domed middle, as well as for its associations with the sun, the moon or balloons; illumination at night reinforces this effect. With the polygonal trunk of a pyramid upside down he even questions the force of gravity. This establishes a relationship of a metaphoric nature between museum object and architecture. The message the building conveys is clear: through its forms, materials, and scale it evokes the spirit of the industry and technology it houses. Frank Gehry states:

"A lot of people will read a lot of things into it - that's what will save it from becoming obsolete."
And for himself it is "...a fantasy ... a Baroque space shuttle ..." 4)

All his buildings, no matter what their program, with their stripped down forms and materials, invite clear comparisons with constructivist and minimalist sculpture. The close connections to local artists such as Ed Ruscha, Larry Bell, or Chuck Arnoldi (whose studio adjoins Gehry's in Venice), Ron Davis, and to the New York sculptors Carl Andre and Donald Judd, have had tremendous effect on Gehry's Minimalist attitude, which is expressed in his work. Thus, Frank Gehry offers a potent architectural vision that is visually radical with direct connections to Minimalist, Conceptual, and Process Art, but it never remains a formalist diversion.

II.3.5. THE PARTI AND ITS ELEMENTS

Despite the strong plasticity of its shapes and the complex connections of its volumes, the Aerospace Museum is derived from a simple underlying parti. One single interior space along the narrow site is parallel to the old building. Gehry splits the museum's volume at its middle, breaking it into two main volumetric objects on the exterior (fig.80,81). This leaves a center split, where they clash with one another in a middle piece, forming the center of the composition. This act of splitting expresses Gehry's attitude to the frontal plane used to control plastic configurations. This approach may have evolved from his Loyola Law School, where the central skylight splits apart the rectilinear block of the administration building (fig.79). Thus, disparate elements are rendered into the shaping tension of the whole composition. Out of this tripartite composition Gehry develops an unstable building, neither linear
nor uniform in its shapes. He deals with three-dimensional spatial sequences of overlapping planar layers and the impact of light, which alters its spatial dimensions (fig. 82, 83). Gehry's approach to these problematic site conditions lies in the contrast of large polygonal and rectilinear objects to the existing armory and in creating the illusion of an expanded interior space that appears larger and wider than it actually is. The east wing of the Aerospace Museum is a bland rectangular box. (The originally fan shaped volume was sacrificed to meet the budget.) The only enlivening element on the east of the final construction are the diagonal fire-stairs spilling out into the plaza in front of the octagonal IMAX Theater. On the main south facade a Lockheed F-104 Starfighter, in half take off position, is impaled on a cruciform strut above the hangar door as the ultimate emblem and most sensational aspect of the museum's design. The west segment is an irregular volume, heavily supported by piers and consoles. It is a seven sided polygon, part of which cantilevers over the street with its edges converging toward an ideal underground
center. On the roof of the major volumes the cross and diamond shaped skylights appear to be extruded from the underlying volumes. These two volumes meet in the center where a large vertical window spans the gap, allowing one to look inside the building. The whole building appears as an extrusion of interior space, raised on a rectangular base and tied together by exterior stair-cases on each side of the major volumes. These signal a driving force toward the center where a large, black prism with a square window marks the highest point of the composition. The knife-shaped prism and a metal clad sphere on top of the circulation tower in the back form the culminating middle of a rough roof-scape of superimpositions (fig.84,85). In the back, the ziggurat configuration of the inner circulation as well as the rectangular base in the front tie the two main exhibition spaces together. Within the main frame of the basic composition Gehry freely superimposes pure volumes: The square, the sphere, the cross, the prism, the rhomb are applied with a planned casualty. Thus, the addition deviates from the former armory
as much as possible. The existing museum is a closed brick container for exhibits; the addition is a metal and stucco foil seemingly wrapped around the objects in space. The addition as a whole plays against a symmetrically balanced entrance of the old. Gehry aligns the mass of the building with the east facade of the old and employs a circular entry ramp around the polygon, which leads into the narrowing alley and to the two entrances directly across the small path. An 18 feet gap, separating the new from the old building (also a decision of economy to overcome the requirements of the fire-code of the old) provides a semi-concealed path between the old and the new wing, up a semi-circular ramp and down stairs. The museum plan is surprisingly simple and shows an almost classical configuration of a centerpiece of symmetrical stairs with an elevator in its core and two wings. This compact structure appears as an intact building within the building, clearly accentuated by its ochre color, and its compact shape (fig. 86, 87). One single, loft-like space stretches vertically through the whole central core of the building. It forms
the void, which is heavily punctuated by the horizontal layering of paths, bridges and stairs for visitors walking 'through' the exhibition.

II.3.6. PATH - SEQUENCE

It is an unfortunate fact for the project as a whole that the addition's main entrance is its back door. The back door is situated in the narrow alley, which separates the addition from the red brick armory, and acknowledges the museum's future plan to provide the option to enter either building from one location. The path leads up a generous, massive, circular ramp, which surrounds the irregular volume and the exit stairs to direct the visitor toward the entrance on the backside of the museum. Gehry deflected this corner of the building to create a more generous, funnel-like entry sequence. Coming around this three-dimensional anchor to the north side, the metallic sphere comes into focus, rendering the back of the building as spectacular as the
front, which faces the pedestrian mall. A terrace along the west of the armory, which replaces formal steps that previously led to the rose garden in the west, connects the old and new building on a common new entry level. The old and new museum are entered from this raised level, which appears to be a form of 'piano nobile', where the entrances lie across the separating gap (fig. 88). A bridge on the second floor will function as internal connector between them. The entrance as central element is marked by a glass and steel structure, which allows views from different levels into the narrow alley and over the entry path. A continuing walkway, passing the entrance, leads to an outdoor exhibit area and to the IMAX theater, which hosts huge screen presentations of aerospace film materials. There are also two different scales implied by the contrast of the hangar entrance for the airplanes in the front and the pedestrian entrance in the narrow back. Once you enter the building through the lobby with its low ceiling, this impression of different scales is reinforced. Some expectations of the interior are undermined by the complex
play of exterior volumes; the inside is one large industrial space. What was perceived from the outside as a ziggurat fragment, forced between two solid volumes, turns out to be the main circulation piece, a tower with symmetrical stairs, leading to three viewing platforms and connecting bridges into the volumes of each side (see fig. 86, 87). On the inside, this tower possesses its own sculptural features and acts as a self-sufficient element inflecting the composition. With distinct and rather disjunct configurations of volumes on the exterior, the interior space is continuous, with diagonal spatial relations used as reinforcing devices. One lands on the viewing platform of the first floor mezzanine. An immense high space opens up with the light falling through the clerestories above and the huge window in the middle, framing one's view out into the park. Objects of the 'sky' are suspended from the ceiling, heavily populating the tightly layered interior space. From the entry level one can either climb up the terraces or move down to view further exhibits and service facilities (a small museum shop on the ground floor). Another circulation route crosses horizontally the second level from one end to the other, connecting the vertical circulation in the middle, and allowing the continuous penetration of the whole length of the exhibition space. Therefore, by using the exterior staircases and opening the fire escapes for entrance and exit, there would be the possibility of a cross movement through the museum (fig. 89). An abundance of viewing platforms as well as stairs, ramps and bridges weave around and about the installations, allowing for ever changing perspectives of the objects and diagonal vistas across the interior space. In sharp contrast to the carefully wrapped outside surfaces, literal deconstructions, especially of the roof structure, tilted planes, transparencies returning
as reflections and perspective distortions all interfere with one another (fig.90,91). Unfortunately, through the intervention of exhibit designers, a theater is located in the polygonal volume, and a space frame was built in with black out panels despite Gehry's protest. Thus, what might have been the most interesting and spectacular experience through its funnel-like shape is turned into the darkness of a planetarium, shaped independently from its bordering outside walls. This separation of a discrete area also interferes with and contradicts the overall impression of the otherwise fluid interior space.

II.3.7. LIGHT AND THE PERCEPTION OF SPACE

The ability to manipulate light has always been a special concern for Gehry. Natural light enters in form of a variety of sometimes hidden, sometimes visible sources; from two, 20 feet high skylights, which are crowning the major
volumes, and from the central, 45 feet high window, punched into the triangular 'tent' in the middle. The open space is flooded by these industrial-scaled skylights and carefully set openings. Through these you can see several parts of the outside colliding with the interior of the building (fig.92,93). The roof, with its skylights, peaks, prisms, and different shapes, represents Gehry's strategy to define new relationships of scale between the parts of the building and the objects on display, which is based on the combination of heterogeneous fragments. Such illusions and the contradictions of reversed perspectives force the viewer to question what he sees and to alter the definition of reality. Here, the observer is denied the relevance of his memory. The spectator seems to find himself inside a spectacular machine, and the space appears to be solely perceptible by the relativity of his senses. Thus, it is not so much the representation of artifacts and a centered order, but the representation of a unique perception that motivates Gehry's composition. He is known for a pragmatic, precarious architecture of discontinuity and disrup-
tion, of tilts and violent skews. The achieved effect is consciously controlled, thus expressing an overall homogeneity, which raises his work above the 'kitsch of randomness'. Comparing his work with canonic, classic balance and order, his architecture seems to be associated with chaos and disorder. The disorder of Gehry's building results from the exploitation of different categories of programmatic irony, the collision of the old building with the new addition and the explosion of a traditional building type into separate elements of sculptural complication. The agglomeration of disparate forms and finishes, of awkward connections and collisions of materials and textures not only acknowledges but responds directly to the ad-hoc character of the 'real' American city and we can conclude that Gehry's work suggests an alternate route in search for an architecture that is appropriate and relevant to its time and place.

NOTES


5) The circulation tower was once in the shape of a peak-up airplane. See earlier plans in: Frampton K., California Counterpoint: New West Coast Architecture 1982, IAUS 18, Rizzoli, N.Y., N.Y., 1982.

II.4. THE OHIO STATE UNIVERSITY CENTER
FOR THE VISUAL ARTS ¹
Columbus, Ohio

II.4.1. COMMENTS

For the design of the new center of the Visual Arts there was a limited competition held in 1982-83. In a two-step process five final teams (local/national architects) were asked to submit their final proposals. I am going to analyze two competition entries. Whereas the spatial concept of Eisenman/Robertson's winning scheme, which is being built, can be matched by experience, Graves' entry remains a proposal. A comparison of these two projects puts in evidence the different developments of Graves and Eisenman, who had a great resemblance in their early works (they actually worked together on competition projects in the early 60's), but diverged from the start - Eisenman toward syntactic considerations - Graves toward a language of allusion and metaphor. I chose these two entries, because their visions, though essentially similar on a diagrammatic level of design, express their roles as ideological protagonists of current architectural thought. ²

II.4.2. COMPETITION PROGRAM

The program specifies that the Visual Arts Center is not only a repository for traditional arts but also asks for accommodations to house avant-garde and experimental arts including new art forms with laser, computer, and video
technologies. The program asked for galleries, an institute for advanced studies in visual arts, a cinema center, performance spaces, an art-library, and supporting facilities to form a complex center for the visual arts. The gallery spaces had to be designed specifically to encourage the most intense involvement and interchange between artists, students, and audience.

"The center will serve as a research facility where artists, students and the public will work, study, experiment and interact. It will provide a nationally recognized model in the arts for the true integration of teaching, research, and service."  
Edward M. Jennings 3)

"The center is dedicated to support activities, whose concern is to engage and delight the sense of sight and to communicate by means of visual symbols and images."  
Jonathan Green 4)

The competition program, though comprehensive, considering the site as an intrinsic component of the design, left decisions for certain priorities, connections and interrelationships open to the architect's proposals.

II.4.3. SITE AND CONTEXT

The Ohio State University Campus was developed in the 19th century in a park which was landscaped in the English Country Style. Its relation to the City of Columbus is established by a specific grid for the campus, shifted off the grid of the city (12.5 degrees). The main Oval, developed after the turn of the century, with the library as the focus and terminating point of the main axis, gave the campus a symbolic as well as a physical center and intensified its character as an academic enclave within the city (fig.94). During the last decades the university developed, especially on its periphery, in a more site
specific manner; intermingling both grids (Fraternity Row, major athletic complex and stadium) but thus losing its integrity by conforming to the city grid pattern (fig. 95).

The competition offered two possible site options located within one quadrant at the main street entrance, where the art, art history, and theater departments are already concentrated. The task, asked for in the competition program, was to encourage contradictory aspects to close the Oval as the last of successive additions and to open up a gateway to the University. 5)
NOTES

1) Unfortunately, for the analysis of these projects, I have to rely almost entirely on the documentation of the competition entries (Ohio State University Competition, Rizzoli, N.Y., N.Y., 1984), which leaves many areas unexplained.

2) The deliberations of the jury, revolving mainly around these two entries, may confirm this observation.


4) Green, J., Director, University Gallery of Fine Art, "Housing a Program: Architecture as Logic, Architecture as Symbol", A Center for the Visual Arts. The Ohio State University Competition, op. cit., p. 18.

II.5. CENTER FOR THE VISUAL ARTS, PETER EISENMAN / JAQUELIN ROBERTSON, TROTT & BEAN, Architects, 1983 - 1988 1)

96. Model, Aerial View of Preliminary Design.

II.5.1. PROGRAM

Four galleries form the heart of the design. In addition to the galleries, the Center consists of classrooms and studios, an underground cinema, a performance space, an art library, office and administration spaces, a bookstore and a small coffee-shop molded in the poché of the 'armory' facade. The Visual Arts Center sets the series of galleries at a right angle to the campus grid cor-
responding to the city grid. All main accommodations are loosely arranged along this gallery with perpendicular access from the main circulation spine. In addition to indoor exhibition spaces, the site is to be used as a work space and exhibition area for works that range from traditional sculpture to 'earthworks' and landform art. The new Center of the Visual Arts is intended to present an architecturally significant setting to the whole university campus. In Eisenman's design it is not so much the program that generates the layout but rather the open-ended matrix of volumes that lays out an infrastructure and provides guidelines for further transformations. Neither the glass spine, nor the earth covered studios and performance spaces, nor the ironic quotation of the former 'armory' imply the nature of work to be undertaken here. A quote from the competition comments clearly shows his attitude toward iconographic considerations:

"... it is not meant to be solely a repository for traditional art. We believe that our proposal represents an aesthetic that is constant with this program. At the same time it responds sensitively to the history and context of the campus, and will enhance its surrounding in a powerful, but not overpowering manner." 2)"

Besides the 'armory facade', he interprets semantic allusions in a very abstract, almost infrastructural way. Thus, he leaves a wide range for iconographic relationships for future developments, which have to be established by the actual occupation. Nevertheless, this follows the architectural logic of the project by excavating and recalling various aspects of the site and former conditions of the place of the new Arts Center.
II.5.2. SITE AND CONTEXT

It was a major concern for the architect to respond to the history and context of the campus and to enhance its surroundings in a powerful manner. The link between the two sites is an integral part of Eisenman's scheme, comprising the remote setting on 17th Avenue with a strong presence at the Oval and the main university axis from the library across the campus. The design superimposes both geometries, the Columbus grid and campus axis, on the Oval (fig.97,98).

"In this way the building projects an image of belonging both to the campus and to the larger context of Ohio." 3)

His main axial device is to extend 15th Avenue as a new pedestrian path into the university campus through to College Road. Besides serving as a direct entry ramp for the Visual Arts Center, this vector is meant to project much further; it is conceived to align the new entry and 'armory' tower with the
main tower of University Hall all the way to the flat end of Ohio State Stadium on the northern edge of the campus, where the Columbus grid is picked up again (see the 'red line' drawn across the site plan). The cut of the perpendicular circulation spine is extended to the south by an outer curved path of the Oval as a tangential straight entry route into the Arts Center which is continued by the circulation spine anchoring the scheme even more in the double geometry of the site (*fig.99*). The new crossing defines the intersection of the university grid with the city grid and is meant to symbolize the intersection of the arts with the community. By the marking of symbolic axes and the extension of important pedestrian routes, the design is laid out to be experienced from students and visitors on their way to and from the campus.

"*The Center will become a focus of interest and activity within the campus; the route will become an event in itself."* 4)

The new center, essentially an infill project, concentrates architectural episodes and incidents at a city's density whose precedent is directly drawn from
a structure of town-planning. The dynamism of the design is carried visually by the structure of two rotated grids through all plans, sections, and elevations, which in turn establishes a three-dimensional matrix (fig.100). Eisenman states:

"The gridded passage way can also be seen as a metaphoric microcosm of the urban grid and even of the larger gridiron pattern of roads extending throughout the State of Ohio." 5)

In the comments to the Visual Arts Center, Jaquelin Robertson points out the analogy to the cartographic surveying grid which lies across the Mid-West. It provides in an intensified form a structural skeleton of the design. Thus, the geometry of the path and galleries, and the partition of volumes is assumed to be underlaid by a greater man-made order. This global approach to the site is in opposition to the architectural context of the campus, which presents a series of object buildings in an arcadian setting (an interpretation picked up by Graves' design). The contradictory diagonal of the railroad tracks in the typical town of the Mid-West, which implies the contrasting scale of the wider region, may be the most striking analogy to Eisenman's attempt to address vast 'site-specific' relationships. Ultimately, it might be questioned if these complex interrelationships to a 'larger order' can be perceived visually without having an explanatory text, or if they remain mainly an expression on a conceptual level.

II.5.3. EISENMAN'S THEORETICAL CONSIDERATIONS

In Eisenman's work the influence of language theory and structuralism
(Claude Levi-Strauss, Michael Foucault) as well as his vital interest in modern art, literature and philosophy were pronounced. The influence of Noam Chomsky 6), especially his theories of syntax and generative grammar, led Eisenman to the attempt to reconcile linguistic theories with architectural design, to draw analogies between language and syntactic aspects of architectural form. 7) Thus, he made an analogy of the concept of 'deep structure' to primary architectural bay systems by turning them into a complex architectural syntax, assuming that the meaning would be contained entirely in its form. He maintains the virtue of space and the notion of modernist 'objecthood' by denying scale and site. Thus, his complex structures are set in space, considered as a neutral field. In an abundance of planning diagrams he demonstrates the geometric manipulation of primary geometrical systems (line, plane, and volume), which illustrates the process of creating form and its resulting meaning (fig.101,102). Seeking for an appropriate architectural expression, Eisenman argues that Modernism in its purest state suggests a displacement of man away from the center of the world, where he loses the possession of a center and the belief in his own rationality and perfectionism. 8) Whereas in his early transformations 9) he started from simple configurations to develop them into a more complex structure, he now reverses this process by means of 'de-composition' to express broader cultural implications. Thus, in opposition to his earlier projects, which worked out from a supposedly cultureless object, the operation of decomposition works in from an acknowledged object culture.

In general, the large scale of his recent projects has changed the nature of his theoretical investigations. He especially changed his attitude toward the site to
what he calls an 'architectural text' by suggesting that object and text are the same thing. This 'text approach' also gains predominant importance for the parti of this museum. One recognizes in his recent designs that his architecture is about telling stories, about the site and the relationship between nature and man-made environment. But this shift toward a narrative architecture raises inevitable questions, whether fiction can inform architecture, and furthermore, whether it can be translated into a commonly shared conception of space and form?

II.5.4. TYPOLOGY AND REFERENCES

Internally, the Visual Arts Center is organized on a split spine running through the whole building. The galleries are situated along an inclined path and all accommodations stem from that circulation device. In some way, the Uffizi in Florence can be considered as an earlier typological precedent by its
similarity of organization.\textsuperscript{10} There, a series of exhibition rooms are organized along a corridor from which the galleries can be entered separately. For a different concern, the Oakland Museum (Roche, Dinkeloo), and Hans Hollein's Museum in Mönchengladbach (1972-1982), which are not only museums, but also double with their landscaped terraces as parks within an urban context, can be considered as examples of a similar landscape approach. Besides 'Land-Art', which is defined to operate within a broader context of landscape moves, a more direct architectural influence may be found in structural theories of organization, as in Le Corbusier's project for a hospital in Venice, (1963), where a functional diagram was translated into a square network of a two-dimensional grid.

A recent similarity to Eisenman's method of superimposing an abstract geometrical order on the landscape is the competition winning scheme for the "Parc de la Villette" by Bernhard Tschumi (Paris, 1983). As in Eisenman's drawings, one is reminded of diagrams, which are altered and overlaid in a series of elaborate and complex processes \textit{(fig.103)}. There he translates the whole program into a functional, and formal matrix, which might be also inaccessible for the uninformed visitor perceiving the objects.\textsuperscript{11} As in Eisenman's earlier design for a perimeter block in Berlin (IBA competition), the conception is derived from an architecture of connections to relate and resolve elements of several existing and former orders \textit{(fig.104)}. In the Berlin housing project Eisenman invented foundations of a 'historic epoch' and took the Mercator grid to create a three-dimensional matrix of walls and paths. These were superimposed on the existing urban structure to confront them with the Berlin Wall, which runs adjacent to the site.
Similarly, in the Visual Arts Center, vestiges of an old order (the armory building) are preserved and resurrected, in contrast to the city and the campus grid. This contextual approach toward an archeological remapping is developed even further in his ongoing Art Museum Project for the California State University in Long Beach. There, the underlying matrix of the design derives from the superimposition of six maps of the area (geological, political, and scientific maps), which are equally combined into a collage of fragments. The resulting patterns are meant to reveal the cultural development of the site over the course of time.

II.5.5. THE PARTI AND ITS ELEMENTS

In order to provide the multiple roles set out in the program, Peter Eisenman's design is laid out as an architectural event in a dense context of older buildings. It provides dynamic sequences of spaces along and perpendicular
to the main circulation spine rather than a single, self-contained, and centered building. The relational network renders the perception of a unifying element, or a center as a single entity, impossible. The elements can only be understood as they relate to the system. The massing concept of the building is that of an 'archeological earthwork' (Eisenman's expression), whose elements and volumes respond to the conceived patterns of the site (fig.105,106). The carefully graded series of volumes with their sloping roof planes suggest that they have erupted out of, or have partially sunken into the flat landscape of the site. The scaffolding of the intersecting grids inscribed on the plan provides a matrix of complex relationships, which connects all the arts buildings. These patterns structure a series of links between the various entries and functions of the buildings. The matrix is marked and reinforced by pavement patterns, incisions, and changes in grade. On the 17th Avenue side, a double row of trees runs on top of descending / ascending roofs parallel to the city grid and the newly established axis into the campus.
These landscaped volumes, calibrated to the height of surrounding buildings are figured into the changing vistas of the routes of entrance and passage along the perimeter of the site. They are perceived in changing perspectives as fragments of an inscribed order drawing a sharp contrast to the solid volumes and horizontal datum of the old buildings, because these volumetric landscapes, housing various facilities mainly below grade, lack any sense of frontality or facade. The main pedestrian routes follow the new east-west axis into the campus, the major circulation spine of the new scheme is located perpendicular to it, cutting a path between Mershon Auditorium and Weigel Hall by means of a minimal intervention into the older buildings. Although stemming off an shifted axis, the actual volumes of the new construction acknowledge the right-angle datum of the adjacent buildings and the direction of the campus grid. Thus, the Visual Arts Center interlocks with the existing buildings on the almost square site: It spreads out perpendicular to the spine, filling the empty spaces in a play of figure and ground (fig.107). The shift of the two geometrical grids is articulated by the square framework of the main circulation set against a utility network on the roof tops, which follow the right angle datum of the main volumes. In contrast to the competition entry where there was no obvious attachment of axial direction and articulation of elements, in Eisenman's redesign the layout of the complex is clarified (compare: fig.96,108). As we see, the whole geometry of the design is developed by a superimposition of city and campus grid pattern. To this, an 'archeological layer' has been added by re-establishing a fragment of the destroyed 'armory' building once on this site. The 'armory', torn down after a fire in 1958, is the most obvious device in the scheme's archeological meta-
phor (fig.109). It becomes a key element in the design in the partially reconstructed form of the old 'armory' building, shifted from the western edge of the site slightly to the south. Thus locked into the system of aligning axes, it becomes the front piece and principal facade of the new center. By resurrecting part of the former heavily rusticated, solid brick walls, and recalling the castle-like image of its various towers and turrets along the outline, Eisenman confronts the campus with a piece of its own history. Also, parts of the armory's authentic foundations are excavated as a continuous foundation line, enclosing an outdoor sculpture garden. The architects see the role of the armory as both totem and real gate.

"It both recalls the past in modern terms (and for purposes of the future) and postulates the continuous transformation of memory in the inventions of art and architecture." 12

The resurrecting of the old 'armory' facade, can be interpreted as the acceptance of architecture's responsibility for meaning, as a semantic text read by the public. This semantic device is rather surprising in an otherwise very ab-
stract scheme. In his revised design, the former continuous armory facade is split and transformed on various locations, thus intermingling with the structure of the abstract matrix behind it. This move clearly intensifies the character of a fragmented 'archaeological recall' and strengthens its appearance as an entirely new construction (fig.110). But it is hard to conclude from the model if, by means of a brick shell, the new Art Center will tie formally into the smaller scale of the buildings surrounding the Oval, or if it is just a violent masking of the new construction and the solid volumes of Mershon Auditorium and Weigel Hall behind it. The segment between the new entry path and the old axial main entrance to the campus is projected to be planted with a grove of buckeye trees from High Street to the west end of Sullivan Hall, where it intersects with the cross axis of the new Visual Arts Center. The square plant pattern, stemming from the old campus axis, constitutes a major interference of the former presence of the campus on the surrounding city. By the suppression of the main visual axis toward the university library, the
Oval becomes a figure that can only be experienced from inside the green. We can conclude that the new Center is essentially based on the functional idea of a corridor between two busy streets. The spine and part of the gallery-roof is made of translucent square glass panels in an aluminium scaffolding. With its glass ceiling as the only apparent natural lighting device, the geometry of the corridor ramp and the galleries are reinforced. The spine is split into a straight hallway and a interior sloping ramp, which connects the galleries and provides a path underneath the entrance lobby to an underground cinema. This end point is marked on the outside by a sloping roof plane picking up the shape of the Oval as well as bordering the south entry ramp of the center. This platform is also reached by a route through the grove of trees, passing the 'armory' facade and leading to a set of semicircular steps. From this point, you can view across the Oval whose shape echoes the elliptical form of the common green. The spine, the backbone of the scheme, which terminates underground and is thus anchored to the Oval, also expresses a centrifugal force with its ascending ceiling toward 17th Avenue, where it is cut off at the street's edge. It provides a straight exterior passageway connecting both streets and allowing a glimpse of the galleries and the activities within. But there is no obvious relationship on 17th Avenue to what the termination of this major pedestrian path will correspond to.

II.5.6. PATH - SEQUENCE

There are various ways to gain access to the new Visual Arts Center along the 'pinwheel' of major pedestrian paths bisecting the complex (fig.111). Pro-
ceeding from 15th Avenue up a gentle ramp, one enters an exterior court in front of the lobby and administrative part of the Center, which are separated by a continuing, semi-enclosed exterior walkway. The forecourt is marked by a square-gridded metal trellis, the preceeding superstructure of the main circulation spine. From the upper vestibule, stairs lead down to the lower lobby, linking the starting point of successive galleries with a bookstore, a small café (molded into the multifaceted shape of the armory fragment), and the tunnel to the film center. Fellow studios are connected both to an exterior work space and the sculpture yard, and to the Ohio gallery by a main level balcony facing the exhibition space.

The interior ramp, a part of the major spine, connects the four galleries, which are divided by freestanding, vertical panels (fig.112). In the north-west corner of the 17th Avenue site a performance space with its own lobby and reception foyer is located between the main- and experiential gallery. The art library and storage facilities in the east are almost entirely under-
ground. Here part of a non-directional grid of columns is shifted along an imaginary cut, which runs perpendicular to the circulation spine to further articulate the sloping volumes on the outside. And the abstract structural pattern of sloping planes and ceilings is juxtaposed on the neutral, rectangular floor plan beneath.

In general, the definition of space is a result of the pre-established three-dimensional abstract matrix. For the shaping of space, Eisenman applies similar compositional strategies for the site, namely, to impose an abstract order on the given geometry of simple volumes. Thus, the interior spaces are defined after the overall armatures have been assembled, and are articulated to serve and to enhance overall relationships. The experience of the interior is characterized by complex connections of interlocking spaces. A precedence for this spatial animation may be found in the works of the early Modern Movement. Especially Le Corbusier, Eisenman's acknowledged starting point of syntactic considerations, developed prototypical forms of complex spatial relationships through a free sectional articulation, made possible by the exploitation of modern technology (Villa Baizeau, Carthage, Tunisia 1927). But, whereas Le Corbusier had new forms of space in mind, Eisenman articulates formal systems, which result in a similar spatial experience (fig. 113). Here, the tension created by ever changing views in this essentially open space is expressed through the play of regular versus irregular shapes and patterns, respectively, by the collision of different grid systems. Eisenman employs a contextual method based on dualistic pairs like solid and void, and regular versus irregular. He lays special emphasis on the relationships between the duality of directions and the plurality of architectural elements.
such as columns and walls, and the opposition of planes and the depth of field. Thus, the identity and definition of spaces are articulated by the collision of different grid-systems and elements of orientation, and interlocking portions often develop their own integrity, caught in the principal matrix of the composition.

In general, the scheme is rooted in a broader context and invested with various formal ideas of a cross axial system of passage ways. Unlike his early projects, it is not only an exercise in syntactic transformations, as a means toward its own ends, but it is also conceived as an integral element of the campus. It will affect the entire quadrant of the university by altering and establishing relationships to the wider context. Although conceived in close consideration of the parameters of the site, the project does not reiterate existing conditions, but rather contradicts them by setting up its own internal logic and order.
NOTES

1) As stated in the jury report, the actual building concept had to be developed and completed in cooperation with the appropriate university institutions. There is little documentation on the forthcoming design (See: SD 3/85), which at the present stage is under construction and should be completed in the near future. Therefore, my considerations have to be done on a more conceptual level of the design.


3) Eisenman, P., ibid., p. 110.

4) Eisenman, P., ibid., p. 111.

5) Eisenman, P., ibid., p. 112.


8) Eisenman, P., "Post-Functionalism", editorial, Oppositions, 6/76.


10) For this interpretation see Jaquelin Robertson's own indication in the commentaries on their design. ibid., p. 113.


II.6. CENTER FOR THE VISUAL ARTS
MICHAEL GRAVES / LORENZ & WILLIAMS INC.
1983

114. 17th Avenue, Elevation.

II.6.1. PROGRAM

The differences between Eisenman's and Graves' scheme are not merely of aesthetic or stylistic predispositions, but lie more in their differing approaches and philosophical positions. Graves' ideological position, the retrieval of architectural figures from the past, is based on the notion of institutional contiguity, conservative values of contextualism, and civic symbolism. Refer-
ring to the building typology of the museum, he incorporates the main func-
tions in one static, self-sufficient building along 17th Avenue. It contains all
galleries and working spaces, as well as accommodations for film and perfor-
mance. On the 15th Avenue site, Graves places the art-library in a separate
building. To define an entry gate, he locates, along the extension of 15th Ave-
nue, two symmetrical towers across the main entry axis. Graves assumes that
any reasonable demands for flexibility and future development (as stated in
the program) can be met within his very strict typological composition, and
he is not concerned that his 'Babylonian' facade might be incongruous in the
context of the art center program that emphasizes the relationship between
art and future technology. He interprets the program in his own way to make
a strong symbolic gesture:

"The center is designed to allow the visitor to identify with, and orient to the
programs contained within." 1)

II.6.2. SITE AND CONTEXT

The principal choice of the site is quite similar to that of Eisenman / Robert-
son's scheme, namely to occupy the whole plot on 17th Avenue and to recog-
nize the importance of a strong visual appearance at the main entry on 15th
Avenue and of the connection to the Oval (fig.115). But Graves interprets the
context of the site and campus in a different way. Thus he sees the context of
the campus in a strictly architectural way as a series of object buildings with-
in a fragmented overall composition. For his own proposal he takes up the lo-
cation and geometry of the surrounding university buildings and incorpo-
rates his Visual Arts Center into the overall scheme to complete the site or to add toward a more comprehensive whole (fig. 116). Along High Street, 17th Avenue, and College Road, he picks up the outline of the existing structures and aligns his major volumes to form an imaginary perimeter for the termination of the North-East corner site of the campus. Thus, the expanse of his main building is predetermined. Graves proposes the Fine Arts library (a secondary element of the competition program) to occupy the north-west corner of the site, adjacent to the main entrance of the campus. It stands separately, articulated as a fragment of the major part of the complex, to pronounce its presence and significance on this visually important place. Graves resolves the contradictory requirements of the program by giving definition to the shape of the Oval. He articulates the main campus entry by mirroring an existing building across the main axis. Thus, in the tradition of the other buildings, surrounding the green, the library is paired with Page Hall facing the Oval (fig. 117). It is also an appropriate counterpart to the main library,
the focal point of the Oval. The inflected front facade of the proposed library, following the shape of the Oval, enforces its character as fragment of a larger whole. The main volume is positioned tangentially to the Oval, thus acknowledging its dependency on the broader context. The orientation and entrance lobby of the art library is formed as a semi-attached tower, which is doubled by a free standing construction, symmetrical to the main entrance axis, and serves as an all-campus information kiosk. The two towers serve both as outer termination of the Oval as well as formal entry gate to the campus, framing the view across the common green to the main library. The significant articulation of exterior spaces and their connections not only enliven the public experience of the site but also tie the buildings together. He treats built artifacts and artificial landscapes as having equal potential to define space for the intervention on the site (fig.118). Peter Carl remarks on Graves' emphasis on the dialectic of the building and the landscape:

"The aim is to discover a Gestalt for the building such that it will retain its own coherence and yet cause the site to act as figure." ②
To achieve these relationships, Graves worked with two types of scale, on one hand, with the scale of the context that establishes a dialogue with the campus, and with a second, smaller scale that relates in detail to the human figure and occupants of the proposed museum.

II.6.3. GRAVES' THEORETICAL CONSIDERATIONS

The most fundamental source in Graves' earlier work is the early Modern Movement and Le Corbusier. For Graves the plan has figural qualities, which he superimposes on the Corbusian system - whose chief vehicle is the free plan - an open, three-dimensional cage. Every element is a clue for syntactic complexity and metaphorical qualification. The dialectic between solid and planar elements and the structural grid becomes a basic theme for Graves, not only in plan, but also perceived in space. It dominates the whole plastic organization, thus exceeding the spatial complexity in the work of Le Corbusier. The rich sectional manipulation of his early work opened up an investigation into the complex nature of space. Currently, however, Graves seems to be more concerned about figurative aspects of form, which depend less on the spatial expression than on its surface appearance. The wall takes the place of the frame as main organizing element. In his museum proposal space is no longer continuous, but made up of discrete spatial figures, bounded by walls or colonnades. The occupied, solid spaces of the thick walls are read as poché, figural space is seen as carved out of a solid mass. The facade becomes a relief with thin layers of frames and ornaments built up or peeled away. He very consciously (and this distinguish-
es him from mostly superficial eclectics) places his elements of a restricted, architectural vocabulary of archetypical icons into a two- and three-dimensional composition. In a multitude of referential sketches, as a sort of shorthand reference, he develops suggestions of order, transformations and scale-shifts, and distinctions of passage and rest. And he combines these with other themes to create a fully elaborated composition. 3) As a clear reaction against the abstraction of Modernism, his concept of figuration involves not a direct imitation of nature, but rather the reproduction of a series of conventional archetypes (wall, column, door, arch, pediment). Reintegrating traditional norms, appealing to the collective memory and to a metaphorical syntax, he derives his architectural language in part from the logic of structure. But we also see that Graves is mainly concerned with its visual presence (my conclusion from working drawings of similar projects). Thus, the moldings of space by the shallow recess of the walls are devoid of a structural necessity, and refer only to their experiential quality. 4) Fragments of architectural motifs are assembled to create a balanced whole, often by means of symmetry, and a tripartite division of vertical surfaces (fig.119, 120). As we have seen, Graves tries to transform volumetric configurations by the typological quotation of premodern concepts of space. As a method of composition he employs the principle of Cubist collage, which is a characteristic of his style. As Alan Colquhoun has pointed out, Graves' buildings become 'bricolages' of recognizable figures, complete with their historical conditions. 5) Thus Graves seems to be caught between the reaffirmation of architectural tradition and, at the same time, the questioning of its validity. However, there is the question, whether cubistic fragmentation can provide
the basis for a more constructive system forming a coherent unity. Nevertheless, it is not only the method of composition which unites Graves' work. Whether he uses the language of Cubism or of the academic tradition, he creates an architecture out of primary forms and offers an intense interpretation of architecture itself as well as its relation to nature and cultural conditions.  

II.6.4. TYPOLOGY AND REFERENCES

Graves' typological references are almost explicit quotations of the past, and can be traced throughout the continuous development of the museum as a 'temple for the arts'. If you compare his scheme with the Yale Center for British Art, (New Haven, 1969-77) where Louis Kahn was concerned with the specific nature of the institution, you will find similar references to Enlightenment typology. While Kahn exploited a functionalist aesthetic, but
went beyond utility, Graves' representation of the museum acknowledges context while creating another realm within it. Informed by the same typological sources, the ties to precedents reach much further back. Compared with the paradigmatic design of Schinkel's Altes Museum in Berlin (1823-1830), Graves' parti seems to be almost a literal transformation. In his design one of the original two courtyards of the prototypical museum plan is filled by a central gallery and looks like a conversion of a symmetrical scheme (fig.121, 122). Referring to historical precedents, Graves notes:

"This similar spatial attitude creates a context in which the exhibits can be mutually understood." 7)

The stoa-like colonnade is reinterpreted as an arcaded passageway, leading to the oversized portal of the new center. Graves also transforms the typological reasoning of Schinkel's symbolic core by turning the 'Pantheon of the arts' into a rotunda for internal circulation. The dominant round form of Graves' centerpiece may be equally derived from the Public Library in
Stockholm (G. Asplund, 1920-28) for its powerful exterior appearance (fig. 123, 124). Graves' primary connection to the Humanist tradition is also reinforced by the employment of a static hierarchical order and the centralized organization (a notion of sacred and profane space) as a key element of orientation. In general, by his reliance on the institutional character of the museum, Graves expects his architecture to translate directly into culture. He wants to represent a cultural condition in his search for an architectural language, but renounces a 'utopian vision', which goes beyond a culturally accepted meaning. In this sense Kurt Foster notes:

".......it remains ultimately deprived of the very power true architecture exercises in the making of culture." 8)

Therefore, there remains the question whether self-contained structures, proclaiming the validity of historic models, are able to inform a design in such a literal way, especially when the boundaries of art are rendered open-ended and experimental, as stated in the program.
II.6.5. PARTS AND ELEMENTS

As we have seen, the main complex along 17th Avenue is organized around a central rotunda crowning the ensemble. It is highly visible from the Oval or coming from the campus gate along the proposed, axial colonnade, which is cut between Weigel Hall and Mershon Auditorium. Its dominance is clearly reinforced by its location in the center of the building marking the intersection of the main axes, as well as by its primary shape and size. The rotunda may house various public programs, including concerts and large gatherings, by joining the otherwise clearly segregated facilities within the building. It is thought to be a pivot for artistic exchange and a public forum for students and visitors alike. Thus, the rotunda links the various galleries to the east and the educational facilities to the west, which surround an exterior sculpture courtyard. The almost independent west wing incorporates the Institute for Advanced Projects for the Visual Arts. The technology laboratory, equipped with highly advanced facilities, is located in the basement level with a double-height area which opens to the first floor. Symmetrical viewing balconies allow visual contact with the working studios. At the same time the public can view the activities along College Road from above without interference. With a clear notion, defining a subcenter, the Institute's conference room on the third floor is placed in the middle of the symmetrical configuration of the west wing and is marked by a steep rising pyramid-trunk which forms a skylight for the assembly room (fig.125). The necessary shipping and receiving area is located adjacent to the galleries and fills the gap between the Mershon Auditorium and the otherwise bilaterally symmetrical layout of the design,
thus adapting to the irregularities of the site. All spaces are well defined by walls and columns or piers which result in a consistent ordering system, enforced by its sectional proportions and lighting. Ceiling moldings, pilasters and other decorative elements articulate and refine the spatial enclosure. Rows of columns form wall-like screens to layer space and to focus axes. Secondary facilities and staircases are placed in intermediary zones, separating the main spaces. They almost seem to be carved out of thick walls as a poché space, which adds to the solid and massive appearance of the overall character of the Visual Arts Center (fig.126,127). In the same way, the round shape of the central circulation drum is inscribed into the otherwise rectangular masses of the administrative offices and the scheme as a whole.

In contrast to the strongly articulated public spaces for general use, the exhibition and performance spaces remain relatively simple, designed to be transformed and shaped by the artists and their employed media, which would provide the required flexibility for future developments. This naturally rais-
es the question if such a strategy, compared to the otherwise very distinct character of the institution of the Visual Art Center suppresses the appropriate expression of an open-ended attitude toward art. Yet, perhaps the very juxtaposition and contrast to a traditional, almost classical environment would draw special power to unknown and yet not anticipated forms of the visual arts. In general, the shaping of external volumes prescribes at the same time the internal order and its relationships.

The library, the other freestanding element of the project consists of two rectangular floors, set back from the curved wall facing the green, and is crowned by a clerestory similar to the Institute for Advanced Studies, thus defining another hierarchically organized subcenter. This notion is reinforced by the treatment of the curved facade. A central freestanding arch marks a path leading up an attached symmetrical stairway to a roofgarden, which allows views across the Oval as well as to the museum in the back. Even if the main building, with its static, almost symmetrical layout, has a
dominant and strong presence on its remote location at the edge of the site, it adapts to the irregularities of the adjacent buildings, filling the gaps with secondary volumes. And together with the other fragments of the project, the library and the gate, the proposal attempts to give a more comprehensive and united appearance to the whole quadrant of the campus.

II.6.6. PATH AND SEQUENCE

Access to the Visual Arts Center is made both from 17th Avenue and from the main gate to the campus along a perpendicular formal axis flanked by a double-row of arcades masking the volumes of the existing auditorium buildings (fig.128 a). A massive L-shaped arcade runs along the east of the library building toward the newly reopened entrance of Mershon Auditorium, thus reaching into the formal entry passage to the main complex of the Visual Arts Center. These interfering passage ways clearly mark pedestrian patterns on
the site, and link the gate and the library with Mershon Hall. They also tie the
Weigel Auditorium to the new Arts Library and to the Campus gate. The en-
tries themselves as well as the whole symmetrical facade are highly articulat-
ed through the shallow layering and multi framing of architectural elements.
Passing through a vestibule, you land in the central drum, a round, sky-lit
volume with two balcony levels, which forms the termination of the entry se-
quence (fig.128 b). The drum is also the central piece from the inside, a gath-
ering place and a place of orientation to the various activities springing off
from it. But the actual center is occupied by a void, a circular hole, repeated
by the shape of the the skylight above. Two-story high columns are placed in
a circle, almost in the atavistic form of archaic prototypes, in the middle of
this vast space. The path leads from the rotunda through an axial sequence of
small volumes (and the main public elevator lobby) into the central perma-
nent collection, which can also be viewed from the balcony level (fig.130,
131). The permanent collection, located in the center of the galleries, is
meant to establish a historical context for all shows. This is an argument Graves uses to justify the whole character of his design, which is certainly not neutral but attempts to establish a strong, representational context to relate to the various activities of the visual arts.

Here the path branches off to the Ohio and regional collection to the left and to the neutral volume of the experimental gallery to the right. All the galleries on the side as well as the main gallery can be subdivided into smaller areas or opened into one large volume. The main gallery is the termination point of the axis from the rotunda and houses large, temporary exhibitions. It receives filtered daylight from a skylight as well as exhibition lighting from a suspended grid. Symmetrical stairways in the east along the circumference of the rotunda bring you up to the mezzanine level, and in the west, down to the basement, which is designed for general public access to the large film center and the performance space, located under the side galleries. Special collection galleries and other service facilities in this axial arrangement follow the basic layout of the main floor. All studies and related facilities are oriented to College Road and to the main Oval, linked by two corridors for exhibits, thus enclosing the courtyard within the complex.

The second floor reached from the rotunda includes besides administrative offices and a balcony, looking back into the Rotunda, a restaurant that divides the aerial space of the galleries on a mezzanine level thus separating them in discrete vertical volumes. The insertion of a mezzanine level in the configuration of galleries enables controlled lookouts through punched out windows and balconies, down into the galleries. Through the necessary difference in ceiling heights it is also used for an articulation of the spatial sequence on the
gallery level. Thus, the complexity expressed in section, allowing a rich visual interference, goes beyond a bland adaption of Beaux-Arts-schemes, and contributes to the multifarious experience of the Visual Arts Center.

NOTES


3) Unfortunately these sketches are not documented in publications about this project. See: Graves, M., "The Necessity for Drawing: Tangible Speculation", AD 6/77, pp. 35-44.

4) Here clarity in the use of surface materials is equally important to reinforce its representational mode.


6) His use of a specific vocabulary resembles a cultural 'nostalgia' for historic forms, which I consider specifically American.

7) Graves, M., "Comments of the Design", A Center for the Visual Arts, The Ohio State University Competition, op. cit., p. 73

PART III

CURRENT SPACE CONCEPTS

AND THEIR CULTURAL IMPLICATIONS

*postmodern space* • features • layering • screens and rooms within rooms • primary, secondary spaces • positive, negative reversals • juxtaposition, superimposition, interpenetration, collage • fragment, demi-forms, inflected parts • scale shifts • geometrical relationships • asymmetrical symmetry • rotation and translation • *ordering principles* • conclusion •
III.1. POSTMODERN SPACE

If we consider the current discussion of Postmodernism, it seems that today's architecture focuses primarily on forms and their meaning. Postmodernism is concerned with the meaning and styles of buildings in reference to the individual and to the problem of popular expression. Current practice has to be understood as a critique of the limited possibilities of expression promoted by the abstract communicative devices of the language of modern architecture. As a premise for current attitudes I have already indicated the limited sensibility for exterior space in America, which favors an interpretation of space from the inside. By referring to selected buildings and projects, which offer a range of actual concepts, ideas, and models for the conception of space, I have tried to give evidence of the present status of architectural principles. For the purpose of clarification, I want to discuss several of their characteristics to draw more general conclusions about design principles which affect the making of space today. These characteristics are chosen for their individual architectural expression; they represent only a small, subjective selection of a variety of relationships, which contribute to the construction and shaping of architectural space. In this process, an attempt is made to illustrate problems of space, spatial geometry and principles of order.

The retrospective character of our time not only generates the appreciation of different space concepts, but also implies the recapture of necessary skills, so that the making of space becomes a conceptually and perceptually identifi-
able element of architectural composition. It has been my intention to identify some constituent elements of architectural space: The treatment of the dialectic of inside/outside, and solid/void, which reveals current attitudes toward space, and the investigation of part/whole, which gives evidence about recurrent themes of syntactic relationships of spaces. These classifications are not meant to be a description of rules for constructing space, but are considered as a set of convictions drawn from my analyses of current architectural practice.

III.1.1. FEATURES OF CURRENT SPACE CONCEPTS

III.1.1.1. Inside / Outside

Reconsidering the history of architecture, it seems that its whole development is marked by the gradual dematerialization of the clearly defined, enclosed space, which can be directly detected by the relationship between inside and outside. Accordingly, the articulation of the three-dimensional reality of architectural space has also changed. The different space conceptions either laid emphasis on the single confining surface elements, expressed in the flat treatment of facades, walls, and slabs, or relied on a plastic treatment of space, where single planes are seen as an integral part of a complex spatial structure. 1) The transition between inside and outside presents a decisive element in the constitution of space. One of the persistent dogmas of modern architecture has been the necessary continuity between both spheres: The inside
should be expressed on the outside and free flowing space should be seen as the appropriate means to establish an uninterrupted unity with nature. One essential purpose of the interior of buildings is to enclose space, to separate the inside from the outside, while the outside calls for a complex relationship to its environment and nature. As Venturi points out, the contrast between the inside and the outside can be a major manifestation of the architectural contradiction (fig.132,133).2) And Oswald Mathias Ungers in "The Janus Face of Architecture" acknowledges a similar theory: A building not only has to communicate its interior content to a neutral exterior field, but also has to accomplish different programmatic forces, imposed from the outside.3) As man structures the reality of his experience concentrically, one can also argue that architectural space has to be organized in an analogous way, including an articulated relationship between interior spaces, building, site, and urban context (see fig.8).

We find a third influence in the American tradition, which, in its response
not only to climate, its attitude toward nature, and in its certain kind of sociability, has created a variety of intermediate zones between the private, interior space of the house, and the public realm of its environment. Today's superimposition of spatial configurations and the way secondary spaces are arranged in and out of exterior walls, may thus be traced back to American vernacular architecture. Not only the openness of the 19th century American house, but also the widespread use of verandas, porches and bay windows suggest a direct parallel to recent attitudes. However, if one looks at the reality of suburban America, the progressive transition from inside to outside is restricted to the form of the house itself and does not participate in the shaping of urban space. (The consequence in today's suburbia is a uniform patchwork of front lawns without visible demarcation of one's property.)

III.1.1.2. Layering

The classical concept of layering was conceived to reinforce the illusion of perspective, to structure the depth of field, and to modulate light and shadows from fixed observation points by means of a dramatic setting. In contrast to the fixed proscenium or frontal plane, layering in modern architecture is not conceived as a dialectic between the plane and the depth of the spatial field. Moreover, the syntactic use of layers generates a system of implied spatial oppositions, tension versus compression, and centrifugal and centripetal forces, to draw relationships between their confining elements. Interpenetration, the way two or more volumes overlap to produce continuous flowing
movement, and the *layering* of space are stressed in current practice in order to define a new complexity of spatial relationships, and to redefine a specific location full of affluent experiences. The sensation of successive layering is based on an insistent foregrounded frontality, comprising the full depth of space. At the same time, secondary and tertiary facades are perceived within the depth of field, and space seems to fluctuate between the thin surfaces of screens and the three-dimensional structure of layered space in between. The sensation of passing through such spaces is not one of a simple transition, as in a sequential arrangement of rooms, and today, though the configuration may be built up of well defined spatial arrangements, it rather involves an alternate interplay to comply with or to contradict spatial expectations. Ergo, the configuration of layered space is not only focused on the ambiguous reading of its surface elements (what has been described as phenomenal transparency), but also implies the gradual unfolding of these complex space settings by passing through, along a more or less consciously structured 'promenade architecturale'. My sequential descriptions of the spatial configurations of the case studies reveal the current importance of perception of space in time. As we have seen in Eisenman's Visual Arts Center, the passageway along the major spine suggests a moving, shifting focus, and the whole building reveals itself as one passes along this axis. Graves, on the other hand, draws major design decisions from the completion or emphasis of the axial layout found throughout the building. Meier's High Museum is entirely focused on the diagonal approach and its duality with the perpendicular inner circulation. Similarly, in the design of the Aerospace Museum, not only the spiral entry way, but the whole interior is laid out for the comprehension of space by an
ever-changing view. This understanding combines the relative reading of frontality with the rich experience of exploring space in time to reconstruct the full complexity of space in one's mind. In terms of structure, one of the most persistent devices of postmodern space making in America is the open frame, defining an ambiguous space partially interrupted by planes and solid masses. The balloon-frame is a system of construction whose lightness and adaptability give the designer great freedom, and allow him to treat structural matters in a circumstantial way. American Postmodernism shares these characteristics of 19th century American domestic architecture with the Shingle Style, and thus we find spatial as well as structural familiarities. Today, openness and transparency are made possible by the use of the frame, while their complexity and ambiguity are made possible by the fact that the frame can be manipulated at will. Without this form of construction, an architectural language like that of the 'New York Five' in the 70's, which depends on a blurring of the distinctions between what is real and what is implied, and between necessary structure and free articulation, would hardly be conceivable. Using this system, which provides so few constraints, allows the structure to be treated as a 'pure idea', as a self-referential sign. The regular grid is freed from positivistic and utilitarian premises, characteristic for the Modern Movement, and is used to establish a geometric frame of reference to play against. Boundaries or edges are left undefined, cancelling a rational perception of order. The transition between inside and outside is achieved by means of layered screenings or by shallow recessions of the facade. Losing its density, the wall or wall fragment, frames and modulates space. As we have seen in the High Museum, layers are used to shape spaces, in a dialectic of
open, fluid space versus the more enclosed and intimate spaces of the galleries. The detached atrium facade acts as a final screen to provide framed views to the outside, thus reinforcing a theatrical effect. As in his private house designs, Meier infuses a dramatic sense into the dialectic between open (public) and closed (private) spaces by means of vertical and horizontal layering, and by the interweaving of load-bearing structures and detached planes of partial enclosure.

On the other hand, Gehry's design illustrates another approach, conceived as a universal container: His horizontal layers are used to structure and divide the volume. He provides an abundance of individually shaped platforms and bridges to invite the visitor to perceive the space from a variety of different locations. Together with the central circulation tower, the slabs are conceived as a substructure to redefine the neutral box illustrating an internalized space ready to be explored through the dynamic motion of the viewer.

III.1.1.3. Screens and Rooms within Rooms

An architecture conceived as a configuration of intermediary places which are clearly defined, implies a break from the modern concept of spatial continuity and its tendency to erase every articulation between spaces. As an example, Charles Moore, in his own house in New Haven (1966), has inserted three vertical shafts or tubes of space, not only to direct light from above into the interior of the house but also to transform the universal space of the box-like shelter into a complex configuration of connected but independent spaces
(fig.134) These were inserted to link and to manipulate the open plan in the vertical dimension. Thus, the spaces inside are defined by a secondary framework providing views, scale shifts, and the localization of the equipment, which reveals their specific function. This renovation can still be considered as a prototypical design, not only for its spatial attitude, but as a comprehensive solution to maintain spatial unity and to redefine a particular place within. In general, the shapes of Moore’s buildings are subordinate to the employment and the organization of various spatial types. I have already mentioned Moore’s emphasis on place, and this literal layering of concentric spaces corresponds to his preoccupation for interpreting the house as a subjective ‘center of the world’ for its occupants. His one-family houses are especially marked by the sense of protection from the outside and the replenishment of independent significant elements on the inside. As Moore states:

"The places we perceive, the forms which we see, the way in which we move in our spatial environment, shall stimulate the human memory through its reconstruction of interrelations between space and time." 4)
By the use of 'rooms within rooms' (the four-poster is considered a modern interpretation of the aedicula, e.g., Sea Ranch Condominiums, 1965), alcoves, and 'saddle-bags', all clearly defined by prismatic shapes, he redefines certain areas for specific use. But foremost, these are means to provide an accommodation of centric space-cells within a larger, neutral space container (fig.135). Gehry uses, for his own house addition in Santa Monica, an inversion of Moore's notion of redefining space. Here the central aedicula is turned inside out; a cage of sheet-metal planes is wrapped around the major volume of the old house. He thereby complicates space as an end in itself until it reaches the point of becoming symbolic of itself (fig.136). This system is self-referential, like any aesthetic system calling attention to itself on the level of rhetoric, not of function. The radical deconstruction of the wall, exposing the layered veneer-structure, incorporates the enclosure into a comprehensive imminence of the formation of enclosed space. His particular employment of chain-link fences, suggesting volumetric space configurations,
marks zones of transitions; as do the entrance foyer for the Temporary Contemporary Arts Museum in Los Angeles, 1983 or the entrance of the IMAX Theater next to the Aerospace Museum. By means of a multitude of screens, he utilizes a stage-set architecture to define a particular place through the depth of space, conceived as a multilayered, differentiated field of vision. The theatrical effects obtained by the Piazza d'Italia (1975-80), a design by Moore and Perez Assoc., embody another prime example of the spatial comprehension of architecture through the use of layering and screens (fig.137). The highly rhetorical form of the Piazza is structured on a series of concentric screens of columns, which are continued in the floor patterns, radiating out into the streets. They combine a 'baroque centrality' with the asymmetrical spine of these layering elements, and thus literally create an architecture conceived as a stage-set, providing a backdrop for the 'gathering actors' of the Italian community of New Orleans. As on stage, this architectural set is entirely designed for its appearance - architecture interpreted as a simulacrum of reality. Graves, in his central rotunda, which is itself a unique space element resting in the thick poché of secondary rooms, inserts an imaginary void into its focal point, running from the circular skylight down to the basement, articulated by a round of columns and a floor opening that circumscribes its shape.

III.1.1.4. Solid / Void

The gradual dilution of confined space, characterized by the opening of the inside, goes hand in hand with the progress in building technology and the
dematerialization of the building's mass. The consequent disintegration of the solid wall in the field of 19th century industrial architecture acts as a metaphor for the vocabulary of modern architecture. Today, the skyline of modern America symbolizes the structural transparency of early prototypes by its logical successor, the curtain-wall. At the same time it signifies not only the replacement of the traditional plasticity of the wall but also the dilution of confined space. Hence, with the dematerialization of the exterior wall, resulting in a membrane skin which encloses an artificially conditioned universal space, the spatial plasticity of the wall and its transition between inside and outside have been neglected. In general terms, the dematerialization of the wall may be characterized by spatial attitudes toward its bordering mass, expressed through the relationship between solid and void.

In premodern architecture, the tension caused by the accommodation of the intricacy within the unified exterior appearance, was often bridged by the mass of the solid exterior wall itself. In modern architecture, the mediating role of the thick wall has been replaced by the idea of the free facade, enclosing the rigid system of a universal space. Programmatic or spatial needs are accommodated by installations, independent from the exterior skin. Thus, the separation of the facade from the body of interior space leaves the exterior wall free for two-dimensional iconographic information, independent from its spatial arrangement. We can conclude that the attitude, architecture conceived as a 'decorated shed', springs from an essentially modernist bias, which still influences architectural critique. As the shape of architectural space is totally dependent on the surface of its confining elements, the tension of inside and outside may be resolved by the changing thickness of the bor-
dering mass (fig. 138). Translated to the advances of modern technology, exterior and interior surfaces may become detached, thus permitting an intermediate zone by the layering of successive screens, or the placement of secondary spaces within the poché of the delineating mass (fig. 139). Venturi illustrates in simple plan diagrams how inside and outside space can be contrasting in shape, position, pattern or size, creating an intermediate zone, a secondary space, whose expanse and shape is determined by the contour of the bordering spaces. If we look, for example, at Eisenman's underground Cinema Center, we recognize that the outer shell responds to the context of the site, insofar as it adapts the elliptical shape of the Oval and aligns it with the building's main axis, whereas the rectangular box of the underground cinema follows solely the internal matrix of the scheme, leaving an empty zone that mediates between the different geometries.
III.1.1.5. Primary / Secondary Spaces

The recognition of residual spaces lying between inside and outside varies, but it seems that in current concepts there is an attempt to regain those shaping possibilities which were neglected through the progressive dematerialization of enclosure. This concept includes Kahn's preferred distinction between 'served' and 'servant' spaces for a new strategy of direct spatial organization. Residual spaces with varying degrees of openness occur at all architectural scales, and the distinction between dominant and leftover spaces depends on the primacy of regular shape (in the same way as we read the duality of figure and ground). Surface enclosures not only contribute to the independent shaping of space, but also are an important factor for filtering and modulating incoming light, as well as for framing relationships and views to the outside. In this respect, the work of John Soane represents an important precedent, where secondary spaces are not limited to configurations in plan, but are used for unique modulations of the section. The ceilings are made out of false domes and vaults to shape volumetric spaces independently of structural elements by the invention of a 'free section'. In modern architecture, the wall, the floor, or the ceiling, having pledged allegiance to the shape of a room, functioned as a sole partitioning mass in space; moreover, each took on the function of skin. Although the common practice of using suspended ceilings to accommodate technical ducts compensates for the loss of poché space, it normally does not take advantage of its inherent quality to shape space independently of the building's structure. Peterson, in his article "Space and Anti-Space", focuses on the restrictions of modern space, but
makes a case for re-establishing volumetric space as a medium of architectural design. In order to find a synthesis between contained space and the surrounding spatial field, he defines positive space as a void 'in-between form' with its opposite, negative space, as a void which is 'in-between space', separated by the walls.

"Negative space is the specific design of a physical solid to solely serve the formation of space, both inside and outside itself. It is a condition of multiple appearances, looking solid and being empty." 5)

Thus, his definition of negative space complies with the condition of secondary or residual space lying within the poché of the mass. Opposed to the functional separation of space through zoning, a hierarchical distinction, based on the classification of spatial sequences, allows various arrangements and interpretations of functional relationships in plan as well as in section. Incompatible functions can be adjacent to each other, depending only on the nature of their appearance or on their spatial connection. The use of secondary space involves the awareness of both the negative space, within the poché of the building, and the positive space, formed by the poché of the building, apparent as the representation of a thick wall. For example, in Graves' museum design, the former shallow layering of the facade is flattened into the wall surface itself, and the wall gains thickness so that space is made up of discrete spatial figures. The negative, figural space, is seen as carved out of solid masses to define space in terms of solid and void, figure and poché. Graves uses this principle throughout the building. Not only is the circular shape of the rotunda mediated by the poché of secondary spaces, but also the axial sequences throughout the main spaces are structured by the employment of in-
intermediate zones. These devices give the impression of an individually shaped progression of rooms and are enforced by the articulation of suspended ceiling moldings. Here the structural reality is based not on fact, but on appearance.

III.1.1.6. Positive / Negative Reversal

Compared with that of other cultures, American architecture is characterized by a space-negative tradition, which means that figural preference is laid upon the interpretation of the solid mass in contrast to the reading of void, concave to convex shape (the inside/outside comprehension of a sphere; appearing as contained space/container, gives a simple view of this phenomenon⁶). In modern Western architecture, a building is placed within natural space, and that space is defined by the outer surface of the surrounding material. In the traditional city, space appears to be cut out from the material forms around it and is defined by the inner surfaces of these forms. The space in between is defined spatially and functionally. The relationship between space and form is the reverse of that commonly created today. Crucial to the appreciation of inner/outer appearance of urban patterns is the double-image of the figure and ground. Nolli's plan of Rome (Giambattista Nolli, 1748) gives a clear example, in which the civic spaces (exterior spaces combined with exposed plans of civic buildings) appear as a figural void within the ground of the surrounding urban poché (fig. 140). It designates the spatial field of the mass of the buildings, which articulate and define exterior space. This figure ground approach to spatial design is an attempt to visualize and to
reverse the properties of solid mass and void space. Thus, the objective is a clarification of the spatial structure and relationships of architectural space. In analogy to Gestalt theory, this graphic tool provides positive figures, space perceivable as object. Ergo, exterior urban space can be considered dominant over interior space and functions. In opposition to the modernist comprehension of space, current architects recognize the different spatial forces of inside and outside and often mediate this difference with 'residual', 'leftover', 'poché', layered, or lined space. This notion leads to an ambiguity between, and sometimes a reversal of, positive and negative space, solid and void. One does of course read the volumes as positive and the space as negative, and this ambiguity causes the reversal, or double meaning which is of special interest and signifies this particular contextual approach (fig.141). Graves placed his library on the edge of the site. Positive space as an operational tool appears to have molded the volume of the building, whereas the reading as void reverses their relationship.
Eisenman reacts in the same way and inflects the outer cinema shell toward the Oval of the campus to promote the continuous reading of the campus green as an elliptical figure. We can conclude that the design of volumetric figural space depends on the appearance of thick masses, which allows the shaping of spaces independently of each other. The reconsideration of the properties of the wall, besides its own figural expression as form, promotes an architecture of figural space. Implicit in this argument is a reaffirmation of premodern ideas of confined space and the reintegration of the expressive possibilities provided by the thickness of the wall, the shape of a space, and the nature of enclosure. In general, the rediscovering of traditional space concepts must not be seen as a complete revival of classical thought. The rupture from the original context and the reinsertion in a contemporary context charge it with different meanings.

"So consumption gives way to accretion. With the preservation and rediscovery of codes of the past going hand in hand with the employment of contemporary codes."  

Gestalt psychology demonstrates that context contributes meaning to a part of a configuration; conversely, a change in context causes change in meaning. The present inclination to reaffirm historical continuities in architecture re-establishes the symbolic potential of three-dimensional form. The discovery of premodern principles also means an opportunity to develop new complex formations. Today, the concept of dominating, visible, confined space is expanding the range of architectural intervention, thriving on the interpretation of space within a network of superstructural relationships.
III.1.1.7. Parts and Whole

In my case studies I have discussed contextual issues and their consequences on the specific design solution; now I wish to concentrate on general issues concerning the internal structure. This process involves the examination of parts of a built form, their articulation as identifiable units, and the relationship of these to the totality of the building. In general, any formal structure can be analyzed in terms of elements and their relationships. Principal alternatives are that the unit is the whole, the units aggregate to form the whole, and that whole achieves a higher level of unity than an aggregation of different units. The classical tradition, always aiming at a synthesis of the whole, implies the use of closed forms and a codified syntax to assemble its parts (fig.142). Considered as a formal system, the integral whole is achieved through highly nested levels of formal organization. The classical canon structures the orderly arrangement of its parts, providing normative schemata for subdivisions, and sets of motives in fixed relations, which are based on conventions. It would exceed the confines of this paper to enter into the particulars of the classical arrangements of parts, although today's reconsideration of classical architecture has to be seen as a reflection on the classical tradition, and in some way, today's attitudes toward formal structure have to be seen as a commentary, based on these conventional principles. Although modern architecture has proclaimed its break with history and tradition, not all means of a structured organization of space have been abandoned. Only the denial of a differentiated planimetric syntax, as in the International Style, reduces the notion of space to an indifferent space-container, which can also
the denial of a differentiated planimetric syntax, as in the International Style, reduces the notion of space to an indifferent space-container, which can also cause a mute architectural expression. But today, architectural composition is marked by rich syntactical relationships, which characterize complex spatial configurations. A major factor for a comprehensive understanding of spatial attitudes is the emphasis on the formation and joining of internal spaces as well as their overall expression as a whole composition (fig. 143). Foremost, the zones of transitions are of special interest; sudden gaps and interpenetrations occur and circumscribe ambiguous limits of regions or entities, breaking up the building into syntactic fragments. Often there are no empty buffer spaces that neutralize the tension between dissimilar geometries, skews or shifted grids. Although originating from basic ordering principles, each ordering gesture gains a state of relative autonomy, revealing differences within a common syntax. This kind of order is based on the reading of differences and achieves its consistent meaning through the interpretation of adjacency.
III.1.1.8. Juxtaposition, Superimposition, Interpenetration and Collage

These terms circumscribe the ways different parts are arranged with various degrees of ordered coordination, ranging from mere spatial neighborhood to a regular composition of elements, which may enforce or contradict a unitary reading of the composition. Superimpositions of various elements and the contradictory relationships of colliding orders can be interpreted as a variation on the idea of simultaneity, as expression of cubistic principles. Although opposed to the traditional comprehension of a sequence of rooms, superimposition is by no means limited to concepts of modern space. In classical architecture, not only does the superimposition of pilasters imply spatial depth within a flat plane, but also the superimposition of giant to minor orders expresses contradictions in scale, which address different relationships of elements to parts and of parts to the whole composition. The juxtaposition of elements contrasting in size, yet proportional in shape, characterizes also a primary technique of monumentality. Whereas in traditional architecture the employment of different orders is a means to achieve a unified whole, today it is used as commentary on architecture itself. By the shallow layering of facades, disparate elements of the architectural vocabulary, transformed in shape and size, are used to draw attention to the architectural code itself. As we have seen in Graves' elevations, abstract figures are shifted in scale and consciously placed to reveal their specific meaning. At the same time they fit, by means of a bound system of proportional relationships, into a balanced composition of frontal planes. The meanings of formal relationships are assembled not only through their appearance, but also through their relation to
memory and convention. Thus the collage represents in some way the process of modern perception and the process of individual thought.\textsuperscript{10) As I mentioned earlier, the collage provides an immediate analogy to the reality of heterogeneous urban conditions with all its different superimpositions, and the renewed interest in the dimension of history seems to immediately require such a comparison.\textsuperscript{11) Furthermore, an inclusivist architecture is better able to deal with the contradictory realities of today than a reduced utopian approach, and the collage has the virtues of permitting a pluralist view, to be put in antithesis to minimalism and the modernist tendencies toward homogeneous universalism. Today, through the principle of collage, spatial groups are superimposed, differentiated through the use of shifted axes and grids, and tilted at slight angles to each other; fragments of space and surface remnants remain as the main figures of the ground plan. This stimulates an ambiguous reinterpretation of space. Comparing these understandings with the previous case studies, we see that all projects apply in different forms to such a description. For example, Eisenman's museum develops its structure fully out of a basic gridded matrix and the superimposition of a series of shifted axes, which in turn collide, modulate, and transform the principal subdivision of the site. Graves takes his highly structured buildings and collages them into the site according to axial considerations, which do not always align with the old structure. The spatial structure of the Aerospace Museum is based on the collage of interpenetrating and overlapping volumes, creating ambiguous zones of encounter. And the High Museum follows an 'explosive' arrangement of scattered and rotated parts, which are balanced by the plain gallery-volumes.
III.1.1.9. Fragment, Demi-Forms, and Inflected Parts

The \textit{fragment}, as a general attitude, promotes a critical relationship between the real and ideal conditions of form. If one is familiar with the figural or iconographic totality of a fragment, one is able to reconstruct the whole as an imaginary visual image. Thus, besides the symbolic discontinuity, a new perceptual continuity can be set up through the inherent qualities of the fragment. In general, we can conclude that a fragment can be interpreted in a two-fold manner: As part of a former whole, it can be seen as a quotation of this unity, and then it comments on its futility through its incomplete state. Instead of discussing the fascination the fragment had in previous times, I want to discuss it as an independent design gesture, although the 'archeological' quotation of the former armory facade in Eisenman's museum might recall this kind of retrospective and romantic allusion. As a fact it embodies a half-statement, which recalls a former syntactic entity, but also denies its ordering integrity.\textsuperscript{12)} On a different level of explicitness, Graves' layout for the Visual Arts Center can also be read as fragment. It simultaneously acknowledges unity on a building scale, yet reveals a fragment on an urban scale, which in turn is completed and is thus inseparably connected with the givens of the site. Here the scattered pieces are used to complement an implied order. \textit{Demi-forms} have their roots in the classical iconography of the niche and the grand semi-circle, a device commonly used to inflect toward a focal point, an axis or a monument. In their incompleteness, they force the viewer not only to add on the missing parts - to complete the eroded figures (square, circle, ellipse) - but also to transform them in his mind, which implies an ac-
tive role for the viewer. For example, the design of the High Museum in Atlanta is based on the fragmentation of a principal four-square parti with one corner removed. The resulting L-shaped galleries are complemented by a semi-circular atrium, which in turn recalls the pure form of the rotunda type. Similarly, inflected parts imply the fragment and demi-forms, by referring to something outside themselves. These are all directional forms, immediately addressing the duality of solid and void. As we have seen in the designs for the Visual Arts Center, convex shapes were used to address the figural primacy of the campus Oval.

III.1.1.10. Scale Shifts

Architectural scale refers to the dimensions of elements in respect to the size of the perceiver and his visual perception. The apprehension of scale is dependent both on one's impression and knowledge, comparing the physical size of elements to the human scale, or to traditional elements based, on archetypical, cultural and personal memories.

"The perception of the size of a space or a building is the product of a Gestalt - a ratio between a physical object and the mental impression conveyed to an observer about the size of that object in relation to himself." 13)

Whereas the International Style often neglected this mutual affinity between man and the syntax of architecture, recent developments focus on this conventional reading, not only to re-establish traditional dimensions of size, but moreover to juxtapose traditional shapes of different sizes as a form of estrangement. This phenomenon depends upon convention and applies not only
to architecture but equally to the visual arts; Pop-Art gains its very power by taking common objects and changing their context or increasing their scale to achieve uncommon meanings. The paradox of scale, also expressed in many of René Magritte's paintings, is typical of scaleshifts. So may the visual force, which Gehry draws from his museum addition, be interpreted. His use of fragmented pure volumes, devoid of any scaling device, determines not only the contrast between old and new and the overall spatial impression, but also its iconographic interpretation. Graves uses similar devices in the hierarchical treatment of spaces as well as in the composition of the facades.

III.1.1.11. Geometrical Relationships

As an ordering idea, geometric relationships are a means to determine formal results. I have already dealt with the constitution of parts and their arrangements as an operation of adjacency, juxtaposition, interpenetration, superimposition, and collage; the investigation into geometrical connections will give evidence of the formal manipulation of parts and their comprehension as a whole. Today, special attention is paid to composition, conceived as a technique for expressing meaning through the spatialization of architectural elements. This includes the use of pure geometries, such as the square, the circle, and derivations of these primary forms to provide a datum of internal order. In previous times, even the parts themselves were regulated by a fixed ratio of their dimensions. Assuming an absolute beauty, Palladio, for example, lays down seven ideal proportions for rectangular rooms.¹⁴) And Le Corbusier's 'Modulor' has to be understood as the last comprehensive at-
tempt to regulate the relative size of parts by a proportional system, which is based on the Golden Section. Today, we see the reintroduction of 'regulating lines' to determine a proportional coherence of parts. The use of basic means of composition, such as the tripartite division of the facade and the regulation of rhythm and repetition by fixed bay-systems, can also be discovered in recent designs, and this use points to the dominant discourse of a wider neoclassical revival of design principles. If we consider the almost literal transformation of the traditional museum type in Graves' design, we are not surprised to find a treatment of volumes and geometrical relationships similar to the classical prototype. There the symmetrical facades are assembled in a nested A-B-A pattern, strictly obeying a fixed proportional rhythm of stressed and unstressed elements. Also in Gehry's addition, though seemingly showing an arbitrary assembly of volumes, we find a tripartite structure, horizontally as well as vertically, which in turn is relativized by singular gestures and the fragmentation of primary shapes. Here the balanced composition is achieved not by symmetry but by the disposal of equivalent volumes in a loose structure. As we have seen, the references are never complete. By the fragmentation of iconographic types, founded on habit and social convention, they suggest manifold levels of significance and ambiguous meanings. The grid, in particular, developed from the repetition or subdivision of pure geometries, is a primary ordering device. Here the grid is not so much used as a structural device or as a signifier of an undifferentiated spatial field\(^\text{15}\), but foremost as a referential sign.

Le Corbusier introduced the singularity of the gesture in relation to the grid. As in the free plan, the grid is a means by which homogeneous space becomes
a contextual presence providing a referential structure and counterform for free gestures in space. The grid, as a frame of reference to a system of non-load-bearing walls, which in turn define the specific volumes, introduces a dialectic of general versus specific, and of structural versus space-defining elements. The High Museum picks up on this duality of load-bearing structure versus enclosing planes. In the case of the atrium, the actual curtain wall facade is detached from the structure to provide a further screen for the transition between inside and outside; in the main galleries, freestanding rows of columns almost contradict the spatial impression of the partitioning walls to draw special attention to the different kinds of underlying order. By the distinct use and special refinement of joints (or missing joints), Meier not so much focuses on structural purity, but rather exaggerates their visual and space defining qualities. Therefore, recent developments may be seen as a further exploitation of these inherent dualities and a modernist aesthetic, where the regulating force of the grid is used mainly for the appearance of partial areas of coherence to enforce the direction or expanse of spaces. Likewise, Eisenman's Visual Arts Center shows a separation of the neutral structure of space and a further elaboration of finishing elements, where he pays special emphasis to these measures by the superimposition, collision or interruption of the geometric pattern of shifted grids and axes.

III.1.1.12. ASYMMETRICAL SYMMETRY

In general, symmetry regulates how elements are chosen and placed in relation both to each other and to the overall structure. These relations are classi-
fied by a common point of reference in a coordinate system. Bilateral symmetry and balance refer to the relationship of parts about a real or implied axis. Symmetrical order is achieved when equal elements have the same but opposing relationship to an axis. Seen in a metaphorical sense, the symmetry of a building or an environment is the most direct expression of an instinctive tendency of man toward an identification with his product and with the organization of his vital space. Reconsidering the figural properties of spaces, we can distinguish between the organization relative to a line, which produces an axial relationship and therefore implies a direction, and centralization relative to a point, which produces different types of rotational symmetries. Especially bilateral symmetry, combined with a hierarchical volumetric arrangement, was a major system of organization prior to the 20th century, and embodied a prime ordering device in the academic tradition. In place of symmetry, implying an axial comprehension of space and hence a static viewpoint, modern architecture has favored the dynamic gesture of the diagonal, which was thought to trace man's perspective apprehension of the full depth of space. There a unified composition is achieved by the juxtaposition of single gestures balanced in an operation of point and counterpoint without necessarily referring to an axis. By the combination of premodern forms of space, recalling a static order and the dynamism of modern space, the present order is cast into doubt. Asymmetric symmetry is a natural outcome of such a juxtaposition. For example, John Hejduk's diamond-house projects, and many designs by Hardy, Holzman and Pfeiffer demonstrate the syntactic exploration of the diagonal, which often coincides with circulatory directions or visual axes. As mentioned before, the diagonal entry ramp of Meier's High
Museum may be traced back to spatial attitudes of the Modern Movement. The exceptional diagonal of the ramp is clearly expressed in plan and points toward the interior ramp, which mediates between vertical tubes of space. This diagonal not only accommodates site specific patterns and adds to the dynamic view of the entry sequence, but also creates a strong compositional opposition to the regular order and static symmetry of the overall layout.

III.1.1.13. Rotation and Translation

The use of slight distortions of symmetrical arrangements, which I see as more important today than the diagonal, acts as a device for an estrangement from a stable composition. These distortions are often justified not only by external forces such as the site, circulation patterns, or functions, but also by compositional considerations concerning the visual perception of space. Important operational principles for achieving these proposed complexities in space can be summarized by the manipulation of symmetrical relationships. Common transformations are proportional variations in size, as we have seen in various scale-shifts, extension and translation, causing the repetition, subdivision, overlapping or interpenetration of spaces, and various forms of rotations of internally defined spatial configurations. A comparison of different stages of Meier's design for the High Museum clearly shows the effect of such an operation. In an early phase, two slightly tilted axes were superimposed on the existing axes of the gallery spaces. This superimposition of different geometric directions caused a further differentiation into three main gallery towers and intermediary zones mainly for circulation, which
emerged on the outside with shifted stairs and other jutting volumes. An important aspect is the collision of seemingly distinct frames of reference. The slight tilting of different axes to one another and skewing of grids compress space and generate a dissonance in human perception due to the usual right-angle datum. As a direct consequence, these operations ask for a new sensibility in the appreciation of order.

III.1.2. ORDERING PRINCIPLES

As we have seen, the way in which formations of spaces are assembled is of utmost importance. The relationships and connections from one space to another reveal their underlying order of composition. The concept of order is a predominant principle within the field of architecture. Order depends on the classification of similar and dissimilar elements, expressed in terms of repetition, contrast and dominance, and the possibility of establishing lawful relationships between its parts, which can be more or less comprehensive. Disorder, on the other hand, is defined as a collision of types of order, where the relationships cannot be established as a form of coordination. The contradiction within ordering principles enhances the ideal through contrast with it, or to borrow another Venturi argument: "...to perceive the ideal you must acknowledge the real." 17) Breaking the order is justified by the recognition of variety and confusion of inside and outside, in program and environment, and by the ultimate limitation of all previous types of order composed by man. However, this 'obligation toward the difficult whole' also means that unity must be continually sought amidst the plural languages to give meaning
to architecture. The norm, though not necessarily present, is a genuine aspect of perception itself. Distortion and disruption in the constitution of space call special attention to shape and confining elements, and the deviation from a simple order is a means of increasing the complexity of spatial relationships. In the case of a collision, at the point of encounter, the resemblances as well as the differences share a moment of existence and allow different systems of reference to be addressed. As the whole is dependent on the inherent characteristics of its parts and their complex relationships, an architecture of realism makes the case for the 'difficult whole', a unity, achieved through inclusion rather than an easy unity gained through reduction and exclusion as it had prevailed in previous attitudes. Architecture nowadays is then determined by the simultaneous existence of disparate systems of order, in opposition to a mechanistic world, where order has become synonymous with rationalization and the deconstruction of complexities. In the field of architecture this corresponds to the reduction of simple geometrical shapes and to the standardization of parts to achieve the greatest possible homogeneity. But where are the functionalist demands for efficiency and simplicity, an through what process of logic do such variegated configurations evolve? The assumptions of functionalist theory were so generally accepted that design was understood as a reductive process, and today functional aspects are seen to be only a part of a complex conception appealing to the full range of imaginative perception. While judgments made under a reductivist ethic tend toward a single concept of order, these elaborate design decisions, as we have seen, respond to a more pluralistic concept of order. The coexistence of multiple ordering systems, which distinguish current attitudes toward the constitution of
space, establishes a complex set of relations as a primary device of expression. These heterotopic systems exhibit high tension, which is directed toward a resolution and which balances the forces within.

III.1.2.1. Heterotopic Systems of Order

The theories of classical as well as of modern form assert the primacy of compositional rules in order to create a unified aesthetic order. Homogeneity implies continuity, familiarity, and recurrence, thus representing the classical search for a perfect and unified world. Similarities and differences are displayed in physical, material form to reveal a symbiosis of parts within an overall composition of order. Today, we witness the attempt to confront the unity of traditional compositional arrangement with a new sensibility, which imposes the investigation of disparate, often contradictory, elements. Each fragment, in being conceived as an independent entity, contributes to the making of a larger unity of heterogeneous quality. Rupture and break might emphasize the singularity of different parts, yet adjacency also allows the possibility of transformation and mutation to occur. This phenomenon is described by Michael Foucault in his book "The Order of Things":

"Disorder appears as a result when fragments, which stem from fundamentally different origins, are placed in close proximity to form new and unexpected relationships." 19)

Likewise, Demetri Porphyrios calls the way in which spaces are linked, juxtaposed, interfered with, or interpenetrated, revealing both fragments of co-
herence as well as disorder between adjacent incongruities, the 'ordering sensibility of Heterotopia'. 20) And Marc Angelil, referring to the same term, notes in "Construction Deconstructed":

"Disorder is identified where the logic of our classifying thinking does not find correspondence with the 'order of things' as they are typically envisioned. What seems but a visual disorder could very well be 'another' kind of order. This peculiar organization in which fragments of a number of possible coherences share a state of existence without unifying common law is what is to be called the ordering sensibility of heterotopic formations." 21)

Heterotopic formations reveal systems of differences which are inherent in the process and products of architecture today. In order to interpret heterotopic formations we not only have to isolate islands of coherence so as to reveal a specific structure of order, but also should investigate the potential relationships between adjacent incongruities. Two different and opposing heterotopic modes of design can be identified within the field of architecture: 22)

- heterotopic iconographic formations
- heterotopic syntactic formations

Heterotopic iconographic formations involve the relationship of a number of conflicting codes, and are based on the juxtaposition of imagery, placed next to each other to form an architectural montage; their operational principles are the collage and the shallow layering of disparate elements. 23) It is characteristic of our period to recall history at a purely formal level and to portray pure imagery without concern for a tectonic understanding of parts. The syntactic approach to architecture understands heterotopic formations in structural terms. In this case syntax is defined as the structure of relationships between architectonic elements. In this framework, ordering systems are exposed to one another so as to display their essential structure and meaning.
This addresses the concept of boundary and its architectural significance - space conceived as an entity and the combination of various ideologies of spatial structure, types of boundary elements, the deconstruction of the wall as in the Modern Movement, and its reconstruction. Today's spatial formations are the result of a metamorphosis, seemingly frozen in a process of decomposition or deconstruction, originating from simple ordering principles. Following Eisenman, heterotopic phenomena might be seen as a further extension of the definition of traditional order to include the dialectic side of order, thus leading to the understanding of an 'other order'. Disorder and discontinuity are understood as transformations of idealized form, with the reading of ruptures, mutations, or distortions, implying departure from and reference to a stable origin. Architecture has always been concerned with the problem of creation and embodiment of an order that reflects the order of society by its attitudes toward formal configurations and their limits. Therefore, order in architecture is not merely a formal problem, but one which is linked to a moral and ethical view of society. We can conclude that contemporary concepts of space exemplify the transformation of meaning in architecture through the formalization of human experience.
NOTES

1) We have to consider that architectural history must not be seen as a steady progression; there has always been a changing polarity between phases of emphasized plasticity versus abstract representation of architectural space.


3) Ungers, O. M., "The Janus Face of Architecture", AD, 6/86, pp. 11-.


10) The apprehension of our visual experience is itself considered the paradigm for collage.


12) The revised design certainly supports this syntactic interpretation.


15) The notion of an undifferentiated spatial field, which accompanies the modern space conception, can be found as early as in Durand’s architectural treaties, where the use of an undifferentiated grid enabled the easy combination of pre-set parts, and together with other operational methods became part of the Beaux Arts approach to architecture.
16) The emphasis in the 1960's on the 45 degree angle, with the formalist outcome of that period, was coined 'decade of the diagonal'. see: Smith, C., R., *Supermannerism*, op. cit., p. 100.


22) op. cit. pp. 27-28.

23) This is certainly not an entirely new idea, as the juxtaposition of conflicting iconographic codes is a sensibility dating back to the 19th-century eclectic use of styles, finding an early example in Lequeu's Rendezvous de Bellevue.

III.2. CONCLUSION

Unlike other arts, architecture is by nature and necessity public; it must not only communicate its own coherence, but also address broader issues such as urban settlement, culture, and society. Thus, I see current attitudes as an attempt to respond to the problems of the meaning of civic art, which went unresolved in the development of the Modern Movement. Proceeding from the premise that architecture is not an isolated, individual act, but is conceived as a cultural attitude toward the making of space and the production of buildings, one inevitably faces the questions of the interpretation of architectural expression in relation to society. We must ask, what are the cultural conditions surrounding architecture today, and how do current trends reflect and influence these conditions?

In order to attempt a valid statement about the cultural framework of architecture, I want to take a brief look at theoretical discussions of the postmodern condition, and then compare them with possible conclusions drawn from the investigations of recent space concepts: The meaning of Postmodernism is constantly under dispute and seen as progressive by some and damned as reactionary and nostalgic by others.

In reference to the Venice Biennale of 1980 (under the title: "The Presence of the Past") Jürgen Habermas 1) considers Post-Modernism in architecture as a neo-conservative movement in alliance with other reactionary forces, equating them with anti-modernity. 2) On the other hand, he associates the modern project with progressivism. Habermas has not only criticized Post-
Modernism as backwards, but also proposed the continuation of the project of modernism in culture and society.

".... the project of modernity has not yet been fulfilled....the project aims at a differentiated relinking of modern culture with an everyday praxis that still depends on vital heritage, but would be impoverished through mere traditionism." ³)

Similarly, Hal Foster in "(Post)Modern Polemics" ⁴) sees two distinctly different positions in current attitudes, one aligned with neo-conservative politics, the other derived from poststructuralist theory. In his view, *neo-conservative Postmodernism* (in opposition to a dialectical supercession of Modernism) is defined not only as a stylistic reaction, but also as a return to history and the humanist tradition, which he equates with premodern and anti-modern tendencies. It promotes a return to representation, to the narrative, the ornament, and the figure; whereas he sees *Postmodernism* as profoundly anti-humanist in its attitude, proclaiming a critique of representation through the deconstruction of the architectural discipline with its own methods of rendering cultural meanings ambiguous and indeterminate. He also juxtaposes their operational principles: The use of pastiche, which reduces history into a repository of historical periods and leads to a partial simulation of reality versus the textual approach of poststructuralism, which claims the depiction of reality, either in the immanence of things, or in some ideal order lying behind or beyond its surface appearance. ⁵)

Finally, to this proposed general schematization, which appears as a somewhat reductive dichotomy between neo-conservative (anti-modern, premodern, humanist) and poststructuralist (modern, anti-humanist, progressive) attitudes, we can add Frampton's analysis of current attitudes in architecture. ⁶)
According to Frampton, the protagonists of Post-modernity also seem to fall into two groups: the Neo-Historicists and the Neo-Avantgardists. The Neo-Historicists feel that the entire apparatus of the avantgarde has been discredited and that no choice remains but to abandon that movement's ostensibly radical discourse and to return to tradition. On the other hand, he considers the Neo-Avantgardists as welcoming the continuing escalation of modernization as an inevitable process. However, by repudiating the utopian legacy of the Enlightenment, they proclaim the end of 'master narratives' in all fields, including that of science itself. Frampton goes beyond criticism and proposes an alternative cultural strategy. He criticizes Modernism and Post-Modernism alike for their failure to provide places of interaction, identity, and community. Thus, in opposition to technological or populist fashions of current architecture, he promotes 'critical regionalism' and emphasizes the need for architecture to distance itself both from the nostalgia for premodern attitudes and from the Enlightenment's idea of progress. 7) As an alternative, he suggests turning to an architecture of resistance against the loss of a collective bond in society and also returning to an architecture of 'place' rather than 'space'.

I believe this last notion brings me close to the importance and significance of the spatial concepts I have identified in current architecture. As a summary, I want to compare the results of my spatial investigations with the previously stated matrix of reactionary versus progressive forces in the cultural discourse. Framptons's notion, based on Heidegger's distinction of space/place (in German: 'der Raum'), is quite similar to the complex relationships I have tried to draw in the contextual discussion of my case studies. Thus we can say
that the *emphasis on place*, though achieved through different means of articulation, is an apparent feature of current space concepts. Despite Frampton's plea for a public realm, Americans have developed a growing capacity to internalize culture; cultural values appear through the personal, introspective interpretation of architectural expression. Therefore we must not lose sight of its limitation on the single gestures of the building venture. While acknowledging contextual issues, the expression of the particularized message, whether conveying the private dreams of the individual or the prestige of corporate America, takes precedence over a broader integration of place. In general, contextualism is a program that seeks to overcome the ruptures of modernism and restore continuity with the site, local traditions, and historical forms. However, we have also seen that the interpretation of place bears a direct connection with man's conception of his existential space, and that this general *focus on the individual* has far-reaching implications. 8) Opposed to the functional ethic, articulated in principles of efficiency, current work is organized by elaborate principles of *economies of meaning*, which directly engage the viewer in the interpretation of the architectural conception. We can conclude that architectural composition is in part based on an experiential and therefore a predominantly *spatial logic*. The addressing of the individual lays special emphasis on the surface appearance of architecture, which leads to a simulation of reality and an architecture of 'fair seeming'; the structionalist dogma of 'material truth' is replaced by the 'honesty' of its appearance. 9) Architecture has always derived its meaning from an underlying mythology which constitutes the invisible referential order, and thus legitimizes its mode of representation. The humanist mythology has presumed the representation
of nature, respectively its embodiment in antiquity, whereas modern architecture has been driven by myths of social egalitarianism and technological reasoning. But what is the myth of today, when these underlying references no longer serve as a common source for an existential orientation in modern life? And how can a materialistic consumer society, lacking any true focus, be addressed? Although it seems that architecture, tied to the past, has become meaningless due to the lack of a shared semantic ground, I think that space is a decisive means for bridging the separation from historical form by appropriating tradition, convention, and the archetypical memory of man. 10) We can say that tradition is stamped on the minds of everyone through the common experience of historical space. Traditional space follows conventions of universal value, corresponding not to political superstructures, but to permanent characteristics of the perception and apprehension of space. The use of certain historical invariants of the collective memory, such as clearly defined, centric, and linear spaces, draws on a patrimony of conventions revised and shared critically by society (this architecture is certainly closer to the majority of people than technocratic architecture, which arose from the crisis of the Modern Movement). As we have seen, the concept of the referential signal is equally applicable to the organization of space and its ordering structure as bearers of significance and meaning. In connection with the questioning of previous architectural structures being modern or classical, and the process of deconstruction and decomposition, *the metaphor of the fragment* has become a compelling rhetorical device. Today, historical architecture is being reconsidered for its figurative and organizational resources of space in order to develop a visual language, which is more directly appeal-
ing and thus understood by the viewer. As I have shown, the artificial syntax of Eisenman and Meier, the violent juxtapositions of Gehry, and the compositional variations of Graves are all examples of the same aesthetic of fragmentation. One fundamental preoccupation, which characterizes American architecture and cultural values alike, is the fragmentation and the disintegration of coherent systems. It is expressed in half-statements, montage, and collage, which recall familiar things and associations, but at the same time cancel a unitary evidence, or at least cast it into doubt. In their attempts to preserve the multiplicity of the world, the operations of the fragment, the montage, and the collage are directly linked to the postmodern mind.\textsuperscript{11} While culture in general reevaluates the richness of diversity, architecture discovers its historical and regional traditions in a fragmented way. I think that fragmentation and discontinuity are legitimate strategies for an architecture of pluralist values to express our own contradictions and inconsistencies. In this way, the editorial in \textit{Precis 6} comments on the culture of fragmentation:

"\textit{In rejecting modernism, with its ideology of standardization, the postmodern has privileged heterogeneity and difference as liberative forces in the redefinition of cultural discourse.}" \textsuperscript{12}

As fragmentation challenges rather than anticipates a resolution, the question might be raised whether architecture will lose an essential motivation and the intent for improvement or a possible synthesis in the future? Although the architectural discourse presents diverse attitudes of representation and invention, there is agreement on the continuing validity of certain aspects of modernism. Characterizing a new era in architecture does not necessarily mean that there is no continuity of some essential principles and practical under-
standings of modernism. (Even the vocabulary of stereometrical forms may be used to reinterpret its use and to gain new communicative meanings in architecture) Today's conception of space reveals the validity and existence of space both as confined volume and as spatial field. However opposed these different attitudes may be, we must consider them as aspects of one historical process that transforms the understanding of architecture, where architectural expression is achieved not through an aesthetic unity but rather through a dialectic confrontation. I believe that the current space concepts, which I have identified, give evidence of the concerns of present day architecture, which include questions about the status of the subject, the architectural language, and its representation. Although I see the rise of neo-conservativism as an indication of a shift from a progressive critique of modernism to a reactionary search for new directions, it is my conviction that possible answers for a heterotopic order in architecture can be found between the radical polarities of the previously stated theoretical camps. Furthermore, I think that this condition of in-between has a closer relationship to reality than any radical points of view (conservative/progressive), which exclude contradictory readings and participation on the part of the observer.

As I can only point toward an interpretation of space in relation to culture and society by drawing connections and showing directions in the pluralist reality of current work, it is my hope that this study will serve as groundwork for further analysis. My attempt was to view architecture as coherent with the changing attitudes and artifacts of contemporary society that comprise our normal experience of the world. I think it is the challenge of cultural analysts to develop an epochal consciousness and an awareness of a post-
modern worldview. In this sense, I want my proposal to be understood as evidence for a broader examination of architecture in relation to its underlying assumptions, and to stimulate further investigations within a larger cultural framework.

Finally, I consider today's architecture to be in the process of a general reconsideration of its architectural heritage, including Modernism. Even though there may be no definitive answers in our culture of fragmentation, the search for a defined spatial structure in architecture can incite a new consciousness for the appreciation of architecture and its role in society.

NOTES

1) Habermas, J., "Modernity - An Incomplete Project" in: Anti-Aesthetic: Essays on Postmodern Culture, ed. Hal Foster, Bay Press, Port Townsend, Washington, 1983, pp. 3-15. (This essay was originally delivered as a talk in September 1980, when Habermas was awarded the Theodor W. Adorno Prize by the city of Frankfurt.)

2) op. cit., pp. 14-15. He defines three kinds of conservativism: The nostalgic engagement for a return to a premodern world of old conservatives, the antimodernism of young conservatives, and the postmodernism of neoconservatives, which he relates to current trends in politics, society, and culture.

3) op. cit., p. 13.

5) op. cit., p. 6.


8) Similarly, American social life presents a view of the community as a collection of individuals, ignoring and neglecting one another, praising competition as the primary means of social order.

9) As Jean Baudrillard suggests, this kind of representation is derived from media reports, which are probably more real to us today than material reality. I suppose that even without a direct reference to my own prologue, the societal implications are apparent.


10) The recovery of memory after the forced amnesia of more than half a century is manifest in customs, dress, and the mass, diffused interest in history and its products.

11) The apparent technological progress and order of contemporary society conceal at the same time an increasing psychic disorder; now unities are disintegrating into fragments without an overall intelligibility. One attempt to explain the pluralism and the fragmentation in architecture is to refer to an atomized mind. While previously man took part in an all-encompassing worldview, today diverse ways of thinking and behaving accumulate without coordination and no basic directives have strength enough to control the endless stream of possibilities.

APPENDIX
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