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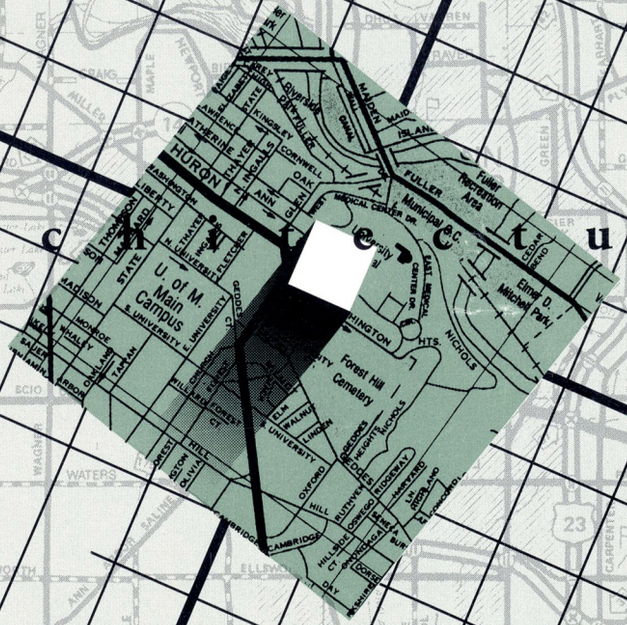

Dimensions

1991

Papers **OBJ**

Journal of the University of Michigan College of Architecture & Urban Planning

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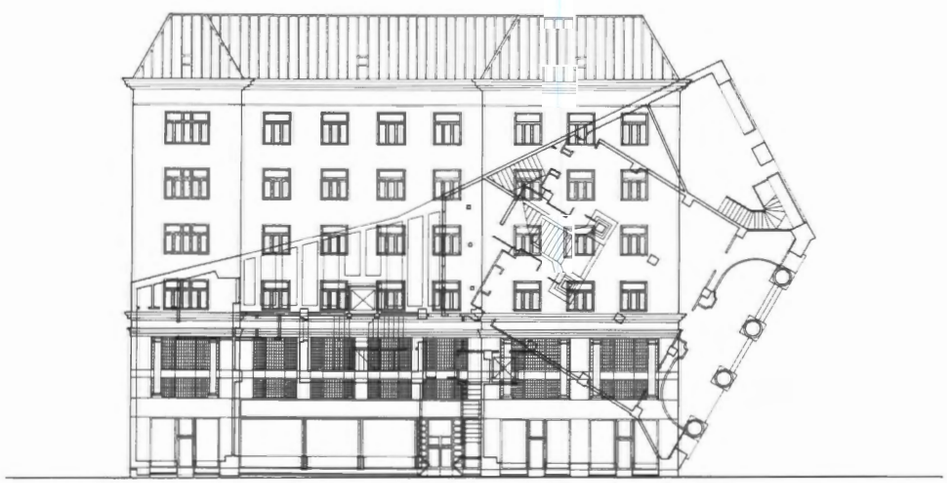
A Student Publication

TABLE



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Letter from the

Editors:

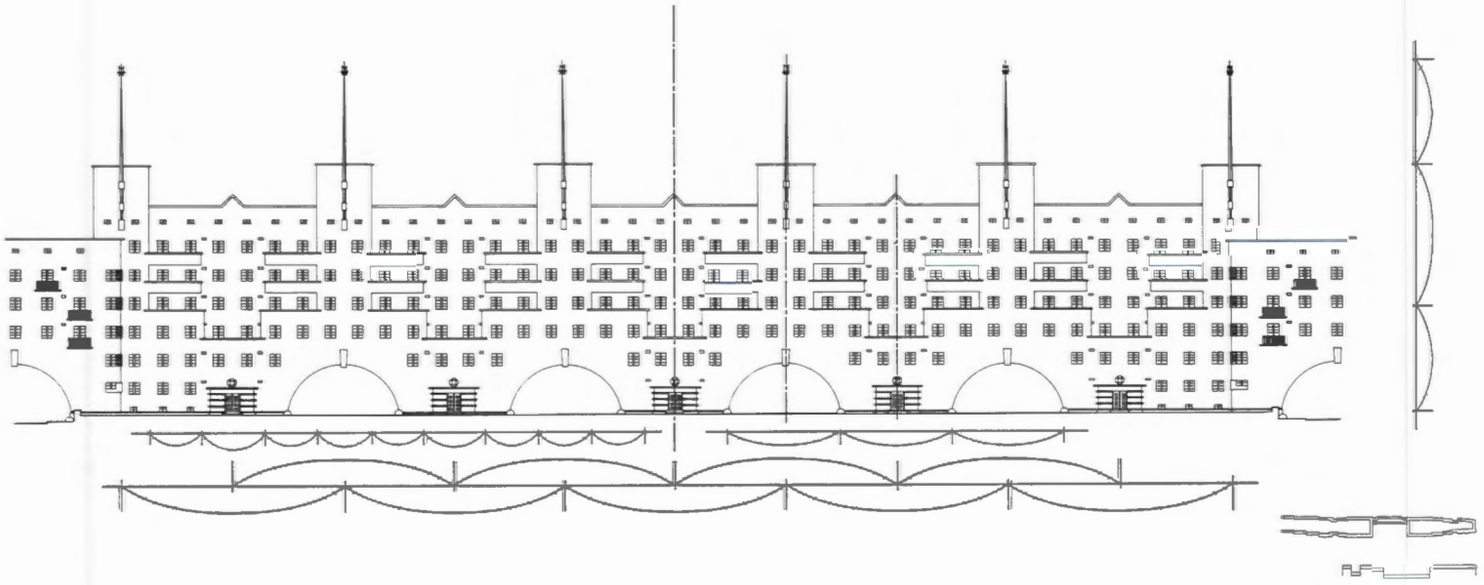
This issue of *Dimensions*, to use a well worn cliche, represents both continuity and change. Continuity because it follows in the tradition initiated by some resourceful and enthusiastic students a few years ago in the College. Continuity because the journal still stands for what it was envisioned to be: a vehicle of expression of the many and diverse voices in the college, and a tool for education that essentially tells various audiences who we are and what we are about. But it also represents change - as it must. Change because of what a new wave of students has brought with them in the interests and issues they hold dear. Change that can also be seen in the ways in which they choose to express these ideas.

The discerning reader will see some key themes emerging in this issue of *Dimensions*. One is a theme of general consciousness-raising of the need for sensitivity to issues and perspectives in architectural and planning education and practice. Whether the issue is ethnic and cultural sensibilities and their contribution to these disciplines (Kirby, Mitchell); a need for a renewed vigor to the environment-behavior paradigm in design and planning education (Schwarz); the discussion of urban issues that should inform problem-solving efforts with reference to economically or racially disadvantaged communities (Pederseon, Kirby); or the need for caution in using photography as a tool in representing, discussing and evaluating architecture as built form (Scott and Dandekar), there are some very useful messages for students, educators and practitioners.

The second major theme has been a discussion of various theoretical aspects pertaining to architecture. The specific subjects and their treatments are, of course, diverse. For instance, Mangana has compared the views of two noted theorists Semper and Viollet le Duc in her discussion of 'style' in architecture, while Potamianos has used a particular theoretical approach, the gestalt approach, in his analysis of the use of natural light in Hagia Sophia in Istanbul. Alhasani's essay studies how Carlo Scarpa has adopted and adapted design and construction ideas of the past and the present in his work, while Ferriby examines the philosophical connections between music and architecture as expressed by some well-known theoreticians. Since theory and practice have to inform each other, we end the literary section with some perspectives on architectural education and practice and learn how these overlap in the work of Dean Emeritus Robert Metcalf. *Dimensions* has also scored a coup in getting Thom Mayne of *Morphosis* to divulge some secrets in how his designs actually come about. Some of the contrasting perspectives in the two interviews should make for stimulating reading.

And as is tradition, we top all this with vignettes from the different studios. The graphic section is an illustration of the creativity and more important the perseverance that only architecture students, who practically live in the studios, will ever really know. This section is a celebration of the studio work of undergraduate and graduate students undertaken over two semesters, and at the same time is also an homage to our instructors.

We hope that you will enjoy reading this issue of the *Dimensions* as much as we have enjoyed working on it. And we hope that it will serve its intended purpose of education for you as much as it has for us.



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Photographs from the Bill Scott article were graciously lent to us by Kathy Scott and are used with her permission.

In addition to acknowledging our active helpers and supporters, Dimensions would like to thank the silent patrons and sponsors who have given generously. Without them, none of this would have been possible.

Thank You.

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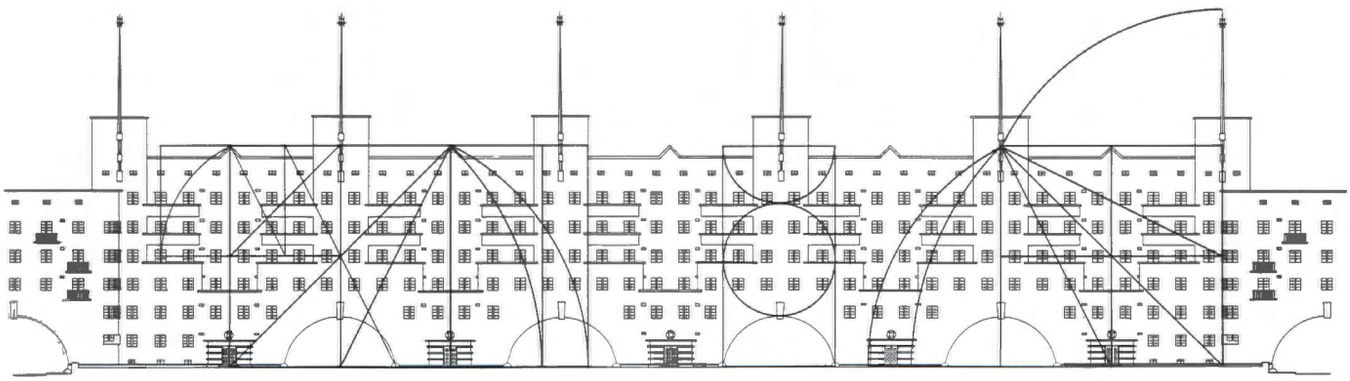


Karl-Marx Hof Analysis
By Alexander Harrow

This issue of *Dimensions* is dedicated to
William Muschenheim 1902–1990

From the Dean:

Poetic pragmatism is a term which has been used to describe current trends in architecture. It is poetic pragmatism that put this edition of *Dimensions* together — a combination of knowing how to get it done and a desire to make it as beautiful as possible. An outstanding and dedicated group of students has planned, designed and executed this journal of writing and projects which represents students and faculty from the disciplines of architecture and urban planning in the College of Architecture and Urban Planning at the University of Michigan.

Like previous issues of *Dimensions*, this edition stands unique, representing the particular talents, interests and passions of the school and a group of students who have dedicated themselves to assembling and critiquing this work for others to see and read.

This journal is a snapshot of this time. There are many ideas here. What trends can one discern? I think the term poetic pragmatism says a great deal about this moment both in architecture and in urban planning. Students are surrounded by the banality of the environment. Yet they are here in school to learn to change this environment, like other generations before them. The economic forces which set programs and agendas in both the public and private sectors seem unlikely to change in the immediate future. So what can one do to make better the world? There is an inevitable optimism that persists in education, it persists because students will not let it die. Today's students are not naive. They know the challenges that lay ahead for them. They know how difficult it will be to change the world to the ideal world they know it could be. They are pragmatic. Yet, each one is a poet. It is poetry that we ask of them as they attack each new problem.

It is that pragmatic poetry that this issue of *Dimensions* seems to capture best.

Robert M. Beckley, *Dean*
College of Architecture & Urban Planning

From the

Chair

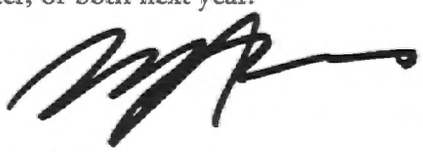
Urban Planning

Another year, another *Dimensions*. Spring/Summer reading at its best, now that there is time for it. It is always exciting, at least for me, to read something published by our students, colleagues and friends, especially if it is something I care about or have a strong personal interest in. What I find most enjoyable is the mix of articles - from design to compelling social issues. Only in a College of Architecture and Urban Planning can one get the variety of topics that one sees in a publication such as *Dimensions*. Once again, this year's issue speaks to that diversity; a testimonial to a job well done by the editors and the contributors.

It was once thought that if you made the city beautiful most of the complex social and environmental problems associated with urban living would be resolved. Even though that naivete is no longer accepted the problems have not been resolved, and the American city, for the most part is still not beautiful. What we do have today is a commitment to learn how we as planners and architects can make life better for all segments of society, knowing that we are not capable of doing it alone. We are keenly aware that other professionals have equal, or even greater responsibility to address these issues. Nevertheless, we are at the boundary of those other professions and need to take a greater leadership role in seeing that today's urban problems are kept at the forefront of the social-political agenda.

Journals allow planners to have a forum for presenting their work to their peers, whether beautiful or ugly. Unfortunately, the overwhelming and grotesque urban problems such as racism, homelessness, infrastructure decay, unemployment, drugs and crime are with us more than ever and tend to dominate the planners' work. Moreover, planning education would be woefully inadequate if we did not put these issues in the classroom and the studio, and try to address these seemingly insolvable problems. A goal of our professions is to identify and resolve problems, either through design or analysis. Therefore, it is appropriate for our students and faculty to communicate the societal usefulness of their efforts.

So take your copy of *Dimensions* to the beach, summer internship, new job, or wherever you go after the term is over. Read all the articles and let the authors know what you thought about their contributions, and consider the possibility of being a contributor as an editor, writer, or both next year.



Mitchell Rycus
College of Architecture & Urban Planning

Threat or Promise:
Historic Preservation and the African-American Community

Daniel L. Kirby

My first formal education in historic preservation came while I was an undergraduate student in architecture at the University of Florida. I enrolled in a course called "Introduction to Historic Preservation," which focused mostly on preservation activities in and around Gainesville. The course discussed the process of identifying sites suitable for preservation, the local preservation board (Heritage Conservation Board), the local preservation ordinance, and the National Register of Historic Places application process. After graduating from the University of Florida, I worked briefly with the City of Orlando's Bureau of City Planning in the Community Design and Preservation Section. My responsibilities included conducting research on properties nominated for designation as local historic landmarks, and working along with the State of Florida's Historic Preservation office to administer a historic resources survey grant for three residential neighborhoods in Orlando. In an official capacity, I attended meetings of the Historic Preservation Board to present recommendations and to respond to questions.

Throughout both experiences, of all the citizens and groups I came in contact with, only on a few occasions did I even hear any discussion about properties associated with the black community. There was a conspicuous absence of other blacks involved in preservation activities.

My earliest exposure to the preservation of a historic structure associated with black people was as a young child while visiting my grandparents in rural Georgia. One day as my grandfather drove down Main Street in Louisville, Georgia, he pointed out the old slave market that still stands in the center of town next to the railroad tracks. It didn't seem very important at the time, but later I have often reflected on how powerful a symbol that old slave market was and what kind of affect it had on the residents who lived nearby. I suppose preserving the market could be considered properly following in the American tradition of preserving 'associative monuments.'

Later, I witnessed the pride displayed by the residents of Eatonville, Florida, as they celebrated the anniversary of their town's founding. Just north of Orlando, Eatonville proudly proclaims itself to be the nation's oldest all-black town. Many of the town's residents have a particular regard for preserving links to their community's past.

As my thoughts on historic preservation have evolved, I have become more aware of the importance of the historic properties that we choose to preserve. The properties we seek to preserve will help future generations determine what we considered important. The properties that we direct our efforts to reveal attitudes about our current condition and our future aspirations.

In this essay I will briefly explore possible reasons why so few blacks are involved in preservation efforts, why some blacks are resistant to preservation efforts, and why blacks should be concerned with preservation activities. Many of the problems addressed in this essay are not unique to African-Americans. Other ethnic minorities and economically disadvantaged groups also face similar problems. However, for the purposes of this paper I will address these issues from the black perspective since this is the one I am most familiar and concerned with. Preserving the black community in terms of our built heritage is directly related to preserving the community in terms of our social environment.

A Lost History?

In 1976, the Preservation Press of the National Trust for Historic Preservation published "America's Architectural Roots: Ethnic Groups that Built America" to celebrate the bicentennial of the American Revolution. This book focused on long neglected traditions in American preservation. Study in this area is increasing, but slowly. The question is, "How much history will be lost before this area is adequately explored."

Recently, I took a course on the History of American City Planning. During one of the lectures my instructor mentioned that there had been several new towns created entirely by blacks in the American West. When I asked for further information on the subject he explained to me that he had only seen one citation concerning the towns and that it was really a shame that no further study had been done in this area.

The first major efforts to gain national recognition of a group of properties associated with African-Americans occurred in 1973 when preservation consultants Robert DeForrest and Vincent deForest nominated 68 sites to the National Register of Historic Places. In an article entitled "Preservation in the Black Community" Andrea Kirsten Mullen points out that before this nomination, "...few people—black or white—would have been able to identify the location of a single national black landmark."[1] Robert DeForrest had this to say:

"Countless numbers of black-built structures had been destroyed. Even more were undocumented. Many of the people we wanted to study left no physical remains."[2]

There are also instances in which blacks have participated in the destruction of buildings built by their own ancestors because of the things associated with them. For example, throughout the South there are a number of planta-

"I discovered that landmarks designed and built by blacks...have been neglected-many had fallen to ruin, and only a few had been thoroughly analyzed and restored..."

"...Preservation, as practiced in the United States, still troubles me. We are light-years away from the women who fought to save Mt. Vernon, but the elitism they fostered remains."

- Andrea Kirsten Mullen

a North Carolina preservation consultant

tion homes that were built by blacks. Some of these houses were even built as homes for blacks.[3] However, there is no great rush for blacks to become involved in preserving what many consider to be symbols of oppression in the Old South. Jesse Kaufman, 84, of Shelbyville, Texas, commented, "Yes, we tore down the Carrol Chapel. It was our labor but a white man's money and white man's land that built that church during slavery. Most of us never liked what it stood for."[4]

Not unlike many other issues, when it comes to involving blacks in preservation, education, is a problem. University of Texas economist Dr. William Darity, Jr. says that , "Blacks are often steered away form academic careers which can lead to the control and interpretation of knowledge."[5]

Don't We Already Have Enough Problems?

In addition to the problems previously discussed, blacks may be hesitant to become involved in preservation activities because these activities do not command their attention. When faced with the problems of violence, crime, and drugs that face our nation's inner cities, survival takes priority over all else. The concept of preservation in its most primal state is that of self-preservation. The idea of historic preservation might seem completely foreign. William Murtagh, Fellow of the International Council on Monuments and Sites, notes that to many blacks "preservation is considered a luxury, and basic needs must take a priority."[6] Also, residents of these communities might wonder what exactly it is that preservationists are trying to preserve.

There Goes the NeighborHood::
Restoration , Rehabilitation, Relocation

The 1989 Spike Lee film, *Do the Right Thing,* examines the issue of tensions between different ethnic groups in a Brooklyn neighborhood on one hot summer day.

In one scene there is a confrontation between a group of young black residents and a young white resident. As the young white man approaches the entry of one the brownstones with his expensive bike in tow, he is stopped by the black residents and one member of the group asks,"What are you doing on my sidewalk?" The white resident responds, "I live here." The black resident snaps back, "Who told you you could move into my neighborhood?"

This small portrait of an area about to be gentrified represents the only exposure to people involved in some type of restoration efforts that many black residents of inner cities have. These newcomers call themselves 'urban pioneers,' a term that in some conjures up negative images of the legions of white settlers who moved westward displacing native Americans. Throughout America's larger cities, thousands of blacks have been forced to relocate to make way for middle-class whites. Many poor blacks are forced from their homes because they cannot afford the increased rents in a rehabilitated area. In "Blacks and Historic Preservation," Michael DeHaven Newsom identifies part of the problem in that gentrification is usually viewed as the normal sign of a successful rehabilitation project.[7] This type of displacement has encouraged distrust.

One example of the opposition of community groups is the Community Development Corporation in Austin. This group of residents from the Clarksville area of that city has opposed preservation and rehabilitation efforts in their neighborhood. They view these nonessential or cosmetic improvements as leading to increased property taxes without improving the quality of life.[8]

What good does it do for a low-income black to support the creation of a historic district if it will only spur an increase in rents that they cannot afford? When preservationists begin to show interest in a particular neighborhood, it may be perceived as the first step in the loss of another opportunity for affordable housing. An article in Time Magazine pointed out that, "Preservation can set up a self-destructive cycle. When a historic neighborhood is restored, it becomes desirable, prices go up..."[9] The poor end up further concentrated in the least desirable areas.

One example of this is the Georgetown section of Washington, D.C. Blacks had lived in Georgetown even prior to the Civil War. By 1930, forty percent of the area's residents were blacks. While they may have lived in modest houses, many were property owners with a sense of commitment to the neighborhood. Real estate investors recognized the attractiveness of Georgetown due to its association with history. Low-income black residents could not resist the prices being offered for their property, or could not afford the increased rents. By 1950 most blacks had moved out of the area. This pattern of displacement is similar to what has occurred in sections of other cities.[10] In his article, "Blacks and Preservation", Michael DeHaven Newsom points out that the biggest problem with the "Georgetown syndrome" is that:

"...Blacks have no place to move once they leave...White middle andupper classes, which already have the greatest number of housing choices, are given one more option, the old black neighborhood, and blacks who have the smallest number of choices are deprived of an option."[11]

It gets worse because the problem is not only an economic one. David Prowler, a housing specialist with the San Francisco Human Rights Commission, points out, "The big irony of gentrification is that today, in these traditionally black neighborhoods, people won't rent to blacks."[12]

"...Preservation is considered a luxury, and basic needs must take a priority"

- William Murtagh

Fellow, International Council on Monuments and Sites

An unfortunate side–effect of much of this activity is that it is really a failure from the point of view of true preservation. Newsom explains that the series of events that took place in Georgetown does not really qualify as "historic preservation." "The true history of Georgetown–until the preservationists' interest in it –was an integrated history."[13]

What Should Be Done?

Having explored several of the negative effects of certain preservation efforts on the black community, I would like to offer some possible solutions for dealing with the problems. Raising these issues will lead to a further understanding of the problem, but we should not stop there. It is to the advantage of the African-American community and anyone truly committed to preserving our past to look for solutions.

First of all, preservationists must consider the needs of under-represented groups. The efforts of preservationists to preserve the built environment and of the poor to preserve housing opportunity in their neighborhoods are not contradictory. Just this past year a city council committee in Richmond, Virginia, formulated recommendations to ease the burden on elderly and low-income residents of a neighborhood that was designated as a historic district. Recommendations included: additional property-tax relief for poor residents, establishment of a conservation area within the same area (this would entitle residents to low-interest loans and grants for renovation), and possible exemptions from historic district regulations for homeowners meeting certain criteria. The four criteria for residents to qualify for the exemption: 1) they must have lived in the community for at least five years; 2) they must be at least 55 years old; 3) the must have a household income of less than $30,000; and 4) they must own property assessed below $75,000.[14] While the Richmond recommendations are not a universally applicable blueprint for handling the problems of the poor, they do demonstrate the possibility for creating alternative policies in order to lessen the impact on the elderly and the poor. In Savannah, Georgia, the National Trust for Historic Preservation provided seed money so that 300 apartments in the Victorian historic district could be set aside for low-income residents.[15]

Secondly, preservationists should become allies with residents of low-income areas. Preservation groups must broaden their focus to include all of the groups present in their particular community. Arthur Ziegler, president of the Pittsburgh History and Landmarks Foundation, has stressed the importance of making preservation viable and engaging: "Figure out what works in your community." In his work with that city's Manchester neighborhood, he was able to get residents interested in preservation activities by physically bringing them to other cities where successful efforts had been undertaken. Ziegler adds, "Successful efforts were undertaken in this neighborhood without displacing any residents."[16]

Thirdly, more blacks must be encouraged to become involved in preservation activities. On this subject Newsom writes:

"A genuine concern for history...(and) a concern for social implications of a restoration project would compel the participation and involvement of blacks presently residing in historic neighborhoods in any preservation activities affecting that neighborhood."[17]

The sooner that we defeat the usual misconceptions that preservation activities are the domain of groups outside the African-American community, the sooner we can combine the two efforts.

In the end the main issues are protection of neighborhoods, housing opportunity, our built heritage and history itself. It is a link with history that provides us with the basis for defining our present condition and our future existence.

NOTES

[1]Mullen, Andrea Kirsten. "Preservation in the Black Community: A Growing Commitment", *Historic Preservation,* January/February 1982, p.39

[2]Mullen, p.39

[3]Overdyke, W. *Louisiana Plantation Homes,* 1965 (as cited by Newsom, Michael DeHaven, in "Blacks and Historic Preservation" from Readings in Historic Preservation, p. 294)

[4]Mullen, pp. 42-43

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[6]Mullen, p. 42

[7]Williams, Norman, Jr., et al. Readings in Historic Preservation. Center for Urban Policy Research (Rutgers University), New Brunswick, New Jersey, 1984, p. 292.

[8]Mullen, p. 42

[9]Anderson, Kurt."Spiffing Up the Urban Heritage", *Time,* 23 Nov.1989, p. 79

[10]Newsom, Michael DeHaven. "Blacks and Historic Preservation", *Law and Contemporary Problems,* vol. 36, 1971, pp. 423-26(from Readings in Historic Preservation, p.292)

[11]Newsom, p. 294

[12]Lindsey, Robert. "Urban Revival Poses Some Hard Choices", Readings in Historic Preservation, ed. Norman Williams, Jr., et al. Center for Urban Policy Research (Rutgers University), New Brunswick, New Jersey, 1983, p. 298.

[13]Newsom, p. 294

[14]Fillkins, Sharon. "Preservation-Gentrification Debate Flares Up in Richmond" , *Planning* , Nov. 1990, p.25

[15]Anderson, p. 82

[16]Ziegler, Arthur. lecture at the College of Architecture and Urban Planning - University of Michigan, Ann Arbor, Michigan. November 12, 1990.

[17]Newsom, p. 294

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Community Economic Development:
A Potential Solution For Chicago's Poor

Sharon Pedersen

America's poverty-stricken communities and neighborhoods are often referred to as miniature Third World countries. Deprived of many everyday comforts of the modern world, most residents of these areas lack access to the jobs and decent housing that most of us take for granted. Chicago, for example, faces 9.3% unemployment, yet an even greater 20.3% of its residents earn below the poverty level (U.S. Dept. of Commerce, 1988). Like many other large cities, Chicago faces the flight of companies, and jobs, to the suburbs; there, cheaper land and taxes as well as a perceived greater quality of life await corporate owners and executives, yet low- income workers may not be able to afford relocation or daily commuting. Many Chicago planners feel that the problem of retail and industrial flight to the suburbs must be addressed (Acosta, Berlin presentations, 1990). The city's tax base is declining, and fewer manufacturing jobs exist for low-skilled city dwellers. According to Census Bureau figures, while the population of Chicago is falling slowly, manufacturing jobs fell 24.3% in the period 1977-1982. Transportation and time costs make commuting to suburban workplaces infeasible for lower class city residents.

. . . contrary to traditional developers' perceptions, all urban residents do not benefit from large-scale physical development projects . . .

The income gap between white and black city dwellers is an increasing problem that urban planners must face; after all, the poor are a large part of planners' constituency. The problem of income disparity is discussed poignantly in Fred Bayles' Associated Press article, "Tale of Two Cities": while "many downtowns have blossomed with new office towers, new jobs and stores and restaurants catering to the urban professional... Chicago employment statistics show only one out of six young black men have a job (Bayles, 1990)." Though Bayles does great service in opening our eyes with his stark statistics, his article fails to pinpoint causes of poverty, and falls short of proposing solutions.

June Thomas goes further by describing the skewed economic development process that many cities have undertaken - one whose benefits to poor urban dwellers are often indirect at best (Thomas, 1984). Thomas is quick to point out that contrary to traditional developers' perceptions, all urban residents do not benefit from large-scale physical development projects: the impact for the poor from indirect benefits (such as new service jobs created) is difficult to assess. Thomas reminds us that, ironically, while financial leaders tout grandiose construction projects as the answer to crumbling downtowns, many of these projects (such as Detroit's Renaissance Center) have failed to make money. Rather than assuming that downtown redevelopment creates new jobs, planners and activists should realize that jobs may only be shifted, or may not benefit the chronically unemployed. Both Bayles and Thomas name education and employment as two key areas needing great improvement if blacks and other minorities are to overcome poverty. Thomas believes that "in order to rebuild cities, we must focus not only upon physical structures...but also upon human resources, which should be developed to their fullest capacity." With manufacturing jobs fleeing to the suburbs and indeed overseas, education is increasingly important to prepare youth for white-collar jobs. Thomas believes that many "declining" cities contain great resources, including powerful organizations such as corporate headquarters, and their personnel. However, traditional civic and business groups concentrate power and influence in the hands of the already powerful and influential, to the exclusion of the persons and groups that need the most empowerment. Daniels, Barbe and Siegel (1981) also give strong arguments regarding the necessity of involving low-income residents in economic development planning.

While traditional, large-scale economic development plans have resulted in demolition of entire residential neighborhoods (as was the case in Detroit's Poletown General Motors plant development), alternative models of development can, and do exist. The city of Chicago has been a leader in forging partnerships with local neighborhood groups to foster economic development. These organizations, usually called community development corporations (CDCs), provide or arrange for business skills training, technical assistance, and capital, often in the form of loans, in order to support self-employment for entrepreneurs, whose businesses in turn provide valuable employment and services to the community. In this manner, neighborhood residents can have a voice in directing the course of local development. As one such organization's slogan states, "We the people will work out our own destiny." Chicago's faith in these organizations and its track record of funding neighborhood-based economic efforts sets it apart from most large cities. This paper outlines the rationale behind community economic development, describes several Chicago organizations currently involved in such initiatives, and points out the strengths and weaknesses of this approach to unemployment and economic distress. Implications for future economic development planners are discussed in the conclusion.

Community Economic Development
History and Rationale

History. Chicago's community development corporations have early roots, with social service organizations dating back to the turn of the century, and civil rights organizations starting in the 1930s-40s (Mier, 1991). The concept of involving low-income residents in community-based economic development received national attention in the mid-1960s, a turbulent time of race riots and citizen activism. In response to cries for more access to economic betterment by minority and low-income groups, the Federal Office of Economic Opportunity and the Ford Foundation funded approximately 40 "Small Business Development Centers" nationwide. One such organization in Chicago had a focus on minority business development (McCarroll, 1982): founded in 1965, this organization was renamed Chicago Economic Development Corporation (CEDCO) in 1971.

As federal belt-tightening occurred over the years, and concerns of mismanagement, corruption and political patronage arose, these programs recieved less and less funding, until today the OEO is a shadow of what it was in the mid-60s. As Daniels, et al state: "Lack of adequately defined goals, capital, markets, and skilled internal management have all contributed to a number of unsuccessful community-based development efforts." CEDCO survived until two years ago, when drying up Federal funding, turnover of leadership, and fraud allegations concerning a business incubator project in Lawndale, one of Chicago's poorest neighborhoods, ended in its demise (Mier, 1991). However, many smaller-scale grassroots CDCs

been conceived and survived over the years, funded by a combination of government and foundation dollars. Mier and Wiewel are optimistic about the potential for CDCs that combine business acumen and ethical conduct with political savvy (Mier and Wiewel, 1983).

Rationale: Market failure: discrimination, imperfect information. Minorities, especially those who are women, are discriminated against through unfair hiring, wage, and sexual harassment practices, often ending up on welfare or in minimum wage jobs with little opportunity for advancement. Meanwhile, the Federal government has shifted its resources from social to military spending. Already meager Aid to Families with Dependant Children (AFDC), medicaid, housing subsidy and food stamp programs have been all but wiped out. As the Federal "safety net" has disappeared, market approaches touted as the answer to problems of poverty have not materialized (Institute for Policy Studies, 1985). In large part, the poor must fend for themselves, creating alternative means to economic self-sufficiency.

Julia Friedman (1988) explains that because loans to small businesses are perceived as high-risk and causing greater administrative expense, many applicants for these loans are exposed to "credit rationing." This is a practice in which banks summarily refuse to review their applications, or subject them to more stringent stipulations including higher collatoral and interest rates, or a loan amount or payment schedule different from those loans seen as low-risk. Market failure results, due to imperfect information and discrimination on the part of traditional lending institutions, and loans are not given to businesses that could be successful. Friedman argues that this justifies the need for public sector loan programs for small businesses such as those administered by community development corporations.

Black Community Development and Capitalism. Traditionally left out of white economic development endeavors, blacks have sought a "piece of the pie" too. Tabb (1979) outlines two broad approaches to blacks' disenfranchisement: "integration," suggesting blacks should ally with whites in achieving the economic aims of business owners and workers, and "separatism," which holds that traditional white dominance of market forces necessitates the formation of alternative economic structures for blacks. In turn, two approaches to the separatist stance are examined by Tabb: black capitalism, which mirrors the white capitalist approach of individualistic competition, and black community development, which advocated a collective, participatory process in which the means emphasizing group unity are more important than the bottom-line financial ends. CEDCO, described above, followed the black capitalist approach: "We went to the corporations (to request funding) preaching just what they wanted to hear: good old American capitalism," said CEDCO's former executive director (McCarroll, 1982). Tabb concludes his analysis by saying that though concrete rewards to black-owned businesses have been limited, important gains have been made in exposing inequality and demanding inclusiveness in economic development programs.

Community Economic Development Programs in Chicago

The cooperative relationship that exists between the city and neighborhood-based community economic development programs sets Chicago apart from most cities. The Neighborhood Development Division of the Department of Economic Development allocates federal Community Development Block Grant funds for general operating expenses of 70 delegate community-based development organizations. Recipients include neighborhood organizations, chambers of commerce, business associations, industrial councils, and special projects, such as one which serves as an early warning system to detect signals of industrial firms' intent to relocate (Norsick, 1990).

Among the Department's Business Finance Division's programs is one that provides micro loans, commercial and industrial loans of up to $20,000 with only 3% interest in targetted areas, and with the lower of 75% of prime or 10% for all other areas. These loans are offered either with bank participation, or solely with the city acting as lender of last resort. Borrowers can receive from $5000 - 20,000 per job created, depending on the quality of jobs created, with criteria including benefits and training offered to low-income individuals, number of heads of households to be hired, etc. Eligible participants are usually those who do not have enough collatoral or projected cash flow to qualify for traditional business loans (Coleman, 1990).

Other popular programs include a facade improvement rebate program, and tax abatement programs. Since retail establishments are assessed at 35% of market value, and industrial at 40%, tax abatements and tax credits for hiring dislocated workers are seen as important incentives for retaining businesses (Ladniak, 1990). Following are profiles of a few of the many organizations involved in neighborhood economic development in Chicago.

Chicago Association of Neighborhood Development Organizations (CAN DO): Serves as a trade association for about 75 neighborhood-based community economic development organizations as well as 95 affiliate members including banks, real estate and technical assistance firms. The nation's largest city-wide community economic development coalition, CAN DO has been in existence since 1979. With funding

. . . in large part, the poor must fend for themselves, creating alternative means to economic self-sufficiency . . .

from state, city (through Community Development Block Grant dollars), and private foundation sources as well as fees-for-service, they provide technical assistance to member organizations as well as loan packaging and business skills training to existing and newly-developing businesses. More recently they have been instrumental in advising on city policy development: for instance, the city recently passed a "CD Float" ordinance that allows for CDBG funds allocated but not yet disbursed to be invested in short-term loans for construction and other projects (Berg, 1990).

Back of the Yards Neighborhood Council, Economic Development Unit: Boasting to be the oldest community organization in the country, Back of the Yards organized an economic development component in 1982 to help revitalize the Southwest side of the city, an area currently comprised of 50% hispanic and 25% black population. Located within a broad area whose enterprise zone includes the former Chicago stockyards, this organization has helped convert the stockyards into a thriving urban industrial park. The organization as a whole receives a variety of funding, including United Way, city and state sources. As a delegate agency of the city's economic development department as well as a state-designated Small Business Development Center, the one-person department helps retain and create jobs through and packaging long-term, low-interest loans for businesses existing or relocating to the neighborhood (through a combination of bank, government, and owners' equity financing—see Chicago Dept. of Economic Development, above) and provides technical assistance for these businesses. Three criteria limit applicants: they must have been in business at least three years, have been profitable or at least improving their bottom line during this time, and demonstrate the ability to create new jobs. Paul Ladniak, Project Director, explains that no government funding is currently available for newly-starting businesses. He reports that three downtown banks do make loans for business expansions without necessity of new jobs being created, but these loans are at the prime rate. His unit receives 40-50 inquiries from local businesspersons per year (Ladniak, 1990).

Women's Self Employment Program: a spinoff from The Neighborhood Institute which is itself a non-profit affiliate of the neighborhood-based South Shore Bank, this organization provides training, technical assistance and business loans for low and moderate income women city-wide who are interested in starting self-employment ventures (WSEP, 1990). Its Full Circle Fund is based on a successful program of the Grameen Bank in Bangladesh (Osborne, 1987). In this program, five women business owners, usually from the same neighborhood, participate in each "circle." After a four week orientation program including business skills training, two of the five women are eligible for business loans; the circle decides who will receive the loans. Two additional circle members are eligible in the others' payments are current after two months, and the final member is eligible after another two months of successful loan repayments. Groups meet every two weeks to make loan payments, review loan applications and give each other support. Businesses started through this concept range from home day-care facilities to construction firms.

Strengths and Weaknesses of the CED Approach

Success Rate. Mier and Wiewel (1983) point out that public and philanthropic organizations often apply a double standard when evaluating community economic development efforts: while accepting a greater-than 50% failure rate among conventional private sector businesses, they demand a 100% success rate among new small businesses sponsored by community organizations. In reviewing seventeen businesses started by community organizations, they determined that four (20%) would be successful by private sector standards of profitability, while an additional six or seven businesses were expected to operate successfully in the coming years, if other standards of success were taken into account. These alternative standards would be breaking even (not generating a positive cash flow or profit, but not losing money either), and creating jobs, a more important reason for existence in the case of many community-fostered businesses. Even though many small businesses started by community development organizations never turn a profit, their spillover benefits of creating jobs and fostering job skills in the unemployed may warrant their existence.

Appeasing Discontent. Although CDCs have had a large impact on low-income neighborhoods, some would argue that they have not made a significant dent in the problem of racism; by putting their energy into local efforts, the organizations do little to confront the broader societal problem of income inequity. Back of the Yards' Economic Development Unit, though in a neighborhood that is 75% minority, serves few minority business owners. Although poor constituents' participation is required in community action programs funded by the Office of Economic Opportunity, federal funding has been granted in an ad hoc fashion, to those areas that made the most noise and were able to meet application and reporting requirements. Vaughan and Bearse point out that some population groups and geographic areas have been excluded from the benefits of economic growth (Vaughan and Bearse, 1981). Capital is rarely available for start-up businesses through Chicago CDC's, since funding sources often do not allow for it; hence, already-existing businesses that want to expand are favored over "the little guy" who is just starting out and lacks access to traditional funding sources.

In fact, the management of some community organizations can mirror problems of the for-profit sector; for instance, a large Chicago community organization called The Woodlawn Organization (TWO) faced an employee walk-out in 1982, when workers attempted to organize a union and demand better pay, working conditions and an end to "arbitrary treatment (Park, 1982)." Although the structure of CDCs as organizations independent from government can allow the freedom to design programs that are more responsive to their constituencies, favoritism and mismanagement can result as easily as it can through government programs. Perhaps increased national training and networking can improve organizational management standards, especially in the areas of lending and hiring practices. Community development training institutes are held annually in Boston and Washington, D. C, and the National Coalition for Community Economic Development offers an annual conference in rotating locations around the country. These gatherings can also heighten participants' impact on regional and national economic policy, since "there's strength in numbers."

Who Shoulders the Burden? President Reagan will go down in history as the advocate of "private sector" takeover of functions which traditionally have been handled by government. With decreasing federal dollars going to social programs, locally- based economic initiatives make sense: if the federal government will not live up to its responsibilities of promoting economic justice and income redistribution, encouraging local groups to provide for themselves can be empowering. However, this approach removes the ultimate responsibility for welfare of the poor from the federal government, and promotes "bootstrap" economic theory. The poor do not choose their lot in life, nor should they have to find their way out of poverty alone. Instead, the Federal government should face its responsibility of helping alleviate inequality by allocating fiscal resources to local anti-poverty programs, including community economic development. The current recession makes even private fundraising an increasing burden to community development organizations.

Implications for Future Economic Development Planning

Thomas warns that planners and community workers should not focus narrowly on one issue, such as affordable housing; the needs of city residents are broad and multifaceted. Since the problems are too large to be adequately addressed on purely a local level, federal and state commitment and dollars will be key to improving urban education and employment opportunities. But this is exactly opposite from current trends in government budgetting, so city officials must play an advocate/lobbyist role in requesting, even demanding higher funding for community economic development. Funding for business start-ups is especially needed; those organizations providing these services in Chicago are probably funding the programs through private sources, since no federal or state loan programs exist for start-ups, according to one economic development specialist (Ladniak, 1990).

Norman Krumholz, former Cleveland planning director, also speaks in favor of helping those who need help most. Until the social and economic problems of the central city are abated, Krumholz argues, cities are not going to attract substantial development; proposed development is not necessarily the start of an economic upswing, but often an attempt to milk resources from where they are really needed, in the center-city neighborhoods. Krumholz tells city planners that it is their duty to do the following: fight off wasteful, counterproductive uses of public money; be realistic in determining and stating what is possible and impossible to accomplish; and address the most pressing needs of the city's residents. (Krumholz, et al, 1978).

Thomas feels that solutions to urban poverty are as complex as the problems, but fortunately, they do exist. Community economic development offers a means for building the capacity of low- income city residents. With planners and community activists working to redistribute the benefits of development, and at the same time to improve federal commitment to addressing the human resource problems of inner cities, the problems of poverty and racial discrimination can be addressed and hopefully eradicated (Thomas, 1984). Tabb describes a course of action this way:

We await a formulation which goes well beyhond the Freedom Budget redistribution of the 1960s and rejects the market constraints of the 1970s. Where and how it will come is not easy to see. But that it must come is certain. Out of growth of global corporations, disinvestment from the northeast, abandonment of central cities, and cuts in government social spending, must come a new resistance movement which by the nature of the problems must be broader and more inclusive than any up to now (Tabb, 1979).

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Notes for Observers of Students' Projects

Benyamin Schwarz

Observers of displays in schools of architecture observe students' interpretation of architectural values and education reflected in their projects. But, time and the changes it brings with it have been confusing corridor-wanderers. A few years ago when visitors stopped by student's works displayed on the walls of architecture schools they could have seen telephone booths that looked like a reproduction of the Sistine Chapel, and urinals which took their shapes from Bernini's cathedrals. The key words in those years were contextualism, historical allusion and applied ornament. Contextualism suggested that a building's physical and cultural context should be taken into consideration in its design. Allusionism referred to the ability of the building to function in a culturally loaded, symbolic way, and to make references beyond itself. And the third word, ornamentalism, referred to the strategy for achieving the references implicit in the idea of allusionism — a kind of system which can have a basis in the literal structure of the building, or with abstract patterns, or with images from nature (Stern, 1980). Students have challenged modernism in their own way, influenced by Venturi, copying pictures from magazines, and eager to become "little Michael Graves."

Recently, influenced by architectural deconstruction, the displays were characterized by eel-like structures and rotated alignments of buildings that were expected to be able to establish a new line of movement into existing sites. Students embraced deconstructivism as if style were everything, as if there were no substance anymore. The key words of the new era came from the vocabulary of the French philosopher Jacques Derrida and architect Peter Eisenman: 'The building itself is not the important creation; the photograph of the building is potentially the work of art', ' The aim is to invent a new building image, the "weak" image.' The idea was (at least my understanding of the idea, based on Eisenman's lecture at the University of Michigan in 1990) to avoid making buildings that look like buildings always have. Eisenman rejected rationalized organization as an unnecessary interpretation of reality, arguing that arbitrariness is part of reality, too, and should be incorporated. A column can be placed in the middle of a staircase; it doesn't block the way but causes other aspects of the building to be noticed. Vincent Scully's (1989) words about the Wexner Center for the visual Arts by Eisenman described the new trend:

Architects need forms even more desperately than they need ideas (or slogans), and here they found them, superficially enough, in the dynamic diagonals, the explosive abstractions, and the impeccably revolutionary credentials of Russian Constructivism — so setting up an intriguing and entirely meaningless play on words as well.

Watching the projects on the walls one has to ask oneself: What kind of values are stressed by the sub–culture of architects and the education that produces them?

Value (1)

There is the question of values and value judgment in design. According to John Habraken architects feel they are the protectors of quality in design. "Our education is largely directed by two things: that the student learns how to establish his own value system and to express it in built forms — architecture as a form of self-expression, a way to set a standard, to safeguard the quality of the environment and to educate the layman;

. . . and with the decline of social pacification motives came Postmodernism, which was much more concerned with the aesthetics of style, corporate identity packaging, and elite environments.

and that he is initiated into a peer group that knows what is good or bad, and is aware of those elusive and secret do's and don'ts that make one a "good" architect — the hidden agenda that makes one fit into his own value system within that of the colleagues he admires" (Habraken, 1979). However, there is not enough in all this to prepare a person for a detached approach toward understanding how issues of form and quality interact. We do not train ourselves to understand issues of value in the built environment, and furthermore concerning is the fact that architecture students are not trained anymore to reflect on the people who are imagined to occupy the buildings conceived and designed by them.

Understanding Human Behavior

One of the paradigms in architectural studies for several years has been based on the premise that knowledge of the basic principles of human behavior helps us clarify our understanding of the relationship between environment and behavior. This, in turn, helps the architect consider how the environment affords people of different backgrounds different aesthetic experiences and activity patterns. Jon Lang (1987) argued that this knowledge "also enables us to understand what we can predict with confidence and when we are really going out on a limb."

A (Brief)History of the Person-Environment Relations

More than thirty years ago a small number of social and behavioral scientists, along with a few architects committed to a particular reading of modern architecture, articulated a new model or paradigm of the architecture process. Both the need for theoretical understanding of the relationship between people and their surroundings and immediate, pragmatic concern over mismatches between people, institutions, communities, and designed environments have provided impetus for this work.

Roger Montgomery (1989) described the process: Based on the conflation of social science and architecture around functionalism, this new model began with human beings who occupied buildings, the users. The inventors of the paradigm saw in its use the opportunity to make far better buildings in terms of satisfying the users (which is what they defined as better). In defining architecture this way the occupants and users became the first cause around whom the whole architecture process revolved.

Through the 1950s and 1960s focused, applied research helped to build a cadre of social scientists committed to studying the relationship between the physical environment and human behavior. Hall's *The Hidden Dimension* in 1966, Barker's *Environmental Psychology* in 1968, and Sommer's *Personal Space* in 1969 articulated the first complete formulation of the new field of person-environment relations. Several architects and social scientists believed by the end of the 1960s that by incorporating social-behavioral sciences into the architectural design process, the resulting buildings would function better for users and occupants. The new paradigm was based on the process model beginning with knowledge and research, followed by a programming stage that specified the social knowledge to be incorporated in the building, then a final design stage incorporating that social knowledge. "The presumption was that, if followed, this process would result in buildings that would be as well fitted as possible to the needs of the people who occupied and used them" (Montgomery, 1989). The last step was added later with post-occupancy evaluation (POE) to complete the circle by providing the source of new social science knowledge to inform the design processes for the next round of projects. The new paradigm was embraced by the architectural establishment, and as a result, during the 1970s virtually every leading school of architecture or landscape architecture required courses in people-environment studies.

The field of environment and behavior in architecture continued to mature during the 1970s and the early 1980s. However, with the inflated building economy

. . . given the educational differences and motivational differences, the architects differed from the public in the meanings they inferred from styles and in their estimates of the public meanings.

which emerged in the last half of the 1970s, and with the decline of social pacification motives came Postmodernism, which was much more concerned with the aesthetics of style, corporate identity packaging, and elite environments. Architects became less interested in designing buildings around users requirements and programmatic concerns. In the mid 1980s came the rise of Deconstructivism. The emphasis shifted toward the personal need of the architect to break new ground in architecture, and to be unconventional in a conventional world (Doubilet, 1989). Thus, the decline of environment-behavior studies should have come as no surprise.

Meanings of environments (1)

It appears that people react to environments in terms of the meanings the environments have for them. The meaning of many environments is generated through personalization — through taking possession, completing it, changing it. But, designers and users are very different in their reactions to environments, their preferences, and so on, partly because their schemata vary. Amos Rapoport (1982) argued that "designers tend to react to environments in perceptual terms (which are their meanings), whereas the lay public, the users, react to environments in associational terms". Nasar (1988) studied the question of whether architects accurately gauge public meanings. His study compared the response of both architects and lay people to meanings attributed to single-family home styles. The findings supported the hypothesis that given the educational differences and motivational differences, the architects differed from the public in the meanings they inferred from styles and in their estimates of the public meanings.

Major Question

Are we teaching students of architecture that an architect's meaning is more important than users' meaning? Is architectural education geared toward only turning out the occasional "genius" – the future master of the new style, the next generation of tastemaker?

From the observation of students' projects it appears that their competence in addressing their imaginary clients' needs is given secondary importance. This is just an observation. However, observation is not just seeing; it is seeing with detachment — the suspension of knowledge and certainty. It is curiosity, before the question is asked. The answer is the end of observation and the beginning of theory.

I don't have a theory about what the goals of schools of architecture are in terms of producing future architects. Unfortunately, I doubt whether the schools in this confused era have clear, defined goals of this sort. But, because I insist that the business of architecture is that of "person-environment relations" I have serious concerns.

Value (2)

People and their satisfactions are not the primary concern of most architects. Architects are concerned with architecture as an art form. In order to build their dreams they know that their art has to be functional and usable more than other art forms. They know that without a sponsor a building does not get built. Perhaps, that is why they are impressed by architects who can persuade a given client or sponsor to spend money on their purely architectural ideas, regardless of their usability for the clients. Architects may or may not incorporate social ideas into their architectural theory, but the subject matter of most of this theory has been architectural form itself. Social and behavioral orientations are not popular among architects now.

Meanings of environments (2)

Research indicates that environmental meaning results from environmental experience. Such meaning is a product of environmental cues and individual factors such as personal and cultural filters or social contact. The broad implications are of two kinds. On the one hand, different environmental meanings would occur for different socio-cultural groups; and on the other hand, some consensus on environmental meanings may occur across

Architectural research and practice have not solved the problem of adapting environments to human competence and behavior. We are not there yet. We may get there.

a community in relation to shared experiences (Nasar, 1988). Thus, what is "meaningful architecture?" Norberg-Schulz (1986) argued that "as a work of art, architecture concretizes higher objects or 'values.' It gives visual expression to ideas which mean something to man because they 'order' reality. Only through such an order, only by recognizing their mutual dependence, do things become meaningful. Such ideas may be social, ideological, scientific, philosophical or religious".

Therefore, defining the aims of architecture as "self expression" seems meaningless, not to mention Narcissistic. Any expression in architecture is significant only when it transcends the self. It is important to improve our theoretical foundation by nurturing a sensitivity to places in terms of our own personal experiences, and in particular the experiences of the recipients of our design.

The Hope

One of the characters in Sartre's play, *No Exit* declared that, "One always dies too soon or too late." For some architects the creation of beautiful form has been the end product of all design. They may have argued that there is no way to gauge responses of users to buildings, that the environment is totally unpredictable, and that views of clients, critics, and other architects are the only ones that matter. Perhaps, for these designers the "death" of the environment-behavior paradigm is too late.

It appears that nowadays architectural education has an ancillary interest in users requirements and overall attention to human or social implications. If there is some truth in Robert Gutman's argument that "the balance between the attention to the purely architectural and a concern for usability seems to change every few decades" (Gutman, 1989), then there is some hope.

Our knowledge and understanding of the person-environment relationship is still very limited. We do not have yet a conception of environmental wholeness and we have not yet been able to effect it. Architectural research and practice have not solved the problem of adapting environments to human competence and behavior. We are not there yet. We may get there. But, if we want students of architecture to get there, we cannot let the paradigm of environment-behavior die too soon.

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Some Notable Vienna Buildings

Emmanuel-George Vakalo and the Winter 1990 Vienna Program Students[1]

The following paragraphs summarize the motivation and reasons underlying the formulation of an assignment given to the students who participated in the University of Michigan - Technische Universität Wien Architecture Exchange Program during the Winter 1990 term.

Many scholars have recognized that the study of morphologically notable buildings enhances one's ability to make architectural form (e.g. Collins (1965), Mitchell (1990), Rowe (1976), and Rowe and Koetter (1978)). Maldonado suggested that "the area of pure intuition must be based on a knowledge of past solutions to related problems, and that creation is a process of adapting forms derived from past needs or past aesthetic ideologies to the needs of the present."[2] Stern called for the kind of study that "comes from the scholarly examination of previous buildings for the purpose of using them as the source of new buildings."[3] Indeed, it may be argued that, whether consciously or unconsciously, most designers use significant buildings from the near and distant past as prototypes for or as analogous solutions to the architectural problems they confront. As Clark and Pause (1985: vii) stated, "one commonality shared by the great buildings of this era with those of the past, is a demonstrated understanding of basic architectural ideas which are recognizable as formative patterns." Thus, it may be assumed that the acquisition of knowledge about morphologically significant buildings plays an important role in informing and improving the form-making process and the architectural product.

What you hear
you forget
What you read
you remember
What you draw
you understand
- Chinese Proverb -

In general, approaches to the description and analysis of the morphological structure of buildings can be seen as systematic investigations which aim at discovering the principles, concepts, and rules underlying the derivation of architectural form. Hence, description and analysis may be viewed as important tools used by investigators to explore, present, and explain the process and product of form-making in architecture. Thus, knowledge concerning the morphological structure of notable buildings and classes of buildings can be acquired.

Moreover, the intentions a designer may have or has had are sometimes revealed through methodical analysis and description. In response to Baker's analysis of his design solution for the National Gallery extension, James Stirling remarked that Baker (1989:xvi) "interpreted several design subtleties which I only felt intuitively, and until his exposition had not fully perceived." Finally, systematic analysis may help the critic of architecture avoid pre-conceived notions or prejudices. Thus, it seems reasonable to expect more insightful and sophisticated criticism. It is from this perspective that Stirling asserted that the "ability to analyze and explain" the designer's form-making ideas constitutes the foundation of architectural criticism (Baker, 1989:xvi)

Perhaps more importantly, methodical description and analysis can enhance the designer's ability to design. Stiny (1976) has argued that formal studies should be a "central enterprise" in architectural research and education. This argument was based on a remark made by March and Matela, "...a designer with a well-understood and structural vocabulary of form is more likely to find suitable matchings with functional requirements than one who attempts to let form follow function in some supposedly self-generative way" (Stiny, 1976: 187). To be a good designer one must not only have a wealth of morphological ideas and the means to implement them, but must also be visually fluent, literate, and imaginative. It may be argued that both require patient learning and systematic thinking. Analysis is a powerful tool which can be used to promote a designer's learning and thinking faculties. At the same time, the analysis of architectural precedent brings the designer closer to the sources of morphological ideas. This is where the creative spirit is nourished, the visual vocabulary enriched, and ideas about form hatched. The generation of

ideas about form is particularly important in the form-making process. As Clark and Pause suggested, "A formative idea is understood to be a concept which a designer can use to influence or give form to a design. The ideas offer ways to organize decisions, to provide order, and to consciously generate form" (1985:139). In addition, through the analysis of notable buildings a designer can acquire the awareness of attainable standards of architectural design.

Consistent with the foregoing assumptions and arguments, each student was asked to (1) select a set of two or three architecturally notable Vienna buildings, (2) describe each building, and (3) explore its morphological structure. Specifically, each building is described using a prescribed set of orthographic projections. In turn, each of these descriptions is employed as a point of deparure for exploring and describing the principles and concepts which appear to determine the location, dimension, and visual interdependence that various architectural elements have to one another and to the morphological structure of the building. Of particular interest is the analytical drawing which addresses through superimposition the morphological relation a building's plan and elevation. The exercise was guided by fairly exacting graphic guidelines to promote the undertaking of comparison and, one hopes, further morphological analysis.

The drawings which the students produced are not only expertly drafted but also instructive and provocative. It is unfortunate that only a small sample of them can be presented here.

[1] Thomas A. Born, Pamela G. Brubaker, Patrick D. Bryck, Christopher W. Bushell, Sue L. Faust, Barbara J. Felix, Alexander O. Harrow, Ronald R. Henry, Dwight M. Herdrich, Jonathan P. Lee, Scott S. Matties, Allen P. McCullough, Jack B. Silverstein, and Lala Rukh Waqar.

[2] See Colquhoun (1969: 73).

[3] Stern also admonished architects to "put history to work as part of the design process" (1980:34 and 39).

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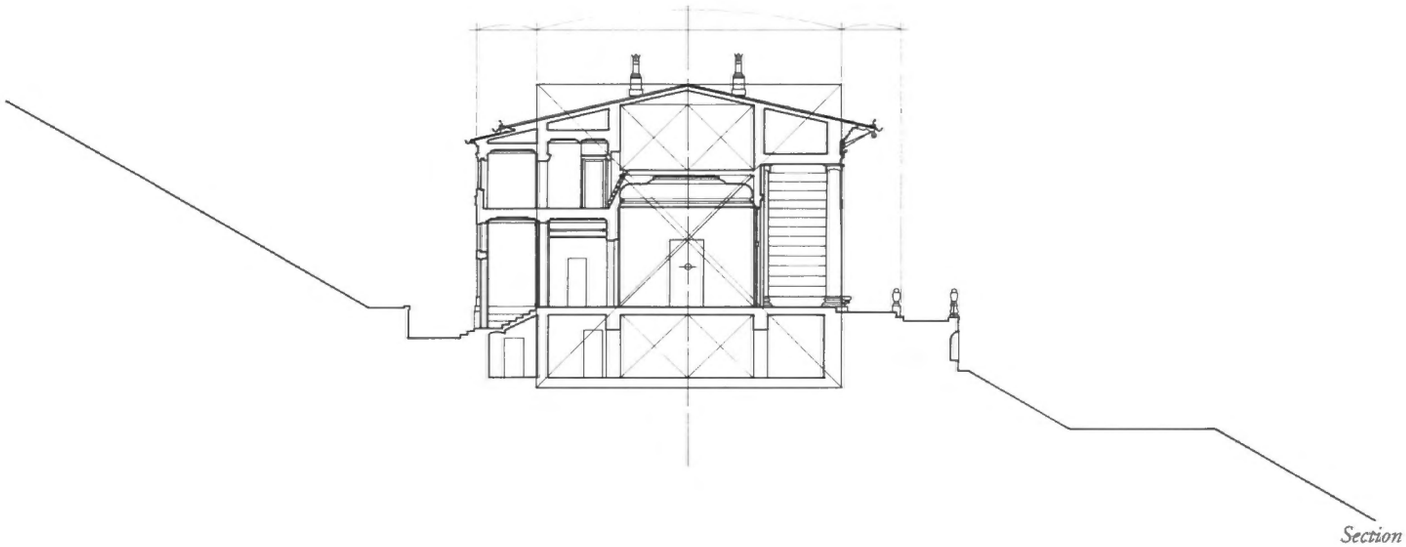
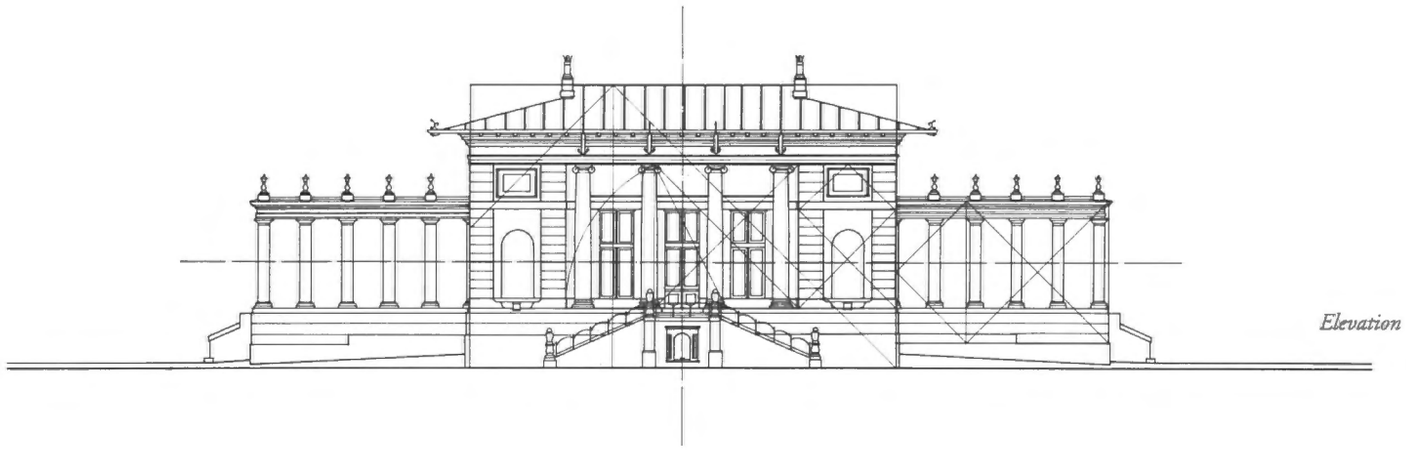
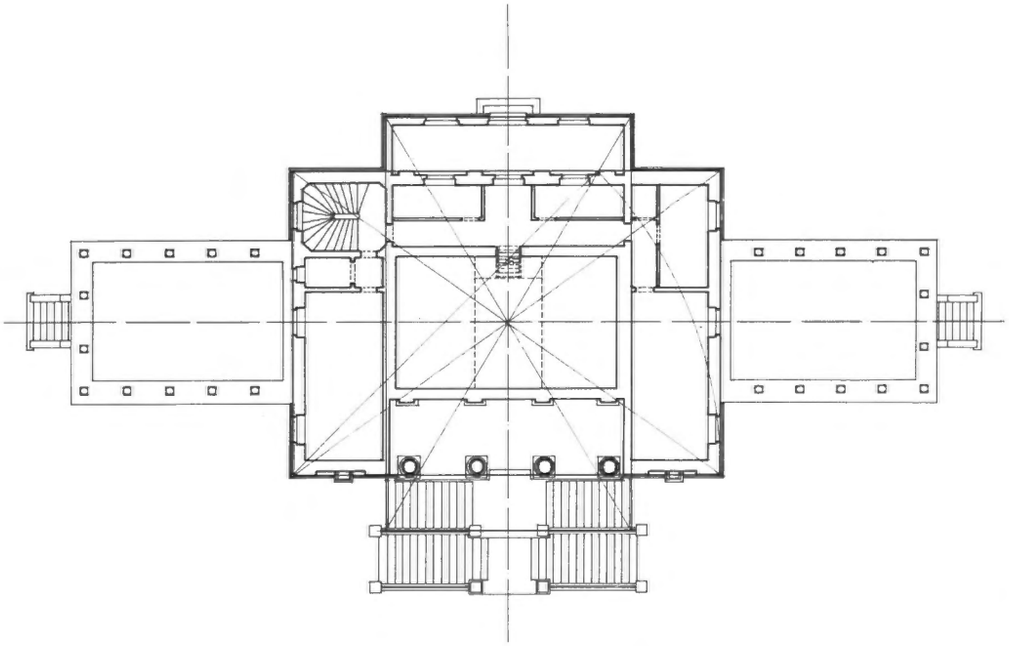


Section

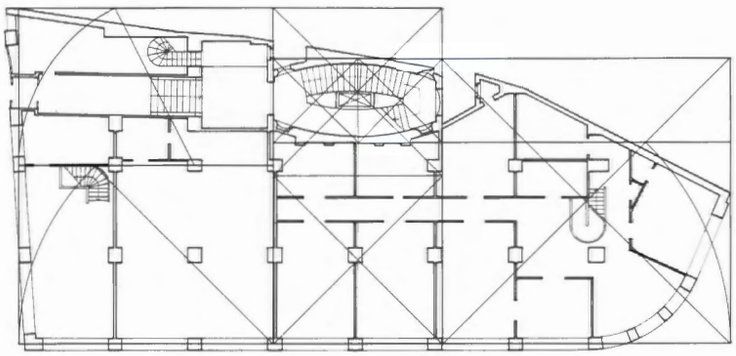


Elevation

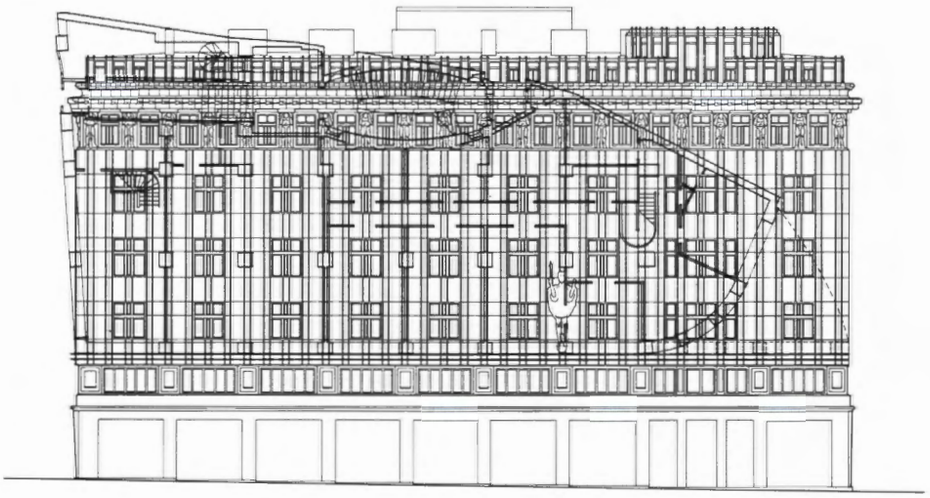


Plan

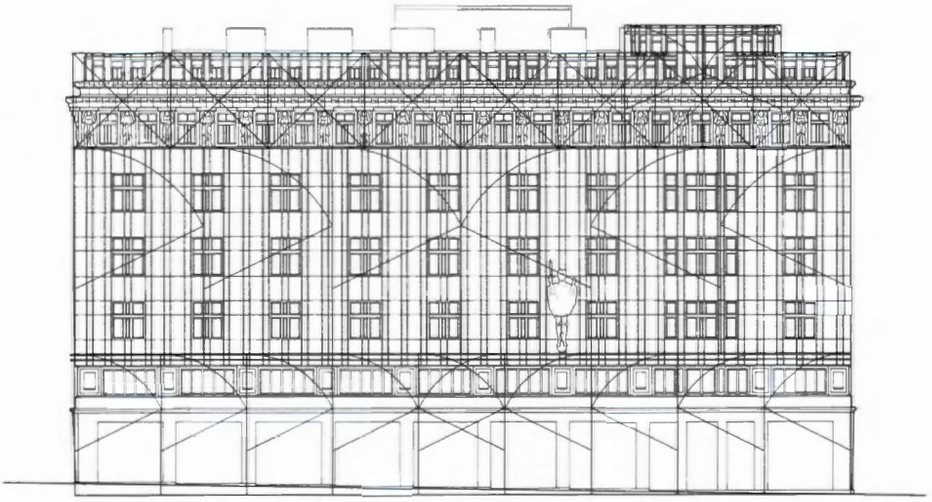
Villa Wagner I, 1886
Otto Wagner
By Jonathan Lee



Plan

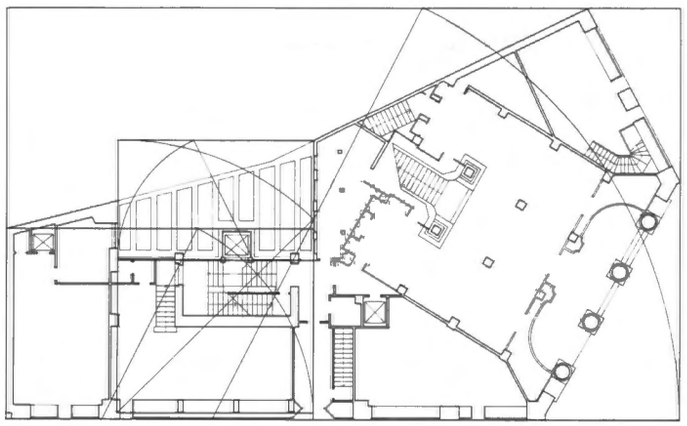


Superimposed plan on elevation

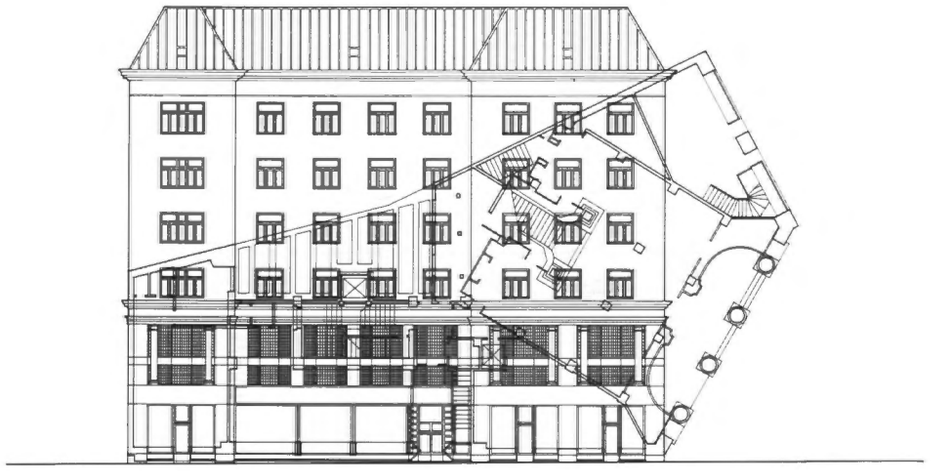


Elevation

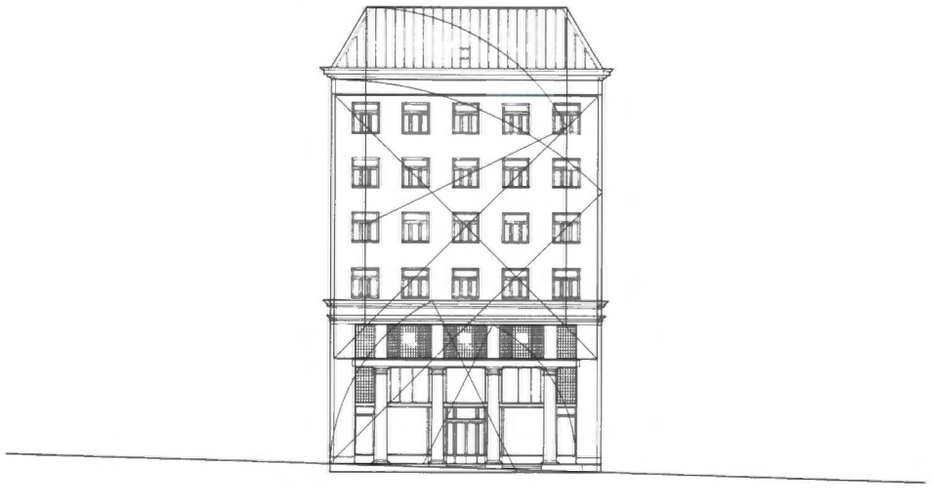
Zacher Building , 1903
Josef Plecnik
By Scott Matties



Plan

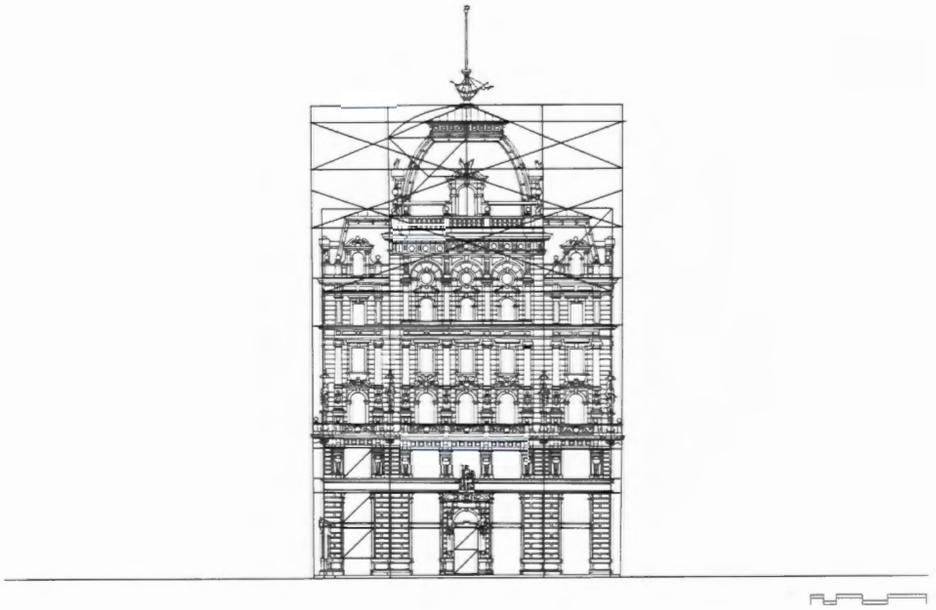


Superimposed plan on elevation

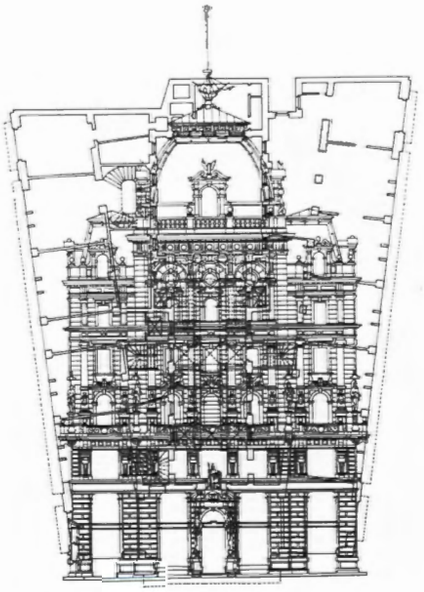


Elevation

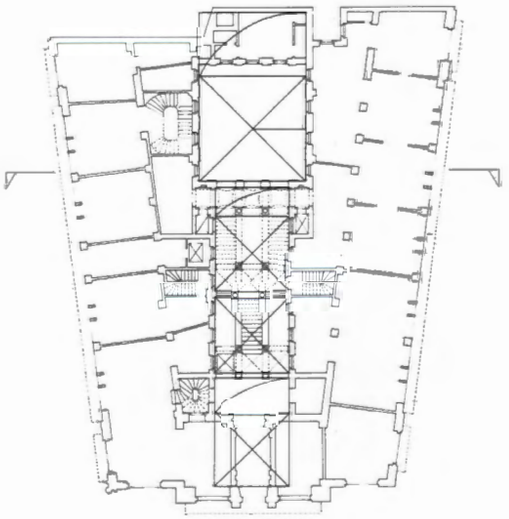
Loos House, 1909
Adolf Loos
By Scott Matties



Elevation

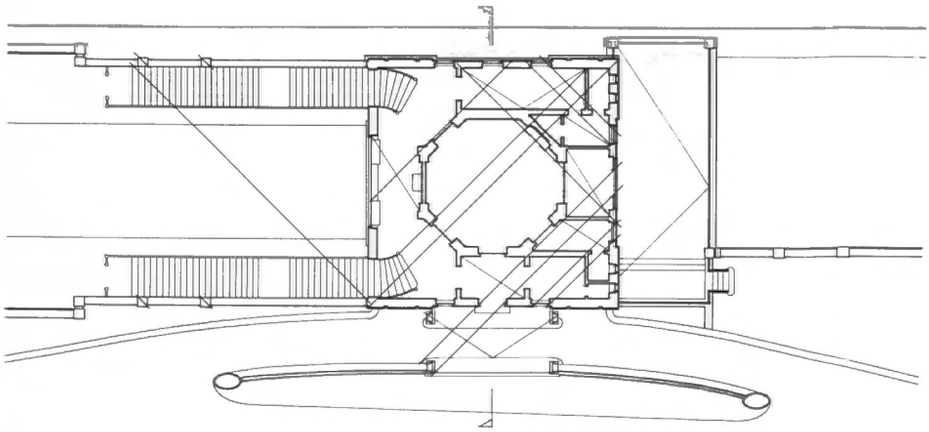


Superimposed plan on elevation

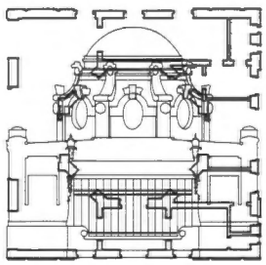


Plan

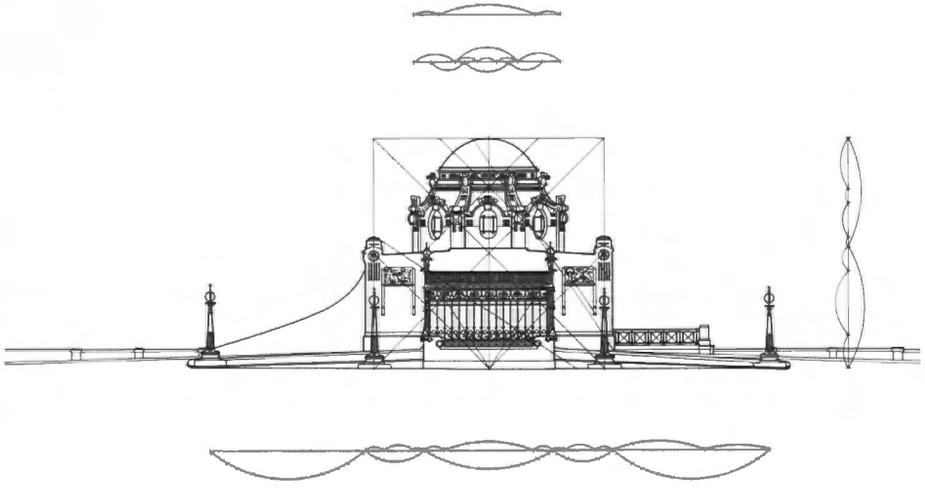
Equitable Palace, 1890
Andreas Steit
By Lala Rukh Waqar



Plan



Superimposed plan on elevation



Elevation

Stadtbahn Court Pavilion, 1899
Otto Wagner
By Pamela Brubaker

Dean Emeritus, Emil Lorch Professor of Architecture and Urban Planning

An Interview With **Robert Metcalf**

Dimensions: How has the architectural profession changed since you began your career?

Metcalf: I have a dual career; practice and education. Architectural practice has become much more complex. It is impossible to keep abreast with the entire industry, forcing specialization and practice limited to certain building types. In education, the best schools have moved from the craft approach, with practicing architects comprising the bulk of faculty, towards a mix of scholars, researchers, and practitioners. The schools are "joining the university" and beginning to emphasize the development of new knowledge to inform design. The five year B. Arch. was standard in the 40s - 50s; the six year M. Arch. was introduced in the late 60s; and the number of doctoral programs has increased since the 60s.

Dimensions: Are you satisfied with the current state of the architecture profession?

Metcalf: The question is difficult to answer except from personal perspective, because the profession is very diverse and hard to *know*. But even in the early 50's as I started my practice, I limited my office to small buildings - so we could do the whole thing - I believed you could not do good design unless you thoroughly understood all aspects of the problem - *integration can occur only in one head.* I don't believe that today, but it is very satisfying to really encompass the entire building - from first conception, through its design, construction, use, and behavior - within your mind.

In general terms, I am very disappointed that architects are abandoning large parts of the building problem to others, and are in a sense becoming 'exterior decorators.' In addition, I do not like the marketing aspect of architecture today.

Dimensions: If not, what do you feel should be changed in the future?

Metcalf: Architects must accept more responsibility for the performance of their buildings - liability problems in this litigious society has pushed them into abandoning responsibility, or leaving it to others. But good design demands competence and there is no way to fudge it. So we need much better education and training, we need to set our sights higher, we need to do better work, and we need to conduct research to learn how and why buildings perform. Practitioners need to get involved and share their knowledge in order to advance the profession. We are extremely competitive and secretive now - scrambling to get work from a shrinking base of knowledge and experience - exactly the wrong approach.

Dimensions: Is there a basic design method or philosophy behind the creation of your houses? If so, would you share with us what it might be?

Metcalf: Of course there is a philosophy underlying everything one does. It is embryonic at first and probably adapted from the work of others that you admire. From the first we tried to meet the needs of people who would use the building and we quickly learned the building could teach people things they had not experienced before. In a good house you will 'discover the moon' - shorthand for nature. We assessed the site carefully, because it has a great impact on building design. We tried to understand the natural forces and their impact on the building. It was soon obvious that the materials, tools, and labor skills that were available strongly influenced what you could do - but it was two-way - there were limitations imposed on design but there were also opportunities to explore. We have always emphasized the use of *natural* materials. (There is little that is natural about most materials

you use in a building, because all materials are processed. You saw and plane wood- what is natural is the grain, color, texture, feel, and weathering characteristics. What is natural about brick develops out of clay and the firing process, etc.)

We have always thought of our practice as a service to people. Architects have an ego problem - if you think you have some magical gift, you may never do the things necessary to advance your level of comprehension. As Bucky Fuller taught us long ago, comprehensive thinking - *good design* - is only learned by doing it over and over and over. The process never ends, there is always more to learn, you can always do better next time. By serving people well, you make your life worth living. You gain respect.

Design method is another ballgame. None of us know enough about this, and few of us ever try to explain it, nor even try to understand what we are doing. Design is integration, and integration of a multitude of factors is extremely difficult. When you start practice, it takes an inordinate amount of time to 'get the scheme.' The working drawings and specifications will not take much time, however. Both excesses happen because you are a rookie - you don't know what you don't know. And if you can't get anything built, you won't learn much. Designing and seeing it built is enormously instructive . . . you have to go to the job, of course, and you have to have an open mind and a desire to learn. You begin to assimilate what you learn, you begin to make connections, to tie your knowledge together, to network. Design begins to come easier, because it is a logical process, after all. If there is intuition and magic, all the better, but design goes nowhere if there is no logic underlying. As you discover how vast the problem is, the instructions for building become more complex, more voluminous. There is more and more you ought to comprehend and decide and incorporate . . .

Dimensions: What would you say to a young person who said they were considering going into the architectural profession?

Metcalf: I congratulate them. Although they may have vague or distorted ideas about what architects do, there is an awareness - a sensitivity - to people and their habitat. Architects are people's advocates, they are tying to improve the physical environment. Your goal as an architect is to design environments that enhance the lives of people. It takes great love and care, a *lot* of time, but it is enormously rewarding . . . Not in dollars, but in many more gratifying ways.

Dimensions: What qualities would you find desirable in a young person who was applying for work in your office?

Metcalf: A desire to learn, coupled with the recognition there is much to learn. A reasonable level of graphic skills, and evidence of accuracy and thoroughness. A personable nature, ability to work with others without friction, and with intensity and good will. High personal standards and a positive attitude that they will advance in their profession, that they will make a contribution. A strong sense of responsibility in anything they undertake. Curiosity, and a willingness to stretch their limits, to grow. Trustworthiness, good character, reliability.

Dimensions: Is there any further advice that you might share with us? For example, you designed and built the house you live in, would you advise others to do the same? If so, do you have any suggestions that might ease the process?

Metcalf: Yes, I would advise any fledgling architect to design and build his or her own house. It is a guaranteed and rapid way to fix in your mind the complex nature of design/detail/construction. You learn very fast when you discover during construction that your design was inadequate, that you did not face up to the problem. You cannot avoid facing it when you build, and much re-thinking occurs.

Dimensions: What do you consider to be the most satisfying moment in your career?

Metcalf: Most satisfying *moment?* The most satisfying *event* was building our house with our own hands. Few people can do that, and everyone knows it. It opened opportunities for my practice in Ann Arbor and it has been a learning laboratory of great value to me. The most satisfying moment for us occurs when we get a letter, a brochure, a picture, or we visit a building that a former student has designed and we realize our efforts in education have borne fruit. The good will and appreciation by a former student for your assistance in their growth and development is the greatest reward a teacher can receive.

Dimensions: The most disappointing?

Metcalf: I was going to learn about housing so I could design beautiful places to live that anyone could afford, and everyone would want. I have not succeeded.

Dimensions: If you had it all to do over again, would you reconsider?

Metcalf: No, I would try to do the same things, but better.

Dimensions: Is there anything that we failed to ask that you wish to add?

Metcalf: Teaching and practice in architecture are most complementary activities. I could not do one without the other. Modest income in each is one reason, but not the most important. I could not teach either construction or design if I did not do it in the real world. Teaching is the stimulus that forces one to keep abreast of new developments. It also gives you regular contact with students - the future. Combining the two spheres of architecture has brought us a lot of joy in our lives.

Hidden Heritage:

Thoughts on African-American Influence in Architecture and Planning

Richard E. Mitchell

Consider that the influence of African-Americans on architecture and planning is rarely, if ever, taught; does it not exist? And consider that most design academies employ primarily European, and Euro-American architectural models as panaceas to design problems. Surely, architecture can be enriched by an informed understanding of ethnic design sensibilities.

As architecture is a cultural artifact possessing historical information, it is a forgone conclusion that both academicians and practitioners should recognize the many collisions of cultural contexts that have resulted in American architecture. Incorporation of these cultural collisions, in particular African American, in both academic and professional realms would aid in the reconstructing of architectural history, which has either omitted particular ethnic influences, or assumed them non-existent.

Attempts at such cultural assertions are usually met with considerable resistance. The feelings are that no such delineation is apparent in the design sensibilities of African-Americans, whether they be the ideals, philosophies, or stylistic imageries; and that attempts at developing or recognizing these sensibilities would be fruitless. If no such delineation exists, then one can only turn to the design schools and their acculturating teaching techniques to effect a change. Yet somehow I feel this would be unnecessary, as one need only to review certain recognized African-American buildings or African-American towns of the early twenieth. century to sense a describable difference from typical design theory and practice beyond stylistic attributions.

And, though there may not be a direct or linear progression of ideals that drives African architecture and planning relative to African-American architecture and planning, there exists a strong need to understand the African-American's design sensibilities, on their own merits first and then perhaps, as elements of an African-American building tradition.

One way of developing this relationship could be through an understanding of the anthropological tradition of certain African ethnic groups. The Dogon tribe, for example, believe that the house serves as a womb; "a cradle for cultural acquisition by providing a specific volumetric context in which most aspects of culture are learned."[2] As the image of its inhabitants, the house expresses an individual or a group in their social universe.[3] One may even go as far to say that "the values upon which culture depends are. . . derived from the house itself."[4]

Or further with the notion of anthropological space, one could make relationships between the two (African and African-American building traditions) proxemically. That is, one could describe the relationships by comparing how the spaces or buildings are experienced, with the assumption that cultural assertion is the underlying impetus behind these projects, which can be recognized experientially. "Edward T. Hall has shown that space speaks through the silent language of proxemic expression: 'people take very strong cues from the space around them, space can crowd or overawe. It can irritate and it can be designed to serve a job, a personality, a state of mind.' The cultural identity of a house lies deeply within it; changes of exterior materials and additions cannot dislodge the primary spatial statement."[5] A culture can be read through its material output; it can also be read through the space it defines.

I suggest that within the realm of either the anthropological tradition or spatial proxemics an African-American tradition in the built environment, which

may well relate to African tradition, could be unequivocally recognized and developed theoretically.

Architecture

It is common knowledge that the slave artisans played a major role in the economic and physical development of the South. Slave artisans and builders were responsible for the design and construction of both the plantation house and the slave quarters. In fact, the oldest landmark in Greenville, Georgia - Windsor Hall - was designed and built by Isaiah Wimbush, a slave artisan. The prevalence of certain African architectural characteristics such as steep, sloping hip roofs, central fireplaces, and porches, that are considered by many historians as African in origin, suggest that elements of African architecture may have been introduced by slave builders.[6]

Nigerian proverb:

Igi kan ki s' igbo: One tree cannot make a forest.[1]

Some recognized African-American buildings are spectacular in their assertion of cultural heritage. However, these buildings, arguably, do not establish an architectural tradition since they represent the wealth and power of the few elite Africans able to assert themselves.[7] Examples of recognized African-American buildings are the round slave quarters at Keswick Plantation, and the Africa House on the Melrose Plantation. The slave quarters at Keswick, near Midlothian, Virginia, constructed by plantation slaves around 1750, were made with the African tradition of handmade burnt clay bricks. The slave quarters are "reminiscent of the circular structures of Kasai Province in Zaire,. . . in eighteenth century Virginia only one with an African tradition could have envisioned living in such a space as the Keswick slave quarters."[8] The Africa House, on the Melrose Plantation, was also built with bricks baked on the property,[9] but unlike the Keswick slave quarters, more of an African architectural sense is evident. The Africa House utilizes characteristics such as a steep sloping roof and wide overhangs, formed with hand-cut timber. These buildings, although arguably non-representative of an architectural tradition, stand as symbols of cultural assertion in architecture.

In addition, the central building type of African-American architecture, the shotgun house, beyond its form, is a perfect example of the "subtle and pervasive" spatial sensitivities that exist in African-American architecture.[10] Considered by some as an architecture of defiance[11] due to its assertion of cultural heritage, in the sense of communal living, the shotgun is a derivative of African sources. The word "shotgun" itself may be derived from the West African Yoruban word *to-gun*, which is applied to houses meaning "place of assembly."[12] It may also be attributed to the the fact that one can discharge a shotgun from one end of the house with the bullet passing straight through to the other side unimpeded.

Relative to communal living, the inhabitants of the shotgun house possess no privacy. Internally prolonged, immediate interaction with one another necessarily occurs, unless one lingers on the porch or street. Unlike Euro-American house designs, the shotgun house does not differentiate between living space and circulation. Hallways are only implied through door alignment. The shotgun exemplifies the West African region's rectangular house in proxemic dimensions that create "intimate spatial encounters."[13]

Presently, there is much debate over whether the shotgun originated in Haiti or North America,[14] though it is obvious that the Yoruba people who were brought in large numbers, from West Africa, to Haiti in 1810,[15] are responsible for the similarity between the shotgun and Yoruba house types. "The architectural links between Port-au-Prince and New Orleans cannot be denied, as all non-essential details that are associated with the shotgun in Haiti are also associated with the shotgun in Louisiana."[16]

However, as architecture became more professionalized, such cultural links became less discernable. Early academy-taught African-American architects struggled with the paradox of entering the mainstream of architectural thought and practice, producing projects which on the surface appeared to represent cultural values other than their own. For the most part, early African-American architects executed conservative, classical designs in an attempt to express the supposed stability and power of the Euro-American culture.

One early African-American architect whose work reflects Euro-American ideals is Vertner Woodson Tandy, Sr.. Born May 17, 1885, in Lexington, Kentucky, Vertner, the son of a building contractor, was educated at the Chandler school in Lexington and the Tuskegee Institute in Alabama.[17] He then attended Cornell University in Ithaca, New York, from 1905-1908. His architectural training began with his father, Henry Tandy, who owned a successful contracting business in Kentucky. At Cornell, the teaching methods of the Ecole

des Beaux Arts stressed European design theories.[18] Tandy's solution for an outdoors swimming pool and pavilion, sponsored by the Society of Beaux Arts Architects, showed the absorption of French design techniques with the geometric ordering of space, axis and cross-axis, and poche space.[19]

After setting up his own practice, he was commissioned by Maden C.J. Walker, an African-American millionaires, to produce a Harlem townhouse and Villa Lewaro (1913) located at Irvinton-on-the-Hudson in New York. In his designs, Tandy employed classical forms in Villa Lewaro, which was considered, somewhat ironically, a "monument to black people to show what can be accomplished."[20] His buildings were continually referred to as either Gothic, English Gothic, Neo-Federal, or Federal Style, and streamlined Moderne. These classifications, at a glance, illustrate how he reaffirmed the culture of the Euro-American, while effectively representing the African-American culture.

"Under my hands the Pyramids arose . . . I made the mortar for the Woolworth Building"

Langston Hughes

In short, the challenge to pursue or discover the meaning of an African-American tradition was very elusive for early academy-taught architects. Nonetheless, I think that one would remain ignorant of African-American architectural sensibilities if one accepts only those buildings that look absolutely African as African-American in nature.

So, most importantly, if proxemic expression can be discovered in a single house, then it can also be discovered in an entire town. The African-American town movement of the nineteenth century provides an enormous resource here. The movement's ideology and ideas, which for various reasons has remained a viable solution for community planning today, have yet to undergo thorough investigation by urban historians and planners.

Urban Planning

Norman Crockett's book, *The Black Towns*, chronicles five towns indicative of the early black town movement, where sufficient research material was available: Nicodemus, Kansas (1879); Mound Bayou, Mississippi (1887); Langston City, Oklahoma (1891); Clearview, Oklahoma (1903); and Boley, Oklahoma (1904); though many other towns existed such as: Blackdom, New Mexico; Hobson City, Alabama; Allensworth, California; and Rentiesville, Oklahoma, although detailed records of the lives led by their citizens do not exist.

As an answer to a less than welcoming society, these towns were viewed by their advocates as an important step toward security. The advocates mass migration to rich farm lands led to the construction of entire self sufficient communities. "The town ideology, in large part. . . sought to combine economic self help and moral uplift with an intense pride in race, while at the same time encouraging an active role in county and state politics."[21] It is thought that further impetus for the movement came from the realization that the American melting pot ideal was dysfunctional .[22]

Unfortunately, not a single chapter focuses on the cultural and sociological ideas that could have existed within these towns, and which could have led to a greater understanding of the towns' proxemic or anthropological expression. Crockett does, however, discuss at length the philosophy of the movement, and the resulting architectural artifacts, which painted a complex picture of the resilient, spiritual strength in African-American culture. The sizes, materials, and relative proximity of houses, the hierarchy of building placement, and the miscellaneous artifacts found through archaeological investigation, all elements of African origin, lead to one conclusion: the struggle for cultural assertion has remained paramount in African-American existence.

The movement underscores the ambivalence "in black thought between integration and separation,"[23] while reminding one of the all important need for self empowerment and self-expression. What is even more interesting is that, at first glance, the movement appears to emulate the social structure and physical structure of the society it was fleeing,which many think accounts for the towns' early demise; [24] while, at a second glance, the towns suggest the need for a comprehensive theoretical framework which would have assured their longevity.

Though the movement raises quite a few interesting questions about the philosophy of self-segregation, the ultimate bounty of knowledge lies in the actual physical evidence uncovered archaeologically. Site excavations have revealed dietary patterns, building materials, dimensions of quarters, and even social organization. Sub-surface structural remains have also been used to identify placement of fenestration, dates of construction and architectural form.[25] "If archeology is a vital contributor to our understanding of all of America's common folk, and what their life meant to them, it is doubly

so in the case to our understanding of the black experience in America."[26]

Conclusion

In the 1970's a number of African-American architects sought ways to incorporate cultural ideals into their designs.[27] But, due to the infancy of the African-American tradition, the works of many of these pioneering architects have yet to be documented and interpreted.

The point that seems most clear is that such a tradition would inherently possesses the potential to convey cultural information, both on the factual level and the philosophical level. Moholy-Nagy, in her book *Native Genius in Anonymous Architecture*, states that "Buildings are transmitters of life. They transmit the life of the past into the lives of the future — If they are more than mere shelter and more than borrowed form. Architecture testifies to the aspirations of the group. Its buildings tell not the official but the private history of a culture—the unending struggle for physical and spiritual survival of anonymous men."[28]

One could suggest that the lack of power and economic opportunity underlies the dearth of a recognized tradition today, while instead it should be argued that the lack of a recognized tradition does preclude its existence. In the words of Max Bond, a New York architect; "Architecture is always evaluated on the basis of style. The African-American architect must develop a different approach. . . to understand how architecture as an art form is used to represent, reflect, and in fact influence... a position of power or lack of [power] in a society. The question. . . is not one of form, but rather, of which culture and system we wish to represent."[29]

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[3] Thompson African 204.
[4] Vlach, Afro-American 123.
[5] Vlach, Afro-American 123.
[6] Richard K. Dozier, "The Black Architectural Experience in America," American Institute of Architects Journal (July 1976) 162-64.
[7] Vlach, Afro-American 122.
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[26] James Deetz, In Small Things Forgotten: The Archaeology of Early American Life (Garden City, NJ: Anchor Books, 1977) 138.
[27] Rick Ratliff, "He has designs on black architects," Detroit Free Press, October 31, 1980 3c.
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PHOTOGRAPHY AND ARCHITECTURE:

AN UNEASY ALLIANCE

William J. Scott, Jr.
Hemalata C. Dandekar

Note:

I am not sure Bill Scott would approve of this particular rendition of his paper. Professor Sharon Sutton and I gave him comments on a 1985 draft. Subsequently I kept prodding Bill to "get on with revising the manuscript." I knew the paper would make a useful contribution. "It's getting to the top of my list, Hema," he would say. Unfortunately, not quickly enough. Bill Scott died on February 9th, 1989, and we, his colleagues, continue to note his absence. In the years our paths crossed in the impersonal faculty corridor of the third floor, Bill was a warm, gentle, supportive presence. His way of helping was non-intruding, oblique, rich in suggestions of alternatives rather than narrow, controlling direction. This is how he wrote. Thanks to Katherine Scott, Bill's wife, who gave me his original draft, I was able to revise the 1985 manuscript. I worry that I have brought too much of the linear thinking of a planner to bear on this work. But not too much because Bill would have understood. Any errors and omissions in this rendition of Bill's paper are my responsibility. The substantive discussion is Bill's. This "joint paper" is presented as a token of my esteem and affection for a colleague whose generous presence is sorely missed in that indifferent corridor of cloistered faculty rooms.

Hema Dandekar
Ann Arbor, February 1991

Abstract

Photography is widely used to communicate about architecture. Architecture books are heavily illustrated with photographs, and lectures on architecture usually use color transparencies. Photographs are now unquestioningly accepted as a means to transmit architectural form and ideas. The photograph is indeed a very powerful visual tool. But, this essay questions the ubiquitous use of photographic documentation as a means to communicate about architecture. The premise is that problems have occurred as a result of our limited understanding of the particular nature of the photograph and its indiscriminate use in shaping architecture. The photograph is a valuable aid toward a kind of understanding of architecture; however, its use needs to be curtailed due to the inherent limitations of the photographic image as mediator between the building and the reading audience. A more appropriate use of photographic documentation, using a developed sensitivity toward the actual possibilities and the limitations of the photograph for communicating about architecture, is called for here.

Photographs and Architecture: A Close Association

From its beginning photography has shared a symbiotic relationship with architecture. Architecture was a prime subject for early photographers. Niepce photographed buildings on his land from his office window in 1826. Fox Talbot, the inventor of the negative-positive process, photographed "A View of the Boulevards at Paris" in 1843. The negative-positive process, allowing any number of positive prints to be made from a single negative, made possible the mass printing and publication of photographs. Talbot's photographs, called "photogenic drawing," were later eclipsed by the Daguerreotype, named after its inventor, Louis Jacques Mande Daguerre. Many excellent examples of early architectural photography exist as Daguerreotypes. Any historical account of photography makes clear the close association that exists between architecture and photography. Initially, the relationship was accidental. Photographs captured something out in the world and that something often turned out to be buildings, the most readily accessible subject that didn't move and blur the image. (At the time emulsions were slow and it was necessary that subjects remain motionless during exposure, in order to produce the sharpest possible image.) From the beginning, photographers, critics, historians and architects were aware of two special attributes of photography: rapid notation and accurate representation.[1]

The ability of the camera to render a sharply detailed account of reality - the world outside - was impressive then and remains so to this day. Observers of early photographs saw them as a stand-in for the real thing. John Ruskin reacted to the "exquisitely bright, small daguerreotypes" and felt that the purchase of such an image of a building was very nearly the same thing as carrying off the palace itself. "Every chip or stone and stain is there and of course there is no mistake about proportions." While Ruskin's initial reaction to photography

was highly enthusiastic, he later modified his opinion as he found that it could not express "the personality, activity, and living perception of a good and great human soul."[2] Historians and critics of architecture became more and more enamored with photography and subsequently more and more dependent on its use in the study and analysis of buildings. John McAndrew (an architectural historian) overheard a discussion between two art historians sitting in the Piazzo San Marco who lamented that no one could work on the later architecture of Venice because there were no photographs of it in the Cini library. This conversation disturbed McAndrew because, in his words, it "exposed a sinister belief that work with photographs is essential but work with the actual building is not."[3] The relationship and dependence of architecture and photography had grown strong, and the photograph was understood as being not only useful but essential for the critical study of architecture and for the documentation of historically important buildings.

The Use of Photographic Reproduction in Architecture

The Commission des Monuments Historiques of France initiated, in 1842 (just three years after the supposed "invention" of photography in 1839), a photographic inventory of historically important structures. The incentive came from the architect Viollet-le-Duc. Photographers worked with daguerreotypes which were later converted into copper plate or steel engravings for making reproductions. A Viollet-le-Duc's *Discourses On Architecture* reveals some excellent examples of this process. Other books and loose-leaf portfolios using photo-derived engravings were published in the daguerreotype era.[4] Maxime du Dampis' publication "Egypt, Nubia, Palestine and Syria" represents the highest achievement of the craft of reproduction before the development of a photo-mechanical process which resulted in the reproduction techniques of today. The photographers of that era were content to produce faithful reproductions of architectural styles in their formal richness. Dramatizing the building through audacious perspectives and lens selection were thought to falsify the spirit of the building, and architectural dynamics were restricted to purity and beauty of form.

We should remember that illustrated books on architecture have a long history, having been published continuously since the Sixteenth Century. Leon Battista Alberti's *de re Aedificatoria* was published in 1485, *de Architectura* was published in Rome in 1486 from a manuscript of Vitruvius Pollio. The first illustrated printed book on architecture with accompanying woodcuts was written and published in 1511. But, as is detailed in William Ivins' book *Prints and Visual Communication*, we find that as we move from wood engravings to steel engravings to photographic reproductions, we experience a shift in the syntax of the reproduced image and a shift in the influence that the image had for historians, critics and architects. Peter Collins notes this shift as it relates specifically to architectural reproductions:

"The architectural magazines of the past hundred years constitute a particularly interesting source of study if they are compared with the architecture they reflect. It seems clear, for example, that architectural developments have been very much influenced by the techniques of reproducing illustrations. There can be little doubt that the coarseness of English detailing in the mid-nineteenth century was very much influenced by the fact that all the illustrations in **The Builder** *were reproduced from wood engravings, just as the greater delicacy of the French detailing of the same period was undoubtedly influenced by the fact that the* **Revue Generale** de L'Architecture *was illustrated by steel engraving."*[5]

In addition to books and loose-leaf portfolios the architectural periodical has been very influential in the development of architectural ideas. The *Revue Generale de L'Architecture*, the first architectural periodical, began in 1840. The introduction of photographic reproduction into architectural periodicals occurred in 1856. Color reproductions, though rare and crude, were an early influence of photography on architectural. Collins deems the periodicals as most influential in shaping perceptions of architecture. He notes:

". . . one can hardly over emphasize the importance of the introduction in 1856 of photographic reproduction into architectural periodicals, since not only did this obviate the need for periodicals to rely on architects providing them with their own perspectives . . ., but it encouraged their editors to show a preference for photogenic buildings, and a corresponding lack of enthusiasm for buildings which, however excellent, did not provide flattering points of view for the camera."[6]

In a 1940 article entitled "Criticism" in the *Architectural Review*, the editor explained that the functional aspects of modern architecture had become so well known that it was no longer an issue to be presented to his readers. Instead, he insisted, "Pictorial criticism and appraisals concerned with the appearance of buildings, evaluated through photographs, represented a more worthwhile approach to take since the man in the street judged architecture largely according to its 'appeal to the eye'."[7] Thus the architectural photograph, used in periodicals for over three-quarters of a century, had gained in significance and became the primary means of conveying aesthetic qualities. Published reproductions tended to create value systems based on them and by the end of the nineteenth century architectural magazines had become fashion magazines. This situation is clearly not unfamiliar today. In some respects, the value of the photographic reproduction in today's culture may be greater than the actual object itself because the photograph can reach mass audiences and thus serves to elevate the status of its designer.

The primacy of photographs in architectural magazines has helped create within architects a desire to be original even when a good solution to a problem may require something more standard in approach. Lamenting this trend, Collins writes:

"Unfortunately, the introduction of photography has artificially militated against functional standardization; for whereas, in the days before illustrated architectural magazines, it did not seem unreasonable for two locales, many miles apart, to have similar public buildings, the use of photographic juxtaposition has inevitably created a false sense of emulation among architects, whereby each community finds itself obliged to have public buildings which are "original" whether or not the rational solution of the accommodational problem is best provided by standardized forms."[8]

Thus the use of the photograph in architectural magazines and books had an impact on building design that could not have been predicted. The coarse wood engraving could not present architectural information in a manner that caused the perceptual and theoretical changes that were brought about by the photograph. But, the photograph was still thought of as simply being a "more accurate picture," precise in its objectivity. No consideration was given to analyzing what the new tool could or could not do; should or should not do.

Problems of Photographic Documentation

Some problems related to the use of photographic reproductions for architectural purposes are now known. The problem of distortion of scale is widely recognized. Photographic reproductions on a printed page tends to equalize all objects, big and small, reducing them to a size suitable for viewing in a book or periodical. Relative sizes are almost impossible to show through photographs alone. One attempt to overcome this problem was tried by *Camera* magazine, a Swiss publication, in a special issue devoted to architecture in December of 1967. Photographs of buildings, varying widely in sizes, were coupled with plans, reproduced at the same scale on translucent sheets of paper. The plan was used as a "foot print" intended to help the reader overcome the limitations of photographs in communicating the scale. While the efforts of the editors were commendable, the results fell short of their goals.

The scale of the photograph can distort the experience we gain of the actual object. Texture can be influenced by close-ups, the nature of lighting, depth of field, focus, etc. Small scale photographs of actual buildings can exhibit qualities of richness that the building might not possess when viewed in person due to the fact that the photograph compresses information into more restrictive areas.[9] The photograph, acting as mediator between the spectator and the object has a tendency to displace, rather than replace, the object to such an extent as to render the object silent. It begins to assume a life that is more active than the object. The object then becomes confused with the activity surrounding the photograph and assumes characteristics directly attributable to its image.

Reproduced images of buildings are directly responsible for much of the debate around post-modernism. Photographs are essential elements in magazine or lecture discussions on the role of the past in current architectural theory. Most of us cannot afford to visit the sites of the buildings used as examples in these discussions, instead the photograph acts as a "stand-in" for the actual building. Like Ruskin, who had earlier realized that photography had inherent weaknesses, Rosenberg voices reservation about the use of photographic reproductions and hits upon another important characteristic of the contemporary image. He sees that artbook art has one overwhelming advantage over the actual objects: It appears in a context of knowledge.

"The art in an art book is a collection of substitute images. As 'objects' these are, of course, less than satisfactory: the plates lack the scale, materiality, surface, aging, environment, etc. of their originals - their color, even at the very best, is, inevitably, off··· art has become part of 'language'; it is a writing of sorts; and there is a growing difficulty in detaching the work from meanings of a literary and theoretical order. A painting (building) now seems to belong in a book. . ."[10]

Photographs of buildings have, in a sense similar to that outlined by Rosenberg, reduced architecture to a kind of literature which is open to varied interpretations and is sympathetic to theoretical analysis. That architectural photographs should, and do, exist in a context of knowledge is supported by Kenneth Frampton when he asserts that the photographic image can easily constitute a reduction in its own right, particularly when it is not supplemented by other forms of information. Frampton goes on to criticize Charles Jencks (*The Language of Post-Modern Architecture, Late Modern Architecture*) and Arthur Drexler (*Transformations*) for the "media-pathology" of using "one shot-per-building" at the expense of other supplementary format such as plans, axonometrics, etc. He summarizes his position as follows:

"Victor Hugo's prophecy that mechanical reproducibility in the form of the printed word would eventually kill architecture now finds unexpected vindication in the mesmerizing power of the photograph, particularly where this perspectival, one point representation of reality is the only information provided."[11]

Thus Frampton underlines the weaknesses and limitations of the photographic image in describing architecture and reiterates that photographic description needs support from other methods of description - graphic and literary.[12] Clearly a more integrative approach to the use of photographs is being called for. Today we are beginning to attempt to do this. For example, Bruno Zevi (1957) states:

"Plans, facades, cross-sections, models, photographs and films - these are means of representing space. Once we have grasped the basic nature of architecture, each of these methods may be explored, deepened and improved. Each has it own contribution; the shortcomings of one may be compensated for by the others."

Interpretations of architecture are dependent on the methods used to gain information about buildings. When photographs alone are used there is a problem. Jual Pablo

Bonta, in his book *Architecture and Its Interpretation*, noting differences in interpretation between critics who visit buildings and those who form opinions by perusal of photodocuments, attributes them to the fact that photographs guide the viewer toward a point of view which is selective and responsive only to some of the features of the edifice. In addition, we must understand that photographs, like other works of art, are interpretive. The attitude of the photographer toward the photographed subject plays an important role in giving significance to aspects of the structure and to shaping our expectations of the building.[12]

Presently, the selection of images for publications and for use in lectures is made almost entirely in accordance with their picturesqueness, sharpness, exposure, color balance and other visual qualities. The question of the intent of the photograph, or the manner in which the intent was made manifest in the image is rarely an issue. Bruno Zevi recognizes the fragmenting nature of the photograph as the frames of a movie film. He senses a discontinuity in the photograph on the phenomenological level, but ignores the issues of historical discontinuity when he comments as follows:

"A photograph records a building statically, *as seen from a single standpoint, and excludes the dynamic, almost musical, succession of points of view movingly experienced by the observer as he walks in and around a building. Each photograph is like a single phrase taken out of context of a symphony or poem, a single frozen gesture of an intricate ballet, where the essential value must be sought in the movement and totality of the work. . . As photography to a large extent solves the problem of representing on a flat surface the two dimensions of painting and the three dimensions of sculpture, so it faithfully reproduces the great number of two and three dimensional elements in architecture, everything, that is, but internal space."*[13]

Photography's inability to fully depict space is thus recognized. The fact that the photograph translates three dimensional reality into a two-dimensional plane poses problems for representing architecture. Existential space, when represented in a photograph, becomes merely a code which verifies a particular character of space in terms of its volume, spatial relationships, ornamentation, light, shade and shadow, etc. The photograph falls short of full characterization.

Photographs of architectural models represent yet another problem in that they are twice removed from phenomenological reality. A model is a reproduction; the photograph of a model is a reproduction of a reproduction. Models, in themselves, of course have their value. Architectural models were used in Italy prior to the sixteenth century. They served three main purposes: as a design tool; as a means to communicate the design to the client and obtain approval for the design; and, as a basis for producing a detailed estimate of cost.[14] Today cost estimating methods have become a lot more sophisticated. But using models as design tools for communicating ideas has changed very little. Models, usually photographed in aerial views, are rendered detached from the typical experience of the spectator. Areal photographs of small scale models, like aerial photographs of cities, fail to instruct in the nature of the experience of space. A model, as a one-time removal from reality, seems the most desirable alternative to the photograph in its capacity to symbolize space. But models are no where near as useful in communicating accuracy of representation.

Cultural Aspects of Photography as an Architectural Tool

Photography has changed the way we view reality. Assumptions concerning reality are often based on photographs rather than on direct experience. Thus our vision is transformed from perceptual to conceptual, a transformation that has been at work, silently, since the invention of the camera. Only within the past decade have a few writers concerned themselves with the effect of photography on our daily experiences. Prominent amongst these are Walter Benjamin, Susan Sontag, Roland Barthes and John Berger. They have addressed the fact that photography fragments perceived reality: it fragments in terms of moment-to-moment perceptions; it fragments the part from the whole; and it fragments the object photographed from its context.

"The invention of the camera changed the way men saw. The visible came to mean something different. . .The camera isolated momentary appearances and in so doing destroyed the idea that images were timeless. Or, to put it another way, the camera showed that the notion of time passing was inseparable from the experience of the visual (except in paintings). What you saw depended upon where you were when. What you saw was relative to your position in time and space. It was no longer possible to imagine everything converging on the human eye as on the vanishing point of infinity. The camera - and more particularly the movie camera - demonstrated that there was no center."[16]

The technique of photographic reproduction detaches the object from the domain of tradition; furthermore, the uniqueness of a work of art is inseparable from its being embedded in tradition. Photographic reproductions tend to destroy exactly those qualities of the object we are most interested in, although we use them as if those qualities were present in the reproduction. We noted earlier that Andre Malraux felt that when objects become "colorplates," they lose their properties "as objects." Walter Benjamin has added a contemporary note to this observation:

"The authenticity of a thing is the essence of all that is transmissible from its beginning, ranging from its substantive duration to the history which it has experienced. Since the historical testimony rests on the authenticity, the former, too, is jeopardized by the reproduction when substantive duration ceases to matter. And what is really jeopardized when the historical testimony is affected is the authority of the object."[17]

Current architectural theorists make heavy use of photographic materials in attempting to persuade. This is where our

photographs by Bill Scott

discussion of the nature of the photographic image is useful in determining the extent to which we can be misled. Robert Venturi's *Complexity and Contradiction* is a good place to begin, not so much because of what was said, but because of how it was said through the use of visual imagery. The first edition of the book (1966) contains 350 illustrations, many of them photographs, all of them the size of postage stamps. Why they were included, especially the photographs, is puzzling for they are too small for close examination. It is obvious that the visual footnotes serve a purpose in Venturi's mind; but to us, they indicate a call to the authority of history to prove the thesis. If this is the purpose of the photographs, they fail on that account. It is suggested that the photograph destroys the authenticity of the object. On page 63 (first edition) we find nine separate images - eight architectural and a reproduction of Jasper Johns' "Three Flags." The photographs have little or nothing to do with each other except on the printed page. McLuhanesque juxtapositions such as these are now quite popular. They exhibit a "language of images." When images are combined in this manner they influence each other. *In Ways of Seeing*, Berger writes:

". . .a reproduction, as well as making its own reference to the image of its original, becomes itself the reference points for other images. The meaning of an image is changed according to what one sees immediately beside it or what comes immediately after it. Such authority as it retains, is distributed over the whole context in which it appears."[18]

Venturi discusses these photographs as though 1) they had authority; 2) they were isolated images with no reference to each other; and 3) their historical context, their fuller meaning, had not been striped away. His discussions are centered on images in terms of their graphics, two-dimensional similarities. In *Contradiction and Complexity in Architecture*, we find on each page of illustrations, sets of situations which according to Venturi, mirror each other in some respects. From Sontag we find an interesting observation:

"To view reality as an endless set of situations which mirror each other, to extract analogies from the most dissimilar things, is to anticipate the characteristic form of perception stimulated by photographic images. Reality itself has started to be understood as a kind of writing, which has to be de-coded - even as photographed images were themselves first compared to writing.

Photography tends to suggest endlessness. This follows from its emphasis on fortuitous complexes which represent fragments rather than wholes. A photograph is in character only if it precludes the notion of completeness. Its frame marks a provisional limit; its context refers to other contents outside that frame; and its structure denotes something that cannot be encompassed - physical reality.

There is an analogy between the photographic approach and scientific investigation: both probe into an inexhaustible universe whose entirety forever eludes them."[19]

The use of photographs in this manner represents another phenomenon: it is a way of acquiring ownership over the object photographed. Susan Sontag, noting that ". . . a photograph is not only like its subject, an homage to the subject, it is part of an extension of that subject; and a potent means of acquiring it, of gaining control over it," lists three different forms of acquisition: 1) the surrogate possession of a cherished person or thing, a possession which gives photographs some of the character of unique objects; 2) the acquisition of a consumers relation to events; 3) the giving of something as information. With the use of the camera and photographic reproduction, everything photographed becomes part of a system of information. Personal experience slips into the background.

Lewis Mumford too in his *Techniques and Civilization* further expresses the fragmentary nature of the photograph and its consequence in design, stating:

" . . .The camera gives an almost instantaneous cross-section of history - arresting images in their flight through time. In the case of architecture, this mechanical copying on paper led unfortunately to similar artifices in actual buildings, and instead of enriching the mind, left a trail of arrested images in the form of buildings all over the landscape. For history is non-repeatable, and the only thing that can be rescued from history is the note that one takes and preserves at some moment of its evolution. To divorce an object from its integral time-sequence is to rob it of its complete meaning. . ."

The theoretical position of historicism uses, to prove its points, vast amounts of photographic material to evoke history. It should be clear from the above arguments that photographs are incapable of evoking historical associations - they evoke themselves as photographs, except in those instances where the photography is a personal document. The historical position, using photographic reproduction as evidence of authority works outside the realm of immediate experience. Objects represented in photographs are without history; they have been stripped from their context; they are isolated, without a necessary frame of reference.

Some Remedies

This essay has pointed out the limitations of the photograph and sought to deepen our understanding of the particular nature of reproduced photographic imagery. Although the photograph is a valuable tool to architects, historians and critics, work is necessary before we can use photographic imagery to its greatest advantage. Some suggestions for a more appropriate use of photography in terms of its application to architecture are:

1) To use high quality reproductions of a technical nature. As the state of the art in photography advances it becomes easier and easier to ensure that most of us can achieve an image possessing high information content. Over or underexposed transparency material becomes unforgivable in this day and age. Lecturers who ask of their audience to "forgive the quality of the slides" should not be forgiven. If we

cannot read the information contained in a photograph the rest of what the person has to say becomes academic.

2) Photographs which are used in publications and lectures should be made by the author. First hand experience is useful in filling in contextually what is left out of the photographic imagery: weather (hot, cold), sound, smell, time, etc. In order that the most complete "picture" of a building/site is correctly portrayed each image must be placed in a "context of knowledge" that escapes the capability of the image alone. This would mean that slide libraries become more individualized. Anonymous collections of slides are not particularly useful in that the images contained there lack meaning. They are, in effect, nothing more than mere "pictures." If we were forced to create our own individual collections of photographs, the level of discussion centered around the image would be more meaningful, we would know more about what we are discussing. First of all, we would know why the image was made, how it was made, and what the image intends to communicate. We could also judge the success or failure of the image based on known objectives.

3) It may be impractical to always have at hand ones own photograph. In that case we must dig into the background of the image we have selected: when was it made; by whom was it made; what attitudes did the photographer bring to the image; how does this image compare with other images of the same subject; what distortions of the subject does the image introduce to the subject; how good is the image on a technical level? A great documentation of this kind of information is a prerequisite for the proper use of photographic documents. If we become more rigorous in the use of these documents we would curtail the continuing mindless use of them.

4) Another problem we face in our current "media-pathology" is the widespread use of paired images in slide lectures. Not only do we face the problem of using appropriate imagery in a single projection situation, but we now feel it necessary to compare or contradict, the images being shown. At times we may find that two (or more) projectors are used simply to get through a certain number of slides in a given amount of time, the consequence being that things are related on the screen for no reason at all. Through photography we can relate, superficially, anything at all. Things that should never be brought together can be "married" with the greatest ease. The situation is ripe for attempts to deceive and to coerce the viewer toward a particular point of view. We should return primarily to the use of simple slide lectures with a single projector and transparency material that meets the above criteria.

5) In order to use photography properly, we must cease using it to accomplish impossible tasks: depict environmental context (environment is much more than physical relationships), and communicate historical concepts (in the manner of post modern architectural theorists). Photographs are objects themselves and have a life of their own. We are responsible for understanding the kind of life that they exhibit and how we benefit from their existence.

People often complain that architectural photographs never contain people. There is a great deal of truth to that observation. Initially, very slow photographic emulsions precluded including people in the photograph. But even after the development of high speed materials, this practice continued and has become standard. It cannot be justified in that the human element is essential in depicting how space is used. John Szarkowski, Curator of Photography at the Museum of Modern Art, created a book in 1956 titled *The Idea of Louis Sullivan* where he consciously attempted to use people in his photographs as a frame of reference to how architecture acquires meaning through use. In the book's foreword, Szarkowski states the following:

"When these photographs were begun, five years ago, it was with the idea of producing an academically serviceable record of the prudential building, in Buffalo, New York. ... As I began to work I found, to my own surprise, that I was seeing this building not with the decorous disinterest with which a photographer is supposed to approach a work of formal architecture, but as a real building, which people had worked in and maimed and ignored and perhaps loved, and which I felt was deeply important. I found myself concerned not only with the building's art-facts but with its life-facts. (Louis Sullivan had claimed they were the same). This concern began to show in the photographs, and the idea grew: when photographers of the nineteenth century first used their cameras to describe formal architecture, they were concerned with buildings the content of which had died, however alive the forms may have remained. The Acropolis was empty, and the pageants on the porches of Chartes were only a souvenir of the great medieval morality plays. Only the forms remained to be photographed. Such an approach became a habit, and then a virtue, until the building in the photograph became as isolated from life as the inset enclosed in the amber paperweight. In our own day perhaps the best architectural photographs have been the casual products of the photographer-journalist, where the life that surrounds and nourishes the building is seen or felt. If to such an approach were added an understanding of architectural form, photography might become a powerful critical medium rather than a superficially descriptive one."[21]

This sentiment is unequivocally endorsed by us. We hope that this paper serves to provoke our professional colleagues to make better judgments in the use of photography in architecture. We need to be conscious of the fact that the skillful architectural photographer has a major impact on how we perceive buildings. We need to be critical of formulating an understanding of architecture on photographic documentation alone. We need to limit the use of the tool of photography to communicate about architecture. The way we use photographs in architecture can affect what we build, how we build and how those buildings serve people.

NOTES

1. Richard Pare, ed., Photography and Architecture, 1839 - 1939 (Montreal, Canada: Centre Canadien d'Architecture/Canadian Centre for Architecture; New York: Callaway Editions, c1982), p. 7.
2. IBID., p. 10.
3. IBID., p. 10.
4. Books using photo-derived engravings include "Arab monuments of Egypt, Syria and Asia Minor" by Girault de Prangey, and John Lloyd Stevens' work on the monuments of the Maya titled "Incidents of Travel in Yucatan." Gustav le Gray, with the printer Blanquart Evard, invented a waxed paper process which made it possible to publish numerous excellent reproductions of the daguerreotypes. These publications were loose-leaf portfolios in which the photographs were mounted on bristol cardboard. Three examples of such portfolios are: Melange Photographiques (Photographic Pot Pourri), Paris Photographique (Paris in Photographs), and Etudes Photographique (Photographic Studies).
5. Peter Collins, Changing Ideals in Modern Architecture, 1750 - 1950 (Montreal: McGill University Press, 1965), p. 262.
6. IBID., p. 262.
7. IBID., p. 263.
8. IBID., p. 231.
9. Andre Malraux, The Voices of Silence (Garden City, New York: Doubleday & Company, Inc., 1953), pp. 24, 30, 44. Further discusses the effects of photographic reproductions on the object: ". . reproduction (like the art of fiction, which subdues reality to the imagination) has created what might be called 'fictitious' arts, by systematically falsifying the scale of objects. . .(it) imparts a family likeness to objects that have actually but slight affinity. In the realm of what might be called fictitious arts, the fragment is king. Classical aesthetic proceeded from the part to the whole; ours, often proceeding from the whole to the fragment, finds a precious ally in photographic reproduction. . .for all alike - miniatures, frescoes, stained glass, tapestries, scythian plaques, pictures, vase paintings, "Details" and even statuary - have become colorplates. In the process they have lost their properties as objects."
10. Harold Rosenberg, The Anxious Object (New York: Horizon Press, 1964), p. 197, 198.
11. Kenneth Frampton, The Need for Roots: Venice 1989, BA Document #3, Winter 1981.
12. Richard Pare, Photography and Architecture (Montreal, Canada: Centre Canadien d'Architecture/ Canadian Centre for Architecture; New York: Callaway Editions, c1982), pp. 10 - 11, Reiterates this point, stating:

"Photographs like all other graphic works, must be examined thoroughly as sources in themselves. It is assumed, for example, that an engraving by Piranesi must be analyzed for distortions of scale and proportion. To do this, the position of the artist relative to the subject must be ascertained. The image must be compared to other representations of the same subject in order to detect changes, to trace additions and subtractions to the building itself. In the same way, photographs must be examined for veracity and for traces of the attitudes brought by the photographer to a subject. . .To be able to evaluate photographs as historical documents and their effect on design a body of work must be studied; for this to happen, individual images and groups of images must be brought together. Therefore... photographs as evidence in the history and concepts of architecture are to be studied alonqside the evidence of texts, prints, and architectural drawings."

13. Bruno Zevi, Architecture as Space (New York: Horizon Press, 1974), pp. 58, 57.
14. John Hooper Harvey, The Medieval Architect (London: Wayland Publishers, 1972), p. 116.
15. Jose A. Arguelles, The Transformative Vision (Boulder, Colorado: Shambhala

Publications, Inc., 1975), p. 140, states:

". . .The relatively instantaneous visual process, photography, called into question the very issue of perceived reality. The notion of a solid universe was no longer unassailable, for in revealing the contrived nature of renaissance visual perception, the photograph implied that the determination of physical reality was solely dependent upon the moment-to-moment perception of the individual eye. Lurking beneath this implication was the notion that the perception itself was the reality, and the thing perceived only a function of it. From this point of view, the material universe is a perceptual fixation or a mental obsession, another idea in a universe of ideas, but with absolute reality. In effect, the elimination of narrative by photography reduced visual reality to a fragmented anecdote. For this reason, the psychological impact of photography was disintegrative and silencing. The mind, still obsessed with what had seemed to be concrete continuity of material reality, was suddenly confronted with flux and discontinuity."

Kenneth Frampton, The Need for Roots: Venice 1980, GA Document #3, Winter 1981.

16. John Berger, Ways of Seeing (London: British Broadcasting Company, 1981), pp. 18.
17. Walter Benjamin, Illuminations (New York: Harcourt, Brace & World, Inc., 1968), p. 223.
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A Comparison of the Concept of Style *in* Semper's The Four Elements of Architecture and Other Writings *and* Viollet-Le-Duc's Lectures on Architecture

By Vassiliki Mangana

The revolutionary shift in architecture from the romantic movement of the early 19th century to the age of criticism and materialism, is represented in the theoretical writings of Eugene-Emmanuel Viollet-Le-Duc.[1] The second half of the 19th century produced another more discrete but equally important figure: Gottfried Semper. The writings of Semper, although not as influential as those of Viollet-Le Duc, were developed as a response to historical conditions similar to those that influenced Viollet-Le-Duc.

The writings of Semper and Viollet-Le-Duc constitute the topic of this paper. In it a critical analysis and comparison of the issue of style as presented by the two theorists is attempted. The structure of this study will be as follows: First, the relation of style and architecture in the two theories will be introduced; then, the respective arguments will be presented and will be followed by some comments on the methodological orientation of the two theories; and finally, the paper will close with some remarks on the nature of style as envisioned by the two theorists.

The Relation of Style and Architecture in the Two Theories

The issue of primordial form as the material embodiment of the "idea" constitutes the basic theme throughout Semper's writings on architecture. His 1851 essay "The Four Elements of Architecture" constitutes a theory of the origins of Architecture. Besides the notion of the mound as the element separating the architectural form from the earth, Semper also introduces "The notions of hearth gathering (social assembly), walling, and roofing ... as basic ideas underlying or giving rise to architectural form..."[2] Although the term "elements" seems to refer to material elements or forms, Semper conceived them " as 'motives' or 'ideas', as operations based on the applied arts."[3] In his later work Semper attempts to place his ideas in a general theory of art. Through observation and reflection of his contemporary social conditions, technological advancements, and intellectual preoccupations, Semper deduces the need for the arts to depart from the use of traditional types. To facilitate the replacement of the old types with new ones, he proposes a "theory of style,"[4] a theory that "seeks the constituent parts of form that are not form itself, but the idea, the force, the task and the means, in other words, the basic preconditions of form."[5] Starting with the publication of "Science, Industry, and Art" in 1852 the formulation of a theory of style placed within a general theory for the arts constitutes a focal point of Semper's subsequent theoretical work.

An opposing view of the relation between architecture and style is presented in E.-E. Viollet-Le-Duc's *Lectures on Architecture* (1863-1872). In this collection of essays, which was induced by "... the respect I [Viollet-Le-Duc] entertain for Truth, and the love of an art [architecture] to which I have devoted my life"[6] Viollet-Le-Duc makes architecture the starting point and the center of his inquiry. The *Lectures on Architecture* contain the main principles to be discovered through the study of historical architecture; criticisms and prescriptions for French architectural education; and principles concerning the methods of construction, the design of structure, the handling of materials, and the treatment of architectural ornament.[7] In his series of essays, which constitute Viollet-Le-Duc's theory of architecture, only a small number directly refers to the issue of style. The limited references to the issue of style derive from the fact that

Viollet-Le-Duc, unlike Semper, views style as only one of the qualities an architectural work could possess.

The Specific Arguments

Definitions

Semper presents a definition of style for the first time in his essay "Science, Industry and Art" presented shortly after the London Great Exhibition of 1851: "Style means giving emphasis and artistic significance to the basic idea and to all intrinsic and extrinsic coefficients that modify the embodiment of the theme in a work of Art."[8] Through this definition then Semper returns to "the basic form, as the simplest expression of the idea"[9] and argues that, "The theory of the primordial motives ... and the primary forms derived from them constitute the first, art-historical part of the theory of style."[10] He then goes further to identify technique and culture as equally important parameters in the development of style. The second part of the doctrine of style "should teach us how the forms evolving from the motives should take different shapes depending on our means, and how the material is treated stylistically within our advancing technology."[11] The third part is that which "deals with the local, temporal and personal influences on form extrinsic to the work of art and their accord with other factors, such as character and expression."[12] Semper's essay "Science, Industry and Art" contained significant discussion about the scientific and technological advancements and the social changes resulting from them, but also introduced the idea that: "While ... art industries carry on aimlessly they unconsciously fulfill one noble task: the *disintegration of traditional types* by their ornamental treatment."[13] Semper's radical view about the need for a new style is presented later when he writes, "This process of disintegrating existing art types must be completed by industry, by speculation, and by applied science before something good and new can result."[14] Through this view, Semper's materialist approach, the issue of style in the sense of relation of form to materials and techniques is indicated.

In "Style in the Technical and Tectonic Arts" (1860) Semper's interest shifts to what might be called "a hermeneutic quest to interpret form symbolically through the visual residues of ... [technical] operations".[15] This theory, writes Semper, "in passing through the field of History ... will not apprehend and explain the works of art of different periods and countries as facts, but as events developing as it were; it will identify the different values of a function composed of many variable coefficients, and will do this primarily with the intention of revealing the inner necessity that governs the world of artistic form."[16]

In his last essay "On Architectural Styles" (1869), Semper changes once more his theoretical approach to the issue of style. The "free will of the creative human spirit is the first and most important factor in the question of the origin of architectural styles, although, of course, man's creative power is confined by certain higher laws of tradition, demand, and necessity."[17] It is in this last essay that a latent tension between objective and subjective factors, existing throughout Semper's work, becomes apparent; a tension referring to a similar one existing between materialist and idealist philosophies.

Viollet-Le-Duc's rationalist approach[18] leads him to offer a less controversial definition of style: "... [S]tyle is inspiration; but it is inspiration subjected to the laws of reason, - inspiration invested with a distinction peculiar to every work produced by a genuine feeling rigorously analyzed by reason before being expressed; ... it is the effort of the active imagination regulated by reason."[19] Although in the previous statement Viollet-Le-Duc initially introduces the notion of inspiration which could be considered similar in nature to Semper's "free will of the creative human spirit" he immediately refers to reason as a structuring principle. Viollet-Le-Duc therefore views style as regulated by specific, deducible rules. He then proceeds to define those principles. He writes: "Acts which cease to express the want they are intended to satisfy, the nature of the material employed, and the method fashioning it, cease to have style."[20]

A better understanding of Viollet-Le-Duc's definition of style can be achieved by examining his more general views about architecture. He writes: "I believe that no one feels more confident than I do in affirming that in our art there is no invention; ... our art prescribes such strict limits in its means of execution that we must necessarily have recourse to the past in order to originate in the present."[21] This statement should not be interpreted as one arguing for stagnation in architecture: rather, it should be understood as one arguing for the

importance of *method*, which is derived from analytical examination of historical precedents in the process of architectural production. A method that leads to satisfactorily meet the requirements dictated by necessity and at the same time allows the imagination to be creative.[22] The three factors then - method, necessity, imagination - constitute the internal structure of architecture according to Viollet-Le-Duc. Style, in contrast, which constitutes the embodiment of the expressive qualities in a work of art, is characterized by an analogous structure. As already mentioned, an object has style when imagination has led to a form indicating 1. the method by which it was made, 2. its purpose (necessity), and 3. the nature of the material used. The scope of the three factors in Viollet-Le-Duc's discussion of architecture and style is clearly different. This difference, however, should be attributed to the change of scale (going from the general to the specific) and therefore their parallel analytical function can be sustained.

Motives vs Principles

In his analysis of the issue of style, Viollet-Le-Duc also introduces the notion of principles and argues that "Style resides solely in the true and marked expression of a principle and not in immutable form,"[23] and that, "nature invariably exhibits style in her productions, because however diversified they may be they are always subject to laws - to immutable principles."[24] This notion of principle and its connection to Nature could be related to Semper's notion of motives. Semper writes: "Just as nature with her infinite abundance is very sparse in her motives, repeating continually the same basic forms by modifying them a thousandfold ... in the same way art is also based on a few standard forms and types that stem from the most ancient traditions and that always reappear yet offer infinite variety..."[25] But the theoretical approaches of the two theorists lead them to use the notions of principles and motives as heuristic tools that differ in essence.

It is through a brief comparison of the issue of dressing, as treated by the two theorists, that the different nature of Viollet-Le-Duc's principles and Semper's motives can be best understood. Although both theorists seek to reveal the *process* by which style is produced, Semper is interested in the meaning and symbolism of the expression of a principle or motive, or what he calls structural-symbolic issues, while Viollet-Le-Duc is interested in the materialization of the principle, or structural-technical issues. Referring to the basic principle of Romanesque architecture Viollet-Le-Duc writes, "The Romanesque architects frankly determined to abandon the distinction between the body and the dress. The construction itself was to become the architecture; the necessities of that construction were to dictate the form."[26] Semper, on the other hand, commenting on the artistic forms and types of ancient Greek architecture, writes, "Among [the] old, traditional, formal elements of Hellenic art, none is so profoundly important as the principle of dressing and incrustation. It dominated all pre-Hellenic art and by no means diminished ... in the Greek style, but survived, highly spiritualized serving beauty and form alone, more in a *structural-symbolic* than in a *structural-technical* sense."[27]

The methodologies of the two theories

In his "Style in the Technical and Tectonic Arts", Semper attempts to philosophically position his theory through a criticism of the major trends of aesthetic analysis in his time which he identifies as 1. the materialist, 2. the historicist and 3. the purist, schematic, futurist. Semper criticized the materialist trend because it simply leads to "theories that give instruction on how to master the material for architectural and structural tasks."[28] He criticized the historicist trend because it only takes "as models works of art from times long past or from foreign people and imitate them with the greatest possible critical and stylistic accuracy."[29] He criticized the purist, schematic, futurist trend as one which simply "wants to define the concept of beauty and circumscribe precisely its subordinate concepts."[30] Having identified both the strengths and the shortcomings of all three trends Semper then proceeds to define the specific task he sets for himself: "To provide an empirical theory of art; to explore the inherent order ... that becomes apparent in phenomena of art during the process of becoming and to deduce universal principles from what is found, the essentials of an empirical theory of art"[31]

Viollet-Le-Duc proceeds in a similar manner. He includes in his theory a severe criticism of the historicist trend [32] and identifies his research program as one attempting "to point out the origin of the various principles that underlie them [architectural forms], and to

trace the logical consequences of those principles, analyzing their most typical developments so as to exhibit them with their merits and defects."[33] The underlying theoretical assumption guiding Viollet-Le-Duc's research program is also explicitly stated when he writes, "I am contemplating a different object, the knowledge of the true, the development of the immutable principle of our art, as variously applied by differently constituted civilizations."[34]

In their theories then both Semper and Viollet-Le-Duc seek to establish diachronic and universal laws or principles that guide the production of architectural form, and both accept the idea that it is through an empirical approach to history that those principles can be deduced. Those theoretical assumptions that the two theorists have in common lead to certain similar conclusions, such as the rejection of the idea that style is a tool allowing a mere chronological categorization of the arts.[35] Despite those similarities in the two theories, however, there are also significant differences.

Conclusions: The nature of the notion of style presented in the two theories.

Dialectic vs Causation

Semper starts his "Style in the Technical and Tectonic Arts" by identifying a crisis occurring in the state of the arts of his time. "These phenomena of the decay of the arts and the mysterious, phoenix-like birth or new artistic life arising from the destruction of the old are all the more meaningful to us, since we are probably in the midst of a similar crisis, as far as we who are in the middle of it, and therefore lacking a clear overall view, are able to surmise and judge."[36] Thus Semper makes it explicit that the issue of artistic change is one of his major concerns. Already in his definition of style presented in "Science, Industry and Art," Semper makes it clear that the genesis and development of style obey certain internal laws, but at the same time they are strongly influenced by external (technical and cultural) factors. The same idea, although somewhat transformed, is also present in his "Style in the Technical and Tectonic Arts" and repeated once more in "On Architectural Styles" when he writes, "In a most general way, what is the material and subject matter of all artistic endeavours? I believe it is man in all his relations and connection to the world, namely man 1. as an individual, the family, 2. as collective man, the state, 3. as mankind, the human idea as the highest task of art."[37] The shift of theoretical interest has been already referred to. What remains constant in Semper's work, however, is his attempt to capture in his theory the complexity and multi-dimensionality of stylistic issues and their relations to man, society and the world. The attempt to account for all these relations is clearly indicated in the last quotation, but also in the whole of his essay "On Architectural Styles." It is in this essay that Semper offers an interpretive analysis of the past in which he attempts to relate such contradictory forces as the urge for autonomy and the contradictory tendency toward subordination[38] - guiding human existence with specific architectural forms, where his *dialectical* thinking, already present in his first essay "Science, Industry and Art", becomes apparent.

Similarly to Semper, Viollet-Le-Duc recognized a crisis in the state of the arts which he, instead of simply examining, set out to resolve through his theory. In the introduction of his *Lectures on Architecture* he writes, "In my view, a course of lectures on Architecture must embrace a wide field of studies - research into the history of Nations, an examination of their Institutions and Customs, and a proper estimate of the various influences that have raised them to distinction or affected their decay. Merely to present to attentive readers the architectural forms characteristic of the nations with whose arts we are acquainted, without pointing out the causes by which their peculiarities have been determined, their connection with the national genius, and their relative influences, without inquiring into the 'why and wherefore' of the various systems of architecture ... would have been to present a sterile compilation of the numerous works which all can now easily procure."[39] Although Viollet-Le-Duc, like Semper, recognizes the influence of such factors as the social and technical, he views them as having a simple *cause-effect* relation to architectural form, thus reducing the complexity of his subject matter. Additionally, throughout *Lectures on Architecture* architecture and style specifically are viewed as autonomous systems. He writes,"Style consists in a marked distinction of form,"[40] a system having an internal structure and being manipulated primarily by the architect. The idea of the autonomy of architecture introduced here by

Viollet-Le-Duc should not be understood as a shortcoming of his theory, but as a result of the research program he set for himself: to compose a theory of architectural production.

Synthesis vs Analysis

"I shall not conclude in favour of one form of architecture to the prejudice of the rest; neither shall I conclude by saying: 'You have heard the claimants; make your choice!' For this should, in fact, be to arrive at no conclusion at all; whereas all instruction, to be useful demands, if not a positive conclusion at least direction and method."[41] Thus, Viollet-Le-Duc explains his intention to produce a theory of architectural *synthesis* that can be summarized as follows: "The design of a building must be the result of a rational method rather than articulation of a preconceived image. It must evolve from the careful statement of a functional program and the arrangement of spaces in shapes and sequences that fulfill the program ... The result is most likely to be attractive because it is also rational. ... The means for realizing a design, the structural scheme, should be devised to fit the plan rather than the other way around. ... New materials, especially those produced by industrial processes, should be welcomed and encouraged."[42] We then see here, once again the consistent use of the *method* by which the elements of imagination, necessity, and material [43] should be used. Related to his method of architectural production is Viollet-Le-Duc's optimistic view about the future development of style: "Art, then is one of the elements of our civilization; if therefore, we are not as a nation rapidly declining, -if, on the contrary, we are progressing, there is no reason why arts should decline; if they do, our artists alone are responsible for it."[44] This belief in the progressive character of the society of his time in combination with his conviction that "when ideas, systems, and principles are modified, the forms corresponding should be modified also"[45] leads Viollet-Le-Duc to contemplate a new architecture and style representative of his period.

In contrast, Semper, starting from the observation of his contemporary social conditions and the state of the arts, attempts to analyze the process by which style is produced, but his comments referring to future developments never acquire the status of a complete theory of architectural production. His initial idea that old forms should be abandoned and replaced by new ones is not further pursued in his later writings. The concluding paragraph of his "On Architectural Styles" is characteristic of his pessimistic view of the future: "Permit me still one other practical application of the fable! People reproach us architects for a lack of inventiveness - too harshly, since, nowhere has a new idea of universal historical importance, pursued with force and consciousness, become evident. We are convinced that whenever such an idea would take the lead, one or the other of our young colleagues will prove himself capable of endowing it with a suitable architectural dress. Until that time comes, however, we must reconcile ourselves to make do as best we can with the old."[46] Thus, the analytic role that Semper assigns to theory hinders the prescription of a set of general rules to guide architectural practice. Rather, he is convinced that the ripened historical conditions will show the new direction that architecture should follow.

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[1] See for example John Summerson, Heavenly Mansions, New York: Norton, 1963, and M. F. Hearn, The Architectural Theory of Viollet-Le-Duc, Readings and Commentary, Cambridge MA: MIT Press, 1990

[2] Harry F. Mallgrave, "Introduction", in Gottfried Semper, Four Elements of Architecture and Other Writings, trans. Harry F. Mallgrave and Wolfgang Hermann, Cambridge: Cambridge University Press, (1989), p. 23.

[3] Ibid., p. 24.

[4] Ibid., p. 28.

[5] Semper, p. 183.

[6] Eugene-Emmanuel Viollet-Le-Duc, Lectures on Architecture,Vol. 1., trans. Benjamin Bucknall, New York: Dover Publications,(1987), p. 6.

[7] Hearn, p. 17.

[8] Semper, p. 136.

[9] Ibid., p. 137.

[10] Ibid.

[11] Ibid.

[12] Ibid., p. 138.

[13] Ibid., p. 142.

[14] Ibid., p. 144.

[15] Mallgrave, p. 29.

[16] Semper, p. 183. Semper's important metaphor of the notion of enclosure as dressing included in "Style in Technical and Tectonic Arts" also indicates his search for the symbolic value of architectural form.

[17] Semper, p. 268.

[18] "This is what I propose to myself in treating Architecture: to inquire into the reason of every form, - for every architectural form has its reason." Viollet-Le-Duc, p. 7.

[19] Ibid., p. 177.

[20] Ibid., p. 180.

[21] Ibid., p. 172-173.

[22] Imagination is defined by Viollet-Le-Duc as "the power given to man to unite and combine in his mind things that have struck his senses" Viollet-Le-Duc, p. 173.

[23] Ibid., p. 181.

[24] Ibid., p. 181.

[25] Semper, p. 183.

[26] Viollet-Le-Duc, p. 230.

[27] Semper, p. 248-9.

[28] Semper, p. 190.

[29] Ibid.

[30] Ibid., p.193.

[31] Ibid., p. 182.

[32] by proposing that the "poet or writer [or generally the artist] of the present day... should express his ideas not by a slavish adherence to the forms or terms employed by those authors, [(Cicero, Racine...) or other exceptional artists of the past] but proceeding as they did." Viollet-Le-Duc, p. 182.

[33] Ibid., p. 7.

[34] Ibid., p. 7.

[35] The rejection of this notion of style is explicitly stated by Viollet-Le-Duc: "I am not speaking now of style as applied to the classification of the arts by periods, but of style as inherent in the arts of all times"[36] he writes, (Viollet-Le-Duc, p. 177), but it is also implicitly present throughout Semper's work.

[37] Semper, p. 182.

[38] Ibid., p. 269-70.

[39] Ibid., p. 271.

[40] Viollet-Le-Duc, p. 6.

[41] Ibid., p. 177.

[42] Ibid., p. 7.

[43] Hearn, p. 13.

[44] The role of which in Viollet-Le-Duc's theory was discussed earlier (see p.3)

[45] E.-E. Viollet-Le-Duc, p. 172.

[46] Ibid., p. 183.

[47] Semper, p. 284.

THE EVOCATIVE USE OF *NATURAL LIGHT* IN HAGIA SOPHIA OF ISTANBUL: A GESTALT APPROACH

by Iakovos Potamianos

The significance of light to man has been widely recognized by both scientists and artists. Its influence extends from biological and practical to psychological and symbolic levels. Light along with rendering visible the world surrounding us, also lends to spaces and objects expressive qualities. A place may appear sad, cheerful or evocative of specific feelings as a result of its lighting.

The evocative effects of light have been explored extensively in the various arts. Successful examples can be found both in painting and in theatrical settings. The implementation of analogous effects in an architectural environment is a substantially more complex undertaking. The shape and total appearance of a building must be determinated by its purpose of being a place to be lived in. This holds true also for the function of light, which serves and interprets the building. Rather than delivering single messages or images based on preconditioned lighting arrangements, an architectural interior must handle the qualities and attributes of the ever-changing natural light in coordination with the nuances and subtleties of life activities it is designed to envelop.

This paper represents a preliminary investigation seeking to analyze the issue of the evocative aspects of light in the church of Hagia Sophia of Istanbul. This church represents one of the earliest and best examples of the implementation of natural light as an amplifier of the religious enthousiasm and conviction. It is one of the most illustrative manifestations of organic and purposeful unity between architectural form and light. This study seeks to identify the perceptual tensions brought into being by the interaction of light and the architectural forms, and discern the architectural techniques and solutions devised for their creation, achieving the particular atmosphere of the building interior. The methodology used in this paper is based on the theory of Gestalt psychology and the proposed investigation will attempt to relate observations regarding natural light to principles and laws as well as deductions deriving from this theory.

The Religious Significance Of Light

All major religions in the world associate light with divine, spiritual, and metaphysical power. The meaning of light in Christian faith, in particular, has explicitly sacred connotations and although its importance and function, for different denominations, depends on the interpretation of the Scriptures, it is commonly associated with the Holy Ghost. [1] All ecclesiastical texts, monastic rules, and Typika[2] constantly refer to light and the manner in which it is to be used in various occasions. If light held such a meaningful position within the dogmatic structure since the dawning of Christian religion it would not seem farfetched to hypothesize that it must have assumed a significant role in the design program of the church of Hagia Sophia, intended to architecturally express this religion, and serve as its morphological prototype.

There are numerous references to light in Christian texts. The mystery of baptism, for instance, is thought to transform the initiated into *photisthentes* (i.e. illumined beings).[3] The Messiah is believed to be Light and bring the Light to humanity. Adam, according to the Scriptures, was effulgent before he was banished from paradise.[4] Similar examples can be found throughout the Bible.

Gregory Palamas, archbishop of Thessalonica, showed, in 1341, that the Holy Scripture abounds in references to the divine light and the Glory of God and that God himself is called Light.[5] According to Lossky, Palamas said:

The divine Light is a prerequisite of mystical experience. It is the visible form of divinity and of the powers by which God communicates and reveals himself to those who have purified their hearts.[6]

According to Palamas, Light is by nature a property of God; it exists outside Time and Space and is made visible in the theophanies[7] of the Old Testament.[8] The perception of God in his increated Light[9] is connected with the perfection that exists only in the beginning and the end, that is, in the paradise before history and in the eschaton[10] that will put an end to history. He maintains, that only those who make themselves worthy of the Kingdom of God may enjoy the vision of the increated Light here and now.[11]

These conceptions were not developed in later Byzantine periods. Contemporaries of the Byzantine emperor Justininan (483 - 565 A.D.) reasoned along the same lines. Paul the Silentiary, Justinian's own court poet, in his poem about Hagia Sophia describes Mary as

...the Mother of Christ , the vessel of eternal Light.[12]

It is in the work of Abbot Suger of St. Denis in France, at the end of the 10th century A.D., that we find explicit writings that relate the metaphysics of light to built form. Suger's ideas were based on the writings of St. Denis the Pseudo-Aeropagite, the patron Saint of his abbey, who propagated the "anagogical approach" from the material to the immaterial world.[13]

Every perceptible thing, man-made or natural, becomes a symbol of that which is not perceptible, a stepping stone on the road to Heaven; the human mind, abandoning itself to the "harmony and radiance" which is the criterion of terrestrial beauty, finds itself "guided upward" to the transcendent cause of this "harmony and radiance" which is God.[14]

In one of his poems, Abbot Suger relates these ideas directly to a specific architectural element.

Whoever thou art, if thou seekest to extol the glory of these doors,

Marvel not at the gold and the expense but at the craftsmanship of the work.

Bright is the noble work; but, being nobly bright, the work

Should brighten the minds so that they may travel, through the true lights,

To the True Light where Christ is the true door.

In what manner it be inherent in this world the golden door defines:

The dull mind rises to truth, through that which is material

And, in seeing this light, is resurrected from its former submersion.[15]

According to an interpretation of this passage by the art historian Erwin Panofsky, the soul incapable of attaining to truth without the aid of that which is material, will be guided by the merely perceptible lights of the resplendent reliefs to the "True Light" which is Christ; and it will thus be raised, or rather resurrected from terrestrial bondage.[16]

A Description Of The Hagia Sophia

After quelling Nike Riotthe Byzantine emperor Justinian decided to build - perhaps as a monument of his victory - a new church (Fig.1). This church was meant to impress both the noble and the populace and become the symbol of the Byzantine empire. Materials were brought and workmen were summoned from the farthest lands under imperial control. It took five years and an enormous sum of money to complete the church. For its design a new type of architect, other than the professional master mason, was needed. Justinian commissioned Anthemios of Tralles and Isidorus of Miletus to undertake this design in 532. These two were called *mechanopoioi* and they were

scholars grounded in the theory of statics and kinetics and well versed in mathematics. Anthemios was the author of a work on conical sections, an expert in projective geometry, and an inventor who knew the principle of steam power and of the burning mirror. Isidorus taught stereometry and physics at the universities, first of Alexandria, then of Constantinople, and wrote a commentary on an older treatise on vaulting... They were not architects to start with but they turned into architects when called upon to devise the plans and statics of a building never before considered viable on a large scale.[17]

Hagia Sophia is symmetrical in plan, along the roughly east-west axis. The design, according to a description by the art historian Krautheimer, unfolds itself from the center of the structure. Standing under the apex of the dome, the visitor begins to grasp the huge space. From the vertical central axis, space expands longitudinally into the huge niches to the east and west. The sequence of spatial shapes develops both centrifugally around a middle axis and longitudinally, from the entrance bay to the apse.[18] According to Krautheimer, the aisles and galleries were intended as places whence to view the nave, which remained always half-hidden behind single or double screens of columns. Another screen was provided by curtains hanging between the columns. The nave, therefore, could only be seen in fragments from there.[19]The visitor, after passing through the transverse barrier of the long but shallow esonarthex, entered the church proper through one of five doors, the royal gate in the center. Only then was the nave revealed, showing its huge dome and half-domes, a sight quite unintelligible from the outside. This revelation, however, was reserved for the few admitted to the nave during services, which were the clergy led by the patriarch, and the emperor accompanied by his court.[20]

The church is singularly full of light and sunshine; you would declare that the place is not lighted by the sun from without, but that the rays are produced within itself, such an abundance of light is poured into this church.

Procopius

In Byzantium, the emperor and patriarch were the *two halves of God.* The patriarch represented the religious aspects of the Godhead and the emperor mirrored His secular aspects; power and justice. The interaction of emperor and priesthood was essential for establishing and maintaining a Christian empire, and their meeting under the great dome of the Hagia Sophia became a symbol of the interaction.

Observations On The Use Of Natural Light And Its Psychological And Symbolic Effects

Both the ecclesiastical and secular hierarchies were permeated by the light of the Divinity, which emanated from the center of heaven and spread to the angels, patriarch, clergy and emperor. Thus in the Hagia Sophia the spatial shapes, the light, and the colors all emanate from the central dome. The ordinary people were allowed to see only from afar the glory that stemmed from the seat of the Godhead.[22]

Artificial Light.

The intention for religious expression in the design of the church is described clearly in a long passage by Paul the Silentiary, Justinian's court poet, regarding the artificial lighting at night in Hagia Sophia. He describes thousands of lights hanging from low to great heights, in alternating winding curves resembling the evening stars and making the church brighter at night than in the day. Also, according to him, "sacred lights" were placed along the cornice at the dome base so as to light the heaven.[23]

Natural Light.

Unfortunately the section referring to natural light in Hagia Sophia, in the above poem, has been lost. Referring to natural light Procopius, Justinian's court historian, writes:

The church is singularly full of light and sunshine; you would declare that the place is not lighted by the sun from without, but that the rays are produced within itself, such an abundance of light is poured into this church.[24]

The visitor enters, in the westernmost end of the church and proceeds directly toward the east where the altar is placed. As one proceeds one's eyes experience a pull upward where the enclosed volume of space increases in a disproportionately rapid manner. Each subsequent step reveals a greater expanse of concavity.

A well known psychological experiment shows that human beings exhibit a prejudice in perceptually overestimating the vertical dimension. A vertical line intersecting an equally long horizontal line at its center appears to be longer than the latter (Fig.2). It is easy to realize the impression a space makes when its height is almost twice as large as any of its horizontal dimensions (Fig.3).

The emphatic loftiness and vastness in Hagia Sophia do not rely perceptually on the dimensions of the built forms alone but also in the dynamic manner in which the latter are revealed as well as the way light penetrates and modifies the perceptual structure of the space. The sketch in Fig.3 attempts to capture the basic directions of the perceptual tensions as visualized in Hagia Sophia. Each observation will refer to this as of how it adds or subtracts from the perceptual scheme of the whole design. Loftiness, vastness and centrality are the principal themes that are to be found in the interior.

In the following, some basic Gestalt principles are described in their contribution to this general structural theme. Gestalt is a German word that means the visual perception of well organized configurations, where the whole appears to dominate the parts, as opposed to mere sums of parts.[26]

The art psychologist Rudolf Arnheim describes clearly the essence of a Gestalt below:

To call a football team or a painting or an electric circuit a Gestalt is to describe a property of their organization. Gestalten (plural for Gestalt) function as wholes, which determine their parts. Four musicians who form a string quartet will create a unified style of performance. This style is a delicate crystallization of affinities and conflicts of temper. It is the balance of convergent and divergent social forces and, in turn, modifies the behavior of each player. Such internal play of influences obeys rules that are largely independent of the particular medium in which they are observed.[27]

The idea of Gestalt implies not only the perception of a form as being greater than its parts but in fact the existence of an underlying perceptual structure which makes this possible. This means that each Gestalt is perceived by means of a structure of directional tensions that are not explicitly given but are rather sensed as being integral to the form.

The triangles of Fig.4, for instance, have distinctly different characters, which can only be inferred from the structural skeleton their shape creates by induction. These triangles are obtained by vertically displacing one corner point while leaving the other two constant. In this continuous transformation certain triangles are formed that can not be perceived as instances of the continuum but as five quite distinct shapes. Although caused by changes in the contour, the structural differences between the triangles cannot be described in terms of their contour.

In Fig.5 one can see the perceptual structural skeleton at work, in each of the depicted instances.

In order to achieve a whole that is greater than the sum of its parts certain principles or rules must be observed. The observation of these rules will not be effective though if all design elements and parts have not assumed a balance of tension and dominance over subordinate ones so that in coordination they emphasize the existence and perception of a common greater goal, i.e. form a Gestalt. If the parts assume an emphatic presence exceeding their value in the hierarchic structure, then the coherence of the whole may be disrupted and the whole may be perceived as a mere sum of elements.

The major perceptual forces acting in the interior of Hagia Sophia are shown in Fig. 3. These consist of:

A. First, a strong pull upward which has an accelerating effect with each step the visitor takes toward the center;

B. Second, an imposing centrality where each attempt to escape beyond the central core ends up in confusion;

C. Third, a strong force distancing the central cupola from the remaining of the structure and the visitor;

D. Fourth, an oblique downward force counterbalancing but also emphasizing all the upward moving ones, coming form the right side of the lay visitor and based entirely on light effects.

These perceptual forces largely depend on or are emphasized by a number of distinct light effects that are

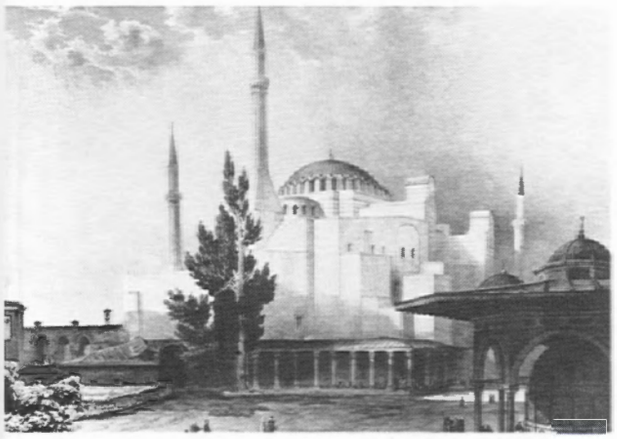

Figure 1. The Hagia Sophia

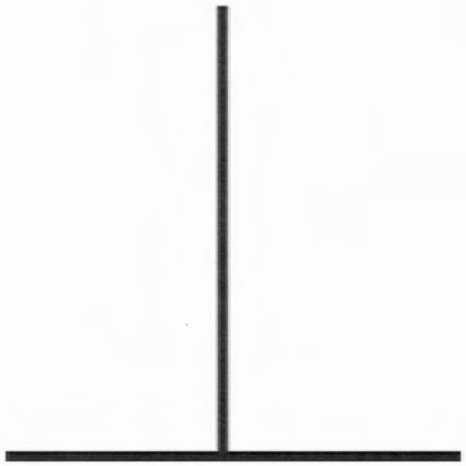

Figure 2. Horizontal vs. vertical perception

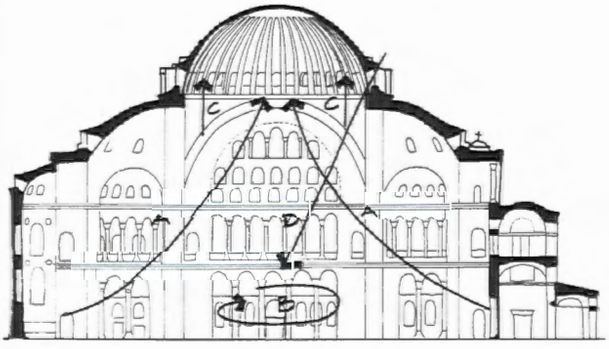

Figure 3. Major perceptual forces

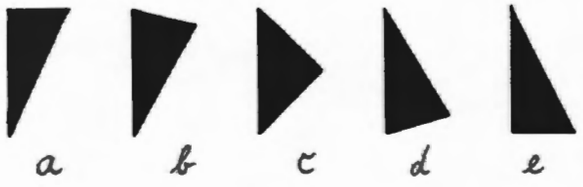

Figure 4. Solid triangles

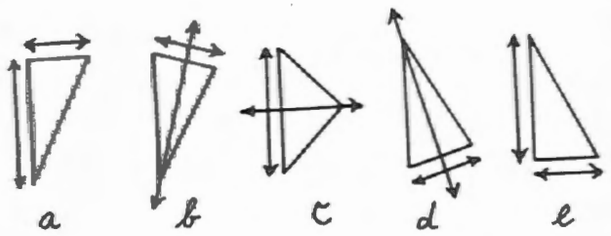

Figure 5. Skeletal triangles

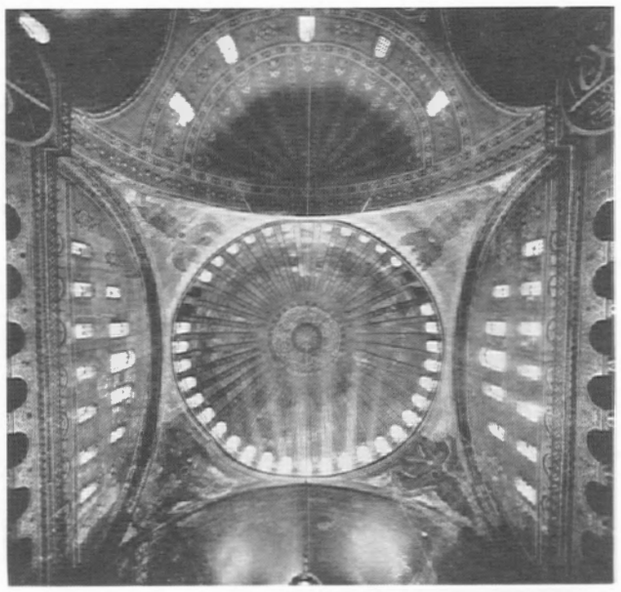

Figure 6. Central Dome

Figure 7. Mosaic

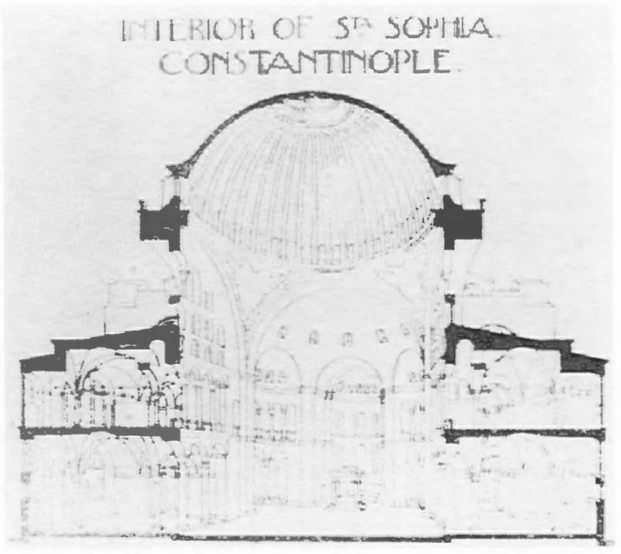

Figure 8. Section

described below. These effects were not afterthoughts attached or added to the formal arrangement of masses but are integral and essential to the design concept.

Enveloping Brightness (Similarity)

By admitting light from many directions the space became very responsive to the slightest weather changes, as regards to the intensity of illumination, even though the intended differentiations and highlights remained constant due to the geometrical configurations of the forms.

A great number of windows from the base of the dome to the ground let light in to wash the wall surfaces from many different angles. This brings forth a clarity and a shining quality without eliminating texture articulation. High contrasts are thus subdued and the material heaviness and plasticity of objects and building elements counteracted.

The law of similarity is at work here. Similar things are grouped together. Similarity of brightness lends a unity to the forms in space. This creates a sense of enveloping brightness and a feeling of airiness and immateriality that support a conception of divine presence and of space unaffected by reality.

The Window Light Band
(Similarity, Vertical Asymmetry)

The forty windows at the dome base cover a small area as compared to the dome's entire solid expanse but they are many and situated at its bottom covering a large portion of the area of the dome's lower circumference. The bright light that bleeds off the window edges further diminishes the distance between them creating, in essence, a luminous band. This, in connection to the uniformly lit band formed by the pendentives, intensifies the thrust with which the dome is separated from the rest of the structure by means of progressive intensification of brightness. The dome thus appears as hovering in mid-air and the vertical dimension is perceptually accentuated. Here the law of similarity, in the case of the band, and the law of vertical asymmetry, as related to the central vertical axis, are exploited.

Stars of the Firmament (Figure-Ground).

One becomes immediately aware that the great hollow of the church simulates another world. The space is self-centered and surrounded by huge orderly masses and relatively small openings clearly intending to impede its perception relatively to the exterior physical world. Thus, the interior space disengages itself from reality and it leaves only small openings to the exterior. These openings viewed from the inside and compared to the great masses, appear as parts of the walls and domes, being seemingly attached to them. A sense that light radiates directly from them strikes the observer's perception more directly than the realization of their true function.[30] They appear like bright objects, as stars in heaven (Fig.6). Even the light shafts are perceived as being produced by these new sources of light. In this way the windows and the light itself become part of the spatial hierarchy. The figure-ground relationship is here reversed. The walls become the ground and the windows become the figure, i.e. bright objects attached to it. The sense of a closed system, a distinct, detached, self-contained world is thus intensified.

Light Made Visible (Lateral Asymmetry)

The symmetrical arrangement of the building in plan, in respect to the east-west axis, is overlaid by a perceptual lateral asymmetry due to the physiological asymmetry of the cerebral cortex. The visitor, according to this principle, identifies easier with his left side in space and perceives actions occurring in his right side as being more distant and foreign.[31] It follows thereby that the sunlight entering the building does not only enrich and enliven the image of the church but it emphasizes the effect of lateral asymmetry. This is achieved by the introduction of a highly dynamic element, such as the shafts of light-already heavily charged with spiritual connotations-on the visitor's right side, thus intensifying their perception as a manifestation of a distant, intangible, overpowering force energizing and controlling the surrounding space.

The expression of imposition of a higher power over earthly matters and beings is also intensified by the strong downward direction of the light shaft. A form penetrating a space obliquely is perceived as being more compelling and dynamic[32]. In this case, this is especially true because the light shaft is the only asymmetrical form in a heavily symmetrical and centralized space. The light shaft's non-material yet dense oblique form makes its expressive significance striking.

The Pendentive Light Band
(Similarity–Vertical Asymmetry)

The central dome rests on four piers that lie outside the dome's circumference by means of four pendentives.

In plan these pendentives are represented as the four remaining triangular parts of the square in which the footprint of the dome is inscribed (Fig. 4 G arrow). Their shape in three dimensions is shown in the sketch in Fig. 4 F. The oblique relationship of the pendentives to the window planes allows the former to receive light from the latter and, by reflecting it downward, to emphasize their own form and importance to the observer.

Each pendentive diminishes obliquely downward until its two lower curved outlines meet and become the edge of the pier. It widens upward until its outlines meet tangentially, and in opposite directions, the cornice of the dome. The shape of the pendentive is the only one in the whole hierarchy of shapes that perceptually reverses and defies the downward gravitational thrust. It is pointing upward with a great dynamism and expressive power inherent in its form aiming toward the center of the dome. But the intense perceptual directionality of the shape does not suffice. It is further accentuated by the light that shines on it. In contrast, the four tympana which in later Byzantine designs become barrel vaults, are considerably darker (Fig. 7,8). In this way the four pendentives are perceptually unified and impart the impression of holding the dome securely and elevating it in higher planes while hardly touching the supports, in an effort to detach the former from the latter and from the rest of the space as a whole. The system of the four pendentives appears as a purifying halo around the dome and as if the dome were being raised by the sheer power of light energy.[34]

A great number of windows from the base of the dome to the ground let light in to wash the wall surfaces from many different angles . . . . This brings forth a clarity and a shining quality without eliminating texture articulation.

In many cases the effect is further emphasized in churches where the lower edges of the pendentives rest on arches that form the beginnings of outward radiating barrel vaults. The usual dimness of the barrel vaults creates a desirable contrast that has the effect of entirely detaching the upper from the lower world while in Hagia Sophia the tympana (i.e. the walled–in arches below the dome) refrain from making this distinction too abrupt, in this way retaining stronger links between the lower and the higher worlds. This is understandable as a statement if one realizes the use of Hagia Sophia as a church solidifying the imperial identity.

In the orthodox Christian faith, as it was later developed, the differentiation of the two worlds is highly desirable because of the authoritative and austere character of the denomination. In monastic environments, especially, this differentiation often reaches extreme manifestations. The distinction between darkness and light, low and high, Earth and Heaven, matter and spirit, must be readily communicable since it embodies the monk's daily strife for realization of these very concepts and it should be omnipresent acting in both an expressive-psychological (through the manipulation of perceptual spatial forces) and symbolic (through iconographic representation) level. This is important because the former acts on the subconscious level producing the atmosphere in which the content of the latter can be most readily understood.

In this sense the juxtaposition between the dome and the surrounding forms lends a highly spiritual character to the upper central part of the building and creates a distancing of it from the darker, more material surroundings.

The Increated Light[35] *- Luminosity*

Another point that must be made clear here is the concept of luminosity.

Luminosity results when brightness is not perceived as an effect of illumination. To this end, shadows must be eliminated or kept to a minimum. And the strongest light must appear within the confines of the object.[36]

In orthodox Christian iconography efforts are taken to diminish cast shadows. The reason probably is that cast shadows are perceived as being intimately associated with material, plastic form. By eliminating the cast shadows the direction of light is not revealed and perceptually an assumption is being made that the luminous object radiates light itself; it is seen as a source. An example of this is the icon in Fig. 10. In the figure of Christ there is no indication of where the light is coming from because there are no cast shadows. The very fine shadows that do exist assume the role of the delineation of the forms without accentuating their volumetric or plastic quali-

ties. The idea of shadowless light radiating from within has found interesting spatial applications.

The well-known art historian Thomas Whittemore relates detailed descriptions of the sensitive placing of the mosaics in Hagia Sophia in respect to light. Referring to various crosses in mosaic located in the esonarthex, he points out:

The field of each lunette is slightly concave and the gold tessellae are set into it not vertically, but with their faces inclined at a slight angle. It is certain that this irregularity was not adopted in order to economize material- there was no parsimony here; it seems rather that, as far as this deflexion was intentional, the aim was to secure a sparkling movement of light and a play of color that should suggest atmosphere...[38]

No photograph can convey the power of the appeal of this succession of images. They constitute no trivial repetition of a single shape; but each meets the vision as if charioted on a billow of light, each with an appeal as thrilling and compelling, and personal, as it seems possible to experience. The effect as you move past them has the cumulative power of a rising flood and they engulf you in the religious enthusiasm of Byzantine conviction.[39]

According to the same researcher, the intention of the mosaic artist was not naturalistic; he did not seek to present a substitute for reality; he was indifferent to momentary aspects of light and shade. His task was to escape from phenomena, and by rejecting the accidents of time and space, to obtain a timeless rendering; to pass from appearance to ideal reality behind it and establish a presentation of the permanent that is hidden from the uncontemplative mind.[40]

We have seen that the idea of the increated light is all but foreign to Christian thought and art. It is therefore probable that great efforts were taken to secure this sensation at least in the areas of greatest importance. If a cross in the esonarthex had been important enough to draw the designers' and the artists' attention one can realize the amount of thought that must have been given to the central dome, the seat of the Godhead.

The first dome, that collapsed in 558, was covered in the inside with plain gold mosaic, while the new dome, of 564, carried a huge cross[41] mosaic in the center, considered to be the protector of the city.[42] This was later replaced by an Arabic inscription (Fig. 6). In later Byzantine churches this position was commonly reserved for the image of Pantocrator (i.e. the Ruler of all).

The effect of luminosity is still today noticeable on the Arabic inscription. The disk in the middle of the dome appears as if it radiated light. This light must be sent to that location from reflections because it cannot be received directly from the windows of the dome or from any other openings. In addition, all surfaces of the church are facing either downward or are vertical. Therefore, any incident light on them would necessarily be reflected downward and not toward the apex of the dome where the inscription lies. It appears that the only remaining possibilities are:

1. A secondary reflection from the floor - unlikely because the whole of the dome would be lit in this case;

2. A secondary reflection coming from the window sill of the dome windows - which appears possible if one observes the tilt of the window sill;

3. A multiple reflection employing window sill, head and the cornice around the bottom of the dome (Fig. 8);

The second possibility appears most probable because light reflected from the window sill can be regulated by the wide window head and the perforated window screens so as to be directed toward the central disk at the top of the dome, and confined in illuminating this alone. It is apparent that the right part of the disk, which would receive reflections from the northern windows, is less luminous than the left, which would receive reflections from the southern ones. In the case of the first, flatter dome, though, the effect may have been different, probably similar to the one in the half dome. This is supported also by the evidence that we have that the first dome was covered in the inside with plain gold mosaic. This treatment of the dome, therefore, fits most aptly the metaphor of Heaven, while the one with the illuminated central disk is more appropriate to the highlighting of an inscribed symbol.

Conclusions

The cavernous interior of Hagia Sophia, as we have seen so far, imparts the impression of spaces where natural laws are counteracted and halted. Once one comes into the self-contained, purified, immaterial world, one's gaze is drawn upward by the richly lit dome of Heaven. Any linear dynamic procession comes to a halt, once the stagnant and imposing centrality of the whole is perceived. All elements are carefully balanced in regard to

the center. Only light penetration remains dynamic emphasizing the strict hierarchical order from the worldly to the divine by indicating the dynamic nature of the spirit through the oblique ethereal presence of light.

Here it should be emphasized that light must be understood as a psychologically influential environmental agent that can assume its true potential and its proper role only as becoming hierarchically subordinate to a single, coherent design concept. By seeking simply a statistical understanding of user satisfaction or by utilizing charts relating psychological tendencies to lighting modes one cannot reach the ultimate comprehension of a design as a whole.

In conceiving light as part of the design goal one can comprehend the spatial Gestalt where the implementation of light is only one facet of the perceptual event, tightly interwoven with all other necessary facets of the overall concept.

Given the central significance of light in Christian faith and the fact that Anthemios, Hagia Sophia's principal architect, was a specialist on the burning mirror, appears that there must have been a conscious effort to make light an integral element of the whole design in order to achieve perceptual cohesion of symbolic associations in the expressive- subconscious level.

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[2] Typikon is a set of written rules or canons observed in a monastic establishment, sometimes specific to this alone.

[3] Eliade, p.57

[4] Ibid., p.59

[5] Ibid., p.62

[6] Vladimir Lossky in Eliade, p.62

[7] Theophany means a visible manifestation of a deity.

[8] Eliade, p.62

[9] The increated Light means that light which has not been created by God, that which emanates from within.

[10] The eschaton means the End particularly connected to notions such as the second coming of Christ, resurrection, Judgement etc. which signify the end of the world.

[11] Ibid., p.63

[12] W.R. Lethaby and H. Swanson, *The Church of Sancta Sophia Constantinople. A Study of Byzantine Building*, Macmillan and Co., New York, 1894, p.47

[13] The church of St. Denis represents the first known example of Gothic church architecture.

[14] Pseudo-Aeropagite in Erwin Panofsky, *Meaning in the Visual Arts*, The University of Chicago Press, Chicago, 1982, p.128.

[15] Suger in Panofsky, p. 131.

[16] Panofsky, p. 131.

[17] R. Krautheimer, *Early Christian and Byzantine Architecture*, Penguin Books, Maryland 1965, p.153

[18] Ibid., p.156

[19] Ibid., p.158

[20] Ibid., p.159

[21] Schneider, Alfons Maria, *Die Hagia Sophia zu Konstantinopel*, Verlag Gebr. Mann, Berlin, 1939, Abb.8

[22] Krautheimer, p.160

[23] Lethaby, p.49-52

[24] Ibid., p.24

[25] Fletcher, Sir Banister, History of Architecture, , New York, Charles Scribner's Sons, 1967, p.281

[26] Lorenz in L.L. Whyte, *Aspects of Form*, Indiana University Press, Bloomington and London, 1966, p.5

[27] R. Arnheim in Whyte, p. 196.

[28] Arnheim, p. 93

[29] Ibid., p.94

[30] See also Procopius' description in the subsection Natural Light of this paper.

[31] Arnheim, p.34,35

[32] Ibid., p.424,425

[33] Schneider, Abb.25

[34] This type of pendentive is not the only one to be found in Byzantine churches. Pendentives in the form of parallel rows of bricks stepping down in receding rows toward the piers or cubic shaped pendentives were widely used. Also longer and more slender windows below small or almost non-existent domes had been used extensively elsewhere in the Byzantine empire. These solutions though would blunt the psychological effect just described.

[35] See Note 9

[36] Arnheim, p.325

[37] Schneider, Abb.63.

[38] Whittemore, Thomas, *The Mosaics of Hagia Sophia at Istanbul*, Oxford University Press for the Byzantine Institute, 1933, v.I, p.12

[39] Ibid., p.14

[40] Ibid., p.23

[41] Krautheimer, p.158

[42] Lethaby, p.42

[43] Whittemore, v.I, plates VII, VIII, V, XI.

[44] Schneider, Abb.24.

Clever beyond all dreams the inventive craft that he has which may drive him one time or another to well or ill. When he honors the laws of the land and the god's sworn right high indeed is his city; but stateless the man who dares to do what is shameful. *Sophocles*[1]

Architecture, until the invention of the printing press, was the only evidence that a civilization had to pass to the following generations as a symbol of glory and prosperity. Today, we have the printed word that conveys yesterday's achievements. Architecture comes second.

Carlo Scarpa succeeded, consciously or unconsciously, in placing his architecture back in the lead as a testimony of his time. His work tells the story of its culture, society, and context. He was named *architetto-poeta*, for his architecture was based on the language of poetry.[2]

This essay seeks to analyze Scarpa's approach toward selecting forms, materials, and processes of implementation through an examination of two of his projects: The Museo Civico di Castelvecchio and Banca Popolare di Verona.[3] Through his work, he is considered on the one hand, the savior of historical techniques, themes and motifs; on the other hand, the experimenter of modern forms, materials, and attitudes. This dialectical approach toward architecture - that of the past and present - is the essence of this essay.

ADAPTING AND ADOPTING TRADITION IN MODERNITY

The tension between tradition and modernity in architecture has been the focus of much attention in the past two decades. Some architects are attempting to combine modernity with tradition in their work, but the results are far from success. Others argue that tradition is associated with the past, that we are living in the present and we are now embedded in modernity.

Tradition continues to exist in contemporary times; it is naive to deny it. It is also naive to oppose modernity because it is an indispensable part of our presence. This dichotomy appears crucial in contemporary architecture more than any time in the past. In examining Scarpa's work, one cannot but sense the intimate presence and co-existence of history and modernity, an achieved balance of impressive past and imposing present. Whether in material, form, or combined, he has succeeded in adopting and adapting history in order to create a sense of continuity within his buildings; a continuity in terms of ideas, experiences and more importantly, physical reality. It is this explicitly reflected continuity that brings his work alive and close to our memories and sensibilities.

In general, *adaptation* refers to the "action or process of adapting, fitting, or suiting one thing to another." More specifically, it is a case in which the original form is modified to fulfill a new use.[4]

Contrary to adaptation, *adoptation* is "the taking up of a practice, method, word, or idea from someone else, and using it as one's own."[5] That is, a course is taken on the basis of another person's idea chosen for one's own practice.

In architecture, both adaptation and adoptation are indispensable parts of the design and construction processes. They are represented in the unconscious of the architect, through the selection of forms, techniques and materials, and may be seen as

Adaptation and Adoptation of the Past and Present: An Essay On Carlo Scarpa's Architcture

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the basis for both *novation* and *in-novation* in architecture. Moreover, these discriminating choices evolve into an agreeable tension that transforms architecture into a pleasurable play as it engages its audience and demands their involvement. This tension of adaptation and adoptation can be observed on certain levels; in Scarpa's work, it is present in materials, techniques, forms and spaces.

EXPERIMENTATIONS ON THE PAST AND PRESENT

Scarpa's approach toward a project is initiated by and formulated through the creation of a multitude of experiences that engage both the visual and tactile senses of the observer. "You have to touch Scarpa's architecture to be able to understand it."[6] This attitude emerges from his deep understanding of materials and his capacity to re-create a new representation of spaces in relation to the surrounding culture and context.

He presents his ideas in fragments because each experience can be seen through and experienced by a unique detail or moment that is not replicated. Consequently, his ultimate choice of technological solutions becomes both adoptive and adaptive in their nature and application.

In Castelvecchio, he adapts the modern materials of concrete and steel in the staircases and bridges that link the various parts of the building; while the past is represented in the adoptation of local materials such as the Prun stone slabs paving the sidewalks and squares of Verona, and the Veronese marbles applied in patterns on the entrance. This familiarity of texture and color takes the observer on a trip of nostalgic memories, yet one does not lose presence of the present.

While revealing the layering of past centuries from the castle's grounds, Scarpa is present during the process of unveiling, and through his designs, reflects an attentive mind and eye to historical details that are genuine and authentic. At the same time, he does not shy away from "leaving an individual and contemporary imprint wherever the original fabric was irreparably lost or damaged."[7]

"Surveying would allow understanding of a form repeating the steps of its first creator. Design process is becoming aware of reality both in the stating of the problem and in its solution. Each solution is not an idea contained by a form, the form itself is an idea. The thinking of solutions is the thinking of form."[8]

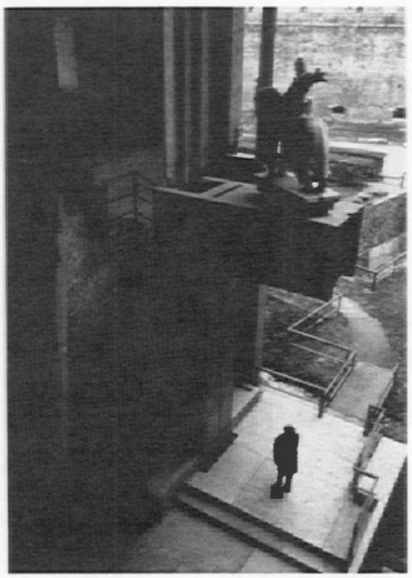
In other words, he does not attempt to reconstruct the past; rather, he amplifies what he has inherited and successfully blends it with a transparent modern approach. For example, in the Banca Popolare project, he does not fear the contrast of traditional materials formed as geometrical abstractions (traditional materials adapted to modern forms) or columns of cast iron with brass capitals (new materials adapted to classical forms). The result is an emerging harmonious relation of traditional and modern images.

Part of this new creation is attributed to his unique understanding of materials, association with craftsmen and a Venetian background that is strongly embedded in tradition.

In contemporary times, craftsmanship implies praise and inspiration, technology becomes reserved and mechanical.[9] But Scarpa has achieved a much sought-after balance between hand and machine crafts. He has brought forward to the present the diminishing art of past craftsmen (that was over-shadowed by machines) within a new configuration and context. At the same time, he has succeeded in taking command of the machine as a tool toward the bringing-forth of a new humane architecture.

"... Scarpa's aesthetic could never be considered pre-modern. It is as machine-made as it is hand-wrought, as full of 'magic' materials as of traditional ones."[10]

In the stonework of the Banca's facade, Scarpa makes use of the machine to execute the mouldings, but to produce the square corners the stonecutters will become indispensable. They will "not only complete the machine's work but will also sand and



Mueso Civico di Castelvecchio

refinish by hand the entire work to bring back the sensitive surface of a handcut stone."[11]

Arrigo Rudi spoke of a similar adoptation in the construction methodof the Castelvecchio, where the stone pieces of the facade were laid, adjusted and numbered on the ground before raising them to their allocated positions, thus assuming precision of joining, a method originally established by the Gothic builders, and accuracy of execution.

In presenting a framework for analyzing Scarpa's work, Zambonini suggests that: "It is in the technological discovery that one should search for the key to the solutions of Scarpa's linguistic operations, defining, in this specific case, technology as a selection of solutions to static and decorative problems given in the Veneto hinterland by local craftsmen through the centuries and layered in the customs and culture of the region itself."[12]

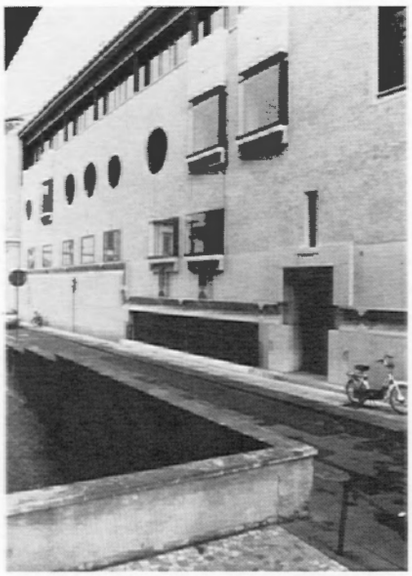
Finally, Scarpa's approach to space is ultimately based on the creation of experiences in reference to the existing context. In Castelvecchio, the main courtyard is more than a passage and unifying element, it becomes a mural that includes the walls of the communes, the towers added by the Scala Family, and Scarpa's modern garden of rectangular lawns and pools of water. It is a balanced presentation of the layering of time upon the building. A series of catwalks and staircases are an opportunity for the visitor to move around and view certain parts (i.e. the statue of Cangrande) diagonally, from below and behind. Within the building, each series of spaces is treated individually to accommodate its exhibits; as twelfth century stonewalls and thirteenth century brick walls become part of the museum, and sixteenth and eighteenth century paintings are contrasted with the white-washed walls. A sensitive approach was adopted in the exhibiting of smaller articles by designing intruding masses in the facade that substitute for small alcoves. Each artifact is given particular attention and an independent entity and is such provided for.

Throughout his work, Scarpa is conscious of adopting the traditional play of light, shade and shadow, whether within his spaces or upon his forms and details. Scale becomes another crucial element that is recognized as indispensable in his drawings; it becomes the regulating tool in experiencing spaces, positioning and sizing of his elements and forms. Scale is crucial not only as measure of dimensions but also as that of the human senses (i.e. sight, touch, etc.).

"His architecture is the argument against reductionism. It is not just architecture of bones or entrails; it is of these and also fat, nails, skin, hair."[13]

THE LOGOS OF OLD AND NEW IN ARCHITECTURE

The idea of past and present is linked to that of the old and new. Architecture as a profession has undergone great changes, particularly in the last two centuries. Architecture became a legitimate part of culture; Viollet-le-Duc and Choisy among others enforced this notion through their work. "Their



Banca Popolare di Verona

interest in the crafts, following the tradition of the encyclopedia, integrated learned culture with technics and craft skills."[14]

During the classical periods, architects were responsible for the form and appearance of their buildings. Constructional problems were not included in their drawings. By the nineteenth century, drawings presented by architects became more detailed, specific and informative. Methods of execution and selection of materials are among those aspects described by the architect. A new relationship arises between the architect and the artisan. The former becomes more aware and involved with the latter's practice and techniques. An agreement is established between the two; thus it becomes no surprise to us when an architect chooses to work consistently with the same craftsmen or even contractors on various jobs since they have established a mode of practice between each other.

"Each specific situation, each new work site, thus calls for the skill of the craftsman, his insight into his craft: on each occasion he has to adapt his knowledge, his skill, to deal with the concrete problem facing him and respond to its specific terms."[15]

In attempting to place Carlo Scarpa in this scene, one is confronted with two realities. One is that Scarpa does not provide us with a "classical" or "traditional" set of drawings; his drawings are evolutionary and continuing throughout the construction process. In his case, "construction is a dimension of the design process constantly being transformed at every stage, at every moment in the evolution of the design."[16] Two is that Scarpa relies significantly on the skills of his craftsmen. Many of them worked closely with him on numerous projects; this reflects the existence of a mutual admiration and solid understanding between the architect and the artisan.

In Scarpa's work we see an adaptation of models that lead to "repetitive", not "standardized", constructional details. Diversity in his work comes from experience and professional skills; experience is controlled and adjusted to each constructional detail that is encountered, and professional skills are adopted and adapted toward achieving excellence.

"With Scarpa, it is form that is abstract. Experience is concrete."[17]

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[2]Sergio Los, a teaching assistant of Scarpa, gave Scarpa this name. (Giuseppe Zambonini. "Process and Theme ..." Perspecta, no. 20, 1983, p. 42).

[3]The Museo Civico di Castelvecchio (1958-64) is a castle built by Verona's leading medieval family, the Scaligeri. It stood on some Roman ruins, incorporated a medieval church, was used as barracks by Napoleon in the last century and turned into a museum in 1924. Bombed in 1945, Scarpa was approached in 1958 to redesign the entire complex. The Banca Popolare di Verona (1973-80) stands on the site of two demolished buildings. Late 1973, Scarpa was approached by the directors of the bank to rework a plan that had already been granted approval earlier that year. The new extension included the insertion of a tunnel in the inner courtyard to link it with the existing complex. The project was completed after the architect's death in 1978. While the museum represents a clear attitude toward historicism, the bank reflects a more modernist attitude.

[4]Oxford English Dictionary, 1933, p. 101.

[5]Oxford English Dictionary, 1933, p. 124.

[6]Arrigo Rudi gave a series of presentations on his work with Scarpa - particularly on the Castelvecchio and Banca Popolare projects - at the University of Pennsylvania, April 24-26, 1985. He spoke of Scarpa's architecture as an object that could only be understood and appreciated through touching and feeling.

[7]Pier Santi. "Banca Popolare di Verona By Carlo Scarpa." GA Document, no. 4, 1981, p. 25.

[8]Zambonini, Ibid, p. 23.

[9]Adolf Behne, in his article on "Art, Handcraft, Technology," discusses the relation between handcraft and machine craft and came to the conclusion that "technology is nothing but perfected craftsmanship." He argues that the major difference is in the division of labor, "in craft the unity of invention and execution is in one person; in technology, it is split between the one who invents here and the one who executes there." Oppositions, no. 22, Fall 1980, pp. 96-104.

[10]Miller, N. "Critique" in Progressive Architecture, vol. 62, May 1981, p. 122.

[11]Zambonini, Ibid, p. 30.

[12]Ibid, p. 27.

[13]Miller, Ibid, p. 123.

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[15]Ibid, p. 125.

HARMONY *AND* DISCORD

By
Brian Ferriby

Is there any relationship between music and architecture? The writings of Vitruvius, Alberti, Boullee, and Viollet-le-Duc, some of the seminal theorists throughout architectural history, will be critically examined, with the intent of determining whether there is any validity to the premise that there is a basic theoretical common ground between music and architecture. Vitruvius, the earliest known architectural theorist, addressed the issue in the following manner:

Music, also, the architect should understand so that he may have knowledge of the canonical and mathematical theory....In theatres, likewise, there are bronze vessels which are placed in niches under the seats in accordance with the musical intervals on mathematical principles. These vessels are arranged with a view to musical concords or harmony, and apportioned in the compass of the fourth, the fifth, and the octave, and so on up to the double octave, in such a way that when the voice of an actor falls in unison with any of them its power is increased, and it reaches the ears of the audience with greater clearness and sweetness. [1]

Since Vitruvius was writing in a time when music theory was in its infancy, it is difficult to be overly critical of the limitations to which Vitruvius speaks on the subject of music. For example, polyphony, the layering of multiple tones to achieve harmonic resonance, had not yet been developed. What Vitruvius did understand, in at least a basic theoretical sense, is the system of intervals or ratios, or rather the laws of proportion in music, as discovered by the Greek mathematician, Pythagoras.[2] It is clear from the excerpt above that Vitruvius believes that there is a relationship between music and architecture, although the extent to which he speaks of it is limited to pragmatic applications. Further, Vitruvius proposes that all the arts have a common theoretical base, as is shown in the following quote:

...all studies have a common bond of union and intercourse with one another... a liberal education forms, as it were, a single body made up of these members. Those, therefore, who from tender years receive instruction in the various forms of learning, recognize the same stamp on all the arts, and an intercourse between all studies, and so they more readily comprehend them all...[3]

Vitruvius speaks of a connection, or common ground, between all fields of artistic study. Architecture and music can therefore be linked theoretically, and the study of each will lead to a greater understanding than if one just studies that which is related directly to their profession. The notion that there is a common theoretical ground between all the arts and sciences is extremely captivating. Vitruvius, however, does little more than introduce it and say that it is helpful to a liberal education. This notion should be expanded to show that not only can knowledge of theories outside a given profession be helpful in discourse between scholars, and in practice when those theories must be directly applied to a specific problem (i.e. Vitruvius' application of the harmonic ratio to problems of acoustics in theater design), but that theories from other fields might be applied to generate new philosophic approaches or methods of design.

Alberti also speaks of the relationship between music and architecture in his treatise. He too handles the issue in a purely pragmatic way, although he contributes the notion that there is a correlation between the proportions of a building and the harmony between musical notes, as is shown in the following excerpt:

Variety is always a most pleasing spice, where distant objects agree and conform with one another; but when it causes discord and difference between them, it is extremely disagreeable. Just as in music, where deep voices answer high ones, and intermediate ones are pitched between them, so they ring out in harmony, a wonderfully sonorous balance of proportions results, which increases the pleasure of the audience and captivates them; so it happens in everything else that serves to enchant and move the mind. [5]

In this statement, Alberti bridges the gap between the art of music and the art of architecture by showing that there can be an aesthetic correlation between them, and for this he deserves due credit. It is also hard to criticize the implication of rigid regularity in his disclaimer

of discord in architecture, and especially in music, since the music of the Renaissance is dominated by full, bright harmonies,[6] without a thought for the more subtle variety offered by discordant notes which is found in the compositions by later masters.

Boullee, on the other hand, states in his treatise that music and architecture have no common ground in theory, as is shown in the following excerpt:

Perault and Francois Blondel... falsely applied the principles of music to architecture; they did not realize that these arts bear no relation to one another and have no analogy and that their basic principles are thus totally different. [7]

Boullee's statement is in direct opposition to the writings of earlier theorists, but there are ample reasons for him to do so. One possible reason is his wish to create, or at least attempt to conceive, an architecture which is not based purely on ancient architectural models, as is shown in the following quote:

Herein lies another possible reason for why Boullee refutes the connection between music and architecture as posed by both Vitruvius and Alberti

It is to you who cultivate the arts that I dedicate the fruits of my long vigils; to you who, with all your learning, are persuaded- and doubtless rightly so- that we must not presume that all we have left is to imitate the [architecture of the] ancients! [8]

Since Vitruvius and Alberti, both theoretical predecessors of Boullee who relied upon the adaptation of ancient building styles, believed that there is a relationship between music and architecture, Boullee might have wanted to refute this relationship as just one more point of contention. Boullee takes this notion one step further when he criticizes Vitruvius for confining his discussion to only the technical or constructive aspects of architecture when he writes:

What is Architecture? Shall I join Vitruvius in defining it as the art of building? Indeed, no, for there is a flagrant error in this definition. Vitruvius mistakes the effect for the cause... Moreover, it must be admitted that the beauty of art cannot be demonstrated like a mathematical truth... What do we find in books on architecture? Ruins of ancient temples that we know were excavated in Greece. However perfect these examples may be, they are not sufficient to provide a complete treatise on art. [9]

The fact that he is searching for a new direction in architecture is evident. In his quest to find a new language of architecture, he adopted theories which can be linked to painting. Herein lies another possible reason for why Boullee refutes the connection between music and architecture as posed by both Vitruvius and Alberti. Boullee's interest in painting was, in fact, more than casual. He had chosen painting as a vocation before he was encouraged by his father to become an architect. [10]

Boullee raises some admirable points in his discussion, such as his contention with the plagiarization of the ancients, and the theoretical connections he makes between architecture and painting, as well as how he incorporates this theory into his practice. However, it is this favored connection between painting and architecture which makes his position on the connection between music and architecture all the more questionable, for how can one state that there are connections between one form of art and architecture, but not between another form of art and architecture, without appearing to be naive. A further examination of Boullee's treatise will show this to be true. He writes:

What constitute to perfection the principles of any given art are those principles from which no deviation is possible. For example, in music no harmony is possible if the rules are not followed... it is impossible to deviate from them without the result grating on our ears. This proves that the harmonic ratio is the primary law governing the basic principles of the art of music, for it provides the sole means of producing harmony. What then is the primary law on which architectural principles are based? Let us consider an example of Architecture that has been imperfectly observed and lacks proportion. This will certainly be a defect but the defect will not necessarily be such an eyesore that we cannot bear to look at the building; and nor will it necessarily have the same effect on our eyes that discord has on our ears. In architecture a lack of proportion is not very obvious except to the eye of the connoisseur. It is thus evident that although proportion is one of the most important elements constituting beauty in architecture, it is not the

primary law from which its basic principles derive... Let us imagine a man with a nose that is not in the middle of his face, with eyes that are not equidistant... If we imagine a Palace with an off-center front projection, with no symmetry and with windows set at varying intervals and heights, the overall impression would be one of confusion and it is certain that to our eyes such a building would be both hideous and intolerable... the basic rule and the one that governs the principles of architecture, originates in regularity and also that any deviation from symmetry in architecture is as inconceivable as failing to observe the rules of harmony in music...Symmetrical compositions are true and pure. The slightest disorder, the slightest confusion becomes intolerable. Order must be in evidence and paramount in any composition... [11]

Now we shall return to the question of whether there is a fundamental relationship between the art of music and the art of architecture. . .

The simplicity and regularity which Boullee attributes to music, architecture, and nature in general, is admirable, and it is difficult to refute his assertion that a close examination of nature is at the root of all the artistic pursuits, but his discussion of music is overly simplistic, for a more thorough inspection of music will show that not only is basic harmony indispensable to the creation of music, but also its rhythm. This also holds true for architecture. This oversimplification can be compared to a physician who overlooked the fact that his patient was dead, but went on treating his symptoms, for it can be said that music or architecture devoid of rhythm or a subtle sense of harmony in composition would be devoid of all life and interest. Further, his assertion that there can be no deviation from the laws of harmony is questionable, considering that even the composers of his day were stretching the rules of harmony set down by the Greeks in an effort to attain ever more subtle nuance and emotion in their compositions.

Boullee's statement that symmetry is more necessary than proportion in architecture is also questionable, to the degree that the statement of the opposite sounds more credible, for a building which lacks proportion is such because it lacks a proper composition of its parts, and thus would appear clumsy to even the layman. In short, it would be poor architecture, and its flaws would be sensed by all who observe it. Symmetry on the other hand is just one method of composition, which assures that even if a building, painting, etc., is clumsy in other respects, it will still appear to have some order behind it, however boring, simplistic, or substandard its composition may otherwise be. Further, Boullee gives what he thinks is an example of symmetry which occurs in nature when he writes that the human face is symmetrical, and any deviation from this symmetry would be an aberration. While it is true that the human face appears to be symmetrical, any sculptor will tell you that this is not the case. In fact, it is difficult to find anything occuring in nature which is perfectly symmetrical. Thus, since all of the premises on which Boullee's argument is based have been proven to be false, or at the very least, grave oversimplifications, his statement that there is no correlation between architecture and music has yet to be proven.

Now we shall return to the question of whether there is a fundamental relationship between the art of music and the art of architecture, and in a broader sense between all of the arts. Viollet-le-Duc introduces this question quite appropriately when he writes:

The arts act upon the senses, and the senses give birth in different ways to a similar series of impression... The musician by his own peculiar language, - the harmony of sounds, - recalls to your mind the grand spectacle (of nature).. The architect also by means of his peculiar language can place you again under the same impression. If he traces beneath the sky a long horizontal line along which your eyes may range without interruption, your mind will be affected by a sense of grandeur, - of calm, - which will arouse in it ideas analogous to those caused by the sight (of nature) ...why, in music, does the minor key awaken in the mind different ideas from the major? It may be said that there is a minor and a major in all the arts... There exists then a close reciprocity between the various expressions of Art. And why? Because all these expressions derive their origin from the self-same source... An architect who can listen to a melody...

without experiencing emotions as lively as those he would feel in viewing a building, is not an artist, but a mere practitioner...[12]

What Viollet writes here sets a standard by which all artists may be judged. The proof of the connection between music and architecture, as well as the other arts, is contained within this quotation. The arts are linked by the senses, by their ability to act upon the human emotion, as well as by their ability to express ideas which act upon the intellect. Viollet also says that all of the arts are derived from the same source, meaning the reasoning mind, or, in a broader sense, Nature.

Viollet gives the impression that nature is harmonious. This is a romantic depiction of nature, which is consistent with many nineteenth century theorists, but this romanticism clouds his more rationalist views. A careful examination of Nature will show that its forces are usually in opposition. For example, the sea struggles against the shoreline, plants battle for sunlight, and people often find themselves in conflict with others. But nature is much more complex than this. The sum of all these infinite struggles is a dynamic equilibrium. Boullee can be criticized because his view of nature was overly simple, and further because his proposal that architecture must be symmetrical is static, and is therefore contrary to nature. Viollet can be criticized, although to a lesser extent, because his romanticism and his rationalism seem to be inconsistent.

The arts are linked by the senses, by their ability to act upon the human emotion, as well as by their ability to express ideas which act upon the intellect.

In conclusion, it has been proven that a relationship between the art of architecture and the art of music does exist. The question could now be raised as to whether the study of music (or other arts) is relevant to architects beyond purely pragmatic applications. Since there is a theoretical relationship between music and architecture, is it not also possible that current trends in music theory and composition are a relevant departure point for architects to incorporate a deeper level of cultural meaning into the built environment?

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Thomas Mayne, Morphosis

Dimensions Interviews the 1990 John Dinkeloo Memorial Lecturer

Dimensions: Since you have stated that the work of Morphosis is preoccupied with a correspondence between the essence of a concept and its translation to the act of construction, my first question is, 'What was the impetus that led you to tighten that gap in terms of the process of conceiving and the process of making?'

Thom Mayne: A lot of these things I am not aware of, they seem just natural and totally obvious. Early on we were involved in an interest in construction and making buildings. When we started it was much less conscious, it was really kind of bumbling, a lot of blind stumbling forward — it was more of a tool. It probably comes from much simpler things; from my childhood, from my background, which had to do with tinkering and making things. It is another kind of development that has to do with trial and error; but it is a very simple hand method of making something, testing it, and remaking it. Versus operating within a more traditional, conceptual [process] — within the limits of architecture —which can be harmful. Although limits are useful. But at the same time, maybe some of it comes from a kind of fracture, a kind of disconnection in your own experience. Through your own education, through this life you live in. I came out of an unique architectural history, which was extremely cool at that level. It was very intellectual, very rational, quasi-scientific. Out of that, definitely came an interest for a certain level of abstraction, or conceptual kind of thinking. None of which I could manifest or really understand at the level of translation. I had no place for it, and I didn't know what to do with it. At some point I started to make a bridge. I think recently it became much more obvious. We were able to talk about it, our own objectives became clear in the conceptual direction and the realization. At this point I am not interested in either or, but the stuff in between, the collision of the two, and in the relationship of the abstraction and the conceptual structures and substructures within the work and its operation in a conceptual framework within a mental framework. As opposed to the perceptual, sensual, understood, material nature of the work. Somehow that represents a complete left versus right side — a complete person.

Some of the drawings, the work itself starts consciously talking about this. It seems to me that there is an important situation there that talks about bridging conceptual gaps; in the end we are traditional, committed to the idea that there is a relationship between concept, use and utility. An artifact is part of culture; and there is the correspondence between the ideas and the artifact's connection both visually to the eye, and its use as a standard that gives it's coherence and meaning — what it really about, versus having to tell somebody what it is about.

Dimensions: It seems that so much work needs to be read about in order to really be understood.

Thom Mayne: Architecture operates like all art forms, it has layers, it has depth. On the one hand, you read it at a more basic primitive level, which is probably the level of the senses and if it is engaging or if it responds to you at that level, you can take it to the next, which is probably a bit more mental at that point. You are connecting the language with meaning, or with a discussion of questions and issues. The aspiration is that you keep operating deeper, and as you experience it either through movement over time, or through more concentrated experience, whatever the particular is, there is something there that represents in itself some sort of pay back. It is the result of the layering that went into it over time. One of the potentials of architecture is that it is dealt with over a long period of time in terms of its creation; and it is fair to assume that the layers of information, of issues and dialogue that take place over time get into the work, and are then read. It also allows for multiple viewpoints based on the individual, and if it is open ended, if it is successful in this process of layering—it is not about one thing it is about many— it allows the observer to participate. You can come at it in any number of directions, based on your own knowledge base, personality and psychology, and how you perceive. The architecture is built in at the psychological level; it deals with the feelings as well as the thinking.

Dimensions: Architecture reveals a process of thinking in terms of this physical object that reveals the whole process of not only thinking about something, but of actually making something in terms of what you read into the object. Perhaps, we need an embryonic state in order for work to mature. The next step is how does this whole thing work when you have to jump scale to much larger projects and how do you perceive this kind of architect, master mason relationship?

Thom Mayne: One way of discussing it in terms of scale has more to do with control than it has to do with risk. It has to do with a series of things that come with a smaller scale project and that project's limited assets versus a larger scale project. We're not interested in craft per se, that is not the interest. It has come up quite a bit, actually. I haven't quite got a grasp on it, other than that it is not the interest — it is really coming around from a completely different place. The interest in the making of the work is just to do with the direct process of dealing with the reality of the architecture. Which means its making, the build, the materiality, the way things are put together, all corresponding to a series of intentions—conceptual intentions. And it ultimately gives the work its authority, or one of its authorities. It is not particularly interested in the nature of craft in the way Ruskin talked about it — a nostalgia for the

handmade object. It has to do with producing a piece which is completely specific to the nature of the idea. It is a very very different thing. One would be coming an ideal, and for me it would be moving backwards — a nostalgic sensibility attempting to have the world the way it was when we in fact literally carved and made things. We are not interested in that, although it might have those qualities when it comes up, in terms of its connection to craft, because we end up going to people, and a lot of the work tends to be handmade. If it is machine made, it is a very primitive notion of machinery based on what technology is today; but coming from and trying to achieve an architecture not from from trying to achieve a goal which has to do with the nature of this cultural phenomenon, of man and work.

I think as the scale increases it becomes difficult. A lot of the magic and power of the work comes from paying attention and putting energy both into the level of invention and then its carry through into making, to the particular, the detailing, and all the traditional architectural aspects. Ultimately that becomes the object. You don't respond to the discursive aspects or the drawings, it is the architecture that has to carry; there's a power and a meaning in the idea that is the way it is going to be manifested.

Parallel to this, very early on we started to have an interest in the set of ideas which had to do with the relationship between idealized pieces and their deformation into contingency. I was very interested in Colin Rowe's thinking and in an architecture, which began to derive strategies for developing a dialogue in some parallel ways to concept/ material, to an idealized/ contingent framework and to work an architecture. It probably started with 2-4-6-8 and we didn't realize it yet. It was the first project Michael (Rotondi) and I did. It was consciously a fun project. We started dealing with these issues; we started from a cube, and as the cube distorted the pieces started pulling off as it hit the edges, and the surfaces started talking about localized conditions, about the particular, while the interior was the idealized private piece. Definitely from there it started generating our whole career and work, and navigation. There was a direct connection between that aspect, because the work derived from the fact that you're using idiosyncratic stuff, and it started immediately dealing with taking things apart and reinventing them. It was somehow a connection between material/concept, idealized/ contingent, and then with that a particular strategy for deriving that forming process in some way — a transformational process. There is a connection of these things with the re-invention of the piece themselves into useful objects as sub-elements of an architecture — the windows, doors, air condition-

ing. Most of the pieces are not separated from an architecture, they are the architecture — the simple kind of constituent pieces of buildings. And in the re-invention and re-working of those which became part of the language required a particular making process. Pretty soon we were knocking on doors and finding fabrication shops and casters, which got us off on a particular direction approximately five years ago.

The Venice III house was the first one that really gelled. It became much clearer, we started using objects, very simple ones. Parallel to that we were doing the Angeli restaurant. We had produced a facade of cor-ten steel which was made completely in the shop. It had to do with budget (of five thousand dollars); it had to do with some very simple connections; an interest in the smithson and the notions of decay not being manifest in the end process but the beginning process; and working with certain values having to do with commercialism, and eroding traditional value and the importance of material. I was just reading a piece on Kevin Roche and John Dinkeloo. It hadn't struck me that their cor-ten connection was used in a very different way. They were still involved in it as an industrial material, but as an idealized one. In the Angeli restaurant, we are using cor-ten steel, but we are interested in entropy, the decaying. You are looking at the dynamic process of that decay as you use the material, then removing it from any level of importance, of preciousness, of traditional value. In a way that starts a whole discussion about the nature of the material and the vocabulary, which is straightforward generic materials. The interest is in refocusing the value to the conceptual area. Its value is situated within the idea, which is the human part of the project. Yet the thing turns around, of course, because ultimately the same materials which at one level are kind of generic, in fact become the architecture, and at another level establish the value. It is this altering notion or reading in terms of how we evaluate importance, or an interest in value — the whole connection of meaning and of value, at that level of architecture.

Dimensions: You were talking about these ideas of consumption and entropy, I am curious,'What was the connection between those early explorations and the Sixth Street house, the idea of 'dead-tech,' as a different layer which begins to inform the work?'

Thom Mayne: The Sixth Street project integrates a lot of those ideas. I was interested in synthesizing a lot of the work that takes place in the smaller additions in Venice which were discussed in this platonic intention. Most of them work through a series of layers from idealized to profane, of volume to surface, and again the surface being able to differentiate itself to localized conditions. At the same time, it was an introduction of another line of development which had to do

with the object. In a series of ideas it had to do with the meaning of the object. In this case the ten objects, which were armatures of various functional pieces that were suspended from the fabric of the house. I feel comfortable with the project; it is one of our stronger projects and it ultimately begins to coalesce some ideas, although they don't match with the words, because as I say those words, I keep inventing in my mind another project that is just words — that may be out there. In some ways, that is why you do not want to pursue the words, you want to pursue the work. I have a huge problem with that, I am extremely inarticulate and I have limited trust in discursive events; particularly my own.

Language for me is an enormous struggle. As I want to explain the thing, and as I have done it, it tends to want to move in a different direction which has to do with actually producing a more neutral matrix for the objects and working with the idea of placing value in these pieces. So you are looking at a series of quasi-consecutive ten things, they are expressed in the connection to some matrix which I think would have to become more neutral in language. Where this one had to do with the collision of two ideas. There was no attempt intellectually clarity, conceptually. This thing kept wanting to do something else, but it wouldn't come out that way. It was a struggle with what we were capable of and what we were doing. There is a funny notion that you're even able to do certain things; there is a disconnection between intellect and expression on a more personal and automatic level, a purely artistic, aesthetic level. One cannot even do what one says one is going to do, because I don't think it is possible. I think many times you have intentions, if anything the goal is to become whole internally, within your own person. It becomes a life goal to reach that in your architecture. Architecture becomes a tool or means to achieve that.

With the Sixth Street house, there was one kind of thrust which was extremely intuitive. And it is what happens when you just sit down and try to resolve things spontaneously, without your control. And there was another intellectual thrust of what the thing wanted to be as we attempted to write or state objectives. I think it would have ended up being something else — it would have been neutralized. I see at the same time the idea of dead tech and discarded objects.

As the pieces were developed they became more and more connected to the context. In terms of their development of the language versus using associations with other objects as a crutch, or as a means of importing either ideas at a more abstract level — for example, having to do with a particular type of movement — or literally in terms of a language that is carried from that piece and it

becomes an instigator of a new thing. It became more and more about autonomous objects within the world of architecture, and it became more connected to the context, in the end the two absolutely connected. At this point, it was very difficult, other than through just the projection of drawing, drawn in fact to show you the ten pieces. At that level there is a lot of illusion going on because in the drawing all of a sudden I try to do a lot of things that didn't happen in the building. I am becoming more aware that these objects really do not connote ten things which have ten histories, which is what I said the intention was — it was not doing that at all. It is still a dialogue but it is something different, some middle ground. Either it is unresolved and it is a criticism, or there is a discussion about the discrepancy between dialogue and a more integrated thrust of the project. I am not sure there is an answer although it is an issue I am interested in all the time

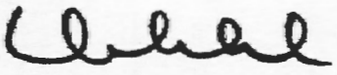
The longer you practice, the more dangerous it becomes because you start believing your own stuff. The more you clarify your position conceptually, the more immense the work gets. The early work served to be operating at a more integrated, intuitive level. The question of whether the conceptual data develops the work or whether the work develops the conceptual data, I prefer the latter. Being the philosopher, I enjoy working through invention and letting someone else figure it out. You don't always have to worry about what it means. You have to operate on a personal level. If it feels inevitable, if it feels natural, your own senses guide you in terms of its achievement to a series of both conscious and unconscious goals, then I feel more comfortable with that aspect. Anyone can take it apart, and investigate the purposes, but there is a danger in attempting to over-intellectualize, to understand yourself at that level.

From the
Chair
Architecture

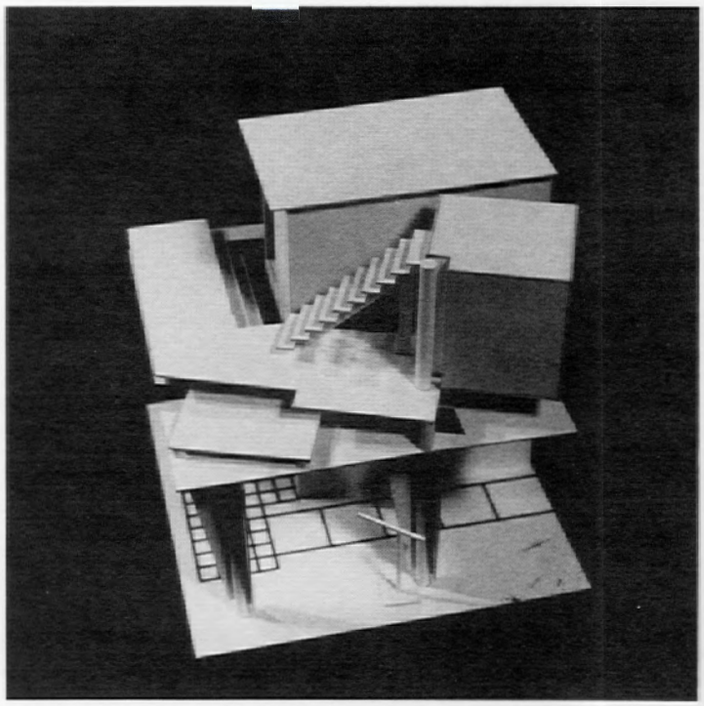
The following work was drawn from "The Critics Choice Exhibition" that took place in the Slusser Gallery during February 1991. It is a broad, lively cross section of architectural design studio work undertaken during the fall semester 1990. The exhibit showcases the work of many very talented students and introduces the studios of a number of gifted studio instructors.

While the projects are diverse in their stylistic perspective they also display mastery of the manipulative and projective skills of design. It is a healthy mix that promotes lively discussion between students and faculty about current trends in architecture/studio teaching and will undoubtedly raise the level of expectations in the design studio. It bodes well for the future of studio instruction at Michigan.

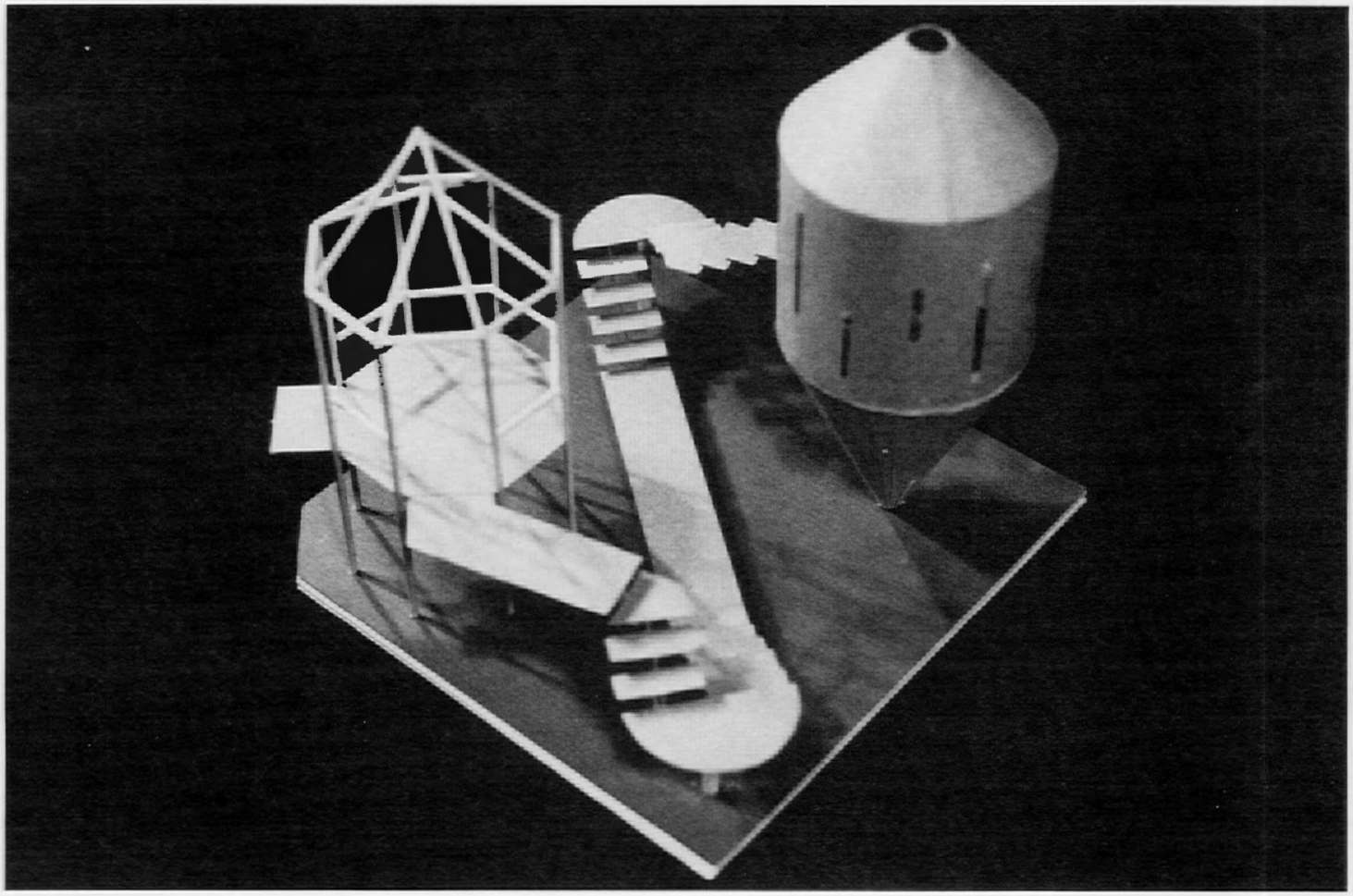
Let me thank all those faculty and students who, through their collective effort, made this show happen. Their spirited volunteerism enabled it all to proceed smoothly from beginning to end. Finally, thanks goes to the School of Art who so generously granted us use of the Slusser Gallery for the show.



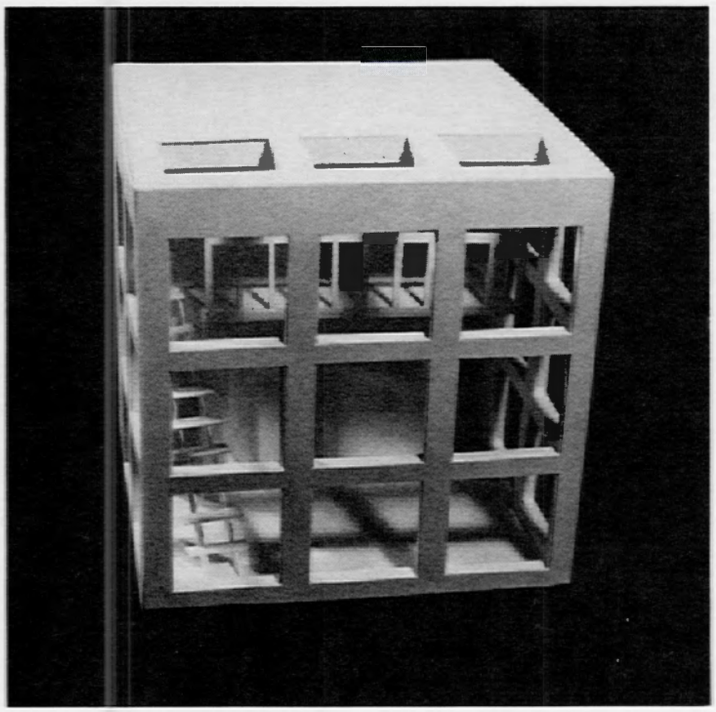
Kent Hubbell
College of Architecture & Urban Planning



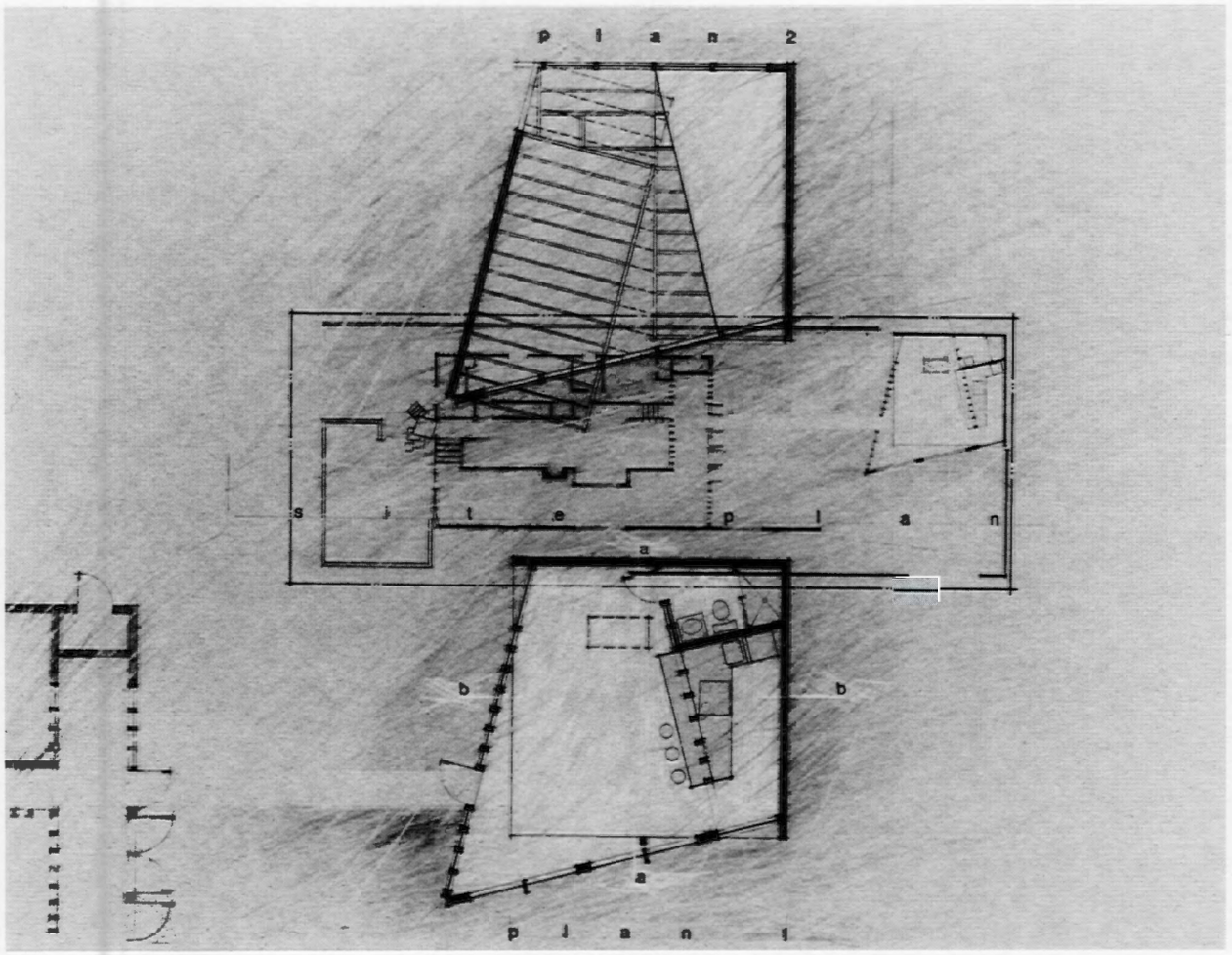
Craig Flowerday
A Place of Anticipation/ Transition / Ceremony
Theresa Angelini, Studio Critic
A transition from the structured ground plane to the elevated decks from which to view the night sky. The decks and cube represent an intermediate level that is a step closer to the realm of space.



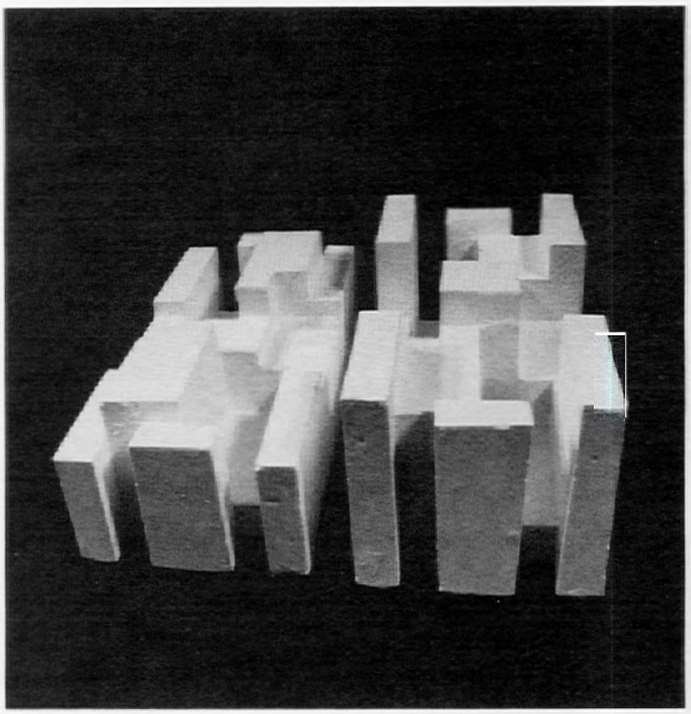
Mike Price
A Place of Anticipation/ Transition / Ceremony
Theresa Angelini, Studio Critic



Scott Wood
Cube for Musician
Melissa Harris, Studio Critic
The conflict between visual image and perception as represented by two shifting grids and a solid/ void relationship.



Dallas E. Felder
Gehry Analysis and Addition
Melissa Harris, Studio Critic
The analysis recalls the intentions of the Gehry house: perception and transparency. The guest house's intent was to retain the character of the original house by being sensitive to the qualities of transparency.

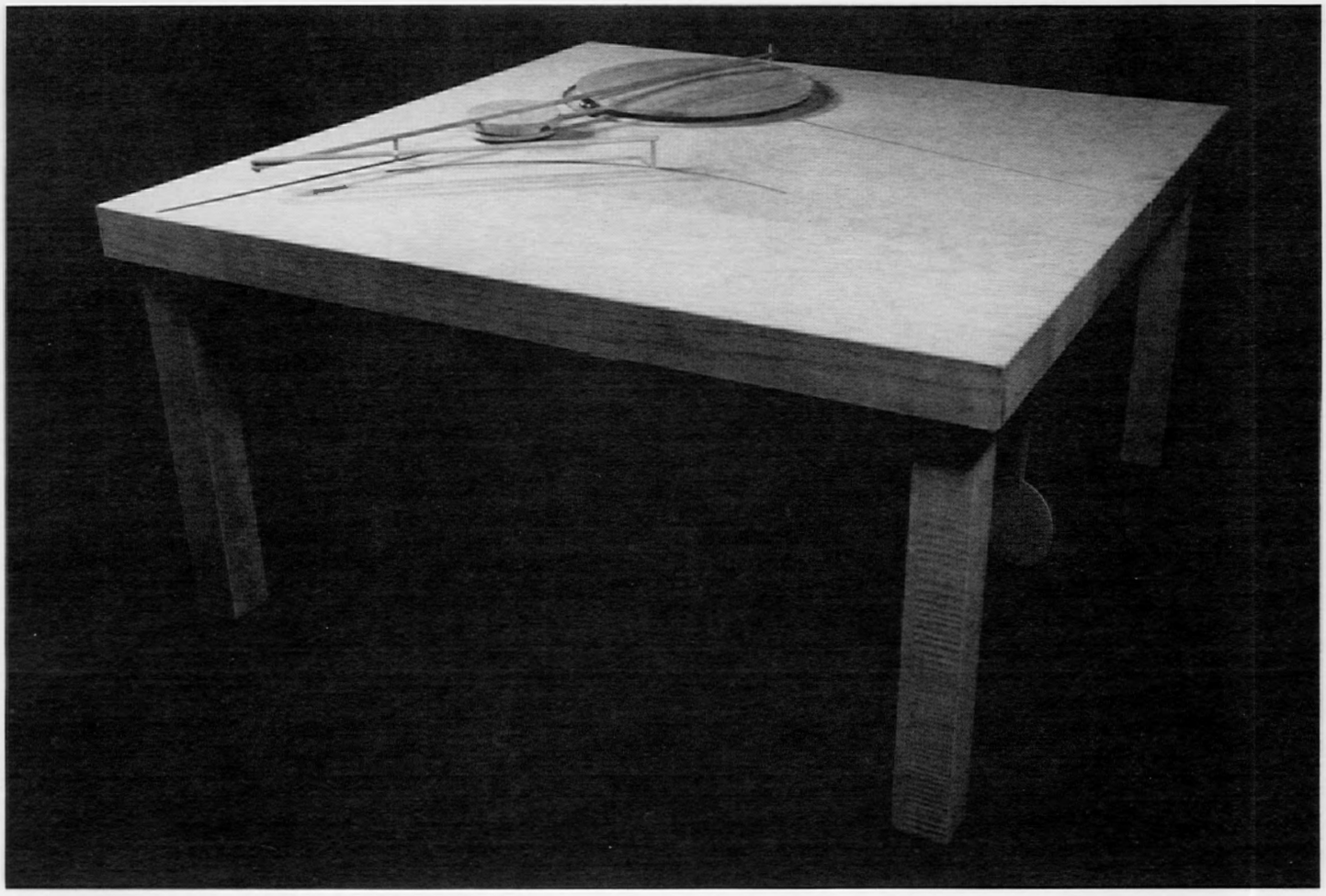


Steven O'Rourke

Housing of Text

Leslie Van Duzer, Studio Critic

The objective was to view space as a solid and handle it as an organized system of spatial definition. The generator of the spaces within the 6x9x12 inch plaster cast was the analysis of a structured text, "the Name Game".

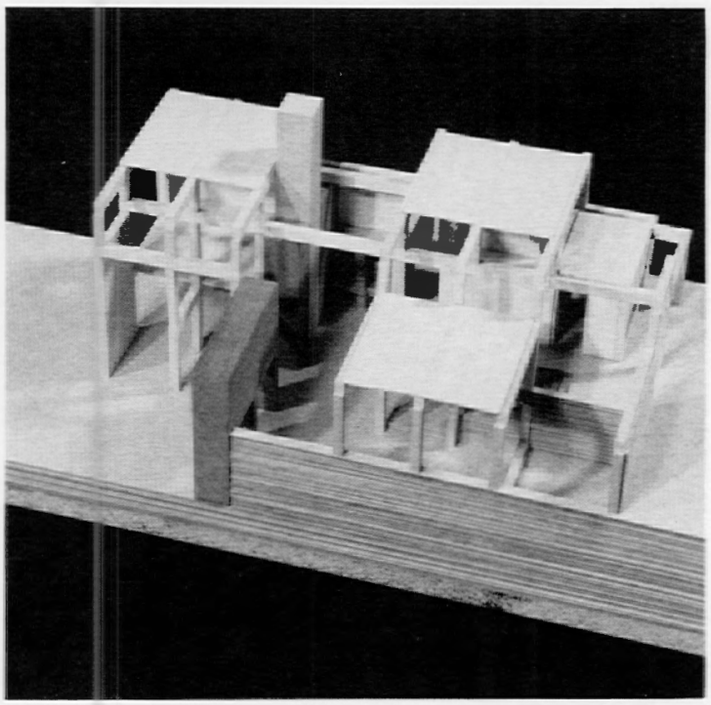


Brad Bunce, Jani Case, Greg Conlin, and Todd Webb

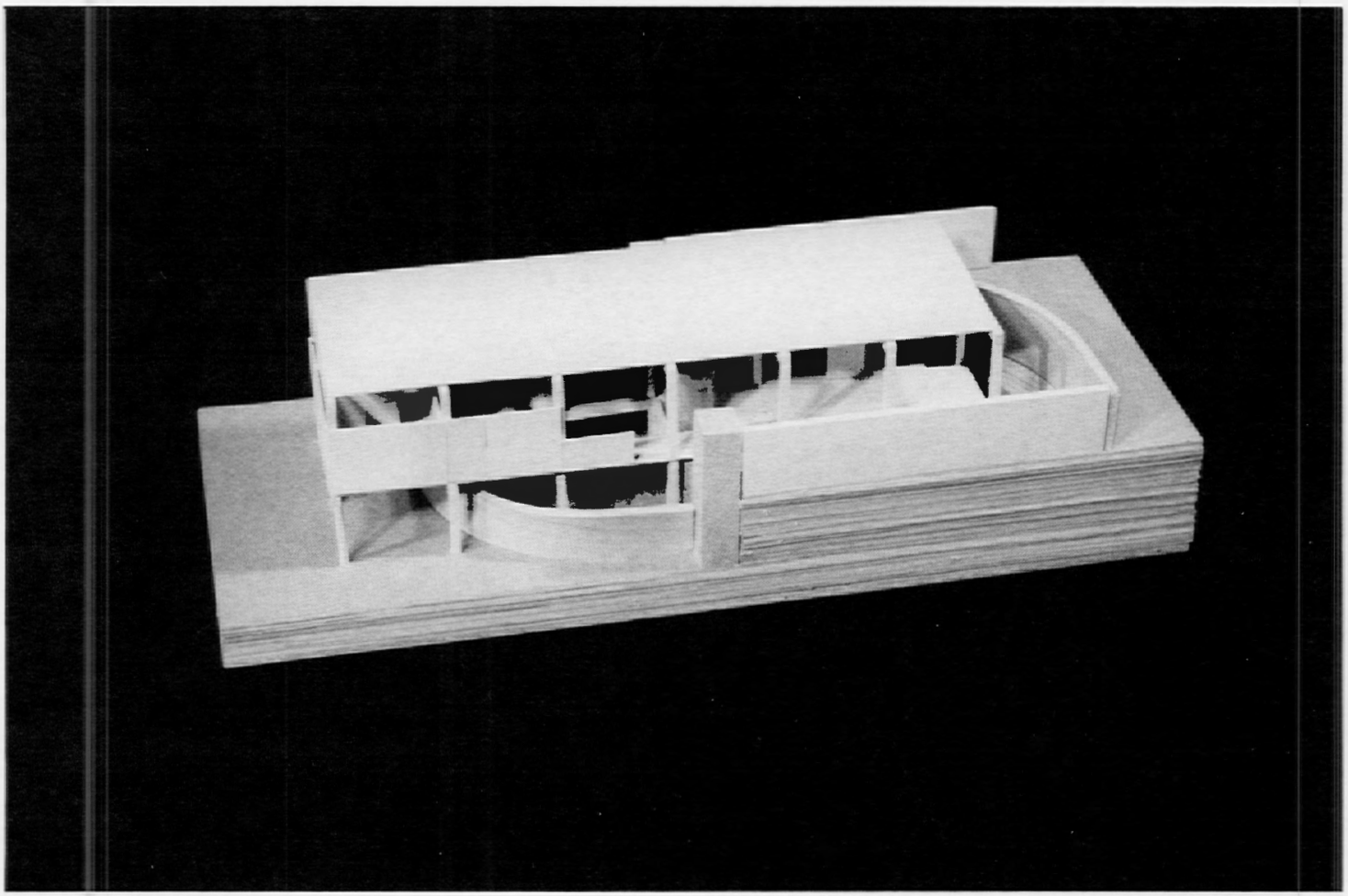
Tracer

Leslie Van Duzer, Studio Critic

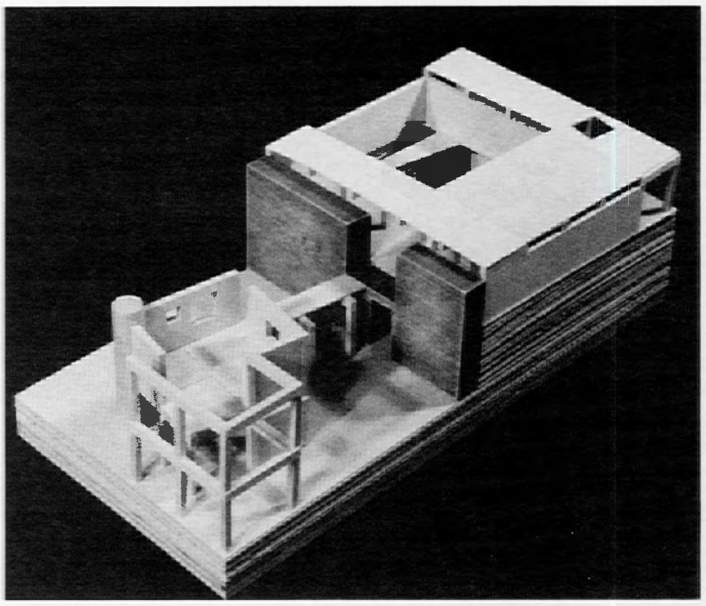
This project was an exploration of the relationship between material form, movement and space. The focus was to create a 3-dimensional construction that mechanically traces four movements (rotating, folding/ unfolding, penetrating/extracting, and rising/ falling).



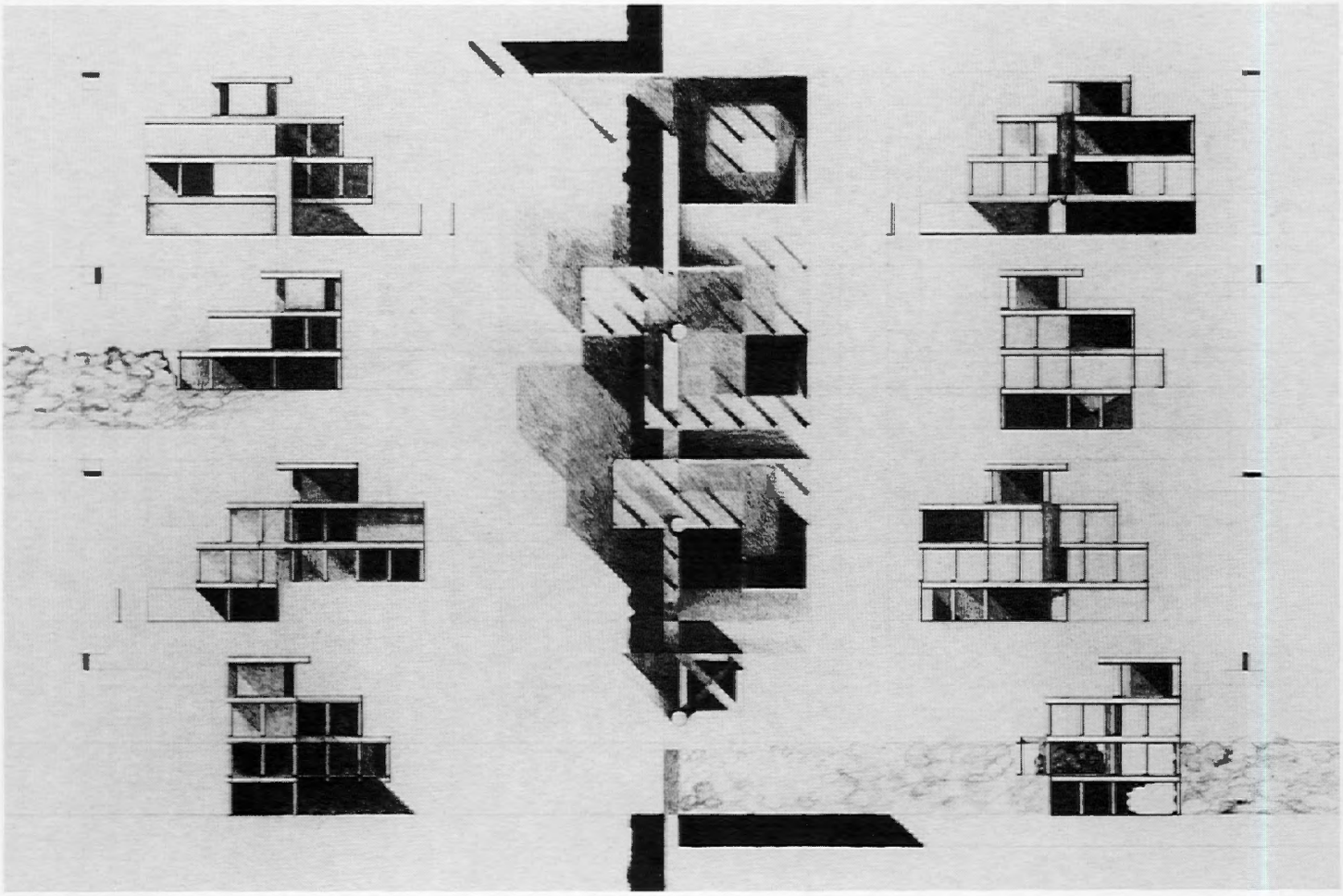
Andrew Michajlenko
Tim Stenson, Studio Critic



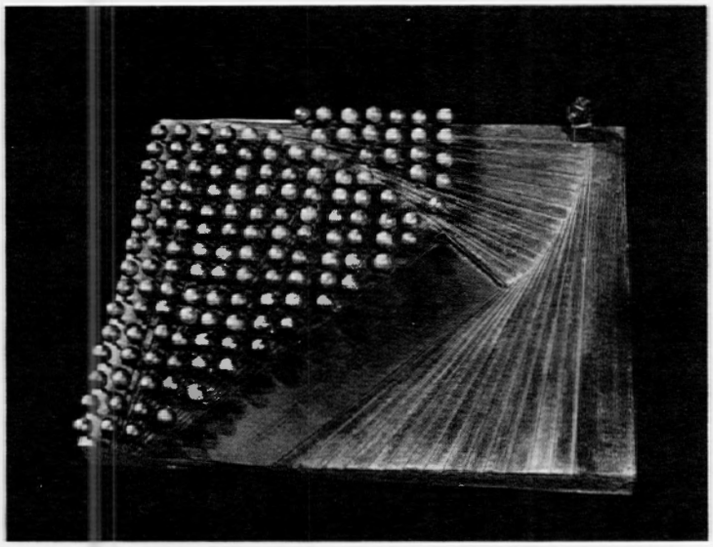
Edwin Wu
Tim Stenson, Studio Critic



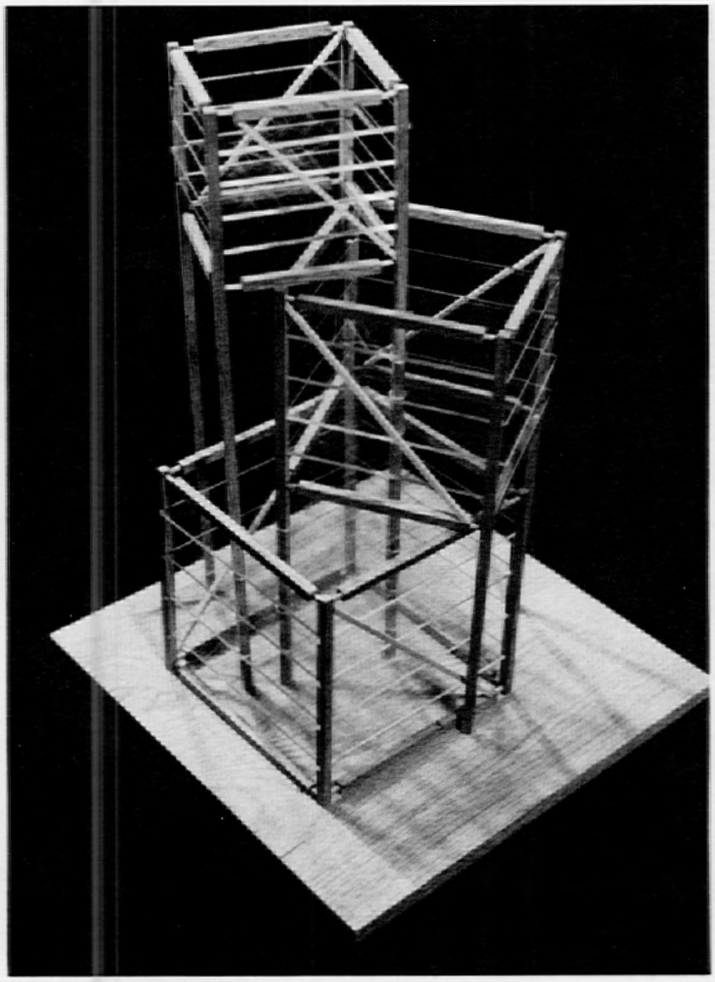
Jason Longo
Tim Stenson, Studio Critic



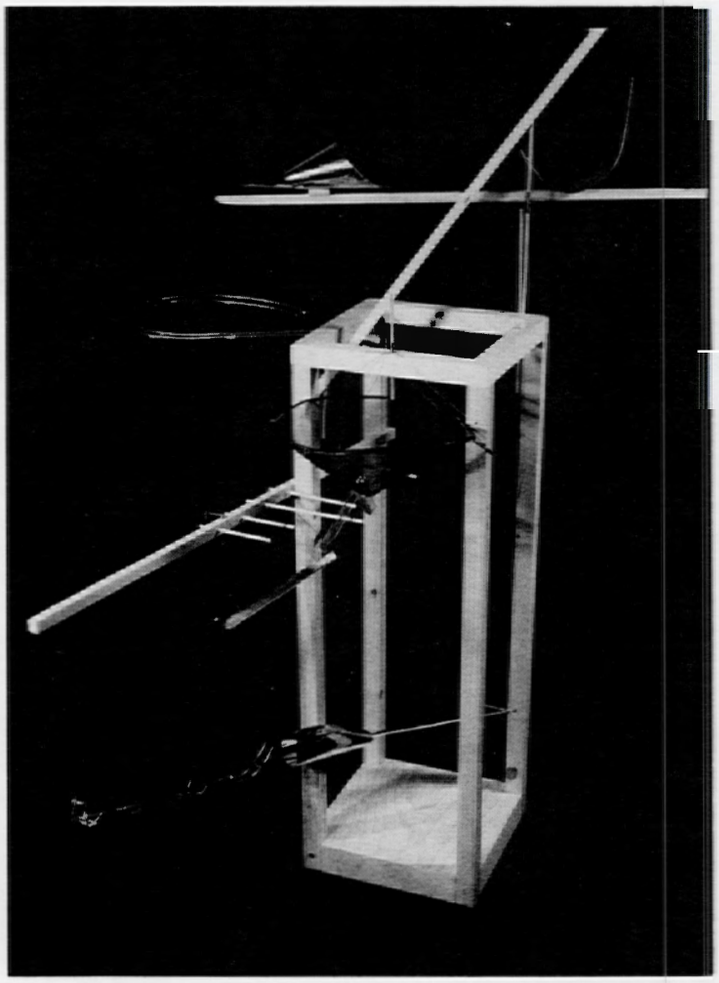
Laura King
Tim Stenson, Studio Critic



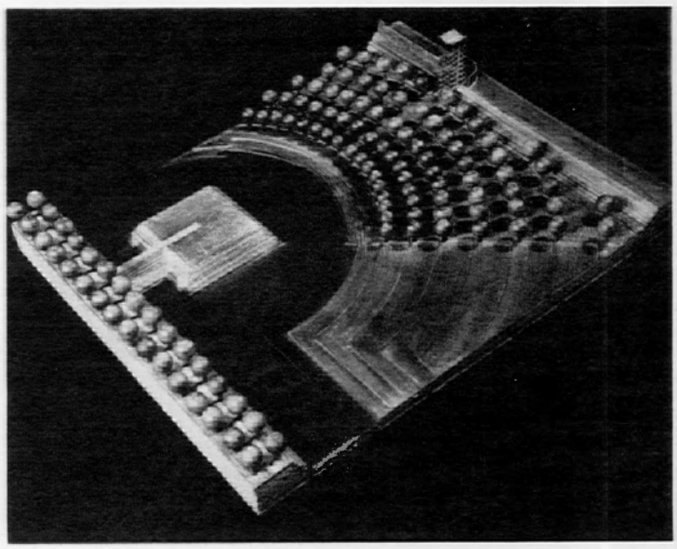
Jeb Brookman
Tower
Peter Osler, Studio Critic
Each level of the tower addresses a different aspect of the site: the water, orchard, and open space.



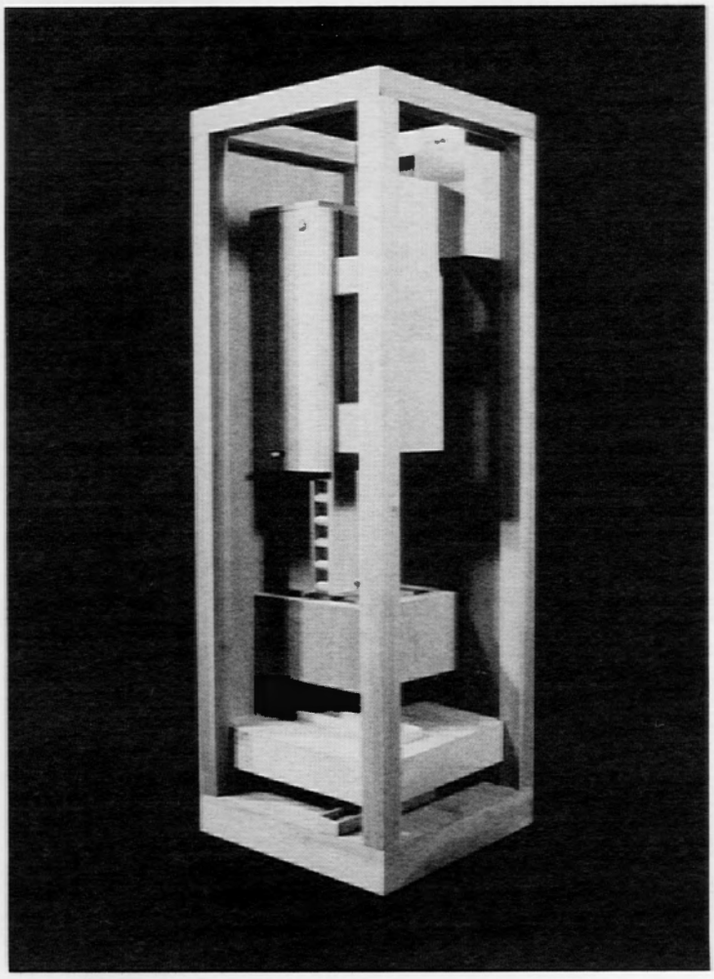
Jeb Brookman
Tower
Peter Osler, Studio Critic



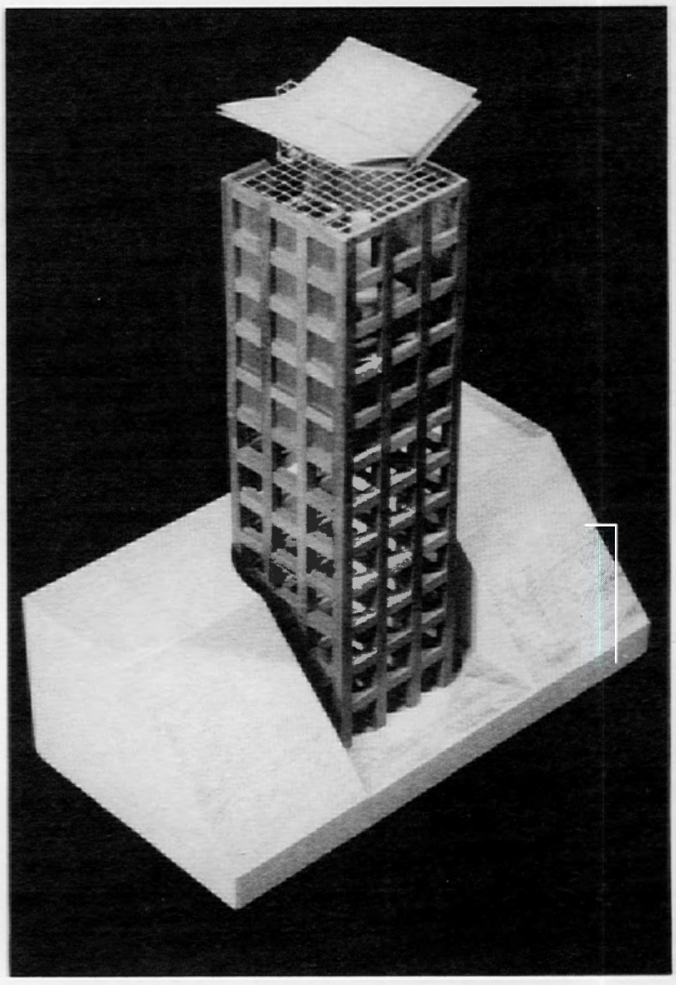
Peter Chen
Gravity
Peter Osler, Studio Critic
Precariousness: Tenacity.



Jon Maass
Tower
Peter Osler, Studio Critic

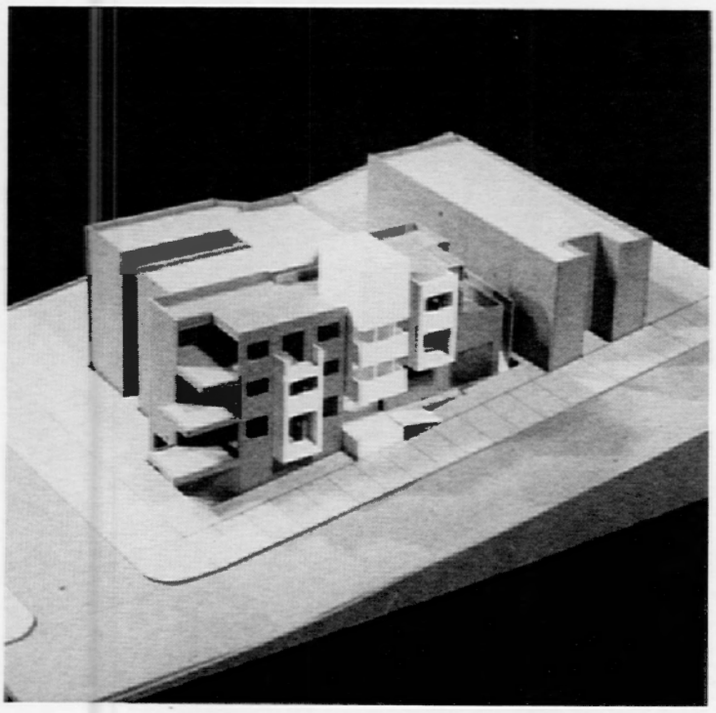


Jim Goodspeed
Gravity
Peter Osler, Studio Critic
A compositional form that articulates the fall of a ball-bearing over a 15 second period: A gravity path.

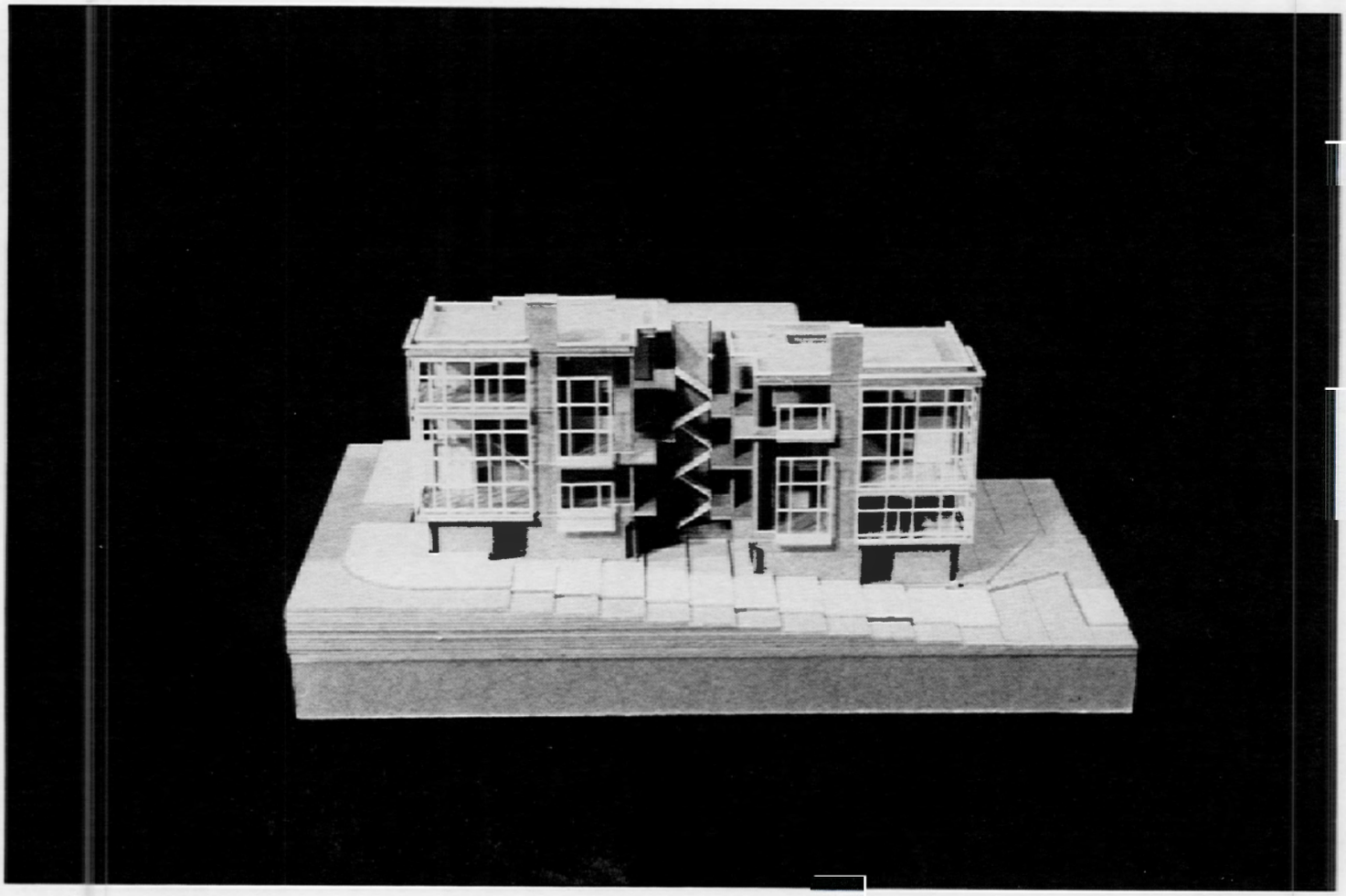


Jon Maass
Tower
Peter Osler, Studio Critic

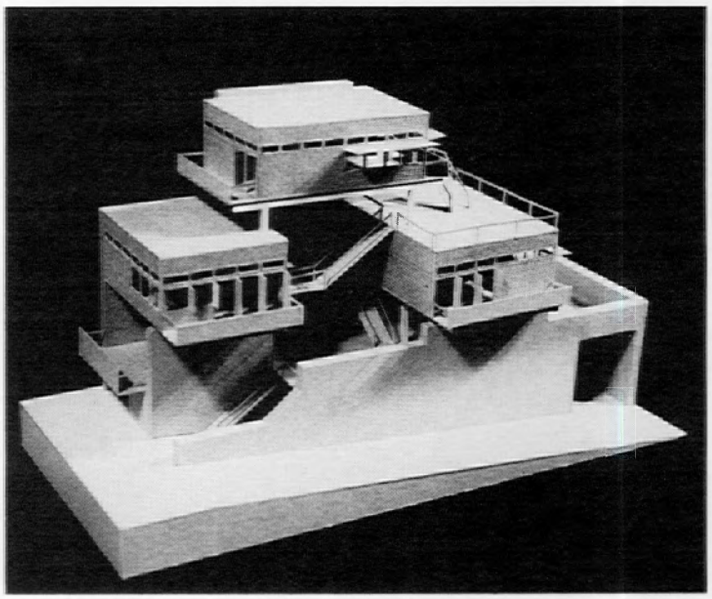
Professional Year Two



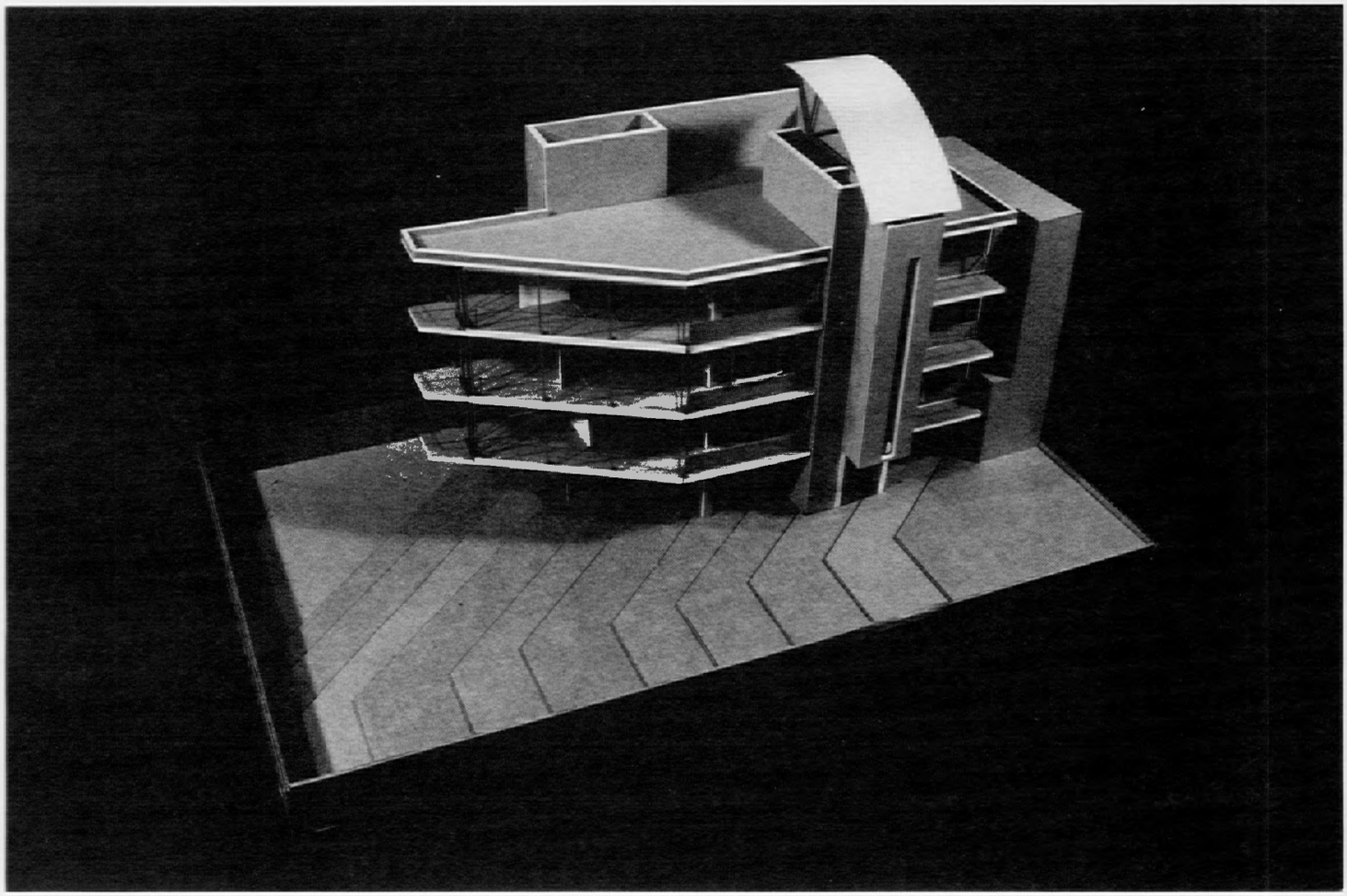
Farik Ghaffar
Apartment Building for a Sloping
Lot in San Francisco, California
Tom Hille, Studio Critic



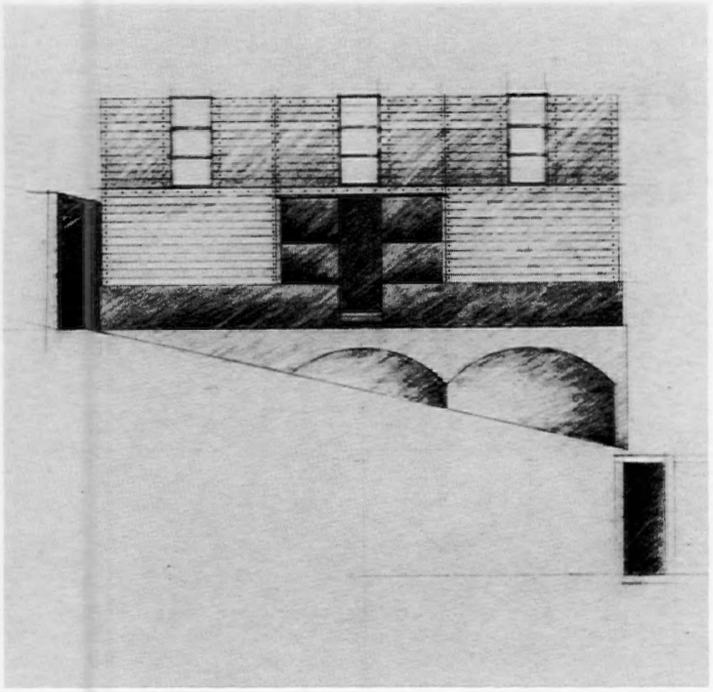
Eric Beale
Apartment Building for a Sloping
Lot in San Francisco, California
Tom Hille, Studio Critic



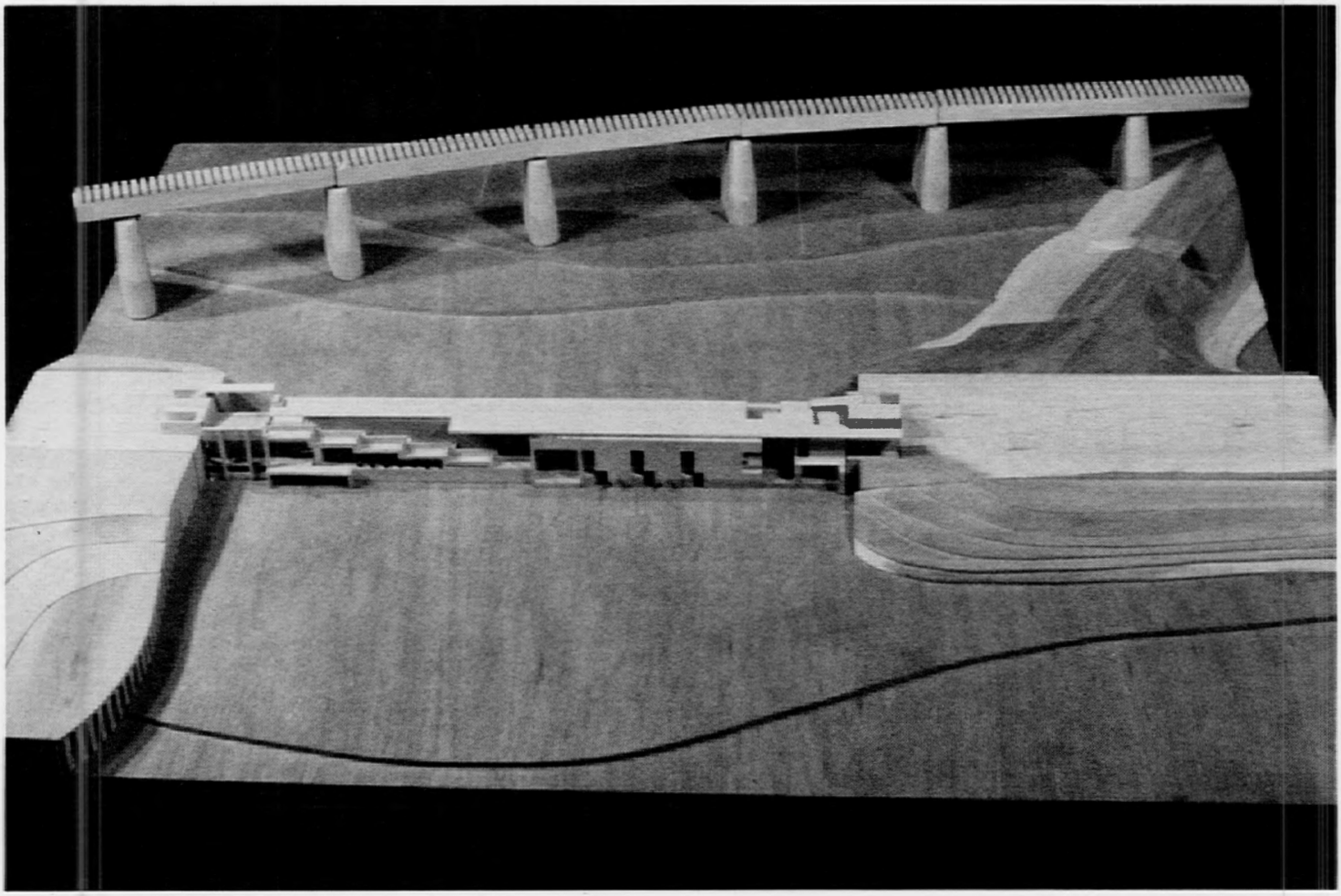
Darryl DeVries
Apartment Building for a Sloping
Lot in San Francisco, California
Tom Hille, Studio Critic



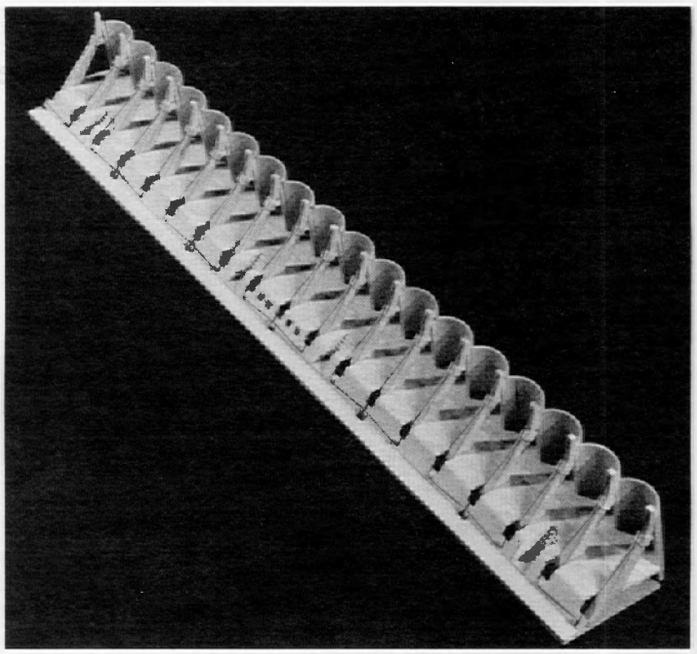
Ken Faulkner
Apartment Building for a Sloping
Lot in San Francisco, California
Tom Hille, Studio Critic



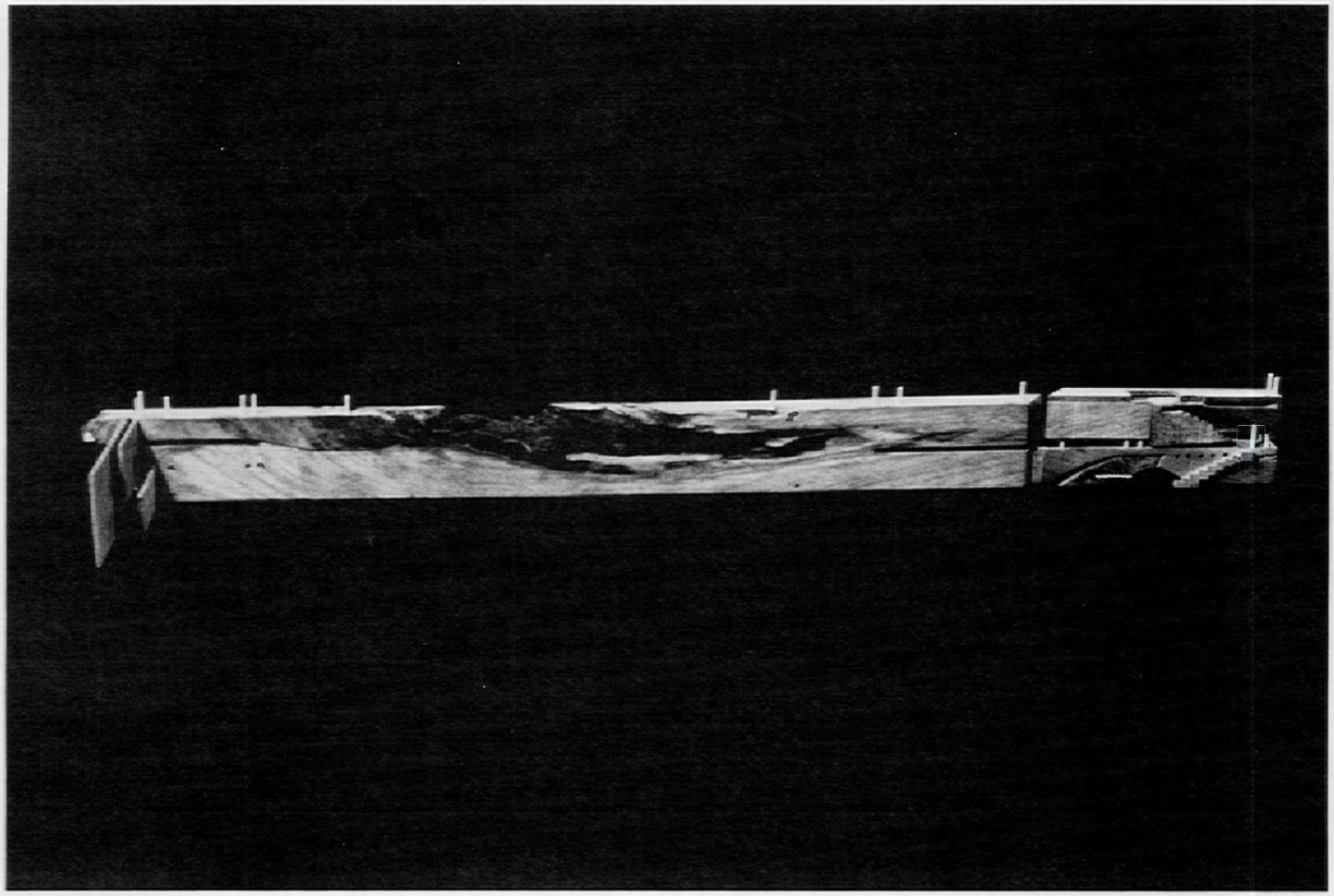
Eric O. Sutherland
House for a Ceramicist
Kent Kleinman, Studio Critic



Audrey Smith and Studio Section C
Dam/Dwelling and studio site model
Kent Kleinman, Studio Critic
To design a dam, which, in addition to regulating the flow of the river, functions as a bridge, canoe station and storage, fishing dock, and dwelling for the dam operator on the Huron river in Ann Arbor.

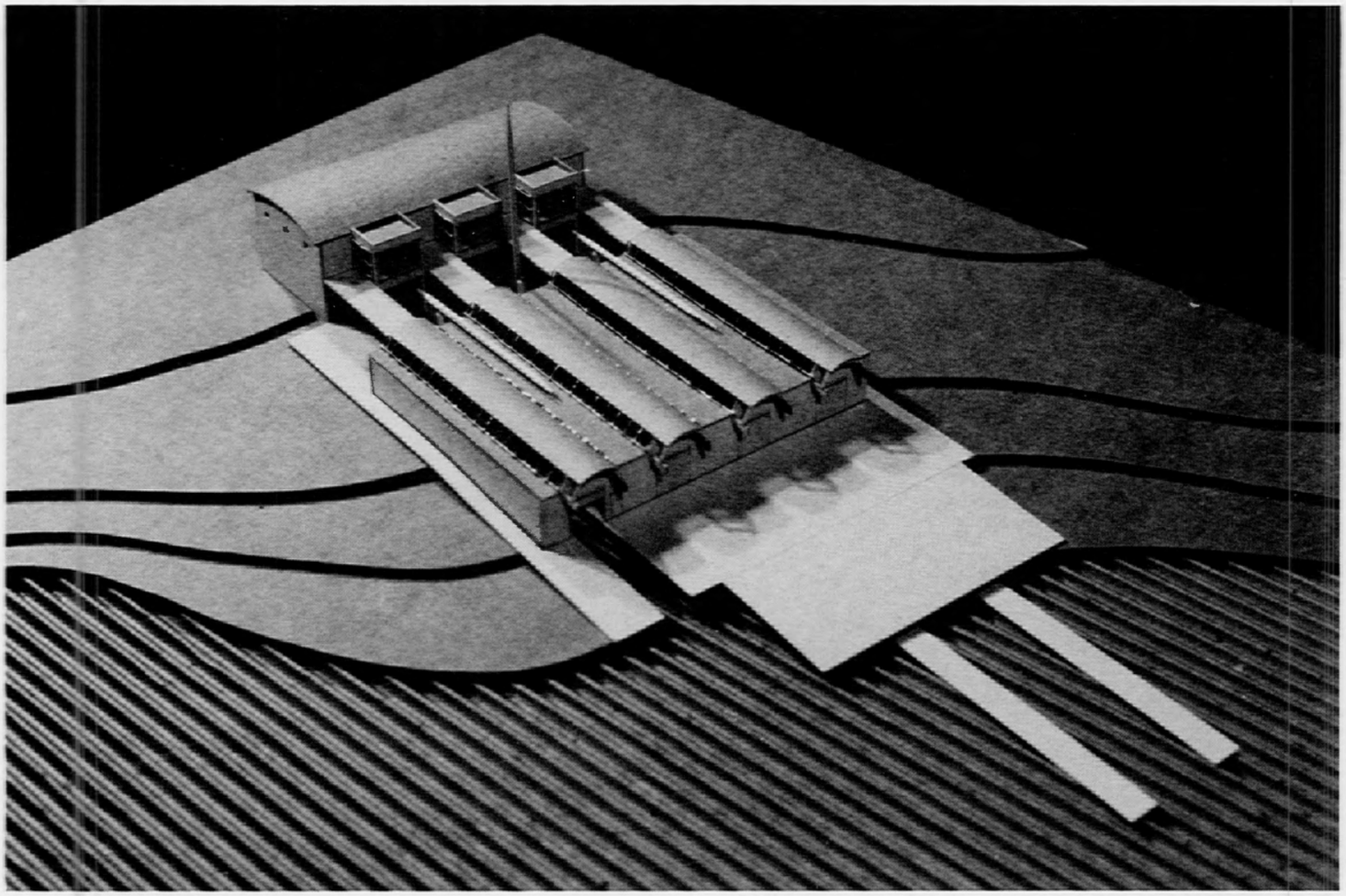


Colleen Armstrong
Dam/ Dwelling
Kent Kleinman, Studio Critic

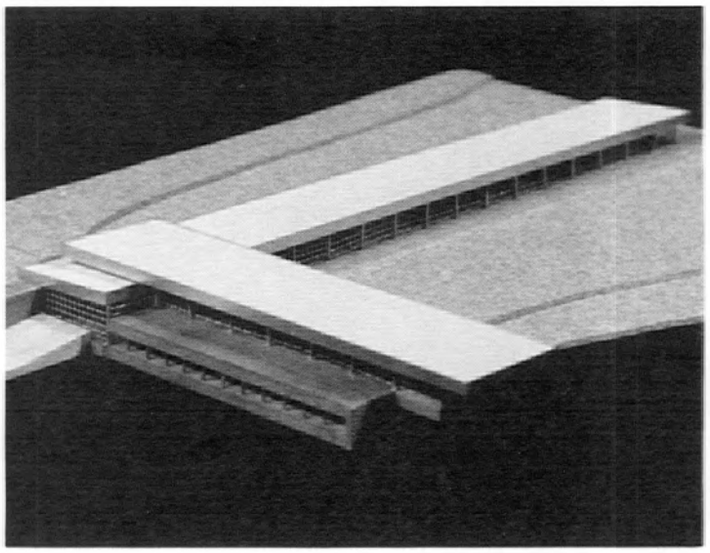


Jenny Park
Dam/ Dwelling
Kent Kleinman, Studio Critic

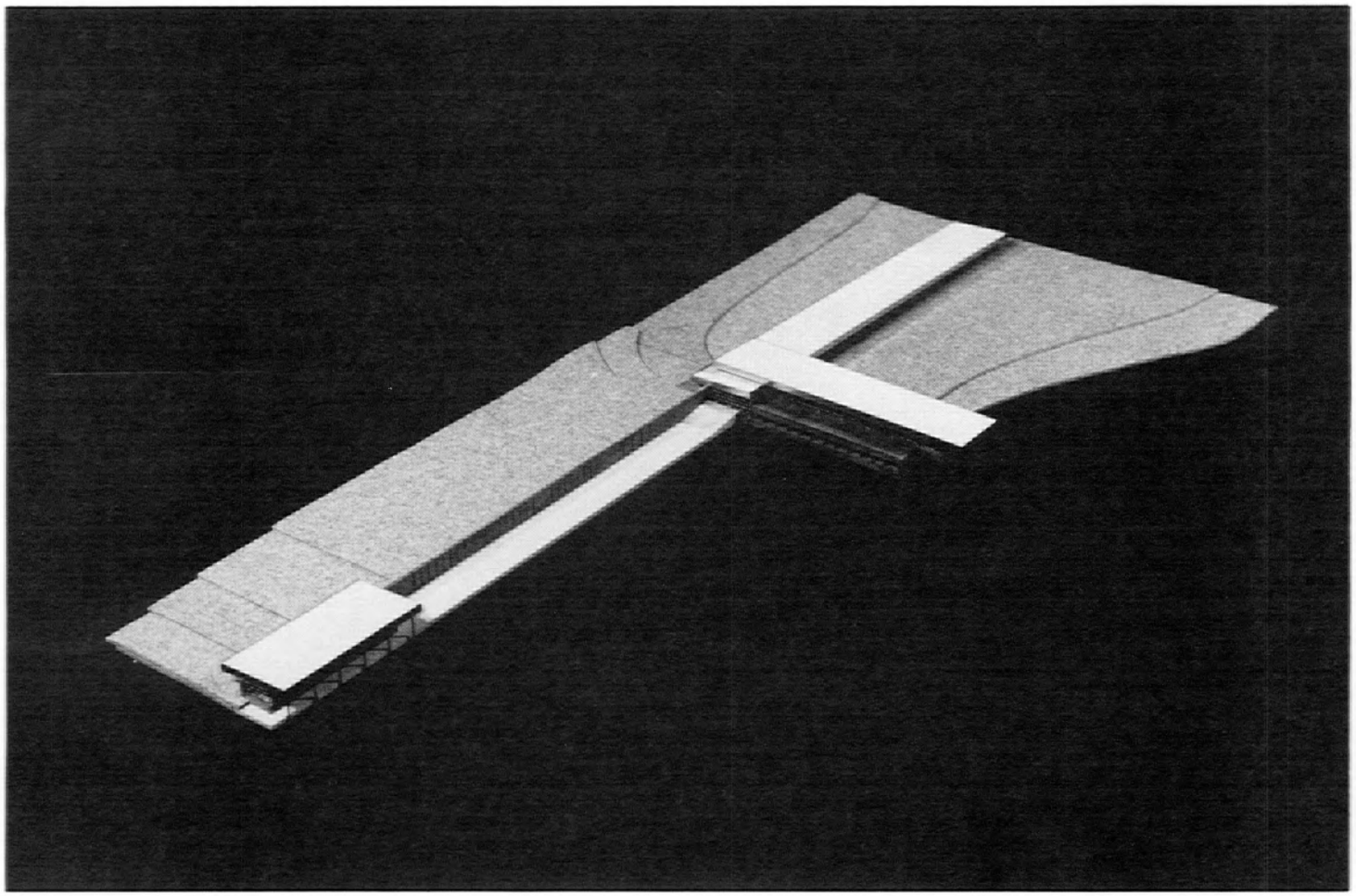
Craig Hoernschemeyer
Rowing Facility
Elizabeth Williams, Studio Critic
A rowing facility for the UMRC on the Huron River. Responds to an industrial life and the repetitive rhythms of rowing and its equipment. Clubhouse/Court/ warehouse/dock.



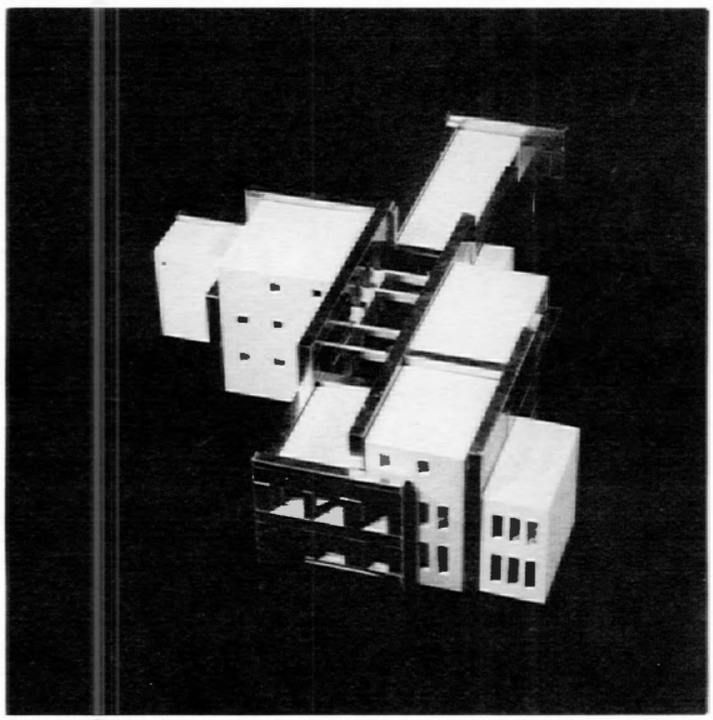
Craig Hoernschemeyer
Rowing Facility
Elizabeth Williams, Studio Critic



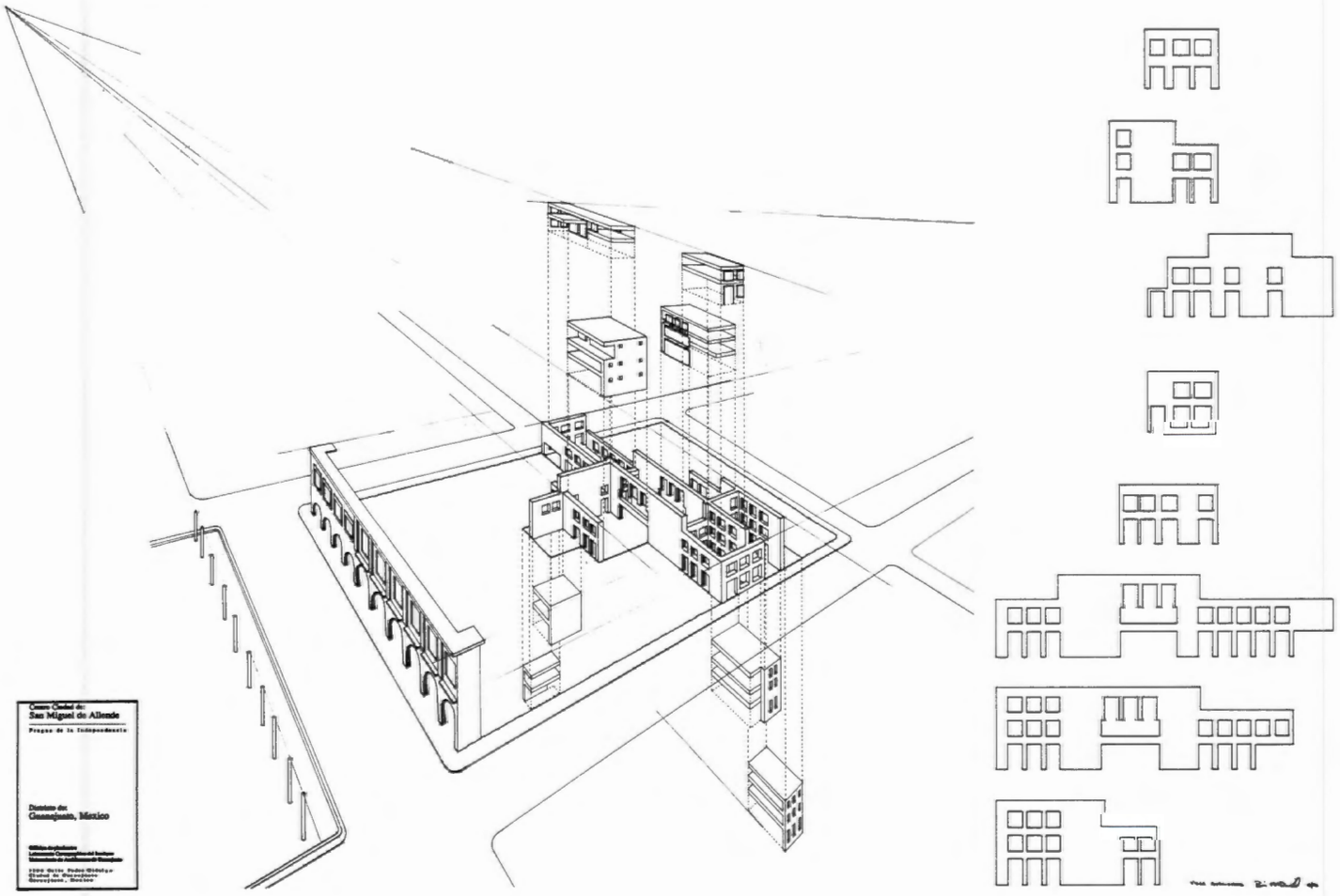
Robert Weaver
Rowing Facility
Elizabeth Williams, Studio Critic
Located onthe bank of the Huron River, the rowing facility provides year round storage, repair, training area for the University Rowing Club, and acts as a transitional step between land and water.



Robert Weaver
Rowing Facility
Elizabeth Williams, Studio Critic

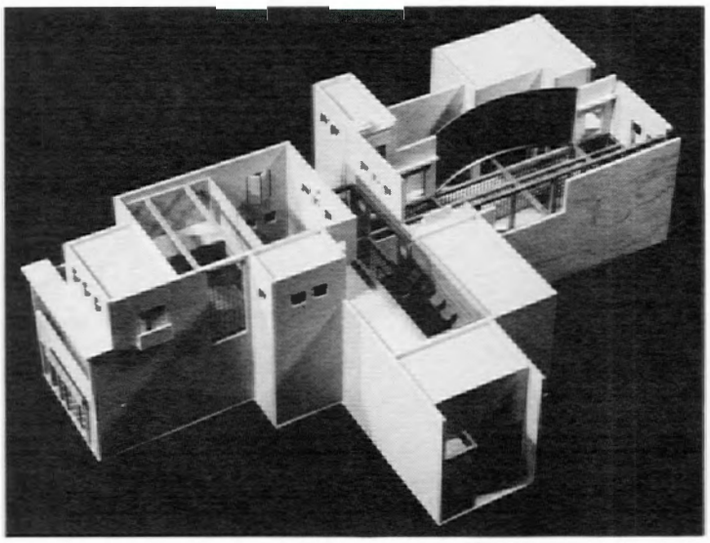


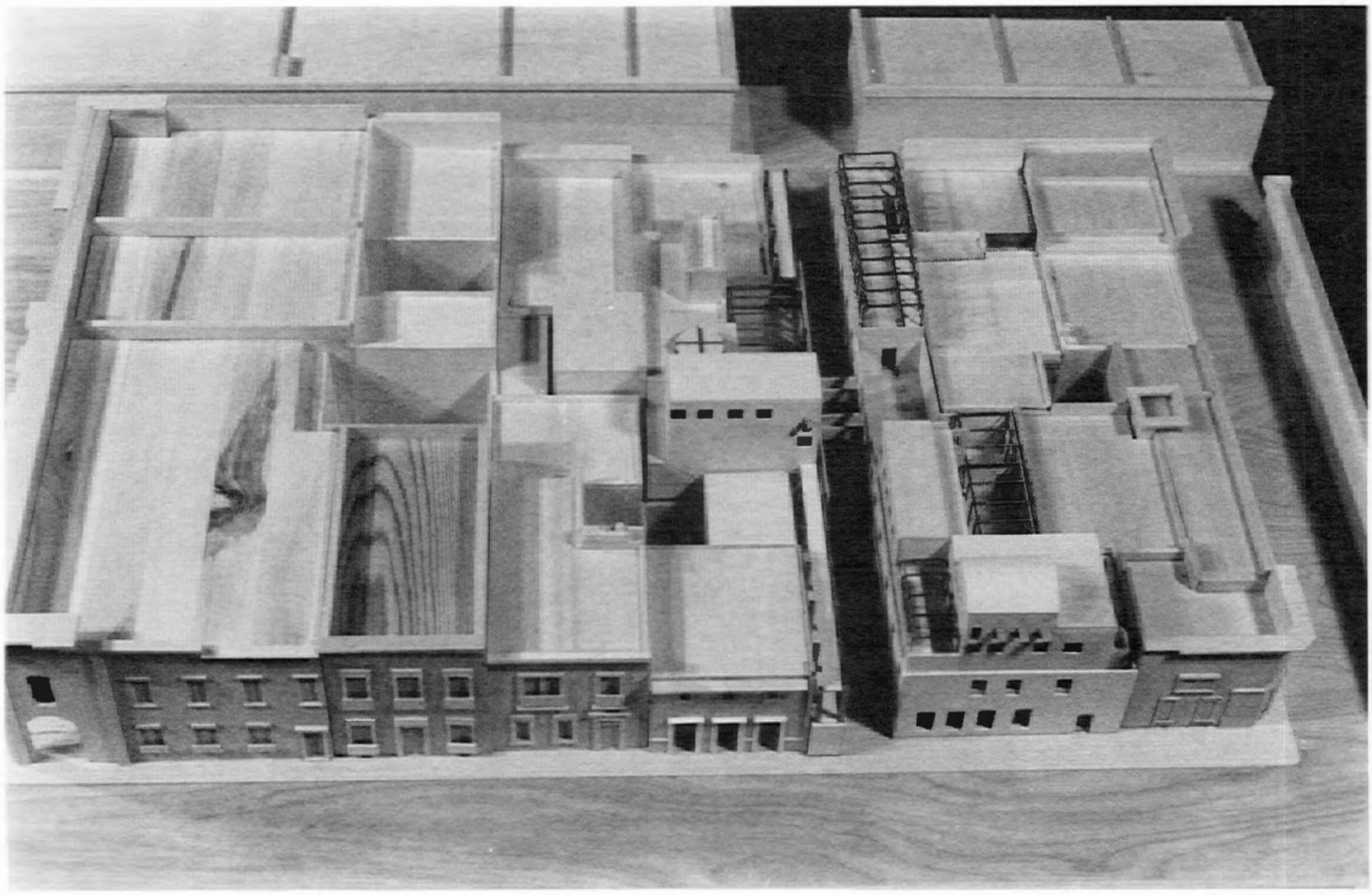
Brian McDonnell
Villa Ruth-Chris
A gallery and two artists' residences in San Miguel De Allende, Mexico.
Dean Almy, Studio Critic
The Villa intergrates with the city by using the party walls as a reference for the main axis. The Villa is arranged around the walls, forming many overlapping and connecting spaces.



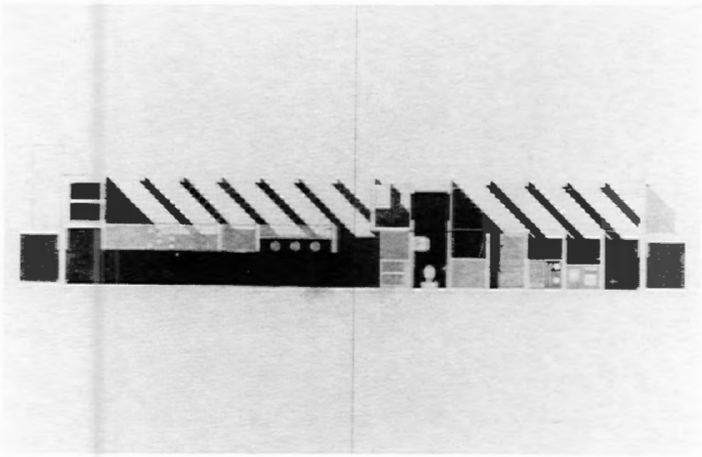
Brian McDonnell
Villa Ruth-Chris
Dean Almy, Studio Critic

John Sponseller
Villa Ruth-Chris
Dean Almy, Studio Critic
A gallery and two artists' residences in San Miguel De Allende, Mexico.

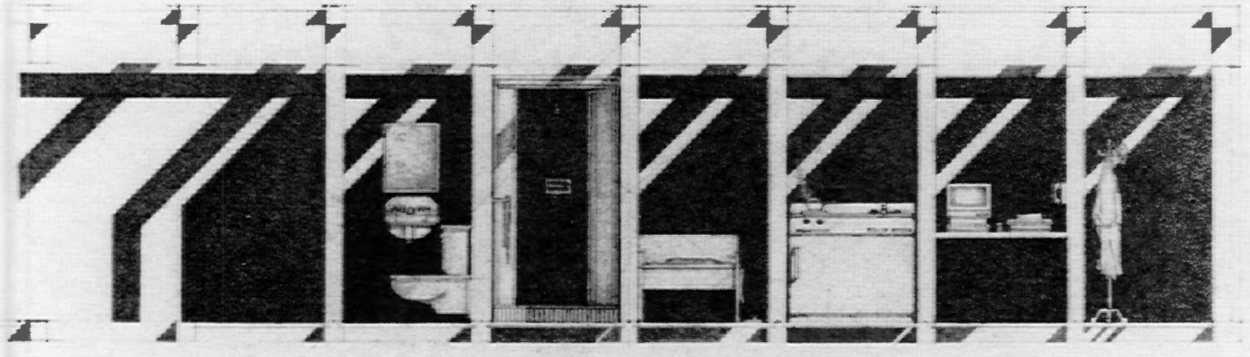




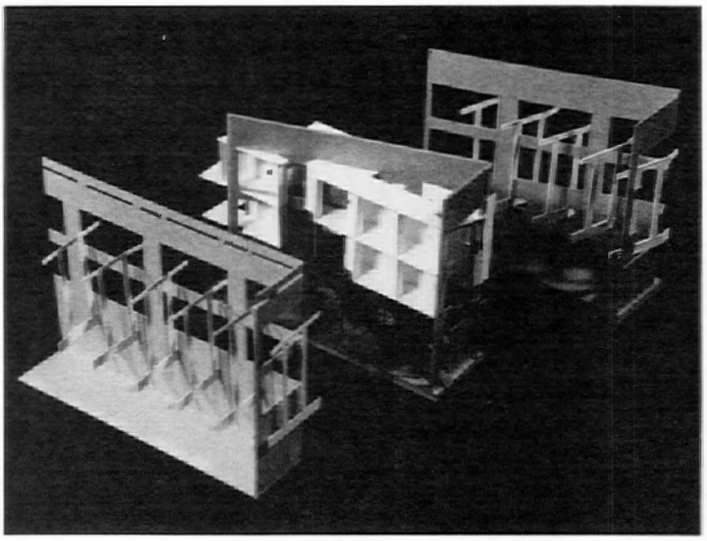
Valerie Werfelmann
Villa Ruth-Chris
Dean Almy, Studio Critic



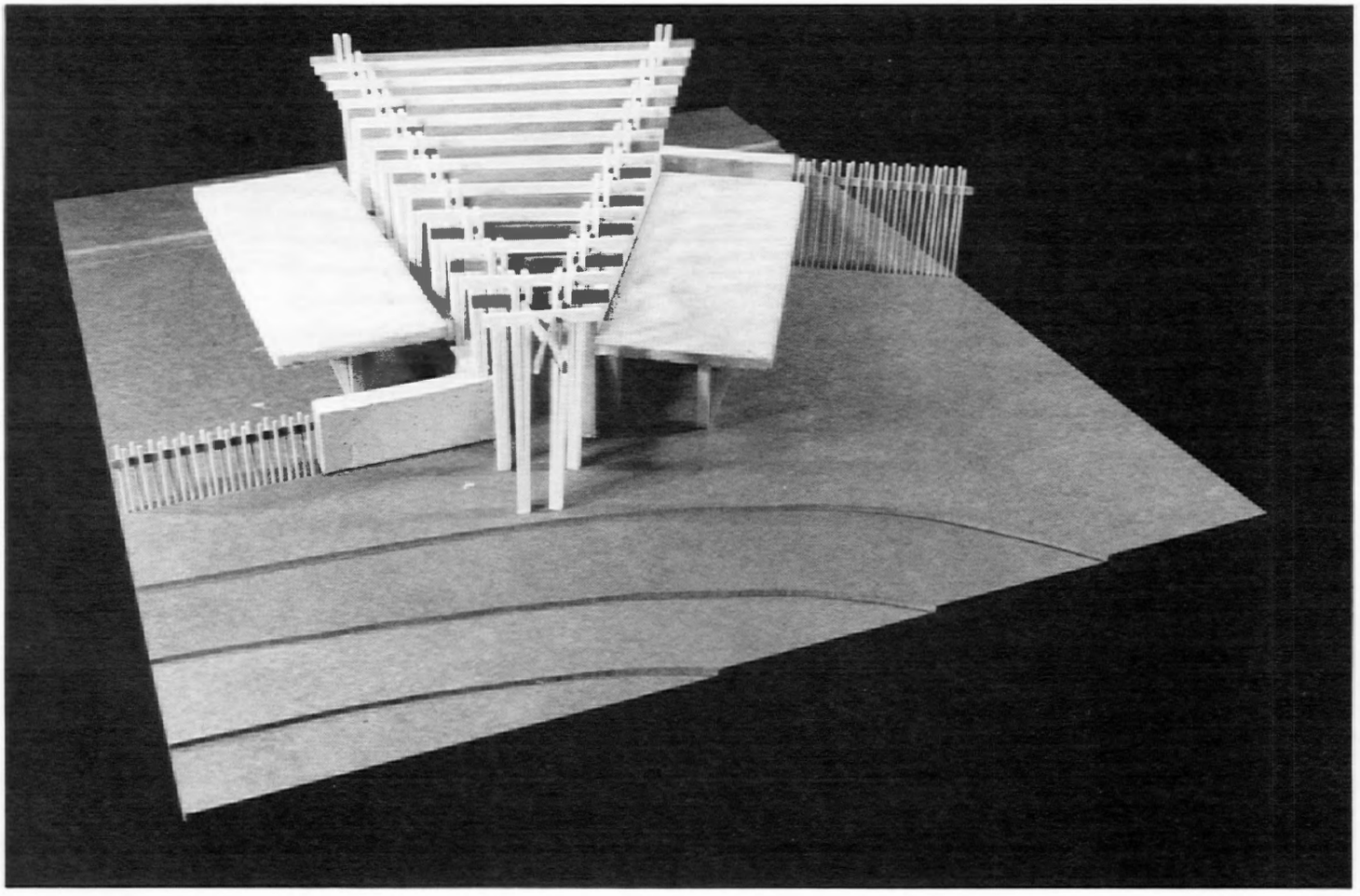
Sinh Dinh
Tempus Fugit Hotel - Plan
Martha Finney, Studio Critic
"...so that we have, after all, to be grateful that our light lies broken in pieces,"
excerpt from 'In Time and Place,' by John Hollander.



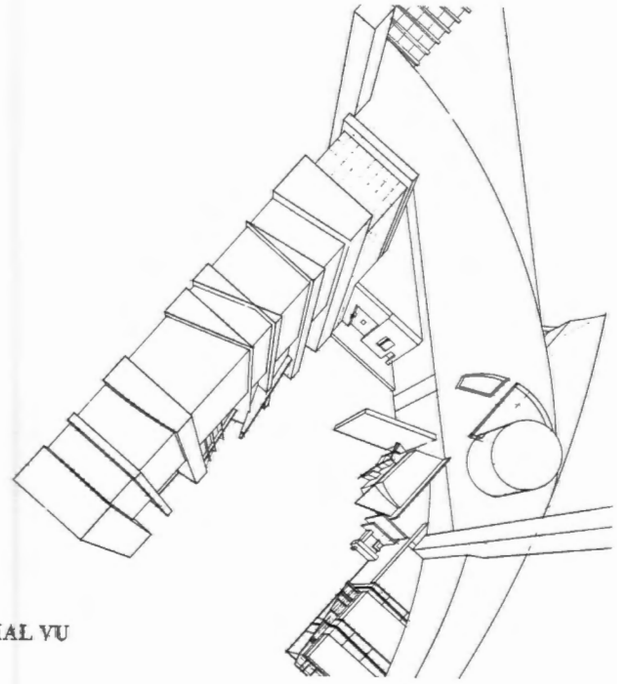
Sinh Dinh
Tempus Fugit Hotel - Section
Martha Finney, Studio Critic



Susan Kreamers
Tempus Fugit Hotel
Martha Finney, Studio Critic
"...But as it is, the very breaking-up of the radiance... was what will always cause us to have embraced these discrete fragments..."

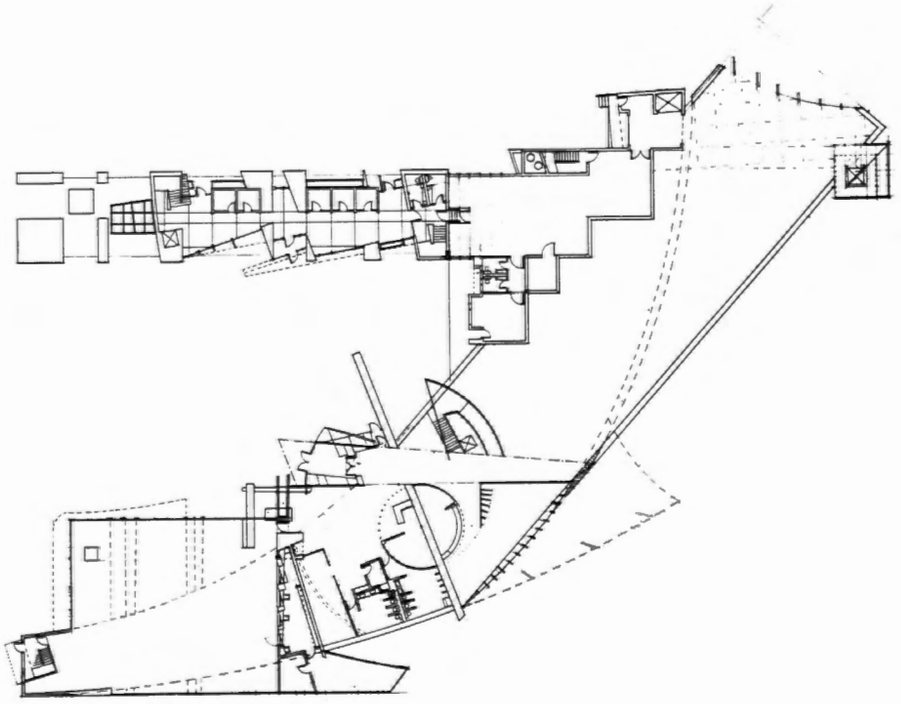


David Layman
Gatehouse
Martha Finney, Studio Critic
A gateway is a threshold or link that synthesizes two zones: connection. Yet, a gateway is also a boundary which establishes distinction between those two zones: separation. The paradox defined by connection and separation is the conceptual backbone for each facet of this design.



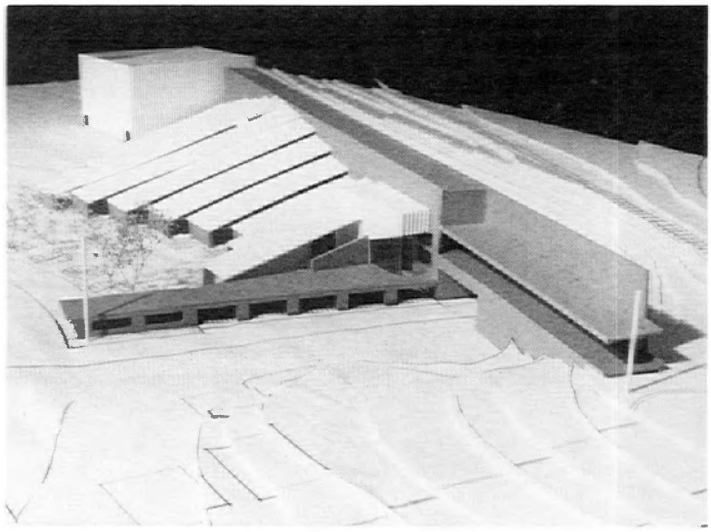
AERIAL VU

John Abela
Natturufraedisafn (Natural Science Center)
Maggi Jonsson, Studio Critic
A multidisciplinary research and teaching facility serving both the academic community and the general public.

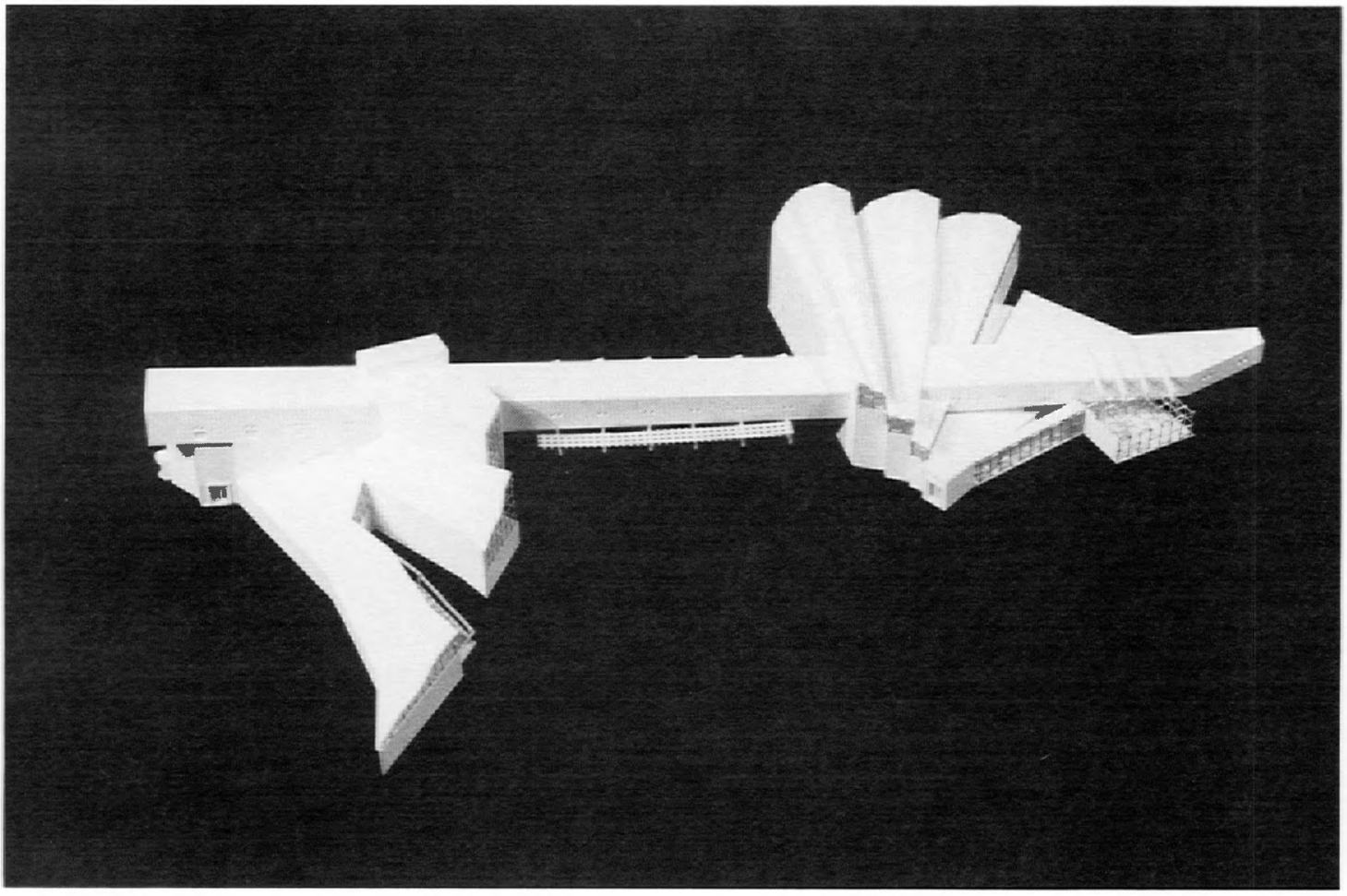


GROUND LEVEL

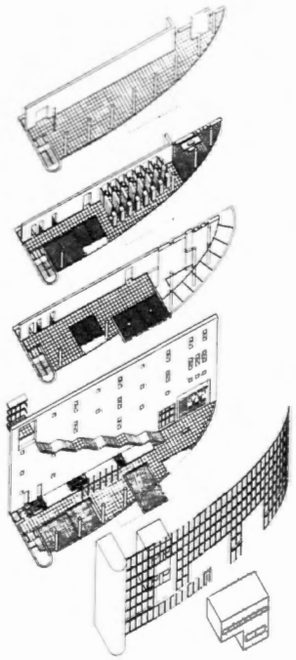
John Abela
Natturufraedisafn (Natural Science Center)
Maggi Jonsson, Studio Critic



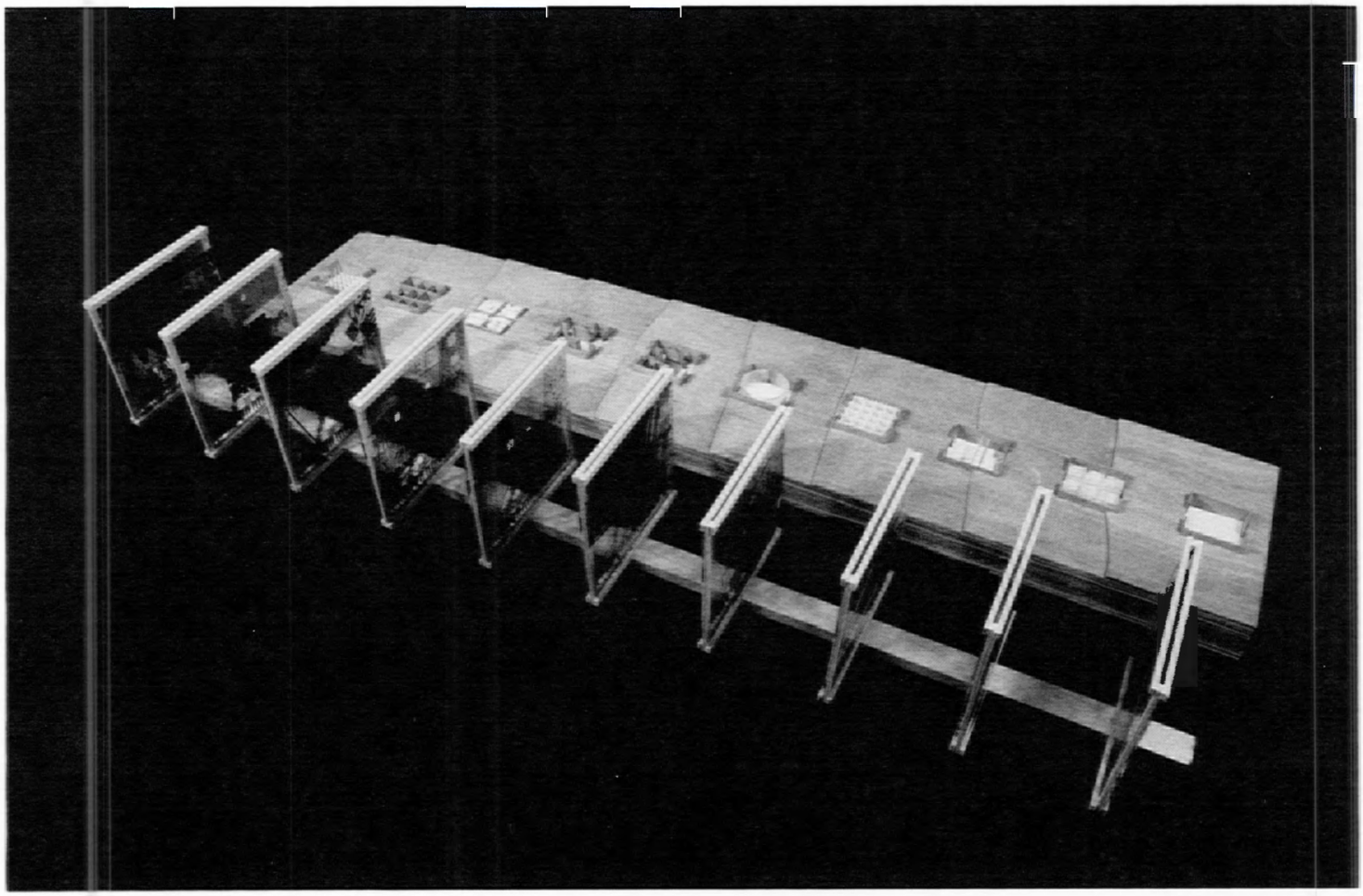
David Voss
North Main Elementary School, Ann Arbor
Maggi Jonsson, Studio Critic
The school is comprised of a wall and classrooms that play off each other, creating an interior gathering area.



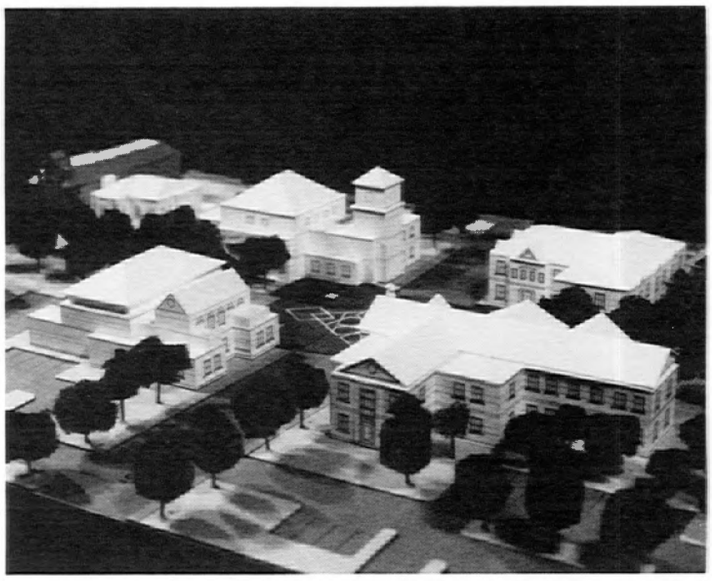
Lisa Raskin
Museum of Icelandic Art and Culture
Maggi Jonsson, Studio Critic
The Museum is a chronological history of Icelandic art and culture and a celebration of traditional and contemporary creativity, both symbol of and entrance to a campus.



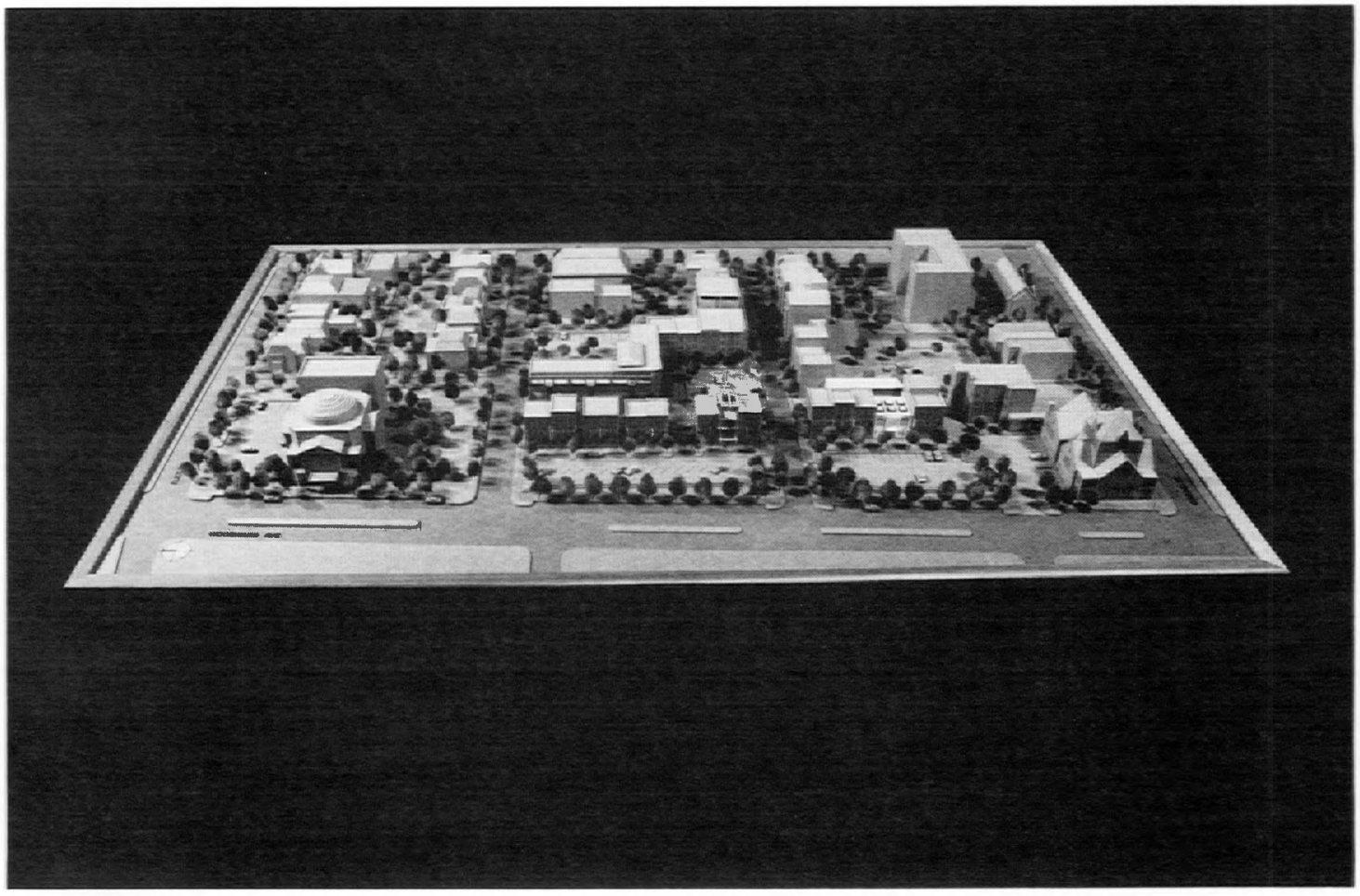
Dan Berman
Publishing House for the Danish Architecture Press
Helen Welling, Studio Critic
In an exploration of the dual role of front and back, the facade for the Copenhagen urban context suggests the location of the entrance.



John DeGraaf
Memory
Helen Welling, Studio Critic
This project addresses the art of memory while using the painting as a vehicle to discover architectural inspiration.



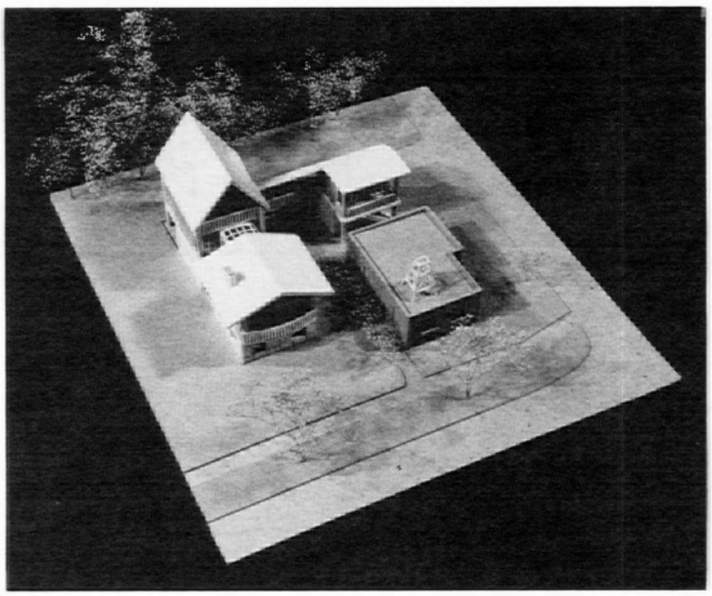
Shahrani Mokhtar
Brush Park, Detroit
Gerald Crane, Studio Critic
The project is devoted to preparing urban design solutions for the rehabilitation of the Detroit's Brush Park neighborhood.



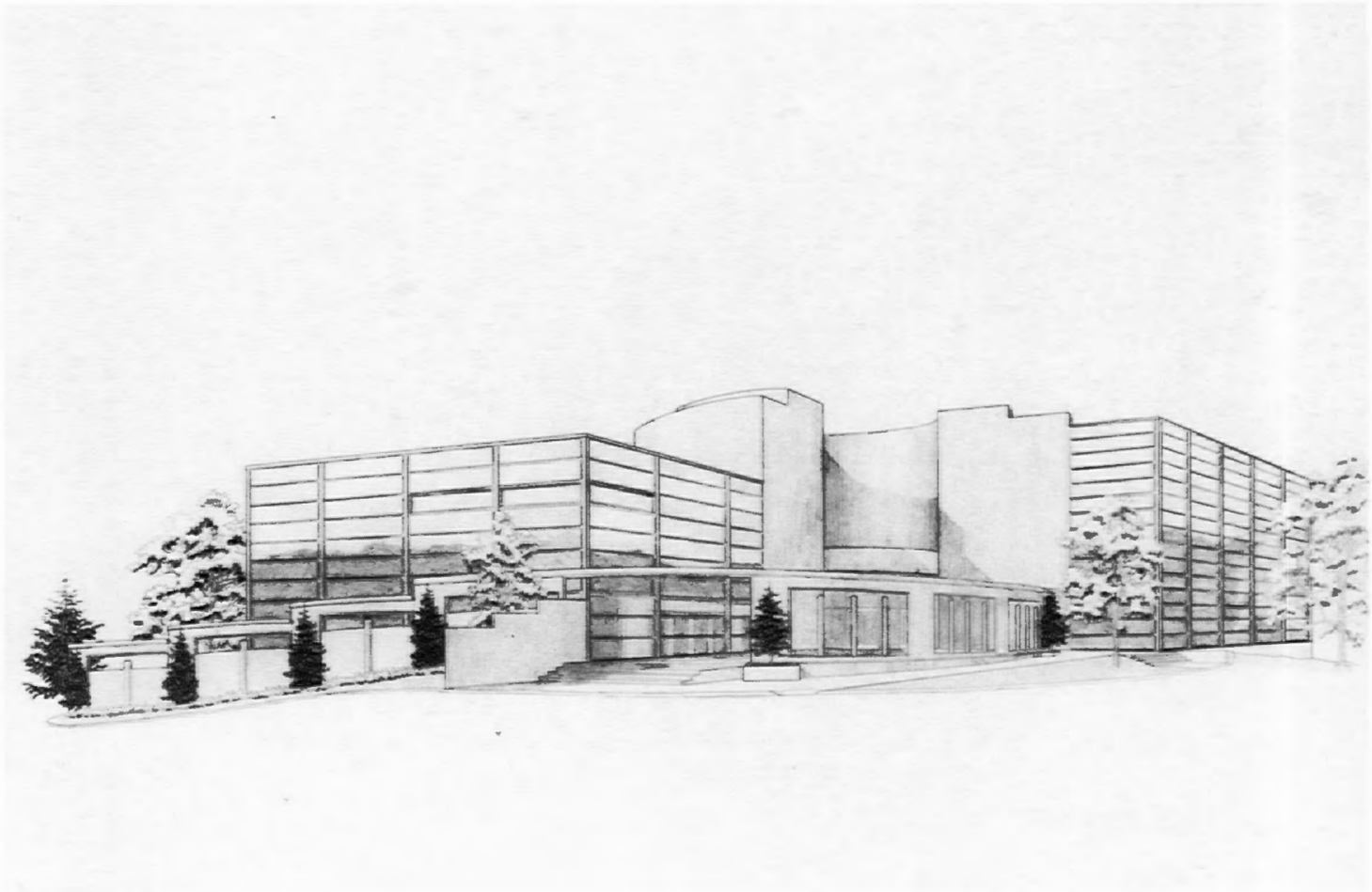
Tom Gormley
Brush Park, Detroit
Gerald Crane, Studio Critic

Thomas Born, Barbara Felix, Kelly Kerlin, Daniel Kirby, John Lapins, Dan Lichauco, Eric MacDonald, A. Philip McCullough, Kameshwari Pothukuchi, David Richardson, Suzanne Storen, Gregory Wattier, James Cooper, and Astrid Zwatz
Detroit: An Ideal City
Robert Beckley, Brad Angelini, Studio Critics
An idealized scheme for the revitalization of Detroit

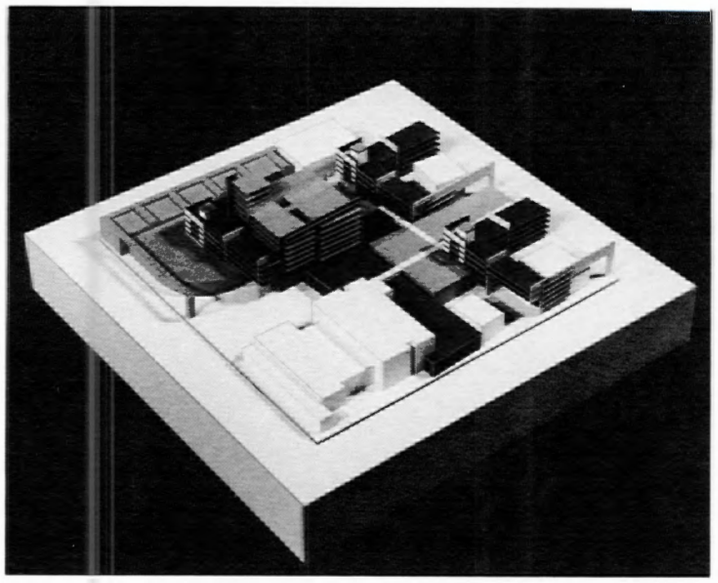
Detroit: An Ideal City
Robert Beckley, Brad Angelini, Studio Critics



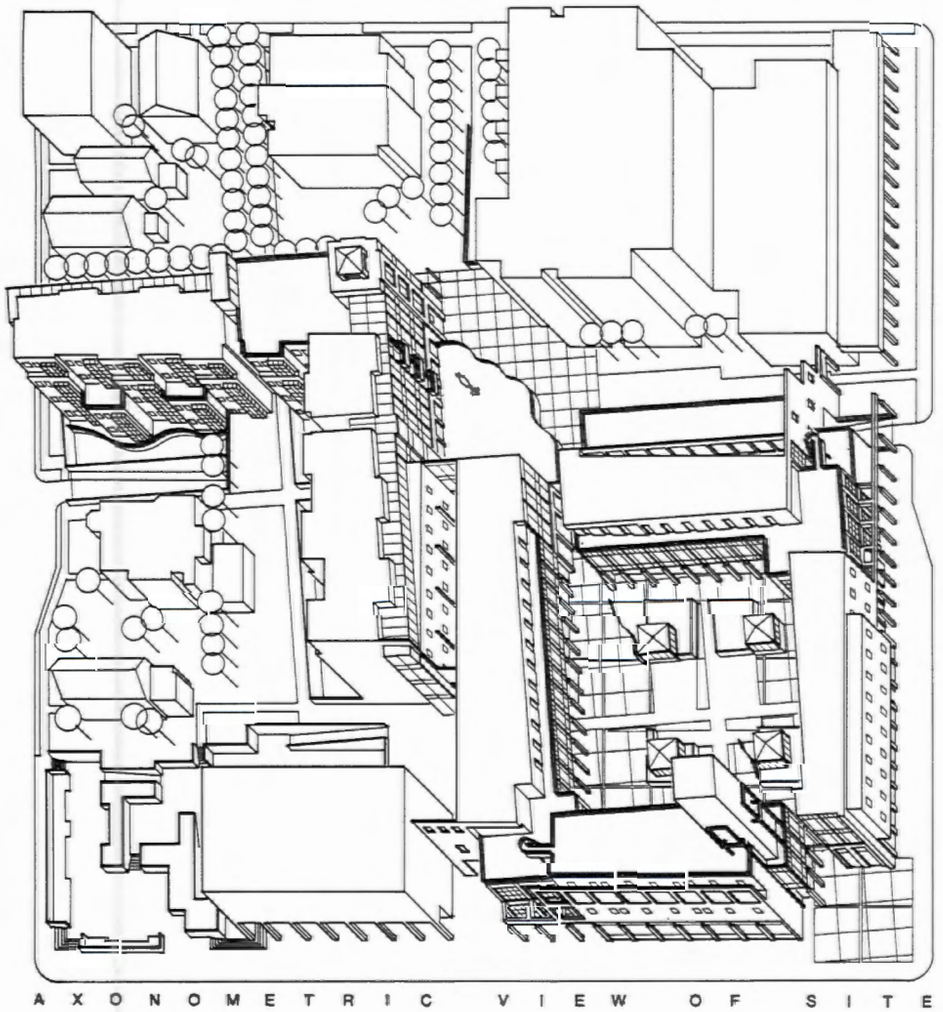
Drew Nelson
House in Ann Arbor, Michigan
Gerhard Olving, Studio Critic
The house for an architect shares its site with an existing pump station. The station interacts with the house and shapes its plan, defining its entrance.



Karen Pottebaum
Ann Arbor Technology Complex
Tivadar Balogh, Studio Critic
The project involved placing a computer company and another compatible company onto a rural lot. This building addresses the natural setting, as well as a high-tech atmosphere.

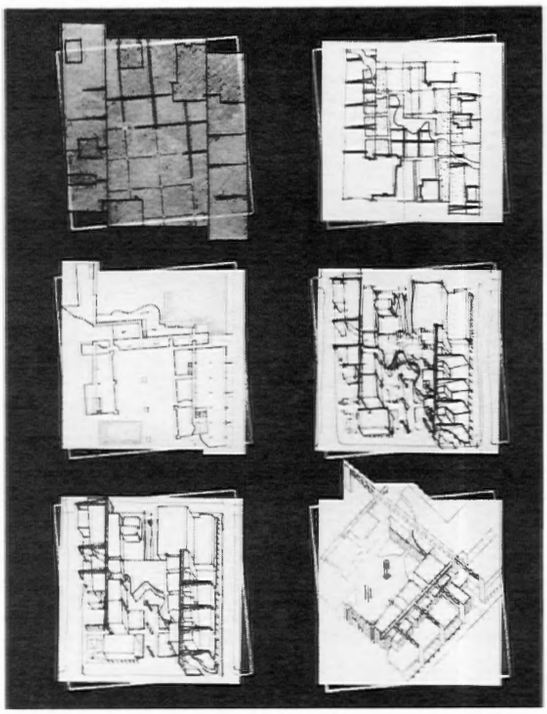


Richard E. Mitchell
Ann Arbor Library Block
Emmanuel-George Vakalo, Studio Critic
A morphological study for the Ann Arbor Library block: The Connection Between Town and University

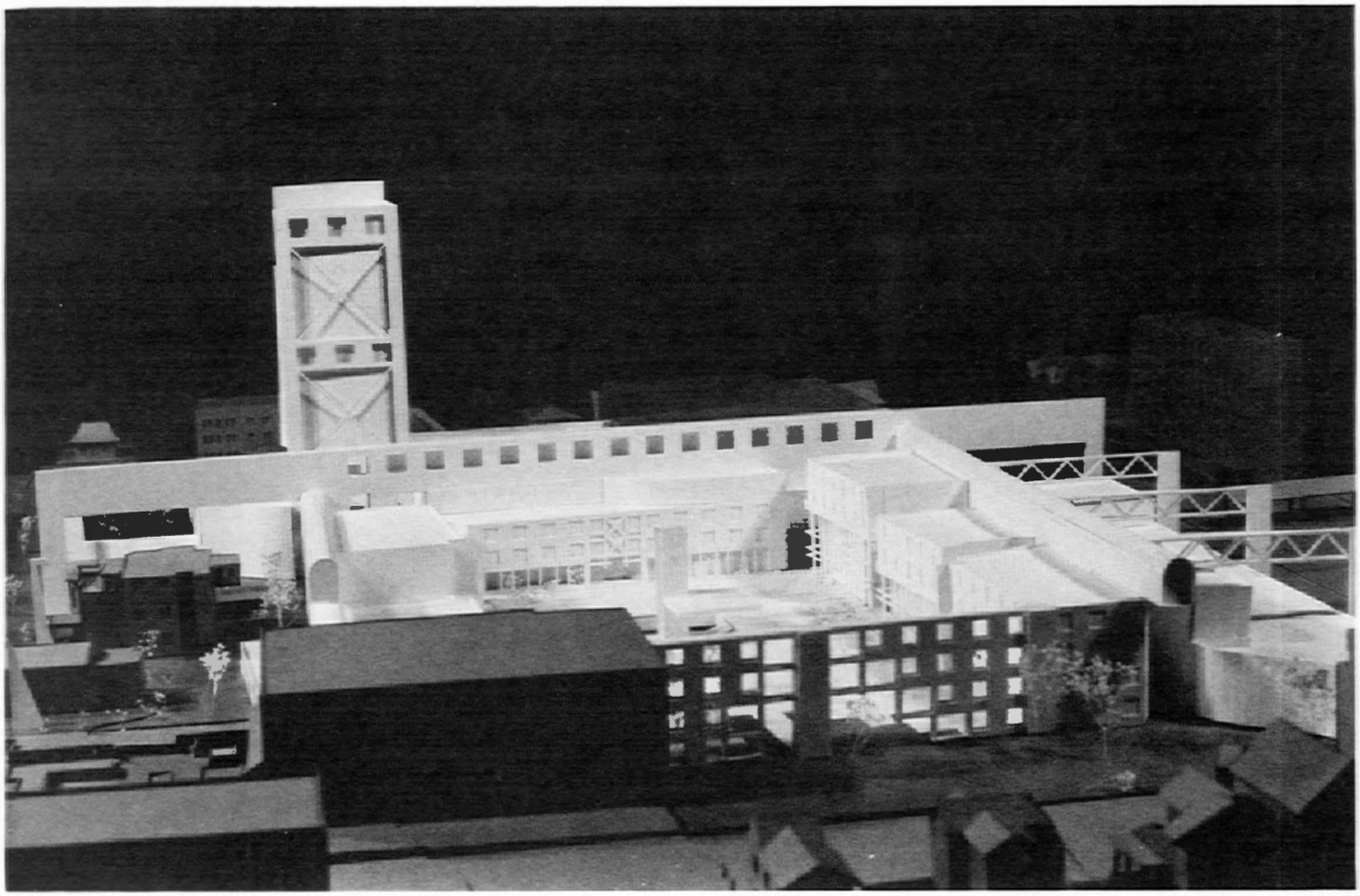


AXONOMETRIC VIEW OF SITE

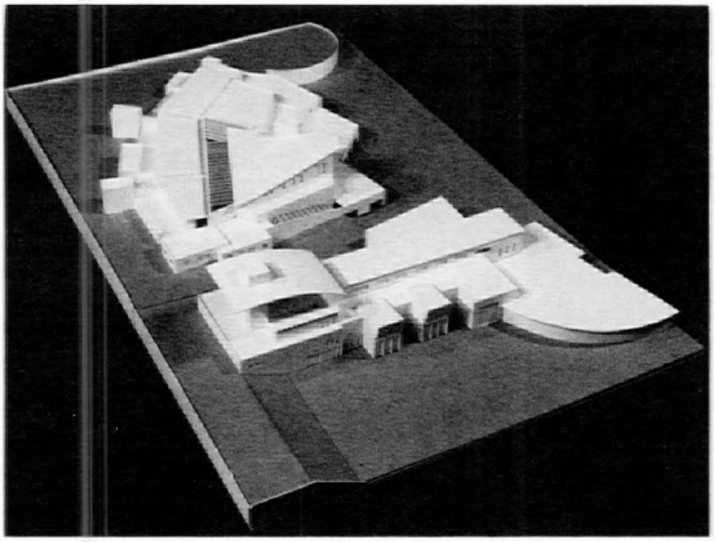
Edward Orlowski
Ann Arbor Library Block
Emmanuel-George Vakalo, Studio Critic
This project was a study of both form and form-making. Morphological clues from the surrounding context (axes, grid shifts, massings, etc.) were studied and overlayed to provide a rationale for the generation of the schematic solution.



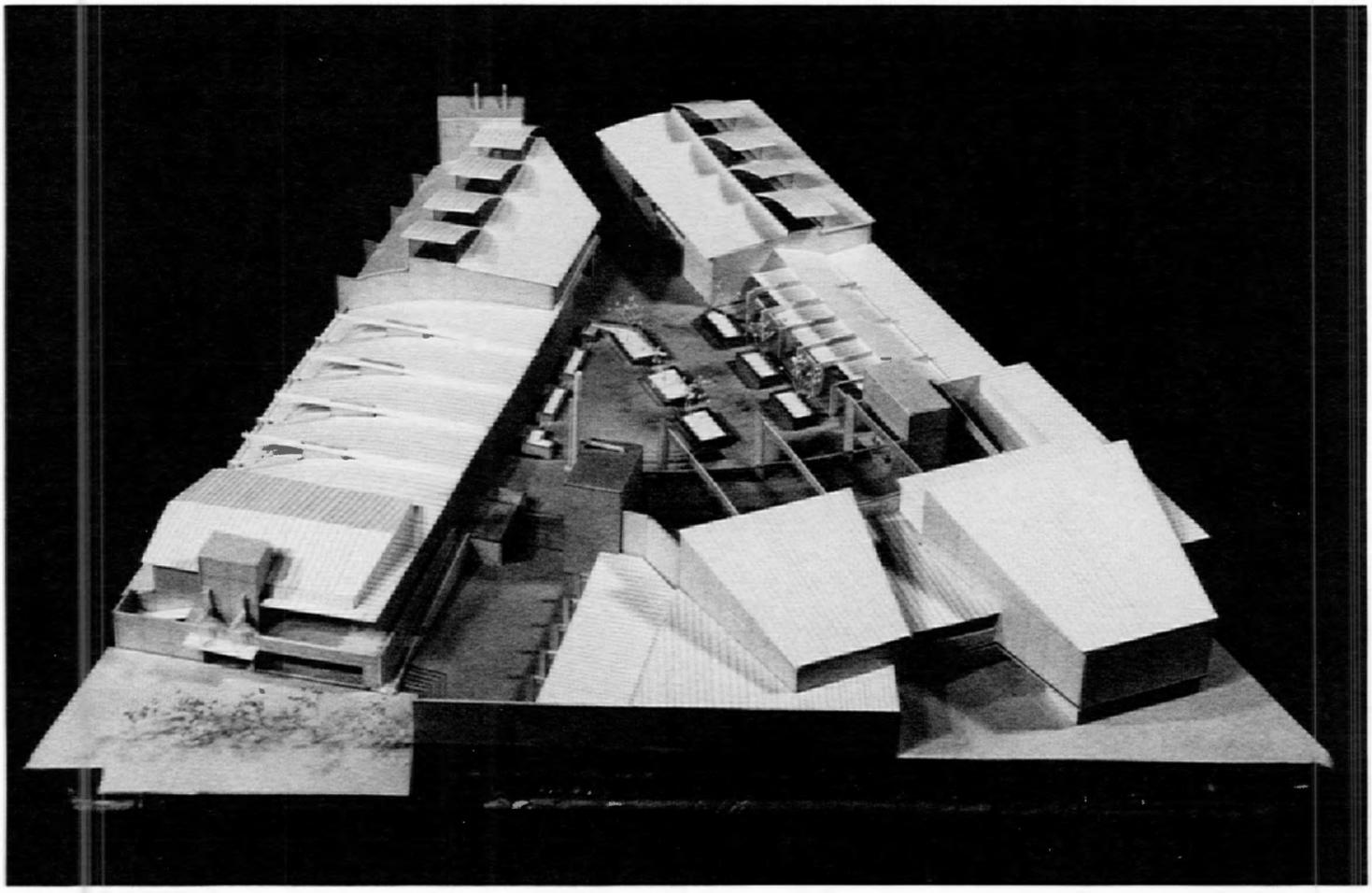
Ron Henry
Ann Arbor Library Block
Emmanuel-George Vakalo, Studio Critic
Morphological study of the downtown Ann Arbor Public Library block, incorporating existing structures with a new multi-use building.



Ron Henry
Ann Arbor Library Block
Emmanuel-George Vakalo, Studio Critic

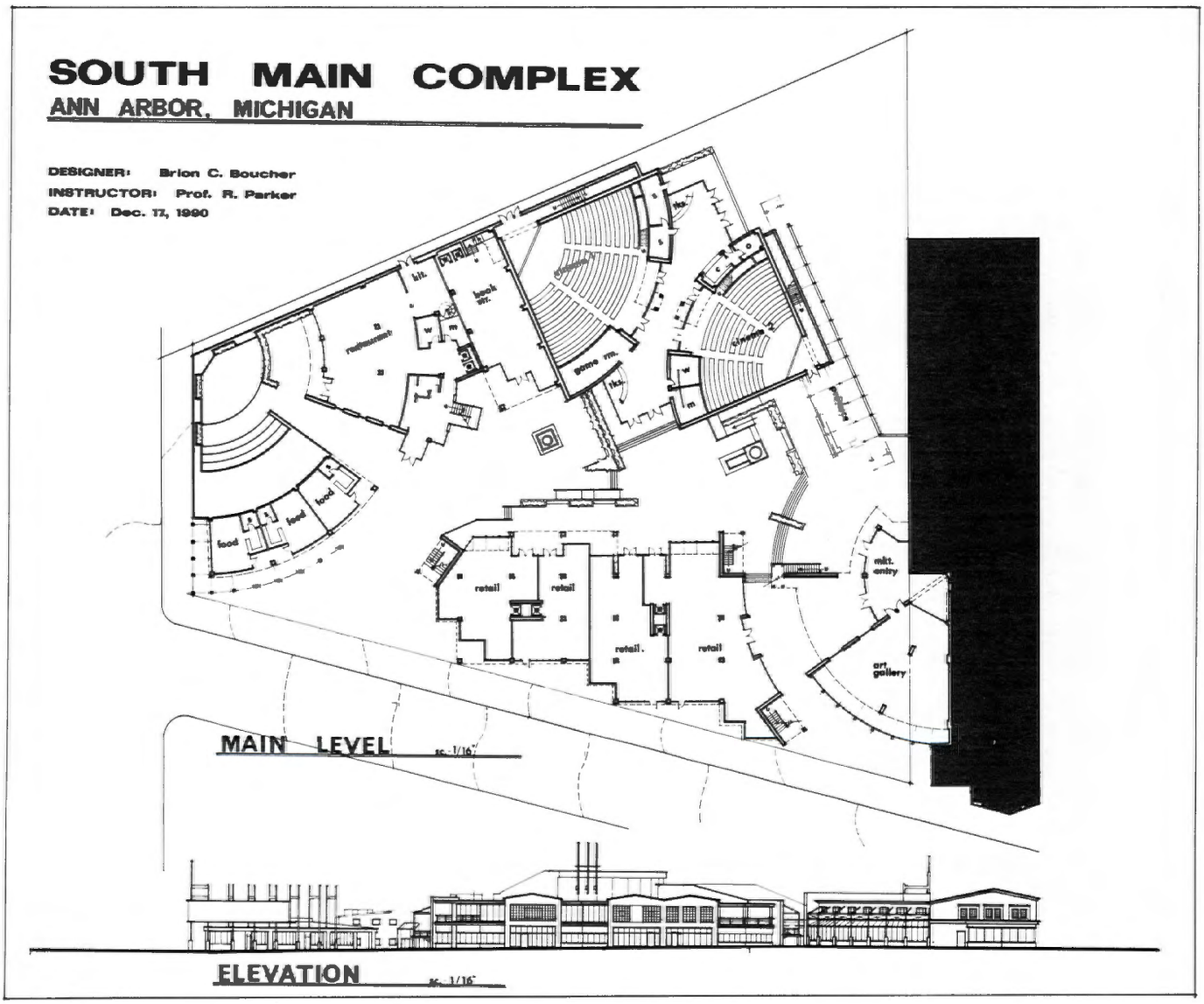


Taija Miyasaka
Humanities Institute
Rod Parker, Studio Critic
Master schematic plan for the Residential College.

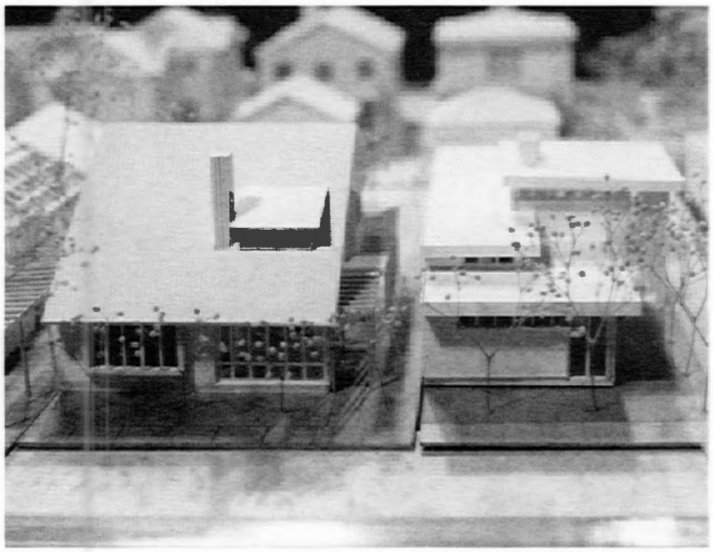


Bob Kraemer
South Main Complex
Rod Parker, Studio Critic
South Main entertainment complex: A collection of buildings to unite the people of the 'Old West End', as well as to promote the feeling of entertainment.

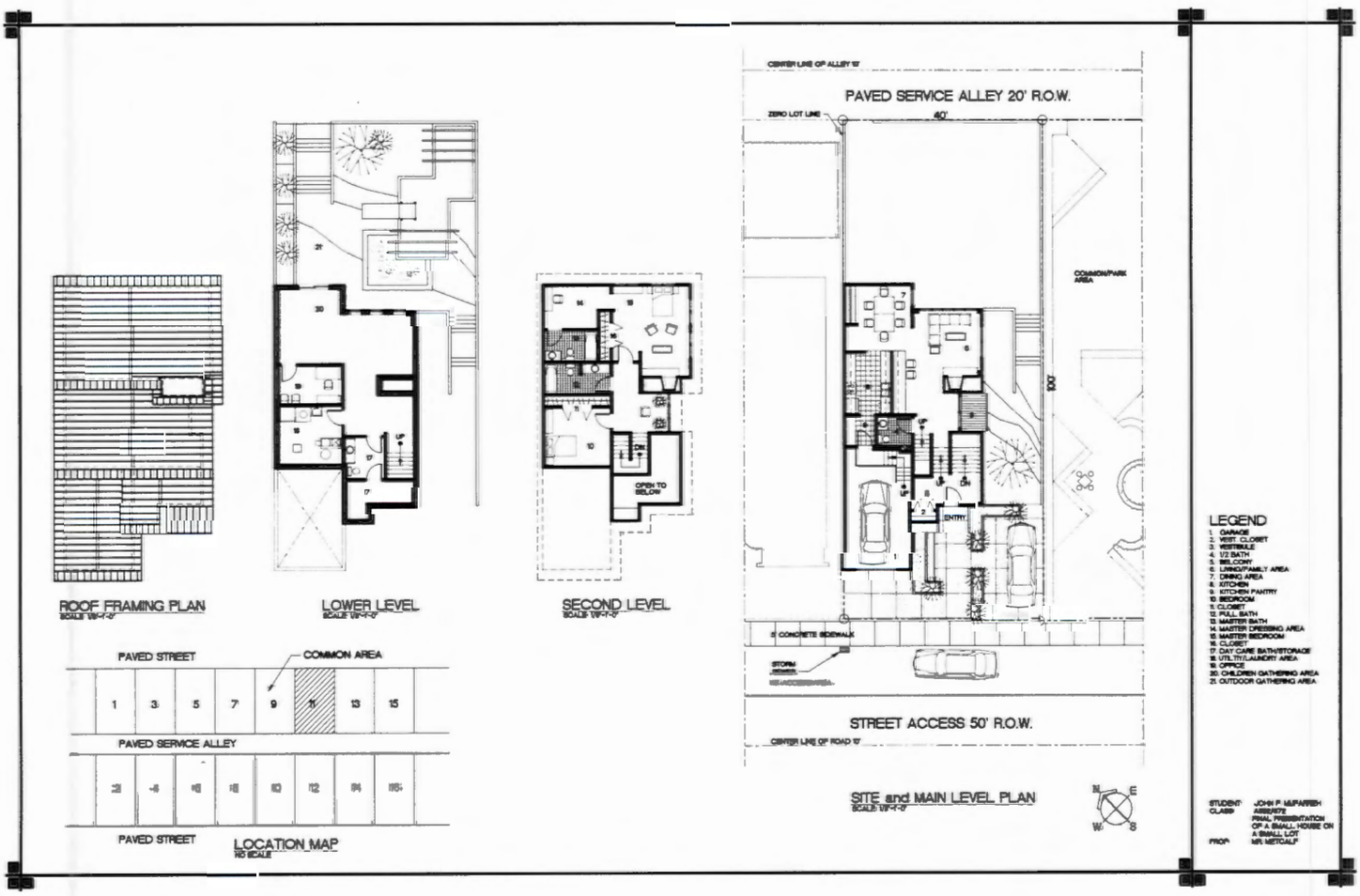
Brion C. Boucher
South Main Street Complex
Ann Arbor, Michigan
Rod Parker, Studio Critic



Brion C. Boucher
South Main Street Complex
Ann Arbor, Michigan
Rod Parker, Studio Critic

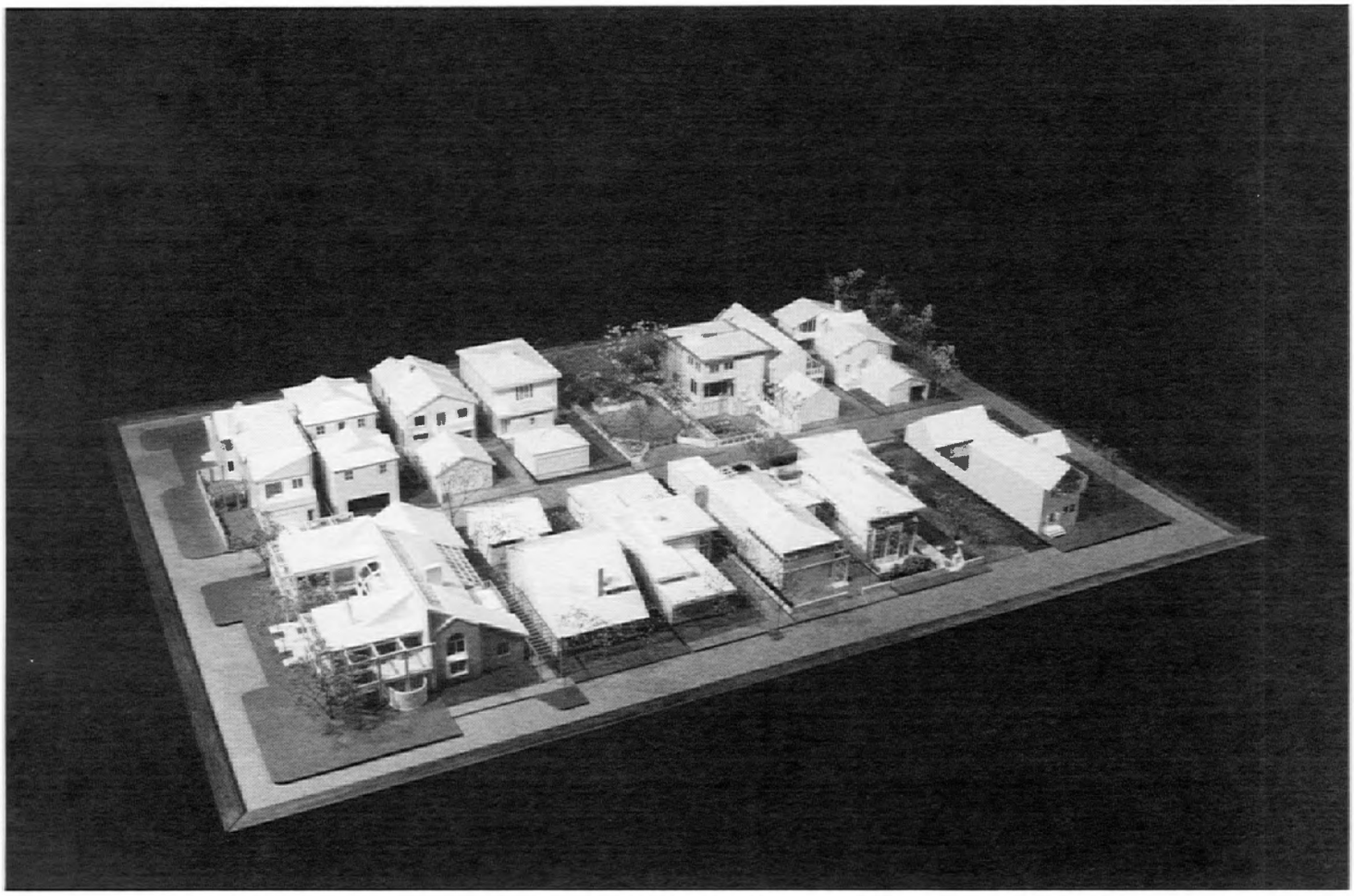


Thomas Ahn, Brian Dykema, Brian Ferriby, John Gay, Marie Krawczyk, John Mufarreh, Gary Polak, Brad Potter, Robert Saxon, Patrick Walsh, James Williamson, Sue Faust, James Gillett, Richard Mattingly
Zero Lot Line Housing
Robert Metcalf, Studio Critic

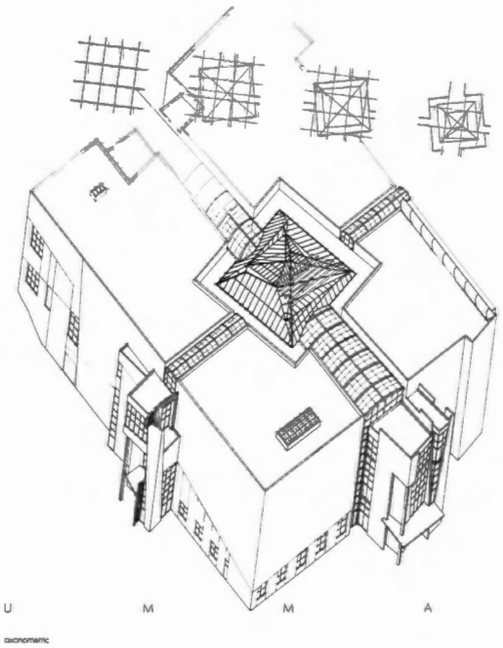


Zero Lot Line Housing
Robert Metcalf, Studio Critic

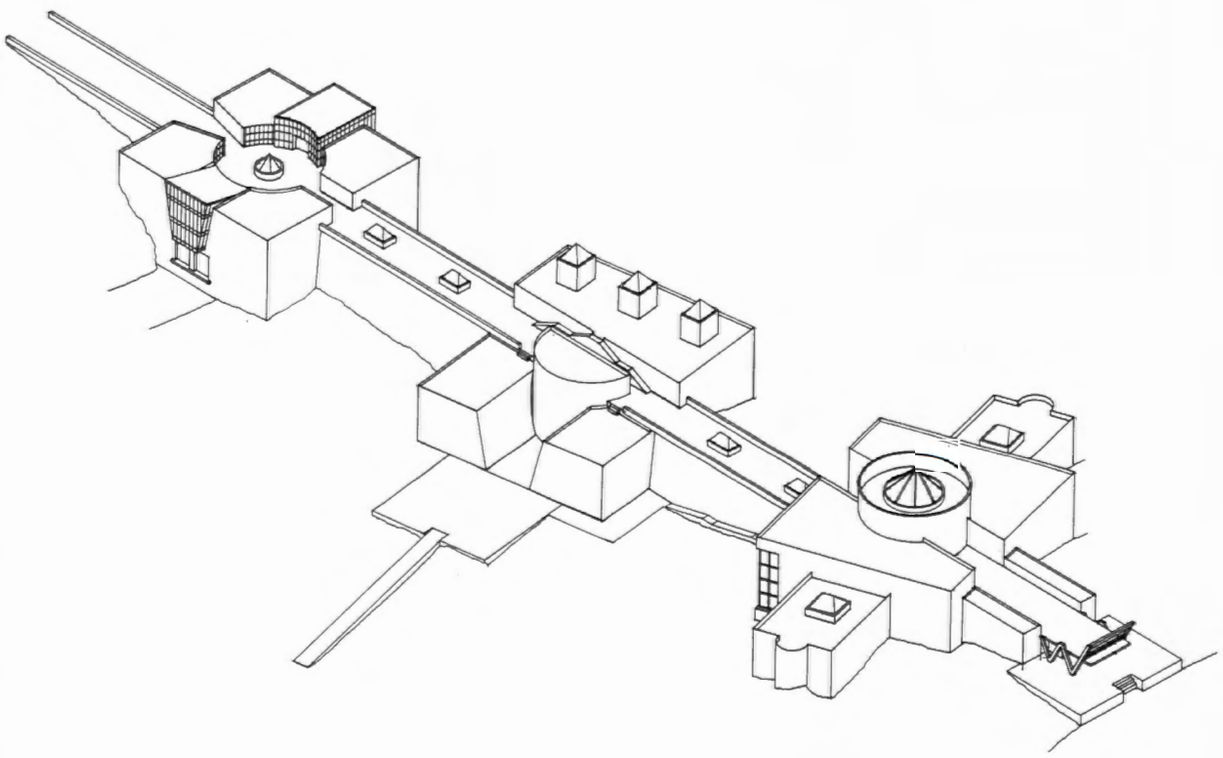
Zero Lot Line Housing
Robert Metcalf, Studio Critic



Zero Lot Line Housing
Robert Metcalf, Studio Critic



Bonnie Greenspoon
University of Michigan Museum of Art
Henry Kowalewski, Studio Critic
The interaction of two grids initiates a series of "events" which demarcate functional element while at the same time responding to a number of contextual influences. These "events" represent issues of building as sculpture while addressing rotation and frontality.



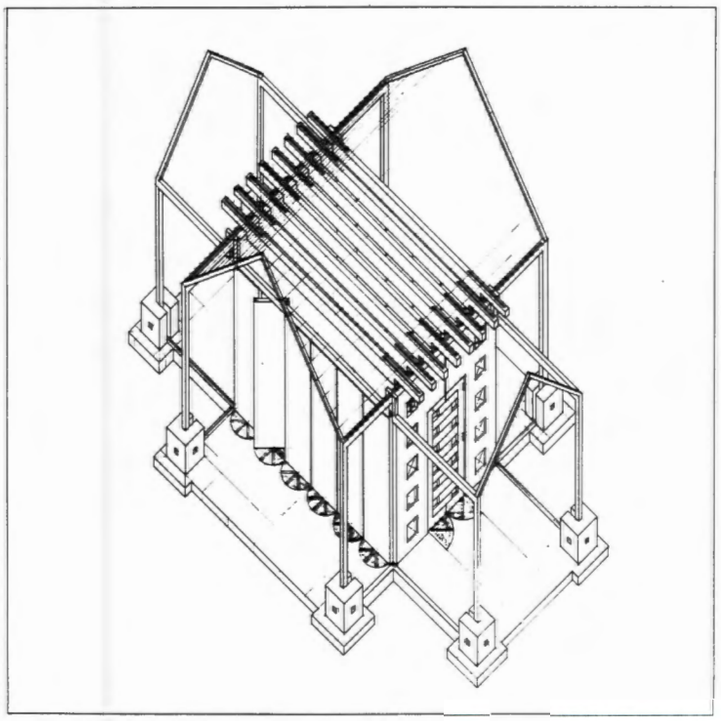
Frank Carenza
Museum of Modern Art, University of Michigan
Henry Kowalewski, Studio Critic
Programatically derived elements are linked by an armature in the form of a bridge, achieving simultaneous perceptions of site, art, and architecture.

Abdul Aziz Abdul, Timothy Coon, Anthony De Eulio, Gregory Jancarik, Bakul Joshi, Du-un Lee, Kelly Ryan, Michele Savaglio, Jack Silverstein, Khoon Tay, Mark Van Elsberg, Kelly Waymire, Karen Zak

Community Design Studio

James Chaffers, Studio Critic

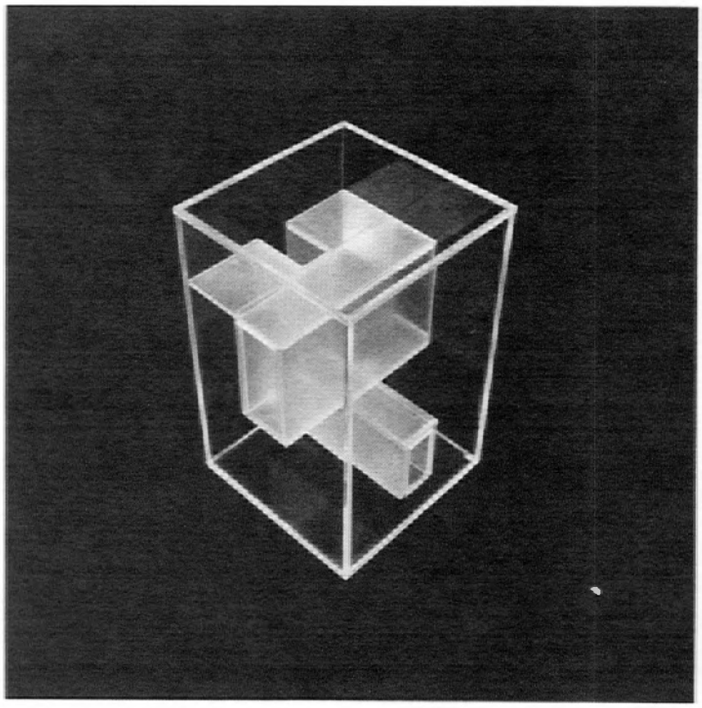
Experimental Graduate 509 Courses

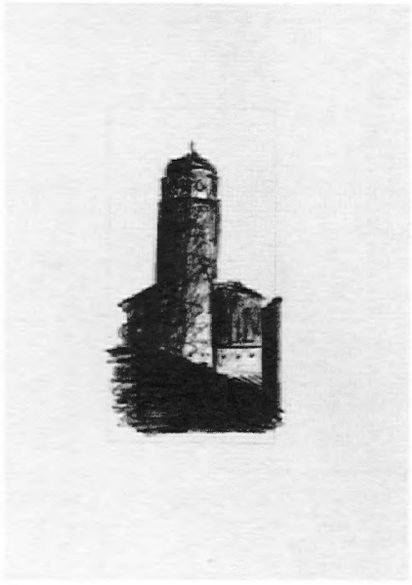


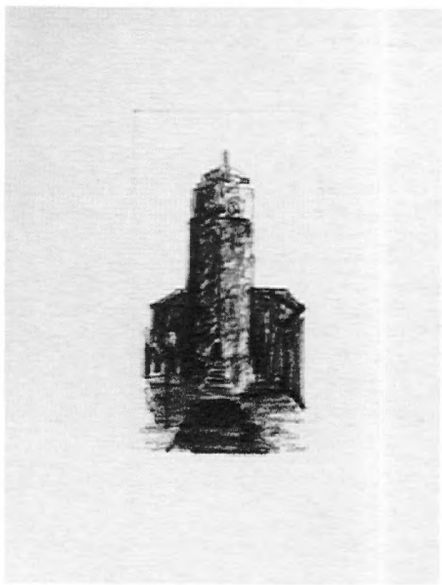
John Lapins
Trope Drawing
Martha Finney, Instructor

Steven Gerrard, Jesus Herrerias, Todd Stevens
Masking
Kent Kleinman, Instructor

A. Philip McCullough
Glass Cube
Martha Finney, Instructor





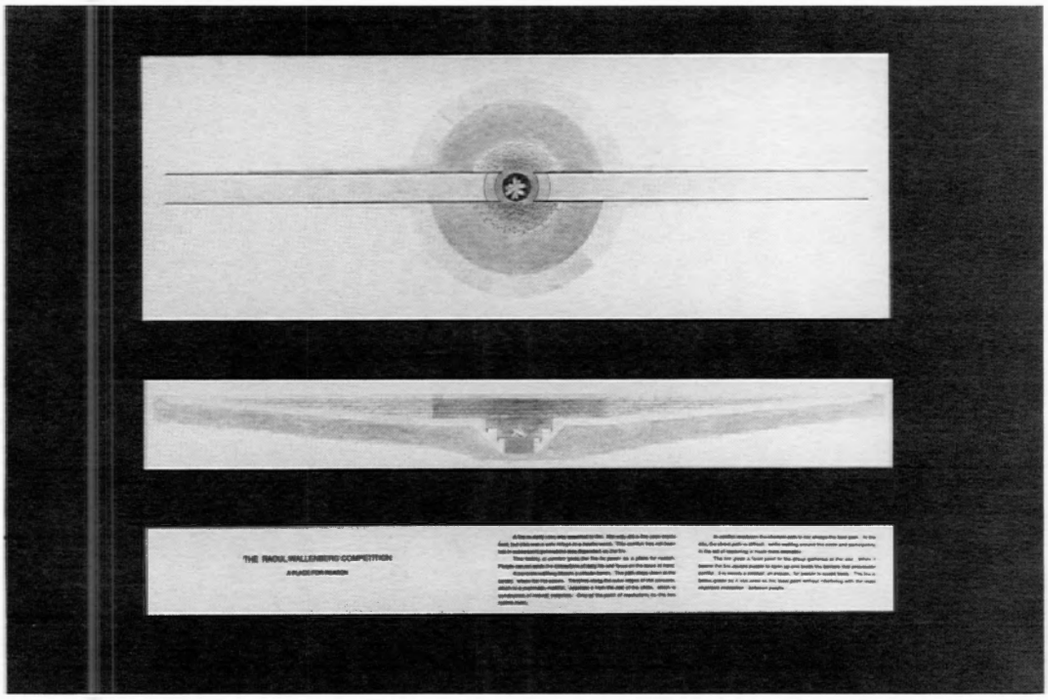


Carol Borowski
Burton Tower Project
Elizabeth Williams, Instructor

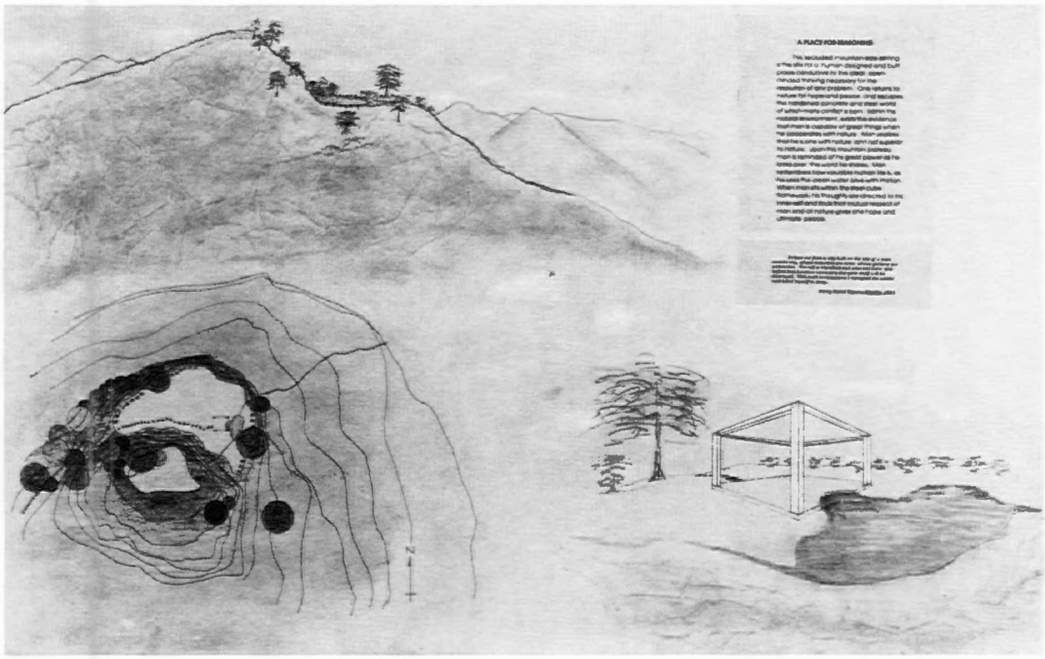
1990 Wallenberg Competition

A Place for Reflection

A Professional Year One Competition in the spirit of Peace

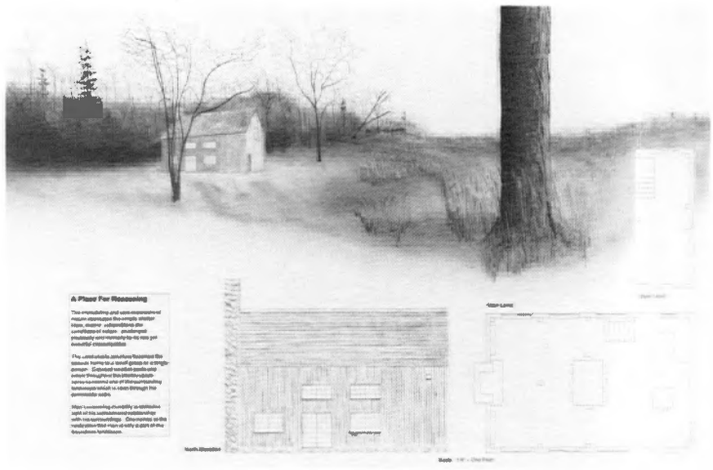


Paul Werner
First Place

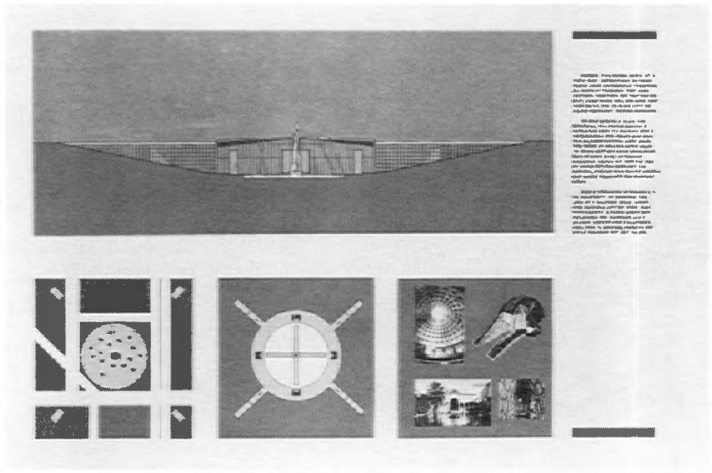


Dave Pezda
Second Place

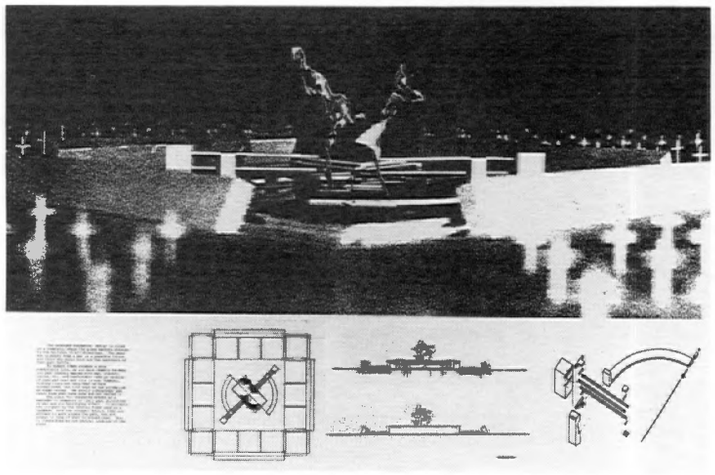
Craig Flowerday
Third Place



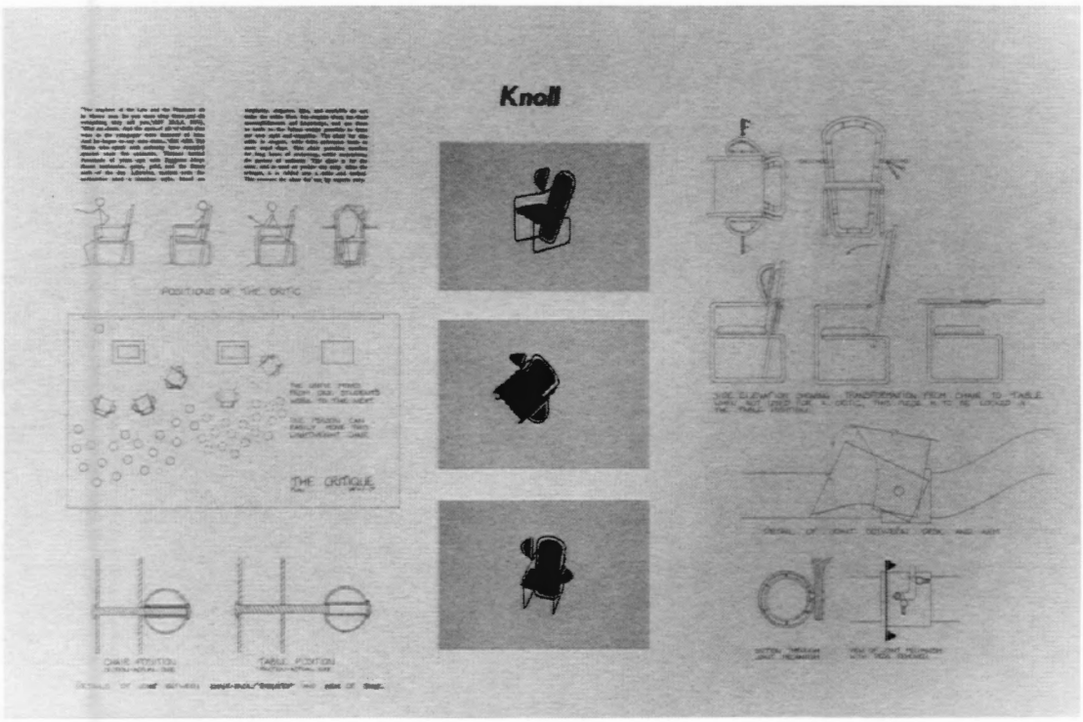
Frankie Del Toro
Fourth Place



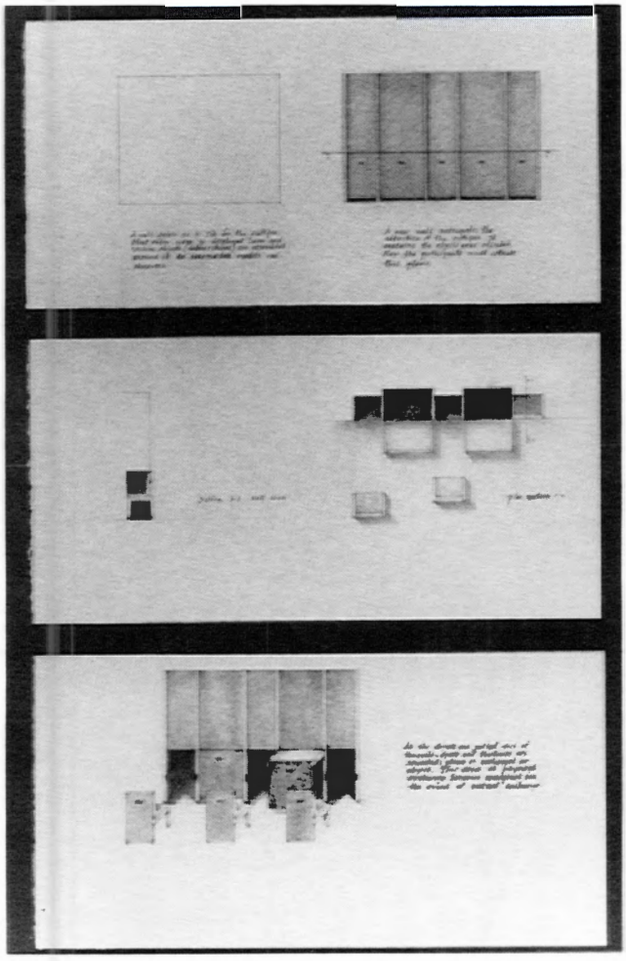
Ramon Corpuz
Fifth Place



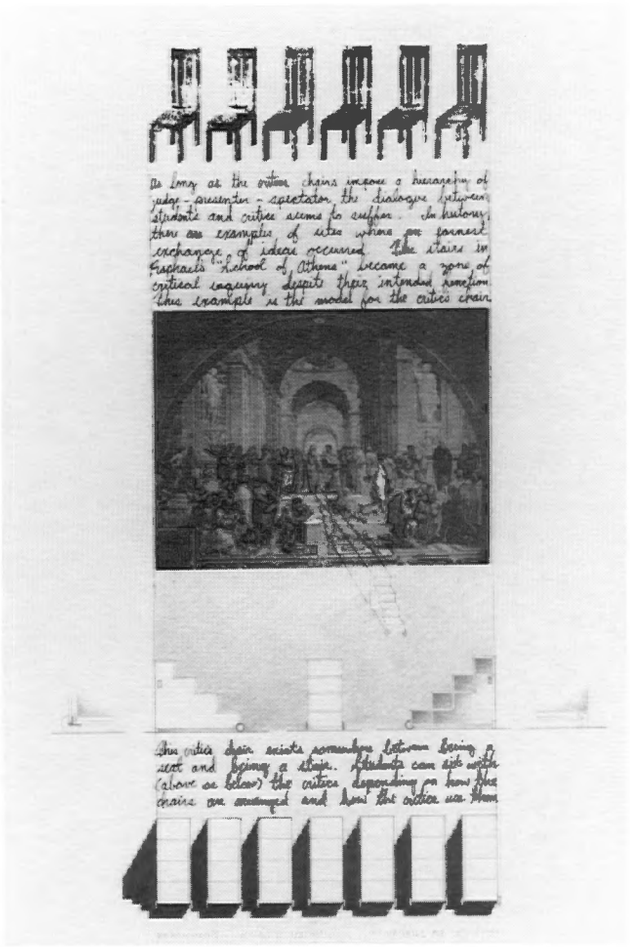
Knoll Competition
A Chair for a Critic
This is a new competition sponsored by the Knoll Corporation for Professional Year Two Students



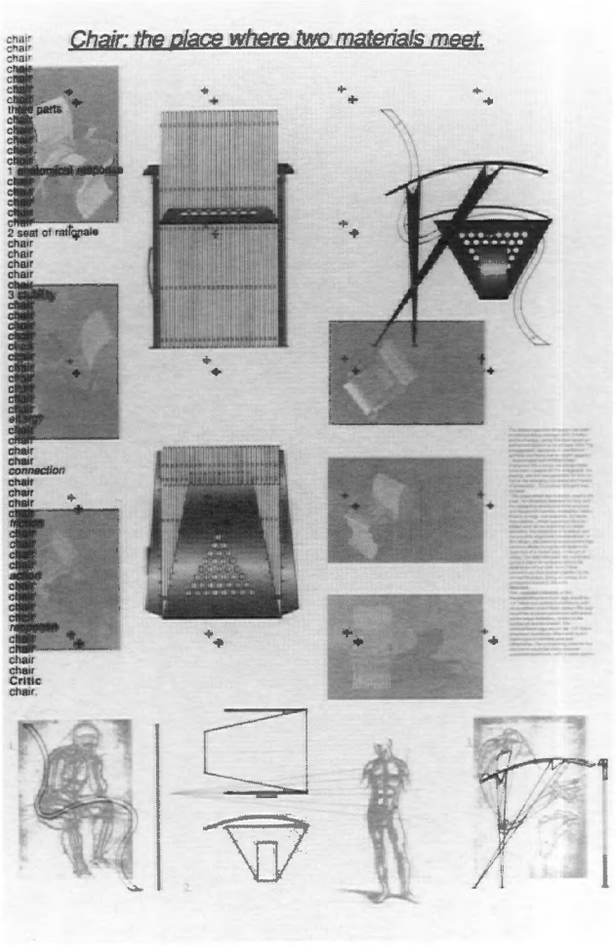
Leanne Wade
First Place



Kathy Fox
Second Place

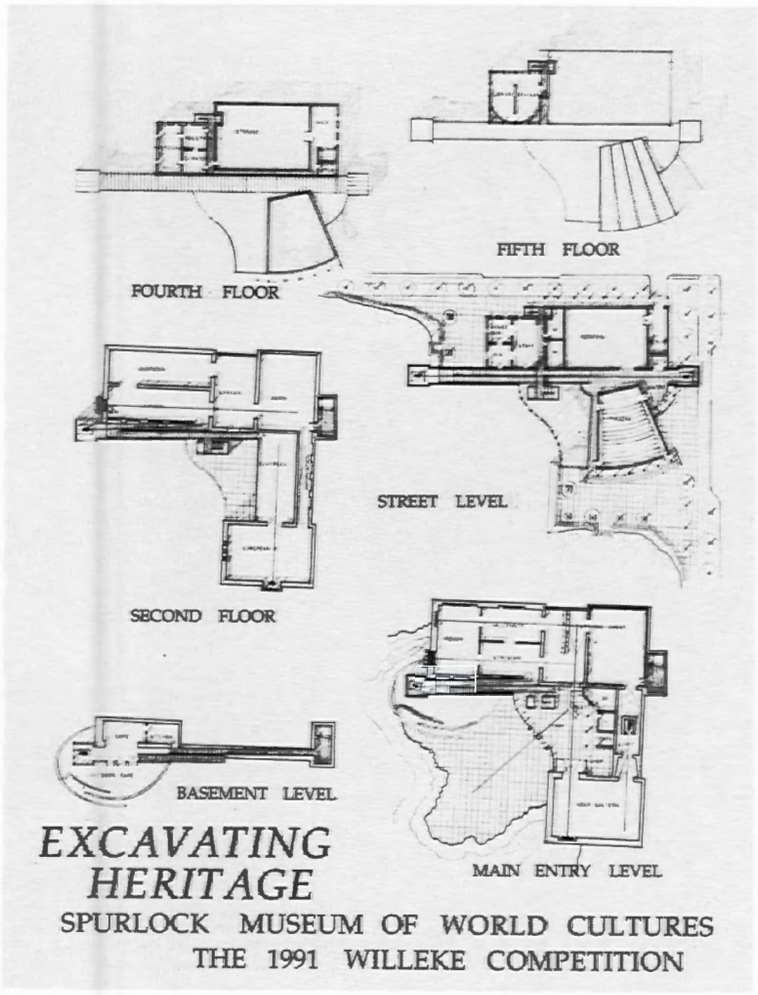


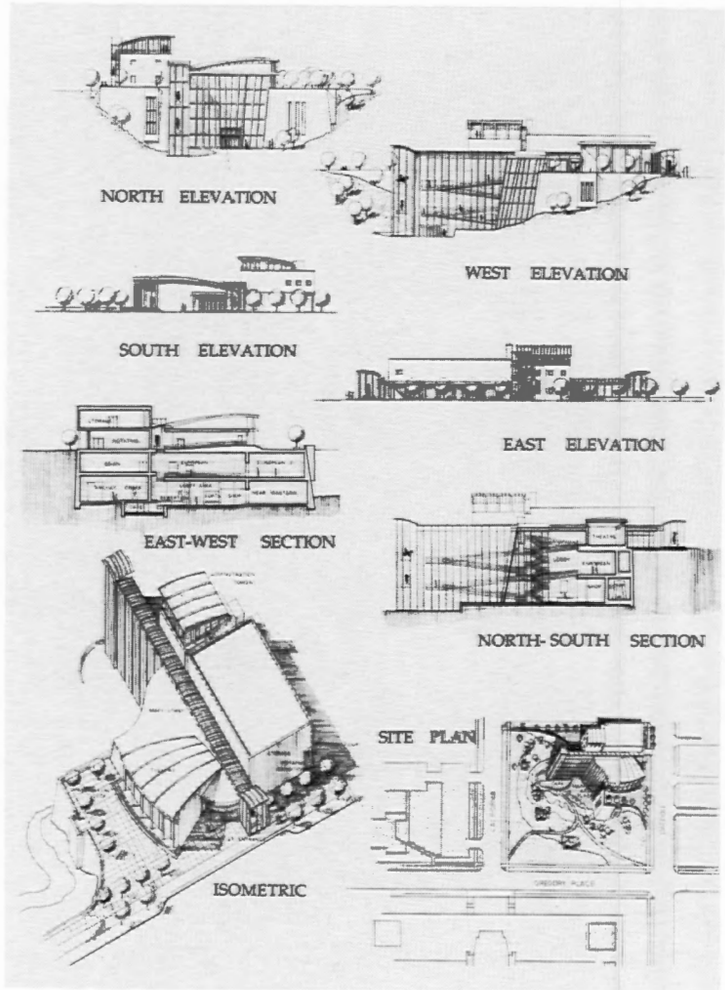
Eric O. Sutherland
Third Place



Simon Tomkinson
Finalist

1991 Willeke Competition
The Spurlock Museum of World Cultures
University of Illinois at Urbana–Champaign

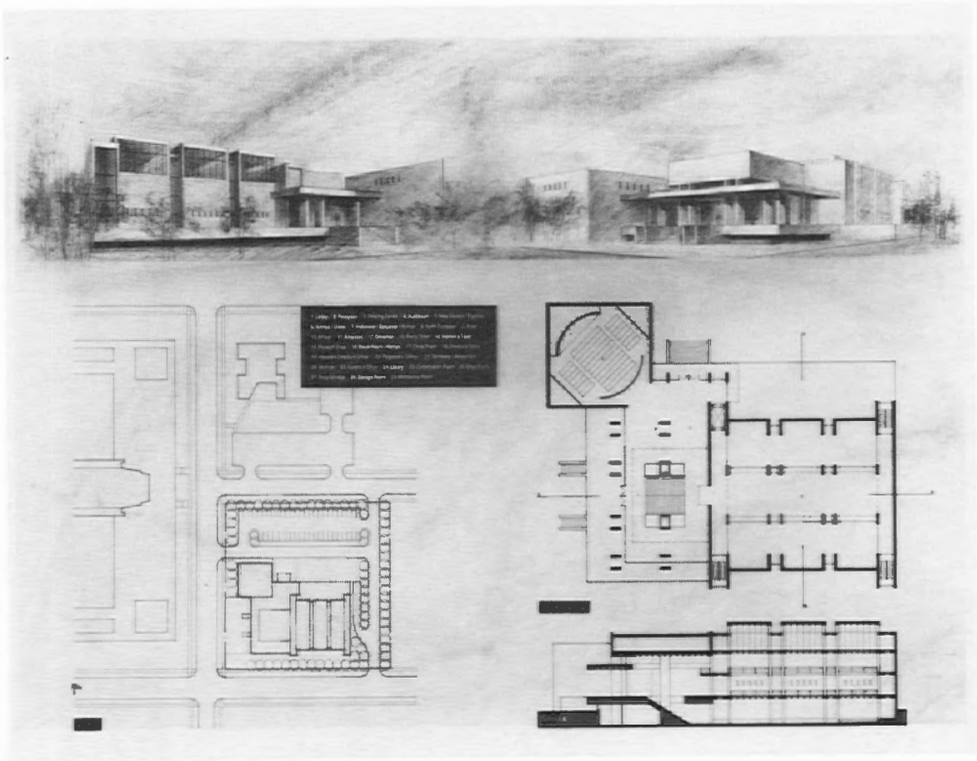


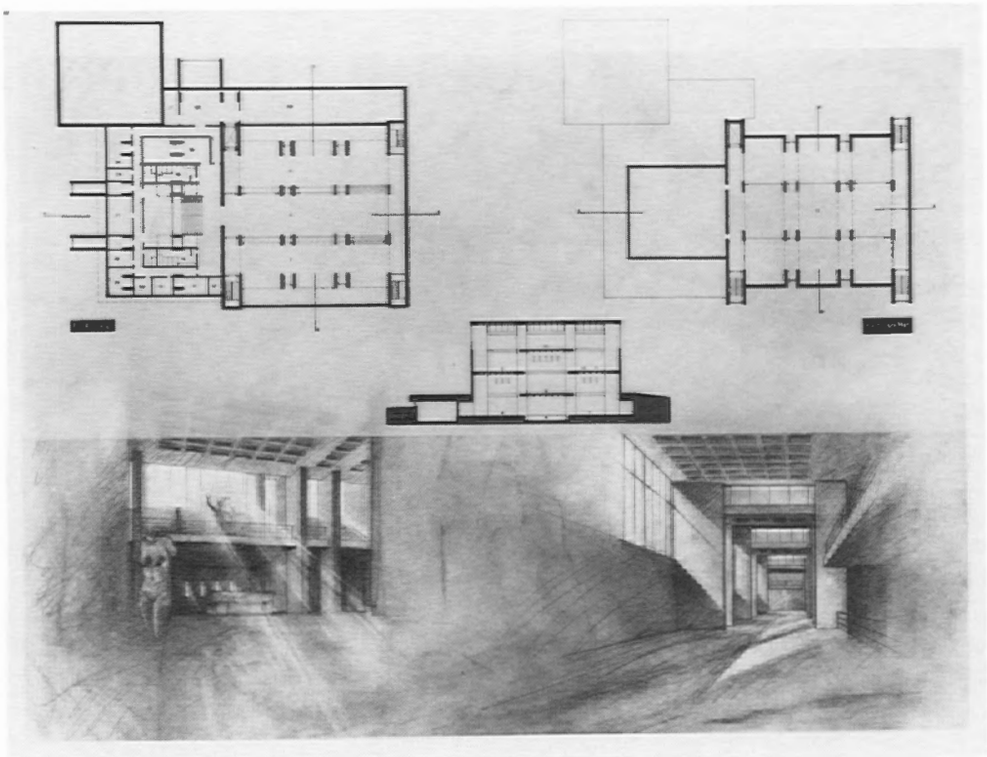


Thomas A. Born

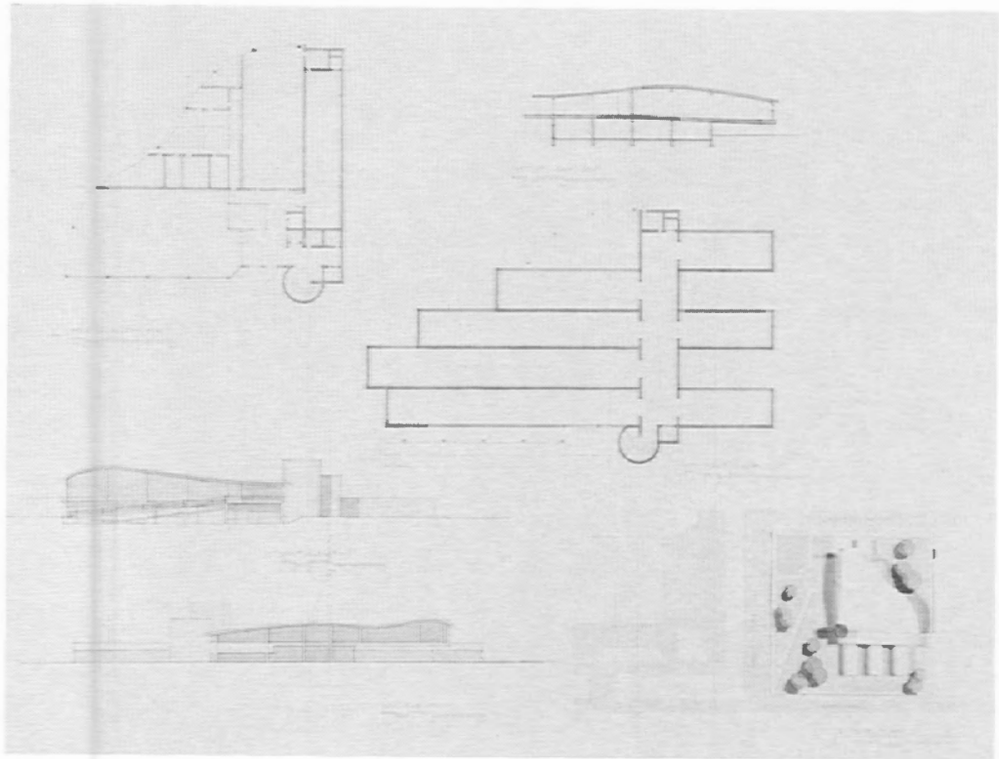
First Place

An attempt to 'excavate' the archaeological museum from the earth of the city. The permanent exhibition space of the museum is below street level, with the temporary exhibition space, administration tower, and theater above grade.

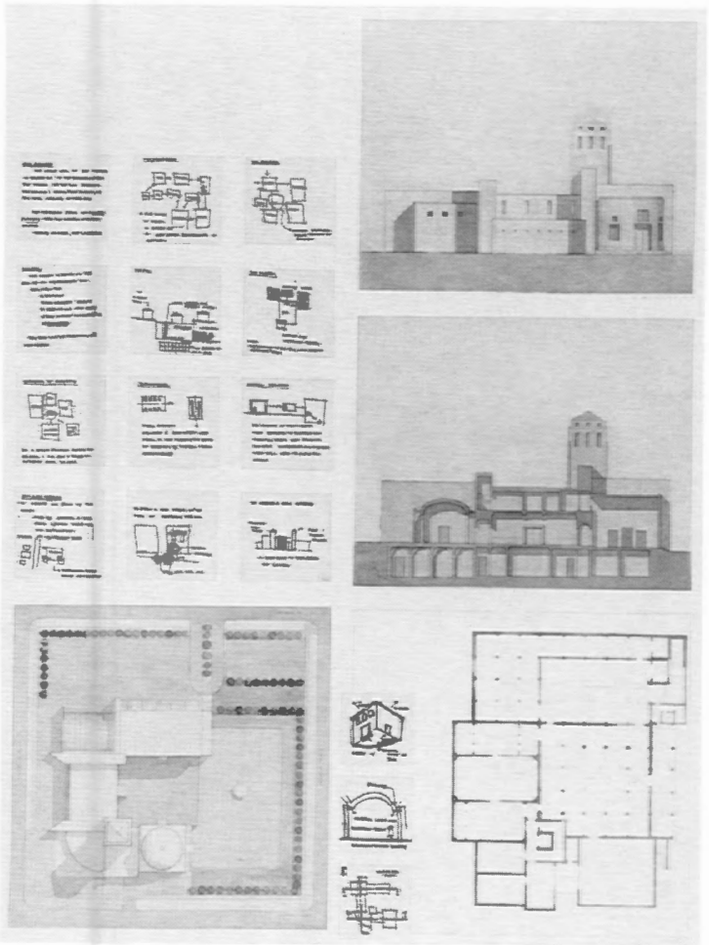


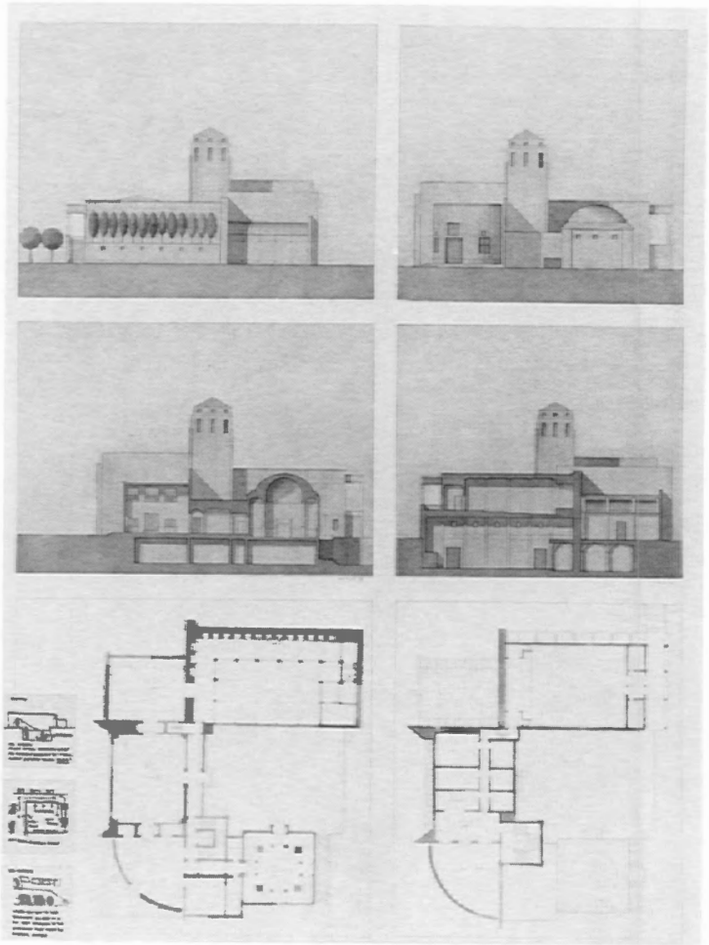


Steven Gerrard
Finalist

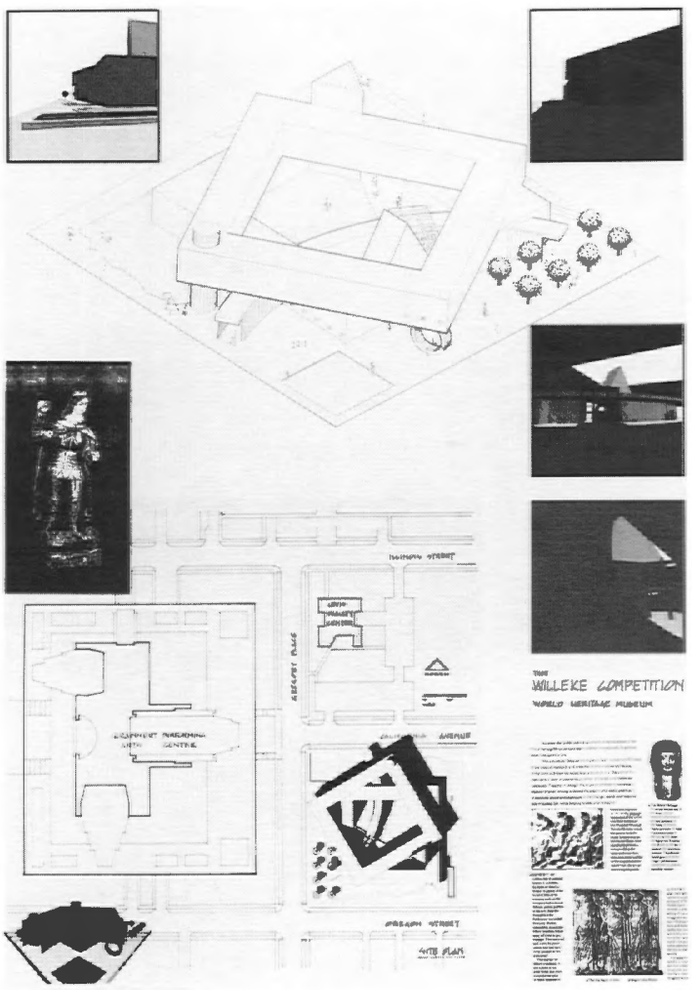


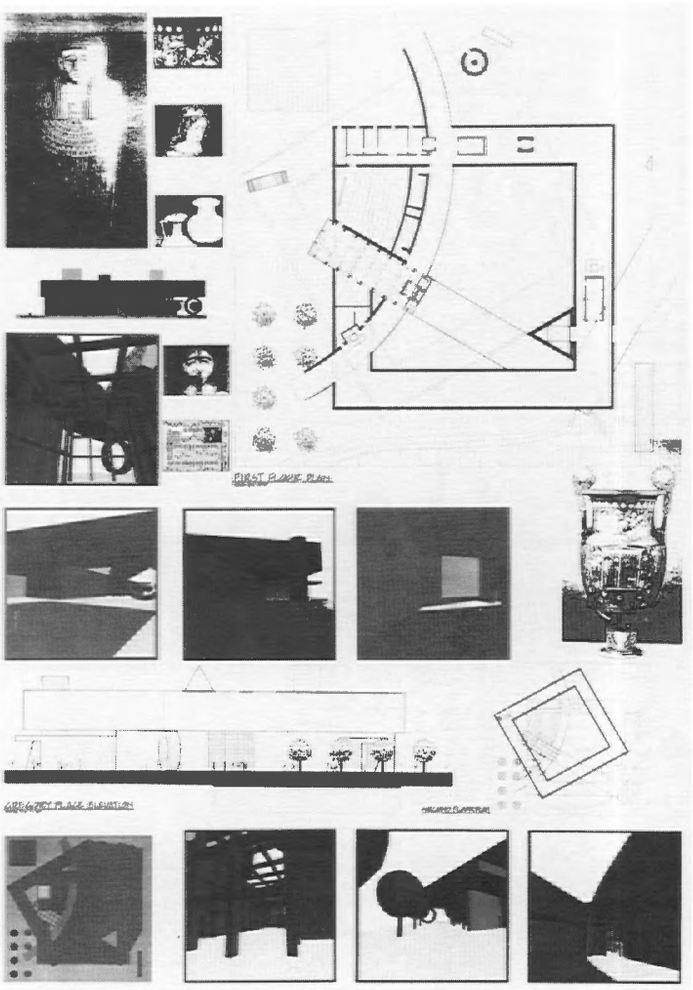
Karen Zak
Finalist





Dan Lichauco
Finalist





Conrad Heiderer
Finalist

Daniel L. Kirby is a Master's Degree student studying Architecture and Urban Planning.
Sharon Pedersen is a Master's Degree student studying Urban Planning.
Benyamin Schwarz is a Doctoral student in the College of Architecture and Urban Planning.
Emmanuel–George Vakalo is an Assistant Professor in the College of Architecture and Urban Planning. He spent a semester teaching at the Technical University in Vienna.
Richard Mitchell is a Master's Degree student studying Architecture and Urban Planning.
William J. Scott Jr. taught at the college from 1970 to 1989.
Hemalata Dandekar is a Professor here at the College of Architecture and Urban Planning.
Vassiliki Mangana is a Doctoral student at theCollege Architecture and Urban Planning.

Notes on **Papers and** Projects:

Iakovos Potamianos is a Doctoral student at the College Architecture and Urban Planning.
Nadia Alhasani is this year's *Oberdick Fellow* and is an instructor here in the college.
Brian Ferriby is a Master's Degree student here at the college of Architecture and Urban Planning.
Andrew Brockway, a Master's Degree Student, and Assistant Professor **Dean Almy** conducted the Thomas Mayne interview.
Thank you to **Tom Hille** for his contribution of slides to **Nadia Alhasani's** essay.
A special thanks to **Desktop Technologies** for their technical support.

Contributions to *Dimensions* and endeavors like it are greatly appreciated, especially in the light of current political stances towards the arts. Symbolic donations are welcome, and special mention is given to the following categories:

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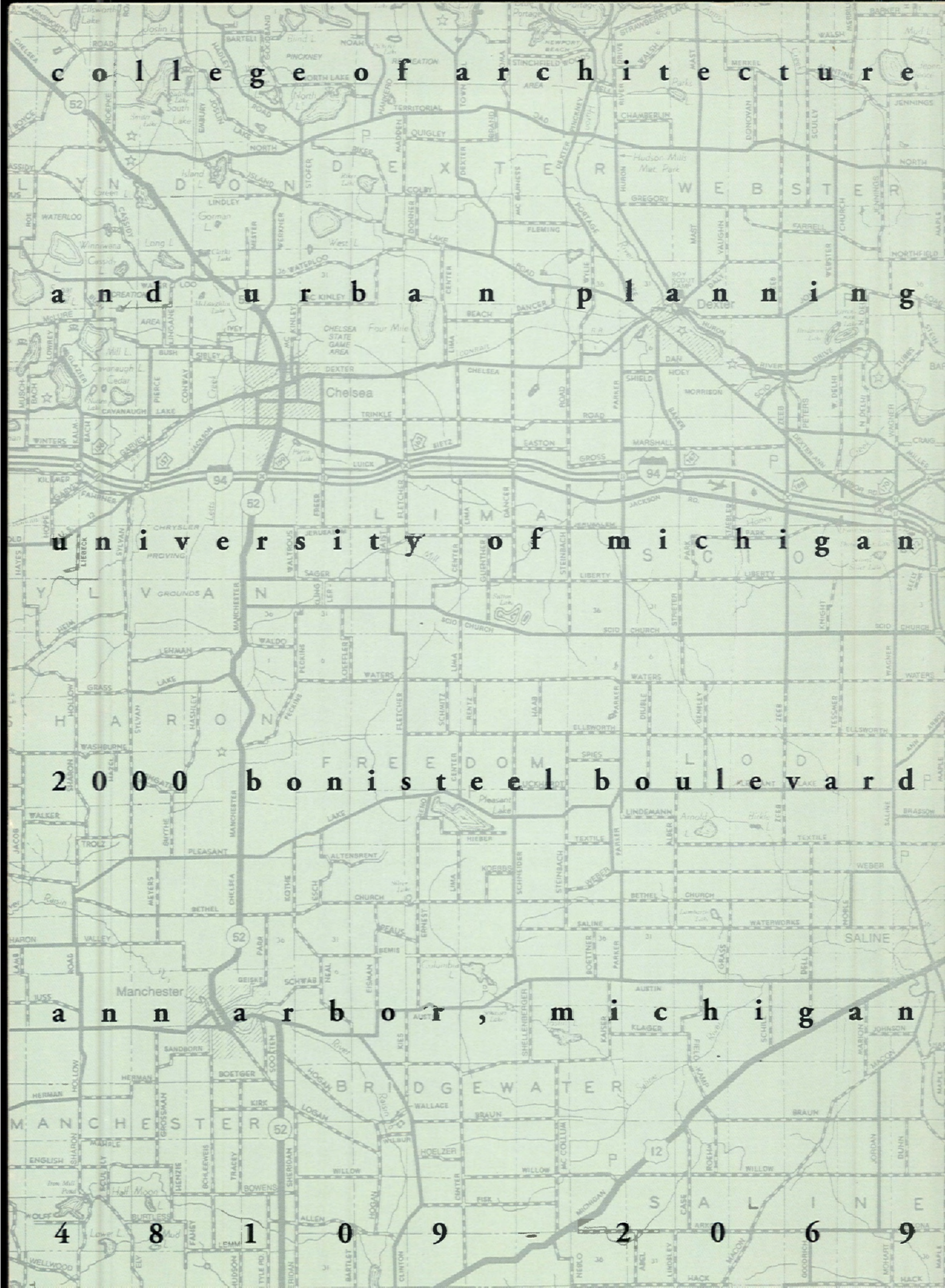

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and urban planning

university of michigan

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