LEARNING FROM TEACHING

A Case Study of a Fourth Year Studio on Urban Design

Edward Blume Wallace
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Submitted in Partial Fulfillment of
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ABSTRACT

The teaching of design studios is examined through a case study of a fourth year studio on urban design in a five year professional degree program (Bachelor of Architecture). It is based on material drawn from extensive observations at a notable northeastern Department of Architecture, Spring semester, 1975, and examines the teaching of that studio.

Recognizing that changes in society and the ways environments were being understood and created implied changes in the practice of architecture and the professional education of architects, this Department began to shift from emphasizing a single, "formalistic" approach of architecture in their curriculum to presenting diverse approaches of architecture and how to design--a multiple perspective approach to education.

The students in the observed studio both witnessed and experienced this shift and the problems of "being freshman designers every semester" when studios presented different approaches. Observations in the studio revealed that the teachers were presenting a different approach to architecture and how to design than the students had experienced in their previous seven studios. However the students did not often use the teachers' prescribed ways of designing while working on the urban design problem, thus frustrating the multi-perspective approach.

To investigate why many students were not operating as intended, the studio's context, the design problem, and the teachers' ways of designing are presented; a chronological account of what happened during the semester is reported; and the teachers' teaching and theories of teaching are examined. Their teaching was found to contribute to the
students not using the teachers' ways, and to the students missing opportunities for learning, both frustrating the students' learning by doing and their learning from doing—each essential for the multi-perspective approach to education. Having learned from their teaching, two refinements in the structure of design studios are proposed; the "practicum" to facilitate students' learning by doing, and "working papers" to facilitate their learning from their doing. Teachers and students alike are encouraged to begin to inquire into the theories of teaching and learning evident in their studio practice, when examining their approaches to architecture.

The research on which this thesis is based was initiated by the Architecture Education Study of the Consortium of Eastern Schools of Architecture, and funded by the Andrew Mellon Foundation.

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This thesis on the teaching of design studios is based on research initiated by the Architecture Education Study (AES) of the Consortium* of Eastern Schools of Architecture and funded by the Andrew Mellon Foundation. The AES research on the professional education of architects focused on "Learning in Schools" and "Learning in Practice," with the major commitment to "Learning in Schools" being a research group organized by Professor Julian Beinart. I was a member of this group.

This group's work began with efforts to establish its research focus and research design, which included reviewing previous studies of architectural education (Marian Moffett) and studies of other professions' education (Roger Simmons), and analyzing the study proposal and position paper of the Deans of the Consortium Schools (Florian von Buttlar). Professor Beinart and the research group also reviewed the literature on architectural education published since 1960. The group's review of this material and consultations with Professor Chris Argyris and the Deans resulted in a consensus

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*School of Architecture, Columbia University; College of Architecture, Art and Planning, Cornell University; Graduate School of Design, Harvard University; School of Architecture and Planning, Howard University; School of Architecture and Planning, Massachusetts Institute of Technology; School of Architecture and Planning, Princeton University; School of Architecture, Yale University.
on focus, method, and products—the design studio, direct observation, and case studies and essays.

Unlike previous studies of architecture education, several design studios (the primary arena of design learning) would be extensively observed and documented from beginning to end, and those observations would serve as the basis of case studies. Three studios, each in different schools and degree programs, were selected by the Beinart group for case studies following brief observations in three local studios.

One case study was to be based on an advanced studio in a five-year professional degree program. The administration of a notable Department of Architecture offering the five-year program invited AES into its studios. This invitation was accepted, and a fourth year studio was selected for the observation because of its more traditional urban design problem; the studio's teachers and students agreed to participate. This studio, selected to be the basis of the case study, became the basis of this thesis. (A modified version of this thesis serves as one of the three major case studies of design studios included in the Beinart study group report to the Architecture Education Study.) This studio was observed during the Spring semester, 1975, in the following manner.

Observation began without well-formulated hypotheses to be tested. This enabled the salient issues to emerge
from the studio rather than be imposed by the research.
Eighteen of the 43 scheduled class meetings were observed
during four visits to the university. In the studio,
discussions, criticism sessions (referred to as "crits"), and
design reviews were recorded on sixty hours of audio tape,
augmented by fieldnotes and sketches for seven of the fifteen
week semester. Contact with the students extended beyond
the scheduled meetings of the studio, including evening and
weekend work sessions, the students' lecture courses, the
school's lecture program, and coffee and dinner conversations.
Selected observations from these occasions are documented in
the fieldnotes.

These observations were augmented with structured
interviews with the two teachers, Hutchinson and Heath
(pseudonyms), at the beginning and end of the semester and
with eleven of the twenty-eight students (referred to as
S1-S11)*. Each of these interviews was recorded and lasted
approximately ninety minutes, adding another forty hours
of tape. Selected segments of the accumulated one hundred
hours of tape have been transcribed verbatim. These
transcripts, the fieldnotes, course handouts, and students'
work comprise the 1,250 pages of material that forms the
basis for this case study.

*Additionally, ten third, fourth, and fifth year students
(referred to as R1-R10) were interviewed about their
sequence of studio and course work.
While this was an urban design studio, the analysis of the course handouts and the teachers' comments about the design problem indicates that the studio was primarily concerned with how to design. Hutchinson and Heath introduced the urban design problem to the students as a vehicle for learning, and intended that the students use the teachers' prescribed ways of designing during the semester. These ways, which the teachers explained as being substantially different from many of the ways of designing the students had used previously, related to designing regardless of project size and were not unique to the teachers' views on urban design and how to make it. The analysis of what happened in the studio revealed that students, rather than using several of the teachers' prescribed ways, often relied on their own ways of designing when producing the assigned products.

This case study reports what was intended and what happened in the studio and considers several ways of explaining the discrepancy. These ways combine to form a view of studio learning which questions these teachers' theories of teaching. It also suggests two refinements for structuring design studios, especially appropriate for those in a multi-perspective curriculum. The refinements reflect the efforts in this study to learn from teaching.
ACKNOWLEDGEMENTS

Many people contributed to this research and to the process of creating a thesis out of the collected research materials; their assistance is acknowledged and appreciated. The are: the teachers and students in the studio, who allowed their daily activities to be observed, taped, and interrupted; the members of my Thesis Committee, Professors Don Schon, Julian Beinart, and Bill Porter, who provided close scrutiny of my ideas in their written form each at different stages of the thesis' development; the members of the Beinart study group, who provided feedback on the ideas as they developed, Roger Simmons, Marian Moffett, and especially Florian von Buttlar, who made considerable comment on earlier drafts; friends not connected with the research, like Tom Nally, who repeatedly heard about Hutchinson and Heath over lunch; Tobie Atlas, who reviewed and edited the thesis; Dena Feldstein and Maijaleena Elkins, who edited earlier drafts; and lastly, Jackie Wallace, who remained patient and supportive throughout the entire project.

Although these people contributed to and assisted in the preparation of this thesis, the observations, inferences, and analyses made in this thesis are the author's (unless otherwise noted), and do not necessarily represent the views of these people, the Deans of the Consortium, or the Andrew Mellon Foundation.
INTRODUCTION

A CHANGING PROFESSION: ONE DEPARTMENT'S RESPONSE AS REFLECTED IN A DESIGN STUDIO

This Department of Architecture, along with many others in the late 1960's and early 1970's, recognized that changes in society and the ways environments were being understood and created, implied changes in the practice of architecture and the professional education of architects. The Department's catalog, 1974-75, explains:

With the changes taking place in world society, the architectural profession in the future will be very different from today. This is not to say that architecture will abandon its traditional functions but that new factors will affect the profession—the emergence of regional ecology, the application of the social science, the shift from the construction of buildings to the whole building process, the evolution of design methodology, the revival of large-scale design and the emergence of new roles for the design profession. In general, architects are less and less called upon to design for individuals and must see the client as society at large. Thus, architectural education must assess what the total environment asks of the architect.

While the "new factors" expected to make "the architectural profession in the future...very different from today" are clearly noted in the statement, the differences in the practice of architecture are not. On one hand the statement says,

The architect...[will] not be the exclusive designer of the environment, but will perform the task within a total framework and in close relationship to other professions.
While on the other hand it says,

While the larger environmental problems are the concern of a number of disciplines, architecture as a profession may be more narrowly defined in terms of those services it performs that characterize its distinct role in giving concrete three-dimensional form to the physical environment.

Whether the architect is to have the "distinct role" of form-giver in the future or not is unclear, although the statement goes on to describe how architectural education at this school plans to respond to "what the total environment asks of the architect."

The nature of the field calls for an undergraduate education that establishes a broad understanding of human values and social problems, as well as the theoretical and technical base of professional competence. In meeting these objectives, the undergraduate professional program structures the exploration of a wide range of architectural issues and scales of involvement, and provides the opportunity to develop particular emphasis that may become a basis for specialized studies at the graduate level.

The Department administration's commitment to the "new factors" resulted in a commitment to "the exploration of a wide range of architectural issues and scales of involvement" in their professional program. This, in turn, lead to changes in faculty, courses, and curriculum.

Due to budgetary limitations, the administration dis-assembled the existing design faculty in order to create vacancies for a diversified faculty in specialized areas of architecture (such as Industrialized Building), in complementary disciplines (such as social sciences), and in
approaches to architecture and ways of designing. This shift in appointments created friction and dissension among the teachers, students, and administration, and is still a topic of conversation throughout the school.

The new faculty's efforts to respond to the changing practice of architecture through the "exploration of a wide range of architectural issues and scales of involvement" resulted in studios presenting new topics and different approaches to architecture and ways of designing. As a result, the studio came under criticism by those who thought it inappropriate to deal with some of these topics and those who thought the design emphasis inappropriate for the students' diverse professional aspirations. A variety of new courses was added to the curriculum, including introductory and theory courses, as well as a number of specialized studios.

To accommodate these new courses, the curriculum requirements were changed. When the faculty had shared a particular view of architecture, prerequisites were used to structure the sequencing and simultaneous enrollment of courses to facilitate the students' integration of the contents. The faculty relaxed some of those prerequisites and allowed students to select more courses appropriate to their diverse professional aspirations. Decreasing the controlled juxtaposition of courses shifted much of the responsibility for integration to the individual student. The studio, long regarded as the arena for integrating courses, no longer functioned in that capacity. The studio teachers advocated
their own particular approaches to architecture, and focused on developing skills appropriate to those approaches.

The diversification of the faculty and the curriculum, and the relaxing of course juxtaposition combined to make studio learning more complex than before. Two of the department's graduating seniors (referred to as R8 and R9) contrasted their experiences with the previous curriculum and its faculty with what younger students had told them about the newer program.

R8: I had a very cumulative design sequence, it was very obvious from one step to the next... I studied under a clique... [Although] the vocabulary of language, as well as the teaching technique were almost cryptic, we were able to communicate because we'd been dealing with the same vocabularies all along. But I imagine that if I had been trained... the way things are now--where there is an amazing collection of different people and different ideas--I would be much more contradictory, or I wouldn't be here. It's very confusing... Most of the people now second semester, third year students [who] have been going through this new curriculum have no ability to design. Their work is terrible. With each semester they could get a new attitude towards what they are doing, and it's like they're freshman designers again every semester. (Interview)

R9: Continuity from one studio to another? When my class first came to [this school], I would say that there was no question that it was a very continuous process from freshman to fifth year... At the present time, I think there is no continuity whatsoever in the curriculum... as far as design goes, which I think is unfortunate.
R9 continued,

Even though the previous...set of courses was maybe a little overbearing, at least it gave you a whole set of rules and disciplines by which you could design buildings. I don't think that this is the case any more. In fact, talking to second and third year people, I would say they are very dissatisfied with what they are going through right now. Because they really don't see where one thing begins and one thing ends, and whether they are in fact building a catalog, or a whole set of theories that they can use in solving their architectural problems. (Interview)

Thus the diversified curriculum posed problems and dilemmas for the teaching of architecture students not encountered in the previous curriculum. While students had the opportunity to sample several approaches to architecture, they were to integrate their courses, and synthesize the diverse approaches, without faculty supervision, as well as readily shift design approaches from one semester to the next. As a result the students developed limited competence in several rather than greater competence in one particular approach.

This tradeoff of depth for breadth, however, has the benefits of any multi-perspective approach to education. The students use and explore several approaches and attitudes toward architecture, and from their experiences, form or select those upon which they will act in professional practice. Another advantage of the multi-perspective approach is that when undergraduate students choose this school, for example, they do not necessarily have to choose a particular
architectural polemic. (Students in the observed studio explained that they based their selection of this school upon the reputation of the university as a whole and the distance from their homes [all students interviewed were from the same state as the university or a neighboring state]. Few students had thought that the Department might have a bias; those who did, were unaware of it when they selected the school.)

Observations in one of the Department's fourth year studios, three years after the transition to the more diverse curriculum, revealed that the teachers, Hutchinson and Heath, were indeed presenting a different approach to architecture than the students had experienced in previous studios. This studio included more structured and less intuitive ways of designing, a departure in size and scale from the problems students had done in architectural design studios to the urban design problem, and the structuring of the "studio as an urban design firm" requiring students to operate in different ways as designers as well as different ways as students. However, the students did not often use the prescribed ways of designing while working with the urban design problem, nor were they observed comparing these teachers' approach with those of previous studio teachers.

The multi-perspective approach to education required that students take a more active role in their professional education. They could no longer rely on the Department to determine
which approach to architecture was valid. The Department's responsibility was to provide students with teachers who offered different approaches. It was the students' responsibility to try them in different studios, and to form or select their own attitudes and approaches out of their experiences. When, where, and with whose assistance they were to determine these approaches on which they would act professionally, however, remained unresolved. The Department's response to the changing profession, diversifying its faculty, was only a partial success. Since the students did not readily use the teacher's particular approach, the value of presenting different ones was diminished. As a result, their ability to select their own from experience was substantially limited.

This case study presents the studio's context (Chapter 1); the urban design problem and the teachers' ways of designing, (Chapter 2); a chronological account of what happened during the semester (Chapter 3); and an analysis of both the students use of the teachers' approach and the "studio as a design firm" (Chapter 4). The teaching of this studio is then examined (Chapter 5). The study concludes with two proposals for the teaching of design studios (Chapter 6).
CHAPTER 1
THE STUDIO'S CONTEXT

This Department of Architecture, along with the Department of Fine Arts and the Planning Departments (Policy Planning and Regional Analysis; Urban Planning and Development), form one of the major Colleges in this University. The College's enrollment exceeds 650 with over sixty full-time and visiting teachers. Over half of the students and faculty are in the Department of Architecture. The University of 15,000 students is located in a town with a population of 40,000, an hour's drive from the closest urban center. The University is one of the town's major industries.

The College offers a range of degrees too numerous to list. The Department of Architecture's degrees include a four-year Bachelor of Fine Arts with a major in Architecture; a five-year professional degree--Bachelor of Architecture; and an advanced professional two-year Master of Architecture degree. Other degrees offered in the College include Masters of Regional Planning, Landscape Architecture, and several special topic programs, plus Ph.D. programs in Planning, the History of Architecture, and Urban Development.

The curriculum for the Bachelor of Architecture requires nine semesters of design studios plus a thesis or a final design studio. Also required are four semesters of architectural history and four of introductory theory, eight courses
on structures and environmental controls, and a course on professional practice. The remaining course requirements are loosely specified electives from inside and outside the college. Only thirty of the 170 units required for this degree are to be taken outside the College, i.e., in disciplines other than architecture, planning and the fine arts.

The fourth year is the first opportunity students have to select studio teachers or topics. Those in the observed studio selected the urban design option rather than the other two in the curriculum (Architecture, and Architectural Technology-Environmental Science). Their selection was reportedly based on the topic rather than the teachers. The design problem was the rejuvenation of New York City's Civic Center in Lower Manhattan by adding one to three million square feet of new municipal office space and supporting functions. (This problem is described in Chapter 2.) Although several students had done large scale design problems in previous studios, (such as campus design, the Welfare Island Competition, the fall 1974 Urban Design Studio), many anticipated that the studio would enhance their distinction between architecture and urban design.

In addition to the studio, these students registered for three or four lecture courses. The two required for Spring semester of the fourth year were professional practice and the last course on technology which consisted of a weekly two hour guest lecture on the integration of technology in
design by a representative from industry or architectural practice. The two electives listed in the catalog for this semester could be within, or one could be outside the college. The catalog explains that fourth year students are "expected to take recommended elective courses that relate to the studio concentration." However, few students in this studio registered in related courses. Rather, their electives ranged from photography to American foreign policy.

The twenty-eight students registered for this studio were in the five-year Bachelor of Architecture degree program; all but seven were in their second semester of their fourth year. Of these seven, four were taking the studio for first semester fourth-year credit, two for third-year credit; and one for fifth-year credit. Only three had transferred from other architectural programs. There were three women and five minority men.

The students had completed their first year before the major changes in faculty had begun, and therefore had a basis for comparing the two programs. Their opinions on what they described as a "formalist" emphasis in design, characteristic of the school during their first year, vary substantially. The students' attitudes towards "formalism," the strategies used to reshape the school, and the new faculty will be evident in their responses to the urban design problem, the studio teachers, and the prescribed ways of designing.
Professor Hutchinson, who played a major role in structuring and running the course, had been teaching at this school for thirteen years. He was a tenured professor, originally from the Southwest United States where he had earned his professional degree and taught for two years before moving to New England to do his Masters in Architecture. He not only weathered the change in the school, but several students remarked that he was both an actor and a sympathizer in that change. By contrast, Heath had been at this school only two years following two years of teaching on the West Coast. He was from England where he had earned his professional degree and worked in urban design and architecture for seven years with an internationally known British architectural office. He was one of the "new" faculty who had been brought into the school. (Students frequently expressed that these "new" faculty did not possess the architectural competence of those who had been fired. They did not consider Heath an exception.) His two-year contract was renewed during this semester. In addition to this studio, Hutchinson advised thesis students, Heath co-taught a second-year theory course, and both worked professionally on small architectural projects.

Several students in this studio had taken others with Hutchinson, including his fall semester on redesigning the campus. None of the students had taken a studio with Heath
(his initial responsibilities were with first and second year courses). Three of the interviewed students had taken the urban design studio, a Convention Center, also in New York City, in the fall semester. Other student projects included housing, schools, retreats for an artists' collective, churches, commercial buildings, museums, and outdoor theaters. The students described several approaches they had used in these projects, three of which they identified as "formalist," "organic," and "design methodology." The teachers described the approach to be used in this studio as "transformation."

The "transformation" approach and the urban design problem implied several changes for the students, including changes in the scale of the problem, the specificity of the problem and program, how students design, the products students produce, the use of criticism sessions and the function of reviews, and the issues to be discussed.

While change was evident in many aspects of the studio, it still seemed traditional: students designed buildings and presented them in conventional means (plans, sections, elevations and scale models); they researched, collected data, and designed and developed various schemes; teachers gave crits during the twelve scheduled hours each week in a large open studio; and work was discussed at reviews by guest critics including other architecture faculty and people affiliated with the design problem. The changes become evident in the more specific descriptions of what was
intended and what happened in the studio. These descriptions follow.
CHAPTER 2

THE URBAN DESIGN PROBLEM: "THE MANHATTAN CIVIC CENTER"*

New York City's Civic Center in Lower Manhattan provided this urban design studio's semester long project. The Civic Center, encompassing City Hall Park and Foley Square (Ill. 2-1) includes federal offices, city offices and court buildings, and non-governmental buildings. Many of the structures have historical and architectural significance, such as the Tweed Courthouse, McKim, Mead and White's Municipal Building, and the Woolworth Building. Several are registered landmarks.

In their two page introductory statement describing the Civic Center, the teachers explained the City's plans:

The intention of the City is to make this area the 'premier civic center in the country.'

The main feature proposed to give impetus to redesigning the area is a new municipal office building.

If the impetus for redesigning the Civic Center was the new office building, the impetus for the office building was the city's wish to "consolidate municipal functions and reduce expenditures on office space." The city, in addition to the publicly owned offices, leased almost three million square feet of office space in Lower Manhattan to accommodate

*All diagrams and drawings in this study are the teachers' or students' unless otherwise noted.
Illustration 2-la: The Urban Design Problem

Department of Architecture

Critics: 

Problem Issued: January 27, 1975
Problem Due: May 12, 1975 (Noon)

THE MANHATTAN CIVIC CENTER

The area of Lower Manhattan around the City Hall (built between 1802-1812) is called the Manhattan Civic Center because City, State and Federal Offices are concentrated in this area and relate to two large existing open spaces -- City Hall Park and Foley Square. The wall of buildings on the west side of Broadway forms a clear boundary to the site. Buildings along Park Row close the southern end of City Hall Park. The Municipal Building and the Court Buildings form the western boundary which is defined by the Brooklyn Bridge ramps. To the north the typically aspatial new Federal Office Building, can be seen standing within the site bounded on the north by the city office building with its clock tower on Broadway and running along the south side of Leonard Street. To the east of the old Municipal Building a number of new buildings have been constructed or are in construction. These include the new Police Headquarters Building, the new Detention Center and the Telco-Downtown Commercial High School.

Chambers Street has developed as a Commercial area relating directly to the Civic Center and implying continuation into the site. The possibility of closing Chambers Street to vehicular traffic -- at least at certain hours has been under study by the City. To the south of Park Row, Nassau Street starts as a linear shopping strip which relates to the Wall Street area. It is already operating as a pedestrian mall between Spruce Street and Maiden Lane from 11 am. to 2 pm. during the lunch hour shopping period.

The Civic Center and surroundings contain an unusually large number of surviving historic buildings for Manhattan. Many of these buildings have been designated New York City Landmarks, or National Historic Landmarks -- among them The City Hall, The Tweed Courthouse, The Hall of Records, St. Paul's Chapel, The New York County Courthouse, and perhaps the most imposing -- The McKim, Mead and White Municipal Building of 1914 which detaches a layer of colonnaded base forming a forecourt skewered by a grand arch on the Chambers Street axis.

The intention of the City is to make this area the 'premier civic center in the country'. Because the area is not permeated by cars since it is out of the regular Manhattan street grid and also since it is not subject to speculative development because it is publically owned, it provides a unique opportunity to create a significant and relatively stable piece of 'urban design' in New York.

The main feature proposed to give impetus to redesigning the area is a new municipal office building. At the present time the City leases nearly three million square feet of office space in Lower Manhattan -- below Canal Street. They would like to consolidate municipal functions and reduce expenditures on office space.

The site designated by the Office of Lower Manhattan Development for this new building is between Broadway on the west and Elk Street; and Duane Street on the north and Chambers Street on the south. The present zoning would allow for less than two million square feet of office space to be built. The City could conceivably violate it's own zoning if necessary--or at least for the purpose of this academic problem it could be assumed that the site could be expanded within reason and perhaps an incremental growth system could be developed to allow for present and future needs.

In organizing the office space consideration should be given to placing those agencies which generate a lot of public traffic where they are not only physically but also visually readily accessible.

Other elements needed on the site are: a post office, a small city museum, a theater-auditorium with meeting facilities for group civic functions; restaurants, and eating facilities, etc.

When completed this area will become even more of a public and tourist area than at present, so proposals which respond to and capitalize on these needs are in order.

A specific program for the municipal building is not available, however, the intention is to provide as much office space as feasible and to include commercial space as a continuation of the commercial facilities existing in the area.

Although the program is undetermined except in general terms the intention is to make the civic center a functionally cohesive unit, and more importantly an active urban place where the potentials existing in the area are linked into a whole network with a new overall symbolic meaning.
Illustration 2-1b: Orientation Drawings

These two drawings are adapted from studio materials by this observer to illustrate the major existing buildings in the Civic Center.
various city agencies. The new building would bring the scattered agencies together and hopefully reduce expenditures.

The project was further described as a unique urban design opportunity.

Because the area is not permeated by cars... and not subject to speculative development..., it provides a unique opportunity to create a significant and relatively stable piece of 'urban design' in New York.

According to the statement, no specific program for the new municipal office building was available although it did designate a specific site, acknowledge city zoning restrictions (less than two million square feet would be permitted, if the city did not violate its own regulations), and list related functions "needed on the site," including a post office, a city museum and eating facilities. Other comments suggested that those agencies which dealt directly with the public should be physically and visually accessible, that as much space as feasible should be provided, and that commercial space should be included. The final paragraph of the statement focused on the Civic Center:

Although the program is undetermined except in general terms the intention is to make the civic center a functionally cohesive unit, and more importantly an active urban place where the potentials existing in the area are linked into a whole network with a new overall symbolic meaning.
This two page statement began the twenty-six page Introductory Handout distributed to the students the first day of the studio. Illustrated with aerial photographs, plans and axonometric drawings of the Civic Center, it included the "Working Procedure," the "Schedule," "Program Material," and the seven page "Phase I" assignment. The "Working Procedure" and "Schedule" reveal the teachers plans for the fifteen weeks of studio work.

The "Working Procedure" (Ill. 2-2) explained that "as an experiment," the studio would simulate an urban design firm with the teachers as principals, and the Office of Lower Manhattan Development (OLMD) as the client. The students were "to make proposals to the city for the development of the Manhattan Civic Center area." The simulation required that students work in groups, producing information "in digested and concise form and in a specified format." This information, which was to be compiled in a booklet, would help students determine "viable basic alternative" proposals for the Civic Center area. Selected alternatives would then be developed either in groups or individually. The "Working Procedure" concluded noting that the studio's work could be "of use to the Office of Lower Manhattan Development if presented in a structured way." The phases of the work and the expected products began to surface in this one page document.
Working Procedure

This problem is to be run as an experiment—a simulation of an urban design office that has been given the commission to make proposals to the city for development of the Manhattan Civic Center area. __________ and __________ will act as principals in this firm.

The rationale for organizing the problem this way is that in urban design it is clearly not possible for a designer to work entirely individually. It is necessary to interact with many people in various capacities and interests—professional, political, economic, social, technical, etc. (See Jonathan Barnett article: Urban Design as Part of the Governmental Process in Architectural Record January, 1970.)

Another factor determining the problem structure has to do with mobilizing the number of people involved (close to 30) in a resourceful way. Since so many independent factors limit final urban design decisions at a synthetic level, the range of these constraints that an individual could generate or determine—let alone encompass—is substantially less than that of a larger group.

As a procedure, therefore, we intend to organize work groups at each of the first phases of the study that will be charged with the responsibility of presenting certain things in digested and concise form and in a specified presentation format. This material will then be collected in a booklet that will belong to the whole group as a design framework which will facilitate dealing with the problem on a conceptual level. Once the many factors have been articulated and made permanently visible their interaction can be tested in a bounded field rather than an open ended one, and decisions can be viewed in terms of viable basic alternatives.

At a later phase it will be possible for each student to select a specific alternate proposal for a more detailed level of development and then to work individually or in groups for the remaining time.

The overall purpose of this framework is to develop connections between relevant facts, observations and architectural ideas. Our work could also be of use to the Office of Lower Manhattan Development if presented in a structured way.
The "Schedule" (Ill. 2-3) indicated the tasks to be accomplished, the allotted time, and the expected products in terms familiar to an architectural design studio. It began with "Information gathering, research, analysis and interpretation," referred to as "Phase I" on the assignment handout, including two weeks for work and one week for presentation of the "Finished drawings," and culminating with a Review, February 14, during the regular 2:00 to 6:00 P.M. meeting time. The second phase of work, "Building massing and site alternatives," was to take two weeks (including presentation) concluding with the February 28 Review of "Finished drawings & models" and diagrams listed for the February 21 Review. Next, the "Precise development of basic alternative building and site strategies" was to last four weeks (including presentation) through the preliminary reviews, until the April 4 Review of "Finished drawings and models." Following this review, three weeks were to be spent in "Detail development of proposals," followed by two weeks for "Final presentation" for the "Final Review--Finished drawings and models," May 12. The last nine weeks of work comprised Phase III.

A quick look at the "Schedule" will illustrate the role of the "urban design firm" metaphor in the setting of the studio work. The "principals" set a tightly structured program of work. A review of the assignments in Chapter 3 will reveal the highly prescribed set of specific, collective
Illustration 2-3: "Schedule"

**Department of Architecture**

**SPRING 1975**

**Critics:**

- Problem Issued: January 27, 1975
- Problem Due: May 12, 1975 (Noon)

**SCHEDULE**

All meetings will be in W. Sibley 102 unless announced otherwise.

Work prior to April 7 will be in groups, after April 7—optional individual or group work.

<table>
<thead>
<tr>
<th>Date</th>
<th>Activity</th>
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<tbody>
<tr>
<td>Jan. 27 - Feb. 7 (2 weeks)</td>
<td>Information gathering, research, analysis and interpretation.</td>
</tr>
<tr>
<td>Jan. 27 Mon. 2:15 pm.</td>
<td>Introduction - assignment of topics</td>
</tr>
<tr>
<td>Jan. 29 Wed. 4:30 pm.</td>
<td>Meeting to discuss N.Y. trip</td>
</tr>
<tr>
<td>Jan. 31 Fri.</td>
<td>- New York - Meet at Office of Lower Manhattan Development, 2 Lafayette Street</td>
</tr>
<tr>
<td>Feb. 7 Fri. 2:15 pm.</td>
<td>Review</td>
</tr>
<tr>
<td>Feb. 10 - Feb. 14 (1 week)</td>
<td>Presentation</td>
</tr>
<tr>
<td>Feb. 14 Fri. 2:15 pm.</td>
<td>Review - Finished drawings</td>
</tr>
<tr>
<td>Feb. 17 - Feb. 21 (1 week)</td>
<td>Building massing and site alternatives</td>
</tr>
<tr>
<td>Feb. 21 Fri.</td>
<td>Review - Models &amp; Diagrams</td>
</tr>
<tr>
<td>Feb. 24 - Feb. 28 (1 week)</td>
<td>Presentation</td>
</tr>
<tr>
<td>Feb. 28 Fri.</td>
<td>Review finished drawings &amp; models</td>
</tr>
<tr>
<td>Mar. 3 - Mar. 21 (3 weeks)</td>
<td>Precise development of basic alternative building and site strategies</td>
</tr>
<tr>
<td>Mar. 7 Fri.</td>
<td>Review</td>
</tr>
<tr>
<td>Mar. 21 Fri.</td>
<td>Spring vacation</td>
</tr>
<tr>
<td>Mar. 24 - Mar. 28 (1 week)</td>
<td>Presentation</td>
</tr>
<tr>
<td>Mar. 31 - Apr. 4 (1 week)</td>
<td>Review - finished drawings &amp; models</td>
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<tr>
<td>Apr. 4 Fri.</td>
<td>Presentation</td>
</tr>
<tr>
<td>Apr. 7 - Apr. 25 (3 weeks)</td>
<td>DRAFT development of proposals</td>
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<tr>
<td>Apr. 18 Fri.</td>
<td>Review</td>
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<tr>
<td>Apr. 25 Fri.</td>
<td>Review</td>
</tr>
<tr>
<td>Apr. 28 - May 9 (2 weeks)</td>
<td>Final presentation</td>
</tr>
<tr>
<td>May 12 - May 16</td>
<td>Final Review* - Finished drawings and models</td>
</tr>
<tr>
<td>May 12 Mon.</td>
<td>All work must be turned in by noon. Work will not be accepted after this time.</td>
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</tbody>
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*Final Review date and time to be scheduled during study week.
tasks and products included in this schedule.

While the "Schedule" used terms familiar in studios to indicate the tasks and products, the terms did not always clearly and completely communicate to the students what was intended. An example is the final studio product which was to be a coordinated range of physical solutions and development strategies for the new municipal office building and the Civic Center. The teachers believed that a range of schemes, supported with the concept and strategy diagrams, would provide the "design firm's" client with a catalyst for decision making about the future of the Civic Center. Rather than having students present competing schemes based on similar assumptions, Hutchinson and Heath felt this would facilitate discussion by decision makers at both the physical and strategic levels of design. While the single coordinated product follows from the "design firm" metaphor, it was not evident in the Introductory Handout, and like the tasks and products in the earlier phases, it was not substantially elaborated in class before the specific work began, nor were there explanations of how the work in each phase was to relate to the next.

In Phase I, the groups were to produce and document information as constraints and clues for the schemes. In Phase II they were to produce a "series of massing prototypes" modified by several constraints identified in Phase I. In Phase III they were to architecturally develop a range
of schemes from refined massing studies. Hutchinson explained the three phases in an interview. He did not, however, discuss their respective products:

Hutchinson: First of all the square footage is very simple. It's a very similar type of space. It's not highly differentiated except for some of the public functions. So it's very easy to sort of mash that into different shape characteristics, it doesn't resist very much. That's what we are doing [Phase I]--to find out what ways it resists being mashed. That information has to be furnished for the next phases. There the only thing that can begin to shape those things, really, is some intention.

What we are trying to do in Phase II would be to formulate hypotheses. You start with a very broad statement of purpose for any given scheme or attitude. [In this case, they started with six Massing Types on seven sites and added seven categories of constraints.] Then one tries to see what that implies. As you take it down to further questions, you begin to overlay a whole series of additional factors on it. It's like a testing process. You subject them to all kinds of examinations about whether they really work on the site. Whether they really work with all the internal requirements and so on. We are trying to spin off as many alternatives as seem legitimate and appropriate. It's a catalogue.

The third phase is a more selective process where there is a range of schemes which get a more specific kind of development, real architectural development. It becomes more difficult at this point because one has to shape it with an intention, a purpose, i.e., now we are going to shape it with this particular set of attitudes in mind. (Interview, 2/12)

During this interview Hutchinson discussed the urban design problem and its phasing along with his underlying ideas.
When asked if the students had been given a similar explanation when the problem was introduced, he responded,

Hutchinson: It has not been as much an explanation of the whole process as I would like... We did state, the program in fact states, certain intentions...

We talked about that [the urban design problem], not extensively though. And in fact we have not gone over the kinds of things that I'm talking about with you now. (Interview, 2/12)

This interview took place on the last class day before the end of Phase I. Hutchinson explained that he planned to discuss this more in Phase II.

Hutchinson: In the next phase we are going to really get into things which are perhaps different from what they have experienced. And then I think it's essential that the whole rationale for doing the thing that way is explained, and that they understand it. (Interview, 2/12)

Hutchinson saw the design problem as a vehicle for learning and understood that "rationale" meant having the students understand the ideas underlying the problem.

"The Problem As A Vehicle For Learning"

Although Hutchinson had not explained much of the "rationale" to the students during Phase I, many aspects of the design problem were influenced by his ideas on how to operate as a designer. He explained his reasons for postponing the explanation:

Hutchinson: The problem is obviously a vehicle, and what it's a vehicle for you make very clear. We tried to, but we could not do it in detail... As yet we have not really gone into it. It's
very difficult to do that because sometimes it's hard for them to see the purpose of any particular thing that they are doing, until they get into it. (Interview, 2/12)

In his introduction of Phase II to the class, Hutchinson noted that the problem was a vehicle for learning and indicated the set of "issues" and "things" for which the problem was to be used.

Hutchinson: I want to use the problem we are doing and explain our attitude towards the problem. A problem is obviously a vehicle to get at certain issues, to do certain things, or to learn certain things that will give you a special kind of experience which you may or may not have had. Certainly this problem is that kind of thing...

There are certain things that you can do in an academic setting that are really distinctly different from what you might do in practice. Through that you can actually facilitate learning how to do it, not just what to do. In other words, if one learns certain techniques, one learns methods of attacking problems. (Class discussion, 2/14)

For Hutchinson the problem was to be a vehicle for getting at "methods of attacking problems." (These "methods," ideas about how designers should operate, are also referred to as ideas about and ways of designing in this case study.)

As Hutchinson continued the Phase II introduction in the studio, he elaborated several of these ideas to the class.

Hutchinson: This [learning of methods] relates to our operating on the problem using a kind of non-orthodox program and to the notion that there are many places where you can enter the design process.

As a rule there is a certain formal behavior and set patterns that I refer to as orthodox. That tends to be the usual thing to do. For
example, you go through certain motions, do certain things, then you do other things. By the time you are in fourth year, it is a pretty familiar pattern.

In the problem I did last term, I deliberately set it in such a way as to challenge some of those notions about the sequence of events which happen in design, in order to illustrate the notion that I think you really enter the design process in many places, and that it does not really matter where you enter...

This time it is not really that different, except that we enter the problem at a different place. (Class discussion, 2/14)

In establishing his desire to challenge the students' notions about "the sequence of events," Hutchinson touched on two ideas about designing: "there are many places where you can enter the design process," and the sequence or pattern of events is not set. In presenting these ideas, Hutchinson contrasted them with the students' previous design experiences and noted their integration into the structure of the design problem. One can find these comparisons recurring in many of Hutchinson's comments on designing. In terms of the "methods of attacking problems," he had planned for the studio to respond to the context of the school and the students' previous design experiences within the school, as noted earlier. However, he intimated that this design problem was not of particular personal interest.

Hutchinson: So in the context of this school the kind of problem that I'm giving is something that I feel is very much needed by the students in comparison to certain other kinds of experiences that they have had. Although the problem is not necessarily
something that I'm personally enamoured with, i.e., it's not so much my 'thing.' (Interview, 2/12)

Hutchinson continued his introduction of Phase II noting that deciding where one enters the problem "has to do with the nature of the problem." In this problem the "data base" (the Phase I assignment) was an important starting point:

Hutchinson: ...there really isn't much of a Program. What is pretty clearly called for is that we have to build a case for something, whatever it is... There is no tight program that breaks everything down into really fine-grained figures.

One really has to begin to generate a lot of different attitudes about it before you can cope with it programmatically. (Class discussion, 2/14)

The absence of a "tight program" allowed the students to determine the problem and its constraints, unlike previous studios.

Hutchinson: Specifically, I think that students not only need experiences in designing or coming up with solutions to the problem, but they need experience in which they participate to a great extent in determining what the problem is, i.e., what are the constraints on the problem or what are the things which actually shape it. It's not that they haven't had that kind of experience, they have had different experiences, but to a great extent in the lower years this school has been

*Although Hutchinson contrasted the students' previous design experiences with his own ideas about designing, and the studio was to provide the students experience using those ideas, he never formally documented or analyzed the students' experience. Rather, his interpretations stem from his presence in the school for thirteen years, from knowing the faculty and the design problems they have given, and from exposure to these students in reviews of previous studios.
dealing with product-oriented design problems in a fairly vigorous manner, including great expectations in terms of quality presentations and drawings as well as sophistication of solutions. This tends to be the major demand placed on students in the lower years, so that their experiences have not tended to be very open, where they would participate in a different way in the problem. (Interview, 2/12)

Hutchinson's desire to extend the students' task to include problem definition is consistent with his model design curriculum--giving students at all levels complex problems, but limiting the number of design constraints they can influence during their first three years. Their influence would increase until "students in the upper years are not only determining the variables, but are writing the problem."

In addition to having the students in this studio determine the problem and the constraints, Hutchinson wished to expand their range of design determinants, as he explained in the previous interview.

Hutchinson: Basically, I believe in pluralism. I really think that people need to understand that there are a lot of different ways to look at things and that there are a lot of possible influences that could be seen as determinants if one is willing to take them into consideration.

...With the level of complexity of things that we have been talking over the first two weeks of the studio...you run into a certain resistance from some of the students because they are not quite sure how it will all tie together. Partly that is because it's not in their experience. Whenever it comes over it seems to me that it demonstrates that it's not part of their experience. They can't see the relevance of a lot of these things
to what they are going to do ultimately. That suggests to me...that there is a certain high degree of arbitrariness involved with a lot of their previous decision making. It has to do with the notion that there are certain favorite solutions which you just kind of plug into. As if there is a kind of okay things that are to be tapped when you come up against a problem.

I think that I believe that also, to an extent. But I really feel that one ought to really expand the range and have them exposed to highly varied models that are drawn from sources they are not in the habit of drawing from. (Interview, 2/12)

While this wish to increase students' range of design determinants is certainly evident in the range of topics assigned in Phase I, Hutchinson also noted an additional way to expand this range through expanding the students' use of models, metaphors and precedent.

Hutchinson: I think that as often as not, that one uses models other than architectural models, like metaphors, which are sometimes more useful in developing an attitude or a concept... It's a mechanism which can be used to get beyond the tendency to just arrange or compose elements without knowing the purpose of the arrangement.

The notion of modeling is very strong at this school, i.e., the use of precedent. I have not always approved of the way it's used in the school...it becomes too restrictive and too formalistic. The range is too limited. It becomes too much of a one to one transfer... [I] think that remote precedents are actually more useful than immediate precedents. A Roman building is much more instructive to look at than the work of Le Corbusier... You have to reduce it to a certain level of abstraction. You have to abstract it in certain ways and extract out of it those things which have a relationship
or analogies to what you are working on. You can't take it at a stylistic or at a functional level. (Interview, 2/12)

Hutchinson was not unaware of objections to this use of models and precedent.

Hutchinson: I think that architects have had funny pre-tenses about modeling and the use of precedent. It's part of our whole cultural thing about originality or proprietorship of ideas. The notion that the creative process is always equated with thinking up things that nobody ever thought of before. That is doubtful. Originality or creativity may be that you found ways to combine ideas in ways that nobody ever thought to combine before and is uniquely suited to a particular set of circumstances. What could be more creative than that? But the idea that you also invent every aspect from beginning to end is just nonsense.

I think some people are suspicious of the acknowledged use of precedent. It's like copying or plagiarism. But you have to keep your mind free because if you don't consciously do it, you will unconsciously do it... But then you never find a one to one correlation between a model and your problem. In his book, How to Solve It, Polya says the same thing. When you are solving a problem in mathematics that you have never solved before, you break it down into sub-problems which are manageable and for which you have a precedent. It's just that you have never done the whole thing before. You work with subunits that are familiar so you can cope with it. Well, that's modeling at it's best. (Interview, 2/12)

Returning to Hutchinson's introduction of Phase II, he discussed another idea about designing, the design process as a "loop." This "design loop" not only developed Hutchinson's ideas about many entry points into the design process and various sequences of events in that process, but also provided
an approach to determining the constraints of a program not tightly prescribed by "generating a series of attitudes."

Hutchinson: You could see this whole thing as some kind of loop where you keep moving around from one kind of motor behavior to another. Where you enter the loop is not very important as long as you keep moving around. Right away you have to get to the other points.

One of the fallacies I think that many designers get into is entering into the problem through one door, through one mode, and basically never shifting that mode. Let me give you an example. Many people enter the problem from an analytical base or from a data base. They enter there because it is what they like and what they feel most comfortable with, because it's something they can do in a very clear way. You can collect all kinds of information. You can sift it, then organize it many different ways. But when it comes to that stage where you actually have to start designing or start dealing on a more conceptual level, which accounts for the leap between data and design schemes, people get bogged down.

Or you know the opposite types, who never want to fool around with all that information. They just want to deal with the big ideas, you know? They don't want to talk about architecture on a conceptual level.

Now I think these are essentially complementary modes of behavior. They are usually reinforcing. It's perfectly valid from a problem-solving point of view to have the big idea and look at it in that way. Then rather quickly you have to get an information base in order to test out that idea. Conversely, you can enter the problem by gathering information, looking at it and analyzing it. Then you can use that as a basis of generating a series of attitudes.

(Class discussion, 2/14)

Other ideas about designing became evident in Hutchinson's interview and later class discussions. The integration of
these ideas into the problem will be discussed in Chapter 3.

In addition to seeing the design process as a "loop," Hutchinson saw it as a "triangle" through which the designer cycled. The "triangle" incorporated the use of models Hutchinson believed students needed.

Hutchinson: In contrast to what I think is too often seen as an implicitly linear design process that recycles with its implied entry point and particular path, there is the triangle. I think that there are a lot of places you can enter as implied by the triangle form. The vertices of the triangle correlate to the three major territories that you operate in: Context, Goals, and Models. You can see it in a global sense. You can see it in a very detailed, micro level and so on. These things have this need to be seen in a whole different series of scales and levels.

Traditionally, we tend to enter the problem from the contextual end. Meaning that we have a site, a program, a client and a set of building restrictions that all form the Context in which you operate. But with this triangle, one only assumes that there is a problem and that you are taking off from something. (Interview, 2/12)

The "loop" promoted shifting between data and the physical design; the "triangle" promoted shifting between "territories" and "scales."

In addition to approaching the design process through the "loop" and "triangle" ideas, Hutchinson believed one should use individual design ideas or concepts to transform the physical design. This "transformation" approach differs from the "orthodox" approach, as Hutchinson sees it. "Orthodox" involves simultaneously working with all ideas at once--a "stew pot" approach.
Hutchinson: The more conventional way is to throw everything into a big pot, all at once. Then stir it around and you try to wrestle your way out through this business of saying, "I'm trying to deal with all the variables in the problem at the same time." (Crit Session, S26, 3/5)

Hutchinson continued to explain the transformation approach in this crit session:

Hutchinson: ...You take something and examine it, keep suggesting different criteria. Each time you plug in a new criteria, the thing doesn't remain the same. It transforms it. It distorts or deforms it, like a string poloygon.

...we could isolate one variable...massing. Using that constant as a point of departure, I can see as I overlay more and more variables, how the mass distorts, how it changes in order to recognize those things. I think you may discover some interesting things in this way, rather than implicitly designing in a rather conventional way. (Crit Session, S26, 3/5)

In the interview Hutchinson elaborated on how the transformation approach resolved the limitations he saw with the stew pot approach.

Hutchinson: The value [of the transformation and documentation] comes from not having to go back to the beginning when you find that something isn't working out or some variable changes. I think that's one of the big failures of much of the traditional design method. People are left holding so much information in their heads. They have so much of it that it is just simply being juggled and manipulated. It's only in kind of vague things, so if something changes which makes that scheme no longer valid, the synthesis is no longer of that particular formulation. Very often they're
really left with an amazing helplessness. They have to go back and re-examine everything. They don't realize which variables are causing the problem and which stuff is valid. With our approach, one could retrace a path through all the alternatives and generate a different scheme while certain elements would remain constant. This is again coming to this business of the transformation. I think that essentially that's what one is doing on his design. You are testing out the capacity of constants to change and to be structured in different ways. It is transformed by a different attitude.

...Traditionally, the things that one was manipulating were often not really very clear and the constraints were also not very clear. If you really get to know those, I think, it gives you a tremendous amount of freedom, because then you can test the limits of the problem; then you have all kinds of freedom because you readily see the territory you can operate in and that territory where you can not operate. You can push the problem to its greatest capacity and you can reach a much higher level. (Interview, 2/12)

Hutchinson encouraged a particular use of drawings and diagrams essential to the transformation approach throughout the semester. These materials aid in tracing the development--transformation--of a design scheme and in clarifying and documenting the individual ideas which combine to transform it. They also facilitate the making of designs. The orderly use of drawings allows a student to "retrace a path through all the alternatives and generate a different scheme" when "something isn't working out or some variable changes." It also generates ideas and supports steady production, as Hutchinson explains:
Hutchinson: It seems that when tracing paper came into existence it revolutionized attitudes towards how one goes about designing with the idea of the successive overlays. You didn't have to destroy your old ideas when you wanted to transform it to try certain changes. I find that I use a lot more tracing paper than a lot of people. But I feel that it is important because I want to keep certain things more or less preserved. So, at the end of the day or at the beginning of the following day, I go back and try to put them in order. That helps you get back into it. It helps you recall the things you did. Sometimes you will even notice things that you had not noticed before because you were so involved in another idea that you had not seen it. I'm not suggesting that you make yourself a highly formalized system, but that occasionally you pull out what you think are the most important discoveries that you are making and make some pronouncement about them in the form of a diagram or drawing. Maybe you even stick them up on the wall. They you can occasionally look up and remind yourself of the thing that you had lost track of. These are messages to yourself about your own biases, your own preferences and your own priorities as they exist at this point. (Crit Session, S22, 3/17)

The particular use of drawings and diagrams can also serve to document ideas in a useful form, as Hutchinson explained to one student:

Hutchinson: Can you tell me what these strange, indecipherable hieroglyphics mean?

S22: Well, it has not been a policy to tell people what I'm doing until I know what I'm doing...

After discussing the ideas in the student's drawing, Hutchinson made some suggestions:

Hutchinson: I think that you need to make yourself a series of diagrams that show exactly what we are talking about in somewhat more
precise terms. I mean really draw them carefully. I think if you would sort out the kinds of drawings you do into different categories that were serving different purposes...you would find it useful.

If you always keep your drawing in this very rough sketch manner, in which things get overlaid and changed around...they simply serve the purpose of being vehicles to think by. But out of them you can then distill down the essential ideas. Right on that drawing you begin to do a lot of ideas that emerge which I think should be recorded.

You could start pinning them up so that every time something emerges which is on a higher level than a vague exploration, you record it. It's really a process of pulling out ideas that are of a higher order within your own priorities... You see what happens to the ideas. You keep recombing these units with other ideas. And I think that's the way it should be. But sometimes you forget them because in the process of working you erode them and it gets away from you. You forget what you started doing. So while they are relatively clear in your mind you should actually make these diagrams.

I don't know how these two ideas might relate to each other, but I think they are both interesting ideas. Maybe they are, in fact, incompatible. One of the ways to explore the relationship between those two ideas might be as a next step to imagine what a section might be through there. And then that starts a long investigation... (Crit Session, S22, 3/17)

As a "catalyst" for making designs, Hutchinson explained the value of diagrams:

Hutchinson: Once you start that process of making a series of abstractions or diagrams, which are simply statements about the issues and the ideas, and attempt to resolve those issues rather than physically laying in a lot of different things, you have the resources of these physical images
[the diagrams]. There are a lot of ways to start. One is making diagrams and overlaying a series of systems on the site, like circulation systems, potential zones for building and places you don't want to build on. There will be grey areas and white areas which according to your own set of biases should remain intact. Another way to start is to look at the sets of information organized in Phase I. Say "what does it mean? How can I see transforming something? Could I start with things which have certain physical characteristics, certain dimensions or other properties?" Just simply looking at them helps me identify certain issues. (Class discussion, 3/14)

According to Hutchinson, after the diagrams are made they should be displayed. He explained his idea in an interview during which he described a previous semester's design problem.

Hutchinson: We drew all these diagrams and made a great big display of them on the wall. Not because these were design solutions, but because it was a way to suggest alternative attitudes that one could take and to bias the basic information, like the arrangement of elements. This served as a catalyst to get people thinking about and accelerate their process of really getting into design. Out of that, people selected certain things, seeing certain possibilities. It suggested a whole range of ways that one could then read different attitudes that one could take toward a university [the particular design problem]. (Interview, 2/12)

This emphasis on the use of diagrams is consistent with Hutchinson's statement that "perhaps the most fundamental facility an architect needs is a facility with abstraction." The particular use of drawings and diagrams not only related to Hutchinson's idea of design as transformation, but to his ideas of the "triangle" and the "loop."
Hutchinson: I think the way you draw and what you draw are terribly important. On one hand you are drawing issues, not buildings. Then on the other hand, you draw buildings. Then you say, "Well, what does that mean?" If you operate only in one or the other of those modes several things happen. One is that there may be a breakdown in communication between you and those you are working with or between you and me, because we can keep interpreting it in a lot of different ways. So it would be very useful to take these abstractions and begin to interpret them.

On the other hand, if you only show specific buildings, you may not be able to transform them because you may not know what they mean. In other words, you can't see them in any generic sense. You can't see them as belonging to some set of basic possibilities and attitudes toward the whole building complex, both inside and outside. (Class discussion, 3/14)

You can't just operate at the diagram level. You have to work back and forth from diagrams to details because, who knows where ideas come from. Some ideas come from the building and some come from the abstractions. (Final review, 5/12)

(This idea was supported by Heath, in an interview during which he purported that "ideas surface from the elimination of information.") Clearly, Hutchinson's ideas on how to operate as a designer were woven into his ideas on the use of drawings and conceptual diagrams, what he called the "artifacts of the process." This will become more evident in the discussion of the assignments.

Hutchinson expressed two additional concerns about the ways students operate as designers in his discussion of the "Charrette Mentality." He explained that he found this
attitude common among architecture students and professionals:

Hutchinson: It's exciting to work all night. I think it takes a certain amount of maturity to get over that attitude. I think a lot of architects have not gotten over that attitude. It's what I call the "Charrette Mentality." It has to do with (1) not being able to work with other people in a reasonable way and (2) not being able to work except under pressure. And therefore, not being able to keep a steady-state production going. Not that there aren't highs and lows, that's nature. But I think those can be somewhat induced. One has to develop techniques to do that. You play games with yourself. Just little techniques to keep yourself involved. (Interview, 5/14)

In considering the way the urban design problem was to be used in the studio, one may expect that the class would have focused on urban design issues and approaches. Indeed, the students indicated in their initial interviews that they had selected this studio because of the urban design issues, yet when this observer asked the teachers about the studio and the design problem, they spoke little of the urban design content. Rather, they both talked about their ideas on how to design, and noted that these ideas were integrated into the studio and the assigned problem. In other words, while the curriculum defined the urban design focus of this studio, the studio reflected the teachers' particular ideas about
designing adopted to urban design. Further, its tie to urban design was evident in a segment from the Working Procedure hand out.

...in urban design it is clearly not possible for a designer to work entirely individually. It is necessary for a designer to work in various capacities and interests--professional, political, economic, social, technical, etc.

Hutchinson's concern for collective, collaborative work reflects his concern that students consider more design determinants and take various positions on the problem and constraints.

Hutchinson: I prefer that they [students] work in groups because they can just cover a lot more material and it also tends to get them in the habit of interacting more and not being so intensely personal without articulating a personal attitude. They are forced to articulate a position or they can't really agree. I don't think it's possible to act totally as an individual in urban design. You have to really be able to articulate and establish your position. (Interview, 2/12)

It is clear that having students determine the problem and identify the constraints helps prepare them to assume designers' responsibilities. In the case of urban designers, the responsibility for setting the problem implies a particular and central relation to the other actors in the urban design process.

Another idea, producing a coordinated range of schemes, reflects Hutchinson's interest in having students take
different attitudes toward the problem, and in having the studio function as a design firm creating a product useful to the studio's "client"--OLMD. Students would not be producing competing solutions to the same program, but producing a coordinated professional document which would illustrate several approaches to the Civic Center redevelopment.

Hutchinson: I think the range of schemes that we as a firm uncover and present should in fact include such possibilities [as] minimal building with rehabbing and landscaping. At the other end of the scale, it seems one could propose schemes which are projected towards the future you anticipate (either pessimistic or optimistic views of the economy and of the need for more government)... At any rate it involves a lot of building and involves a major transformation of this area. (Class discussion, 2/7)

Hutchinson intended that the range of schemes vary in implementation and execution strategies, in addition to ranging in size and scale. Heath contrasted this product with the most recent proposal for redeveloping the Civic Center by architect Edward D. Stone (a physical design for the Civic Center with new buildings, trees, and paving patterns).

Heath: It's not as if we are trying to produce a final definitive architectural scheme...

All these alternative schemes or strategies are merely bargaining tools--tools which promote discussion of certain options for the people who really make the decisions. They are the City Government and ultimately the people who elect them. (Class discussion, 2/7)
Heath's ideas were consistent with those in the article "Urban Design as a Governmental Process,"* (handed out in the studio), which attributed the success of the efforts of the N.Y.C. Development Offices to the support of the mayor and the active involvement of urban designers in the political arena.

The students had been in studios structured like architectural design competitions where they had worked individually (if not secretly) to prepare competing design solutions. Working collaboratively, therefore, required most students to operate in different ways. They reported in interviews that their previous group experiences had been unsuccessful; they had learned to avoid collective, collaborative work. The coordination of schemes in this studio meant that not all students would be developing those of their preference as they had been able to do in the past. Instead, they would have to develop schemes important to the collective product.

Whether the teachers' ideas about designing were specifically related to urban design or not, they all seemed to correspond to Hutchinson's fundamental attitude towards operating as a designer, his "methods for attacking problems."

Hutchinson: We have to have some organization about the way we go about designing. (Class discussion, 3/10)

In review, the list below contrasts the ways of designing for which Hutchinson intended the problem would be a vehicle for learning with what he understood to be the students' previous design experiences.

+ **Many Entry Points and Various Sequences of Events in the Design Process** vs. the orthodox entry point and set sequence of tasks.

+ **Students Determine the Problem and Constraints** vs. the problem, program, and constraints set for the students by the studio teacher.

+ **Designs Informed by a Range of Design Determinants** vs. the limited number of determinants involved in the students' previous decision making.

+ **An Expanded Use of Models, Metaphors, and Precedent** vs. a restrictive use of models, metaphors, and precedent which is "too formalistic" and approaches a direct transfer of ideas.

+ **The Design Loop**—frequent shifting from concept to the physical design, and from data to design—vs. working only at the level of the physical design (or data).

+ **The Triangle**—a cyclical design process—vs. a linear design process.

+ **The Transformation Approach** vs. the "stew pot" approach, and designing from a "parti" or a central organizing idea.
The Particular Use of Drawings and Diagrams for designing vs. the "heiroglyphic, indecipherable" drawings which are drawn over many times and later discarded.

Steady-State Production and Group Work vs. "the charrette mentality."

And the two ideas specifically related to urban design:

Working Collectively and Collaboratively vs. working individually.

Producing a Coordinated Range of Schemes vs. producing competing definitive architectural schemes.
CHAPTER 3

THE STUDIO CHRONOLOGY

To trace what happened in this studio during the semester, certain day to day events in each of the three phases are detailed. The chart provides a chronological guide to these events and a summary of how the studio time was spent.

The Chronology of Events

<table>
<thead>
<tr>
<th>week</th>
<th>date</th>
<th>D W R</th>
<th>HuHe</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHASE I</td>
<td>1/27 Introduction</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1/29 Planning for site visit</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>1/31 N.Y.C. site visit</td>
<td></td>
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<tr>
<td></td>
<td>2/3 Discussion of visit</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>**2/5 Work &amp; crits</td>
<td></td>
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<tr>
<td></td>
<td>**2/7 Preliminary Review</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>**2/10 Review continues</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>**2/12 Work &amp; crits</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>**2/14 Phase I Review</td>
<td></td>
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<tr>
<td>PHASE II</td>
<td>2/17 Introduction</td>
<td>4</td>
<td>0 4f</td>
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<tr>
<td></td>
<td>2/19 First series</td>
<td></td>
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<tr>
<td></td>
<td>2/21 Work &amp; crits</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>2/24 Second series</td>
<td>2</td>
<td>2 4f</td>
</tr>
<tr>
<td></td>
<td>2/26 Work &amp; crits</td>
<td></td>
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<td>2/28 Work &amp; crits</td>
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<td></td>
<td>3/3 Work &amp; crits</td>
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<tr>
<td></td>
<td>**3/5 Work &amp; crits</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>**3/7 Phase I &amp; II Review (OLMD)</td>
<td>3</td>
<td>3 4f</td>
</tr>
</tbody>
</table>

Legend:
** indicates AES's studio visits.
D W R refers to the use of the studio time; D: Discussion and instruction; W: Work and crits; R: Reviews.
HuHe refers to the teachers' attendance in the studio; Hu: Hutchinson; He: Heath; numbers are the hours they were absent from the studio; lower case letters indicate why--r: another studio's review; p: personal or professional; o: other, including faculty meetings.
The Chronology of Events continued,

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Event Description</th>
<th>D</th>
<th>W</th>
<th>R</th>
<th>Hu</th>
<th>He</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHASE III</td>
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<tr>
<td>7**</td>
<td>3/10</td>
<td>Introduction; sketch design</td>
<td></td>
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<td>2</td>
<td>or</td>
<td>3</td>
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<tr>
<td>**</td>
<td>3/12</td>
<td>Review of one day sketch</td>
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<td>3</td>
<td>**</td>
<td>1</td>
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<tr>
<td>**</td>
<td>3/14</td>
<td>Discussion; work &amp; crits</td>
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<tr>
<td>8**</td>
<td>3/17</td>
<td>Crits on using diagrams</td>
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<tr>
<td>**</td>
<td>3/19</td>
<td>Work &amp; crits</td>
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<tr>
<td>**</td>
<td>3/21</td>
<td>Work; early holiday?</td>
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<td>4</td>
<td>**</td>
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<tr>
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<tr>
<td>10</td>
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<td>Groups; commuter mentality</td>
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<tr>
<td>4/9</td>
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<td>4</td>
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<tr>
<td>11**</td>
<td>4/14</td>
<td>Minor review with G10</td>
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<td>4/16</td>
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<td>4/21</td>
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<tr>
<td>13</td>
<td>4/28</td>
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<td>4</td>
<td>r</td>
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<tr>
<td>4/30</td>
<td></td>
<td>Work &amp; crits on facades</td>
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<td>4</td>
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<td>5/2</td>
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<td>14</td>
<td>5/5</td>
<td>Presentation; ink</td>
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<td>5/7</td>
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<tr>
<td>5/9</td>
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<td>Work &amp; crits</td>
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<td>r</td>
<td>4</td>
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<tr>
<td>15**</td>
<td>5/12</td>
<td>Final Review (OLMD)</td>
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<td>**</td>
<td></td>
<td>Complete drawings</td>
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<tr>
<td>**</td>
<td></td>
<td>*Totals</td>
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</tr>
</tbody>
</table>

D: 20/172 = 12%
W: 108/172 = 62%
R: 44/172 = 26%
Hu: 49/172 = 29%
He: 19/172 = 11%
*The Studio Time: The studio was scheduled to meet four hours a day, 43 days during the semester, including the Final Review, yielding a semester total of 172 hours. Of that 172 hours, 44 hours (26% of 172) were spent in review sessions giving each student 1.5 hours of review time if distributed equally among 28 students and if used at 100% efficiency. 20 hours (12% of the 172) were spent in instruction and discussion, field trips, etc., leaving 108 hours (62%) for work and crits. But Hutchinson was out of the studio 49 hours (29% of the 172) and Heath 19 hours (11% of the 172) during the semester. Together, they were out 20% of the 172 hours [68/2 \( \Rightarrow \) 34/172]. Only 8 hours of the 68 total were for personal or professional reasons. The other 60 hours, the teachers were fulfilling faculty responsibilities, primarily as guest critics at reviews of other studios.

With 108 hours of work and crit time for two teachers, 28 students potentially have 216 hours to be distributed among them. Removing the 68 hours the teachers were away, there remained only 148 hours to be distributed. If crit time was used at 90% efficiency (an optimistic percentage), then the 148 hours would be reduced to 133. If this time is equally distributed among the 28 students, each student would have 4.75 hours of individual time with the teachers during the 14 weeks of work, twenty minutes per week. (Roughly the same aggregate time this observer spent with each interviewed student outside their reviews.)

It would be unfair to both teachers to ignore the time they spent in the studio and on field trips outside the scheduled studio time. On different occasions, they stayed later than the scheduled end of class, came in extra days, including weekends, and came back in the evening. But these occasions were not frequent and benefited only the few students present each time. The extra time balances out their occasional late arrivals and phone interruptions.
PHASE I: "Information Gathering, Research, Analysis and Interpretation"

The Phase I assignment, (Ill. 3-1) given to students in the Introductory Handout during the first class meeting, listed seven topics around which students were to form groups ranging from "Metropolitan Context" to "Site Model." The subtopics and lists of information to be gathered filled four pages; the "Presentation Format" for the material, with general requirements, group/topic requirements, and a standard 8 1/2" x 11" graphic layout filled three additional pages. As principals of the "design firm," the teachers prescribed the topics, tasks, and products scheduled for the first three weeks and coordinated the students' work.

As explained in Chapter 2, Hutchinson saw the requirements of the Civic Center and Office Building as being very malleable ("it's very easy to sort of mash that into different shape characteristics"), and the program "undetermined." In Phase I students were to identify and document the constraints and clues that could shape the design schemes and present the design information to allow the students to make their own interpretation of the consequences for design schemes. The Phase I work (and the work of the subsequent phases) was set in the 8 1/2" x 11" format so it could be easily assembled into a booklet for the students' use. The purpose for the booklet in Phases I and II was explained in the "Working Procedure" handout.
PHASE I: INFORMATION GATHERING, RESEARCH, ANALYSIS AND INTERPRETATION

The class will be divided into groups to gather, research and analyze information pertinent to the problem. The material produced will be presented in accordance with the format guidelines attached and assembled into a booklet for use as a design framework for all members of the class.

In certain cases, sub-headings of the following topics call for "interpretation" of information as well as its straightforward gathering. This simply demonstrates that in urban design there is no convenient separation between "analysis" and "design". Further interpretation and even information gathering will be necessary at the later design stage. Personal judgment, individual initiative and group discussion are necessary at this present stage to determine the appropriateness and graphic form of interpretative drawings.

TOPICS

A. METROPOLITAN CONTEXT

For the following categories in this section there should be an emphasis on the hierarchical breakdown from metropolitan to local scales.

1. Symbolic - historic
   - image
2. Perceptual - identification of area in its context
   (eg. according to Lynch's categories of "path, node, edge, landmark, district")
   - topographic variation of Manhattan skyline
3. Use - major use classifications and distribution - commercial, residential, etc.
   - demographic distribution related to uses
4. Zoning - illustrate present planning intentions as controlled by zoning
5. Movement systems - vehicular (private, public)
   - subway
   - pedestrian
   - service
   - other
6. Major utilities distribution - water
   - electric
   - drainage, etc.
7. Grid - analysis of plan geometry of Manhattan in abstracted form.

B. MANHATTAN CIVIC CENTER AREA

1. Historic - buildings
   - spaces
   - history of plans for area
2. Symbolic - area image
   - image of component parts
   (buildings, spaces, streets, etc.)
3. Functional - use of individual structures
   - population according to use of structures
   - use of open spaces
   - zones of activity
4. Zoning - PAR (floor area ratio)
   - zoning envelopes
5. Spatial and perceptual - interpretation of area in terms of its visual and perceptual qualities
   - eg. scale, proportion, unity, continuity, axiality, asymmetry, disintegration, visual corridors, etc.
   - eg. complementarities such as closed/open
   - concentrated/dispersed
   - communal/private
   - containers/contained
   - centroidal/peripheral
   - means: plans and axonometric drawings
6. Movement systems - vehicular (private, public)
   - subway
   - pedestrian: horizontal - stairs
   - vertical - elevators
   - service
   - include category, degree and time of use
7. Utilities distribution - horizontal
   - vertical (where possible)
   - eg. electric, water, drainage, etc.
8. Groundscape, vegetation, etc. - textures, materials
   - trees, etc.
9. Environmental - climate and micro-climate
   - wind: direction, behavior, etc.
   - sun: angles, shading, seasonal variation, etc.
   - precipitation
Illustration 3-1, continued.

C. CIVIC CENTERS - comparative study of precedents

What constitutes a Civic Center?

1. Type - administrative
   - cultural
   - recreational
   - commercial
   - mixed

2. Location - city context
   - climate
   - region, etc.

3. Symbolism

4. Design concept
   How implemented politically and economically?

5. Design process - master plan
   - incremental strategy
   - participatory planning, etc.

6. Architectural realization - scale
   - materials, etc.

D. OFFICE BUILDINGS

1. Planning criteria - anthropometrics
   - planning grids
   - structural grids
   - organizational hierarchy and optimum groupings
   - circulation:
     - horizontal - corridors
     - fire codes
     - vertical - elevators
     - stairs

   Note: a precise and complete study of elevator systems is necessary
   - daylighting standards
   - communications
   - environmental services - ventilation
   - lighting
   - heating
   - sound control
   - cooling, etc.

   Planning components - offices
   - conference rooms
   - storage areas
   - reception areas
   - toilets and staff rooms

   Consider - dimensions
   - access, circulation systems
   - lighting

3. Parking - structural grid implications
   - compatibility with superimposed grids

4. Codes - fire - escapes
   - travel distances
   - fire rating
   - compartmenting
   - daylighting

5. Zoning - FAR (floor area ratio) - influence of this constraint
   on depth, height and overall form of typical office structures
   - history - evolution of setback requirements
   - incentive zoning, etc.

E. PROGRAM DEFINITION AND EXPANSION

   - investigate appropriate additional uses for area
     eg. commercial
     recreational
     cultural
   - suggest scale of distribution - square footage
   - suggest possible locations - refer to interpretive area studies

F. AREA DESCRIPTIVE DRAWINGS

   - sectional elevations through area
     (block out in pencil before final inking)

G. SITE MODEL

   - to scale 1" = 80' 0"
   - sectionalized and demountable
   - materials:
Illustration 3-1, continued.

**PHASE I - PRESENTATION FORMAT**

- All work to be presented on 8 1/2" x 11" sheets.
- 17" x 22" sheets will also be used and later reduced to 8 1/2" x 11".
- Titles and written material accompanying drawings in 'Para-tipe' lettering - see accompanying specimen sheet. Use 5 sizes of lettering as specified.
- Margins in accordance with accompanying specimen sheet.
- Text in IBM (arrangements to be discussed)
- Diagrams, plans, maps, etc. in black ink line.
- Shading on plans, etc. in 'Para-tipe' coordinated dot, line and grid screens - these to be specified later.
- Students should identify their drawings by pencilling their names in the lower right-hand corner of the back of each sheet. Where more than one person works on a single drawing all names should be placed on back. No names or 'unorthodox' information, no freehand lettering or non-format visual material should be on the drawings designated 'finished drawings'. This "finished drawing" category refers to things to be included in the finished booklet.

**PHASE I - DRAWINGS**

<table>
<thead>
<tr>
<th>SCALE</th>
<th>DRAWING</th>
<th>SHEET SIZE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group A</td>
<td>plans</td>
<td>8 1/2&quot; x 11&quot;</td>
</tr>
<tr>
<td>Group B</td>
<td>plans</td>
<td>8 1/2&quot; x 11&quot;</td>
</tr>
<tr>
<td>Group C</td>
<td>To choice</td>
<td>8 1/2&quot; x 11&quot;</td>
</tr>
<tr>
<td>Group D</td>
<td>mixed</td>
<td>8 1/2&quot; x 11&quot;</td>
</tr>
<tr>
<td>Group E</td>
<td>text only</td>
<td>8 1/2&quot; x 11&quot;</td>
</tr>
<tr>
<td>Group F</td>
<td>sections</td>
<td>fold out?</td>
</tr>
<tr>
<td>Group G</td>
<td>model</td>
<td>--</td>
</tr>
</tbody>
</table>
Illustration 3-1, continued.
This material will then be collected in a booklet that will belong to the whole group as a design framework which will facilitate dealing with the problem on a conceptual level. Once the many factors have been articulated and made permanently visible, their interaction can be tested in a bounded field rather than an open ended one, and decisions can be viewed in terms of viable basic alternatives...

The Phase I assignment integrated Hutchinson's ways of designing in the studio work. With the malleable requirements and undetermined program, the students could determine the problem and constraints; with the selection of assigned topics, students could expand their range of design determinants and use of models, metaphors, and precedent when selecting constraints in later phases. Documenting each factor separately prepared the design information for later use in Hutchinson's transformation approach and his "design loop" and "triangle." It also reflected his considered use of drawings and diagrams, as did the students' determinations of the "graphic form of interpretative drawings." Choosing to have the students use a common format and share information reflects Hutchinson's attempt to discourage the "proprietorship of ideas." Breaking the design process into specific tasks and phases and having the students work in groups indicates his desire to promote "steady-state production." Hence, the Phase I assignment reflected Hutchinson's entry points, events, and sequence of events in the design process.
(While observation in the studio did not begin until the end of Week Two, the teachers reviewed these events of the five class days missed.)

**WEEK ONE: INTRODUCTION OF THE PROBLEM AND PHASE I**

On Monday (1/27), the class assembled in a high ceilinged seminar room, where the Introductory Handout was distributed and discussed, and the problem was introduced. This rectangular room, used for the reviews until the beginning of Phase III, sat the twenty-eight students, teachers and guests snugly around four long tables. The walls were white, three were covered with floor-to-ceiling tack boards, interrupted only by a wood door at one end of the room and a window facing north on the opposite wall. The fourth wall was covered with the blackboard extending the entire length of the room. The tables and chairs were an office-type furniture wood-grained Formica, chrome legs and plastic upholstery. There were bright, buzzing fluorescent lights, with the room a comfortable temperature from steam and body heat, although conversations were rarely spared the noise of the pipes. The hardwood floors were obscured by the clutter of people and furniture. The studio space was a five minute walk from the seminar room. The first session lasted all afternoon; the students were formed into seven groups corresponding to the seven topics of Phase I based on personal interest. Just how the problem was introduced is not
not known, but from Hutchinson's comments in Chapter 2, it is presumed it was presented more as work to be done than as a vehicle for learning certain things.

On Wednesday (1/29), the class met again in the seminar room, this time to discuss and plan their site visit to New York City on Friday. Transportation and meeting arrangements were made, and students were assigned the task of acquiring certain information from various agencies and sources in New York. The planning session ended before 5 o'clock, (the studio was scheduled to meet from 2 to 6 o'clock, three afternoons a week).

On Friday (1/31), the site visit began with an 11:00 a.m. slide presentation by the Office of Lower Manhattan Development (OLMD) on the history of the Civic Center from an early squatter settlement, through its era as a "center of commerce" (marked by the Sun Building), to its becoming the center of government with the building of the City Hall. The presentation continued with a review of various plans which had been proposed since Robert Moses, including architect Edward D. Stone's recent plan for a tower and plaza. After lunch, students walked the site and visited notable buildings as the Tweed Courthouse and the Sun Building; their tour of the City Hall was thwarted by a bomb scare. The students had the rest of the afternoon to seek out the information they had been assigned to collect from the various agencies such as the Landmarks Commission.
WEEK TWO: PRELIMINARY REVIEW

On Monday (2/3), the teachers began with a discussion of the trip, then spent the remainder of the afternoon working with each group reviewing the information each had collected, and noting what had not been available. During these sessions the groups began to organize their materials for presentation at review on Friday.

On Wednesday (2/5), Heath continued working with the students on their preparations for the review on Friday. Hutchinson spent most of the afternoon discussing this studio and others he had taught with a study director of the Architecture Education Study (AES). (The AES had been invited by the administration and this observer to observe studios in this school, and after discussions with Hutchinson, the urban design studio was selected.)

On Friday (2/7), the seminar room was teeming with students by 1:30 who posted their 8 1/2" x 11" sheets for the preliminary Phase I review. According to one of the interviews with Hutchinson, this review was to show how the groups were progressing and to provide assistance in refining their way of communicating the various types of information. Several students were busily working to complete their sheets throughout the afternoon. Most of the work had been posted by 2:15. Hutchinson began the
session by briefly explaining the Architecture Education Study and by introducing this observer, who elaborated on the research approach and asked for the students' cooperation. Heath arrived during this discussion, and Hutchinson interrupted to introduce him to this observer.

Hutchinson, then shifting the session to the review, explained that while each group was presenting its work, the other students could work in the studio if they wished. Heath, however, suggested that all the students stay so they could see how some of their work had overlapped with the work of other groups. None of the twenty-four students present left. Hutchinson prefaced the presentations by saying that the work "doesn't have to look like anything right now... it will give us something to talk about," although he explained that it would not all be discussed. (Examples of the finished versions of each topic group's work are Ill.3-3.) As the first student was about to begin, Hutchinson, realizing that over 200 sheets had been posted on the wall, commented to the class, "We probably won't finish today." Only seven students would present their work before the session would end at 6:15.

The review got underway at 2:30 with one student's work on topic "A, Metropolitan Context."

Hutchinson: Who else is working with you?

S1: S16 and S26.
Hutchinson: Is this mutual work?

Sl: No, we are all working on separate areas.

Hutchinson: Would you like to tell us what you have done now?

Sl: I've begun to put my information down on a map. I'm just trying to find the distinctive areas of the surrounding New York City.

Hutchinson: Can you explain the breakdown of the work for the three of you?

Sl: I'm doing the first two, Symbolic and Perceptual, and I'm also doing the last section, Grids. Sl6 is doing transportation [Movement Systems], and S26 is doing 3 and 4, Use and Zoning.

Hutchinson: Do these six categories [really seven] seem adequate or have you reorganized it?

Sl: They are general enough that you can include or exclude whatever you want...

In locating them [the distinctive areas], I picked out recognizable areas, or areas which are supposed to be recognizable. Those... which offered something different than other sections of the city... I've also plotted the Official Landmarks, some included in our site...

What I'm trying to find next is what are the landmarks people use to find their way around these areas... that's as far as I have gotten on these first two sections. That's all I'm thinking I can do.

In his first five minutes Sl gave his progress report including many details not mentioned above, but like the presentations which followed, did not explain or demonstrate the impact his information could have on the Civic Center design. In the questioning and discussion which followed
for over an hour, the teachers intimated their own ideas about the data, its relation to the design, and the ways it should be presented. Their comments to Sl followed a pattern, which is also evident in their responses to subsequent student presentations. First they asked questions such as:

Hutchinson: In the way you draw and describe it, you do not attempt to organize it hierarchically anywhere?

Sl: Not yet.

Heath: Do you see any overlap of Districts and Landmarks? Are they totally separate patterns?

Following these questions which were indirectly trying to search for the student's ideas about the relation of information to the future design, the teachers again indicated their ideas about what information was appropriate to the topic.

Hutchinson: Since you are dealing with the Metropolitan Context, it surprises me that you are not dealing with Manhattan as a place—thus seeing it as having significance for not only the whole area [Lower Manhattan] but for the country and the world.

That may seem ridiculous to zoom out to that larger frame of reference, but Lower Manhattan in that frame of reference is a very clear place. If you approach Manhattan by air, water, or land, it's one of the images people have... The whole notion that it is an island surrounded, that this tip is the one which presents its face to the world. It symbolizes the financial area of the country, if not the world.

That's what I mean by establishing some hierarchical notion of this place.
Both teachers went on to comment on the graphics related to Sl's topic. During the first twenty minutes, Sl directed his comments specifically to the teachers rather than the whole class. Likewise Hutchinson and Heath responded directly to him. With the teachers' backs to them, most students spent the time in small conversations, some related to the studio work, some not; the background noise made it difficult for the few students trying to listen to hear. The class remained involved in other things as the teachers were generalizing about the presented work.

Hutchinson: In each category it is important to anticipate how you are going to use the information. It's not just an effort to cover the ground and have it done. If it's not something which will ultimately have an effect on the design, then it's not worth including as a perfunctory thing.

The teachers went on to ask more direct questions and make comments suggesting a connection between data and the design, though without giving examples of possible impacts.

Hutchinson: For example, what about the perimeter of Lower Manhattan and the way it has changed? It would seem to me, that would have an enormous effect on the symbolic and image aspects of the whole area.

New York has always had this ragged edge with all the piers, while in Chicago the whole waterfront is a park—a public resource. This whole edge of Lower Manhattan is going to become a public place with promenade, parks, housing, etc... Doesn't that have a major impact on image and symbolic value of this area, if indeed that happens?
Heath followed with a similar point suggesting the importance of the irregular street system in Lower Manhattan. The ongoing interchange revealed the student's lack of clarity about his responsibilities for this work.

Sl: You're asking for value judgments now, not just information. Our site is between those two built up areas [Wall Street and the World Trade Center] and there is no reason it can't remain that way.

Hutchinson: You could take an attitude toward that area and peripheral development which might reinforce that... You find that the tip is pretty small but has gotten built out in successive stages. People...can keep adding more layers without interfering with the old patterns.

Sl: But do you want me at this point to take attitudes toward this?

Hutchinson: You don't have to make any judgments about this at all. Let's say you just present the idea and values, but you don't have to say which ones you prefer. But you have to present this to everybody, because this belongs to the whole class.

At this point (3:00), the background noise from student conversations had reached a distracting level. Hutchinson rose from his chair, turned to the class, and sternly proclaimed,

Hutchinson: And since this belongs to the whole class, I think you ought to participate, keep quiet or get out!!! Sl is not doing this for himself... Whatever comes out should be as useful to you as it is to him. It's going to take some time to get that across... I would like to ask a question. Since you
have not been working on Metropolitan Context, if there are expectations that you have, they should come out now...

Hutchinson then returned to Sl's questions, and more general comments about the work.

Hutchinson: Is it important to take a position? I don't think you need to take a position. You can show that traditionally that is all ragged edge and old docks... Then show that over time this thing [the tip of Manhattan] has been built out in layers...obviously you don't have to displace anything that way... You might say that high density new development and intense development really ought to be taking place on these new layers and not in the old areas, around our site. If you anticipate that, you certainly give us a certain kind of information.

Hutchinson then completed his pattern; he demonstrated how the design might specifically respond to the design information. He demonstrated what it meant to "anticipate," although he did not indicate how one actually anticipates. Another connection between design information and its implications for the design occurred near the end of the next student's (S26) presentation (a discussion of his composite map of parks and paths in Lower Manhattan where pedestrians would not encounter automobiles), although these connections were made infrequently.

S16: Maybe you should define the interfaces between these two systems [pedestrian paths and automobile paths]?

S26: That's coming from another group. This is a plan which can be worked on. All these linkages don't currently exist.
Hutchinson: I think what S16 is suggesting is a good point too. There may be other possible interpretations, i.e., other systems of linkage between the existing or proposed pedestrian precincts. 

So maybe you should show the system that exists with gaps in it. Then people could choose between potentials for linkage.

Remembering the "keep quiet or get out". warning, the students began to follow the discussion between S1 and the teachers, and several added comments during the remaining 40 minutes of S1's review.

Following S1, the review moved to S26 and quickly through his maps of land use, parks, and urban renewal projects (20 minutes), then on to S16's maps of the transportation systems and links (30 minutes). In each case the teachers' comments followed the pattern established in S1's review.

During the transition to the next student (4:30), the teachers expressed concern over the pace of the session. 

Hutchinson: Do you think we should take a break?

Heath: We are really running out of time. We had better decide what we are going to do about these sessions...

The group reassembled after 10 minutes with five fewer students. Hutchinson and Heath then suggested ways to proceed.

Hutchinson: We could spend the first hour on Monday finishing up the review, but there is a
question of whether we ought to go through all of it. There is a point of diminishing returns for reviews. Though it gets bogged down, a lot of it is useful in that it gets everyone into the problem and gets people informed in this exchange of information. The question is, do you think it's worthwhile to have a formal review of the finished products as planned [February 14]?

Some of the responses were:

S6: We are just spending an inordinate amount of time on it...

Heath: One way to spend the rest of today is to work like this in a little group. Put things out on the table and chart some themes...

S6: Maybe on Friday, we should just pull out the crucial issues and talk about them.

Hutchinson: That's why I would like everyone to be here, because that would come from this process of going through all the groups and pull them out as we go.

Without a clear mandate from the class, Hutchinson suggested that the review continue, and that students leave if they so wished. But before turning to the next student, he reiterated some of his comments to S1 to the whole class.

Hutchinson: I would like to make some general points which apply to all these different categories [topics]. I think that you are trying to present the information in a rather perfunctory way, i.e., it's here all transposed into dull facts... Whatever comes out of the phase ...is not necessarily just conventional data [design information], but would begin to establish some frame of reference from which one can really begin to design. You anticipate how you use it. You can see it applied in a case and therefore you focus it more clearly... Many of those diagrams are fundamental, but many of them don't get
at the crucial issues. Once you see it three dimensionally, suddenly things are more clear than when you see it has lines on the page which are done at a level of abstraction which is hard to connect up with, and look at it in terms of architectural potential, spatial potential, use potential, etc.

If you anticipate how you are going to use it, if you see a problem and you think, "Oh, wow, wouldn't it be great if...!" This is what S16 was doing... I think that's very important--I think it would be better to leave some of the gaps not filled in. People can do that in different ways. But you say here is this whole potential of a set of spaces which could be linked up into a whole pedestrian network.

If you can, put something there which shows how these things are, then leave it up to the individual to see what connections to make.

Students had to rely on these explanations of the Phase I handout as no documents elaborated on the tasks or their relation to the other phases.

Then after arranging some logistics about library materials and getting the studio space in order on Saturday morning, Heath proposed,

Heath: One possibility now is to take one person from each of the groups and get him to summarize what he and his fellow workers have been doing. Then if something particular comes up, he can pin it up and talk about it.

S18: Some groups aren't working as groups, which is a problem...

Heath: Yeah, I know. What about the Site group. Are you working as a cohesive group in any way?
S: No, S7 did it.

Heath: S7 did it all?

With S7 ready to explain his work, Hutchinson decided to have a thesis student, also working in the same area of N.Y.C. present his materials. He was followed by S9 summarizing his paper on the city bureaucracy prepared for topic "E, Program Definition and Expansion." Here, again, much of the 35 minutes was spent with both teachers asking about and suggesting ways to relate this material to design possibilities, a discussion which drew intense concentration from the class without any verbal contribution.

Next S7 presented his work on topic "B, Manhattan Civic Center Area," subtopic "5, Spatial and Perceptual." It prompted questions among the students giving the teachers opportunities to talk more about their ideas for the studio. While S7's neatly drawn diagrams and his presentation dealt with the spatial qualities of the site, including remarks like, "relation of the elements to the grid," "Broadway as a major ordering element," and "Foley Square could even be organized off Broadway," the students' questions were on other issues.

S6: On a general level, how do you feel about, or what are our limits on taking down buildings?... Are we going to set some rules about which building can go and which can stay, or is that up to us? As principals of this firm, how do you feel?
Hutchinson's response moved quickly to the "range of schemes" which the studio was to produce.

Hutchinson: What I suggest is that at one end of the scale rehab is a distinct possibility, and I think that the range of schemes that we as a firm uncover and present, should in fact include such possibilities. ...one could propose schemes which are projected towards the future you anticipate. The pessimistic view says the economy is bad and it's not getting any better. You are not going to be needing all of this building... A conventional optimist might say that things are going to get better, and that we need more city government...and it involves a major transformation of the area...

But later when S6 reiterated his question, Heath commented on another aspect of the firm and the principals.

Heath: You must see the degree to which we are being unspecific about things like that, [it would] be inconsistent with the idea of simulating the office. In an office...you have got to know what you are doing, and advise people that you should do this and not that. The reality...is that the principals in the firm are in no position at all to say that this must be done... All these alternative schemes and strategies are just bargaining tools or tools to promote discussion of certain options for the people who really make decisions, who are the city government, and ultimately the people who elect them. It's not as if we are trying to produce a final definitive architectural scheme...

and later,

Hutchinson: If you take the position that the Tweed Courthouse must stay, then it seems to me that you have to demonstrate a scheme in which it becomes an essential part, otherwise it would not [stay]...
Hutchinson: You saw the presentation OLMD made which traced the history...[and] the proposals that had been made by different professional people... One of them takes a different attitude toward certain things like the buildings that are there... They set their own rules. It's not as if there is a set of rules that just exists out there somewhere, and all we have to do is figure out how to plug into them. That would make a much easier problem...

As with the previous presentations, the seventeen students who remained for S7's presentation closely followed the discussion, particularly the last 20 minutes when the cited comments were made. But unlike the previous presentations, students played a major role in the discussion and questioning this time. The involvement from the class did not extend into S20's presentation of additional topic B material. Five minutes into his presentation the session had broken into many small conversations, including Heath talking to the Office Group. By 6:15 the review ended much the same way it had started.

In presenting and discussing their material, the students cited numerous sources ranging from agency reports to books from the school library. However, only a few were regularly seen in the studio: the OLMD booklet, Manhattan Civic Center, excerpts of which were included in the Introductory Handout, the Plan for New York City* volume on

Manhattan, and such standbys as Graphic Standards, Time-Saver Standards, and Urban Planning and Design Criteria by DeChiara and Koppelman. (These or additional sources were not seen frequently during Phase II or III. The teachers had also posted magazine articles about buildings or projects they considered useful precedent and brought additional articles throughout the semester. These related to office layouts, phasing, large interior spaces, integration of new facades with classical facades, and techniques for graphic presentation. (Ill. 3-2) The teachers would mention these new additions to the class, but they would discuss them only in crit sessions. Occasionally particular buildings as the Gothenburg Law Courts or the National Library for the British Museum project (Sir Leslie Martin, Colin St. John Wilson) would be discussed in crits and articles about them would be posted in a later class.

The next morning, which was Saturday, Hutchinson and a third of the class arrived in the studio to arrange the desks and 4' x 8' "Homosote" panels. The room had been newly acquired from another department on the top floor of an aging four story brick building adjacent to the main architecture building. All the interior partitions had been removed to create space for first and fifth year studios, in addition to this fourth year one. The other fourth year studios remained in the main architecture
Cultural and entertainment facilities include shopping, hotel, recreational swimming pool, tennis facilities, restaurants and cafes.

Starting provision for 1969-1970:

The replacement of the city's Law Courts by a centralisation concept.

The creation of a cultural centre based on St George's Hall which will not be linked to present services to courts at lawn.

In order to exhibit a detailed programme of requirements the architect and the planning officer and their associates carried out a through survey of all departments (including police) in 1965 and March 1966.

From these studies a list of criteria specifying functional requirements was drawn up. The most significant of these are:

The first requirement both for the convenience of the public and the proper efficiency of the organisation itself is to ensure a proper centralisation of work in the civic centre.

The public reception area for information and information should take the form of a central and easily identifiable hall.

This reception hall should be sufficient for all public business.

Every department should be connected directly to the public reception hall.

Since the reception hall could be sufficient for all public business the department office should be linked to the necessary for security and comfort thereby and should be dealt also as economically and conveniently as they require separate reception facilities.

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Illustration 3-2, continued.

The total area at property involved including inner streets and part of Green Square is 3 acres of which a considerable proportion is in the lettable ownership of the City Council.

The concourse surrounding the public hall.

Photograph 1. The Civic Centre at the completion of Phase 1. in the Pictonprecinct development of the Civic Centre.}

Model of the Civic Centre at the completion of Phase 1, in the Pictonprecinct development of the Civic Centre.

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Model of the Civic Centre at the completion of Phase 1, in the Pictonprecinct development of the Civic Centre.
building. The room was unfinished with wall segments of different light colors recalling the previous offices and classrooms. This studio occupied the northwest quadrant of the rectangular space giving most students north light and a pleasant view. The metal drafting tables were arranged in rows of three extending from the north wall under large industrial sash windows. There were a few panels within the rows which gave a third of the drafting tables tack space, and further provided some enclosure for the studio. A rectangular conference area was created from the panels at the west wall, with one long side of the area open to the long side of the studio. Students could either sit around the conference table on a low storage cabinet between the two spaces or on several of the drafting tables during discussions and reviews. This set up permitted students to move in and out of reviews with minimal disruption of the discussion.

The natural grey of the panels and the multi-colored brick walls remained unchanged throughout the semester. Two students painted the exposed pipes above their work space (steam pipes and conduits for the fluorescent lights) primary colors, but no one else followed suit. Besides tacking drawings and photographs to the panels at their desks, the only other changes students made in their work areas were to bring in wooden footlockers for storing their books and supplies. Heavy chains secured these lockers
to the drafting tables along with the stools. The studio space remained organized the way it had been those two hours on Saturday. (It only became more cluttered with discarded models and stacks of discarded drawings as the semester progressed.)

WEEK THREE: PHASE I REVIEW

On Monday (2/10), the preliminary review continued, but in the newly arranged conference area in the studio. The review began at 2:30. Eight students were sitting around the table, others were looking on, and the remainder of the class was working as they had been since before the scheduled beginning of the class. Beginning with topic "B, Manhattan Civic Center," "4, Zoning--floor area ratios and zoning envelopes"--the review went much the same as it had on Friday. Hutchinson repeated his points about the work being for everyone, the students' perfunctory approach to it, and the need to demonstrate the potential impact of the information on the later design schemes. The presentation and discussion, including feedback from the class, lasted 45 minutes. During this session, three students were occasionally taking notes.

Realizing they had taken more time than planned, Hutchinson and Heath kept the subsequent presentation-discussions under
thirty minutes. Still, the group working on topic "D, Office Buildings," had to return after dinner. Many of the students were neither working on their topics nor attending the review while waiting to present their work. Those who were working had completed their review and were refining their material.

On Wednesday (2/12), the only class work day between the reviews, some of the students were putting their material in finished form within the format, while others were still revising their work. Heath worked with students all afternoon, suggesting additional ideas for their topics, stressing the limited time available, and assisting with the logistics related to the graphic presentation requirements. Hutchinson was visiting another studio's review session. Students were in and out all afternoon getting supplies, and getting their drawings copied and bringing in work they had done elsewhere. (One student, Sl, maintained a desk in another studio in the main building, bringing his work in for criticism sessions and reviews. Two other students worked mainly at home.)

During visits to the studio before the Friday review, a few students were observed working intensively. Thursday evening and Friday morning were particularly active and intense.

On Friday (2/14), the last day of Phase I, students posted their two hundred sheets, in format or not, complete or not, for the scheduled Phase I Review in the seminar
This session began with slide presentations by five students in the architecture history degree program, who though not taking this studio, had prepared papers and slides on the historical significance of specific buildings in the Civic Center. The reading of these papers with the lights down for the slide shows became monotonous after the first hour. A few conversations began in the back of the room and a couple of students could not resist the opportunity to recoup from their recent late nights' work. The class took a break after these presentations, then reassembled at 4:15 after one student requested, "Mr. Heath, could we get started now?"

What started at 4:15 was not the presentation and review of the students' Phase I work, but Hutchinson's explanation of the problem. He had noted in the February 12 interview that neither he nor Heath had extensively explained the urban design problem or many of the ideas underlying it to the class, but they would in Phase II, where they expected the work to be different from what the students had previously experienced.

Hutchinson: We really haven't discussed the problem and the didactic framework that this fits into. I think that some of you have been a little confused because I know you tend to type cast—you have certain expectations about the way you are making progress. What I am doing currently is significantly different from what I did last term, and I think an explanation is in order to give that some general meaning. Without elaborating I want to use the problem we are doing, and explain the attitude toward the problem.
Illustration 3-3: Phase I Work, Topic A

METROPOLITAN CONTEXT

RAILROADS & SUBWAYS

- REGIONAL COMMUTER RAILROADS
- RAPID TRANSIT w DIRECT SITE ACCESS
- RAPID TRANSIT w INDIRECT SITE ACCESS
- PROPOSED SECOND AVENUE SUBWAY

C.U.U.D.4

DEPARTMENT OF ARCHITECTURE URBAN DESIGN
FOURTH YEAR

METROPOLITAN CONTEXT
GRID STUDY

The proposed fabric of Lower Manhattan: Continued superblocking, radical change of open/built area ratios

- Existing and new or proposed superblocking, generally non-residential
- Proposed landfill and superblocking, basically residential

C.U.U.D.4

DEPARTMENT OF ARCHITECTURE URBAN DESIGN
FOURTH YEAR
Illustration 3-3, continued, Topic B

CIVIC CENTER AREA
SPATIAL CONCEPTS

LOWER HARRIOTT W
Conceptual Arts passes through object like buildings

C.U.U.D.4

DEPARTMENT OF ARCHITECTURE URBAN DESIGN FOURTH YEAR

CIVIC CENTER AREA
SPATIAL CONCEPTS

GRID SYSTEM
E-W grid
Continues down Chambers Street
Contains Tweed Courthouse

C.U.U.D.4

DEPARTMENT OF ARCHITECTURE URBAN DESIGN FOURTH YEAR
Illustration 3-3, continued, Topic C
Illustration 3-3, continued, Topic D

OFFICE BUILDINGS
HIGH-RISE STRUCTURAL SYSTEMS

C.U.U.D.4
DEPARTMENT OF ARCHITECTURE URBAN DESIGN
FOURTH YEAR

OFFICE BUILDINGS
LAYOUT PROTOTYPES

C.U.U.D.4
DEPARTMENT OF ARCHITECTURE URBAN DESIGN
FOURTH YEAR
Illustration 3-3, continued, Topic E

CULTURAL AND EDUCATIONAL FACILITIES

An integral part of the Civic Center program is definitely the educational and cultural facilities that it could support. If one views the governmental complex as an information center, the integration of such facilities is a necessity. Cultural and educational activities can serve to promote public interaction with governmental activities. The following facilities could be provided:

MUSEUM

A government sponsored museum does not have to be the exhibition of ancient artifacts, representative of a long gone age that holds the interest of only old spinsters who once used these relics. Nor is it necessarily the display of a collection of paintings and sculpture that were rejected by the more established museums. Actually, the entire civic center complex has the potential of being a museum. Each governmental agency could present a display describing its activities. The public could merely wander through these displays and interact with the visual presentations describing the governmental process.

One large exhibition space could also be provided for temporary special exhibits.

AUDITORIUM

A public auditorium with a seating capacity of at least 2000 people is a necessary requirement. It should be able to accommodate public lectures, political speeches, as well as concerts and performances. A large stage and projection control booths would therefore be necessary.

CYCLORAMA

A 360° projected theater could be an interesting backdrop for short visual presentations about government in New York. These have been successfully operated in many cities in the United States.

LIBRARY

A governmental library should definitely be included. It should be able to accommodate complete reference materials for public and governmental use, with emphasis on the laws governing the City of New York.

CONFERENCE ROOMS

A series of small conference rooms are also a necessary requirement. They would be utilized for small meetings and presentations. Direct accessibility to all governmental agencies is an important consideration.

RADIO AND TV STUDIOS

Facilities for producing TV and radio programs are required. These are to be utilized by the city-owned broadcasting station, WNYC. Necessary requirements would be 3 administrative offices, 2 recording studios, 2 control rooms, a record library and a large public studio for audience participation.

MAYOR'S OFFICE

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<thead>
<tr>
<th>Deputy Mayor</th>
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<td>Mayor's Commission on the Judiciary</td>
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<td>Bureau of Labor Services</td>
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<td>Mayor's Office of Single Room Occupancy Housing</td>
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<td>Mayor's Office of Staten Island Development</td>
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<td>Mayor's Office for Veteran Action</td>
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<td>Mayor's Voluntary Action Center</td>
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<td>Mayor's Washington D.C. Office</td>
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<td>Mayor's Council for Veteran Action</td>
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<td>Mayor's Advisory Committee</td>
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216,000
Hutchinson followed with comments (excerpted in Chapter 2) explaining that the urban design problem was a vehicle for learning. He also indicated how this problem and the one he had given the previous semester differed to illustrate several of his ideas about designing—the sequence of design events and the shifting modes of work. Then, introducing Phase II, he continued,

Hutchinson: Okay, we want to shift rather dramatically now to another mode. In other words in our schedule it says that we're going to do massing studies. That sounds banal. Well, what we really want to do is that, plus a lot of other things, meaning we want to shift the mode of operations to a much more conceptual mode.

Now we begin to generate ideas of what this thing is,...and what are appropriate kinds of models for the Civic Center. But rather than just doing it in a bland way, we want to break it down and use the data base [Phase I] to help generate.

For example, I think it is rather important to know how that building mass, the amount of square footage or volume you are enclosing is constrained by these things that we have, because those can limit you in certain ways, seeing the real possibilities on the site...

You really have to bring to it a lot of other attitudes. You might begin by looking at what a Civic Center might be, taking off from other models, whether they are the kind of thing like physical models, social models, the relationship between a space and activities..., or the kind of implementation models, having to do with, who does it, and how they do it...

Before the observer left the discussion, Hutchinson commented on Phase I.
Hutchinson: Part of the reason to have all of this is to have it as a conscience... Something that reminds you to check out certain things, rather than... manipulating things... You don't always have those big ideas that are floating around zap us on the first day. So it may be very good for you to sit down and fairly mechanically begin to combine.

Since the Phase I work had not been presented, Hutchinson asked that it be posted in the studio, so students could read and review the material for themselves, and question the originators about ambiguities and omissions. However, few of the students' sheets of design information had provided a written explanation of the graphically presented interpretations, hindering such a review.
PHASE II: "Building Massing and Site Alternatives"

The Phase II assignment (Ill. 3-4) structured the exploration of "basic alternatives for developing the Civic Center site," in two series, over three weeks. Students were to group around the six listed "Massing Types," and within those groups, develop massing studies for each of the seven interconnected sites. The first series of massing studies were to satisfy the minimum constraints of limiting dimensions and height to width ratios, while attaining three million square feet or maximum site coverage. For the second series, more constraints would be added "that distort and transform them [the first series] into architecturally developable possibilities." As in Phase I, the presentations were to be in 8 1/2" x 11" format, one sheet for the plan, and one for an axonometric, to be added to the booklet--the "design framework." For the second series, the presentation was to include a one-eighth scale chip board models to fit into the chip board site model completed in Phase I.

Hutchinson's description of a previous design problem (a university) with an undetermined program and malleable space requirements, further explains this phase.

Hutchinson: We developed a whole series of simple diagrams that would depict the facilities that came out of this program, three dimensionally,
Illustration 3-4a: Phase II

Department of Architecture
Critics: 

17 February 1975

THE MANHATTAN CIVIC CENTER

During this phase of the problem a series of studies of basic alternatives for developing the Civic Center Site is to be explored. Starting from generic building configurations put onto the site in the first series, the second series will involve applying to them a range of concepts and constraints through stages that distort and transform them into architecturally developable possibilities.

First Series -- Building Massing -- Due Wednesday, 19 February 1975

Seven site alternatives permuted against six basic building massing types. (All combinations are not possible so discretion will have to be exercised.)

Site Alternatives
1. Between Duane and Reade -- Broadway and Hall of Records.
2. 1 plus Sun Building site.
3. 2 plus Immigrant Savings Building site.
4. 3 plus 2 Lafayette site.
5. 4 plus available land north of Duane.
6. 5 plus available land south of Chambers. (South and east of Park Row)
7. 6 plus available land (including air rights) (South and east of Park Row)

Massing Types
1. Object
2. Grid of objects
3. Random arrangement of objects
4. Linear
5. Linear series
6. Grid (grid and objects)

Constraints
Maximum total square footage of 3 million or maximum site coverage (with maximum square footage shown) -- whichever governs.

For massing alternatives the dimensions should be limited as follows:

Buildings --
- Minimum 40' double loaded
- Minimum 25' single loaded
- No upper limit

Voids (open courts)
- Minimum 1:1 height to width up to 100' high
- Minimum 1:1.5 over 100' high

Presentation:
- All drawings shall be done on 8 1/2'' x 11'' within the square standardized format.

Drawing requirements:
- Each alternative is to be drawn in axonometric in ink on a separate sheet.
- A plan diagram should accompany each -- drawn on a print of the base map.
- A dark (not black) tone should be put on building in plan.
Illustration 3-4b: Seven Sites

This drawing is adapted from studio materials by this observer to illustrate the Site Alternatives.
in some relationship to each other, with an absolute minimum of constraints... Then gradually we transformed these things by adding more and more constraints...

Then we began to organize into groups, where each group had a different metaphor or a different intention. For example, one could see the university as a supermarket, as a galleria, as a collector of disperate things. We drew all these things up and made a great display of them on the wall. Not because these were design solutions but because it was a way to suggest alternative attitudes that one could take...

This served as a catalyst to get people thinking about and accelerate their process of really getting into design. Out of that, people then selected certain things. (Interview, 2/12)

Similarly, alternatives based on different "attitudes" were to come out of Phase II. From these alternatives, the intended coordinated range of schemes was to be developed in detail in Phase III. While the Phase II assignment clearly reflected this anticipated end product, each of the other ways of operating which Hutchinson intended students use in the studio was also evident in the assignment, especially the transformation approach to designing. Indeed the assignment was an exercise in this approach. As in Phase I, the tasks and products assigned for Weeks Four, Five, and Six were highly prescribed and coordinated by the teachers.

(Observation in the studio resumed in Phase II on Wednesday of Week Six. As the first campus visit had ended with the Phase I Review [Friday, Week Three], the following account of the intervening weeks was reported by the teachers at the beginning of the second campus visit.)
WEEK FOUR: PHASE II INTRODUCTION AND "THE FIRST SERIES"

On Monday (2/17), the students received the two-page handout which listed the sites and massing types as the transition to Phase II continued from the Friday review. In his two hour discussion, Hutchinson explained the university project from a previous semester, showing samples of axonometric transformation drawings (Ill. 3-5) to illustrate his approach to designing and the Phase II assignment. He then tried to put the Phase II work into the context of the whole semester. The students had to rely on Hutchinson's and Heath's explanation of this approach, as there had not been any articles, papers, or case studies written on it. Heath later reported that most students had found the use of the university drawings "okay," while the more antagonistic ones had found the approach overly simplistic. He felt there was still a problem in getting the students to think about how they would go about designing.

Heath also reported that he had produced a series of graphic charts to explain the approach to the students. The charts (Ill. 3-6) demonstrated the process of combining and transforming ideas and forms, first using abstract patterns and then using the Civic Center. Unlike Hutchinson's samples of finished products, Heath's charts demonstrated the
Illustration 3-5: University Transformation Drawings (composite)
Illustration 3-5, continued.
Illustration 3-6: Heath's Charts
Illustration 3-6, continued.
Illustration 3-6, continued.

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<th>Site</th>
<th>Constraints</th>
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- **Site 2**
  - **Constraints**
    - Placement issues due to limited space.
    - Accessibility concerns due to narrow access points.
    - Lighting constraints due to shadowed areas.
    - Noise pollution from adjacent facilities.
Illustration 3-6, continued.
Illustration 3-6, continued.
Illustration 3-6, continued.
Illustration 3-6, continued.
Illustration 3-6, continued.

A sketch Heath generated in one crit session to illustrate the transformation of a "donut" massing into a possibility for the Civic Center office building.
process while providing a framework for the students' work. (For example, on chart 1, the abstract patterns combine with the sites to produce object and grid buildings. And in chart 2, an object-tower mass is transformed by adding successive constraints.) But these charts had not been presented, as Hutchinson felt they would overpower the students. When Heath had introduced one of the ideas from the charts into this day's discussion, as he explained later to the observer, "It bombed. Hutchinson pulled me out with a discussion of where ideas come from." Heath acknowledged that "some things you can get across in a thirty-minute class, and some just have to be done over the board, where it has meaning for the student's work." He noted, however, that it was difficult to determine which things were appropriate for either setting. The charts eventually appeared in individual criticism sessions during this phase. The day's discussion ended with students forming new groups. They worked the remainder of the afternoon, while both teachers met with individual groups.

On Wednesday, (2/19), the work continued with both teachers meeting with the groups, although according to the handout, the first series of massing studies was due. Hutchinson and Heath emphasized the need for students to get the Phase I drawings finished, including titles and "zip-a-tones."

On Friday (2/21), several groups had not solidified
and were beginning to disperse. Heath talked with students working individually, not intruding on the two working groups. He found that those he talked with "did not know what they were doing."

Heath: Some students had done three schemes. I asked them to take one... and explain how they got from here to there [from their starting point to their scheme].

He found that students generally did not know how they had arrived at certain points, though when asked specific questions, they were able to work it through. Most students, he discovered, had gone from a "suggestive idea to an architectural idea [parti]" without the transformation of the scheme by adding constraints. Heath tried to go through the students' schemes by taking an early idea and transforming it using the criteria they suggested. His charts reportedly helped him explain the process of what he was doing.

The day passed without Hutchinson or the Review of Models and Diagrams listed on the "Schedule."
WEEK FIVE: "THE SECOND SERIES"

On Monday (2/24), the class shifted to the second series. The teachers explained the added constraints during the first hour: "Zoning" envelopes, spatial and formal "Site" concepts, "Conceptual Strategies and Models," and three "Functional" constraints—a one-third, two-thirds ratio of public space to private, the size of offices and commercial space, and a subway connection which would link the existing stations of the five lines near the Civic Center. Heath supervised the work during the rest of the afternoon while Hutchinson attended another studio's review.

On Wednesday (2/26), the work continued with the teachers meeting with the groups and announcing a new due date for Phase II, giving the class more time. The scheduled "Review of finished drawings and models," Friday, February 28, the next class day, was changed to the following Friday, compressing the time for the semester's other scheduled events. Heath was out the last two hours this day attending another studio's review.

On Friday (2/28), work and group meetings with both teachers continued.

WEEK SIX: THE PHASE I AND II REVIEW

On Monday, (3/3), work and meetings continued. Students were reportedly preparing finished drawings in the format of
their massing studies. In addition, each student was expected to make a scale model of one study of his or her choice.

On Wednesday (3/5), work continued and observation of the studio resumed. Hutchinson, in his first crit session of the day, found that one student, S26, working on the building as "Object" massing type, was "making a wall along Broadway,...using it to enclose space," rather than an "Object" in a space, as the City Hall in the park. He had also not transformed his massing type with the prescribed constraints. In redirecting him, Hutchinson gave examples of the "object" and other massing types, and illustrated the intended approach to the assignment using the student's work. "I'm just...basically transforming those parts of the building which begin to differentiate themselves... in that case, the public and commercial parts." He went on to explain the "stew pot" and "transformation" approaches to design. (Segments of his explanation to S26 are quoted in Chapter 2.1. After the session, the student explained.

S26: I had gotten started designing my own thing, and he put me back on track. So I guess it (the crit session) was good. I'll get back to working on my design next week.
(Crit session, 3/5)

Following this session, Hutchinson left for the afternoon to attend another studio's review. Heath talked individually with students about the massing studies as well as their unfinished Phase I work until after 6:00. Heath's individual
sessions with members of the same group revealed that many students did not know what other group members were doing. As in Phase I, the groups had divided the work among their members (this time by sites), and gone separate ways. (Examples of students' drawings of two massing types, "Grid of Objects" and "Linear," talked about this day, are Ills. 3-7 and 3-8.)

Although this was the last class day before the Phase I and II Review, only four students remained in the studio one hour before the class officially ended. Two of the students who remained this day explained that others were tired of the project and had lost any enthusiasm with which they might have started the semester. Indeed several students noted earlier in the day, "that they had not gotten anywhere" since the previous visit. One student, S2, explained that she was not looking forward to Phase III starting the next week, as she still did not see it as "designing." Few students were observed in the studio between this class and the Friday presentation.

On Friday (3/7), the last day of Phase II, students began posting their work for the Phase I and II Review in the seminar room before 2:00, for what was to be a long afternoon. As two students inked their pencil drawings at one table, a confusion of people put work up until 2:30 when Hutchinson interrupted this conversation with the guests to explain how the material should be organized on the walls.
Illustration 3-7: Grid of Objects/S15's Sketches
Illustration 3-8: Linear/S8's Sketches
The five hundred 8 1/2" x 11" sheets (Ill. 3-9), placed edge to edge, literally papered the walls of the 15' x 30' room.

Two representatives from OLMD attended the review as invited guests, along with three faculty members. Both representatives were involved in the city's efforts to redevelop the Civic Center and had completed their architectural education in this Department several years earlier. Of the three faculty members, two were recent additions to the school. One (G1) was currently teaching a second year studio and a seminar on design methods. The other (G3) was teaching a fourth year studio on designing with existing manufactured building parts, and a seminar on Industrialized Building Systems. The third faculty guest (G2), who had joined the faculty with Hutchinson, was teaching the studio with G3.

In getting the session started just after 3:00, Hutchinson explained:

Hutchinson: I don't think it makes an awful lot of sense for people to stand-up and talk about what they have done, partly because nobody has any real convictions about what is up there... It's a bit overwhelming to have that much material up on the wall. That makes for difficulty reviewing it.

Later in the day, he explained that the studies were not schemes yet, though they were "highly suggestive." For him, the material's use was for designing, not reviewing.

Hutchinson: I hope we can get it all reassembled now over in the studio. The real use of it is not so much to have a review...but in the
Illustration 3-9: Phase II Work, March 7 Review
Illustration 3-9, continued, Object

METROPOLITAN CONTEXT
MASSING STUDIES

OBJECT
CONSTRAINTS: PUBLIC-PRIVATE, OFFICES
SITE: 3
TOTAL BUILDING AREA: 124,000
NUMBER OF STORIES: 27

DEPARTMENT OF ARCHITECTURE URBAN DESIGN FOURTH YEAR

METROPOLITAN CONTEXT
MASSING STUDIES

OBJECT
CONSTRAINTS: PUB.-PRIV., OFFICES
SITE: 3
TOTAL BUILDING AREA: 124,000
NUMBER OF STORIES: 27

DEPARTMENT OF ARCHITECTURE URBAN DESIGN FOURTH YEAR
Illustration 3-9, continued, Object
Illustration 3-9, continued, Grid of Objects
Illustration 3-9, continued, Grid of Objects

GRID OF OBJECTS
SITE COVERAGE GOVERNS (H:W)
# OF STORIES: 6
TOTAL SQ FT: 2,3000,400

C.U.U.D.4
DEPARTMENT OF ARCHITECTURE URBAN DESIGN FOURTH YEAR

GRID OF OBJECTS
SITE COVERAGE GOVERNS (H:W)
# OF STORIES: 6
TOTAL SQ FT: 2,3000,400

C.U.U.D.4
DEPARTMENT OF ARCHITECTURE URBAN DESIGN FOURTH YEAR
Illustration 3-9, continued, Random Objects

MASSING STUDIES
RANDOM OBJECTS
CONSTRAINTS:
SITE:
TOTAL BUILDING AREA:
NUMBER OF STORIES:

MASSING STUDIES
RANDOM OBJECTS
CONSTRAINTS:
SITE:
TOTAL BUILDING AREA:
NUMBER OF STORIES:
Illustration 3-9, continued, Random Objects
Illustration 3-9, continued, Linear
Illustration 3-9, continued, Linear

LINEAR MASSING

G.F. = PROPORTION, SQ. FT.
3 m SQ. FT.
20 STORIES.

LINEAR MASSING
Illustration 3-9, continued, Linear Series

LINEAR SERIES
BASIC CRITERIA
GIVEN
100' LINE WIDTH
ADDITIONAL
1.7mil sf

LINEAR SERIES
TYPE A
Illustration 3-9, continued, Linear Series

LINEAR SERIES
TYPE B
1.35 mil sf
Illustration 3-9, continued, Grids
Illustration 3-9, continued, Grids
next phase when we actually start designing, it is available to make reference to...

But how to review it, and how to use the session or the guests was to be a major issue all afternoon—one that would not be resolved.

Going on to explain to the guests what the class had done, he noted:

Hutchinson: We started in a fairly conventional way, that is of taking the problem, dissecting it, breaking it down into manageable areas of research...

He proceeded to point out the Phase I work and comment on the different topics which the student groups had researched.

Then turning to the Phase II material, he continued,

Hutchinson: We decided to study massing alternatives on the site. And rather than...the more typical way...--to simply start trying out different massing possibilities, or being I guess lead by intuition to different site strategies, and looking at different ways you could put that much square footage there within the edges—we took what I guess most people in the class feel is a somewhat mechanistic beginning or approach...

He proceeded to elaborate on the constraints students had used to transform the "pure" massing types into "perhaps viable" alternatives, but which would not be "real schemes without being transformed quite a bit further."

Then, beginning to set the agenda for the review and for the guests, he explained,

Hutchinson: For our purposes, I guess the way to use this and get something out of it right now is sort of the key issue. I think there are several things we can talk about...--what inferences
can be drawn from this, what does it mean, what kinds of possibilities for the next stage are now at least implicit...and at least begin to explore and even exploit the kinds of things that are here, either blatantly, or very clearly and intentionally there.

I think it is also in order to make a critique of the process itself... I can make some myself. One has to do with whether or not the different groups actually functioned as groups internally. Whenever they did function as groups, it seems to me that the things that hang on the wall are more meaningful than those where the groups broke down and took off as individuals and had their own assignments and went off and did it, then found that there were conflicting criteria with the other members of the group...

Each of the groups, to some extent, established their own criteria in addition to those which had been given. The first one, and perhaps the most important one is to define for themselves this generic massing type...

During these remarks, a few background conversations like those at the Phase I Preliminary Review began. In an effort to "draw some students into the discussion" (3:20), Hutchinson asked S8 to explain his group's approach to determining what was "linear" for each of the sites. S8 reported that they had drawn a series of increasingly longer blocks, axonometrically, asked fellow students which were linear, and then charted the findings. After determining which were linear, the group found that no linear building could accommodate three million square feet on the smaller sites.
In responding to linear massing studies, the guests asked more about the assignment and the process than about the particular studies, as in the following excerpts.

G1: Is there a key which identifies which one fit that maximum three million square feet..?

G2: So I can understand this generally, which came first, this wall [Phase I] or these walls [Phase II]?..

Did you when you selected the proportions of the building, subject that to any other criteria, like... what the proportions are doing to the internal organization, the depth of office space, length of corridor, depth of useable space..? There are some optimal proportions that lend themselves to specific building types. Also...how much actual wall and foundation footage is needed in order to produce that building, would be interesting overlays...in a study like this...

If you prove that the linear building won't work in terms of the criteria of square footage, etc., was there any attempt to make composite studies--...a grid building with a long building?..

G3: For my own understanding, is what you are producing there sort of a morphology of forms first that are predicated on set back requirements and some approaches to site coverage? Is that tied into a functional morphology, saying that long buildings are only good for single loaded corridors, and therefore only good for certain office uses? Or is it broader than that--that certain buildings could be for mixed use?

Hutchinson and Heath responded to these and other questions with more elaborate descriptions and explanations of the assignments and of the transformation process. This prompted more discussion among the guests, including comments about the "amount of office space in Manhattan that is going
begging." The background conversation recurred during these discussions.

Then, at 3:40, Gl tried to direct the discussion to the task at hand.

Gl: If we accept transformations, our problem really is to begin talking about evaluating those...or at least to start talking about the different possible parameters there might be. If for instance, we are talking about the maximum of three million square feet, we should talk about what that implies, what kind of development it is, what type of situation would be desirable, and try to typecast the project itself... Perhaps there are a limited number of project types and alternative massings. And we have to decide on what parameters are to filter those out...

But G2 lead the discussion into office prototypes, suggesting that these students develop one for New York City which was more responsive to market and energy needs than office towers. Hutchinson responded that the class was trying to simulate an office doing a feasibility study which demonstrated a range of strategies, not one or two. Then referring back to Gl's comment, he noted,

Hutchinson: We have to try in the next week or so to filter out the basic types, and hopefully that's what this kind of stuff can help to generate.

The proposal by Gl was only one of eight made by the guests and teachers in search of a way to deal with the wealth of student work. After the diversion from Gl's comment, G3 suggested in order to filter out those basic
alternatives, one could either "apply criteria to the schemes" or "take a prototypical solution from each group and evolve it to its best use." But Gl reiterated his proposal, explaining that if they could list the categories of criteria, and set limits within those categories (like 300,000 square feet), then "we could start looking around the room, and criticizing schemes on the basis of those parameters...and try to pick out the good schemes," and then repeat that with a different list of parameters.

As before, the proposals were delayed by more discussion before they could be tried. The comments included still further explanations of the assignment and process by both teachers, and suggestions of categories and parameters by all. One OLMD guest stressed his concern for how much to build, given the 15% vacancy rate in Lower Manhattan office space, and recognizing that some amount of building would improve the Civic Center, while too much would have a negative impact on the adjacent areas (though he could not say how much was too much). G2 expressed a concern for energy consumption and suggested creating a "hierarchy of constraints." Gl suggested five categories to get things started: staging strategy, demolition-preservation, total square footage, imagery (as in background building), and heat load and cost as they relate to a building's surface. Then within these categories, he "randomly picked" a set of parameters
which the guests commented on. Hutchinson restated and elaborated the assigned constraints to extend Gl's list, and made a rare comment on the political reality of such an urban design project.

Hutchinson: I think a comment that was made earlier when talking with [the OLMD guests] before we came in...would be very useful... My own paraphrasing or interpreting is that everything is self-cancelling in a case like this. For any scheme that you come up with, you will find some interest groups, which have a substantial interest, for which that is not a scheme—for which there will be major opposition. This is the nature of politics, and the nature of all kinds of complexity of civic government and organization.

And both guests from OLMD added their political perspectives.

OLMD 1: Taking Gl's parameter, would an administration spend a great amount of its capital funds to build an anonymous, background building?

OLMD 2: There is a whole opposite argument—building a new Civic Center is a politically delicate question because it is taking public money away from essential services to build additional office space for an expanding bureaucracy. Conceivably an anonymous building would be the politically expedient solution. The more doable one.

In this thirty minutes since Gl's first proposal, the room had become hot and smoky, and the students' increasingly restless. Their efforts to add to the discussion by raising their hands had gone unrecognized until S11 broke in during a lull to explain that "the guests have criteria I never thought of," and to ask that they review them so a list could be made. As ways of doing this were being discussed, Hutchinson initiated the last series of proposals for looking at the work. It was now 4:20.
Hutchinson: Shall we actually start quickly looking at these...taking these criteria..? Are there a couple of linear models to put into the site?...

As the group rearranged themselves around the site model in a burst of conversation, Sl1 placed his linear study model--an elongated E shape in plan--on his site. The group settled as Gl began the comments.

Gl: If this is the one we are dealing with, I'm not sure what everyone else is thinking, but it seems to me that this one is very hard to think of in terms of a staging strategy... I don't know how you want to do this? If we were to eliminate those buildings which don't fit any of the criteria, we wouldn't be talking about this proposal... I would like some response from other people. Do we look at this building and see what can be done with it to deal with those criteria, or do we eliminate it?

Sl: I think if we explain the process that we went through on each one, that will let you cover more of the different schemes instead of getting stuck on one building that was slapped together in a couple minutes... Shouldn't we really criticize the process?

Gl: What I was suggesting that we do, is to pick out buildings that essentially fit these criteria and talk about them. And then we talk about other issues...

Hutchinson: In terms of picking them, may I make a suggestion? That is that the students who did this series select the ones they would like to have picked...

G3: I thought this was for a proliferation of ideas and was non-judgmental. So how can you go now and criticize those? We haven't even fixed the criteria.
S1: They do have some judgment to them...

G3: Well what you are suggesting then is whoever puts a building into the model tells us what the criteria are...

Hutchinson then turned to the drawings to review for the guests how the linear schemes were arranged from smaller to larger sites, and from the most simplistic to the most developed. Picking up on the development of those schemes, G3 asked,

G3: Couldn't the group explain how they arrived at a certain solution, or what the process was by which they arrived at that solution?

Hutchinson: Yeah, I think that would be appropriate, if you want to do that. S1, you're not in this linear group are you?

S1: Yes, I am. I'm in site 5.

G2: Stand-up.

Placing his model on the site, S1 began presenting his scheme, explaining what he had tried to do spatially. This presentation at 4:30, the first of the day, was to be just another false start, however. G3 interrupted him after a few minutes, explaining over the noise of background conversations,

G3: Excuse me, but I thought you were going to be the spokesman for the whole group.

S1: For the whole group? No, just for myself. After a bit of laughter, S1 continued explaining how his scheme had developed. Five minutes later, Hutchinson
interrupted him to ask that he present the scheme in terms of Gl's criteria. Then, unsatisfied with the presentation which followed, he interrupted again.

Hutchinson: Can I just make a comment on that? We can't address ourselves to all of the issues important to you... We can't have everybody go through their process... We have to try to find something that cuts across this process and has value for everyone for getting the best feedback at this stage from the people that we have here... There is no need to defend something that is really not a scheme...

The guests then proceeded to ask Sl questions about how his scheme complied with the criteria. The rest of the students were becoming anxious, and shortly after, one interrupted to make his own suggestion of how to deal with their work.

S9: Mr. Hutchinson, I would like to make a suggestion that would be time saving. I think that rather than having representatives from each group stand-up and discuss the schemes,...since most of you people have not really examined the schemes, I think it would be much more useful if you people would just get up and take ten minutes looking at them.

Hutchinson and everyone agreed enthusiastically, recognizing that it implied a welcome break and asked that each guest select one scheme to talk about when they reassembled.

They reassembled at 5:15 with Gl taking the floor. He had selected the diagonal grid schemes of S18 and S20 (included in the drawings which follow) as ones which related favorably to his first set of parameters, and proceeded to ask the students about their schemes' response to those
parameters. His fifteen minutes of comments and questions were virtually uninterrupted, unlike earlier. He concluded by asking if another guest would like to go through another scheme, however that did not happen.

Instead, the session returned to the general discussion among the guests as earlier in the day. They commented on S18 and S20's grid schemes, on the relative difficulty of making different massing types work, and on the various parameters. Their occasional references to specific schemes referred to the student's models rather than the more detailed drawings. G3 reiterated his concern for "the way we tend to judge these," because using a single set of parameters contradicted the intent to be "pluralistic." Gl agreed, noting that he had simply selected one set to get the discussion started.

The OLMD guests made few comments during this discussion. At 6:00, however, they took the floor for the last twenty minutes of the day. They explained several ways the city government worked that could help shape the schemes, for example, the needed proximity of agency heads to the mayor. They reported on an incomplete and out of date attempt to determine the square footage needs of the city agencies, and on the movement to decentralize city government into "little city halls." They restated their concern for the urban design implications of what was to be built, especially on
the public and private sector surroundings, and their interest in seeing shops, stores, exhibition space, eating establishments, and an information center used to enliven the Civic Center. They were asked what strategies they would use if making a proposal which would "have a reasonable chance of getting built," though they might not resolve all the issues. They suggested that the fewer the square feet, the more "doable" the proposal, because there would be less cost and less impact on the surroundings. Most of the students were attentive during this discussion, despite the time (two were taking notes).

These client comments, the most extensive of the day, ended at 6:20 as another guest and a few students left the review. The session then broke into little discussions around the model. Before the group disbanded at 6:30, Hutchinson reiterated his request that the work be posted in the studio on Monday, and Heath asked that students make copies of each sheet for the booklet to be assembled with this material. This ended the Phase II work.
PHASE III: "Precise Development of Basic Alternatives"--The Range of Schemes

Using the "data base" assembled in Phase I, and the catalog of massing studies produced in Phase II, students were to architecturally develop a coordinated range of schemes in Phase III. According to the "Schedule" handout, this development was to occur in two segments over nine weeks: the "Precise development of basic alternatives and site strategies," and after several reviews, the "Detail development of proposals." However, with the extra week taken to complete Phase II, only eight weeks remained.

Unlike in the earlier phases, the handout did not elaborate the scheduled assignment. Instead it listed the presentation requirements for two reviews (Ills. 3-13 and 3-16) and were not distributed until later in Phase III.

Hutchinson had explained earlier (Chapter 2) that when taking a scheme to "a more specific kind of development" in Phase III, "one has to shape it with an intention, a purpose, ...with a particular set of attitudes in mind." In selecting those attitudes, the students would be determining the constraints on their designs. The schemes were to be developed by transforming basic alternatives in response to those attitudes or constraints. The other ways Hutchinson had intended students operate were also integrated in this phase's work, especially group work. The "Schedule" noted that, "Work prior to April 7 will be in groups, after April 7--optional individual or group work." (This coincided with the scheduled
beginning of "detail development.")

(Observation in the studio continued from Phase II until Monday of Week Eight, then resumed for Week Eleven and Week Twelve, and again for Week Fifteen, the Final Review. The accounts of the intervening weeks are from teachers' and students' reports.)

**WEEK SEVEN: PHASE III INTRODUCTION & SKETCH DESIGN**

On Monday (3/10), the students began posting their materials from the Phase I and II review on the panels in the studio as requested on Friday. At 2:40 they had finished, and began assembling in the conference area for the teachers' introduction to the Phase III work (quoted here at length since no handout explained the assignment.) In Hutchinson's absence, Heath began.

*Heath:* We can talk a little about the discussion that we had Friday, and how much of that was redundant and boring and unnecessary in a second, but right away [I want] to give you an idea of what we have in mind for this week and then for the subsequent two weeks...

This week we [want to] just try to pull together some ideas from this tremendous array that we have here in terms of what are viable "partis" or viable ideas... In my mind that doesn't mean that one would be able to run up to the wall and put your finger on one solution as it appears in its present form... It's very clearly much less simple than that.

We really have to come to resolution of what are a set of viable options on this, by a certain amount still of group discussion.

This week working still within groups, hopefully in a very schematic model form--rather
than drawing--by the end of the week, [we hope] at least to have some kind of notion about the zoning down of options to the things we feel will provide the basis for development.

Now, whether that subsequent development is group or individual, it's still a little early. We want to remain somewhat flexible on that. What we don't want to happen at this point is the individual--already within his group...used to working on his own and... developing his ideas--to rush off developing what he has in detail as his solution. We still would like to keep it, during this week, as a group project. Now that doesn't necessarily mean that the groups remain as they are...

Having these things cleaned up..., we can re-cap what happened on Friday, and then begin to...discuss in groups, the things which are really important, bearing in mind some of what was discussed at the end...on Friday, with the people from OLMD.

But before the recap, Hutchinson arrived.

Hutchinson: The biggest question as far as I'm concerned is, how do we narrow down the range of schemes by the end of the week, and at the same time work out a framework in which there is...a minimum of overlap. If everybody takes off individually at this point, we just simply cannot do that... Everybody will find that you're off in the corner and doing the same thing that somebody else has gone off to do in another corner.

Why the range of schemes was to be reduced should be evident to the reader from previous explanations, but it was not evident to several students.

S3: I understand that we want to narrow these things up, but I don't understand what we are trying to accomplish by doing this.

Hutchinson: I think we've talked about it several times. One discussion is that we would try to come up with, by the end of the term,...a series
of separate schemes, which represent a range of different attitudes toward the site and towards issues like preservation. Meaning that at one end of the spectrum,. . .no, or very few buildings have to be done—perhaps involving rehabing old buildings and maybe landscaping. At the other end,. . .we would deal with schemes...up to three million square feet.

Okay that's one set of wholes which has to do with the amount of building. Now, interwoven with that are obviously issues like questions of preservation, and attitudes towards existing fabric...

S3: Well, is what we're doing, planning several different attitudes that could be acceptable budget positions for the site, and then with those attitudes we are determining exactly what can and cannot be done?

Heath: We're certainly doing that, and a bit more, rather than making some kind of optimum selection from what we've got here...

To use this as a kind of catalog of schemes which are in themselves just simply worth developing as they exist now, I think that would be the wrong way around. I think it would be better...to try to identify some attitudes, some realistic possibilities for the site... And then use this stuff...to develop that range...

Hutchinson: Yeah, that's what we need to determine...Hopefully by the end of the week we'll actually have some clear set...

I think we need some props...By taking some bits and pieces of stuff from models here, [we can begin] speculating on different attitudes that one might have in regard to putting things into the site and what that might mean in terms of the whole series of issues.

Another way to do it is to let people respond based on what biases they've built up so far to the issues and the problem. Hopefully there might be enough people who'd be willing to take different attitudes.
We could establish a number of different levels at which the problem is attacked. This might be a rallying point for groups rather than a particular form...

I've said all along that I wanted ultimately that people would be happy with what they're doing—not stuck with something that they can't believe in. How many people would be willing...to assume an attitude of building a lot of stuff here, perhaps an incremental growth scheme... Are there people willing to do that?..

The teachers not only explained what they were trying to accomplish, but generally how they could begin, taking the responsibility for organizing the work as they had in both previous phases. As Hutchinson redescribed the two extreme solutions, and reiterated that he did not want to force anyone, another student inquired about what he was trying to accomplish. In responding, Hutchinson noted several of his ideas about designing, including the most fundamental—having some organization.

S24: Are you trying this week...to present a certain range of alternatives to make some people maybe re-evaluate their biases towards the problem?

Hutchinson: No, I wasn't trying to use this as a sort of group therapy. I was really trying to see if we could really get the thing going in the next phase, where we actually start to design. But we have to have some organization about the way that we go about designing.

Whereas in a normal problem, people just now take off and start doing their thing, we'd like a framework in which that happened. I think people ought to be able to individualize their efforts, but...I think it's very redundant, because people are always very protective and sort of mother-hennish with their ideas. Then at some point, they get off the nest and all the chicks are exactly alike,...in all the different nests.
S24: How exactly would you have people working in groups?

Hutchinson: Well, I have an idea about doing it, but it's negotiable... What I had thought was that maybe this week, we could generate a whole lot of props that we could plug into this model, and then we'd have something to talk about on Friday. We'd get everybody around and talk about it, and even combine them in different ways... I think a lot of the things come out of what you have.

But Hutchinson's answers proved unsatisfactory for a third student, who expressed his own uncertainty about the work.

S18: I just think it sounds a bit nebulous. I'm not sure that I can really grasp what we're trying to get to.

Hutchinson: Okay, we've got two things working at cross purposes. One is people's individual wishes, and the other is the need for a range of schemes. They may not serve the same purposes. In other words, it may be that all the schemes come out alike. I guess that's what was nebulous about it.

A fourth student then argued for doing the task individually, to which Hutchinson surprisingly agreed. Presumably his concern for students being "happy with what they're doing," was extended to groups, at least for the moment.

S--: I wanted to say something before about the procedure for this in terms of the groups. I don't know how we were going to decide on that. In terms of this cataloging process of coming up with biases, I think it would be a lot better if you disbanded the groups and worked individually, for two reasons. One being that you might have found through your work in a particular group that your biases are definitely not within that group.

Hutchinson: I really agree with this. I don't think we need to keep the old groups. When I said that a minute ago... it was just a point of departure for organizing.
What I think in a way might be the best would be right now for everybody to go off to his own table and do a scheme. Quickly, very quickly, a one day sketch. And come up with a model which depicts as near as possible something that you could assemble out of all the things that were done—assuming it has had some meaning for you, and that out of it you've drawn certain conclusions and you have certain ideas. Then we'll just bring it all back and compare notes and maybe out of that, we could begin to structure something. What do you think about that?

S--: It's a good idea.

The one day sketch would allow students to work individually and begin identifying attitudes to structure the range of schemes. Apparently, Hutchinson had no single way ready to assign as in the previous phases. In this situation, he seemed more concerned with the outcome—"the attitudes"—than the ways for identifying them. But one student was not convinced about the sketch.

S7: ...I don't think that's as valuable as going through and picking out issues, overlaying them and coming up with a solution that way.

Hutchinson: Okay, I agree and the reason I said that a minute ago ...is that if you put a slab in, it has certain consequences. You get the low buildings, they'll have different consequences...

I think what S7 is suggesting is that one really ought to make your private or personal review of the things that have been done, to try for yourself. Determine what you think are the most important issues and what are the most important emerging ideas that you can get out of that. Then try to synthesize those very quickly...with a very simplified model...Look, when do we get back together?...

Perhaps we could do it at 2:00, Wednesday, and then everybody goes back to work...Then it's just whatever you want to present, except that I think everybody ought to have some kind of model and accompanying drawings, diagrams, colored spaghetti, or whatever.
Heath: This is a way of getting at certain issues... it's not just every man for himself for the rest of the semester...

So the week's task was set and the Phase III product was discussed, yet two other items on Heath's agenda had received little attention. What the teachers had in mind for the subsequent two weeks received no comment, and the previous Friday's review was only mentioned briefly.

Heath: Before we split, we really on Friday didn't do it as one might normally do it as a review--saying to someone "Well, get up and describe what you did and how you went through it." A number of people afterwards came up complaining about the fact that we've done all that work and it never even got discussed. Are there any sort of issues here which people want to talk about? We can sort of come back to it when it becomes more useful and valuable.

Hutchinson: Well, it's here and it's available and you can look at it. And I think you should. It may be a very good way to accelerate getting into it. Look quickly at all this stuff and you may be able to zoom in a lot faster than if you just go back there and start trying to dream up all of the things you think...are important.

As the students returned to their desks, Heath left for another studio's review, and Hutchinson collected plastic boxes and other model pieces from around the studio to use as "props" on the site model. He then began to arrange these pieces in different patterns and to talk about the consequences of each, as six students looked on. After a few minutes, he began talking to individual students at their desks, while several sets of students fiddled with the "props" during the next half hour.

Hutchinson's individual sessions were interrupted around 4:00 by a secretary reminding him of a meeting he was to attend.
Hutchinson left and the students continued to work for some time, but by 5:30 only three students remained in the studio, and only two of them were working on design.

The following afternoon there were eight students working in the studio, three fiddling with the "props" while talking of shaping the exterior space, and the others making drawings and models at their desks. On Wednesday morning, four of those eight students were back working after their Professional Practice course at 11:00.

Wednesday (3/12) afternoon at 2:00, many students were roaming the studio, looking at others' models, while some were still gluing cardboard. Before reviewing the "one day sketches," Hutchinson elaborated on his comments about the Phase III work from Monday, (2:30).

Hutchinson: Let's talk a little about how we take it from here, in forming groups and so on. Heath and I were talking about maybe this afternoon trying to make a notation about different basic schemes and also the different approaches. Because they probably ought to be sorted out... and when we finally get groups together there should be several factors involved.

One is that there is no major bad vibes within the team. Another would be that there are certain sets of issues that people should agree upon...and perhaps some generalized strategy for how you approach...We are not going to try to form the groups this afternoon, but I think we should keep in mind what would constitute the basis for a group.

Anyway, this afternoon I thought we would simply look at the schemes and respond to them and talk about them.

Up until now these things have tended to be Heath's and my imposition on you. From here
on, it's going to be less and less of that. It will be more things that will be determined by you. This was just to try to get things to coalesce and get accelerated into the problem...

Heath: From next week on, we would like this to be over the board crit business quite frequently. We haven't had too much immediate contact with you in the studio up until this point because we tried to impose a certain structural notion. Now that that has happened, it's important to have more contact...particularly the work in groups...

Following these introductory comments the review began with S9's presentation. The sessions went quickly. Students crowded around the models and made frequent comments, unlike the previous reviews. Many of the teachers' and students' comments and questions dealt with the issues and attitudes, including the Phase II constraints, which the students' designs were trying to reflect. But Hutchinson was not pleased. He stopped the review after two hours and twelve students' presentations. Responding to S19's drawings and model, he explained,

Hutchinson: I find myself really getting depressed. Yours isn't anymore a depressant than the others. I feel there is so little connection between the kind of massing you really put in there and the way the thing really works. Either you are a good formalist or you are good, at least, at making it work. Most of these...are neither... Ideally you would like to merge these two...

Hutchinson was interrupted by a student, S18, taking seriously the comment that "more things...will be determined by you." He expressed his confusion about the teachers' expectations.

S18: From my point of view, I would like to just sit down for a week and just design. To have time to sit down and look at the thing from my point of view.
Hutchinson: Okay, you will have a week, alright? What we are doing now is quickly responding to what I think is an impulse or need to design...that is what this is supposed to be...

S18: Maybe a lot of people were confused and I was confused then because I thought we were still fooling around with what we have done.

Hutchinson: Well, dammit, you didn't listen--we said it, I don't know how to say it more clearly than the other day--you were now designing.

You were actually now making schemes, making "partis." You are not necessarily wed to what you had been doing before--that [Phase I & II] was all a resource... You can look at it, study it, get ideas from it. But you aren't continuing from it. You aren't working in groups anymore, necessarily...

What I'm really saying is that within a very short time, one day, one afternoon, people at this point should be able to come up with single but viable ideas...There is a clear notion about what it is that sets an intention... some of these... have begun to do that. They [students] said, there is a clear idea of how the thing works and what it is supposed to mean on the site, spatially.

Heath: Not only spatially but also meaning in other terms, too. We have discussed this a number of times. I didn't think any one person has gotten up and said, "this is my concept of what this is in this particular space"...

Hutchinson: It surprises me that people are not quicker in response, given the opportunity now to move out of what is a more mechanical process, to begin to behave more individually and more personally to what you see as the more crucial issues, and what you would really like to do...

This was only the first of several important interchanges in the forty-five minute discussion which revealed both the teachers' expectations and the students' understanding of those expectations and ability to operate within them.
In the next comments, one student (S12) acknowledged his problem with designing without a fixed building program. Hutchinson, while astounded, explained the necessity of doing such, especially on a project of this type.

Hutchinson: I think there are a lot of...necessary steps between what was supposed to have been done here...One [is] where people are on the site and...the points that need to be connected up. I thought it was obvious but apparently it is not obvious because people don't respond to it.

The student was concerned about another necessary step which had been overlooked.

S12: ...I don't think you can make any sort of scheme...without knowing any of these things...[like functions]...and a whole set of other things...

Hutchinson: [S12], do you really believe that the only way to design a building is to know every room which has to go in the building? Is that what you are saying?

S12: Well, that's all I've ever been exposed to.

Hutchinson: You never learned about Zoning or Packaging...about Generalizations, drawing Conclusions

S12: Yeah, but we don't-

Hutchinson: We have certain generalizations and people basically are not even working with those--about the notion of highly public kinds of space as opposed to kinds of spaces which are highly repetitive...

Heath: Really your question implies that we are back to square one, where we have to have a lot more information before we can really do this...

Hutchinson: I would like to hear some other comments about this, because if this creates as much of a paralysis as is implied...then I'm really disturbed about your future...
Believe me, about 95% of the time as an architect, you will not have the things you are asking to be given...

I think one very important point which may not be really established well enough...the city bureaucracy is constantly changing... That is, it's nature...

After explaining why design must happen without detailed programs (they are often unavailable or unreliable) each teacher went on to briefly explain a strategy for dealing with such uncertainty.

Hutchinson: So in fact what you are trying to do is to make a very generalized space based on criteria which is not necessarily that which is given to you by the occupants themselves.

Heath: What one is really designing in a situation like that are the non-programmatic elements... like lobbies, pedestrian movement systems... they become like a backbone, a skeleton or organism which things can grow onto or wither from.

One must make some generalizations from what program we have. It may be something to do with 10-15,000 square feet as being a reasonable figure for some type of subgrouping of offices, cluttered about a major entrance point.

In the comments which followed, Hutchinson became increasingly frustrated with the students' work as he considered what should be done next.

Hutchinson: I really feel like we ought to recycle this until it begins to yield something. I don't think that the idea of just having people go off into their own individual selves now is going to yield much. I really don't!.. It looks to me as though you had not individually determined your own constraints on that site and on the program.

It's as if anything goes... You single out one guiding notion or constraint or objective or bias or whatever, and to hell with everything else... It's much more complicated than that!
He reiterated what the students were to have done.

Hutchinson: You would be advised to organize these things hierarchically—set priorities,...saying these are the things I see as legitimate alternatives in terms of interpreting the site, meanings of buildings...the ways agencies are set up...

There are at least four or five of these which you can't ignore as a starting point. We have been over that. The schemes...[from Phase II] already introduce these things. It's not as if we have not gotten there yet.

Then he became very angry and criticized their performance as designers and as students.

Hutchinson: I think we ought to do this again on Friday, as painful as it may be—until we get somewhere. I'm not going to throw in the towel, dammit! I'm not going to say go and do your own thing. No! Absolutely! We are going to do this until people make it mean something...Now I'm very much aware that a lot of you are simply not participating. Neither do you ever put anything in here, nor do you make a remark...Why don't we go to work?

After a comment by Heath, Hutchinson apologized to S19, explaining that his frustration had built up looking at all the schemes, not just his. He then proceeded to tell the class what he felt they needed to do to be better students.

Hutchinson: I really think that you have to get more serious about trying to develop some kind of notion, and become truly more independent. Independence is very closely connected with a sense of responsibility. It's not something that someone can just lay on you any more than they can lay on you a sense of responsibility.

Another interchange followed, shifting the comments to the teachers' approach to design and the students' understanding of it.

Hutchinson: I think you ought to demonstrate not only your scheme or series of schemes, but what Heath
suggested, which has to do with what are the systems you are trying to connect up. What is the problem? You have to demonstrate a problem before demonstrating a solution... This whole inferential thing, "Oh, isn't this nice," sometimes misses the point...

S4: It seems to me that, from what you present, the methods are going to define the problem. I really don't feel these massing studies define the problem [enough] to go ahead and do what you want us to do now. And even if it does, these massing studies never meant much because we didn't even delve into what those massing studies meant except in a very few cases.

Hutchinson: That's a very good point. The reason for having made this kind of jump is that... people were feeling very much impatience, and they need to get on about doing something on their own. What I had hoped, and it didn't materialize, was that people would in fact go up and look at these things. Make studies of all the first phase stuff, and draw some kind of conclusions...

S4: The massing analysis delving into all of the problems of precedent, civic form, internal function, and all these things which seem to be circulation on the site,... all that synthesis wasn't really present in these massing studies.

Hutchinson then asked S4 if he would like to have a presentation or discussion of the Phase I and II material again. S4 replied no. Hutchinson then reiterated that it was now necessary for students to personally establish their own set of constraints from their studio work, their site observations, and their "own ability to... intuitively know what kinds of things you think are important." He argued that since the schemes were "operating at a rather primitive level," the earlier work should be re-examined.
Hutchinson: It requires now that either you...go back through all this stuff step by step, and even have all of the first phase stuff presented to everyone... I'm perfectly willing to do that, if people feel that is necessary, now. I thought people would be able to do that on their own.

Heath felt that the students had a limited understanding of the Phase II work.

Heath: I think that one of the problems of that process is the meaning of a particular set of transformations is not necessarily evident from what is pinned on the wall.

S4: My only point is that personally I feel that to deal with this problem, you can't just deal with massing models, but you have to deal with plans, sections, abstract diagrams, and with a much wider range of things. Our bias in the last four weeks has been to deal only in massing, and only at that level of detail. Now when we are supposed to interject all these things from the first phase, the bias is left over from the previous four weeks.

Heath: I think there is a misunderstanding of this process. I think you have a very minimal attitude to the transformation. In your mind the transformation is merely to manipulate these things at a formal level so that this one looks nicer than the last one.

Hutchinson: Again there is a disparity... Some schemes are very mechanical and others actually began to get into the problem.

Heath: The most successful ones, the ones which looked the most sophisticated, are the ones which mean more...

Avoiding the ambiguity between schemes looking "nicer" and looking "sophisticated," Heath restated the need for students to develop their "own point of view," using the transformation work as a "springboard." Hutchinson explained his understanding of the use of the massing studies as abstractions, and their importance to the architect.
Hutchinson: I think that the intention with regard to massing studies had to do not with those purely formal issues, but seeing them as abstractions, as diagrams which would abstract certain issues because perhaps the most fundamental facility that an architect needs is that facility with abstractions...

Both teachers elaborated on the use of diagrams in design and in this urban design problem before the comments turned to how one actually should proceed.

In the last interchange before the students went to their desks, ways to review the previous work and to form groups were suggested.

Sl: Is it possible that we can...work on this again...?

Hutchinson: That is what I am saying. I would like to recycle this.

Sl: Well, you were talking about discussions of the earlier stuff.

Hutchinson: There was some discussion about going through all this massing thing...and precedent studies. Do you think we need to go through it?

Class: NO!

S4: If groups would have discussions of the ideas from this early stuff,...who would collectively decide how they are going to perceive and analyze and collect information, then--

Hutchinson: I think that's an excellent suggestion. Do you want to form such groups spontaneously?

S--: I think it should be for people who want it.

Hutchinson: I think if people want to go ahead, as we have said all along, if people want to work individually they are free to do it. If you want to form groups to do it, fine. I think that should coalesce. We don't need to formally set them up. We could just let people do it because they obviously work much better if you do it that way...
S5: I also think there needs to be more personal feedback as far as schemes go.

Hutchinson: Why don't we do this? On Friday, Heath and I will simply start working with whoever wants to come over and put things in the model, put some drawings up, and we can talk about them. It doesn't have to be a whole class thing. Everybody doesn't have to participate except when they are ready. Okay?

Agreeing with this suggestion for forming groups and for Friday's agenda, the students dispersed to their desks around 5:15. Both teachers talked individually with students until after 6:00. (Apparently the teachers' desire to reduce their imposition on the students outweighed Hutchinson's dictum that he would not "throw in the towel." Students could work individually, and could go about designing a scheme, presumably as a way of establishing their own sets of constraints. Also they were still responsible for reviewing and making use of the Phase I and II material themselves, despite their previous disregard of it. The sorting out of the basic alternatives that Hutchinson mentioned before reviewing the schemes would presumably have to wait for students to determine their sets of constraints.)

On Friday (3/14), twenty students were cutting cardboard, actively working at 2:00. Ten minutes later Hutchinson arrived and without notice began giving S6 a crit. As they talked, the five students with adjacent desks began to listen, and the crit became a class discussion. Late arriving students took positions at the desk cluster, as did some students who had been working. After ten minutes, ten students listened. By 2:40, sixteen listened. Heath and a few students were still arriving as the discussion was coming to a close.
Hutchinson's comments centered on the use of diagrams and the related ways of designing he had intended the students use. As an example, he explained how a thesis student was designing his project with diagrams. He sketched several diagrams as he talked. He then suggested that these students use the same approach in their work (several of the ways of designing were noted in Chapter 2).

Hutchinson: I think, now, that the way to begin to isolate strategies is not so much to draw specific buildings, but to draw, to make abstractions of sets of issues in a very generalized way. It helps, for example, to always keep in mind the potential underground link along Chambers Street, because that can keep being materialized in different ways...

He went on to elaborate on the use of diagrams when abstracting those issues (quoted in Chapter 2), and then noted how such diagrams were used in crit sessions.

Hutchinson: I don't personally think there is any preferred way to do this... You do this partly by your own preferences, by your own mode of operating. But when I come around to talk with you, it would be extremely useful if you had the kind of sets of diagrams I am talking about, rather than saying, "look at my neat scheme only." Okay, that I want to see, too... But I would really like to see in what way you can put the problem in some perspective for yourselves. You can identify those issues you feel take a higher priority... those issues will [not] in fact remain, because you can be influenced by me or by your own development... You always have to keep the possibility open that you can be influenced by ways to resolve the things you could not see initially. That is called recentering the problem.

He then explained why "the way you draw is terribly important." The students were to draw issues, not buildings.
Having commented on the approach, he turned to S6's scheme and discussed the connections and responses of the new buildings to the existing ones and the spatial definition of the Civic Center --creating a "wall" as a "backdrop for the Tweed," and needing to "somehow integrate Foley Square." He quickly drew diagrams of these ideas as he talked. Before concluding, he indicated his current attitude toward group work, and announced the agenda for the next week--Week Eight, the last week before the Spring holiday.

Hutchinson: I don't know if you have had a chance to try to get together in groups or [what]...but that is strictly up to you at this point. I would just state my preference that you would not all work totally individually, if you can find compatibility in approach.

S10: Don't you think it is best to work individually to feel your way through the thing, and then begin to work in groups once you begin to have it together?

Hutchinson: That's just fine. Some people may already know they have some similar things they would like to work on. Others may need to sit for a while to get your own thoughts going. As far as I'm concerned, next week can be a working week with criticism, okay?

S24: There will be over the board crits then?

Hutchinson: Yes.

As the group dispersed, Hutchinson conversed with S6 before leaving to spend the remainder of the afternoon at another studio's review. As the students started working (3:00), Heath began a crit session with S9 around the site model while four students listened and added comments. He was interrupted by a second year studio teacher seeking guests for his studio's
review that afternoon. Heath declined as Hutchinson was already out of the studio.

Moving back and forth from the site model to the students' desks, Heath conducted sessions with three students working individually and two students who had been working together since Phase II. He talked to these students about their design ideas and helped them to diagram them. One student, S2, used a schematic diagram to present her ideas to him, but not separate diagrams of the ideas and issues evident in her schematic (Ill. 3-10). Heath responded by extracting several ideas from her work and drawing them as diagrams. He also helped her refine the schematic diagram and the ideas it represented. Several students who had been waiting with their drawings and models in hand to see Heath but were unwilling to stay, left by 4:00, leaving only ten to twelve students in the studio. When Heath left at 5:00, two groups and three individuals (nine students) remained working.

The week ended without "narrowing down the range of schemes" and without students developing their own sets of constraints in order to formulate the range.

**WEEK EIGHT: CRITS AND DIAGRAMS**

On Monday (3/17), the day after the annual Spring Costume Ball, the afternoon was filled with over the board crits by both teachers. Hutchinson arrived around 2:30, as did several students, and found two-thirds of the class working individually or in pairs, and Heath giving S4 a crit.
Illustration 3-10: S2's Diagrams (facsimiles)

A. S2's Drawing

B. Heath's Drawing

C. S2's Drawing

D. Heath's refined version of C.
In spite of Hutchinson's explanation and arguments for using diagrams the previous Friday, only two students (S11 and S24) were observed preparing or using diagrams of single issues. Hutchinson reiterated his comments from Friday in crit sessions while making diagrams of the students' ideas and demonstrating how the diagrams could be used.

In one crit Hutchinson found S22 making a drawing almost completely covered with lines (Ill. 3-11a is a segment), representing a physical scheme. In response to his request that the student explain the "strange indecipherable hieroglyphics," S22 presented the mesh of ideas in his scheme. Hutchinson drew several diagrams (Ill. 3-11b) to disentangle and clarify S22's ideas. While drawing, he suggested how to proceed.

Hutchinson: I think that you need to make yourself a series of diagrams that show exactly what we are talking about in somewhat more precise terms... If you always keep your drawings in this manner, a very rough kind of sketch, things get overlaid and changed around... But out of them, you can then distill down [your ideas]--say "okay, there are certain things [which are more important]." Right in the little drawing you begin to do these, a lot of things emerge, which I think should be recorded.

He then reviewed several of his arguments for using diagrams (quoted from this crit with S22 in Chapter 2) in the remainder of the twenty-five minute crit, while continuing to draw diagrams of S22's ideas. (He also discussed the student's unfinished Phase I work on Topic "E, Program Definition and Expansion.")

In another session, Hutchinson found S2 using a schematic diagram of her physical design, rather than diagrams of single
Illustration 3-11a: S22's Hieroglyphics
Illustration 3-11b: Hutchinson's Diagrams of S22's Scheme (facsimiles)

A. City Hall Park-Foley Square Link
B. Circulation Off Chambers Street
C. Zone Extended From Office Bldg.
D. Circulation Links Two Larger Zones
issues or constraints, although Heath had demonstrated their use in his crit with her on Friday. She was reluctant to talk without a workable scheme.

S2: I'd really rather talk on Wednesday...Right now I'd be talking to you about things that I really haven't sorted out in my mind.

Hutchinson: ...It doesn't have to be at any particular level...to talk about it...You don't necessarily need to talk about schemes that are fairly comprehensive...[those] dealing with all possible aspects.

We can talk about partial ideas or partial notions about the problem or some aspect of it...Sometimes it's a...bit dangerous to try to get everything to coalesce at once.

S2 explained that she was trying to create a spatial linkage between City Hall Park and Foley Square but had found two problems: the Hall of Records was in the way and "I don't even know if it's a good idea." Hutchinson commented that "it's a very useful way to look at it," and continued:

Hutchinson: Well, it is in fact a spatial thing. It potentially is a functional thing because those are common lines of potential movement between those elements, so it's carried simultaneously perhaps on a number of different levels of the problem; functional, spatial, and so on. So that when you make a discovery like that, it restates the problem for you, right? I think then that you have to begin to make it explicit.

First, it's very abstract...there is this phenomenon. Now, what does that mean? Well, I would diagram it... I would differentiate between things that are of greater and lesser importance to you.

As with S22, he moved quickly to talk about the use of diagrams.

Hutchinson: We would have drawings of those things...of importance. These drawings are...still sketches,
but they are done carefully on a separate piece of paper. They would be protected, preserved and perhaps form a basis for a series of overlays.

...When someone comes around to talk, instead of...wade[ing] through...layers and layers of drawings that are sort of undifferentiated, you could pick out the artifacts of the process [the diagrams] which are inherently important, right? Because they have already articulated themselves. It's like organizing your own activities in design... Certain things become more important to you...

One of the problems that people have is that they don't keep a graphic record of those things, and...[ideas] have a funny habit of getting dissipated, lost, or [lie] around... in all these little sketches. Where that sketch may be totally unimportant to you now, there are some things in here that are really still very important to you... If those get pulled out...even redrawn, and they're revised and transformed according to new inputs, suddenly the thing means something different to you...

So rather than talk about schemes, I really think that right now it's more important to just talk about that [constraints, issues]. And then when we do talk later...it will facilitate that discussion.

Let's continue that process of saying that on the one hand there are things that are very abstract and implicit and then you have to gradually make them more explicit...[and] you translate them into alternatives. I can see it as this but...also as...that.

So, you make those things [diagrams] instead of trying to make all these schemes or buildings, okay?

Another student, S9, who was also reluctant to discuss an incomplete scheme, talked about his ideas though he preferred not to draw or diagram them.
Hutchinson: Why don't you draw it? Why don't you quickly sketch it for me?...

S9: All right...I could talk to you about it Wednesday, then I'll have it all down....

Hutchinson: No...why can't I see you later this afternoon?

S9: Because I've been working on this idea all weekend and I'm not getting any further... I'd like to see you on Wednesday...

Hutchinson: Well, what's so formidable about it that you can't make me a sketch that we could at least talk about?

S9: Mainly, because I'm not a good sketcher.

Hutchinson responded in much the same way he had to S2.

For students like S2 and S9, using diagrams in the ways Hutchinson explained meant not only they would go about designing in a different way, it also meant they were to use their crit sessions differently. When Hutchinson found students with the intended diagrams, he discussed the single ideas they had communicated and how to combine those ideas. (Ill. 3-12) These sessions were also time consuming, however. After three and a half hours Hutchinson had talked with only eight students (including two hours spent with one student, S24, who had the diagrams).

(This was the last day of the observer's second campus visit. The accounts of the days which follow until Week Eleven are based primarily on the teachers' reports.)

On Wednesday (3/19), the over the board crits stressing the use of diagrams continued.

On Friday (3/21), both teachers were attending other
Major Issues to deal with:
- Accommodations of scale varying between enormous & intimate.
- Chamber street connection.
- Mixing of different spatial types.
- Separation of circulation (main & auxiliary site).
- Concept of govt.
- Brooklyn bridge.
- 3-D imagery important.

Objectives:
1. Unity site visually & perceptually.
2. Creation of unique place differing from grid.
3. Organization structure to fit with form together.
4. Integration of old-new.

Internal structure vs. external site pressures.

Colored Roofscape.
studios' reviews. The review originally scheduled for this day was postponed until the Monday following the Spring holiday week (3/31). (The students may have started their holiday a day early with the teachers out for the day.)

WEEK NINE: PREPARATION FOR THE APRIL 4 REVIEW

On Monday (3/31), the preliminary review took the form of crits. Before starting, the teachers held a brief meeting about the upcoming April 4 Review and handed out the presentation requirements, "Abstractions of your priorities," and building models and drawings (Ill. 3-13). According to the "Schedule," this week was a week for presentation of finished drawings and models, concluding the first part of Phase III, "Precise development of basic alternative building and site strategies."

On Wednesday (4/2), the work and crits reportedly continued.

On Friday (4/4), students posted twenty-five schemes in the seminar room for the Review which would last from 2:30 until 8:00. The two representatives from OLMD were again the guests, and reportedly ran the session. Heath had been preparing a "briefing document" to bring the guests up to date, but it had not been completed. Hutchinson described the schemes presented as "arbitrary" and "naive," responding mainly to "formal and site issues." Discussion focused on the models rather than the detailed drawings. Many of the students had not provided the abstractions and drawings requested. Hutchinson also reported that the students had not demonstrated an understanding of the
Illustration 3-13: Requirements for the April 4 Review

Department of Architecture
Critics: [Redacted]
Presentation for Review Friday, 4 April '75
THE MANHATTAN CIVIC CENTER

OLMD will be here for the review scheduled for Friday afternoon, April 4. In order to get the most benefit from his comments a certain minimum amount of presentation is needed.

Each group should have the following material:

1. Abstractions of your priorities at both the site and building levels. Included should be diagrams of:
   1.1. Lower Manhattan context issues
   1.2. Civic Center Site issues
   1.3. Programmatic and activity zoning. (Public - private, commercial, concourse, etc.)
   1.4. Circulation -- pedestrian, vehicular, service, subway.
   1.5. Spatial -- formal strategies.

2. Presentation Drawings (in format).
   2.1. Model 1" = 80'.
   2.2. Building plans -- ground floor and typical floors in 17" x 22" format.
   2.3. Building -- site sections at scale of section reductions (These will be only non-format drawings).

Several alternative schemes in diagram and model may be useful.

Please make readable-professional drawings either freehand or mechanical.
possibilities and constraints of their schemes. The guests raised questions about "circulation and traffic studies," and buildings being wide enough to be efficient office space. Their major concern, as they had expressed at the March 7 Review, was over developing the ground plane ("landscaping, texturing, and shaping" evident in architect Edward D. Stone's proposal) to make the Civic Center a more visually cohesive and identifiable place. Most schemes had reportedly ignored these issues. Hutchinson later noted that "it was obvious they had only scratched the surface. They have a big piece of work to go yet."

**WEEK TEN: FORMING GROUPS**

On Monday (4/7), the teachers began a week of organizing students into groups and getting them to develop certain basic schemes, although it had originally been scheduled to be the first of three weeks of "Detail development of proposals," the second part of Phase III. The afternoon began with Hutchinson discussing whether groups could be organized around a scheme or a set of issues, and how interpersonal problems influenced design work. He moved quickly to his concern about the students' "commuter mentality." He expressed disappointment with their progress, and became irritated over their "lack of commitment and lack of time in the studio." He said that by their fourth year students should have made a major commitment to architecture, but that this entire fourth year class seemed less involved than those in recent years. He felt
their commitments to sports, fraternities, and similar activities were dissipating their architectural commitment, but he acknowledged to the students present that the most flagrant offenders were not there. Students later reported they did not find these accusations appropriate, citing the teachers' own attendance this semester.

The teachers tried to organize groups, disregarding the note on the "Schedule" that after April 7 groups would be optional, but the students were reluctant to cooperate. Those who had had similar schemes or sets of issues at the Friday review eventually came together and continued their work. They created "marriages of sorts," in Hutchinson's words, in the crits the remainder of the afternoon.

On Wednesday (4/9), the teachers spent the afternoon in crits. These revealed that several groups were not staying together, usually because students disagreed on the collective scheme or were unwilling to compromise their own schemes. This resulted in "marriage breakups" and the teachers became "marriage counselors" by their own account. They also found that certain basic schemes were not being developed (although no actual list had been compiled), and tried to redirect certain groups in order to expand the range of schemes. In an attempt to have the students working alone join groups, Hutchinson and Heath asked each group to chose which of these students they would be willing to work with. This was met with some resistance, and by the end of the day eight students continued to work alone, including two of the three women students.
On Friday (4/11), Heath continued efforts to form and solidify the groups and to get them to shift their schemes in his afternoon of crits. Hutchinson, who was ill, later noted that this week was "emotional and painful, not having much to do with architecture."

WEEK ELEVEN: SETTING THE SCHEMES

On Monday (4/14), students worked individually and in groups until 3:30, when a distinguished visiting lecturer from Great Britain (G10) joined the studio at Heath's invitation to review some of the students' schemes. Hutchinson was attending another studio's review this afternoon, but had explained in a conversation with this observer earlier this day that:

Hutchinson: What we hope to accomplish this week is to get the groups firmly decided on a scheme and do design development.

As the guest arrived, eighteen students assembled in the conference area to hear S18 and S20 present their schemes and G10's comments. The discussion was on physical design; visual corridors, light angles, responses to the style of the existing buildings, urban spaces within a street grid, and the Tweed and City Hall as "garden ornaments." During the hour G10 sketched his ideas and frequently referred to built precedent (including his own work) for examples. Because of the highly-detailed comments, the session was tedious, and as few as ten students were present at any one time. The class reassembled as the next two students (S4 and S25) posted their drawings,
but only six remained after fifteen minutes. Before leaving for the day, the guest commented on a third scheme. In concentrating their scheme between Chambers Street and the Federal Building, S14 and S15 had depressed the automobile traffic on Broadway and placed an office building and pedestrian bridge over the depressed street. (Model photographs of later versions of this scheme and others critiqued this week are with the April 28 Review events.) G10's response to this scheme was:

G10: I think that works well, but there is no vocabulary to do that. If you don't have something to crib, what are you going to do? It takes five years to invent something.

(G10 would be a guest at the Final Review.)

On Wednesday (4/16), Hutchinson discussed the upcoming reviews with the class and gave crits to different groups and students working alone. Heath attended another studio's review all afternoon. S9 began his crit with Hutchinson by explaining his precisely drawn floor plans (on yellow tracing paper) including the two zones of the building, the recessed plaza, and the location of shops. Hutchinson questioned and commented on S9's terracing the building above the plaza, his use of entrance imagery, his choice of thirty foot office bays, and his not aligning its facades with those of the existing buildings. He also noted:

Hutchinson: You are always so hard to give a crit to because you never have any tracing paper. I always have to find little corners to work on.

S9: That's what I do.

S9's desk was so cluttered with stacks of yellow tracing paper
and study models that one could not have drawn on more than a corner of a sheet if one had the paper.

At 3:00, Hutchinson assembled the students to announce plans for the April 28 Review and the Final Review.

Hutchinson: Heath and I have talked about the logistics and we decided we would have a review, but not the kind of gang review, next Wednesday [4/23]. The reason is that we could use the remainder of next week to recoup and get things revised or whatever is necessary to take into consideration the things that are mentioned. And with three weeks before the Final Review, the time really becomes short.

We have also decided to...call for the problems and have the Final Review May 12. We think that the best way--the only way is to have the review at the time the projects are due.

The "Schedule" indicated that the work would end May 9, leaving the weekend to rest before the Review on Monday. Students complained that Hutchinson's new plan would not give them time to "physically recoup," but Hutchinson argued that some students would work right up until the last minute regardless of when he collected the drawings and models. He explained:

Hutchinson: Look, if we set our sights on that now, then there is no reason why you can't do it as well.

Then S3 asked,

S3: Do you really expect to cover all the projects in one day?

Hutchinson: Well, maybe not...I still don't know how many we really have. I don't know how many groups have broken up... I would prefer to have a session run until late Monday night and finish it...

He then returned to the April 28 Review.

Hutchinson: A week from today we would like to have a review with each group separately. That doesn't
mean if people want to come and sit in, they can't. But basically it's pretty cumbersome to have twenty-eight people sitting around the room waiting to talk about their project. It also becomes fairly wasteful at this point. So what we will do is make a schedule and try to stick to it as much as possible.

We will want the people to have site plans and building plans, sections, site sections and elevations. And I would say a minimum of three site section-elevations... Then basically the same kind of thing could be asked for again. In fact, you could look at that set of presentation requirements and see very much the same kind of breakdown--strategy formation, analysis,...and study model--[for the Final Review]. However for the final, we want models which are very finished...

If you don't really take this review Wednesday seriously, I think that it's going to be just about impossible to finish up in good shape for the Final Review. Some of you have not really... Like the last review, quite a few of you did the kind of drawings that we asked for, but there were a lot of people who did not.

As the discussion continued, the more detailed requirements (as the scales to be used for the drawings) were sorted out, and Hutchinson asked the class who they would like to have as guests during the next review. They asked for G2, G6, G7 and G15, all of whom were members of the faculty with "formalist" learnings before the transition began. Hutchinson readily agreed, then explained that he would be giving crits to groups this afternoon.

He then moved to the adjacent tables of S8, S3, and S12 to review their scheme, at the time in diagrammatic plans and 1/16" scale sections. Their tables were covered with layers of tracing paper with elevations, sections and plans, and parts
of several models. Most of their seventy minute crit was spent on the design of their multi-story lobby. Hutchinson suggested they have "trays" cascading into the space with shops and tellers on the lower level and administrative functions above, and kiosks on the main floor for "quick turn over" functions. He sketched a section through the lobby as he talked. Before going on to the next group, he asked this group how they were going to proceed. As S8 began proposing how the work could be divided, however, Hutchinson told him to "resolve that among yourselves," but not to wait for each other to make design decisions in order to continue.

Hutchinson's crit with S14 and S15 followed at 4:30. He covered in sixty minutes many of the same points discussed in the two earlier crits.

Hutchinson's last session of the day was with S22 and S24 (5:30). They had created bans of subterranean offices covered with an undulating "groundscape," readily acknowledged as inspired by the Oakland Museum by Roche and Dinkeloo. Small office blocks were set above grade (Ill. 3-14). They talked mainly about the model, using the diagrammatic plans to clarify their points. In the forty-five minute session, Hutchinson's comments included concern for the "visual relationship" between the circulation system above grade and the system underground, and the small office blocks and the ground surface. He concluded by encouraging S22 and S24 to make scale drawings, explaining that everything could not be resolved and then drawn.
Illustration 3-14: S24's Drawings
(S22 and S24 did not have scale drawings as they had been working out their ideas in their model.) They agreed to start drawing and Hutchinson departed at 6:15.

Despite these long sessions, Hutchinson was able to work with three groups and one individual, half the students in the studio this afternoon. Only fourteen students had remained after the review plans were discussed.

On Friday (4/18), both teachers gave crits, usually each an hour long. They arrived in the studio around 2:30 and found eighteen students present and working. Hutchinson went directly to S6 and S7's tables, where they began explaining their 1/64" scale plans and sections (Ill. 3-15). Hutchinson chose their multi-story, glass-roofed lobby space to address his comments and sketches. Sketching an overlay of their section, he suggested other roof configurations referring to the IDS building in Minneapolis, and other arrangements for the trays projecting into the space. He also asked how they would detail the roof structure, and what the grid on their building facade represented. He then reformulated his question and asked:

Hutchinson: If you are the urban designer, what architect would you want to do it?

He went on to discuss how to articulate the building's systems to clarify its expression, and how their auditorium would "deflect circulation" through the site.

Heath talked with S4 and S25 about the incremental growth of their scheme, referring to the posted articles on the British Museum National Library project, and about getting service to
Illustration 3-15: Drawings from Crit, S6 and S7's Section
Illustration 3-15, continued, Hutchinson's Overlay Sketches
Illustration 3-15, continued, Hutchinson's Overlay Sketches
the shops in their underground mall, referring to Toronto's malls.

Hutchinson stayed until 7:00 and talked with S11, S14 and S15, and S18 and S20 about their schemes' treatment of circulation in the Civic Center. He also cautioned S21 that she needed to get more drawn to have a good crit.

**WEEK TWELVE: PRELIMINARY PHASE III REVIEW**

On Monday (4/21), Heath gave crits to two groups and two individuals, half of the twenty students working this day, while the others occasionally listened. Hutchinson was attending another studio's review; several students commented on his own apparent "commuter mentality." With S9, Heath discussed details in his plans and elevations; with S8, S3 and S12, he responded to their facade drawings; and with S4 (his partner S25 was not present), he talked about interior and exterior circulation and their connections. Each of these sessions lasted an hour. His session with S2, S5, S17 and S23 (students who had been reluctant to join a group, but who Hutchinson had formed into one) constituted their first crit as a group. In their ninety minutes, their problems of operating as a group were evident and Heath tried to assist. Forty-five minutes into the session, Heath explained:

Heath: It's a strong idea... By this point I would have made innumerable sections to study potential relationships with the buildings, subways... If that's your proposal, then that's what you should be studying. You seem to be thrashing around here. You don't seem to know how to take a certain aspect of this problem and develop it...
One problem is that you are asking me to discuss this at the level of architecture and I don't see any proposals so far that I could talk about. Up to this point, I've had to talk about it at the level of general concepts.

Also, you divide up the work before you have any common understanding or a scheme. S2 is to look at the relationship with Foley Square and City Hall Square while you are dealing with this. How can that be looked at separately? ...it would be so much easier to have a scheme to look at...

S5: Maybe I made it seem that all the work was separate. At the stage that we broke off, Hutchinson had suggested to get the most out of all four of us that we have to work separately on different things and then put it together. So we had general notions, like the underground tube.

Heath: So shouldn't one or two people very quickly sit down and begin to design that thing, because it's so crucial?

S23: Yeah, that's what we thought. We have a lot of internal problems, to put it mildly. (laughter)

Heath: But given internal problems, you know, gee, you live with somebody, you work with something. There are always problems, problems, problems. But you have got to be able to do it. You have to be able to sit down for two days and do it. You have to take responsibility for yourself..."I will design it. This is the way we are going to do it."

S5: That's what we did and that's what we were discussing when you came over...

We have been working closely together, trying to make important decisions. (laughter)

S23: Putting that building together didn't take long. We sat down and hashed it out. Putting in the bar, the core, etc...because the way we started the whole group was putting that in, then we sat down and did it. But it didn't work out that way.
Heath: Oh, God, I'm unwittingly in a crisis situation. Where you...don't you know what the hell you are doing?

S2, S5, S23: YES!!

S23: We thought we would bluff our way through it, but...I don't know where to go or what to do. Hutchinson was going to come up, but he is at a review. I spoke to him Friday about it and at that time all four of us were not here.

Heath: I don't know what your feelings are. You have got to sort out whether you guys really can work together. If it's internal relationships that are spoiling everything, then...

S2: Then what?

S5: It's too late to go tell someone to start walking.

Heath: ...but if you just can't pin down...if there are competing ideas here...

S5: We have too many ideas.

[S17 returns to the studio from an errand]

Heath: Is it egos? Are you strongly ego-oriented?

S23: No...let S17 present his work on Chambers St. He is part of our group.

S5: Then why isn't he here?

S2: S17, bring your stuff over.

S23: This is the major portion of our design, the crux of the whole thing.

S17: Well, what have you been talking about?

S23: We went over the other drawings.

S2: We want to find out what is happening on Chambers St. Tell us.

S23: We each did our brief. It's your turn.

S17: Immediately I concerned myself with hard lining the plan and section of this underground tube
in its initial phase...as strictly a subway connector. [Shuffling drawings, he shows a simple plan and section at an intersection.]

S2: Where is your other section?

S17: Multi-level tube pay bypasses...

Heath: Have you looked at any of the Market Street stations on the BART system?

Is this the only section you have drawn? We have been talking about the whole thing. I seemed to have walked into some kind of hornet's nest. You seem to be having some problems and I guess...if that's as far as you have gotten, just making one section through there, if the rest of you are working at that pace it will take three years time. The point about this [drawing]...these kind of studies, of which this partly finished drawing would be just one small part...with plans, sections, elevations, etc., you could work at it as a problem. It would seem that a key set of decisions stem from the way that you have started and it would affect the way you deal with the rest of the problem.

Look, I tell you, if you guys were working in my office...two years ago, we were working on an urban design problem in the office and a set of guys had recently been in school. One hadn't done an urban design problem before. One was building his own house. It became evident to me early on that they weren't strongly, efficiently functioning parts of the team who could take certain aspects of the design, develop ideas out of them and feed them back in. Two of the five got fired very soon. The other three gradually began to produce because we really rode them and said "look, you guys are not just draftsmen, just because you are being paid less and are sitting in the other room...you are important parts of this whole set up. We are dealing with urban design here. It's not something that one person can slip out of his sleeve and do a big master architect job on it and some people draw it out in the back room..."

We are in an academic situation, but I don't see the situation in the studio differently...
if I really wanted to play that role, I would kick you all in the ass and tell you to sit down and make some crucial decisions. And I don't mean waving your arms about. I mean making sets of drawings.

You have a set of very general conceptual ideas here that are developable and strong. It seems to me to be a part of a really consistent urban design approach, rather than making more architectural statements which are unrelated...

If it's interpersonal dynamics that are at fault, for Christ's sake, in the next few hours either sort it out or go your separate ways and say "I'm going to design this" and make some drawings of something. To just flounder about like this...or is there a drawer full of drawings that you don't want to show me?

A couple of times in the last week in various people's schemes, I got very excited about their thing both at an urban design level and an architectural level, simply because three people sat down and they simply sunk their differences if they had any. They had really begun to make drawings, for Christ's sake. Do the things that architects do and out of that we start to have these really optimistic sessions. We did overlap about what if you did this...the adrenalin flows. It doesn't flow if you just sit around feeling sore at the other person. It's ridiculous. You just get it together, otherwise...

You have to do the job of the people I was describing to you, as well as coming up with the big idea...Somebody had to make specific sections, specific studies of something, and bring it back and say "this is what I found out. Let's put it together or make a model and see what it looks like." Then the decisions would be made by the people. But you couldn't make the decisions at the various levels unless those people had taken the responsibility and initiative to make those kinds of drawings. If they wait around for someone to tell them what to do, Christ, you know.

As Heath left, the four were discussing what each would do. S23 announced his intent.
S23: I'm going to do a lot of this stuff that I wanted to have done all along. I'm going to sit down and draw that plan that goes from Battery Park to Chambers St. at three levels, and make the connections at the subway station...

On Wednesday (4/23), the preliminary review, planned the previous Wednesday, began at 1:30 p.m. in the conference area. Each of the guests who the students had requested attend cancelled in the morning. The groups and individuals presented their schemes (Ill. 3-16) to Hutchinson, Heath and a visitor from the faculty of another Northeastern school of architecture and planning, while other students worked.

Although the teachers had posted a sign-up sheet for twenty minute review sessions, they typically lasted forty to eighty minutes. The more complete the drawings, the more discussion they generated. At 7:30, only seven schemes had been presented. During these sessions several of the fifteen students working in the studio listened to parts of the discussions.

Most of the schemes had the drawings and models the teachers had requested, though only a few students included diagrams. The extent of detail and graphic quality of the drawings varied substantially.

The visitor's questions differed from those of the teacher's and the previous guests. He asked more about the students' approach to urban design, than about their physical designs. For example, he told one student that the view of the client evident in his description of his scheme was that of "employee" and "consumer" but not that of "residents," although many
Illustration 3-16: Models/April 23 Review
Illustration 3-16 continued

S9 An Earlier Model

S9
Illustration 3-16 continued
Illustration 3-16 continued
Illustration 3-16 continued
people lived in that part of Manhattan. He gave an example of a client group who had been similarly ignored and had stopped another project in New York City. Hutchinson and Heath responded to these remarks by helping the students present and defend their schemes, and by explaining the earlier phases of work to the visitor.

At 6:00 Hutchinson announced that the review would continue on Thursday at 2:30. (The visitor was also involved in reviewing the two schemes presented that afternoon.)

On Friday (4/25), the review resumed at 2:30 with Hutchinson and Heath. Their comments about the four remaining schemes were more like those in their crit sessions than those in the Wednesday review. Again, fifteen students were working in the studio. Both teachers worked with these groups and individuals after the reviews ended at 5:30.

WEEK THIRTEEN: FACADE DESIGN AND PENCIL PRESENTATION DRAWINGS

Monday (4/28), which began the last two weeks of work before the Final Review, was scheduled for "final presentation" of the schemes. This week the teachers wanted students to focus on designing the facades of their buildings, and laying out their presentation drawings in pencil to be reviewed before they were inked. Heath handed out the "requirements for final presentation" specifying the concept diagrams, abstractions, model, building plans, and site sections for each scheme. Additional requirements were listed for those working
in groups (Ill. 3-17). He began reviewing the student's drawings, but saw only part of the class. Hutchinson was attending another studio's review all afternoon.

On Wednesday (4/30), both teachers continued reviewing the students' drawings, and discussing "strategies for making facades" as they talked about designing their building facades. After the April 4 Review, two students, concerned about the progress of their schemes, talked to the teachers about dropping the course, although they had done satisfactory work in Phase I and II. One student did drop the studio to continue his computer graphics work, but the other, S13, was convinced to stay in the studio and be responsible for coordinating and assembling the booklet of the students' work. She agreed and arranged with a reproduction company to get a discount on the reduction of the students' drawings to the booklet's format. Today had been the day scheduled for the drawings to be done, but they were not ready and S13 saw her efforts as wasted.

On Friday (5/2), the teachers' review of pencil drawings and facades continued, although they had to work in the studio over the weekend in order to see everyone.

WEEK FOURTEEN: INKING PRESENTATION DRAWINGS

On Monday (5/5), Heath continued to review students' drawings while Hutchinson attended another studio's review all afternoon. This week had been set aside for inking the drawings and diagrams and making finished models. The erratic work schedule established the previous week continued with
Final Review: Monday 12 May 2 p.m.

Manhattan Civic Center

Requirements for final presentation will be graduated according to team size.

All drawings will be in format either 8½" x 11" or multiples thereof. A reduction of any drawing over 17" x 22" must be provided by the students after the final review.

Prints shall be hung-trimmed to format (no tracing paper) Zip-a-tone should be used to make drawing read, i.e. tones over commercial areas, voids in plan, shadows in sections—elevations, etc. no color (everything is to be printed in a booklet)

A Graphic scale should be provided on each drawing.

Requirements:

1. One person
   1.1 Concept diagrams—precedents, metaphors, etc. to be included.
   01/2" X 11"
   1.2 Abstractions of your priorities at the site and building levels
   01/2" X 11"
   1.21 Manhattan—lower Manhattan context issues.
   1.22 Civic center issued
   1.23 Programmatic and activity zoning
   1.24 Circulation—Pedestrian, vehicular, service, subway
   1.25 Spatial—formal issues
   1.3 Model 1" = 50' showing buildings in more detail than blocks and site development including landscaping.
   1.4 Building plans—subterranean, ground, typical floors, etc.
   Ground floor plan should show entire site development.
   1.41 Diagram alternative office floor layouts.
   1.5 Site sections—elevations showing surroundings 1" = 60'

2. Two persons—requirements for one person plus:
   2.1 Building sections—elevations at a scale larger than 1" = 60' (with shadows)
   2.2 Roof plan with shadows showing entire site development—17" X 22" format

3. Three persons or more: requirements for two persons plus:
   3.1 Axonometric of major interior space.
   3.2 All drawings and model should be done in more detail
students working whenever possible regardless of the regular studio times.

On Wednesday (5/7), both teachers answered students' questions on the presentations and on details in the designs. While some students had worked outside the studio or outside the regular meeting times, they all sought out the teachers during this last week of class work.

On Friday (5/9), the students continued their presentation work, as they did through the weekend until it was posted on Monday. Both Hutchinson and Heath were attending other studios' reviews all afternoon.

WEEK FifTEEN: THE FINAl ReVIEW

On Monday (5/12), the semester's work was to be complete. The groups and individuals posted their thirteen schemes in the large lecture room used for their professional practice and technology courses, as well as the Department's lecture series. The edges of the rectangular space were busy by 2:00 with more than fifty people (students from this and other studios, wives, teachers, and guest critics) posting and viewing the drawings and models, while the jumble of chairs for two hundred in the center held books, coats, and a few exhausted students. By 2:30 the schemes were posted though in no particular order, and Hutchinson opened the session.

Hutchinson: I think the way we are going to run this today is pretty well known by now. I think we communicated to most everybody, but I wanted to just
mention it. Instead of have it run where we take a scheme and students get up and present it, then we move to the next one and so on. From experience, that really takes a long time and also begins to get fairly tedious. We thought we would split the guests into two groups and explain the projects. You (students) can stick around if you want, if you want to go away and shower or eat, its not a matter of excluding you, and come back around 4:00. By that time we will have had a chance to...look at them, and then have a discussion around 4:00. The jury [the guests] then would ask questions, and make comments. You can ask questions or feel free to defend your own position or whatever you want to say about your project. We are not trying to exclude you. We are just trying to keep the thing moving more quickly. So now, if you want to split or stay--by 4:00 we can assume we will get back together.

As some students began to depart, Hutchinson took five guests to one end of the room and began explaining the students schemes, while Heath, three guests, and several students began at the other end (Ill. 3-18). With Hutchinson was OLMD 2, a third year studio teacher with "formalist" leanings (G6), a planner/architect from the school's planning department faculty (G12), and two representatives from New York City's Historical Commission (who left before the discussion began). The guests with Heath were OLMD 1, the teacher of the fall urban design studio (G8), and G10, the British visitor in the studio April 14. This visitor and the representatives from the OLMD were the only guests to have previously reviewed any of this studio work.

As the guests went around the room, the teachers spent five to ten minutes explaining their sense of the central
ideas in each scheme. This technique followed from Hutchinson's generalization about students' presentations.

Hutchinson: The way people describe what they do is very interesting. What they choose finally to say about what they do is very revealing. I always want to intervene and say but isn't really what you are doing this, rather than what you say you are doing... They are doing one thing and talking about something else. Or they are doing one thing and not realizing what they are doing had certain underlying assumptions. (Interview, 5/14)

The drawings and models around the room were precise and pristine, although many of the schemes did not have all the materials required. The "concept diagrams" and "abstractions" were most typically omitted. (The schemes of S9, and S8, S3, S12 presented more of these than others.)
Illustration 3-18: Phase III Work, S6, S7
Illustration 3-18, continued, S6, S7

MANHATTAN CIVIC CENTER
PLAN: TYP.

MANHATTAN CIVIC CENTER
PLAN: -1
Illustration 3-18, continued, S6, S7

SECTION: E-W

SECTION: N-S
Illustration 3-18, continued, S8,S3,S12

PRESERVATION response

Restoration and reuse of portion of Sun Building
Partial facade transplant from Reade St.

C.U.U.D.4
DEPARTMENT OF ARCHITECTURE URBAN DESIGN FOURTH YEAR

PRESERVATION response

Integrated use of Emigrant Savings Bank Building
Redesignation of use for Lobby

C.U.U.D.4
DEPARTMENT OF ARCHITECTURE URBAN DESIGN FOURTH YEAR
Illustration 3-18, continued, S8, S3, S12

AXIAL RELATIONSHIPS
response

Recognition of major and minor axes
Reinforcement of centrum through introduction
of major interior space

FUTURE EXPANSION
response

Building acquisition and new building infill to tie in
with Chambers St. link
Illustration 3-18, continued, S8, S3, S12

ACTIVITY ZONING response

PEDESTRIAN CIRCULATION response

Introduction of sub-grade pedestrian link
Redefinition of pedestrian zones
Illustration 3-18, continued, S8, S3, S12
Illustration 3-18, continued, S8, S3, S12
Illustration 3-18, continued, S8, S3, S12

MANHATTAN CIVIC CENTER
SECTIONAL PERSPECTIVE
The idea of the Chambers Street wall provides the impetus for a series of pedestrian spaces that could interrelate with the wall.

The Chambers Street wall of buildings would be broken intermittently to provide plazas that would sponsor public activities. Future government buildings would provide the backdrop for such activities.

Beneath the wall would exist a connector of sorts which would interrelate subways and office buildings along Chambers Street. This in fact would have oblique to Chambers Street. Cutouts in the road would make Chambers Street a two story wall with commercial on both levels. The lower level would be able to traverse existing roads running perpendicular to it with out disrupting traffic.
Illustration 3-18, continued, S9

THE UTILIZATION OF THIS SCHEME DERIVED FROM THE CONCEPT OF INTERMITTENT PLAZAS ALONG CHAMBERS STREET. THE SCHEME WAS PLACED AS ONE IN A SERIES OF SIMILAR ORGANIZATIONS ALONG CHAMBERS STREET. IT ALSO HAD THE ADDED RESPONSIBILITY OF FUNCTIONING AS A CONNECTOR BETWEEN FOLEY SQUARE AND CITY HALL PARK. THE POSITION ON THE SITE REFLECTS THESE CONCERNS.

MANHATTAN CIVIC CENTER CONCEPTS 3

THE BUILDING'S EXTERIOR RESPONDS TO EXISTING SITE CONDITIONS BY ITS ATTEMPT TO REINFORCE THE GRID PATTERNS OF THE AREA.
Illustration 3-18, continued, S9

MANHATTAN CIVIC CENTER
Axonometric

MANHATTAN CIVIC CENTER
SITE PLAN
Illustration 3-18, continued, S9

MANHATTAN CIVIC CENTER
2nd FLOOR

MANHATTAN CIVIC CENTER
TYPICAL TOWER PLAN
MANHATTAN CIVIC CENTER

CONTEXTUAL SITE PLAN

LINEAR EXTENSION OF CHAMBERS ST. INTO A MAJOR COMMERCIAL EXPERIENCE
Illustration 3-18, continued, S16

MANHATTAN CIVIC CENTER
SITE PLAN

MANHATTAN CIVIC CENTER
GROUND LEVEL PLAN

THE MALL
Illustration 3-18, continued, S16

MANHATTAN CIVIC CENTER
SECOND LEVEL PLAN

MANHATTAN CIVIC CENTER
TYPICAL UPPER LEVEL PLAN
Illustration 3-18, continued, S16

MANHATTAN CIVIC CENTER
SECTION THRU NEW STREET
Illustration 3-18, continued, Sl6

MANHATTAN CIVIC CENTER
SECTION THRU CHAMBERS STREET
Illustration 3-18, continued, S18, S20

MANHATTAN CIVIC CENTER
SITE PLAN

MANHATTAN CIVIC CENTER
TYPICAL OFFICE PLAN
Illustration 3-18, continued, S18,S20

MANHATTAN CIVIC CENTER
N-S SECTION
Illustration 3-18, continued, S18, S20

MANHATTAN CIVIC CENTER
SOUTH ELEVATION
Illustration 3-18, continued, S22, S24

MANHATTAN CIVIC CENTER
SITE PLAN

MANHATTAN CIVIC CENTER
-1 FLOOR PLAN
Illustration 3-18, continued, S22, S24

MANHATTAN CIVIC CENTER
E-W SECTION BB
By 4:15 the guests had completed their previews, and the students had returned. Hutchinson invited the guests to comment. Their comments, quoted extensively here, reflected concern for the design problem and its approach to urban design as well as the students work.

Hutchinson: I think that most every scheme has been looked at now and we wanted to get everybody back together. I'm sure not all of your schemes will be fully understood from the [material posted] so if you would like to have an opportunity to explain your scheme, I'm not going to give it to you now, but the opportunity might arise in some of the discussion. If it doesn't you make the opportunity yourself, okay, between now and the end of the time.

Now to some kind of discussion, I thought we might ask our guests from OLMD to make some kind of remarks at the beginning. So whatever they want to bring up as questions or issues... Please feel free to inject your own questions or comments about things which you think might be overlooked or misunderstood Okay?

OLMD 2: One difficulty I have in looking at the various schemes is being able to determine the differences in them, quickly. Perhaps one way to solve that problem...it's a problem we have at OLMD—how to present something to someone who may or may not be familiar with the problem—you never know in City government if the people you are dealing with know anything about the problem or not... While drawings are very good, it's difficult to determine the differences in the various schemes very quickly. Even with the models you can't tell what things are being kept, what are not. One issue was preservation. It would have been good to see a diagram of what you consider your site to be; one building site or the whole civic center. Then given that framework, what buildings are you keeping; what buildings are out. And having that info catalogued on a sheet of paper that would also give the size of the building and maybe some indication of how you
arrived at that programmatic decision...
They [most people] don't articulate what the rationale for their particular program is, even if it is only in verbal terms rather than something they can fully justify. I don't think you can fully justify the programs in these schemes without a good deal more knowledge.

Two other things which are particular problems--this is again something which could show up on the drawings or certainly on 8 1/2" x 11"'s rather than full sheets. One is a diagram showing what you consider to be the main pedestrian circulation routes through the site. The other thing is vehicular circulation. There is a particular problem with traffic to and from the Brooklyn Bridge in rush hours--we wouldn't expect you to be traffic engineers and come up with a solution which is highly successful. But if you have thought about the problem, in relation to the building you are proposing, you might begin to see where the problem would lead and what implications it would have...

Some of the questions I think that relate to the Chambers St. crosstown [subway connections] are questions having to do with how development takes place and how do you pay for the particular improvements you are talking about. Some schemes suggested that you build the subway connections first, that would in turn sponsor the development. But generally what we do in the city is get a developer who is developing a particular building to incorporate that improvement, the subway connection or something like that, and specify through the zoning or through leasing agreements or whatever, so that a particular project pays for the improvement at the same time, and the city taxes are not burdened. The city has problems raising the money for the transit improvement it has scheduled now.

Other than talking about particular schemes, these are the general comments I have.

OLMD 1: I just have a more general comment which is that the problem as presented to you from the start, in a sort of nebulous way, was a planning problem and an urban design problem which had the goals to articulate and identify the Civic
Center, and to reinforce its identification and to rationalize the planned circulation through the site. At the same time it was presented as a problem of designing a building which would allow the individual citizen to be able to deal with the bureaucracy and provide nice office space for the people who work in the civic center itself. In looking at all the schemes I don't see any which really succeed at both. I don't think it is possible to succeed well with both those goals. But I wonder if everyone has really thought about which one they are really focusing in on. So when we go around and look at the schemes I would like to talk about functioning as a building which is easy to understand to the public and which is a nice work environment. At the same time look at the solving of the urban design and planning problems of the Civic Center by creating the buildings. Those seem to be two separate things.

Heath: ...They are separate things but presumably by what you say you don't mean they are mutually exclusive...

OLMD 1: ...It seems to me that all the buildings are low rise. Nobody has built a low rise building in NYC in a long time, because buildings function better as towers with 40% coverage. They are usually cheaper to build. That issue comes up, does it function as an office building? Then the issue of buildings being articulated in response to site pressures. But often there is not an identifiable main entrance to the building which is important to the general public in their dealings with the city. To be able to have one place to go to get information. That's looking at the problem the other way--as a building not an urban design problem.

I feel most of the schemes are focused at the level of urban design. I feel they are not worked out enough as buildings. I say that as a person who works in urban design, I probably couldn't work them out as buildings. I feel the buildings are much too concerned with response to site pressures and not enough concerned for the functions of an office building.

I think at some point the notion of urban design should be carried through even broader. They
haven't dealt with the whole site - they started to branch from the original site but they never quite developed the entire Civic Center as it was defined in the problem, to include City Hall Park.

Hutchinson: Do any other members of the review want to make any counter remarks or...do you actually want to go around and look at individual schemes and talk about them?

G12: I want to make a few general remarks. One has to do with pedestrians. This is one of the places in NYC that not only focuses on pedestrians but pretends to focus on them as people who are enjoying the fact that they are pedestrians. There has been a tremendous amount of attention paid to pedestrian circulation, but a lot of it in circumstances where the architectural treatment of that space would either be very expensive or very dreary or possibly both...

The other point was that several schemes have created rather large spaces that don't seem to have pretty definitely required functions. It's a pretty big piece of Manhattan -- I remember a couple courtyards rather large and extensively produced and I wasn't sure what would go on in them.

The last minor point -- I understand it wasn't until rather late in the project that you really got into the possibility that anybody lived down here. I'm not sure whether Manhattan would ever want people to live down here but in a couple of schemes it would be very easy to do it. Just generally speaking as a city planner, I would welcome any attempt to bring some living back into spaces like this. People living here twenty-four hours a day, helping to keep it from being a slum or a desert.

Q10: Well, I don't know how you had the nerve to begin. I have difficulty at this stage of assessing any...Frankly, I find most of the solutions repulsive if you are judging them as places to work in and walk about it. But I think that it's hardly possible to operate in this way. It may be that it has to end up like a zoning solution in which you do the two bits you think you can afford within the five year
cycle. Then try to design those in some ways nicely. There is far too much badly designed architecture. The pop architecture. My heart bleeds for the client. But then I would have never dared do the problem, except if the pedagogic intention was to demonstrate what I have just said.

Hutchinson: But let me ask a question. I probably agree in some ways but how are you going to deal with something called Urban Design? Or who is going to deal with something called Urban Design? These two people [OLMD 1 & 2] deal with it professionally all the time. It isn't as if it isn't being done. Somebody is going to do it. Who is it going to be?

G12: That's what G10 is saying, you have two alternatives. You can give a problem which is nearly enough manageable so you can ask students to manage it and criticize it the way they can. The other alternative is to take a problem like this, which is probably as complex an urban design problem as the mind of man could conceive, with circulation, subways, office buildings, private space and everything else. What they end up doing is realizing the utter frustration of the practice of urban design in one sense but begin to understand very sharply what its real problems are.

Hutchinson: ...But that seems to be the major reason for being in a studio. I think that one doesn't expect perfection but one expects an honest attempt to grapple with certain kinds of issues.

G12: ...I'm not expecting perfection, I'm only saying that there are so many variables and so many inputs and so many problems, that it is really fairly hard to ask anybody to state clearly exactly what their priorities are. Maybe that's all you can have them do is have them state what their priorities are. When you design something to a very large degree with his own set of priorities you have to accept them you can't go out and ask him why he didn't do some other things. And that's what we are doing as we go through this thing. When anybody does anything, we are saying why didn't you do something else?
Hutchinson: I think so, too. I think it is a big problem... But I wonder to what extent it is not because of the scale and not just because it is too complex inherently. I think a building is just that complex inherently.

G10: But isn't there a difference if you take a convention... Suppose we take a house at the other extreme. It has to be a very rare house where certain of the things are not convention, i.e., timber, bricks, doors. But as far as student exercises are concerned you can identify the blocks of real things from which the design is assembled or the profiles are cut from. Well the difficulty with this kind of thing is that is said certain of them are conventional. If you take half a city block, and say under the building code certain reconfigurations are possible, but in fact the block is set like a brick is set, you know you can turn it over within certain laws. You can have certain sorts of brick or have certain bits knocked off. But in fact it's easier to handle mentally... You haven't got any free-form because the society hasn't grown up with free form building blocks which are generally acceptable. You don't have brick-equivalents. Therefore, you have to invent the brick. If you take the subway as a skeleton, you have to invent the way that it is to be profiled before you could put it in. You have to invent the brick, as it were, before you can locate it or even think about it. It's so many degrees of abstraction it is impossible for me to handle.

To go back to Le Corbusier, if you look at the first project of anything he does, its always the last project. The first scheme of any new scheme is the last scheme because that is the building block you can handle at the time. He gradually evolved into a different block and a different configuration which responds to the mood of the technology that changed since you last did it. But if you are a student, you don't have one of your own buildings or one of your own urban schemes which you can use as shorthand while you work out how to deal with it. You tend to fall back on diagrammatic configuration. For example, the first stage of the Free University was based in the diagrams which were developed for the Frankfort scheme.
Then it took five more schemes before it achieved the building block characteristic where things were possible. Then you began to handle it per Urban Design. But my idea of Civic Design doesn't exist. Urban Design, this is sort of Urban Structuring, dealing with zoning and flow, etc. Beyond that, you have to jump straight into architecture, otherwise you miss the building block business and you get pile upon pile of abstractions which in the end you can't handle. I think the analogy of a chair is equally difficult... It has no building blocks...

Hutchinson: I would agree that it has a lot to do with the conventions that you accept as elements that you have to work with. Now any student is put at a disadvantage with regard to having these blocks. Basically, he is working with them as given or he has to try to invent them. I think what you see, for the most part, are schemes working with given blocks. These are working with, as well as students understand, certain conventions about buildings.

But given the complexity of the problem, the likelihood is that people are going to accept conventions of one kind or another and work with them, rather than reinvent the pieces. If the conventions are inappropriate or if they don't work out, it really throws the student to a position where he either has to go back and find another convention or he has to try to invent it. But to invent those things are very difficult, based on the amount of experience and the number of design experiences students have.

Then G12 tried to move the group back to the specific schemes but this was delayed by G8 and G6's comments.

G12: Perhaps its reasonably clear as you look around the drawings that these students...did have priorities that became reasonably clear when we understand that you encouraged one to do one kind of thing and one to do another. If we simply look at them as illustrations of different priorities and criticize them in terms of the priorities accepted by the students, that would be the most useful thing we could do. There
was at least one that said, "let's focus on presentation," and another one that said "let's focus on making that office building have a character that particularly related to the fact that it is a gathering of political reference offices." One said, as I looked at it, the way to presume the character is to build a three-way reflecting mirror that happens to be an office building.

Hutchinson: I think it would be very useful to go around and just talk about the priorities in regard to different schemes. Then relate those priorities to relative success. There is always a temptation to lay over a different set criteria. That, of course, is the dilemma that any architect...has to face... No matter what you are going to do on that site, you are going to alienate some substantial group of people. In fact you may get strong opposition from a substantial group of people.

G8: I want to make a comment. I think that problem of seeing these drawings as representations of buildings as opposed to urban design or whatever they are, is really generic to the whole issue of urban design. When you tackle an urban design problem, then the question is whether you come up with broad strategies, diagrams as it were, which are then subject to interpretation into buildings or whether you actually are making specific buildings which then respond, once and for all, to the situation you are dealing with. I would tend to think that behind each of these drawings, they are so particularized as to give the impression of very specific buildings. You almost have to be specific and particular in order to bring up the idea, but that also nails you, because it obscures the diagram. If in any given scheme, one could entertain the possibilities of that being actual buildings that were being hinted, one could entertain a matrix that resolves issues of separation, etc. I think it is possible to discuss the schemes, even though they may appear to be very particular buildings. I don't see a lot of these schemes as buildings. I see them as interpretations of strategies or diagrams.
G10: But when you get into an area of buildings where 2/3 of those buildings are likely to remain fixed, it tends to have to be particularized, doesn't it? Because it's a building to building process...architectural game...I think it is a fantastically different problem!...

OLMD 1: ...whether we treat them [architecture and urban design] as separate professions or separate problems or not, separating them out especially in a complex problem, like this, it is very helpful. If instead of looking at drawn up buildings, we were looking at circulation systems or planes through space, it might be a lot easier to look at it as an urban design problem.

G10: But they are being pushed toward the architecture because you are suspicious of the diagram unless part of it is worked out.

G6: It goes back to basic urban design problem of criticism, where if you are lucky you get a figure-ground plan and if you are super lucky you also get a 3-D representation. And that is even open to speculation whether it is even worth doing. So, it leads you to a cyclical process where you are involved with particular on one hand and a continual testing that out against the generalization. I have the feeling, I think everyone else does. It's partially the presentation and partially the shortness of the cycle and being seduced by what you feel that you have to do. The generalizations don't come through as clearly and as strong as they might because they are in fact heavily loaded with architecture... One wishes that instead of spending time putting shadows on a pretty awful SOM elevation one had spent time on something that yielded something more in terms of fundamental concepts of the buildings. I think there are some things which could be dealt with on a detail and on a general level--in that there is a very strong bias. You have almost succeeded in making it go away. But there is a very strong bias in the class--to counter G10's comment there is an anti-Corbusian thing, which is anti that Federal Building which is a bastard cousin of a bastard cousin and so on of the original King. Almost nowhere in the class is there a "tower city"
solution. You tend to either get "wall" buildings which stretch the office building notion too far, or you get "deep warehouse" buildings that make a big mass of texture or a cut out. Or they may get to the point where they reconstitute Modern Architecture thin-walled-elements by making slide buildings. I think the problem can be dealt with on that level but it's an awful lot to expect in one semester to get conveniently through the cycles. But the big lesson is to have a clear generalization at this stage of the game; you are not building. It is an exercise—to have a clear strategy of how you are going to deal with it. As you investigate more detailed levels of the thing, you use that generalization as a vehicle to test these things out. At some point you have to make the judgement—is it going to transform this thing from a camel to a cactus plant, or am I going to say that's just one problem I just can't solve at this stage? For the most part they generally suffer from trying to deal with too many issues at the same level of intensity. I personally would much rather see them as an academic thing, dealing with a few things and doing it rather well.

At 5:15 after each guest's opening comments were made, Hutchinson asked how they should proceed.

**Hutchinson:** If we are going to look at them we should move around and look. Do you want to continue a general assembly? What is the general feeling about that? I get the feeling from S9 that he thinks most people are too tired to go on.

**S9:** Generalized discussion, we can't deal with.

**Hutchinson:** He says they can't relate to the generalized discussion. [Student yells "knock down, drag-out"] You want to go individually? You can at least take a series of examples. We are going to have to have some kind of format for it. Either, we move problem to problem or we take up certain kinds of issues and look at schemes which deal with those. What about preservation? Maybe we ought to start with preservation issues.

Look, I'm not going to take the responsibility to be sure that everybody's scheme gets talked
about. You are going to have to do that yourself. If you dealt with an issue and you are being ignored, speak up.

Who are our preservationists? Sl. Maybe we will just start talking about the scheme, okay?

Obviously they set as a very high priority the preservation of existing buildings. I would like some comment on that.

No wait a minute. I'm not the guy that is going to organize this. This is your review.

Sl: Do you want me to start?

Hutchinson: I just thought people could ask questions or make comments. Theoretically everybody has looked around and seen all the schemes. I should think they could be making comments. If there are gross misinterpretations, then students should speak up.

Hutchinson then identified three other schemes which had dealt with the preservation issues, and Heath began to compare their different responses. Quickly the review format changed, and for the next hour, students presented these four schemes.

At 6:15 the general discussion resumed.

Hutchinson: Does anyone want to bring up other issues?

Gl2: There are more issues than we can possibly deal with.

Hutchinson: It seems too that a review like this is only a way to peel off different issues and begin to discuss them. I don't know how people feel at this point about bringing up new issues. Frankly, we have not touched on a lot of things people have spent a lot of time doing. I personally feel that there are a lot of levels of accomplishment that students have been involved in. I don't know what the expectations are for the review. There is a question of whether it is sort of a
judgemental thing or some opportunity to talk about a lot of things which have been dealt with. I don't see it as judgemental.

GL2: Do you see any particular points that you two know were struggled over that we ought to react to?

Heath: Well, the complexity and the tremendous number of variables, specific ones as making a relationship between urban design issues; they occupied a large part of the semester to some extent to the determinant to some of the solutions. OLMD 1 talked about how do you design an office building. We tried to address both ends of the spectrum. This site is froth with so many issues one could go on for another three or four semesters and never solve the problem of site.

GL2: That was surely a given from the beginning-- that there were not going to be any good solutions.

G6: Well, not that there would be no good solution but not one which encompasses everything.

Hutchinson: There are a couple of general points having to do with strategy of the relationship between new things and old things, and the whole spatial organization with regard to the reading of that. Whether you see the site as a big V shaped "field" with objects that stand, with the exception of the wall along Chambers St. which several schemes pick up and reinforce and rebuild or destroy that wall. Many schemes destroy that wall. Then you ask what is the attitude about these old objects-- what do you do with those buildings? Here, its clear that objects are still objects that stand on this large park. But these are strategies which are more difficult, maybe not more difficult, but at least have a certain validity. I think that's what Sl1's scheme does, by identifying a whole set of issues. One has to do with the curious relationship between that row, that row and that row, all of which exist on the site, this being an important axis for the spatial organization of the site. What this series of diagrams suggests here is that one really compresses this organization on the site, while at the same time reinforces that. Meaning that you
detach the site from the surroundings. It's like taking the site defined, like that, and putting a large element in the middle which then recenters this. Personally, I think that's a perfectly valuable assumption as well. It's more difficult to resolve at a detailed level, because it ultimately involves literally joining new and old buildings together, which is a big problem when someone really tries to develop those buildings.

With Hutchinson having made his own general comments, the discussion continued until it broke into small conversations at 7:00. These conversations contained several important segments.

Heath: That's one problem with the whole thing. One would like to see some typology of different approaches.

G10: We are always back up against this fantastic business that if you don't live there, you are actually very unaware of what you would see.

OLMD 2: The advantage of working on a scheme in an office like ours is that you begin to get familiar with the area over time. A lot of the things which are just abstractions on a plan mean more to me than they do to your students.

Hutchinson: That's the distinct disadvantage of doing something called Urban Design in [a town of 40,000]. What problems do you actually select?

Hutchinson: I was talking to G10 in the men's room a few minutes ago and he said "you know, the more I looked at the work the more I think you are right." Then I said, "I have a notion about design, that you can't just operate at the diagram level. You have to work back and forth from diagrams to details, because, who knows where ideas come from. Sometimes ideas come from the building and sometimes they come from diagrams." He said, "I agree. I think you are right."

Heath: He has a real danger of running himself into a conceptual cul-de-sac.
Hutchinson: I think he was overwhelmed by the...

Heath: Heroic design on the wall. But what did he know of the process?

Hutchinson: And that is the problem. You know what we ought to have in a case like this? Instead of having a review by a group of people who come in and sort of talk about the work, one really ought to have a client. You get a group of people. They follow you through and keep up with you. So there is not a matter of people being able to abdicate responsibility for a whole decision-making process but they actually get involved in it.

Hutchinson: On the review...nobody was reading out things in the drawings. It was such a picky thing. The powers of generalization and the powers of observation and perceptions seem to be kind of a cutting through--never looking up or down.

I have come to expect this from reviews.

G20: Another difference was that you really didn't present the project and state the issues that you were responding to. So they really couldn't criticize you or a project in particular not knowing the issue, exactly.

Hutchinson: I think partly it is the fault of the way we presented it.

Heath: It didn't work.

Hutchinson: Because, one really has to, no matter how many times you do it and people really are tired of hearing it--you really have to recycle through all the basic issues and the process and that takes too long. That's why I think it would be nice to have a client. If you have a client they could be going along with you and the thing. Then you wouldn't have to do that each time because they would know where you were coming from.

Heath: I wanted to sit down and talk about this to the jurors, but how can you?... These frustrations are similar to those presenting schemes to clients. It was like a project we worked on last year--total misunderstanding because of inadequate preparation of the people,
inadequate time, and sheer bias on the part of public people. It was a total misconstruction of what it is all about.

Heath: At least we have had some very different sorts of juries, that is for sure. Whether that is a function of the state of the problem, a function of the personalities on the jury, day of the week, etc., who knows? But it is an intriguing thing. Maybe that thing [review] is not by its nature sufficiently stable as an educational vehicle for it to carry on... This is a forum where people share their ideas about the project. The question is to create the right kind of critical mass of observations or ideas which begin to spark something.

With that, Hutchinson announced that students would not have to turn in their work today as scheduled but could have until Friday, May 23 to complete their drawings and models, and that groups and individuals could meet with Heath and himself before then for a critique of their schemes. But 7:30 the room was empty; it's walls bare.

(The booklet of students' work anticipated all semester was not compiled until the following fall and then was abbreviated because of cost, according to Heath. The 100 pages contained work from each phase, selected to include examples from each student. It did not contain a typology of the students' schemes.)
CHAPTER 4

THEMES

In reviewing the events of the semester, several impressions of what happened in the studio come to mind. One is that although the teachers' ways of designing were integrated into the studio work, the students frequently did not use those ways when doing the assigned work. Another is that the "studio as a design firm" produced changes in the studio institutions, such as the criticism sessions and the reviews. Other impressions of the studio come from the events, but only these two will be discussed.
The Problem as a Vehicle; Reconsidered

Evident from Chapter 3's account of what was intended and what happened in each phase of the design problem is the impression that students frequently did not operate in accord with the prescribed ways of designing when doing the assigned work. This impression questions the effectiveness of these teachers' use of the design problem as a vehicle for learning, especially for learning different ways of operating as designers. It also questions the theories of studio teaching evident in their structuring and managing of that studio learning experience. What was intended and what happened in each phase are briefly summarized in this theme.

In Phase I when students were to collect, interpret, and present the design information listed in the assigned topics as a basis for determining the problem and its constraints in Phase III, interpretations were infrequent. Interpretations of how the design information could effect Civic Center designs were rarely evident in the graphics or in the explanations, despite the volume of material students produced. These interpretations were to have been argued out by the groups. However, the students divided the topics and worked individually, occasionally duplicating efforts. The assignment included an expanded range of design determinants and use of models, metaphors, and precedent. The diagramming of the information prepared the way for the students' use of the "design loop," the "triangle," and the "transformation" approach to designing.
In Phase II when students were to begin trying and using the "transformation" approach with two sets of constraints, they completed the task (while completing the Phase I work) though they were anxious to "get on with design." Those constraints focused more on functional, internal, and zoning issues, not reaching the use of models such as "railroad concourses," precedent such as Boston's Government Center, or the interpretations of other collected design information to "transform" the building masses. Again, students divided the group assignment into individual tasks and did not follow or discuss the work of other group members.

In Phase III students were to design a coordinated range of schemes with the Phase I and II material as a resource. They did move quickly to designing schemes, but did not use the assembled material or the "transformation" approach. They persuaded the teachers to relax the collective, collaborative work requirement for several weeks. Some students did post diagrams when required for presentation but they seldom used them when designing. They determined the problem and its constraints within the limits set by the teachers yet the design determinants and the use of models, metaphors, and precedent evident in the final schemes did not extend the problem beyond architecture to urban design. The variations in the students' problem definitions and selected constraints were evident in the diversity of the final schemes. The guests at the Final Review, however, did not find that the schemes constituted a coordinated range or an observable typology.
In all three phases the students "charretted" before deadlines rather than working steadily throughout the semester.

Indeed, the students frequently did not use the ways of designing incorporated into the studio assignment, but relied on their own ways, many of which Hutchinson had attributed to them, when doing the assigned work.

Admittedly the distinction between a vehicle, itself, and what was to be learned from its use was often subtle in this studio. To have students "work collectively and collaboratively" is not substantially different than to have students "organize work groups in each of the first phases." But the distinction is essential, since completing a vehicle such as a specific product does not necessarily mean that the intended learning has occurred. Hence, when considering a design problem as a vehicle for learning, the completion of the vehicle should not be confused with affecting the intended learning. Therefore, these teachers' use of the design problem as a vehicle for learning different ways of designing needs further consideration --their theories of teaching will be examined in Chapter 5.
The Studio as an Urban Design Firm

Setting up the design studio as an urban design firm with the teachers as "principals" facilitated the integration of Hutchinson's and Heath's ideas on designing and urban design in the studio work. From this position they were able to determine the products and the program of work which the students would follow. However, during the semester, references to the studio as an urban design firm were infrequent. Only two aspects of the metaphor were mentioned in studio discussion: principal/designer (employer/employee) responsibilities, and client/firm responsibilities.

In its use to clarify the teachers' role as principal (employer) and the students' role as designer (employee), the metaphor came into play in the early review (2/7). One student, S6, asked the teachers for a specific decision regarding the urban design problem, and was told that "principals" were not in a position to make design decisions.

S6: On a general level, how do you feel about... or what are our limitations on taking down buildings... I just want to know, are we going to get some rules about which buildings can go and which can stay? Or is it up to us? As principals of this firm, how do you feel?

Hutchinson responded by discussing the idea of a range of schemes as the studio product, and noting that they would not be working in an "excessively large area" or "taking down all sorts of buildings outside" the designated site. In response to a further inquiry by S6, Hutchinson reiterated the site
boundaries, and explained "awfully strong arguments" would be required to operate outside the site. S6 was still searching for an answer to which buildings could be removed.

S6: Okay, then within the site, can we have a drawing that shows exactly which buildings must stay?

Heath: I think "must" is the wrong word. You must see the degree to which we are being unspecific about things like that. "Must" would be inconsistent with the idea of simulating the office. The office is different from school because you [the designer] have got to know what you are doing and advise people about what you should do. The reality of this is that the principals in the firm are in no position at all to say what must or must not be done.

Thus, in this "firm," the principals were not the final arbiters of design decisions.

The subsequent class discussion dealt with supporting designers' decisions to retain buildings, not with other ways the traditional studio roles "would be inconsistent with the idea of simulating the office," i.e., other aspects of the teacher/student--employer/employee relationship modified by the "design firm." While the metaphor did begin to clarify the students' role in this studio, it did not inform the students about the intricacies of working in a firm like the one being simulated. For example, as teachers set the studio's work program, did that mean that employers set the firm's work program?

Reference to this employer/employee aspect of the metaphor was observed in the studio on only one other occasion.
One group of four students was having problems with an unequal production of work. Heath recounted a professional experience to elaborate his emphatic comment, "Look, if you guys were working in my office..."

Heath: Two years ago, we were working on an urban design problem in the office [with 5 recent graduates]... It became evident to me early on that they weren't strongly, efficiently functioning parts of the team who could take certain aspects of the design, develop ideas out of them and feed them back in. Two of the five got fired very soon. (Crit with S2's group, 4/21)

The message was clearly that principals could fire designers. But in terms of the studio as design firm metaphor, what did that mean if the teachers were disapproving or dissatisfied with the students work?

The metaphor was also used to clarify the client/firm responsibilities in the class discussion which followed Heath's comments on the principals' role in design decisions.

Heath: One responsibility to your client is not to just say that the Landmarks Commission says that the City Hall must stay and Tweed Courthouse must go, so we scrap it. You should show as one possible alternative how the Tweed could perform a very important function in relation to some new kind of building.

Hutchinson further explained that designers should develop schemes to establish the quality and longevity of their design decisions.

Hutchinson: ...you have to demonstrate a scheme in which it becomes an essential part, otherwise it would not stay...if your move isn't convincing enough, then someone could come in later and...take that building. (Class discussion, 2/7)
Hutchinson's and Heath's concern for the students' understanding of client/firm responsibilities was also evident in their inviting of representatives from OLMD to all the major reviews. But as it was, the role of the clients in the urban design process was not established beyond that of a critic, despite Hutchinson's desire for greater client involvement expressed during the final review. Indeed, the two OLMD representatives functioned more as additional design critics than as clients. Also, although Heath's notion that the clients could benefit from a "catalytic document" established certain underlying ideas about the client's role in the urban design process, the client/firm responsibilities were not discussed with regard to the client's role in the production of the professional document.

The metaphor which was used to structure this studio was not used to explore the actual distinctions between the aspects of this studio that reflected the simulated design firm and those that reflected the "design studio." Clarifying those distinctions would have illuminated the qualities of each and facilitated the students' learning about the intricacies of working in a design firm. That use of the metaphor would have been consistent with the teachers' intention to "expand the students' use of models, metaphors, and precedent." However, Hutchinson's and Heath's use of the metaphor in this studio evoked several changes in the studio institutions. The roles of the teachers and students, the criticism sessions,
the reviews, and the studio products each realized some change.

Heath's comment that the teachers, as principals, were not the final arbiters of design decisions though they could establish the nature of design arguments indicates changes in both the students' and teachers' roles. The "firm" metaphor was used to shift the responsibilities of setting the problem and its constraints from the teachers to the students. The intention of having students determine the problem and its constraints, as well as the distinctions between the principal/designer responsibility and the design firm metaphor, required that students become increasingly independent as designers and more responsible for their design decisions. This shift in the student's responsibility implied a shift in the teacher's main role from one who validates design decisions to one who validates arguments. The teachers still had a role in suggesting ideas, extending the students' ideas, and selecting contexts for evaluating these ideas, but it became secondary. The coordinated products of each phase implied other changes. The teachers assumed the overall coordination of the students' work in their role. The coordinated work reduced the students' sense of control. This prompted one student to note in his final interview that "only the last four weeks of the semester had been design." These new roles and responsibilities influenced changes in the norms of the crit sessions and the reviews.
The crit sessions focused less on design ideas and more on where to get data, how to interpret it, and how to communicate it in a useful manner to other co-designers (Phase I). Design ideas were discussed in the interpretation of design information and in the massing studies in Phase II, but the main focus was on transforming the mass to respond to various constraints (again, less on the acceptability of the idea, more on the process). In Phase III, crit sessions included discussions on how to use a critic, how to present ideas conceptually, and how to diagram ideas. Again, design ideas were discussed, but more as an element in the process than as a validation of those ideas.

The reviews reflected a greater change in the studio's operation. Twenty-six percent of studio time was consumed in major and minor reviews. Several minor reviews were organized so that students could present their schemes for comment, but at the major reviews the work was presented as a collective product. The Phase I review (2/14) was dominated by a slide lecture on the historical significance of buildings in the Civic Center, and by Hutchinson's explanation of the design problem and the next phase of work. The students' work was posted though it was not discussed.

Similarly, the work of the first six weeks was posted for the Phase I and II review (3/7), but the students themselves did not present it. Instead, three faculty reviewers and two OLMD representatives spent three hours discussing how they
could usefully comment on the work. The teachers had intended to use the review to begin the selection of schemes to be developed architecturally; instead, students heard reviewer after reviewer talking in very general terms. When the discussion did focus on the schemes, it revolved around 1"=80' scale models rather than the more detailed drawings. The next class day Heath acknowledged the students' discontent with the review, but rather than discuss that, Hutchinson explained that the materials were posted in the studio and students should use them in Phase III.

As schemes were developing in Phase III, students presented and defended their work in minor reviews. For the final review, the faculty presented the schemes to the guests in the absence of the students. The guests then offered general remarks upon the students' return. However, the students, somewhat dazed from their shortage of sleep and the last few days of hard concentrated work, expressed dissatisfaction with the reviewers' general discussion. They asked for the traditional critique of their groups' schemes. A few groups presented their schemes which were criticized by the guests.

The structure of the final review, which the students found unsatisfactory, was consistent with the design firm simulation: the principals presented their designers' work. At the review, however, Hutchinson noted that the structure of this review was a response to the "long time" and "tediousness" which he associated with reviews where students presented each
scheme. The consistency of the review structure with the simulation was not acknowledged in the class or in interviews by teachers or students.

Reviews are an essential arena of evaluation for students. In their interviews students explained that the quality of their visual presentation and their success or failure in the review tended to influence their reputation in the class and their image of themselves as designers. Information about how students perform is especially important from guests as it is not modified by the more personal relationship between student and teacher and it provides evaluation from fresh perspectives. Furthermore, by designing a final review which did not criticize the individual schemes, one of the students' main sources of feedback and evaluation was cut off.

In their interviews, students also described the review as the setting where they learned most from other students. Their designs demonstrate alternative approaches to dealing with the same problems; presentations reveal new graphic techniques; and the guests' comments evaluate the various approaches and provide insight into the schemes by comparing several solutions with precedent or other frames of reference.

Thus, the set-up for the final review prevented students from hearing these presentations. As a result the critical evaluations of each project by the guests were less meaningful since the students were not aware of what each design team had done. They also mentioned that in other studio's they had been
familiar with others' schemes, but that this semester they had
found themselves surprisingly unfamiliar with and unable to
characterize the various schemes. However, they were given the
opportunity to have critiques of their schemes by the teachers
in the two weeks following the review. Less than half the
students reportedly took advantage of this offer. While these
opportunities did provide criticism for specific groups
scheme, students were not able to learn from other groups' work.

The new product, a coordinated range of schemes, meant
students would not be designing and presenting competing
schemes. This changed the studio norms by modifying the
mechanism which students used to establish their individual
identities and statuses. In interviews they mentioned that
their design reputations among other students were established
by the quality of their individual designs and presentation
graphics. This coordinated range of schemes with compatible
graphics that would come out as a single professional document
meant that the identity and distinctiveness of each student's
work was minimized, perhaps even lost. Reputations established
by this document were attributed to the working group, i.e.,
the firm, not to individuals as in previous studios.

While certain aspects of the studio institutions were
changed others were not, among them the role of the client.
The OLMD remained passive in the design process, and many of
their comments remained disregarded.
In summary, the metaphor of the studio as an urban design firm was central in structuring the studio and had a major impact on what happened during the semester. The changes in the studio institutions which it evoked influenced the students' ways of designing and their ways of operating as students. However, had the teachers and students used the metaphor to investigate urban design practice, the students could have gained a better understanding of urban design, and how one should operate in the studio and in professional practice. But the metaphor's potential was not realized.
WHY WHAT WAS TO HAPPEN DID NOT?

The review in Chapter 4 of what was to happen in the studio that did not, indicated that rather than operate as the teachers had intended, many students had operated according to the ways Hutchinson had attributed to them. If students' experiences trying and using a different approach to architecture, and different ways of designing are to be the basis for learning the approach, it is important to understand why many students did not use the one prescribed by these teachers. This is especially important when one recognizes that those experiences are the basis for examining several approaches from which students will form or select those they will act on professionally.

Several studio incidents suggest three ways of explaining the students' action. These explanations provide one interpretation of the studio events, and the assertions they imply combine to form one view of studio learning.

In Phase I when the students were to work in groups, they worked individually. The "Schedule" and "Working Procedure" handouts indicated that they were to work in groups, and the Phase I assignment outlined the seven topics around which they would form their groups. Yet, at the Phase I Preliminary Review (2/7) students were not presenting group work. When Hutchinson inquired of one of
them, (Sl), "Is this mutual work?", the student responded, "No, we are all working on separate areas..." and went on to explain which subtopics each group member was doing.

Tackling the subtopics individually, as done by all the Phase I groups, is one approach to group work. However, Hutchinson had intended the students argue out their individual positions and decide on a collective one. While the handouts had explained why students were to work in groups, the explanations were equally valid for the students' approach. The handouts had not explained in specific terms how the groups were to function, and the students had not shared the teachers' understanding of group work.

In the preliminary review when the teachers were confronted with the students' negative responses to "Is this mutual work?", and later, "Are you working as a cohesive group in any way?", the discussion returned to the students' design information. The teachers did not interrupt the presentations to inquire why the work was individual or to explain their desire for groups to argue and take positions. Even when students in the same group presented overlapping and duplicate work, as happened with topic "E, Program Definition and Expansion," the students' approach to group work was not discussed. By contrast, the teachers did interrupt the presentations to remind (or
inform) students that presenting information without establishing its importance to the design of the Civic Center was inadequate, and occasionally they gave examples of how it was to be done. By taking no action to correct the way the students were working, nor to inquire why they were not operating as intended, nor to explain their understanding of the assignment, the teachers did not indicate that there was a misunderstanding. (Taking no action may also have indicated to the students that working in cohesive groups was not important enough for the teachers even to acknowledge it.)

Hence, by presenting the assignment in unspecific terms and by not taking action to correct the situation when students did not operate as intended, the teachers frustrated the students' awareness of how they were to operate and whether their approach was incorrect. So, one way of explaining the students not operating as intended is that they were unaware.

This lack of awareness was not limited to group work, or to the first part of the semester, as the following segment from one student's final interview indicates.

Observer: What do you think were the teachers' intentions for the course? Did they want you to learn particular architectural concepts, or ideas about the process of design, or about learning to learn?

S7: Right now, I just don't know--I just can't tell and I think that's bad. It's part of the
professor's job to lay out what he wants to do. He has to let his students know what he wants to teach them or else they can't learn it. (Final Interview)

That the teachers did not take any action suggests another way of explaining the students operated as they did; they were having problems operating as intended and were not receiving effective assistance. In this review the teachers did indicate in their feedback to the students that they were not presenting their design information as intended, and their inquiries about "mutual work" may have carried the same meaning for the students' approach to groups. Furthermore, the teachers provided little help. Their comments were more toward creating an awareness of what was to be done and how, rather than toward resolving the students' problems with using their intended approach. This lack of effective help in the face of these problems was particularly acute in Phase III where students were developing schemes in groups. Heath in his crit with S2, S5, S17, and S23 (4/21) discovered they were having problems designing together, but did not provide more helpful comments than "...in the next few hours either sort it out or go your separate ways." Referring to others in the studio he noted "...they simply sunk their differences if they had any." Referring to two urban designers in an office where he had practiced, he explained, "...they
weren't strongly, efficiently functioning parts of the team" and they were "...fired very soon."

A third way of explaining the students operating is evident in Phase III where students were supposed to use conceptual diagrams to present and to design their schemes and many did not. The sets of diagrams required for presentation were listed in the handout for the April 4 Review, expanded in the handout for the Final Review, and were discussed in class March 31 and April 16. It is presumed that from these handouts and discussions students were aware of the intended use of diagrams. In Phases I and II they had complied with the presentation requirements.

The students' use of diagrams in the April 4 Review was reportedly minimal; when observation of the studio resumed (4/14), diagrams were evident in the work of only two students (S11, S24). For the April 23 Review, which Hutchinson had described to the class as being a test run for the Final Review, only three of the thirteen schemes presented during the three days of continuous review were accompanied by any of the diagrams required three weeks earlier. The Final Review was different. No posted scheme was without some accompanying diagrams, although only one-third of the schemes had all the "abstractions" minimally required. One student, S9, remarked in his final interview that "the most important thing I did to explain [to others,
the concepts that I was trying to deal with" was to use the conceptual diagrams, but admitted that they had been done "at the last," rather than being developed along with the scheme.

While the teachers had relied primarily on the handouts to make students aware that diagrams were required for presentation, they relied extensively on comments in criticism sessions and class discussions to make students aware of the what, how and why of using diagrams when designing. Especially notable was the class discussion April 14. There Hutchinson explained that students were to use diagrams when designing, especially when developing basic strategies and positions on the issues. He described examples of how diagrams are developed and used, and demonstrated this by extracting single issues from one student's scheme and diagramming them. He explained the importance of diagrams to his ideas about designing, to the use of the Phase I and II material, and to their use in criticism sessions. But even with this discussion only two students (S11 and S24) were observed using diagrams the following day. In crit sessions that day Hutchinson reiterated his April 14 comments and demonstrated how to make and use diagrams employing ideas from the scheme being critiqued. Hutchinson's conversation with S22 about his "strange, indecipherable hieroglyphics," his conversation with S9 who
wanted to talk about ideas but not draw them, "Mainly, because I'm not a good sketcher," and his conversation with S2 who was using a schematic diagram of her physical design, but not of the issues and constraints, all happened this day. When Hutchinson found S24 with the intended diagrams, he immediately shifted to discussing the ideas contained therein and how to combine several of them.

Even after this individual help most students were still not using diagrams as intended when designing. During the observations between April 14 and April 25, diagrams in any form from single issues to schematic diagrams of plans or sections were observed in only five schemes (S24 and S22, S11, S18 and S20, S8's group, and S2).

Why did the students not use diagrams for presentation and design? The handouts, discussions, and criticism sessions suggest that the students should not have been unaware. The observed students' use of diagrams, though limited, does not indicate they were having production problems and not getting assistance. Indeed, much of their Phase I and II work had been presented in this manner. Hence, a third way to explain the students' action is that the students decided not to operate as intended.

The comments by students about situations in this and previous studios where they or others did not operate as
intended support this explanation. The reasons and circum-
stances which the students explained had influenced their
decisions are many, but, interestingly, they all relate to
either the intended ways of designing, the teachers, or the
studio situation. (Their comments illustrating that they,
indeed, on occasion decided not to operate as intended are
presented in the Appendix.)

Studio Learning

The assertions implied in the three ways of explaining
the students' action combine to form one view of studio
learning. The first assertion is that students must be
aware of how they are to operate, as clear descriptions and
illustrations can provide. The second is that students must
try and use the teachers' ways of designing. The third is
that students need feedback on how they are doing when
trying a different way, and help if there are problems
that need to be corrected. Without description, feedback
and help, students would have to guess what they were to do
and how successful they were. Therefore, it is possible to
suggest a view that awareness, trying, and feedback and
help together are central in students' learning well-
defined ways of designing.
This view recognizes that in design studios (noted for their use of "projects," not texts) learning grows out of doing projects and out of discussing those projects with teachers, guests, and other students. As Hutchinson has noted, design problems are vehicles for learning. Hence, the experience doing certain tasks is an essential source for their learning.

This view of learning particular ways of designing reflects one way learning in studios grows out of doing, "learning by doing." It is "you show me how and I will try it." It is appropriate when tasks and products are well defined, and the goal is the students' demonstration of competence. For example, "You show me how to diagram an idea, size a beam, or construct an axonometric drawing, and I will do it as you did." It is as much a process of discovering what one is to do, as it is a process of learning to do it.

When students readily try the particular ways, the diagram of learning by doing is straightforward, even in
acknowledging one paradox: students can not try the different ways without an awareness of what they are to do; their awareness is derived from their own trying.

In this studio students were to learn by doing--they were to try and use the ways of designing prescribed by the teachers. However, their infrequent trying and using of those ways limited this approach to learning, and suggests that the link between awareness and trying in the diagram needs to be explicated. Implicit in that link is a fourth assertion that students decide to try either tacitly or not.

Hutchinson anticipated that some students would decide to try his ways of designing. As he noted in his initial interview, "they accept anything you do." However, if students are deciding not to try certain ways as a response to their attitudes about them (as argued in the Appendix), their tentative acceptance of those ways will have to preclude trying them. They may even have to accept ways of designing in general as legitimate for studio
learning. Some students in this studio did not feel "learning a method" was legitimate.

This interpretation suggests two responses to the students' deciding and accepting. One is to challenge them to inquire into their understanding of why they are trying different approaches in different studios. They may not understand the curriculum's multi-perspective approach to education, or how trying facilitates learning in that framework. The other is to accept the interpretation and work to gain their acceptance as if the intent were change.

Both responses would take time but could be useful to even those students who do readily accept and try. Both can extend the students' understanding of the multi-perspective approach to their professional education.

To facilitate gaining acceptance, the teachers should be clear and specific about their approach and ways of designing, and put the students in positions to go through the same processes as the teachers have when forming their own convictions about how to operate as designers. Students must examine their own experiences as designers and decision makers to identify the ways of designing they have come to use and the problems they have found when using them. If problems become evident, they may make a tentative decision to reject one approach and search for or invent another to try.
In the studio teachers would acknowledge that students had certain ways of designing when they entered. Thus, gaining acceptance of different ones might sequence from the students identifying their own ways, examining their use of those ways for problems and successes, tentatively rejecting ones with which they have problems, searching for alternatives, and tentatively accepting different ways to try.

Hence there would be a shift in the learning context from students being assigned different ways to having them examine their own ways and then trying the teachers' ways as alternatives. By focusing on change* the students' task shifts to that of the multi-perspective approach to

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*This discussion draws on the writings about learning and change by Donald Schon, Chris Argyris, Ed Schein, David Kolb, and Larry Greiner cited in the Bibliography.
education using their experiences with different ways of designing as a basis for forming their own personal approach.

This approach to gaining students' acceptance reflects the second way learning in studios grows out of doing, "learning from doing." Learning that occurs when students go beyond doing and examine what they are doing and their simultaneous experiences. One student in the studio demonstrated the problem with not going beyond.

Hutchinson: S12, do you really believe that the only way to design is to know every room which has to go in the building?

S12: Well, that's all I've ever been exposed to! (Class discussion, 3/12)

S12's technique for solving design problems was useful for only a limited set of problem types.

Learning from doing can facilitate students' learning about how they solve problems, what arguments they use, how they operate in problem solving groups, and which circulation concept organizes their design scheme. It requires that students document, abstract, conceptualize, and explain their "doing." This allows the learning to be applied in other situations or other designs and facilitates the sharing of learning and the examination of the consequences of the students' own decisions and actions.

Learning from doing is what Don Schon calls "discovering what you know," hence, discovering from doing describes this learning equally well. Kolb's "Experiential Model
of Learning"* best describes this experienced-based learning in operational stages.

Kolb's Experiential Learning Model:

Concrete experiences

Testing implications of concepts in new situations

Observation and reflections

Formation of abstract concepts and generalizations

Briefly, Kolb's model conceptualizes learning as a cyclical process beginning with the students' immediate "concrete experience." These experiences provide a basis for "observation and reflection" from which "abstract concepts and generalizations" are formed or understood. These "abstract concepts and generalizations" have implications for action in new situations which must be tested. This testing brings the student into the realm of the "concrete experience" and the cycle continues.

One hypothetical example of a design student's cycle would be that while designing interior office layouts for the municipal office building (Concrete experience), the student stops and asks him/herself, "Wait, I'm doing

architecture here, but this is an urban design studio... But how is doing urban design different from doing architecture?" The student may compare this studio with previous studios to see how the treatment of urban design and architecture differ (Observation and reflection). The student may formulate his or her own distinction, for example, that architecture deals more with the building and fitting it together internally and with local site conditions, while urban design deals with several buildings and fitting them together externally with an existing set of urban conditions (Abstract concepts and generalizations). The student may then determine that he does not need to do furniture layouts but only general office and circulation layouts to establish that the proposed building envelope can work as an office building, and that internal circulation connects satisfactorily with the exterior circulation network, leaving the other interior work for the architects (Testing implications). The student urban designer then begins work on another aspect of the urban design project (back to the Concrete experience).

While Kolb's diagram is useful for conveying the sequential relationships of the four elements in his model of learning, the sequence will vary. For example, students could be reading about a theory of designing (Abstract concepts), which reminds them of the studio work they are
currently doing (Observation and reflection on their Concrete experience). This could in turn result in their gaining a new understanding of what they were doing (new Abstract concept), or in their reformulating how they would work (Abstract concepts), which they would try (Testing implications) and evaluate (Observation and reflection).

While Kolb's model describes the process of learning from what one does in any setting, it is particularly appropriate for studio learning in a curriculum presenting multiple approaches to architecture and how to make it. The model describes the process by which students try the various approaches and examine them in use, while forming their convictions about the approaches they will act on professionally. But this model does not address the previously discussed concern for awareness, deciding-acceptance, and feedback and help associated with trying.

(Learning from experience, one's own as well as others, is not only appropriate for learning in studios, but for learning in practice. In professional practice designers' own experiences and the experiences of others form an important basis for learning about successful design strategies and physical environments, as well as for learning about operating with clients and other professionals. For designers learning from experience is seen in their intuition and in the constraints and issues considered important in their designs. Thus, learning to learn from
one's experience and the experience of others is an essential part of one's studio preparation for professional practice.)

Having presented the view of studio learning that students must not only learn by doing, but from that doing, the interrelated strategies which facilitate the students' awareness, acceptance, trying, and feedback and help need elaboration.

Different strategies can be used, but their effectiveness will vary with their appropriateness to the specific student and the specific situation. Consider the importance of students' experiences with the ways of designing for which they have developed a preference. Novices with limited awareness, experience, and proficiency may be easily persuaded to try different ways, ignoring their own. The advanced student, with experience to support preferred ways, and strongly committed to those ways, may be unwilling to give them up, or even to examine their effectiveness. Thus, tentative acceptance may be more easily achieved with the novice than with the advanced student. One student, S2, recounted in an interview the ease with which she surrendered her suburban house images of residential design the first week of her first year studio. However, in Hutchinson's studio, she did not use diagrams as intended, did not use the transformation approach, and was an uncooperative group member in Phase III.
One set of strategies is primarily based on students' trying before teachers' explanations or demonstrations. The students' awareness and acceptance comes from their trying and from the teachers' feedback and help. That help may include individualized explanations and demonstrations. The students' success with the new ways can yield acceptance, if the results of their trying is sufficiently convincing. One student's apparent success may reinforce or encourage acceptance by others. This strategy is most effective with ways which are quickly and easily accomplished. When developing proficiency requires perseverance, this strategy may not carry the student beyond tentative acceptance. Even when students are committed to the new way, extensive problems in trying them can bring their acceptance into question. This strategy, a form of advocacy through practice, asks students to by-pass deciding-acceptance to try new ways.

Another set of strategies is primarily based on teachers' advocacy--gaining the students' tentative acceptance through persuasive explanation and demonstration, or one without the other. This would be most persuasive when presentation and demonstration are integrated, i.e., using both levels of advocacy, and shifting from one level to the other--the "design loop" in operation. Here students understand more about what they are to do, and
how and why they are to operate, before trying. Hence, less explanation comes in the form of feedback and help. This strategy would be most effective if a student were searching for alternative ways of designing.

Neither of these sets which reflect the "learning by doing" approach asks students to examine the alternative ways in contrast to ways in previous studios. They also do not ask that students consider other ways of designing.

A third set of strategies incorporates the students deciding-accepting, and reflects "learning from doing." Teachers can help students identify and examine their own ways of designing, as suggested previously, by suggesting alternative ways and offering their own interpretations. However, the final analysis must rest with each student. If teachers identify and examine the students' ways for them, and are the source for the new ways, several problems can occur. The students' conceptualizations of their own ways may contradict those of the teachers. Further, the students may not find their ways of designing inadequate, especially inadequate in the manner which the teacher explains. If students do find their own ways inadequate, they may still not accept an alternative advocated by the teachers; the teachers' alternative may not resolve the perceived inadequacies or may not deal with the same inadequacies the students have identified. Hence, the result of keeping the identification and analysis of their
ways and the resolving of their inadequacies out of the students' hands, could be an insufficient student commitment to both accepting and trying those ways. Thus, the source of the critique and the source of the alternative ways can play an influential role in students' accepting.

Before students can effectively examine their ways of designing they must accept the constellation of related ideas as legitimate and important. Constellations of ideas, like ideas about designing, are sets of ideas (or theories) which are related by common concerns, such as in this studio, how to operate as a designer or how to operate in groups. Constellations include complementary and contradictory ideas, theories, concepts, ways of operating, expectations and measures of success. The process of gaining legitimacy for a constellation is the same as gaining acceptance for new ways of designing, as both are influenced by the same factors.

Gaining students' acceptance of different ways of designing is the process of helping students to legitimize ideas for themselves. If involving students in identifying and examining their own and other ways is effective, it will not be for convincing them to use the teachers' ways for the long term. It is not a teaching technology with which students can be persuaded regardless of the approach being advocated. Quite the contrary, this view puts
students in charge of their learning. They form their convictions based on their experiences with a range of approaches. Hence, it addresses the dilemma in learning that students can not know what a teacher will teach or its importance until they have learned it. Students can understand their role in multi-perspective education and develop the capacity to alter the ways they operate as professionals based on their experiences in school and in practice. This approach to studio learning is no less important for students in a more mono-perspective curriculum. Those students must also reconcile the approach to architecture and ways of designing being taught with their own perceptions of architecture and the world around them. The objective in a design studio, then, would be not only to develop students' competence with particular ways, but to use their experience with those ways to understand their own, and those of others. (This view of studio learning questions the teachers' and students' theories of teaching and learning evident in the studio and the Chronology. However, only the teachers' theories are examined here.)

These Teachers' Theories of Teaching

Hutchinson's explanation for the students not operating as intended centered on the students— their unwillingness to work and to suspend disbelief. In his final interview
he indicated that a number of students had been unwilling, and he questioned their understanding of studio learning.

Hutchinson: You get people who are very committed to what they're doing, who are willing to work and who realize the direct relationship between their own input and what they get out...

At the opposite extreme you get a very substantial number of people who have never understood that and probably never will... I get the general feeling that there is a substantial amount of the class that would really like to absorb it without ever having to do any work--the goof-offs...

There is always that problem of their willing suspension of disbelief... There is no way you can educate someone without their willing suspension of disbelief. They have to be able to take something on faith up to a certain point. That doesn't mean they don't question but that they have to be willing to go along with it... on faith that it will produce something that's worthwhile.

You still get an enormous resistance from people even in the fourth year who are inflexible. They do not see the immediate payoff coming from the time that they are investing... The more that they believe it's not going to pay off, the less it pays off. (Interview, 5/14)

Further, Hutchinson noted that several students had worked diligently, but had not been willing to suspend their disbelief. His impression was "that they put in too much work in relation to what they got out."

While Hutchinson's explanations placed the responsibility for the students' action on the students, as he had also done during the semester (notably the April 12 Review and his comments about the students' "commuter mentality"),
the three previous explanations shift much of that responsibility to the teachers, calling their theories of teaching into question. Hutchinson explained in interviews several theories upon which he based his action.

Regarding the students' awareness he indicated that only abstract explanations of what is to be done and why it is to be done can be made before students begin work (trying). Hence, awareness comes from trying, relating it to other experiences, and getting feedback with explanations.

Hutchinson: I think we can make a general statement about our purpose and method. But then, until they really begin to deal with it and react to it and find themselves involved in it, you can't really explain it except on a very abstract level. Once they begin to experience it themselves and relate it to their other experiences, then the whole dialogue starts... When they can't fall back on the familiar, there can be frustration. When that begins to happen, you try and put that into perspective. (Interview, 2/12)

Regarding deciding and accepting, Hutchinson indicated that some students would readily accept while others required more explanation.

Hutchinson: Some students will accept it. They accept anything you do. Others will either question me, or at least want a further explanation... I usually [give that] on an individual basis... it becomes meaningful in that way, because of the way they relate to their own experience...

Even within the school, their experiences have been quite different... I think too much
teaching really ignores that... One takes these people where they are. (Interview, 2/12)

He also indicated that students must try the teachers' ways before they can find them useful.

Hutchinson: ...Sometimes it's hard for them to see the purpose of any particular thing that they are doing, until they get into it. (Interview, 2/12)

And that teachers gain students' tentative acceptance for trying by asking them to "suspend their disbelief" in what they are asked to do.

Regarding trying, Hutchinson indicated that the problem was to be a vehicle for learning (quoted in Chapter 2). The problem, then, would give students the opportunity to try and use his ways of designing to gain awareness and acceptance.

Hutchinson did not comment on his approach to giving feedback and help, other than it could include individual explanations.

In accord with these theories Hutchinson and Heath created opportunities for students to operate in a different way through the assignment (problem as a vehicle). In structuring the studio they unilaterally decided how the students should operate as designers, anticipating that the students' own ways would not be as effective. They asked students to "suspend disbelief" in their ways in order to try them and find them useful. From students' trying and
the teachers' feedback and help, the students' awareness was to grow, and their successes with those ways were to encourage their acceptance. The set of strategies used to implement these theories, then, relied primarily on the students' trying before the teachers' explanations of how or why, as in Phase I where the students' "perfunctory" presentation of design information was the basis for explaining and demonstrating how the information was to be presented (with interpretation) and why.

The limitations of these theories were evident in their implementation during the semester. Further, they are not consistent with the learning by doing/learning from doing approach to studio learning. First a look at the theories related to students' awareness.

Hutchinson's theory that students' awareness and understanding grows out of their trying poses a paradox. Students must try in order to understand, but they must sufficiently understand and be aware of what they are to do, how they are to operate, and possibly why, in order to try. In the studio, Hutchinson's presenting of those ways often did not provide this understanding and thus complicated the students' efforts to try.

When presenting the assignment, Hutchinson explained in general terms what was to be done and how students were to operate—the ways of designing they were to use. The
handouts were no more specific. Without more operational explanations (like those he gave in interviews), students began to work using their understanding of such terms as "interpreting design information" and "group work" rather than the teachers' particular meanings.

The handouts used traditional terms to describe these teachers' "non-orthodox" approach. Hutchinson, himself, pointed out the disparity between the assigned "Building massing and site alternatives" scheduled for Week Four and his intentions.

Hutchinson: This [use of models and metaphors] will become much clearer in the next phase of the problem. Although it says in the outline or schedule that we would be dealing with massing and alternative sites for the building, there is an intention which is very specific with regard to that which has to do with modeling. In other words, what we're going to, instead of just having people look at the thing as buildings on the site and the ways that you can put these buildings on the site, we're really going to try then to view it on a more conceptual level. Like what are different attitudes that one can take toward this place, that would become like a metaphor for it, you know, one sees it as something, as a great sort of archetypal architectural thing like a railroad concourse, for example, or one could see it as a supermarket, for another... Once you look at it that way, it's no longer just buildings that you are building, it's no longer just elements shifted on the site compositionally. (Interview, 2/12)

This further confused the students' understanding of what they were to do. The assignment appeared to be similar to students' previous problems in spite of the differences.
S7: I had just come out of a semester of urban design in the fall with another critic. Hutchinson had talked about this problem in much the same way the critic last semester had talked about it. (Final Interview)

The teachers presented the assignment as a professional problem, minimizing their comments to the students about their underlying pedagogical intentions and about their intended ways of designing. Even the Introductory Handout, despite its length, did not explain that the ways of designing integrated into the studio work were different from those familiar to the students, nor what the problem was to be a vehicle for learning. Rather the problem was presented as work to be done.

S7: I feel like I don't really know that there is anything that we are trying to get at. We are just trying to arrive at a final product, and we are going to do the typical sort of look at the site...

But I have this feeling that Hutchinson is trying to say something but I can never understand what it is he is trying to say. He talks all around something, but I don't know what it is he is talking about. (Initial Interview)

As Hutchinson explained he preferred to share information about how to operate and why, to demonstrate his ways, and to explain his pedagogical intentions after students had gotten into the work—"when students needed it"—and individually rather than to the whole class at once. When he saw a problem with how they were operating,
he would discuss it somewhat in crits, class discussions, and reviews. Though noting in class that the "problem was a vehicle for learning" certain things, Hutchinson specified few of these things to the students. Occasionally he would discuss the ways of designing integrated into the work, referring to urban design or his own ideas about designing for support. In crit sessions he elaborated and demonstrated these ways as they related to the individual student's work. But given that each student in the studio potentially had 4.75 hours of individual crit time with the teachers during the semester (twenty minutes a week), it seems unreasonable that each student had similar access to adequate explanation and demonstration of the teachers' several ways. Indeed, the teachers were observed giving extensive explanations to only a few students.

When Hutchinson did elaborate the work to individuals or to the class, he focused on the work at hand rather than how it related to the whole semester, and did so when he saw a problem with the students' work, and often not when the students inquired.

S7: One of the problems I'm having right now [is] I really don't know where I'm going in the course. I have a feeling that the course is going toward putting out a building via a method... When you ask questions about what we are doing now and what we will be doing next,...there is this response that there is no boundary; that everything melts together... (Initial Interview)
S2: I don't know how they are handling this semester. Every once on a while they will say, "Ah ha, you don't know what we are doing next," or "When we get to the next phase..." It's a very planned semester. We are not exactly being kept in the dark...
(Initial Interview)

In reviews Hutchinson's emphasis on creating students' awareness through feedback and help was evident in his explanations of how students were to operate and why when they failed to operate as intended. But his comments were circuitous. He began with subtle and indirect inquiries about the work, not revealing that it was inadequate and not specifying the work in more operational terms. Outright statements that the work was inadequate came only after extensive subtle and indirect inquiries failed to shift the students' operating. (In the February 7 and March 12 reviews, where this pattern was observed, the outright statements began two hours into the review.) At these points he gave a more specific and operational explanation. Indeed, his explanations became more specific and operational as the semester progressed. When they did not get beyond the subtle and indirect inquiries (as occurred regarding group work at the February 7 review), the teachers appeared to be taking no corrective action, either as feedback or as help, when students failed to operate as intended. At other times the teachers pointed out to the students that they were not operating as
intended, but only repeated their general explanation without specifying how they were to operate, and without providing additional help (as with the problems S2, S5, S17, and S23 had working together in Phase III).

Aside from the problem of explaining how students were to operate after the work was done, when students had no other opportunity to comply, this circuitous approach often consumed much time and diverted attention from the intended message. In the February 7 review one student expressed his frustration with the review and his anxiety about not doing design to Hutchinson while he was using the subtle approach.

S6: We are just spending an inordinate amount of time [in this review]. The point gets made then repeated twenty times. I don't want to spend my next week redrawing, my minimum dimensions for fire stairs.
(Review, 2/7)

S6 was referring to the teachers' comments on what information was needed which were "repeated twenty times," and not the implicit message about how they were to be operating as designers.

Often the teachers' feedback was directed to the whole class in reviews and in class discussions. In these sessions Hutchinson would invite student comment, however the comments were infrequent and from only the few more vocal students. The collective feedback did not allow many of the students who were failing to operate as intended to
realize that the feedback was intended for them. At times those students were absent from the class, as with the April 7 discussion of "commuter mentality."

One avenue of feedback that the teachers did not use was grading. The final grades, the only ones given, aggregated many concerns which were neither specified nor evaluated separately.

The teachers' presenting of the assignment and the intended ways of designing in general terms, disguised as "orthodox," and as feedback and help, can also be interpreted as a response to the resistance they anticipated from the students. Hutchinson thought that students would resist his ways if they saw them as a "method" for designing. Indeed, most of the students interviewed were adverse to any method for designing. If the students' resistance to producing group design schemes at the beginning of Phase III is any indication of their attitudes, the students' resistance would have been more evident had they understood at one time what the assignments implied. However, by not being explicit about their ways, and by not revealing that the constellation of ideas shaping the studio was about designing, the teachers did not confront this resistance (so it could be resolved), and they did not establish their ways or this constellation as legitimate
content for a studio on urban design, thus, perhaps, reinforcing its illegitimacy.

The implementation of this theory also had consequences for Hutchinson's "try it and find it useful" approach to students' acceptance. With students often having to guess what they were to do, how they were to operate, and why, as well as how well they were doing, their chances for having success with the teachers' ways and for finding them useful were limited. Yet, without persuasive results in trying and using those ways, the students may not accept them. Consequently, in this studio one would expect to find the "try it" theory ineffective except for those students who understood the prescribed ways, who tentatively accepted them, who had given them sufficient effort and time to find them useful, and who needed little assistance to use them successfully.

Hence, Hutchinson's theory of only presenting abstract explanations before students began working was not adequately implemented; his explanations were not adequate for students to begin to try, and the feedback and help often occurred too late for the students to try and use those ways. Also, it is not clear that students related these ways to their own experiences other than to note the differences, or that Hutchinson put the students' experiences or his ways into "perspective," or that students'
understanding was increased by trying except by trial and error. Hutchinson's theory was not consistent with the learning by doing/learning from doing approach to studio learning; the teachers did not make it clear to the students what the problem was a vehicle for learning, what their pedagogical intentions were, or what constellations of ideas the studio was to focus on. Especially inconsistent were their disguise and withholding of this information in the face of anticipated student: resistance to the assigned work. In addition to these consequences for the students' awareness, the implementation of this theory had similar consequences for the students' acceptance as Hutchinson approached it.

Hutchinson's theories that students' acceptance grows out of trying, and that students can "suspend their disbelief" in his ways in order to try them are consistent with the learning by doing/learning from doing approach as far as they go and if adequately implemented. As Hutchinson explained, students "have to be able to take something on faith up to a certain point" when trying something new. Thus, one confronts the dilemma in learning of how students can know they want to learn something before having learned it. "Willing suspension of disbelief" is not sufficient in theory or practice.
During the studio Hutchinson asked the students to "suspend disbelief," and he noted in his final interview that the students who had gotten the most out of the studio had been those who had "suspended their disbelief," but recognized that they were few in number. However, the teachers' only assistance to students during the semester had been to admonish them to "suspend their disbelief" and to try the prescribed ways of designing. For those students who were unable or unwilling, help was needed, but not forthcoming, either as help to become more willing or able, or as an alternative way of achieving tentative acceptance.

The "willing suspension of disbelief" without complementary theories ignores the students' own ways of designing and isolates them from the process of changing the ways in which they work. They are not even asked to "suspend belief" in the ways they prefer when "suspending disbelief" in the teachers' ways. Students who could "suspend disbelief" would by-pass identifying, examining, and possibly rejecting the ways they preferred, and would avoid searching for alternatives included in the deciding-accepting link of the learning by doing/learning from doing approach.

Rather than help students identify their preferred ways as a base to build from, and then identify the inadequacies of those ways and suggest different ways which
might resolve those inadequacies, Hutchinson did all this himself. He did not consult the students to determine if they thought they were using the ways he had attributed to them, or if they had experienced the inadequacies he had attributed to their ways. He did, however, on occasion describe to them some of the ways he expected they would use, noting the inadequacies he had identified. For example, students were occasionally confronted with Hutchinson's description of the "stew pot" approach and its limitations and the virtues of the "transformation" approach. However, they were not asked about how they operated as designers or what limitations they had encountered while designing.

By ignoring the students' preferred ways the teachers were asking them to be novices and were indicating that the ways they had developed over three and a half years in architecture school were unimportant as well as inadequate. These advanced students, whose preferred ways had gotten them through studios until this one, may have been more reluctant to examine those ways given the circumstances, and more likely to discredit the source of the devaluing. This devaluing of their experiences put them in a position of defending their experiences and their ways which further inhibited bringing those ways into contention.
"Suspending disbelief" also does not address the need for students to legitimize the constellation of ideas (how to operate as a designer) with which they were to deal. To reiterate, both the course handouts and the teachers' explanations of the studio and the design problem to the students focused on urban design and not on ways of designing.

While this assessment of Hutchinson's theories regarding acceptance argues that in the studio he minimized the importance of the students' deciding and of their preferred ways, his interview comments suggest otherwise. Earlier in this chapter Hutchinson was quoted on the importance of students relating their current work to their previous experiences when learning. When discussing his desire for students to design in groups in Phase III, he noted that he did not want to make any "shotgun weddings" (although they later acknowledged doing so) because:

Hutchinson: 
"...invariably...you get some people who just don't do anything or so very little... So I don't like to force group things."

(Interview, 2/12)

As he explained the virtues of group work the dilemma between "forcing things" and missing the benefits of group work experience became evident. The same dilemma is also evident in his proposed strategy for getting a range of schemes in Phase III.
Hutchinson: ...though I would still want to insist that there is a range and that they don't all pick the same thing...I think we have to plan for part of that too, and influence again, not by force, but just by saying "Okay, let's try to get some representative schemes. Who is willing to work with this idea?" I think generally that works pretty well. (Interview, 2/12)

While Hutchinson's comments are consistent with the learning by doing/learning from doing approach, his actions in the studio were not, especially those related to "suspending disbelief."

Hutchinson's "design problem as a vehicle for learning" certain things is consistent with the learning by doing/learning from doing approach to studio teaching. However, that the students did not try or use several of the teachers' ways of designing indicates that they were not using the problem as a vehicle for learning different ways of designing, or for learning more about their own ways. Therefore, students were not operating in accord with the multi-perspective curriculum. In the studio the students were simply doing the assignments--Phases I, II, and III--and using the ways they knew (the ones Hutchinson had attributed to them). Indeed the students' assignment did not include any parts for which using one's experience doing the design problem would be the basis for the students' learning--the assignment was to create design schemes in a prescribed manner.
Here Hutchinson's theory of "problem as a vehicle," and the theory of teaching embedded in the multi-perspective curriculum were not adequately implemented. Here, too, when students were not operating as intended as students (rather than as designers), the teachers did not make them aware of what these theories implied for them as students. Also, the teachers did not provide help other than occasionally giving students feedback on their performance as students by admonishing them to work more in class, to try their ways of designing, or to be less disruptive in reviews. They did not elaborate on the theories which underscored the teachers' approach to the studio, nor did they comment on the students' compliance with the theories in their feedback to the students. Here the learning by doing/learning from doing approach has implications for learning to operate as students as well as for learning to operate as designers.

The teachers' implementation of the "design problem as a vehicle for learning" had additional consequences for the students' studio learning, especially their learning from doing: students missed opportunities for learning.
Missed Opportunities for Learning

Although the teachers had envisioned this design problem to be a vehicle for learning, their theories of teaching evident in this studio were contradictory. They gave a very evocative design problem, rich with opportunities for learning, yet they did not follow through on many of the issues which the problem and the studio situation evoked, and thus missed those opportunities. This can be seen in virtually every aspect of this urban design studio, as the following references to studio incidents document. The opportunities for learning evoked or introduced by the design problem are distinct from those evoked or introduced by the problem-solving situation in the design studio. However both groups include opportunities the teachers had intended (Chapter 2) and opportunities the teachers did not express but which can be seen by examining the situations they set up for the students.

First, the opportunities evoked by the urban design problem and the "urban design firm" should be noted. The problem assigned different products, tasks, and design constraints than those required for the architectural design problems students had experienced in their previous seven studios. The different products and tasks implied that what urban designers do is different from what architects do. Yet these and other differences (or
similarities) were rarely discussed, and several students noted in their final interviews that they were unclear about them. One student, S9, reported that he had suggested to Hutchinson in the course evaluation that several slide presentations about urban design would have helped clarify the differences between architecture and urban design. For this student these differences were observable in the physical environments rather than in how the environments were made. Opportunities for the students to learn about urban design had been missed.

The assigned urban design tasks were to be done collectively yet the student groups subdivided the assignments into individual tasks, and encountered problems collectively designing a group scheme in Phase III. Still, the fundamentals of working collectively were not discussed, although the necessity of working collectively had been noted in the "Working Procedure" hand out. The design problem had set up situations for the students to work collectively but it wasn't carried through. An opportunity for learning had been missed.

The article, "Urban Design as Part of the Governmental Process" by Johathan Barnett (Architectural Record, January 1970), which was distributed to the class, could have afforded several opportunities for learning. While the teachers had not compared the new studio products associated
with urban design with products associated with architecture, they had consistently presented the purposes of the new products for the urban design problem. For example, Heath discussed the importance of the final product, the coordinated range of schemes, to urban design for a public agency--to facilitate discussion and action among the political decision makers. This use of the final product was consistent with Barnett's article, but other issues in the article relating to public sector urban design including the importance of planners participating in the governmental process in order to gain political input and support, the role of Community Planning Boards for community participation for building a "constituency to assure implementation," and the role of political power in achieving noted planning and city design successes, never surfaced in the observed studio discussions. The article was handed out, but not discussed. Several opportunities were missed.

While the role of the urban designer in the development process, evident in Heath's description of the final product's use, differs from the typical role of the architect, and while Barnett's article suggested a political role for the urban designer, the role of the urban designer in the development process was never examined during observed studio discussions. In addition to urban
designers, one other set of actors in the development process was introduced into the studio, the OLMD representatives. However, the role of the public client in the development process was not discussed, nor were the roles of the agency's representatives or the workers they represent. Rather, the representatives, present in the studio only during reviews, assumed the role of critic along with the other guests. Although Heath's and Barnett's comments related to roles, and the introduction of the client into the studio set up the situation to discuss the roles of the various actors in the urban development process, this was not discussed. Another opportunity was missed.

The "urban design firm" metaphor brought another set of roles into the studio, the roles of principals and designers (employees) in the firm, and the attendant responsibilities for coordination and management. While the teachers did on occasion refer to the "firm" to make a particular point, opportunities to discuss strategies for managing twenty-eight employees of equal status, strategies for coordinating the production of a range of schemes, the respective roles of the actors within the "firm," and the dynamics of the employee/employer relationship were missed. Of particular importance is that the metaphor was not used to distinguish "studio" and "firm," or to resolve the
conflicts between them. For example, who was responsible for the coordination of the schemes in Phase III, the designers or the principals? The principals had coordinated the work in Phases I and II. Also, who was responsible for creating the typology which indicated the characteristics of the range of schemes? (The lack of a typology of schemes resulted in missed opportunities for learning. Had there been a typology it could have provided valuable information for the students to determine what constituted a significantly different treatment of a design constraint, and the consequences that treatment would have for the design and for the other constraints. If the typology had been developed as schemes were taking shape early in Phase III, and had been posted as it developed, it could have served to make the process of coordination more obvious and easily understood.)

In the design problem the building program and the constraints for the municipal office building were loose and undetermined, but strategies for dealing with indeterminant programs and for establishing constraints, frequent occurrences in professional practice, were rarely discussed. Another opportunity was missed.

Second, the opportunities for learning evoked by the problem solving situation in the design studio should be noted. One student, S10, complained in his final interview
about how certain students had been given more crit sessions than others during Phase III. He reported getting only one during the first five weeks of Phase III. Hutchinson reported that when he would stop by S10's desk and make his standard overture, S10's response usually indicated to Hutchinson that he did not want a crit at the time.

Hutchinson: I don't like to...force myself on people. If I don't detect a certain receptiveness, I usually soft-pedal--like looking over and making some casual remarks like "How are you doing?" If they immediately start asking me questions and getting involved and wanting to show me things, I sit down and start. But if they stand there and say "Oh, okay. I'm doing alright," then I maybe take that to mean that they are at a stage that they do not want criticism... Very often, I will talk with them a while, and then go away. That happened any number of times with S10. (Interview, 5/14)

Despite these problems, how to get a crit was not discussed in the studio, and how to use a crit was only discussed with a few students. Some students, nevertheless, not only determined how to get crits but how to get their own concerns addressed (after Hutchinson had elaborated his concerns). Opportunities for learning how to operate as students were missed in this situation, as well as in the teachers' use of the problem as a vehicle.

Given the interpretation that the teachers' intent was to change the ways students design, change, how one changes, and how one finds one way of designing better than
another could have been discussed. However, neither change nor the process by which Hutchinson determined his ways to be better than those he attributed to the students were discussed. Another opportunity for learning evoked by the studio situation was missed.

While the design problem and the problem-solving situations in any studio evoke or introduce opportunities for learning a broad range of issues, the intent and timing of the studio may not allow a thorough investigation of all the issues. How are the issues which fall outside the limits of the studio to be dealt with? There are at least two possibilities. One is to explicitly confront the issue, acknowledge its relative importance, and make an operational assumption for use in the studio. An example would be to acknowledge that various interest groups would be affected by the proposed municipal office building, notably the office workers and the owners of currently leased office space throughout Lower Manhattan, and that they and others should be involved in the early planning stages, following Barnett's argument for community participation. The limits of time and distance make such community involvement impossible for this studio, however, therefore, "Let's assume that the community groups will be involved in the evaluation of our range of schemes through
Different assumptions are equally possible and probable.

The second possibility is to deal with the issue implicitly or ignore it, the implication being, of course, that what is ignored is unimportant. Hutchinson explained in a formal interview that he took this approach by default because of the limited time available in the studio.

Hutchinson: This whole business of issues, particularly on something like urban design, is so complex that it is necessary to narrow down the range of things that you can ultimately try to deal with in a semester. That doesn't mean that the other issues are totally ignored, it just means that if there were more time, you could find ways to synthesize them. (Interview, 5/14)

The situations in this studio in which the teachers ignored or implicitly dealt with the evoked issues have been described as missed opportunities for learning. There are further consequences of this approach.

Submerging the evoked issues through lack of discussion could result in misconceptions about many issues. These include the complexity of the design problem, strategies for approaching design problems in practice, and the role of the urban designer and other actors in the urban design process. These misconceptions are created or perpetuated because the problem is simplified for the studio, important influences and contexts are not recognized as important, and
basic assumptions and strategies which describe professional action are not recognized or discussed.

Without discussion students may continue to act on assumptions and strategies of professional action which are inappropriate or inaccurate. Students may neither be aware of the inappropriateness of the assumptions, strategies, etc., nor be aware of them at all. The lack of discussion inhibits both the discovery of these assumptions or strategies and the evaluation of their appropriateness.

Another consequence of the lack of discussion is that the importance and legitimacy of the evoked issues may be diminished. Students in this studio perceived certain issues to be legitimate and others as illegitimate and unimportant. Types of office arrangements were introduced in Phase I and were discussed explicitly by the teachers, but were considered illegitimate by some students. If students discredit issues that are explicitly discussed, how will they respond to issues which are dealt with implicitly or ignored? The lack of attention given issues by the teachers certainly discredits them if the opinion of the teacher is valued by the students. The students' perceived legitimacy of issues is consequential for the students' future learning. Learning to work collectively is a good example of an issue which when used ineffectively in the studio prejudices future investigation. Learning
to work collectively was not introduced as something one could learn about, the students' assumptions formed in previous studios (avoid working in groups) were not examined, and the students' problems working effectively in groups were ignored in the studio. As a result, not only did they fail to learn to determine which were legitimate issues or concerns, they also were inhibited in learning from their own experiences—learning from their doing. Students were denied the experience of moving from a personally experienced problem to conceptualizing the problem and acknowledging it as a legitimate concern, that is, something which could be learned. This experience would establish students as the sources of significant concerns and establish their ability to learn from their own experiences. This discovery and recognition of legitimate concerns from one's own experiences directly reinforces one's role in learning. The lack of recognition devalues a student's experience as a source of knowledge and inhibits his or her direct involvement in present and future learning.

The emphasis on the students' experience as a source of learning requires that it be acknowledged that a design studio does not provide actual professional experience from which to learn.
Hutchinson: The method of teaching architecture is basically simulation. You are always simulating something that is not real.
(Interview, 2/12)

The studio is a simulation of professional practice. As such, the studio offers opportunities to learn from the experience of others as well as one's own. While certain aspects of a studio can be described as "simulated" (though often treated as "real," like a building program), other aspects are "real," i.e., provide real experiences. This distinction can be paralleled to the two groups of opportunities for learning. The opportunities evoked by the design problem are "simulated," for example, the simulation of students working as design professionals executing the design problem under contract for professional services. In contrast, the opportunities which are evoked by the problem solving situation are "real:" the students' experiences with the teachers, with other students, and with confronting a design problem and the limitation of their ways of designing.

This distinction between "simulated" and "real" aspects of the studio is important in the urban design studio because the teachers and students focused more on the "simulated" aspects, such as the Phase I Information Gathering, or the professional drawings, (the "vehicles" for learning), than on the "real" aspects, such as operating as designers, using different ways of designing.
or working collectively, (the intentions underlying these "vehicles"). Indeed there was no evidence that anything other than the quality of the students' professional work would be the major basis for their final grades. The result of this focus was that students were not encouraged to use their "real" experiences in this studio as a source for learning about how to operate as designers or as students. Further, they were not encouraged to use their "real" experiences as sources for learning about their "simulated" experiences, such as, how the OLMD representatives' role in the studio reflected the agency's role in urban design work. Therefore, students missed opportunities to learn from their experiences, to learn how to learn from their experiences, or even to learn that their experiences were an important source.

Hence, in this studio, the teachers' theories of teaching evident in their action not only inhibited the students operating as intended (learning by doing), but also inhibited the students learning from their experience (learning from doing).

*Clearly, the professional work is a "vehicle" for other intended learning about urban design which were important to this studio, although these intentions were not emphasized by the teachers in their formal interviews.

**Although the students may have been using their "real" experience with the physical environment as a source for their learning about urban design.
CHAPTER 6
LEARNING FROM TEACHING

When students are given a design problem as a vehicle for learning a different approach to architecture and different ways of designing, and they do not use those ways, some action needs to be taken. When the teachers' theories of teaching are found to contribute to the students not using the different ways, and to their missing opportunities for learning, the action to be taken should reflect what has been learned from their teaching. Central to this learning is that studios should reflect both learning from doing as well as learning by doing. The implementation of this can take several forms in both the structure and day-to-day management of a studio. These were the two areas in which Hutchinson's theories were evident. In this chapter two refinements in the structure of design studios are proposed: the "practicum" and the "working paper."

The structure and management of the observed studio emphasized learning by doing, the problem as a vehicle for learning prescribed and well defined ways of designing. The students, however, were not always aware of those ways, and occasionally when they were aware of them they decided not to try or use them. Hence, to facilitate
learning by doing, a greater emphasis on advocacy* of these ways is necessary to make the students aware of the ways they are to try, how they are to operate, and why they should use these ways and not others. This includes the teachers being clear about the constellation of ideas on which the studio will focus, and how other constellations evoked by the problem will be dealt with. Furthermore, students should be helped to see these ways in terms of their experiences in other studios, and should be aware of the educational agenda of the studio and curriculum--where trying and using different approaches to architecture is the basis for forming one's own approach.

The "practicum," a format from management schools where students learn to put theory into practice, would facilitate this advocacy. When adapted to design studios such as this one, the "practicum studio" would have two somewhat separate parts: the first would emphasize the students' understanding, awareness, and acceptance of the approach and ways of designing to be tried; the second would emphasize developing the students' proficiency with the approach and its ways through practice (trying), feedback and help. This advocacy could take the form of

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*This emphasis on advocacy and a subsequent emphasis on inquiry borrows from Argyris and Schon's (1974) use of these terms for characterizing interpersonal theories of action.
lectures, demonstrations, case studies, or exercises, but
would not rely on students' understanding growing solely
out of their doing the design problem. This would most
appropriately come at the beginning of the semester,
perhaps the first several weeks. With a clearer under-
standing of the approach and ways to be tried, the students
should need less help, should go in the wrong direction
less frequently, and should be able to help each other more
often. Thus, more of the teachers' limited time with
each student could focus on criticism.

This "practicum studio" would be most useful where
teachers have a particular approach to architecture and
can effectively present, demonstrate, and explain it, and
give assistance to students day-to-day. Teachers wishing
to examine their own advocacy and assistance giving could
adapt the second refinement proposed for the studio for
their use.

The "working paper," the second refinement, is
intended to facilitate students' learning from doing,
through personal inquiry into their experiences. It adapts
some of this studio's highly structured professional
experience (the three phases) to the learning experience.
This additional studio product complements the traditional
drawing and design (professional) products of studios.
The professional products indicate the quality of the
designs which the students produce, while the "working papers" help students understand what they learned while producing those designs.

Learning from doing relies on the students to learn from their present experiences as well as their previous ones. In the discussion of missed opportunities it was noted that students were doing much more than design schemes with unfamiliar ways. They were also working in groups, using different kinds of design arguments, engaging in criticism, involved in a process of change (personal and professional), acting in simulated professional roles with clients and principals, and much more. These are opportunities for learning from one's present experiences.

The students' previous studio experiences were not used in the urban design studio as a source of learning. Hutchinson did not ask them to examine the ways of designing they had used in light of those to be used in this studio, nor were they examining them outside the studio. Although this school's response to multi-perspective education had been to diversity its faculty to have students experience different approaches, this response did not include assisting students in learning from their experiences with those approaches. If students are confused by the different approaches (as in the quotes in the Introduction), and are not examining their experiences
to form or select the approach they would choose to act
upon professionally, then, the school and the teachers need
to expand their responsibilities to assisting students in
this task in the appropriate setting--the studio. Writing
"working papers" would help students identify and understand
approaches to architecture and ways of designing from
previous studios, and the problems and successes they
experienced with them. (In the practicum studio this could
begin in the advocacy segment, as a contrast to the
approach being presented.)

Whether students are focusing on their present or
previous experiences, the "working paper" is one form in
which students can be assisted when learning from doing.
For students to use their experiences as a source for their
learning, an understanding of the process of learning from
experience and some tools to document that experience
would be helpful. Students' drawings of their schemes and
its development document part of the design experience.
But to document other aspects of the studio, like getting
crits, working in groups, problems and successes when
designing, or how several schemes reflect different attitudes
about specific issues, and more, other documentation such
as written notes, tape recordings or diaries, are
necessary. The age old "journal" some professors request
of students is one such example. But these journals
rarely go beyond documenting the experiences and spontaneous observations. To learn from experience, students often must do more than record what happened in notes, drawings or tapes. They must examine and reflect on that experience and document their considered observations and conclusions (including proposals for new actions). Kolb's Model suggests one framework for this inquiry, Argyris and Schon's (1974) framework--identifying one's own interpersonal theories of action, and assessing the correspondence between one's "espoused theories" and one's "theories in use," and determining the consequences of each--suggests another.

If design problems are to be vehicles for learning, the students' assignment should include a focus on that learning. "Working papers" can provide this focus and can facilitate learning from the "real" and "simulated" aspects of the students' present and previous studio experiences. The following are some examples of topics that could be pursued in a working paper.

"What is the urban designer's (and others) role in the urban development process, as reflected in this studio?"

"Problems of Designing in Groups, and Some Solutions."

"What is the Professor's Approach for Giving Criticism and Help?"
"A Comparison of Students' Strategies For Learning Design."

"Problems with the Way I Design."

"The Influence of Non-studio Courses on My Design."

"A Typology of the Class' Preliminary Design Schemes."

"Translating Design Information into Physical Decisions."

Hence, "working papers," depending on the topic, could help recover missed opportunities and aid students in their examining of the approaches to architecture and in selecting or forming their own approaches.

These working papers can be produced along with the professional products during the semester, or in a block of time at the end of the semester, perhaps two weeks. In studios such as this one where they typically have their final review at the very end of the semester, students spend all the allotted time on doing the problem. If these reviews occurred earlier, some of the allotted time could be spent on learning from that doing. This would mean less time for designing, but more learning from that doing.

The "practicum" and "working paper" proposals present two ways to implement the learning by doing/learning from doing approach to studio teaching. They focus more on the refinement of the studio structure than its day to day management. Yet for this approach to be effective, it must
also be implemented in the day to day running of the studio and dealing with students. In order to accomplish this, teachers must invent their own proposals, and indeed they might also invent other structural refinements. However, by beginning with these two proposed refinements, multi-perspective education can be facilitated. They respond to some students' desire for increased advocacy and inquiry in design studios which grows out of their studio experiences, as the following comments from a graduating senior at the school indicate:

R1: Studios should be more academic...more expressive of theories of architecture...less trial and error.

(On her first year studio)... It was like a guessing game, everybody knew (what architecture was) except for the students... Students came in and sat around and wondered what the point of the assignment was.

(On her third year studio)... It would have been nice if he could have been clearer in the beginning...(but) by the end of the first six weeks, it because clear what he wanted and it turned to be...a very worthwhile semester.

(On her fifth year studio)... This year the critic was clear about what he wanted to accomplish...made a point of it... I wish the whole school would.

(Interview)

Whether or not these two proposed refinements are used, students should be aware of the multi-perspective education which their studio and curriculum embrace. The strategies effective for presenting approaches to design
can be equally effective for presenting approaches to studio learning. For students to operate in accord with the learning by doing/learning from doing approach, they must understand and accept it as legitimate for studio learning. As with approaches to architecture, students need help to understand the approach to learning and assistance in learning to learn. Once this awareness is achieved, if students are not operating appropriately (for example, deciding not to try), teachers (or another student) can give feedback on how well they are doing, inquire if they agree with their assessment (resolve any disagreements), and help them to learn from their own experiences. Each is essential for proficient production as students.

In conclusion, design problems provide rich opportunities for learning in design studios as vehicles for learning from doing as well as by doing. These opportunities for learning and the objective of multi-perspective education, however, remain unrealized if students do not use their experiences—past and present—as bases for their learning. Hence, teachers and students alike should begin to inquire into the theories of teaching and learning evident in their studio practices when examining their approaches to architecture. They will be learning from teaching once they identify their theories and their
problems and successes with those theories, and begin to invent or consider alternatives that further realize the studio's potential.
APPENDIX: STUDENTS' REASONS FOR NOT USING THE TEACHERS' WAYS OF DESIGNING

In interviews with students about their studio experiences, they explained that on occasion they had not operated in the ways they believed the teachers had intended. The reasons or circumstances which influenced their decisions were related either to the teachers' ways of designing or to the teachers. This was inferred from students' comments about the following situation, reported in the Chronology.

On March 5, the class day before the Phase I and II Review, only five students remained in the studio at 5:00, and only three at 6:00. Three weeks earlier, before the February 14 Review, students had been observed working energetically during the full class time and preparing for the review outside the class. Two of the three students remaining at the end of the day, on March 5, were asked by the observer why others were not working during class and after class for the review as they had three weeks earlier.

Both S2 and S8, responded in separate conversations that "people were losing interest--they didn't like what they were doing." There were other problems with the work. S2 found it unexciting and slow. This opinion was supported by other students who reported they "had not gotten anywhere" in the past three weeks. Furthermore, S2 was not expecting Phase III to be an improvement, as she did not see it as design. The students' attitudes toward this work and the teachers'
ways of designing contributed to a decrease in their productivity.

S2 noted that students were not in the studio during class time this day because Hutchinson was at another review. Heath was giving a crit to the other remaining student at the time of S2's comment. While more students were not in class when only Heath attended, many students were in class on days when only Hutchinson attended. The marked change in class attendance indicates that the students preferred Hutchinson and argues that their negative attitude toward some teachers may have also caused a decrease in their productivity.

These two influences will be examined.

Ways of Designing

From their comments in interviews, it can be concluded that the students' performance in studios and their willingness to try the teachers' ways of designing were influenced by their attitudes toward those ways and the ideas underlying them. One student, S9, chose not to use conceptual diagrams when designing.

S9: A lot of people do extensive analysis but that is not the way I operate... I was almost apologetic because I saw the way a lot of people in the class did extensive sheets and sheets of analytical and descriptive information in the first phase [and second phase]... I had five or six study models throughout the semester. Those schemes operated as my basis for analysis. (Final Interview)

S9 did not try the teachers' ways because he had had success with his own ways in previous design studios and did not find any problems with them. Another student who did not
use diagrams as intended noted his success and confidence about designing based on his previous experience.

S7: My work has been good... I've had good experiences with juries... I've worked for some firms and they have respected what I can do. I think architecturally I have more confidence than I do personally. But as I'm designing, I'm sure that what I'm doing is basically okay. (Initial Interview)

Previous success was only one of the several factors affecting the students' attitude toward specific ways of designing. Another factor suggestive of a negative attitude was an unproductive and unsatisfying experience in previous studios (such as working in groups).

S7: On other projects that I've collaborated on I think it would have come out just as well if I had done it alone. (Initial Interview)

Yet another factor was the approach to architecture these ways of designing implied. Students had made decisions based on the approach prior to this studio.

S6: It's often joked, but it may be true, that my class is the last class of "formalists," visually. It's something we have been doing for 4 years, except for some kids that have just ignored it. A lot of kids in my class have said that they don't believe in this type of thing. (Initial Interview)

S7: I have come around to realize I can't give the formal development of a scheme the highest priority. (Final Interview)

Students' prejudices against certain approaches had also affected their selection of studio teachers.

S7: Some of the issues they [the teachers who where not selected] feel are important are ones I do not feel are particularly important or I'm not interested in them, or I feel I can learn later. (Initial Interview)
Students found the structure of the teachers approach incompatible with their ideas about how to design. They complained about postponing design until Phase III. S4 noted that only four weeks of the fifteen-week semester had really been design. Students complained that the Phase I "Analysis" and Phase II "Transformations" had not been helpful in designing the Civic Center.

S10: We wasted eight weeks on analysis...and research [Phase I and II] which amounted to zero... All that Random Object and Grids [Phase II]...was totally useless... The real essence of what we were doing was never established. (Final Interview)

Many students thought they should start designing by making physical schemes; a few students did not wait until the designated time to begin sketching these schemes.

S10: Analysis has its place and once you...see its value, people get tired of it... so one night I wanted to sit down and start designing and put my thoughts on paper because I was getting apprehensive... Some of the things in that sketch are still in my design. (Final Interview)

In addition to not finding the Phase I and II work useful, students found the effort required to produce the material from those phases in booklet form unproductive.

S10: We wasted eight weeks with this stuff, putting it into the format and Xeroxing it just to make a final product. I hate that... Half the semester was concerned with producing a product or booklet. That was a waste of time. (Final Interview)

(This perceived low regard for the value of Phases I and II cannot be mentioned without noting that few students were observed using these posted materials during Phase III as had been intended. S8 remarked that other students had asked him for information during Phase III which had been posted for weeks.)
Often he had not even worked on the topics of their inquiry.)

Having a tightly scheduled work program was incompatible with S22's ideas about designing, as evidenced by a small yet conspicuous sign at his desk: "You can't schedule creativity."

At least one student thought that by fourth year students should determine their own structure.

S7: Maybe by fourth year we don't need a structure. Maybe we should have our own way of approaching problems and be able to divide it up ourselves. The professors are trying to put the boundaries on this and let us go. (Initial Interview)

Another factor affecting the students' attitudes was the students' intentions for the studio. Some found ways of designing conflicting with their reasons for choosing this studio option.

S7: I had just come out of a semester of Urban Design in the fall, with another critic...I particularly wanted to get into the architecture of the urban design scheme--last semester we remained at a purely urban level...No, it didn't happen, because...I was immediately steered off course by five weeks of supposed analysis...I'd call it bullshit... (Final Interview)

Lastly, the students' attitudes toward the ways of designing were influenced negatively because they usually implied changes in the studio institutions. Students were to work steady, not charrette. They were to discuss ideas and diagrams with critics, not just trial solutions as they had before. The homogeneous graphic style required throughout the semester removed an important mode which the design students had used to establish their reputation in a class--distinctive graphic presentation.
Teachers

From their comments in interviews it can also be concluded that the students' performance in studios and their willingness to try ways of designing were influenced by their attitudes towards the teachers.

One student, S2, explained her attitude toward her first-year studio critic, G7.

S2: ...As a critic, he is excellent, because he cares. He wants his students to learn. G7 cared, you had to produce for G7. You had to work, you had to try...I did well with G7 as far as grades. Obviously, if you don't get along with the critic..., you don't want to do anything for them. You want to do things for G7. You want to show him that, yes, I did learn this example. (Initial Interview)

For this student, her perception that the teacher cared that his students learn was a positive influence on her performance. Further, her axiom regarding getting "along with the critic" indicates the influence of the interpersonal relationship between the student and teacher on the student's performance. From S2's comments, one can assume that her performance was primarily a response to the teacher and not to the work itself. However, it should be noted that in retrospect she felt that the task G7 had set for that studio was both valid and successful.

S2: He [G7] made a serious, honest and very hard and very excellent attempt to take us from our mostly suburban environments...and teach us how to perceive, how to see, and what architecture was... And I think he did it.

If S2's attitude toward her teacher in the first-year studio had a positive influence on her performance, her attitude
toward her second-year studio teacher, Gl, had the opposite effect.

S2: I went from a semester with G7 [in first year] to a methodologist, Gl [in second year]. It was a waste of my time and his time. I didn't do any work...I didn't like Gl. I didn't like what he was trying to do. To tell the truth, I don't know what he was trying to do. I didn't want to know.

I didn't do anything all semester...I figured that I was going to get kicked out of school. But I got credit for the course with the same grade as everybody else, C. My whole idea after that was that they don't care. (Initial Interview)

In accordance with her axiom S2 did not get along with her critic and therefore did not want to do anything. Her attitude toward the teacher was so negative that she "didn't want to know...what he was trying to do," and did not work even when she expected the penalty to be suspension.

S2's axiom and comments supports the importance of the interpersonal relationship between the student and teacher on the students' performance. Other student's recognized the importance but took different courses of action.

S6: [My enthusiasm was also generated] from the enthusiasm that he [G7] showed to me personally as a student. I did get a little better treatment than some... (Initial Interview)

S4: It's a real accidental thing how teachers and students can react. It's strongly interpersonal. (Initial Interview)

Even if accidental, some students were alert to the teacher's personal qualities in selecting a studio.
S7: The reason I selected this section [studio] was because of all the critics, Hutchinson would be the best for me. Of the [five choices] I respect two [Hutchinson and G2]...I was not impressed with them [the remaining three]. It was either Hutchinson or G2, but G2 is too aggressive a character for me to deal with. (Initial Interview)

Even after being selective, some students believed they could direct their interpersonal relationship with the teacher by adjusting their own interests to complement those of the professors.

S6: It seems to me that the teachers take a personal interest in students who are responding along their personal lines. People like G7, he watched my progress very closely. People have taken an interest [in my development], people like Hutchinson. (Initial Interview)

Another student, S7, who worked with S6 this semester, explained the results of such a strategy.

S7: He [Hutchinson] has an interest in our scheme... Maybe more than in some of the others...we got more [crits] than average. (Final Interview)

This strategy and its success did not escape other students attention, although many chose not to use it.

S10: S6 and S7 have become the sort of pet project of the semester which is only because of the way they design. They are very "formalistic"... Hutchinson really eats that stuff up...They have had two-hour crits when...[others] wanted to have crits, too. He [S7] doesn't disagree or talk back or say "I don't like that" --Hutchinson tells them what they should do and they are doing it...[even when S7 admitted to S10 that] "Hutchinson says we should do it [a structural detail] another way...and I hate it, I don't like it." I don't like it when people do that. (Final Interview)

A teacher's relationship with different students will vary, but does the relationship between the teacher and one student
influence another student's performance? S10 did not improve his performance because of the supportive relationship between the teacher and S6 or S7. S2 was equally alert to Hutchinson's favoritism and support of other students in the studio.

S2: Hutchinson walked out on S21 at one point. She was presenting to the April 23rd jury, the final jury beyond which we would start inking. S21 was presenting her project and Hutchinson got up and walked over to S8's desk to give him a crit. That was wrong for him to do.

When Hutchinson came in there were certain groups he would go to first...One of his favorite groups was S8's group...Once he said to them that, "I'm glad somebody is going to have something this semester." (Final Interview)

In addition to interpersonal relations, the students' attitude toward the teachers was influenced by the teachers' previous reputations and the way they operated in the studio. The teachers were respected for what they had accomplished professionally and their particular architectural polemic or dogma.

S6: I respected him [G7] for what he had to teach and for what he had done. He has built...a lot of the teachers here talk but just haven't built any place. He has ideas and makes them known. (Initial Interview)

(It had not escaped the students' attention that G7's buildings had been published in cover stories in the U.S. professional journals, thus reflecting his professional stature and the recognition of his work and ideas.)

The students' attitudes toward the teachers were also influenced by the reputation of the group with which the students associated each faculty members within the Department. One such group was the "new faculty."
S8: I'm displeased with the qualities of the new professors being recruited... If they come to a jury of one of the older professor's studios, they either agree with what is being said or they go off on tangents that are irrelevant... [or] were about things that I already know...

The comment that I respect at a jury is... a comparison of ways of accomplishing something or suggesting a better way to accomplish a given idea. The new professors on a jury don't give any insights. (Initial Interview)

The ways the teachers operated in the studio were as important to the students' attitudes toward them as their reputations; if not more important. As S8 indicated in the previous quote, the teachers' performance on reviews influenced students' perceptions of the teachers' value. The importance to S8 of a "comment giving a comparison" indicated the significance of the form of the teachers' statements. This was reinforced by other student comments.

S8: I wouldn't mind if they were staunch representatives of certain methodologies. So if you took a semester with them... either you like it or not, but you know about it. (Initial Interview)

The form of the teachers' statements were also important in crit sessions.

S7: When someone [Heath]... timidly comes to your board and suggests that you do something, by fourth year, you don't put up with that. You have to have someone come over and if they really have an idea, they have to say, "God damn it, this is right." Then you at least give it some consideration. (Final Interview)

S8: At the beginning of the semester, I would have questioned if he [Heath] had any good ideas at all. I had him on juries and was not impressed with his comments. After having a couple of crits from him, I realize he does have some good ideas. But his approach in making suggestions or perhaps even his personality is not as conducive to acceptance as Hutchinson's. (Final Interview)
Students wanted to know what the teachers' intentions were for the studio, for they saw it as important to their learning. Hutchinson and Heath, however, did not list them for the students, and few students figured them out for themselves.

S7: The faculty's intention for this course--I don't know. I just cannot tell and I think that is bad. It's part of the professor's job ...to let his students know what he wants to teach them or else they can't learn it. (Final Interview)

The teacher's ability to manage the studio was seen as important in S10's critique of this semester.

S10: I just think this semester has been a total wipe out. Just the way the semester has been run; what the professors have done, where the emphasis has been put; the scheduling of the thing--it's just been a disaster. (Final Interview)

Students found the teachers inequitable in their distribution of the crit time.

S10: During the semester I was put off by the fact [that] he [Hutchinson] was able to ration his time with a few people and neglect the majority of the students...

They [S6-S7] have had two-hour crits when people in the class were actually getting mad because they wanted to have crits, too. (Final Interview)

When discussing good teachers, several students used the teacher's ability to motivate the students as a major criteria of evaluation. They depended on the studio teacher to generate some enthusiasm.

S2: What comes out [of crit sessions with G7] mostly is the enthusiasm. He likes what he is doing. (Initial Interview)
S6: The enthusiasm which I got was generated by his [G7] enthusiasm for architecture. He [G7] would just get up and lecture with slides and say, "Isn't this beautiful the way it..." You really got gung-ho. You couldn't wait to get back to the drafting board and do it.

In third year...G6 [was] just passively viewing one's work. Not generating the excitement. Maybe once or twice you get a comment like "Wow, your scheme is really beginning to fly!" It was good. Then he could get into it.

While he [G6] follows the same dogmatic lines as G7, he wasn't a positive influence...we did an art museum...the thing never really got off the ground. He just wasn't around enough to help out. He didn't seem to take the interest. Perhaps he was relying on us to generate our own momentum. (Initial Interview)

Did Hutchinson and Heath create a sense of enthusiasm in the class?

S10: At this point [three weeks prior to the final review], 100 percent of the students are not motivated. I feel depressed, I don't feel any inspiration from the professors. I don't feel motivated by the professors.

They [the teachers] just don't care much now. There hasn't been any impetus. Nothing that makes the students want to work or really get into the project. (Final Interview)

S6: Hutchinson has this monotone, very subdued... I just feel the teacher should generate enthusiasm...'G7 ranted and raved, he really got me going...This semester just hit a slowdown. (Final Interview)

Hutchinson and Heath did not provide much enthusiasm in the students' evaluation; they did not see it as their responsibility.

Whatever the students' reasons were for deciding not to
operate as intended, whether they were related to the ways of
designing or the teachers, their decisions prevented them from
the experience of trying and using different approaches to
architecture— the experiences that were to be the basis for
their learning.
Bibliography


