Many people have helped me to reach this point of my education. The most important of those are my parents. This book is dedicated to them. I also want to acknowledge the design instructors that have influenced me most: J. Robert Taylor, Tony Costello, Dan Woodfin and John S.J. Burke. Thanks goes to Mr. Thornburg who helped me understand W.B. Yeats, who helps me understand life. Thanks also to my best friend, Joni.
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Abstract

This is not a typical thesis book. It is not a packaged reproduction of a large design project. This book deals with the creation of architecture. It deals with thought provoking issues which are usually ignored in the professional world. These issues are what architecture is all about. If dealt with correctly they will create architecture that makes a positive addition to its context. If ignored, the architect is free to exploit his "knowledge" in creating a monstrosity which he calls "architecture" but is in fact a virus in its environment.

The issues are discussed as to how they affect programming and design. The project for which the issues are studied is a mixed-use development consisting of a department store, a hotel and a bar/restaurant.

The issues presented are issues that are present in every design project; they are not exclusive to this project. Interpreting the issues is the most important step in the design process. As an interpreter, the architect has to define the meaning of the issues as they pertain to a specific project; as a designer he must transform their meaning into architecture. Theoretically the architect should be an objective mediator between the issues and the architecture, but as we all know subjectiveness is always present. It is with these thoughts in mind that this thesis book is created. It is time to deal with the issues which create architecture.
4 Introduction / Philosophy / Methodology

PROGRAM PURPOSE

Expansion of ideas that have been conceived in the first four years of study

Development of a beginning workable design philosophy

Development of the student to a higher level of professionalism

PROGRAM STRUCTURE

Three quarters of design studio work taken with other classes
1st quarter
programming and schematic design
2nd quarter
design development
3rd quarter
design development and production

PROGRAM PROBLEMS

Should be open to more variations with the given structure

PHILOSOPHY

CONTEXTUALISM--A building must fit its site in character and scale

CLARITY--A building must be understandably ordered in plan, elevation and sequence

HUMANISM--A building must provide opportunities for visual, psychological and behavioral variety

METHODOLOGY

Investigation of site and program
Definition of issues
Design/Resolution of issues
-Isolation
-Identification of solution possibilities drawing from:
-past observations
-printed materials
-studies
-contextual examples
-Judgement of solution based on:
-rationality
-sensibility

This is not a process methodology. It is a design methodology. After isolating an issue several issues can come up within it. For example, dealing with the issue of entrance, other subordinate issues such as sequence, perception, doors, door handles, etc., are dealt with and create solution to the larger issue.
program

issues

streams

used on:

In methodology. It is important. After
and issues may be, for example, in the
of sequence, handles, or create the issue.
This project consists of a 50,000sf department store and a 75,000sf residential hotel containing typical hotel rooms, one bedroom apartments, and two bedroom apartments. Also included is a bar and restaurant. The site is located on a 63,000sf lot, 2/3 of a block, in downtown Iowa City, Iowa. The clients consist of the College Plaza Development Corporation, a hotel chain, and Armstrong's Department Store.
This section contains issues that were identified in the programming stage of the project. They include:

- GOALS AND OBJECTIVES
- PROJECT CONCERN
- SPACE REQUIREMENTS
- BUILDING CRITERIA
- CONTEXT IDENTIFICATION
- SITE CHARACTERISTICS
GOALS AND OBJECTIVES

TO PROMOTE MIXED USE DEVELOPMENTS
Demonstrate the feasibility of this type of venture

Make a positive addition to Iowa City

Set a good architectural example for this building type

TO GET A PROFITABLE RETURN
Joint venture with a department store chain and a hotel chain

Allow long term apartment rental as the market requires

Provide spacious accommodations at competitive rates by providing only essential services

TO AID THE ECONOMY
Bring more consumers into the downtown shopping area

Provide jobs to Iowa City residents

PROJECT CONCERN

Like most university towns, Iowa City has several different groups of inhabitants. One group of approximately 50,000 people consist of permanent residents who work and socialize in the town. Another group of about 28,000 consist of students who are semi-transient. They normally live in the area for nine months at a time and often change residency each year.

Also included in this group are people moving to the town. They require a place to live temporarily, one to six months, while looking for a permanent residence. A third group could be considered short term residents. These people come to town for conferences, business contacts and university sporting events. To make any large scale project successful in Iowa City, it has to provide a service to each group of residents. The concern of this thesis project, if built, would be to provide a service to as many groups of residents as possible.

There is no doubt that a large hotel on this site would be capable of reaching maximum capacity on those weekends that the university would have home football and basketball games. However, this would not provide enough income to insure a profit. A smaller residential hotel that depended on over-night guests, week-long guests, and one-month to one-year guests would have a better chance of financial success than a large hotel that depends on only one group of guests.
## Space Requirements

<table>
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<tr>
<th><strong>Hotel:</strong></th>
<th><strong>SF.</strong></th>
<th><strong>Maint. Shop</strong></th>
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<td><strong>Furn. Store</strong></td>
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<td>Front Office</td>
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<tr>
<td>Lounge</td>
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<tr>
<td>Men's WC</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Women's WC</td>
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<table>
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<tr>
<td>50 rooms @ 350'</td>
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<tr>
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<tr>
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<tr>
<td>Living</td>
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<tr>
<td>Dining</td>
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<td>Bedroom</td>
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<td>Kitchen</td>
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<tr>
<td><strong>850'</strong></td>
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<table>
<thead>
<tr>
<th><strong>2 Bed. Apartment</strong></th>
<th><strong>SF.</strong></th>
<th><strong>TOTAL NET SF.=</strong></th>
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<tr>
<td>15 @ 1200'</td>
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<td>121,850' + 5% Walls</td>
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<tr>
<td>Bath</td>
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<tr>
<td>Storage</td>
<td>100</td>
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</tr>
<tr>
<td><strong>1200'</strong></td>
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<table>
<thead>
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<td>Sec. Office</td>
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<td></td>
</tr>
<tr>
<td>Accounting Office</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Linen Room</td>
<td>200</td>
<td></td>
</tr>
<tr>
<td>Men's Lock</td>
<td>150</td>
<td></td>
</tr>
<tr>
<td>Women's Lock</td>
<td>150</td>
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</tr>
<tr>
<td><strong>TOTAL SCOPE =</strong></td>
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<td>144,850'</td>
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</table>
BUILDING CRITERIA

FIT THE URBAN CHARACTER

- Strong interaction with street
- Look at context for symbols and scale elements
- Evolve from site influences
- Pour story height restriction
- Consider materials usage

GIVE A UNIQUE PROJECT PERSONALITY

- Establish an appropriate ambience
- Avoid typical department store and hotel elements
- Be sensitive to user needs
- Avoid monotonous repetition

MAKE COMFORTABLE LIVING SPACES

- Provide adequate public and private exterior spaces
- Establish buffers and transitions between spaces
- Consider the effects of apartment and room orientations
- Provide non-standardized living units

UNDERSTANDABLE/READABLE

- Hierarchy of form and elements
- Recognizable commercial image
- Recognizable residential image

CONTEXT IDENTIFICATION

Iowa City was the first capitol of Iowa and is the home of the University of Iowa. The campus is adjacent to the business district and there is a strong interaction between them day and night. The city is well vegetated and the Department of Community Development is very active in establishing land use and land form guide lines. The older housing districts have an Italiante and Victorian flavor. The downtown stores are made up mostly of 19th century Italiante structures. Unfortunately, most of the first floor facades have been "modernized" but many of the second and third floor facades still show through. The old state capitol building was originally established as the focus of the city, but lost that role when Des Moines became the capitol. Since the stores in the downtown area were not built around the courthouse as in most typical county seats, the city has no focal core. However, the fountain of a recently developed urban plaza has become the focus and meeting point of downtown and is located at the northwest corner of the project site.
The campus is located in a residential area, with a mix of older housing and newer developments. The downtown area is characterized by a grid of 19th-century structures. The first "modernized" residential areas date back to the early 20th century. The University of Iowa, however, is an exception, as it has been designed to fit within the existing urban fabric. Since the campus area was planned as a "city within a city," the city services are integrated with the university. The site is located at the intersection of several major streets, providing easy access to both the residential and commercial areas. The map shows the layout of the campus and its relationship to the surrounding neighborhood.
Site Characteristics

The site is 320' x 196', contains 63,000 sf, is zoned commercial and occupies the north 2/3 of a city block. It is presently a barren surface parking lot and drops 8' in elevation from the northwest corner to the southeast corner. There is a 15' set back on the west, north and east sides with the south 1/3 of the block being occupied by a four level parking structure. The streets on the north and west sides have been developed into part of an active urban street mall which has its focus at the northwest corner of the site. The street to the west is only moderately used by vehicular traffic. The block to the west is occupied by a one story brick and metal mansard roofed bank on the south half and a renovated late 1800's commercial building on the north half. The block to the north west contains a five story office building with ground level shops. The block to the north contains a one story hardware store and a new two story library of brick. The block to the east contains the old library which is a limestone Greek revival building with its entrance facing the site. That block also contains apartments, a residential scale office building, and houses converted to retail space. Pedestrian traffic is heaviest along the west and north sides with minimal traffic on the east.

CLIMATE

MAXIMUM AVERAGE TEMPERATURE
88' - July
348 C.D.D. - June

MINIMUM AVERAGE TEMPERATURE
16' - January
1259 H.D.D. - January

WIND DIRECTION MPH
Winter NW - Ave. 12
Spring NW-S - Ave. 10.5
Summer S - Ave. 8
Fall S-NW - Ave. 10

RAIN FALL
Ave. 3"/month
Max. 5" - June
Min. 1" - February

SUNSHINE POSSIBILITY
Winter 55%
Spring 60%
Summer 75%
Fall 65%

SUN ANGLE EXTREMES
Summer max. incline 78'
Rise and set 105' N of S
Winter min. incline 28'
Rise and set 75' N of S
Design Issues

This section identifies the issues that were dealt with in the design sequence of the project. Issues included are:

URBAN DESIGN ISSUES
SITE ISSUES
SCHEMATIC DESIGN ISSUES
DEVELOPMENT ISSUES

This section culminates with the final design product.
URBAN DESIGN ISSUES

Several urban design issues have been discussed earlier. These include: to serve various resident groups, to aid the economy of Iowa City, to establish a recognizable personality, and to fit the urban character. The last issue is the major determinant of the site layout. The best way to fit the urban character is to build to the edges of the site. This reinforces the street grid and the traditional building/street relationship. This issue also helps establish the relationship of the apartments to the urban area. The apartments need to relate to a semi-public space which suggests the creation of a housing court.

One other issue relates to an existing condition. The street west of the parking garage is presently used as a drop off point for people coming downtown. In designing this project, that street should also be redesigned to better serve its purpose as an arrival node.

SITE ISSUES

Since the general urban design issues have been resolved, the next step deals with the site organization within that framework. The two major site issues deal with the development of the edges of the site and the development of the housing court. The court acts as a transitional zone to the apartments. In all but one of the first conceptual diagrams the court only opens out to the east towards the apartments across the street. This closed-ness helps to insure privacy but creates inconveniences in external circulation.

In developing the edges it is important to reinforce the existing nodes around the site. The easiest node to reinforce is the apartments across Linn Street to the east; in the conceptual diagrams apartments are placed along the east side of the site to reinforce that node and the street node. Another easy node to reinforce is the plaza; logically the department store, the bar/beer garden/restaurant, and the auto arrival node are used to do this. It is more difficult to determine which is the best way to reinforce the last three nodes: the plaza fountain, the auto arrival node, and the old and new libraries. The hotel can be used to reinforce the drop off place of the bar/beer garden/restaurant and the plaza. Another important issue is the 114 to 120 housing complex. At this point it is uncertain if the bar/beer garden/restaurant or the plaza is needed to reinforce the end nodes.
to reinforce the libraries or the drop off. The fountain can be reinforced by the bar/beer garden, the department store, a combination of both, or a connection to the housing court. At this point it was determined that the bar/beer garden could best reinforce the fountain but that more investigating at a larger scale was needed to locate the hotel entrance.
At the larger scale it can be seen that locating the hotel near the libraries does reinforce that node but the department store is not a strong reinforcement to the drop off. Used in this manner, a major entrance to the department store would have to be located there; this would put more importance on that part of the store, detracting from the rest of the store and from the relationship between the store and the plaza. Locating the hotel on the arrival circle is a better choice. The activity associated with the hotel reinforces that node. The use of the department store to reinforce the library node does not create a portion of the store that is more important than the rest, and thus does not damage the relationship between the store and the plaza.
SCHEMATIC DESIGN ISSUES

After the basic site issues had been resolved, the schematic organization of the major elements began to take place.

DEPARTMENT STORE

There are two major department store issues with which to deal: its internal organization and its relationship to the street. The store should reinforce the plaza. Methods of doing this include allowing maximum visual connection and providing several street entrances. Creating more activity as opposed to one or two major entrances which would funnel people off the plaza. Having several entrances also increases the amount of impulse buying due to the ease of access of passers-by. This is also a more traditional approach to the street and fits the character of downtown.

The internal organization of the store should also fit downtown. To avoid the megalithic typical department store organization, each department should be set up as an individual shop which relates to the street. This begins to break the building down into smaller parts which makes the organization more understandable and readable.

HOTEL

The issues with which the hotel deals include: reinforcing the auto arrival node and the housing court, and creating a unique personality. Locating the hotel entrance on the drop off is supportive and locating the hotel lobby adjacent to the court reinforces that node. The ways of creating a unique personality include providing a residential character as opposed to the high-tech flashiness of convention hotels and providing a retreat from the street. In the early design phase the rooms are pulled away from the street vertically to achieve the retreat effect.
APARTMENTS

Other than creating a housing court and reinforcing existing apartments, the apartment concepts also include providing private terraces to reinforce the court and providing varied apartment types. The apartment types include row houses that relate to the street, townhouses within the court and modified row houses that step up and over the department store and look out to the plaza at the third level. This is also a traditional relationship of apartments over stores downtown.

At this point the first formal design presentation was made. The critique which follows is a combination of the jury comments and my comments.
JURY COMMENTS

Condense focus nodes (drop off, beer garden, fountain) along west side

Separate department core

Possible underground service to department store

Eliminate internal circulation to apartments

Use housing court as an internal node

Work on elevations

OBSERVATIONS

Remove department store entrance from drop off

Strech beer garden from fountain to drop off

Eliminate covered walk from front of department store - use retractable awnings instead

Eliminate external stairs along north
Design Changes

After the first presentation it is necessary to make three major organizational changes. First the department store is concentrated along the north edge. This condenses the shopping area and creates more activity along that side. Also the departments become more separated.

Second, the bar/restaurant/beer garden is extended from the drop off to the fountain. This acts as more of a reinforcement to both of those nodes and also as a continuation between them.
The third change deals with the hotel. Even though the entrance and the lobby are node reinforcers, the rooms are not. While being a retreat, the rooms should also reinforce the housing court and be reinforced by it. It is better to locate the rooms along the parking garage wall. A single loaded corridor along the garage can service the rooms while rooms at grade can have external entrances to support the court.
These changes and the studies of the hotel entrance and the bar/beer garden entrance were reflected in the final schematic design critique which follows.
JURY COMMENTS

Study department store entrances more
Open the center of the housing court and close the ends
Watch circulation to apartments because of weather
Perhaps bar looks out to drop off
Hotel and apartment relationship may invade privacy

OBSERVATIONS

Push hotel against parking garage
Define the structure more
Work on interiors
DESIGN DEVELOPMENT ISSUES

The design development issues to be dealt with after the schematic organization is resolved include: the defining of exterior spaces, the implications of the structural and mechanical systems, the impact of massing, the development of the entrances, and the image created by the exterior skin.

To this point the housing court has not been very well defined. The purpose of the court is to act as a semi-public circulation across the site, circulation to the apartments, and ground level hotel rooms, and exterior spaces for the apartments and the hotel rooms. To achieve these functions there must be a strong separation between them. A system of shrubbery and other plantings to define the court will provide a contrast to the hard edges of the building as well as separate the functions. An addition to the court at this stage is the introduction of a public drinking garden and a second level dining terrace. These are located off of the hotel lobby, the bar, and the department store which now has a back entrance. These four elements reinforce each other to create a dynamic node which adds another level of interest to the project.

The structure at this point is steel W-section columns with W-section primary beams and bar joist secondary beams. This structure implies the use of an enclosing skin, encased columns, a hung ceiling and concealed systems.

Also, the massing of the hotel rooms is changed to create a sense of enclosure to the court and the apartment massing is adjusted to be more understandable.

The entrances become more developed at this point. In designing the entrances, the preceance of the Italiante buildings in downtown Iowa City is looked upon with much thought. This project's entrances, like those, become street reinforceors. They continue the hard edge of the building.
The image created by the exterior skin is the most important issue to be dealt with in this phase. Again, the precedence of the Italiante buildings are noted in developing the elevations. Each twenty foot bay is divided into three parts with the center part slightly larger. Windows also break down into smaller units as they proceed vertically. At this time, brick was the major exterior material.

From these advances the first design development presentation was made.
JURY COMMENTS

Street relations are good

Obscure views from hotel to apartment

Possible basement storage areas for residents

Possibilities for energy saving on south facing apartments

Reduce the amount of glass in department store elevation - possibly repeat fenestration pattern with solid material

Design

Changes to the presentation dealt with different points of view. No use of concrete in brick to concrete plank system in brick building. The system of Herman Heide developed dealt with various concepts of natural ventilation and ventilated facades explored.

Internally, transition was discussed and the role of materials in the
Design Changes

Changes to make after this presentation deal with the application of a different structural system and the use of concrete block instead of brick to provide a contrast to the brick plaza. The new structural system is pre-cast pre-stressed concrete beams, columns and slabs. The system comes directly from a Herman Hertzberger design. Also developed are the interiors of the various components. Applications of natural ventilation and solar heating and ventilating techniques are also explored.

Internally, the beer garden becomes a transition from the street to the bar and the restaurant. The narrow bays in the department store become vertical circulation or other department separating devices. The apartment plans are based upon a system of solids and voids where the bedroom, bathroom and storage are solid masses separating the other living spaces which occupy the voids. The hotel rooms are also based upon this principle.

Two massing changes are also made. The hotel rooms are pulled away from the entrance mass to allow the vertical circulation to take place between them. The apartment massing is changed to create different terrace types and apartment types. All of these changes result in the final presentation which follows.
BIBLIOGRAPHY


Architectural Record. vol.169, pp.94-107, February 1981.

Architectural Record. vol.169, pp.96-105, December 1981.


35 Fourth Floor
Isometric / Apartment Plans

1 Bedroom 1 Bedroom 2 Bedroom
Ground Level Level 2 Level 3 and Level 4
Beer Garden Perspective
41 North Elevation
West Elevation
South Apartment Elevation