The Design of the,
INDIANA UNIVERSITY-PURDUE
UNIVERSITY AT INDIANAPOLIS,
STUDENT RESIDENCE CENTER

BY

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Submitted in partial fulfillment of the requirements for an Architecture Thesis, courses Arch. 404, 405, 406, a requirement for the Bachelor of Architecture Degree from the College of Architecture and Planning, Ball State University, August, 1983.
Dedicated to:
Family, Friends, and Professors
without whose support and understanding this
thesis might never have been completed.
Acknowledgment

I wish to express my thanks to the following persons for their advice, knowledge, and patient assistance in the design of this project and the compilation of this report upon that design:

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Design Professor, Arch. 404, 405

Jack Wyman -
Design Professor, Arch, 406

Bob Meden -
Outside Critic

Jeff Culp -
Structural/Mechanical/Design Critic

Jeff Hall -
Landscaping Critic

David Paul -
Director of the IUPUI Student Union,
Director of IUPUI Student Housing

Maggie Dorset -
Assistant Director of IUPUI Student Housing

Mike Wagoner -
Director of IUPUI Student Activities
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Forward

The ensuing pages contain a discussion of the IUPUI Residence Center, an architecture thesis. However, before continuing with this discussion, the reader should have an understanding of what an architecture thesis is and what it entails. In some ways it is quite similar to a thesis in any other field, and in other ways it is quite different.

A Masters or Doctoral Thesis is basically a search for the solution to a problem. The solution to this problem is looked for through the means of research. This research can take the form of scientific investigation, or a research of literature. In both cases, it is standard procedure to have an hypothesis, or preconceived notion of the solution to the problem, which is then proved true or false through the use of research.

Design, in its purest sense, is also the search for the solution to a problem. The problem being the need for a building, and the solution being the resultant design for that building. In other types of problems, the correctness of the solution can objectively be judged either true or false through research. In design the correctness can only be judged subjectively through the opinions of those studying and using the design. Therefore, design is not exact. There are no truly right or wrong answers. Groups of people and architects do tend to agree on certain things that they feel make a building either right or wrong. These ideas are termed design philosophies and generally specify certain criteria against which a building is to be judged right or wrong. They most closely resemble the hypothesis discussed earlier. However, where the hypothesis was a proposed solution, the
design philosophy is a proposed set of criteria used to determine a solution. A hypothesis is proved right or wrong through research. If an experiment based on the hypothesis is performed, and it fails or succeeds, then the hypothesis is proved either right or wrong. A design philosophy is proved either right or wrong through the design process. If a building is designed using a specific philosophy, then that philosophy can subjectively be judged right or wrong by anyone's opinion of the result.

Thus, an architectural thesis is an attempt to prove the rightness or wrongness of the design philosophy developed by the student through his limited years of design experience. It also is a test of his design skills as to how well they adhere to his proposed philosophy. As a three academic quarter process, it allows the student time to develop his project to a degree never before achieved in the shorter time spans of past projects. The degree to which any of these goals are successfully completed is a purely subjective judgment.
Abstract

There is documented evidence of the need for more student housing at IUPUI in the form of unfulfilled student requests for housing. The Assistant Director of Housing for IUPUI, Mrs. Maggie Dorset, states that at the present time there are twenty to thirty unfulfilled requests for on-campus apartment-type housing. It is her opinion that if more of this type of housing were available, the administration of IUPUI would have no problem renting it. It was determined that in the range of forty to fifty units that could house between two and three students each was needed.

Mr. Mike Wagoner, Director of Student Activities for IUPUI, feels that there is a need to consolidate in a central location several campus organizations that service the student population. At the present time, these functions are in cramped and inadequate locations around campus. They exist next to and inside buildings that share nothing in common with these organizations. There also exist several social clubs and organizations which occupy classrooms for their meetings and have no place in which to store or maintain any private property. Mr. Wagoner feels that it would be advantageous for these organizations to have permanent meeting rooms at some location on campus.

Mr. Wagoner and Mrs. Dorset both expressed concern over the lack of decent service facilities for the on-campus student. They are also concerned that, due to this lack of services and a lack of social activities, most students living on campus do so only when classes are in session and go elsewhere for recreation. Basically the quality of life on campus is such that living there is only a convenience and not
totally enjoyable.

Therefore, the program for this facility includes not only forty to fifty apartments for students, but also offices for student service organizations, student club meeting facilities, services for the student, and hopefully a social life and quality of life that will make the on-campus student more comfortable on campus.

Program Brief

Living Units

Users: Basically Upperclassmen, Graduate Student, Married Students. These are very serious students who spend a great deal of their time studying.

Functions:
- Sleeping
- Resting
- Reading
- Studying
- Entertaining
- Watching TV
- Listening to the Stereo
- Dressing
- Storing Clothes
- Bathing/Showering
- Toiletry Storage
- Cooking
- Storing Food
- Storing Dishes
- Washing Dishes
- Hobbies
- Games

40-50 X 1,000sf ea. = 40,000-50,000sf

Convenience Facilities

Users: All on campus students, some off campus students, faculty, staff, and possibly people from the surrounding community.
Functions:

<table>
<thead>
<tr>
<th>Facility</th>
<th>SF</th>
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<tr>
<td>Quick Stop Market</td>
<td>2,500 sf</td>
</tr>
<tr>
<td>Dry-Cleaner Outlet</td>
<td>1,500 sf</td>
</tr>
<tr>
<td>Liquor Store</td>
<td>1,500 sf</td>
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<tr>
<td>Pharmacy</td>
<td>1,500 sf</td>
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<tr>
<td>Unisex Hair Salon</td>
<td>1,500 sf</td>
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<tr>
<td></td>
<td>8,500 sf</td>
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Social Facilities

Users: Same as Convenience Facilities

Functions:

<table>
<thead>
<tr>
<th>Facility</th>
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<tbody>
<tr>
<td>Restaurant</td>
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<tr>
<td>Deli</td>
<td>2,000 sf</td>
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<tr>
<td>Lounge</td>
<td>2,000 sf</td>
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<tr>
<td>Pizza Parlor</td>
<td>2,000 sf</td>
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<tr>
<td></td>
<td>8,000 sf</td>
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Child Care Center

Users: The children of the student body, staff.

Function:

To provide a healthy learning environment in which children can be looked after while their parents are at class or work. 2,000 sf

Student Organizations

Users: The Student Body, Organization Staff, Club Members.

Functions:

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<tr>
<th>Facility</th>
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<tr>
<td>Veteran Affairs</td>
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</tr>
<tr>
<td>International Office</td>
<td>1,000 sf</td>
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<tr>
<td>Student Activity Board</td>
<td>1,000 sf</td>
</tr>
<tr>
<td>Black Student Union</td>
<td>1,000 sf</td>
</tr>
<tr>
<td>Club Rooms (10 @ 500 sf)</td>
<td>5,000 sf</td>
</tr>
<tr>
<td>Student Publications</td>
<td>2,500 sf</td>
</tr>
<tr>
<td>Facility Director/Information/Security</td>
<td>2,000 sf</td>
</tr>
<tr>
<td>Multi-purpose</td>
<td>5,000 sf</td>
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TOTAL = approx. 82,000
wall @ 3% 2,460
HVAC @ 10% 8,200
Circulation @ 12% 9,480

102,500 sf
The word "context" has come into frequent use by architects and architectural critics within the last several years. What do these people mean when they use this term? This term refers to the identifiable character of the area surrounding any new or existing structure. The architectural context of a building can relate to its site characteristic (wooded, rocky, hilly, etc.). It can refer to the type of building most commonly found in the area such as residential, industrial, or commercial. It can deal with the general volume of the surrounding buildings be they single story bungalows, or block long warehouses. The architectural context can refer to any predominate architectural style such as Italianate or Prairie Style, or to any predominate architectural feature such as dormers or flat roofs. The materials in structures that surround the building can also be considered in the architectural context, such as a predominance of brick, or a series of yellow buildings. Basically, a building's context is anything that influences the character of the neighborhood in which that building is located.

If this context is ignored, as so many architects of the past forty years have done, serious damage may be done to any desirable character had by the neighborhood in which the new building is located. Continued disregard for the existing context can destroy any feeling of neighborhood or character completely. A hodge-podge of unrelated architectural styles, volumes, and materials can lead to a confusing eyesore. This can be best observed in any long strip development. With many styles of signs and colors, all glaring for attention, all that is accomplished is visual
confusion and general ugliness. Whereas, any residential street with a series of similar houses with similar architectural styles and materials and plantings takes on a richness and a harmony that leads to a greater whole.

The purpose of this architectural thesis is to prove that if the existing context is studied and dealt with properly, buildings of different types might exist side by side without a destruction of a desirable neighborhood character or flavor. Hopefully through the proper use of materials and the manipulation of architectural elements to affect the perceived scale, buildings of different sizes might coexist without visual tension.

Not only should the building be considered when designing, but also the spaces that the building is creating. Not only should the positive space be designed, but also the negative. Without proper regard for the space surrounding the building, it will tend to float on a flat plane. The area between it and its surrounding buildings will be without usable space and thereby devoid of life and activity. If the building design does take into consideration the space around it, then it will have life and activity, and thereby be connected to those buildings that surround it.
The campus of Indiana University-Purdue University-at Indianapolis is located about a mile west of Downtown Indianapolis, just off the north-west corner of the mile square. It is surrounded on three sides by water. To the west and south is the White River. To the north is Fall Creek which empties into the White River at the north-west corner of the site. The area was originally covered by single family residences. However, in the 1950's and 60's, many of these homes were removed in the now infamous "urban renewal". In this vacant section of land IUPUI grew. Originally it housed just the medical facilities for the Indiana University Medical School. Today it holds the IU Medical School, the IU Dental School, the IU School of Nursing, the IUPUI Law School, and IUPUI itself, from which one can receive any degree offered by either IU or Purdue.

Since IUPUI is primarily a commuter University of approximately 20,000 students, a large portion of the campus consists of large expanses of asphalt parking lots. These are punctuated by large medical, hospital, and classroom buildings that have very little human scale and little regard for the spaces that they create. Only on the far west end of campus where a few houses and many large trees escaped the bulldozer, and in the north central part where the Medical School began and the buildings were not large and the trees have had a chance to grow, is there any pleasant pedestrian scale.

Since a contextual problem was proposed by the earlier presented Thesis Statement, the far west end of campus was chosen as the site for this proposed new building. In this area
existed the only remaining Housing, and this was also the area the University had chosen in which to locate its own campus apartment housing. All other locations were already heavily covered with buildings presenting a building type not consistent with housing or had been totally voided of any context by the bulldozers of thirty years ago.

The site chosen was triangular in shape, bounded to the north by Michigan Street, to the east by Limestone Street and to the south-west by the White River.

Limestone Street, bounding the east, is a two-way street that exhibits the only remaining residential character in the IUPUI area. It is lined on one side with original single family residences in shabby, yet repairable, shape. The other side is lined with new, university owned, two story townhouse apartments. Though these are not of the most pleasing architectural design, their use of materials and general volume is a fair match for the houses across the street. The big plus of Limestone Street is its abundance of fully mature shade trees. These trees give the street a pedestrian flavor and warmth that is sadly lacking in many other parts of the campus.

Michigan Street, bounding the north, is a one-way street west. It carries the major west bound traffic of campus and is a major traffic artery of the City. As Michigan Street approaches the site, it is diverted to the north slightly to provide for an approach ramp for its bridge over the White River. Its original course is lined on the south side with houses resembling those on Limestone Street. However, these houses are no longer family dwellings, but fraternity houses. The same abundance of mature trees that exists on Limestone Street exists along Michigan. The island created by the diverting of Michigan is used for civil services provided by the City. There is a fire
station, a police station, and the City's fire practice tower. Unfortunately, these buildings are surrounded by a sea of asphalt, and are not a positive amenity in the area.

The White River bounds the long third side of the site. It is a documented fact that a river view is considered a positive amenity to any building. However, in this instance the river view is denied to most of the site due to a flood control levee that rises fourteen feet above the mean height of the essentially level site. The direct view across the river is not necessarily pleasing due to the presence of concrete erosion control on the opposing bank. The view down the river is much more pleasing, and should become more so with development of the White River State Park.

Located almost in the back yards of the houses on Limestone and Michigan Streets is a prime example of existing architectural context being ignored, the Warthin Apartment Building. This building is a four story "L" shaped building built in 1963. Its flat brick facade and large volume give the building a monumental character not in tune with the multiple small buildings that exist elsewhere in the area. Not only does its scale present a problem, but its general orientation presents a problem as well. It is located neither parallel nor perpendicular to either the rectilinear street grid of the city or the essentially straight line of the river.

It was therefore decided that the housing on the site and a large extent of the trees were to be considered sacred. Their destruction was to be avoided at all costs. The pedestrian scale was to remain and be reinforced if possible, with the assumption that a certain amount of repair will be done to the worn fabric of the existing buildings. It was also decided that, borrowing from Christopher Alexander's book, "A Pattern Language", site
repair would be enacted. In other words, those aspects of the site determined to be negative should be corrected. The scale problems and geometry problems were to be remedied if possible. The feeling that this area is the center for any and all housing on the campus was to be emphasized.
Programatics

Not only does a building need to respond to its environment to be successful, it also needs to respond to its users and their needs. The needs of the people that use a building are often more tenuous and complex than the needs of a building. These needs are often difficult to pinpoint, because the people who are to use the building often have little or no idea of what they need or want. To enable the architect to design a building that meets these needs, they are often spelled out for him in a "program". A program will often have many sections. These may include a discussion of how a building should relate to its context, a discussion or list of the physical spaces needed and their dimensions, and a discussion of how the building should relate to its users. Since a list of the spaces and their dimensions can be found in the project abstract, and the building criteria was fully discussed in the section of this thesis discussing the site, the only section left to cover is the one dealing with the user's needs.

IUPUI is located in the heart of the Indianapolis Metropolitan Area. This area, encompassing Indianapolis-Marion County and its surrounding counties, has a population of approximately two million inhabitants. IUPUI draws upon this area almost exclusively for its enrollment. The average IUPUI student is termed a non-traditional student. He or she may be older, or hold a full time job, and commutes to campus daily by car. A traditional student would move to either of IUPUI's parent institutions and pursue a degree there full-time.

A significant portion of the student body at IUPUI, however, consists of traditional
students. To receive a degree from Indiana University in Nursing, Dentistry, or Medicine, it is necessary to attend classes at the IUPUI campus. Students from these three schools make up a majority of the students who request on-campus housing. The remaining fraction is composed of students who for some reason wish to remain in the Indianapolis area and desire inexpensive or convenient housing.

Students living in on-campus housing at IUPUI meet the definition of traditional student only in terms of their living arrangement. Since the Dental and Medical Schools are graduate programs, students in these programs tend to be older than the average undergraduate. With this increase in age comes a predictable rise in marriages and children. Competition to get into these programs is great, and the courses of study are intense. Therefore, these students tend to be of a serious nature and are very concerned with their studies. These students tend to prefer an apartment style accommodation over that of a dorm room. They prefer more freedom and privacy. They need more room in which to live and their own cooking facilities. In essence, these students will consider this housing as their permanent home as opposed to calling their parents house "home".

The mentality of the university is such that it provides services for commuter students only. The university provides the basics of dormitory housing, but other services are clearly lacking. The surrounding neighborhood also is wanting in providing services for he on-campus student. Therefore, the on-campus student is often unhappy with on-campus housing. He or she becomes a suitcase student, living on campus only when necessary and going home to his/her parents' house at all other times.

The commuting student can sometimes feel
isolated from their peer group. If most of their high school friends go away to school while they remain behind with their families, the commuting student can quickly be stripped of his or her social life. Making new friends while at class only a few hours a day can be much more difficult than in a permanent living situation as at other colleges and universities. As a response to this problem, there are several organizations and clubs that can help the commuting student establish a group of friends. These can take the form of formal institutions such as the Black Student Association, or informal social clubs and fraternities. Currently, the formal institutions are scattered in locations throughout the campus, without recognition of their congruity of purpose. The various clubs and organizations operating on campus hold their meetings in basements and classrooms with no permanent location in which to store or maintain their own property.

Thus, it is suggested that this new building not only provide for the physical space needed to house the required number of students, but to also become a residence or residents' center. The building should meet the needs of privacy, freedom, and establish the feeling of home to the residents of the new building. It should establish services needed by all on-campus students, and it should provide a sense of belonging to the university to all IUPUI students.
In a search for representative buildings of the type to be designed, many examples were found, but few dealt with any program elements beyond those directly related to the housing itself. In the end, some five previous designs were found to be precedents for the type of building to be designed for this thesis: the Graduate Dormitory at M.I.T. by Aavar Alto; student housing at the University of Alberta by Diamond and Myers, Architects; the Battery Park City Project for New York by Johnson, Burgee, Harrison, and Abramowitz; The Coldspring Development by Moshe, Safdie and Associates, and the Mall at the University of Michigan/Dearborn by McCoy and McCoy.

The design for the Graduate Dormitory at M.I.T. by Aavar Alto is an excellent example of a building responding to two different geometries. The building acts as a buffer between the campus and the river. On the side facing the campus, the building presents a rectilinear geometry in response to the basically rectilinear geometry of the campus. On the side facing the river, the building presents a curvilinear facade that responds to the fluid bank of the river. Though this side does not parallel the river, its curves allow nice views both up and down the river, and the curves are a nice response to an element in the environment that has no straight lines.
The interplay of curves and a rectilinear geometry makes for a lively and interesting series of spaces on the inside of the building, giving it a life that it would not have had in an interplay of rectangles upon rectangles.

The proposed Battery Park City Project for New York City by Johnson and Burgee, Harrison and Abramowitz, et. al. is an excellent example of the functions of a City, housing, office space, and retail spaces, all integrated into one complex. The design concept is that of two buildings fronting each other on an enclosed promenade. Retail and commercial spaces are handily located off of this promenade. Offices occur on the levels above, with the residential spaces on top of that. Everyone is provided a view of the mall, with the associated need for privacy of each type of space controlled by the respective distances that they are located above the Mall.

The Mall at the University of Michigan/Dearborn is a lively student center designed by McCoy and McCoy. This student center has proven to be very popular among its users for its informality and adaptability. It functions exceptionally well in a situation where general socializing and specific student functions occur at the same location. These two types of areas draw life from one another through a strong visual link, making the sum greater than its parts. The concept is a simple one akin to
suburban shopping malls. A straight open area, furnished with multi-level seating is lined by offices and meeting rooms for student organizations and their functions. At one end is located a large clock tower, which also houses the local student radio station. All functions are afforded as much visual contact as possible in order to create a lively and stimulating environment.

The Student Housing project for the University of Alberta by Diamond and Myers, Architects, is a good example of student housing fulfilling a variety of social needs at a University. One of the primary concerns of the architects in the design of this project was the extreme cold of the environment of Alberta Canada, especially during the cold winter months that school is in session. Therefore, the housing was designed along an enclosed linear core. Instead of a stagnant building, the housing became a pedestrian street connecting many of the buildings on campus. Along this spine at the pedestrian level, the architects provided for a certain amount of commercial rental space, not only for its convenience, but also for its social value on campus and to link the university to the city.
The Coldspring Community of Baltimore Maryland was designed by Moshe, Safdie and Associates to provide the qualities of townhouse type housing in an over-all density of about twice that of conventional townhouse-type developments. They accomplished this through the use of a pedestrian deck which connects all the units on the site, along with providing a cover for the necessary parking. This results in a tightly knit community without the usual resultant sea of parking that would normally have been an off-shoot of the high density of units. Thus everyone is afforded his own private garden, a view of the social interaction on the deck, and private covered parking.
When designing this building, several complex problems had to be addressed and balanced in order to achieve a balanced and successful design. Some of these problems included conflicting geometries, social needs, physical needs, volumetric differences, and the relationship of the building to the campus complex. At differing times during the design process building concepts were developed that seemed to focus on one or two of these problems but never all of them. These solutions were unbalanced and often created more problems than they solved. However, they were all important learning steps that had to be taken in order to explore possible solutions to the few problems that they did try to solve.

The first design was presented for review at the mid-term of the first quarter of study. It responded to three major problems. The first was that of the creation of a campus node, a node of activity that would mark this as the center of the residential portion of campus. This node was also supposed to be the
area of activity from which the life of the building was to be drawn, and hence provide for the social gratification of the residents. The second was the problem of the conflicting geometry of the Warthin Apartment building to the rectilinear geometry of the city street grid, the Warthin Apartments being rotated twenty seven degrees from the street grid. The third problem was that of the conflicting scale of the Warthin Apartments to the surrounding houses.

The design concept was based on the simple premise that the geometry of the Warthin Apartments be continued over the site by extending lines perpendicular to the ends of the wings out over the site, thus dividing the site into quadrants. Borrowing from the classical English dormitory, the area framed by the "L" of the Warthin Apartments and these newly created lines would be an outdoor courtyard for the recreation and socializing of the residents. The opposite quadrant would be an enclosed atrium housing all the student service functions. At the barrier between outside and inside was to be the most intensive activity and life of the building. The two remaining quadrants would hold housing oriented to the street geometry that would step up and back from the street, starting at a house scale and slowly building to the scale of the Warthin Apartments. Several major concepts developed in this scheme would remain with the project for months to come. These included the idea of a major outdoor space being created at the crotch of the "L" in the Warthin Apartment building, the idea being that, at the meeting of a major indoor and outdoor space, there is the maximum potential for social interchange and life, and that the housing units should be read as individual units and step up and back from the street.

This scheme was rejected for several
reasons. One was that the building did nothing to interact with what many thought to be the most important site amenity, the river. Another reason that the scheme was rejected was that the scale and character of the atrium quadrant was too imposing on the backs of the houses it faced. It was determined that the relationship between the housing and the major lines drawn from the Warthin Apartments was not successful. In fact the whole influence of those lines was thought to be to forceful upon the site. Finally, the building was too compact and closed in upon itself. Not only did it not reach out and touch the river, it was too withdrawn from the major campus fabric.

The second scheme was presented at the end of the first quarter. This scheme was designed primarily as a reaction to the negative comments that the first scheme received. The primary concerns were the relationship to the river and the relationship to the fabric of the campus. There was also an attempt to lessen the influence of the geometry of the Warthin Apartments while investigating that geometry into the new building.

In this scheme, the entrance was placed as far north on Limestone Street as possible in order to be accessible to Michigan Street which is a primary traffic spine on campus. Upon entering the building, there was a long mall. At the terminus of the mall was a major restaurant that was to act as the anchor to that end of the building. Along the north edge of the mall were all of the offices, clubs, shops and restaurants called for in the program. The south side of the mall was to be transparent and look out on the court yard that was formed in front of the apartment building. The new building formed an "L" that opposed the "L" of the apartments but was oriented to the street geometry. Each end of the "L" was sliced off at the angle of the apartment
building. The Mall was also sliced into at the angle of the apartments in accordance with the manner of the last scheme. As the new housing units stepped back from the ground, they stepped up to become the ceiling to the mall. Each level had a balcony that over looked the mall and the courtyard. The major ideas that were presented in this scheme that were to have an influence upon later schemes were the idea of a mall connecting the campus to the river and the housing units in some way looking over that mall.

Though this scheme had many ideas that had carried over from the previous scheme and had contributed several more that would be used in later schemes, this particular realization of the new building was resoundingly rejected. All that had been accomplished in the lessening of the importance of the Warthin Apartment geometry was to make the apartments less a part of the design, and to make any attempt to deal with that geometry look arbitrary. The idea of reaching to the river was determined to be a good idea that was very poorly developed, in that the building stopped before it reached the river and at a level where the river could not be seen over the levee. As the housing followed the mall to the river, it was drawn out and the individual units lost uniqueness.
tending to give the facade a monolithic appearance that totally overpowered the existing houses.

The third scheme was presented at the mid-term of the second quarter and began to bring together the successful ideas of the previous two designs without their obvious faults. This scheme was developed primarily to resolve the major problem of relating street to apartment to river. In order to do so a generic solution to the design of the housing was sought to facilitate the design of the ground floor, the ground floor was generally agreed upon to have no housing units, the housing units occurring above.

A general housing block three stories high and four apartments wide was decided upon, with two vertical circulation/mechanical cores that would pierce the first floor. Since the levee was approximately one story above the general level of the site, the pathway that connected the campus with the river gradually sloped up until it had gained the needed height to clear the top of the levee. This slope was below handicapped requirements to allow access to the building to everyone. The pathway wound its way around three outdoor spaces, again gaining its strength from the interplay of indoor and outdoor spaces. The first space was the major courtyard in front of the Warthin Apartments. The pathway did most of its level changing as it traveled along the edge of this court, giving an ever changing perspective of the Court. On the edge between the path and the Court were located the major restaurants and social space. To the north of this area were all of the shops, clubs, and offices. The next outdoor space as the playground for the daycare center which was located opposite the end of the Warthin Apartments. This court was higher than the pathway and the pathway rose to meet it. As the pathway passed the end of the
Warthin Apartments it was diverted at a right angle to travel around the third space, a sunken court that was the outdoor space for the multi-purpose room. After traversing around this sunken court, the path passed the restaurant that was still acting as the terminus to the building, but which now had a clear view of the river.

The major ideas generated from this scheme were the rising pathway, the series of three spaces, and, most importantly, the use of a curve to form the other side of the courtyard at the crotch of the "L". Despite the large amount of progress that this scheme
presented over the previous schemes, there were still many problems. The curved pathway works quite well with the apartment building, but still presented a problem when relating the curve to the street. With all of the clubs, offices and shops in one location and on one level, the single-story mass was too large to relate to the broken-up one-and-a-half story masses of the houses. The new housing worked well as far as its volumetric relationships went, but its relationship with the first level was strained. As the pathway rose, so did the outside facade until it reach a height that was uncomfortable when placed near the houses. The development of the pathway after it passed the end of the apartment building was still weak, because the pathway related to the sunken court much more than to the river, the interesting vocal feature of that part of the site. Despite these problems, the solution to the design problem was beginning to gel.

The final design scheme was presented at the end of the second quarter. Between it and the preceding scheme had come several minor schemes and studies dealing with the level change, apparent facade height, and the ways in which circular and rectilinear geometries can join. This scheme is the culmination of almost all of the major ideas from past schemes.

This design scheme is based upon the use of the curve as moderator between the two conflicting geometries. The curve begins at the river end of the project. At this point, it is perpendicular to Michigan Street. It then bows around until it is perpendicular to the end of the larger wing of the Warthin Apartment building. From this point, it reverses its direction of curvature and bends around forming the major courtyard in front of the apartments. It continues in such a manner until it is parallel with Limestone Street. The height of the two minor outdoor spaces is reversed from
the previous scheme, the playground for the day care center is now the sunken court, and the raised court now is a terrace in front of the apartment units at the west end of the building. The terrace at the west end of the building now has an unobstructed view down the river.

The interplay of the curve against rectilinear elements develops the spaces that have the most social significant in the design. It creates the court in front of the Warthin Apartments and the terrace in front of the new apartments. It also forms the mall on which all of the stores are located.

As with the previous design, the restaurant and lounge are located as a buffer between the major courtyard and the mall. The curve serves as the major east-west traffic spine connecting the campus with the river. However, contrary to the last scheme, only the curved pathway in the mall and the restaurant and lounge, step up in height to achieve a one story level change. The term step up is appropriate in that the level change is achieved through a series of steps and not through a ramp as in the previous scheme.

In this scheme there are four different types of architectural elements, housing, social services, the day care center, and the towers for vertical circulation.

The housing is in a rectilinear configuration that parallels both Limestone and Michigan Streets. Beneath the housing in the western section is the parking for the new housing units. In the eastern section, the spaces below the housing are used for the shops. The housing consists of separate loft type apartments. All of the housing is roofed with a pitched roof that runs parallel to the streets. Located along this roof are a series of large dormers. These dormers are the width of two apartments and are separated by one
unit. The size and spacing of the dormers is designed to emulate the size and spacing of the gable ends of the individual houses around the site. The facades of the two units which are emulating the gable ends of houses are sided in common horizontal lap siding. The spacer units are sided with a smooth stucco. Since these housing units are one story above the general level of the site, earth berms are used to hide any perceived facade except that of the units themselves. In this scheme, the idea of vertical circulation and mechanical cores piercing the first level at regular intervals was rejected in lieu of the previous idea of single loaded corridors overlooking the mall.

The social services, the club rooms, the offices, and the restaurants have a totally different character than that of the apartments. These functions all occur either above the curve or beside the curve and face the modern and monolithic facade of the Warthin Apartments. Hence these spaces have very slick curved glass and steel facades. The horizontal floor and roof planes are emphasized along with the major vertical structure. The rest of the facade is sheated in bronze glass panels, a row of transparent glass between two rows of opaque glass top and bottom.

The daycare center seemed to fit neither category of spaces previously described. It instead became a separate element, completely detached from the rest of the structure. It's basic character is that of a one room school house. Its pitched roof and scale closely emulating the roofs and the scale of the houses on the site, yet it is rotated to the geometry of the Warthin Apartments. The openings in the facade are arranged to allow all the occupants, no matter what their heights, to see out of the building. The face of this building is covered in a brick veneer that matches the color of the bricks in the Warthin Apartments as closely as
possible.

The final set of elements that was introduced into this scheme was the stair towers. These towers not only serve as a means to travel between floors, but also as major compositional elements that help hold the other diverse elements in the composition together. They function at either end of the curve as anchors to the curve. They also signal and help direct pedestrian circulation onto and off the curve. They also form knuckles about which the building makes right angle turns. They too are sheeted in the same brick as the daycare center.
Summary

The purpose of this thesis was to explore a design problem which embodied many contextual problems. It was hoped that, with the proper manipulation of forms, materials, and design elements, the new building would be a good neighbor to the old buildings already on the site. It was proposed that a proper manipulation of the aforementioned elements would lead to a perceived scale compatible with that already existing on the site.

The question to be asked at the end of the design process is, was this achieved? To a certain extent it was. When the existing example of student housing on the site and the second design scheme discussed earlier are studied, one can see what kind of failure is possible when given this particular design problem.

Many accomplishments were made towards a good solution to the given building on the given site. The major accomplishment was the solution of the geometric conflicts between the streets, the Warthin Apartments, and the White River. Through much searching, the discovery of the curve as a moderator between conflicting geometries was the saving grace of the project. It allowed for the design of a building that appears balanced and complete, integrating all the various existing elements, especially the Warthin Apartments, into a total composition.

Several parts of the project remain undeveloped to their fullest potential. The biggest area where design needs to continue is in the area of the social space both inside and out. More work needs to be done to define exactly what occurs in these spaces and how they are used.

These questions can be answered within the
framework of the existing design without changing the decisions already made. As with the social spaces, design development is needed in the area of the building facade. More work should be done in order to ensure the best possible integration with the surrounding community.
Reflections

Without making excuses, I feel that my project was too big to handle as a three quarter design project. The solution of the problems inherent to dormitories in general, and the specific problems existing at IUPUI would have been problem enough. To design a workable dorm that solved the social problems of all on-campus housing at IUPUI is a big task. My thesis statement made it an even bigger task. The contextual and geometric problems of the site on top of the other problems was quite a set of problems to find a solution for. Unfortunately I was forced to resolve the geometric and compositional problems through most of the year at the expense of time that I would have liked to have spend on design development that would have made the building a truly good neighbor.

I would not, however, want to end this thesis on a negative note. All in all, this year has been a good learning experience, I did solve many difficult design problems. I also learned a lot about myself and my design process. All in all, I am very pleased and proud of the work that I have accomplished and the final design for what I feel has the potential to be an exciting building, and a good neighbor.
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