

AN EXAMINATION OF THE RELATIONSHIP BETWEEN UNDERGRADUATE
RESIDENCE-HALL ARCHITECTURE AND STUDENT SENSE OF COMMUNITY
USING OSCAR NEWMAN'S DEFENSIBLE SPACE PRINCIPLES AS A
CONCEPTUAL FRAMEWORK

by

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B.Arch., University of Madras, 2000

A THESIS

submitted in partial fulfillment of the
requirements for the degree

MASTER OF ARCHITECTURE

Department of Architecture
College of Architecture
Planning and Design

KANSAS STATE UNIVERSITY
Manhattan, Kansas

2002

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ABSTRACT

This thesis examines the relationship between undergraduate residence-hall architecture and student sense of community. The theoretical perspective adopted is from architect Oscar Newman's *Defensible Space* (1973) and *Community of Interest* (1981). Three residential halls at Kansas State University—Goodnow Hall, Moore Hall, and Putnam Hall—were selected as study sites. Newman's three design principles of territoriality, natural surveillance, and building image are used to examine if and how the design of these three residence halls facilitates or inhibits a sense of student community.

Specifically, the aims of this thesis are:

- 1) To understand the activities and the behavioral needs of student residents in the common spaces of residence halls;
- 2) To use this information to evaluate the relative success of the three Kansas State University residence halls in facilitating student community through defensible space features;
- 3) To use the resulting findings on student satisfaction as a basis for generating design guidelines for future residence halls with a stronger sense of student community.

The research begins with a literature review presenting the theoretical foundation of this study. This literature review is divided into two parts—the first section reviews the history of undergraduate on-campus housing, while the second section reviews Newman's *Defensible Space* and *Community of Interest* as well as several other studies that relate architectural design to sense of community. The following three chapters are the main body of the thesis and provide an empirical analysis of the three Kansas State University residence halls. A description of students' relationship with the three residence halls—Putnam, Goodnow, and Moore—is provided, using plans, photographs, behavioral mapping, questionnaires, and interviews. The last chapter relates these empirical findings to Newman's defensible space properties and suggests several design guidelines that might facilitate a deep sense of student community.

Most broadly, this thesis concludes that some features of defensible space theory did not play a major role in the three residence halls' sense of student community, while other features did. Specifically, the design features of residential-unit size, and corridor and building height contradicted Newman's defensible-space assumptions, while the design features of site design, building image, and visual permeability supported Newman's assumptions. In short, the thesis concludes that student residence halls require a different set of design guidelines for facilitating a sense of community than the guidelines Newman established for family housing.

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ACKNOWLEDGEMENTS

I would like to express my sincere appreciation to my major professor, Dr. David Seamon, for his encouragement, advice, and criticism, which made me more determined than ever to succeed. I also wish to thank Professor Marina Pecar, and Professor Lyn Ewanow for their helpful suggestions, and time spent serving as committee members.

I also wish to thank Derek Jackson, the director of Housing and Dining Services, of Kansas State University, as well as Mr. Wes Garrison, of the Association of Residence Halls at Kansas State University, who helped me during my study. My special thanks to the residents of Putnam, Goodnow, and Moore Halls, who responded to the questionnaire and participated in the interview.

I would like to say thank you to my family, especially my parents. Without their advice, support, and blessing, none of my dreams would have come true.

Finally, I would like to express heartfelt gratitude, and love to my friends who supported and encouraged me at every step of the way. I would like to thank Girish Shenoy who spent hours editing the text and for being there for me through all times.

I would like to dedicate this work to my family

Mom and Dad

Shaw and Chitra

Balaji, Bharathi and Zeal

Chapter 1

Introduction

This thesis examines the relationship between undergraduate residence-hall architecture and student sense of community. The theoretical perspective adopted is from architect Oscar Newman's *Defensible Space and Community Of Interest* *mmunity of Interest*. Three residential halls at Kansas State University—Goodnow Hall, Moore Hall, and Putnam Hall—were selected as study sites. Newman's design principles are used to examine if and how the design of these three residence halls facilitates or inhibits a sense of student community.

Specifically, the aims of this thesis are:

- (1) To understand the activities and the behavioral needs of student residents in the common spaces of the three residence halls. This analysis will be carried out using information from photographs, observations, questionnaires and interviews;
- (2) To use the behavioral information from aim1 to evaluate the relative success of the three residence halls in facilitating student community;
- (3) To use the resulting findings on student satisfaction as a basis for generating design guidelines for future residence halls with a stronger sense of student community.

An Introduction to the Three Halls

Kansas State University is a comprehensive research and educational institution with over 20,000 students. The sprawling 300-acre campus is located in the city of Manhattan, a university town in north central Kansas with a population of about 30,000. The campus houses some ninety-seven buildings that vary in size and architectural style ranging from Gothic and Romanesque Revival to modernist and postmodernist.

Table 1 presents a summary description of the three residence halls to be studied. As the table indicates, Putnam is the oldest and the smallest building, whereas Goodnow and Moore were both built during the 1960s, and are high-rise with heights of six and nine floors respectively. Moore and Goodnow have almost the same capacity in spite of

Moore's being taller, since Moore has two wings while Goodnow has three. In addition, Goodnow Hall has more spacious rooms than Moore. In the academic year 2001-2002 when this research was conducted, these three halls were occupied to their maximum capacity. Next, I will discuss each building in detail.

	Goodnow Hall	Moore Hall	Putnam Hall
Construction date	1960	1964-67	1951
No. of Rooms	292	321	100
No. of Floors	6	9	3
Sq. footage/room	450 sq. ft.	192 sq. ft.	206.25 sq. ft
No. of rooms/floor	48	24	24
Total capacity	597	634	210
Population, fall '01	592	604	209
Architects	Ekdahl, Davis & Depew, Topeka, KS.	Bozeman, Mullen and Hyberg, Topeka.	Charles L. Marshall, Architect, Topeka, KS.

Table 1.1. General description of the three residence halls

Putnam Hall

As shown in the bird's eye view of figure 1.1, Putnam Hall is the southeastern-most building of a three-building dormitory group on the south side of the Kansas State University campus. These three buildings—Van Zile Hall, Boyd Hall, and Putnam Hall, together, are better known as Strong Complex. Van Zile hall was the first residence hall to be built on-campus during 1926.

Boyd Hall was started in 1951 and that same year, money was appropriated for a third building originally called "Southeast Hall"—that was designed to accommodate 210 students. In 1961 Southeast Hall was renamed in honor of Mrs. Irene Putnam, who in 1955 established the Henry J. Putnam memorial scholarship at Kansas State University to honor her late husband. The firm of Charles L. Marshall, Architect, Topeka, Kansas was the State Architect responsible for the design and construction of the Boyd and Putnam Halls.

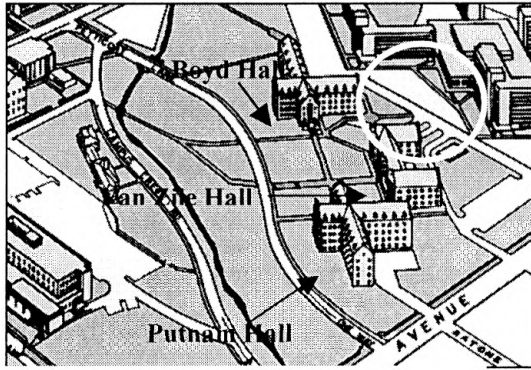


Figure.1.1. Plan showing Putnam Hall among Boyd and Van Zile Hall.

With its Gothic architectural style, Putnam Hall is much different from the modernist Goodnow and Moore Halls, appearing as a stately mansion. The plan in figure 1.2 shows the two entrances providing access to Putnam Hall. The entry from the quadrangular courtyard is the main entrance leading into the building, and as shown in figure 1.3 the entrance is elevated with a limestone parapet. The space before the main entrance is furnished with two garden swing seats and one wooden table with fixed chairs. As can be seen in figure 1.3 Putnam's main entry door is made of solid wood. A second entrance to Putnam is from the basement where there is a tunnel connecting Putnam to Van Zile and Boyd Halls.

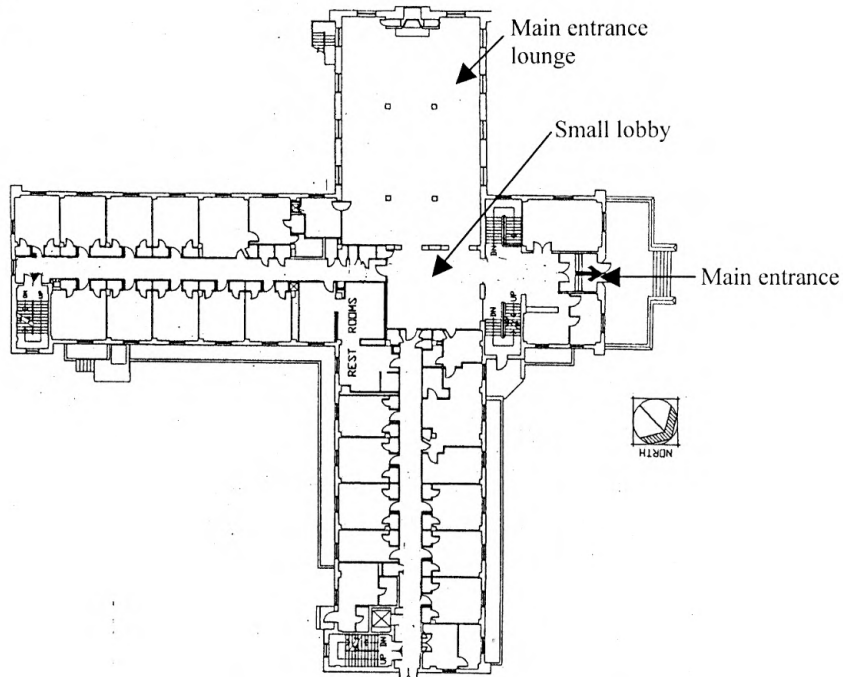


Figure. 1.2. First floor plan; main building entry on right.

As can be seen in the plan in figure 1.2 Putnam's first floor has a reception desk hidden away on one side with flights of stairs adjacent to it, leading to the rest of the floors. There is a small, brightly lit lobby (figure 1.4), which provides entry to the two wings of rooms on this floor. To one side of the small lobby, there is a large main entrance lobby, as seen in figure 1.5, which is elegantly furnished. This lobby also has a piano and a fireplace. The lighting for this space is from concealed sources in the ceiling and from small lamps placed next to seating.

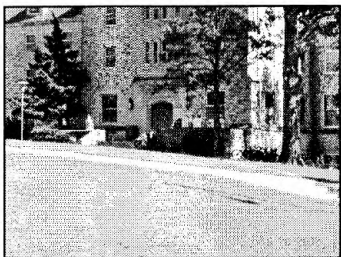


Figure. 1.3. Main entrance of Putnam Hall.

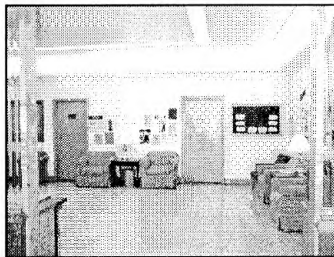


Figure.1.4. Small lobby, Putnam Hall.

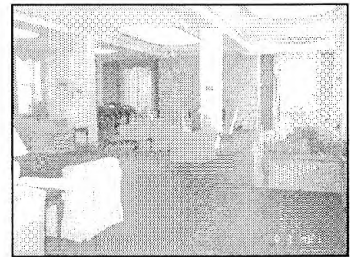


Figure.1.5. Entrance lobby at Putnam Hall.

The basement of Putnam consists of a laundry, TV room, and study area with a table-tennis table, a small library, and a computer lab. Figure 1.6 shows the TV room, which is best equipped of the three halls. The room has a theater-like effect with good furniture and a home theater system. The study area is filled with furniture and a fireplace. In short, the basement is very well furnished and has a comfortable ambience.

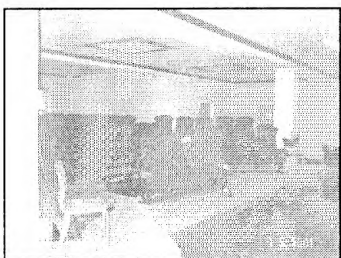


Figure.1.6. TV room, Putnam Hall.

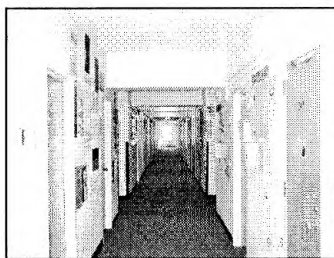


Figure. 1.7. Corridor, Putnam Hall.

The plan shown in figure 1.8 shows a typical Putnam floor organized around a 'T-shape' floor plan. Two wings of the 'T' accommodate only 4-6 rooms whereas the other two wings have 11 rooms. There are no doors at the entry of each wing in the second and third floors and there are no floor lounges on these floors.

As seen in figure 1.7 the corridors are also double-loaded and broader than those at Goodnow and Moore Halls. These corridors are lighted at the ends by windows that bring in good amount of natural light. But for the absence of the floor lounge, the rest of the building presents a very bright picture and a homelike atmosphere.

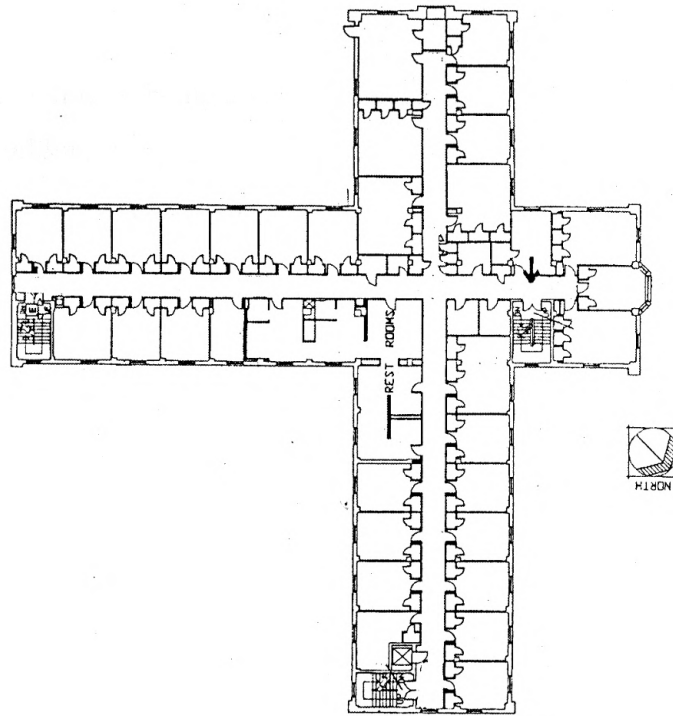


Figure. 1.8. Typical floor plan of Putnam Hall.

Goodnow Hall

This housing complex is located two blocks north of the natatorium on Denison and Claflin Avenues on the west side of Kansas State University campus. The first permanent hall for men, Goodnow Hall was opened in 1960, housing about 600 students. It was dedicated to the honor of Isaac T. Goodnow, one of the early settlers in Manhattan and founder of Bluemont College. Marlatt Hall, a twin of Goodnow was erected four years later, and furnishes accommodation for an equal number of students. At that time it was planned to house male students on the northwest part of the campus and female on the northeast section. At present, however, Marlatt houses men and Goodnow approximately one-third women and two-thirds men. A food center was erected in 1960 and enlarged

during the following four years to provide eating accommodations for the residents of Goodnow and Marlatt Halls.

Ekdahl, Davis & Depew of Topeka, Kansas were the Architects for Marlatt, Goodnow and Kramer Dining Center under the supervision of John Brink, State Architect. These three buildings together form the only redbrick façade buildings on campus. To provide the students with a feeling of being away from school, the architects decided on changing the façade of the building from regular limestone to red brick. Thus, these three buildings viz., Marlatt Hall, Goodnow Hall and Kramer Dining Center (figure 1.9), stand out among all the buildings on campus.

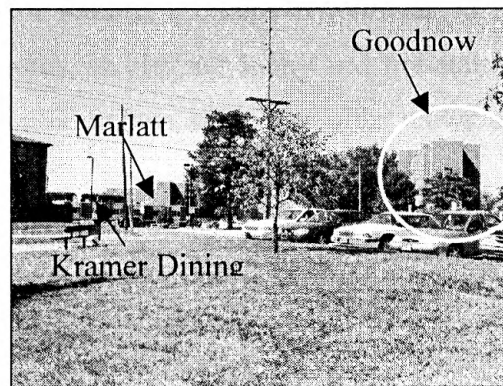


Figure.1.9. Photo showing Goodnow with the other buildings.

Goodnow Hall is located at the intersection of Claflin and Denison Avenues. It is a six-story red building with a flat façade punctured by glass windows. Goodnow can be accessed from both Claflin and Denison Avenues. The front and the main entrance facing Claflin Avenue looks into a small parking lot in front and a lawn beyond it. The rear entrance overlooks a large parking lot on one side and the Kramer Dining Center on the other.

As it can be seen in figure 1.10, Goodnow's main entrance is seen as a setback in the otherwise flat façade, with glass doors and the glass walls of the entrance lobby, elevated by three steps. The rear entrance is more convenient than the main entrance, which is devoid of any seating space or shade. The rear entrance is a slightly elevated space,

which accommodates a brick parapet that provides seating for students wanting to chat, smoke, or socialize, as can be seen figure 1.11.

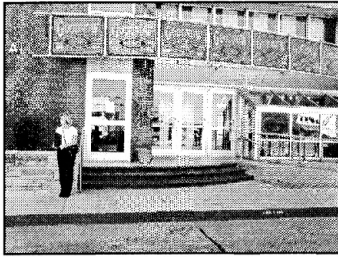


Figure.1.10. Main entrance of Goodnow Hall.

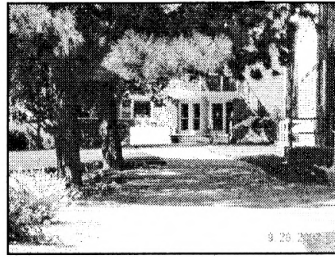


Figure.1.11. Rear entrance of Goodnow Hall.

As the plan in figure 1.12 shows, Goodnow accommodates a lobby (figure 1.13) that includes some space for seating, a computer terminal, and a reception desk. There are also three wings of rooms, an elevator lobby and fire stairs in this space. The lounge is provided with glass walls on two sides that offer views to the space before the main entrance, the parking lot, the lawn and the entrance.

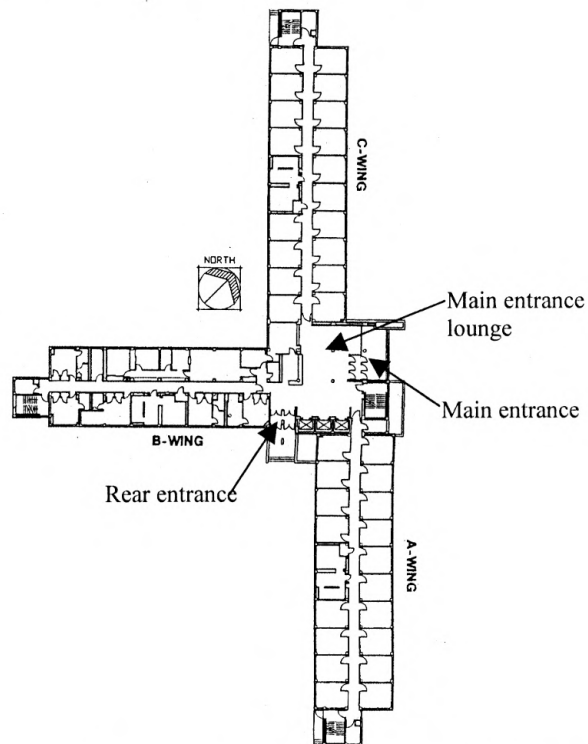


Figure. 1.12. First floor plan of Goodnow Hall; building main entry on right.

Goodnow's basement is comprised of a laundry, TV room, small foosball table, study room, a kitchenette, music room, and a lobby with six vending machines. The TV room and the ping-pong table seem to be rarely used (figure 1.14 and 1.15). The basement is not very brightly lit and comfortable.

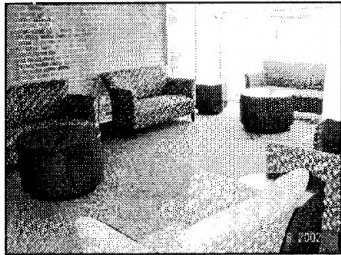


Figure.1.13. Entrance lobby, Goodnow Hall.

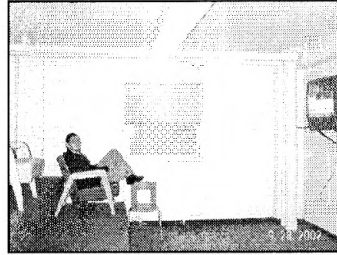


Figure.1.14. TV Room, Goodnow Hall.

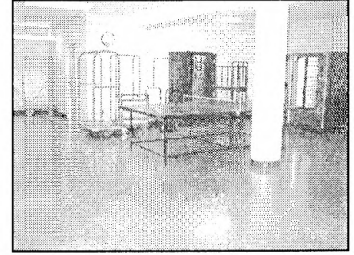


Figure.1.15. Basement lobby, Goodnow Hall.

As the plan in figure 1.16 shows, all of Goodnow's floors include a floor lounge (figure 1.17) and three wings of eighteen rooms each. The floor lounge provides space for studying, social gathering, general chatting and other group or single activities. This space is also used for posters and other announcements. The lounge also provides entry to the floor supervisor's room and to the three wings of student residences.

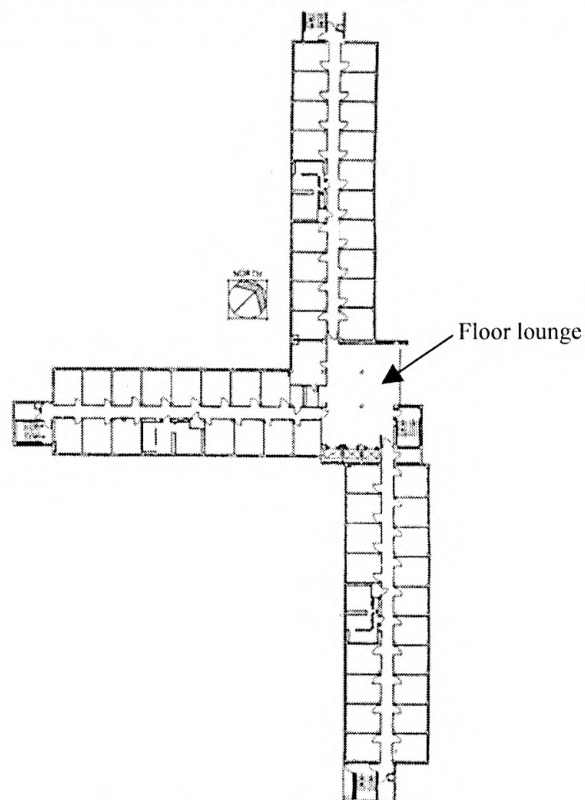


Figure. 1.16. Typical floor plan of Goodnow Hall.



Figure. 1.17. Floor lounge, Goodnow Hall.

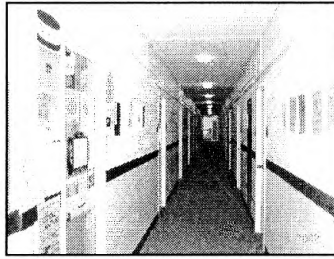


Figure.1.18. Corridor, Goodnow Hall.

The wings of each floor in Goodnow are made up of eighteen rooms placed along a double-loaded corridor with common restrooms. Figure 1.18 shows the narrow corridors that have no source of natural light, and the artificial lighting provided does not seem to be sufficient. Overall Goodnow Hall portrays an institutional image owing to its wings of rooms on each floor. The small and dark entrance lounge adds to this image

Moore Hall

Located in the northeast corner of the campus (Figure 19) Ford, Haymaker, Moore and West Hall are a group of dormitories that also include Derby Food Center. The four dormitories were built between 1962 and 1967 initially to accommodate women. Presently, however, they house both male and female students. Ford and West Halls are women's dormitories, Haymaker houses men only, and Moore is a co-ed dorm (with one-third women). Moore Hall was named after Dr. Helen Moore who was the Dean of Women college from 1940-1958 and who also taught in the Department of Mathematics until 1963. The architectural firm Bozeman, Mullen, and Hyberg from Topeka were the designers of the complex, and James C. Canole was the State Architect in charge of the project.

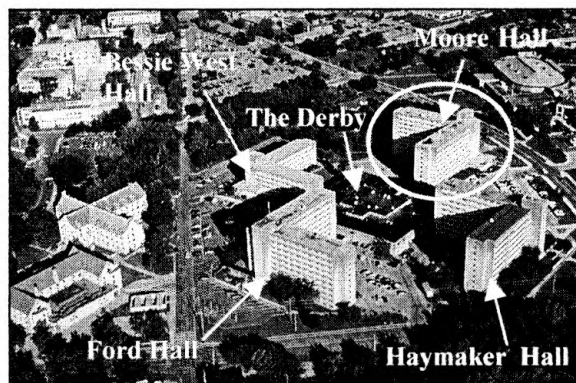


Figure.1.19. Photograph showing, Moore and the other three halls.

At nine stories, Moore Hall is one of the tallest buildings on the Kansas State University campus. It is the first hall that can be sighted from Weber Hall and the International Student Center. Moore is located along Claflin Avenue and its main entrance overlooks a parking lot. The rear entrance is approached from Petticoat Lane through a treaded grass path that leads to a common open space before one can enter the building. There is a third basement entry to this hall – which connects the Derby Food Center by means of an underground tunnel.

As seen in Figure 1.20 (and as marked on figure 1.22) Moore's main entrance, though not impressive, portrays a better picture than Goodnow does. The entrance is elevated by a flight of steps and has a large space before the main entrance. The student residents use this sheltered space to smoke, chat, socialize or as a waiting space. A garden chair is also provided there. The steps are convenient to sit on with broad mid-landings and low risers. Railings enclose this space.



Figure.1.20. Front entrance of Moore Hall.



Figure.1.21. Rear entrance of Moore Hall.

Figure 1.21 shows the elevated rear entrance with its limestone parapet overlooking a common open space between West and Moore Hall. The open space at the rear area includes a basketball court, a sheltered picnic area, and some open cement spaces for playing games such as Frisbee, and soccer.

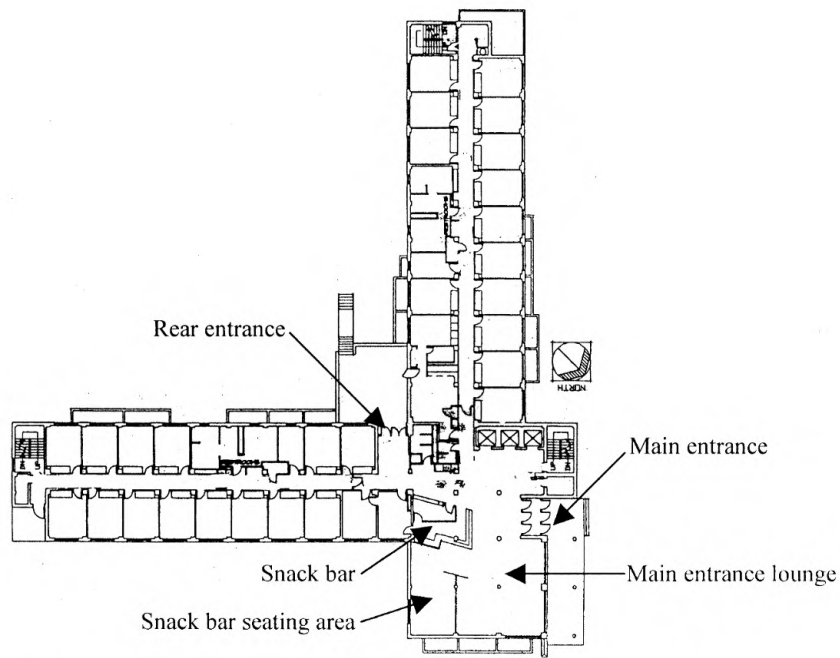


Figure.1.22. First floor plan of Moore Hall; building entry on right.

As can be seen in figure 1.22 the first floor of Moore Hall, comprises a large main lobby, reception desk, snack bar, elevator lobby, fire stairs, mailboxes and two wings of rooms on this floor. The main lounge is divided into three parts. The first part is the visitor seating area shown in figure 1.23, which is further divided into two by a fish tank and some plants. The second part consists of a few study tables and chair, including two computer terminals with seating. The third part includes a bar table with seating and a snack bar at one end, serving student residents with drinks, pastries, etc. Moore is the only hall out the nine halls on-campus to have such a snack-bar facility.

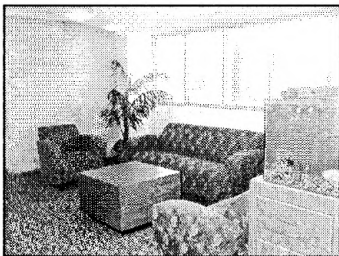


Figure.1.23. Entrance Lobby at Moore Hall.

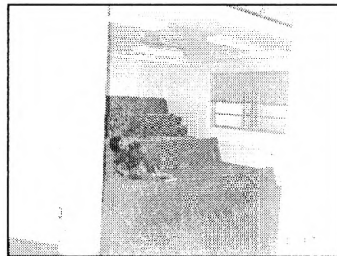


Figure.1.24. TV room, Moore Hall.

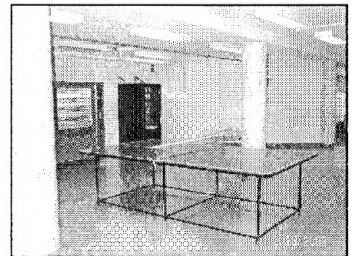


Figure.1.25. Basement Lounge, Moore Hall.

The basement of Moore Hall is divided into a lounge with a ping-pong table (figure 1.25), music room, study room, TV room (figure 1.24), poolroom, laundry, and a kitchenette that includes vending machines. This basement connects Moore Hall to the Derby Dining Center.

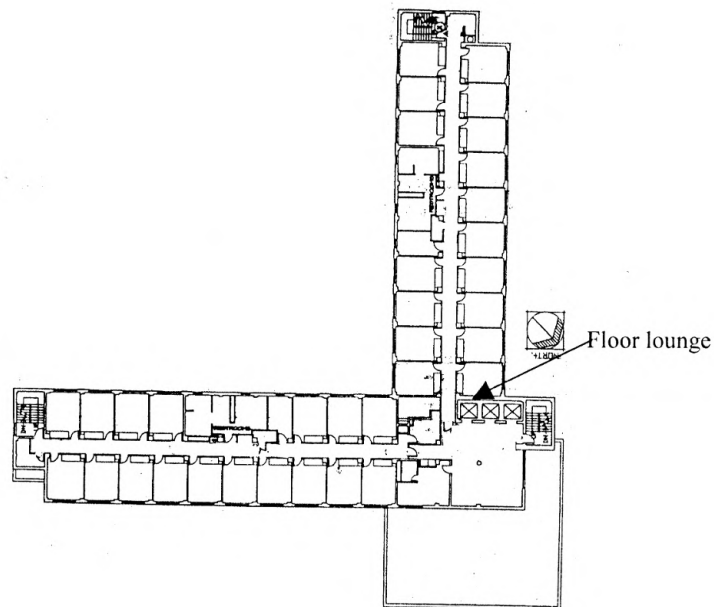


Figure 1.26 shows the typical floor plan for the upper floors of Moore Hall. A floor lounge, an elevator lobby, and fire stairs with two corridors of rooms make up each floor. As shown in figure 1.27 the floor lounge in this hall is much smaller than that at Goodnow, but also includes seating and some study furniture. Each corridor comprises of 18 rooms like in Goodnow Hall along a double-loaded corridor. Same conditions prevail in regards to appearance of the corridors in Moore hall also, as it is in Goodnow Hall. Figure 1.28 shows the Spartan corridor, with no natural light.



Figure.1.27. Floor Lounge at Moore Hall.



Figure.1.28. Corridor, Moore Hall.

The Following Chapters

The rest of this thesis will evaluate the relative success of the three residence halls in terms of facilitating a sense of student community. To achieve this aim, the next chapter will discuss the literature that was used to form a theoretical foundation for the research. The literature study is divided into two parts—the first part includes a study on the history of undergraduate on-campus housing and the second part covers the book *Defensible Space* by Oscar Newman and studies that relate to architectural design and sense of community.

The next four chapters (chapters 3 to 6) following the literature study are the main body of the thesis that provides empirical analysis of the thesis. Chapter 3 discusses the descriptive analysis of the physical study carried out on site. This includes the comparison of the three halls with photographs. The fourth chapter describes the behavior mapping that was plotted in various spaces of the hall and its interpretation. The outcome of the questionnaires and interviews that were conducted among the residents of the residence halls are discussed in chapter 5. The last chapter summarizes the evaluation of three residence halls and also provides design principles that can help to facilitate a sense of student community in residence halls.

Chapter 2

Understanding and Designing Student Housing: Literature Review

The literature study of this thesis is divided into two parts. The first, shorter part provides a background on the history of on-campus housing, while the second, longer part discusses literature from environmental design studies. After an extensive literature search, it was discovered that there is very little material discussing the history of on-campus housing and student life. Perhaps the single best overview is offered in a student thesis written by Victor Hsia in 1967 at Utah State University (Hsia, 1967) Hsia's review is relied on heavily in the discussion on the historical background of student housing.

The second part of this literature review discusses work that considers how environmental design can contribute to a sense of community. Key works to be covered include Oscar Newman's *Defensible Space* (Newman, 1973) and *Community of Interest* (Newman, 1980), and Clare Cooper Marcus's *Easter Hill Village* (Cooper, 1975).

1. The History of On-Campus Housing

I begin this chapter by reviewing the literature on the history of on-campus housing. Fragments of the written record reveal a few occasions of students in ancient times living in learning centers. Five hundred years before Christ, the Chinese philosopher Confucius is reported to have had as many as 3,000 pupils studying with him at a time. Many of his students lived in his house and took up daily chores to maintain the house (Eastman, 1964, as cited in Hsia, 1967, p.3).

A hundred years later in Greece, during the fifth century B.C., a number of large schools developed, the most famous of which was located on the Island of Cos, where Hippocrates had studied (Watson, 1963, as cited in Hsia, 1967, p.3). In 387 B.C., when Plato founded his Academy, a society of scholars and students came to live in Athens. Though some students remained at Plato's school for a short time, many remained for the greater part of their lives, devoting themselves to the advancement of knowledge

(Watson, 1963, as cited in Hsia, 1967, p.4). The problems these students faced in terms of housing remain unknown to us.

The twelfth and thirteenth centuries date the beginning of the great European universities. Students came in great numbers to centers such as Oxford, Bologna and Paris, where famous masters and books were available. Morison (1936, as quoted in Hsia, 1967, p.4) writes that “It seems probable that in every medieval university the bachelor’s degree was normally taken between the ages of fifteen and nineteen. The wealthy students came with servants and set up independent and comfortable establishments, while other usually banded together and lived in what today would be called co-operative houses”. At Bologna, the usual practice was for parties of students to hire a whole house and make their own arrangements, as to servants, furniture and the like (Rashdall, 1936, as cited in Hsia, 1967, p.4)

At first, these universities undertook no supervision over the private lives of their students beyond seeing to it that they were not cheated by unscrupulous citizens or injured in the numerous broils of the day (Schachner, 1938, as cited in Hsia, 1967, p.5). Many students deserted their studies for the pleasures of city life. The more serious students established houses, as at Bologna, arranging with a bachelor or a Master to take care of financial arrangements, and to control to a certain extent the activities of the group. A community residence such as this was called a hospicium or a hospitia in Paris, and a hall at Oxford (Stewart, 1942, as cited in Hsia, 1967, p.5). By the middle of the thirteenth century, according to Schachner (1938, as cited in Hsia, 1967, p.5), “the majority of middle class students resided in such halls, and the self-governing democracy was a thing of the past. The Masters or Principals in-charge had their own ironclad rules for their charges.”

Originally, many colleges were merely endowed halls, which were financed by charitable individuals who left funds for the provision of boarding, lodging, and apparel for poor students. Since the attendants of these establishments were paid by the foundations and not by the students, their authority over the student residents increased. Gradually the

colleges began to accept paying scholars and by the fifteenth century payment by the members of the hospicium was required.

By the time of the Renaissance, inventions, revolutions and discoveries brought students to the cities that provided them with education. The seventeenth century saw these rapid changes and expansion of human boundaries through travel and the development of science. Stewart (1942, as quoted in Hsia, 1967, pp.5-6) explains:

Up until 1650, the impact of discoveries following upon the explorations of Copernicus and Galileo into the realm of science, and those of Columbus, Cortez, and their followers into the unknown regions of the terrestrial globe expanded the available studies and the spirit of the university life. The reformation largely cancelled these gains. In the strict religious alignment, which it precipitated, the universities reverted to conservatism. And in Germany, residence halls were abandoned for the boarding house system, which has remained the customary collegiate housing of that country.

In France, despite the weakening of two universities by the bickering between the Jesuits and the Huguenots, the residence halls maintained themselves until the Revolution closed all educational institutions. At Oxford and at Cambridge, although each college was completely and militantly Catholic or Protestant, the residence system survived and furnished the pattern for the first American college.

Thus two contrasting philosophies about student housing developed, and they are still with us, with adherents divided on how best to serve the residential needs of students. Some believe that the universities should offer only intellectual education, permitting students to live in fraternities, apartments, rented rooms, or wherever they may wish. There are others who believe that a college or university is responsible for the total

training of an individual, including social and personal education, and therefore must provide residential accommodations (Hsia, 1967, p.6).

For example, German universities provided students with lecture halls, libraries, laboratories and a main hall suitable to hold ceremonies. Students attending these universities had to obtain their own boarding and lodging. This system was emulated in the older English colleges. In the United States, there were no dormitories built between 1871 and 1909 at M.I.T. or Harvard or at John Hopkins (Bush-Brown, 1957, as quoted in Hsia, 1967, pp.6-7). Many remnants of this system are still visible, particularly in urban universities, such as New York University and graduate schools such as that at Michigan, as well as technological institutes, such as Massachusetts Institute of Technology, which has not yet fully converted to the residential system for undergraduates (Bush-Brown, 1957, as quoted in Hsia, 1967, pp.6-7).

There are some educators who believed that higher education should continue in the English Collegiate tradition of being concerned with educating the whole person. They believed that the primary objective of the residential system is to assist the institution in providing a better educational program; housing students thus becoming a secondary aim. American history is full of individuals who supported this view: all the early college educators such as Thomas Jefferson, James McCosh, and Abbot Lawrence Lowell, who developed the brilliant scheme for the Houses at Harvard; Woodrow Wilson and Andrew Fleming West who together helped shape the residential pattern at Princeton (Bush-Brown, 1957, as cited in Hsia, 1967, pp.6-7).

After World War II in the United States, many students arrived to live in campus dormitories that were remarkably cold and stark, inhuman and monstrous. Intimacy and individuality were frowned upon, and students had to share common spaces for sleeping and living. This arrangement brought about many conflicts among students, and the students became dissatisfied with the conformity imposed on them. The authors of the 1972 *Student Housing* says that “College is no longer a place where the older generation can with solemn ceremony hand its cultural values—wrapped as a gift—on to a new

generation. Now college is a place where the young go to see and experiment with their own identity, their own culture. Dormitories can provide a stage for these experiments” (*Student Housing*, 1972, pp.11-12).

The authors of *Student Housing* (1972) also argue that dormitories between 1920s to 1970s were not designed as places of discovery nor did they work as laboratories for different lifestyles. Rather, the main emphasis is efficiency. The authors also claim that:

...The university administrators provide efficient compact housing for a maximum number of students in minimum space, if possible close to classes, otherwise on available land. They have built indestructible, inflexible structures, measuring the living area in terms of either “beds” or “spaces.” Physical layout resembles turn of century prisons, monoliths of concrete and brick. A relentless corridor cuts each floor, separating double-occupancy rooms. Gang baths bedeck either end of the corridor. Dining halls and impersonal lounges that look like bus terminals complete the picture. If a house and mother rules are added, the result is instant-prison for the hapless student who has to live there.

...The search for identity and informal activity outside the classroom is part of the personal development process and, therefore, an important aspect of college life, then dormitories will have to change. They will have to become congenial places for students sharing, in various degrees of intensity and individuality, a process of learning and growth (*Student Housing*, 1972, p.12).

According to the authors of *Student Housing* (1972), many college administrators of the 1970s believed that building dormitories that would satisfy students was a futile attempt, because most students do not know what they really want in a living situation. A student housing study conducted by architecture students at Pennsylvania State University in 1971 demonstrates a consistent pattern of discontent and an equally consistent litany of

unmet needs. Two-thirds of the students who had moved off campus had found their dormitory life oppressive but expressed a desire to return to on-campus housing if they were offered:

1. A variety of living options from which to choose;
2. A chance for small groups to establish a feeling of closeness through shared interest;
3. Privacy—in other words, meaning control over one's environment and an absence of rules and regulations (*Student Housing*, 1972, pp.12-13).

This *Student Housing* study concluded that there could be no ideal dormitory arrangement that would please everyone—because no two students are identical. Variety is what the students are looking for. Some students prefer their residence hall to be a relaxing social haven, which will provide distraction from the rigors of academic life, while others want it to stimulate cultural or intellectual activities. Some may want to live in close proximity to only a few of their peers, while others want a large and fluctuating social milieu from which to choose. The report concluded that, ultimately, the students want a larger role in shaping and managing their college lives. A majority of students, particularly upperclassmen, do not want to be taken care of, and “caretaker dorms” are viewed as impediments to autonomy and freedom. Students want to live in a situation that they can control and change. Environments that impede this are seen as authoritarian. As such they inspire apathy, rebellion or rejection (*Student Housing*, 1972).

A number of student housing studies have argued that architecture can foster or discourage students, social formations. Robert Geddes and Humphrey Osmond find there are limits of size for every group, whether they are sharing a lounge, washroom or landscaped courtyard, beyond which friendships do not form. It seems likely that the frequency of involuntary, personal, face-to-face contact is one of the most important factors in the formation of groups and informal friendships. It is also necessary to create spaces in such a way that they can help draw together groups to which individual students feel they belong and in which they are more easily able to make friends (Mullins and Allen, 1971).

In summary, these student-housing studies suggest that architects must realize that students have certain requirements as individuals, as part of their personalities, and these personal needs may matter the most for many students. Social organization and the design and equipment of a dormitory are interdependent, inseparable features, thus indicating that social interaction is at least partly dependent on architecture as well as social and psychological factors (Mullins and Allen, 1971, p.24).

2. Environmental Design Studies

The second part of this thesis's literature review discusses environmental-design studies—i.e., research that analyzes the effect of architecture on people. Some of its propagators are Oscar Newman (1972), Jane Jacobs (1961), Bill Hillier (1984, 1996), and Clare Cooper Marcus (1975, 1986). The primary goal of this thesis is to examine how the residence hall design relates to social interaction among residents, thus this “environment behavior” centered literature is presented.

Oscar Newman's *Defensible Space* (1972)

Oscar Newman begins his book by focusing on “a study of the forms of our residential areas and how they contribute to our victimization by criminals. More broadly, it examines one aspect of how environment affects behavior” (Newman, 1972, p.xiii). The book outlines the problems produced by many of the most familiar housing types, particularly the high-rise, and suggests remedies for both new and existing residential development.

Newman (1972, p.3) defines the term defensible space as:

A model for the residential environment which inhibits crime by creating the physical expression of a social fabric that defends itself. All the different elements which combine to make a defensible space have a common goal—an environment in which latent territoriality and a sense of community can be translated into responsibility for ensuring a safe, productive, and well-maintained living space...Defensible space is a

surrogate term for the range of mechanisms—real and symbolic barriers, strongly defined areas of influence, and improved opportunities for surveillance—that combine to bring an environment under the control of its residents.

Newman examines historically the shift to housing large numbers of residents in high-rise buildings from the old well-protected, extended-family housing of many agricultural and early urban societies. He then discusses the problems faced by high-rise housing, especially high crime rates. The main cause he identifies is the lack of surveillance features in the design of the high-rise building—especially the double-loaded corridor and scissor staircase. These factors give rise to a lack of definition to the hierarchy of defensible space—public space, semi-public space, semi-private space, and private space.

The problems faced by high-rise housing are illustrated in Newman's comparison between high-rise projects—Van Dyke—and a low-rise project—Brownsville—located adjacent to each other in New York City. He explains how Van Dyke largely lacks in defensible space qualities, while the buildings at Brownsville are endowed with those qualities (Newman, 1972, p39).

Towards the end of his second chapter, Newman defines four major design characteristics helping to establish defensible space. *Territoriality* is listed as the first design characteristic, which is defined as “The capacity of the physical environment to create perceived zones of territorial influence: mechanisms for the subdivision and articulation of areas of the residential environment intended to reinforce inhabitants in their ability to assume territorial attitudes and prerogatives” (Newman, 1972, p.50).

The second design characteristic of defensible space—*Natural surveillance*—is defined as “The capacity of physical design to provide surveillance opportunities for residents and their agents: mechanisms for improving the capacity of residents to casually and continually survey the nonprivate areas of their living environment, indoor and out” (Newman, 1972, p.50). The third characteristic of defensible space is *image* and is

defined by Newman as “The capacity of design to influence the perception of a project’s uniqueness, isolation, and stigma: mechanisms which neutralize the symbolic stigma of the form of housing projects, reducing the image of isolation, and the apparent vulnerability of inhabitants” (Newman, 1972, p.50)

Finally, the fourth characteristic of defensible space is *milieu* and is defined as “The influence of geographical juxtaposition with “safe-zones” on the security of adjacent areas: mechanisms of juxtaposition—the effect of location of a residential environment within a particular urban setting or adjacent to a “safe” or “unsafe” activity area” (Newman, 1972, p.50).

Newman goes on to discuss territoriality as a feature that was present naturally in earlier housing examples but absent in many modern housing projects. The features of territoriality are discussed—for example, site design, street design, real vs. symbolic barriers, the incorporation of amenities and facilities within defined zones of influence which answer to occupants’ needs, and significance of number of people sharing a facility in a project. Newman illustrates these features with detailed case studies comparing various projects.

Under site design, he argues for housing sited in such a way that their grounds relate to particular buildings. This he illustrates using the example of Breukelen houses in Brooklyn New York (Newman, 1972, p.54). He explains how the use of the “L” for the plan of the buildings brings about a defined semi-private territory, which is used for recreation and a children’s play area. After discussing other examples, he then explains how to subdivide the existing fabric of streets in order to create territorially defined block and areas—the street design (Newman, 1972, p.60).

Real vs. symbolic barriers are defined as interruptions in the sequence of movement along access paths and serve to create perceptible zones of transition from public to private spaces. Examples of real-barriers are U-shaped buildings, high walls and fences, and locked gates and doors. Some examples of symbolic barriers are open gateways, light

standards, a short run of steps, and planting and changes in the texture of walking surface (Newman, 1972, p.63). Newman then emphasizes the significance of number in subdivisions of buildings and projects. By numbers Newman is discussing about the number of people sharing a facility in a project. Newman's argument is that, the fewer number of people sharing a facility, the more the sense of territoriality.

Newman argues that natural surveillance and territoriality go hand in hand. He talks about the various features that have to be present in order to facilitate surveillance by residents. These include glazing, lighting and positioning of nonprivate areas and access paths. He discusses the importance of these features in both interior as well as exterior areas. He explains the various methods of designing buildings in such a way as to provide good surveillance features. Under this he discusses the buildings relationships to the street and good lobby visibility. He then examines interior areas that require surveillance such as lobbies elevators, hallways, and fire stairs (Newman, 1972, p.78-91).

The third and fourth characteristic mechanisms of defensible space—image and milieu—are both discussed together in Newman's third chapter. Distinctiveness achieved from the interruptions of the urban circulation pattern, distinctiveness of building height, project size, materials and amenities, distinctiveness of interior finishes and furnishings make up the features of image. The distinctiveness of the project contributes to helping the residents become interested in the building (Newman, 1972, p.101-108). This gives rise to a sense of territoriality and also helps to provide surveillance. In milieu Newman highlights the juxtaposition of residential areas with other "safe" functional facilities, with safe public streets, and the dimensions of juxtaposed areas (Newman, 1972, p.109-117)

All four features mentioned above are discussed by Newman using one or several examples. Of all the examples that he mentions, the one most relevant to this thesis are the dormitories at Sarah Lawrence College, which he examines in his chapter on territoriality. He explains how in each of three detached buildings of an older dormitory at Sarah Lawrence College there is a strong communal sense, whereas a new modernist

building consisting of one long slab served by an interior, double-loaded corridor and four sets of stairs has a lack of a communal sense (Newman 1972, p.74-77). Newman argues that students in the older set of dormitories feel a part of their hall, and thereby take responsibility, whereas the newer dormitory presents us with a picture of vandalism and general disregard.

Oscar Newman's *Communities of Interest* (1980)

The main aim of Oscar Newman's *Community of Interest* is to identify new physical communities and their functions so as to learn how better to plan and design them. He is also interested in learning about these communities to achieve societal goals larger than the simple satisfaction of each individual family living in the community (Newman, 1981, p.2).

Newman explains that successful communities of interest are created by people who are able to live in close proximity with others who share similar needs, which depend on physical proximity to be satisfied. He refers to such a community of people with common interests and life-styles as *life-style groups* (Newman, 1981, p.12). Newman believes that to create a surrogate form of extended family in contemporary society requires the provision of physical environments designed for the specific needs of a group of families pursuing similar life-styles: for example, residential environments exclusively for families with children, as different from environments exclusively for young adults or for the elderly. These are the three life-style groups for which Newman will advocate suitable living conditions in the following chapters. Newman argues that "it is this form of "segregation" which is the key to the "integration" and "interaction" of neighbors of different racial, ethnic, and economic backgrounds" (Newman, 1981, p.17).

In the third chapter, Newman discusses the different housing types in use today and their evolution in response to the pressure of increasing density. He also tries to demonstrate how different housing forms affect residents' abilities to determine and control activity within their buildings and their willingness to accept responsibility for maintenance and security of the areas outside their home (Newman, 1981, p.48-50). He examines three

residential prototypes of significant difference: (1) single family houses; (2) walk-ups, and; (3) elevator buildings. Under single-family houses, he includes attached, semi-detached and row houses. Walk-ups include garden apartments and open gallery buildings, and elevator buildings commonly range from six to thirty stories in height (50-500 families per entry). Each of these prototypes is discussed using examples from the past as well as current examples from United States and other countries. He explains how each feature in these residential forms evolved and how they contribute to a sense of community (Newman, 1981, p.50-70).

Newman illustrates the three residential prototypes with their built features listed in a comparative form. He explains the inherent defensible space qualities present in them. Finally he summarizes in chapter three, explaining that a family's claim to a territory diminishes proportionately as the number of families who share that claim increases. Further, he argues that the larger the number of people who share a communal space, the more difference it is for the people to identify it as being in anyway theirs or to feel they have a right to control and determine the activity taking place within it (Newman, 1981, p.76-77).

Newman throws light on the management problems inherent in high-rise complexes as contrasted with row houses and walk-ups (Newman, 1981, p.101-108). He provides a comparative study of the lived-environment provided by the residential prototypes: single family, walk-ups and elevator buildings. He uses various examples to support his stance taken. Using this discussion, Newman explains to the reader the advantages and disadvantage present in each of these building types. His intention is to make the best of each of these residential building prototypes.

Newman claims that "the first and the foremost critical step in creating a housing development with community of interest is to select building types which are most suited to the life-styles and needs of the occupant groups...All the other design guidelines are secondary and supportive of this basic requirement" (Newman, 1981, p.157). For the purpose of choosing a building type for a particular life style group, Newman uses two

criteria classifying residents: income and life-style. As mentioned above, he identifies three life-style groups: families with children, working adults, and retired elderly (Newman, 1981, p.158).

Chapter seven of *Community of Interest* discusses the general characteristics of the three life-style groups that Newman has identified. He begins with families with children, and explains that children are central to this life-style. He explains that care must be taken to provide them with adequate play area and easy access between the building interiors and exteriors. He explains how such requirements will not be well suited to high-rise buildings. He then argues that the simplest solution would be to provide a type of housing where as few families as possible share a common entry. Single-family row houses are the preferred solution, followed by walk-ups (Newman, 1981, p.159-160).

The retired elderly is the next life-style group to be discussed. Newman explains the daily routine of the elderly. He argues that the elderly, like children, typically spend time around their house and with other elderly families. Newman explains that the elderly seek residential environments, which are occupied by other elderly and that they place much importance to this criterion in the choice of their residential environment. Therefore, Newman argues that the building type selected for elderly residents should be one which facilitates the interaction of neighbors (Newman, 1981, p.160).

For the above condition to be satisfied, there are no types of residential buildings, which are not suitable for the use by the elderly: the only type which produces difficulty, would be the walk-up (because of its stairs). But even then, the problem is that of access rather than of interaction between neighbors or control of public areas. Newman strongly recommends the high-rise building type for the elderly, which has no access problems and gives potential contact for the elderly with a large number of neighbors. He also explains that assigning all the elderly to one building will not result in isolation, and placing their building next to other building types housing different life-style groups can promote interaction (Newman, 1981, p.161).

Finally Newman discusses the life-style group of working adults, who do not perceive their home environments as their living milieu, but rather like a base of operations. He believes that working adults are best provided with housing in high-rise elevator buildings, which are provided with round-the-clock doormen and a custodial staff to control the interior public areas of the building. He would not recommend walk-ups and row houses for the working adult's life-style group, as they don't live in the house most of the time, exposing the house to burglars. Newman then provides solutions to the density problems that each of these housing types may involve. He explains these with illustrations for all the three building types for different density, and different requirements on an acre of urban land (Newman, 1981, p.162-163).

The second design principle for creating communities of interest according to Newman requires that the collective public areas of a housing development be designed to serve the needs of residents. He again emphasizes that it will be made easy if residents sharing similar interests are grouped together (Newman, 1981, p.169). Next, the third principle requires the site and building be so designed that the grounds and the interior common circulation areas are defined as belonging to specific groups of residents. The fourth and the final design principle requires the assignment of the nonprivate areas of buildings and grounds to as small a group of residents as possible (Newman, 1981, p.170). Newman then illustrates how to integrate the four design principles, coming up with five model designs for different building type/ family type combinations.

In chapter eight, Newman provides site-planning guidelines for housing. Under this theme, he discusses the assignment of grounds to create easily perceived zones of influence, a project site being subdivided so that all the ground areas are related to particular buildings or building clusters. Newman describes the various methods by which zones of influence can be defined and then explains how city streets can be incorporated into the zones of influence.

The most important contribution of Newman in *Community of Interest* is the idea he has provided for two housing projects in Newark, New Jersey and in New York City. The

first project was designed to house the three mentioned life-style groups in his suggested building types. He explains the three building prototypes—High-rise for elderly, walk-ups and row houses for families—that he has used in the design. The second project in New York City involved the integration of housing for the elderly and for families with children on a small site. In this scheme, the elderly housing is located in a nine-story elevator building positioned on top of the three story walk-ups for the families with children.

In the last two chapters of *Community of Interest*, Newman provides solutions whereby existing housing developments can be modified. He also discusses the failure of modern architecture with respect to housing. For the present thesis, it is important to note that *Community of Interest* uses human behavior to provide residential design solutions. In one sense, this thesis explores a fourth community of interest—*on-campus undergraduate student housing*.

Critics of Oscar Newman

Newman's work has had its share of critics. Roger Tijerino claims that the term “social fabric”, used by Newman, is vague and does not fully explain how this quality emerges. He also argues that there is no theoretical link between the built environment and civil behavior in defensible space discourse (Tijerino, 1998, p.321). In his paper, he is trying to build on Newman's and Jane Jacobs' observations suggesting that Norbert Elias's *The Civilizing Process* (Elias, 1939/1994) can be used to develop a critical perspective on defensible space. Tijerino explains that the relation between civil behavior and both private and public spaces is critical to defensible space studies, from which further research on defensible space can be developed (Tijerino, 1998, p.321).

Gregory Saville (1996, p.361) critically examines Newman's latest work *Creating Defensible Space* (Newman, 1995). In this book Newman explores three case studies using defensible space ideas: The five Oaks Community Project in Dayton, Ohio (1991); The Clanson Point, New York project on row housing in South Bronx (early 1970s); and the Yonkers, New York project, a dispersed, high-density public housing project (late

1980s). In each project Newman has incorporated unique set of design tactics to create defensible space (Saville, 1996, p.362).

Saville opens his critique by writing that “reading Oscar Newman is an exercise in tolerance—one must tolerate his individualistic approach and writing style to reach his substance” (Saville, 1996, p.362). He accuses Newman of being physical a determinist, working in isolation from criminological research and occasionally working in isolation from the actual residents living in the conditions Newman is attempting to improve. He also feels that Newman is not aware of the latest research developments in the “defensible space” field—that the early sections of his 1995 book seem to be more a response to his critics than to the articulation of anything new (Saville, 1996, p.362)

Saville (1996, p.362) also emphasizes that some of Newman’s ideas do not include the factors of social characteristics of inhabitants, and are always based on the physical form of housing. Saville discusses, for example, the influence of building height and the number of units per entry as a crime-determining factor, but he emphasizes that recent studies show that these factors do not always predict crime. He then presents research carried out in Vancouver regarding building size and height that produced results opposite to Newman’s conclusion (Bernard-Butcher, 1991, as cited in Saville, 1996, p.362).

Saville wonders why Newman doesn’t accept that he is a physical determinist. He also elucidates the problem of Newman’s work as being thirty years old and outdated. He claims that there have been many changes to social structure since Newman completed his major work. Saville criticizes the examples Newman provides to support his defensible space theory and claims that they are not well-supported evidence, as no post-occupancy evaluations have been carried out to determine if defensible space theory did in fact work (Saville, 1996, p. 363).

Saville finally ends his critical review of *Defensible Space* wondering why Newman never mentions any of the other successful practioners of this theory and strategies. He

feels that Newman stands alone trying to propagate his work, unlike his ideas that discuss co-operation and collaboration.

Sheena Wilson (1978) agrees with Saville about the fact that Newman's physical modifications using defensible space rarely resolve social and management problems, which tend to co-exist with those of poor design (Wilson, 1978, p.2). She also claims that the evidence provided by Newman is not consistent, implying that design should never be considered independently of social and management factors.

Bill Hillier's Criticism of Newman

Hillier is another architect with a critical view of Newman's theory of territoriality. Hillier and his colleague Julienne Hanson have developed the theory of *Space Syntax*, which is defined as "the social content of spatial patterning, and the spatial content of social patterning" (Hillier & Hanson, 1984, pp. x-xi). *Space Syntax* was developed at the Barlett School for Architectural Studies to describe and analyze patterns of architectural space—both at building and urban level. The idea was that, with an objective and precise method of description, it can be found how well environments work, rigorously relating social variables to architectural forms (Hillier, 1983, p.50). According to Seamon (1994), Hillier appears to provide incontrovertible evidence that a settlement's particular spatial layout contributes to the kind of place and community which that settlement becomes.

Hillier believes that "for many people the problem is not architecture but the lack of it..." (Hillier, 1983, p.49). He believes that the problem faced by architecture is that of understanding patterns of spatial relationships. He argues that the global properties of spatial patterns must be understood. He explains that "it is the global organization of space that acts as the means by which towns and urban areas may become powerful mechanisms to generate, sustain and control patterns of movement of people...Our research has shown that spatial organization—over and above any effects due to the location of facilities and population density—has a crucial effect on the ways people move through an urban area and therefore on the ways people become automatically aware of each other" (Hillier, 1983, p.50).

Hillier's work, as cited in Seamon (1994, p.35), point toward two possibilities: first, that urban designers must deal with space before they deal with form; second, that in dealing with the importance of space, designers must understand the settlement's overall pathway network first. Hillier and his colleagues demonstrated that the built environment, through its spatial qualities, plays a significant role in supporting a lively street life. The theory of *Space Syntax* uses quantitative evidence to show why the relationship between physical and human worlds makes such a difference and why particular city streets and street networks are more or less active (Seamon, 1994, p.36).

Hillier attempts to identify the type of street network that can support public life. He also recognizes "how a world's underlying spatial structure, or morphology, as he calls it, guides particular actions and circulations of human bodies moving through that world and, how, in turn, a self conscious understanding of this human world/physical world intimacy might lead to environmental design and policy that supports a stronger sense of place and community" (Seamon, 1994, p.37).

Hillier's study of traditional village layouts throughout the world made him wonder whether there is any sort of underlying spatial order to these villages, or is the physical arrangement largely determined by non-physical socioeconomic factors like requirements of livelihood or structures of family and kinship (Seamon, 1994, p.38). To answer this question, Hillier examined several traditional French villages for commonalities, and found what he called the *beady ring structure*. This is the first central concept in Hillier's theory of space syntax.

The characteristics of the *beady ring structure* are:

1. All the building entrances face directly onto the village open spaces; thus there are no intervening boundaries between building access and public spaces.
2. The village open spaces are continuous but irregular in shape; they narrow and widen like beads on a string.

3. The spaces join back on themselves to form a set of irregularly shaped rings.
4. This ring structure, coupled with direct building entry, gives each village a high degree of permeability and access in that there are at least two paths (and, typically, several more) from one building to any other building (Seamon, 1994, p.38). These four characteristics are illustrated in figure 2.1.

The spatial pattern created by the beady ring structure is an integral part of human worlds and places that unfold in its midst. In part, because of the particular nature of the spatial pattern, these worlds and places are alive with activity, interaction and encounter, or they are dead and empty. According to Hillier (Seamon, 1994, p.39), the modern western city's problem is that designers and planners have no understanding of morphology and have therefore allowed this invisible fabric to deteriorate or to collapse. The result is lifeless streets and districts.

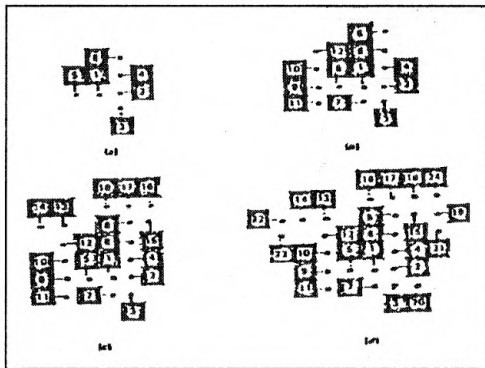


Figure.2.1. The first four stages of computer simulation: by the fourth state the beady-ring pattern has become clearly visible (from Hillier and Hanson, 1984, p.60).

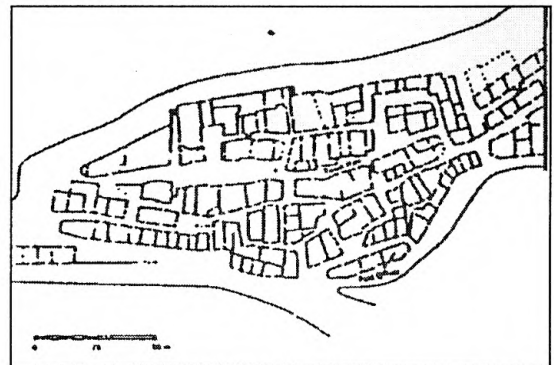


Figure.2.2. Map of the village of Gassin (from Hillier and Hanson, 1984, p.90).

Hillier uses the example of the French village of Gassin (figure 2.2) to illustrate the theory of space syntax. He discusses the *axial structure* of the village of Gassin that allows strangers to enter an area, or, conversely, keeps them out by making it difficult to get through (Hillier, 1983, p.52). This axial space is the one-dimensional quality of the space and is illustrated by long narrow streets. An axial map of Gassin is shown in figure 2.3, which can be drawn using the maximum straight line that can be drawn through an

open space before it strikes a building, wall, or some other material object represents an axial space geometrically. Hillier also discusses convex spaces, as shown in figure 2.4 of the village of Gassin, which relate to the two-dimensional nature of open space and are best exemplified by plazas, squares, and parks. They can be identified geometrically by areas inside of which no line drawn between any two points goes outside the area. Thus we can say that an axial map is made by drawing the smallest set of straight lines that pass through each convex space and link all pathways together. Axial spaces relate to the *stringiness* of the beady ring structure, whereas convex spaces relate to the *beadiness* (Seamon, 1994, pp.40).

Hillier then discusses what he calls “virtual community”, which offers a sense of safety and belonging which may flower into a real community. This virtual community is the architectural contribution made to social well-being (Hillier).

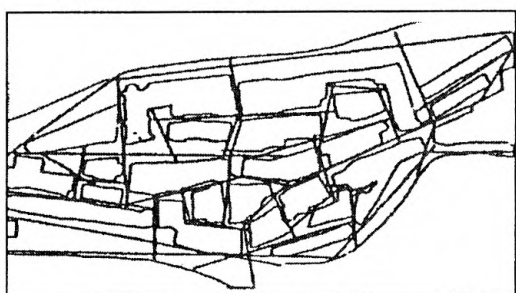


Figure.2.3. A map of Gassin's axial spaces
(from Hillier and Hanson, 1984, p.91).

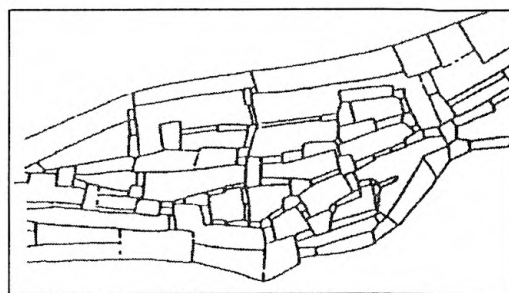


Figure. 2.4. A map of Gassin's convex spaces
(from Hillier and Hanson, 1984, p.92).

Hillier is against Newman's proposal of closed, inward-looking clusters of houses, which he believes is founded on dubious territoriality theory (Hillier, 1983, p.50). He claims that no architectural philosophy of enclaves can solve the problem of recreating urbanity. He explains that enclave architecture reflects an over localized conception of design. How a space fits into its larger urban fabric is a more important determinant. Urbanity and virtual community, according to Hillier, are the products of the larger scale organization of space—that is, global design (Hillier, 1983, p.50).

Hillier believes that the spatial organization of towns and urban areas affects patterns of peoples' movements and functional use according to well-defined principles which relate

to three factors: *intelligibility*, *continuity of occupation*, and *predictability*. He defines intelligibility as how easily inhabitants can distinguish between the larger pattern of space and the local parts. Continuity of occupation is defined as pockets of unused or underused space in an area, and predictability of space is the potential pattern of encounter that can be predicted from the spatial pattern (Hillier, 1983, p.50).

He brings out two key distinctions between the kinds of people who are affected by the physical arrangement of space: the *inhabitants* (who live within or near a particular group of spaces), and *strangers*, who do not belong to a particular set of spaces but pass through en route to another area. Unlike Newman, Hillier believes that the presence of strangers promotes the policing of space. In other words, he does not agree with Newman's idea of inhabitants alone policing the space. He believes that "strangers police space and inhabitants police strangers, thus generating 'automatic' control in area without the use of vigilante groups, electronic supervision or simply locking strangers out, and so reducing certain street crimes" (Hillier, 1983, p.52).

Hillier's work on space syntax provides invaluable insight for understanding how pathway patterns contribute to making a place what it is. He also explains how global planning has to be done before local planning. Hillier demonstrates how smaller parts of a place are integrally bonded to the whole through circulation and morphological structure, thus helping us identify spaces where good interaction will take place and where it will not be successful (Seamon, 1994, p.44).

Though Newman's book *Defensible Space* is criticized by some of the above-mentioned researchers, the crux of defensible space is still a valuable point of view. It shows the brilliance of an architect who tried to provide solutions to a major problem that was growing rapidly in low-income housing—crime. Newman's defensible space theory is drawn upon as a conceptual way to examine the relationship between architectural design and students' residential satisfaction. The following chapters will either agree with or dispute Newman's theories, which therefore become a major theoretical backbone for this thesis.

Cooper Marcus's *Easter Hill Village*

Clare Cooper Marcus's *Easter Hill Village* (Cooper Marcus, 1975) is a case study of low-income housing project in Richmond, California. This book was one of the first substantial studies of environmental perceptions of public housing tenants. It demonstrates the differences between what designers think the residents of public housing want and what the residents really want. Cooper Marcus examines the relationship between people's physical environment and their behavior and attitudes. She also analyzes the way people use buildings and space. In other words, this book is a post-occupancy evaluation (POE), and Cooper Marcus begins the work with a description of how the necessity to build low-income housing arose in Richmond and what the site is like.

Cooper Marcus explains the difference of opinion between the architects and the Richmond Housing Authority in terms of the project image and cost. The architects did not want to provide the image of mass housing for Easter Hill Village and wanted each resident to feel that hers was a unique, individual house that she could look upon as home. The main design aim was to avoid the institutional image of existing public-housing projects. To do so the architects provided each house with a slightly different façade, a front yard and a back yard and porches (Cooper Marcus, 1975, p.3). Cooper Marcus explains how Easter Hill Village stood out in Richmond because of its uniqueness (Cooper Marcus, 1975, p.6).

The main part of *Easter Hill Village* provides details about the day-to day life in the complex and the kinds of people who lived there. Cooper Marcus explains how the residents got to know each other in the project, and she explains how the physical proximity of the yards and the narrow frontage of the dwelling units enhanced familiarity. She also discusses the visiting pattern of the residents, which was strong in the predominantly white eastern side and weak in the racially integrated western side. She then moves on to her interview reports, which help to clarify sources of friction in the neighborhood. Cooper Marcus introduces us to the people who were interviewed at

Easter Hill. All of them had some social problem to complain about and about the lack of interest shown by the police in their neighborhood.

Cooper Marcus then discusses the dwelling units' interior space and the privacy within each home. She explains how the budget constraints made the walls far from sound proof. She also examines peoples' satisfaction with room size by using plans and photographs.

Cooper Marcus emphasizes that a lack of aural privacy in the houses seemed to affect most residents living at Easter Hill. Some people were not happy with the close physical presence of their neighbors, and some wanted at least one side of their house free, while others favored a detached house for the extra yard space it would provide. Cooper Marcus concludes that the residents of Easter Hill were more concerned about privacy between their home and their neighbors than they were about privacy within their own home (Cooper Marcus, 1975, p.69-74).

Cooper Marcus also discusses visual privacy, which involves intrusion into people's private living space through windows and into private outdoor space over fences. Cooper Marcus explains how a majority of the respondents whose house faced directly onto the street liked the orientation, whereas those facing a court or open space disliked the arrangement. The implication was that the street formed a kind of barrier preventing too much intimate contact among neighbors (Cooper Marcus, 1975, p.74-78).

Cooper Marcus discusses the use of private outdoor space in the fourth chapter of her book. The designers of Easter Hill Village provided three pieces of private open space attached to each house—a backyard, a front yard, and a porch. The architects hoped that the open space would provide a setting wherein residents might “express themselves” and thereby add a touch of individuality to their homes (Cooper Marcus, 1975, p.81).

Among the three private open spaces, the backyard was found to be the residents' most valuable possession. It showed over time personalization by the residents, who grew plants and maintained a small lawn (Cooper Marcus, 1975, p.98). Cooper Marcus then

lists the qualities of backyards and the uses the residents had put it to. She also discusses the features of the front yard and the front porch.

Cooper Marcus also examines what children wanted and liked about the Easter Hill Village. Sketches and drawings of the project provide us with an idea about what feature impressed the children the most. It was very fascinating to note that architectural details overlooked by the adults often appeared in the children's drawings—example, corrugated porch roofs and chimney vents.

The sixth and seventh chapters of Easter Hill Village discuss resident reactions to the physical design of the neighborhood and resident attitudes toward public housing. The eighth chapter, discusses the aspirations of the tenants of Easter Hill Village. In her summary, Cooper Marcus evaluates the designers' social objectives in regard to whether they were actually achieved and to the extent they reflected actual needs as expressed by the residents themselves. She concludes that Easter Hill residents liked their homes but not their neighborhood (Cooper Marcus, 1975, p.198). She ends the book with some recommendations for user needs in multi-family housing.

In summary, *Easter Hill Village* illustrates how residents perceive their environment, and how this environment affects their behaviors. Especially, Cooper Marcus provides useful guidelines for developing questionnaires and interviews relating to environmental behavior and architectural uses. Her work also demonstrates the gap between what the architects provide and what users want.

Cooper Marcus's and Sarkissian's *Housing As If People Mattered* (1986)

In *Housing As If People Mattered*, Cooper Marcus and Sarkissian (1986) have assembled a collection of guidelines for the design of low-rise, high-density family housing. The authors explain that their guidelines deal only with low-rise housing forms—buildings without elevators (depending on local regulations, three to five stories) (Cooper Marcus & Sarkissian, 1986, p.12). They also emphasize that this book is written primarily about housing for families with children. The authors also emphasize on the needs of children,

as designers most often ignore their needs (Cooper Marcus & Sarkissian, 1986, pp.12-13). These authors provide guidelines for the layout of dwellings and their open spaces, community facilities, play areas, walk ways, and the myriad components that make up a housing site (Cooper Marcus & Sarkissian, 1986, p.1). The authors explain that there are many housing locations that do not have a sense of place. The aim of the book is to assist in the creation or rehabilitation of more places with a sense of community and place.

Housing As If People Mattered uses post-occupancy evaluation (POE) research to generate the residential design guidelines. Cooper Marcus and Sarkissian wonder why design professionals do not use the existing research outcome on people-housing relations (Cooper Marcus & Sarkissian, 1986, p.5). The authors also discuss how the housing environments have to meet the changing needs of the residents.

Cooper Marcus and Sarkissian explain the evolution of relationship between architect and client. They describe diagrammatically, as well as verbally, the separation that has emerged between the clients and the designers, who no longer work at a personal level. This change, the authors explain has led to the emergence of environment and behavior studies (Cooper Marcus & Sarkissian, 1986, pp.2-4).

Cooper Marcus and Sarkissian propose cluster housing as a socially and ecologically desirable form of housing. By clustered housing they mean any arrangement whereby dwellings are clustered on a site (these units could be single-family houses, row-houses, or apartments) so that some of the site can be left free to develop communal open space or shared recreational facilities (Cooper Marcus & Sarkissian, 1986, p.12). The authors explain that clustered housing in the inner city allows people to enjoy a green and quiet environment within easy access to city jobs. Also, clustered housing on an urban fringe will, if repeated often enough, increase overall densities and render public transport more economical. Cooper Marcus and Sarkissian also argue that clustered housing permits more rational use of any given site—the best soil saved for food growing, existing woodland preserved for play or windbreak, natural drainage pattern and so forth. This form of housing offers distinct advantages to population segments not previously given

much attention in housing design—for example, working parents, children, and adolescents (Cooper Marcus & Sarkissian, 1986, p.9).

Chapter Two of *Housing As If People Mattered* gives a brief outline of key design guidelines and how to use them effectively. Cooper Marcus and Sarkissian explain that their book is not written with a “behaviorist” or a “determinist” viewpoint but rather involves attitudinal and observational data collection. Cooper Marcus and Sarkissian explain that “the guidelines that follow are not intended to force people into a certain pattern of behavior. They are based on sensitive observations of how people apparently *want* to behave, to be, to play, and work and socialize in and around their homes and how they feel about these activities” (Cooper Marcus & Sarkissian, 1986, p.10). Cooper Marcus and Sarkissian also emphasize that they reject determinism on a macro, societal scale. On the other hand the authors argue that, on the micro scale of space in and around the home environment very much influences behavior. The authors say that design cannot cause behavior, but it can offer the possibility of certain activities taking place (Cooper Marcus & Sarkissian, 1986, p.10).

Cooper Marcus and Sarkissian further explain their interest in social and architectural design research concept, using examples and detailed arguments. The authors tell us that “rather than separating design considerations from human behavior, we approach the designed physical environment first and foremost as a setting for human behavior” (Cooper Marcus & Sarkissian, 1986, p.10). Cooper Marcus and Sarkissian claim that the book (Cooper Marcus & Sarkissian, 1986, p.10) is an attempt to guide residents, clients, and designers of housing toward a better understanding of how design affects these most basic human activities, the activities that take place at home.

The rest of chapter two explains why and for whom these residential guidelines were developed. Cooper Marcus and Sarkissian also explain how to use the guidelines provided in this book. The authors explain that their guidelines deal only with low-rise housing forms—buildings without elevators (depending on local regulations, three to five stories) (Cooper Marcus & Sarkissian, 1986, p.12). They also emphasize that this book is

written primarily about housing for families with children. The book also emphasizes on the children's needs as designers most often ignore their needs (Cooper Marcus & Sarkissian, 1986, pp.12-13).

The rest of the book presents in detail 254 such design guidelines that are explained over fourteen chapters. These guidelines begin with the larger-scale guidelines before they begin discussing the smaller-scale guidelines, such as those of personalization, access to dwelling, children play area, and so forth. Each of these design guidelines includes a brief summary of the guideline, followed by detailed explication, and possible design responses.

Conclusion

Defensible Space, *Community of Interest* and *Easter Hill Village* are core works for the present thesis. These books have a common perspective—how the physical environment affects human behavior. Both *Easter Hill Village* and *Defensible Space* indicate a potential way to generate guidelines for defining variables that affect environmental behavior in a residence hall. Newman's *Community of Interest* presents the idea of communities of interest and helps to formulate design schemes for a fourth community of interest—undergraduate students living in on-campus residence halls. *Easter Hill Village* offers useful guidelines for organizing questionnaires and interviews. The book also gives insight on how to carry out a post-occupancy evaluation study. Finally, *Housing as if People Mattered* helps in providing ideas about generating guidelines for future on-campus student housing. The following chapters will demonstrate in greater detail how each of these works is a major conceptual baseline for my thesis.

Chapter 3

Descriptive Analysis of the Three Residence Hall

Having reviewed the literature on dormitory architecture and student housing, the next step is to provide an empirical analysis of the three dormitories—Goodnow, Moore, and Putnam Halls. Toward this end, this chapter provides a detailed physical description of the three residence halls, through a depiction of their architectural and landscape architectural features as related to defensible space qualities. In turn, chapter four discusses behavioral information, while chapters five and six describe results from residents' questionnaire and interview information.

Methodology for Describing the Residential Halls' Architectural and Landscape Architectural Features

According to Zeisel (1981), describing physical surroundings involves systematically looking at physical traces. Zeisel explains that these “traces may have been unconsciously left behind (for example, paths across a field), or they may be conscious changes people have made in their surroundings. From such traces environment-behavior researchers begin to infer how an environment got to be the way it is, what decisions its designers and builders made about the place, how people actually use it, how they feel toward their surroundings, and generally how that particular environment meets the needs of its users” (Zeisel, 1981, p.89).

Zeisel lists the various recording devices that can be used to observe physical traces—for example, annotated diagrams, drawings, and photographs. The device used in this research is that of photographs, which Zeisel says can give an initial overview of the type of things that a researcher is likely to see in the field. After studying photographs, researchers can leisurely discuss what behavior a trace might reflect and what intent might be behind it (Zeisel, 1981, p.98).

Zeisel identifies four categories of physical tracing. The first category—*by-products of use*—reflects what people do *in* settings—for example, bits of litter or worn spots left

behind by someone who used, misused, or failed to use a place (Zeisel, 1981, pp.100-101). Erosions, leftovers, and missing traces are three types of by-products. *Erosion*, Zeisel explains, represents the traces that show wear and tear, *leftovers* represent physical objects that get left behind as the result of some activity, and *missing traces* tells us about what people do not do (Zeisel, 1981, pp.101-102).

The other three categories of physical traces discussed by Zeisel represent what people do to their setting. The second category—*adaptations for use*—reflects changes by users to make an environment better suited to something they want to do—for example, building a fence, or converting a lawn into a patio (Zeisel, 1981, pp.100-101). According to Zeisel, the different changes that people make can be fitted into the categories of *props*, *separations*, and *connections*. *Props* explain the situation when users add things to or remove things from a setting, creating new opportunities for activities. Changes that separate space formerly together, increasing the quality of privacy, control, and darkness or more sharply dividing territories, indicate the qualities of the category of *separation*, whereas *connection* indicates the physical adaptations that connect two places enabling people to interact in new ways (Zeisel, 1981, pp.103-105).

Zeisel's third category—*display of self*—relates to the changes people make to establish some place as their own, to make it express who they are personally—for example, a flag or a religious shrine on front lawns, mementos of trips on windowsills, and so forth (Zeisel, 1981, pp.100-101). Zeisel explains *personalization*, *identification* and *group membership* as the three types of display of self. Expression of individuality and uniqueness defines personalization, while identification is defined as the environment that people use to enable others to identify them easily. Group membership relates to the display of the membership that people have acquired in formal groups and organizations (Zeisel, 1981, pp.106-107).

Zeisel's final category—*public messages*—are changes such as wall posters and graffiti by which people use environments to communicate with a large public audience, sometimes anonymously (Zeisel, 1981, pp.100-101). These types of public message

include *official*, *unofficial* and *illegitimate* messages. Official messages are frequently seen as the message erected by institutions, which may even pay for the right to do so. Unofficial messages, in contrast, originate from individuals and groups that communicate publicly by means of settings not designed specifically for that purpose. Finally, illegitimate messages are messages to the public that are not planned for and for which environmental adaptive changes are not made, and which, although sometimes expected, are seldom if ever approved of, and are considered to be illegitimate uses of public environments (Zeisel, 1981, pp.108-109).

Zeisel concludes his chapter on physical traces by explaining that a good way to begin almost any environment-behavior project is to walk around the research site looking for physical traces of behavior. He claims that it is easy to do, and can be done unobtrusively, providing investigators with an important starting point for their research (Zeisel, 1981, p.110).

Physical Descriptions of the Three Kansas State University Residence Halls

In describing Goodnow, Moore, and Putnam Halls physically, two visits were made to each building and the different spaces in the hall were walked through to get a general overview of each building. Next, a third visit to the three buildings was conducted, when photographs were taken using a digital camera. Finally, the halls were visited for a fourth time, when more photographs were taken. Approximately two hours were spent in each hall during each of the four visits to the three halls.

The various spaces that were observed in the halls were selected using Newman's defensible space theory. Newman emphasizes the transition from public to private space through semi-public and semi-private space. Therefore, the spaces that were observed were also selected in this order. The space before each of the buildings' main entrances was studied under public spaces; entrance lobby and elevator lobby were studied under semi-public spaces; and floor lounge, corridor and basement spaces were studied under semi-private space. All these spaces were documented with photographs.

These photographs were then studied in terms of the four features of defensible space — territoriality, natural surveillance, image and milieu—as outlined in chapter two. Out of these four elements only the first three were in the end considered, since the fourth quality—milieu—deals with larger-scale architectural units not appropriately portrayed in photographs of the buildings themselves.

In the following sections, each of the three residence halls is considered in terms of each of the three defensible space features.

1. Territoriality and the Three Residence Halls at Kansas State University

As explained in the literature review, territoriality is the capacity of physical environment to create perceived zones of territorial influence: mechanisms for the subdivisions and articulation of areas of the residential environment intended to reinforce inhabitants in their ability to assume territorial attitudes and prerogatives. Defensible space is the mechanism that succeeds in providing both the resident and the outsider with a perceptible statement of individual and group concern over areas of building and grounds. Defensible space also allows occupants to develop a heightened sense of responsibility towards care of the environment. In the following sections, the qualities of territoriality are examined as (a) site design; (b) space adjacent to buildings; (c) street-building relationship; (d) physical and symbolic barriers and; (e) size of residential units.

a. Site Design

Site design, the first quality discussed here, describes residential buildings that are sited in such a way that they relate to and define the grounds around them, thereby serving to create a territorially restricted area. These defined areas, indicate to the residents and strangers alike that the grounds and hence the buildings are for private use of the residents.

In the case of Putnam Hall's site design, the building is located on elevated ground from Petticoat Lane as shown in figure.3.1. Along with Boyd and Van Zile Halls, it encloses a quadrangular courtyard space which includes a lawn and a basketball court. The main

entrance of Putnam looks into this courtyard. On the rear side, Putnam faces Manhattan Avenue. Putnam is connected to the Van Zile Dining Center located at Van Zile Hall through an underground basement. There are no other entries leading into Putnam Hall other than the fire escape staircases. Putnam exerts a strong sense of territoriality owing to the presence of a cluster formation with Boyd and Van Zile, giving rise to a courtyard.



Figure.3.1. Putnam Hall from Petticoat Lane.

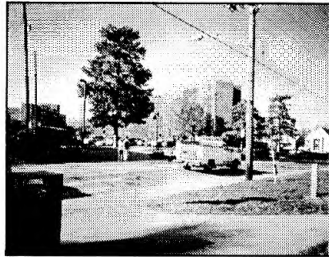


Figure.3.2. Rear of Goodnow Hall from Denison Avenue.

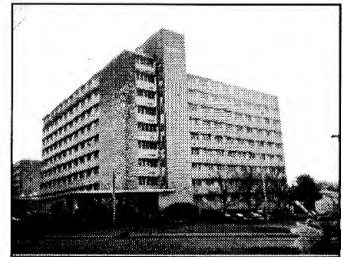


Figure.3.3. Moore Hall from Claflin Avenue.

Unlike Putnam, Goodnow Hall is located along one side of an “L” shape, with Marlatt Hall occupying the other side of the “L.” Both these halls sandwich the Kramer Dining Center, and in between them is a tennis court. As shown in figure.3.2, the main entrance of Goodnow diagonally faces both Claflin and Denison Avenues. As shown in figure 3.6, Goodnow’s main entrance looks over a small parking lot and a lawn that abuts Claflin and Denison Avenues. As figure.3.5 indicates, Goodnow’s rear entrance provides easy access to the Kramer Dining Center and the tennis court and to the southern buildings on the Kansas State University campus.

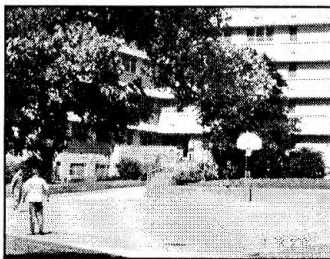


Figure.3.4. Goodnow’s elevated rear entrance.

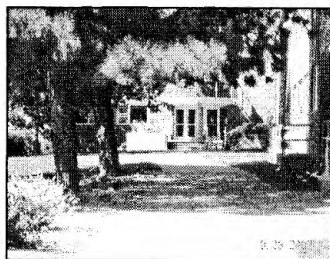


Figure.3.5. Goodnow’s rear entrance.



Figure.3.6. Goodnow’s main entrance facing Claflin Avenue.

Likewise, Moore Hall is located among two other halls that are all centered on the Derby Dining Center. Figure 3.3 indicates that Moore’s main entrance, like Goodnow, faces Claflin Avenue and overlooks a parking lot. As shown in figure 3.4, the rear entrance to Moore is from a basketball court and picnic shelter between Ford and Moore Halls. This

space is accessed from a grass path bordered by Petticoat Lane. Moore is connected to the Derby Dining Center through Moore's basement and there are no other entries leading to Moore other than the fire escape stairs. The movement from the Petticoat Lane to the rear entrance involves a transition from public to semi-public space. This transition is not present in Goodnow Hall, where the rear entrance faces a parking lot. Putnam Hall also presents a good sense of transition in the movement from Petticoat Lane to the main entrance. In other words, the entrance into the courtyard informs any stranger that he is no longer in a public space. Thus, it can be said that Putnam portrays the strongest sense of territoriality among the three halls, followed by Moore and Goodnow Halls.

b. Space Adjacent to the Buildings

Having considered the three halls' site design, we next must examine the *spaces adjacent to the buildings*, a feature which can provide a means to help promote territoriality—for example, through seating, play areas, and so forth. The location of such activities at the entrance of a building can work to facilitate its recognition as an extension of a semi-public zone for residents who can better come to know other building residents who share this space. In this space, strangers may also be more easily recognized and their activity comes under observation and immediate questioning when behaviors are inappropriate.

As shown in figure 3.7, Putnam Hall has a small, elevated space before the main entrance that is approached by steps. This space accommodates two garden swing-seats and a table with fixed chairs. The space is enclosed by a limestone parapet on all four sides and, overlooks the courtyard and the basketball court.

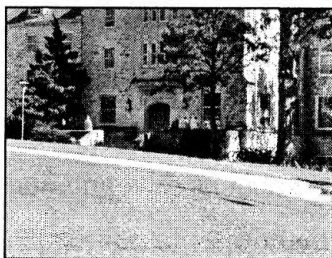


Figure.3.7. Putnam's main entrance.



Figure.3.8. Goodnow's main entrance.



Figure.3.9. Moore's main entrance, with wall windows providing excellent visibility in and out.

Unlike Putnam, Goodnow Hall has no demarcated space for seating in front of its main entrance. As shown in figure 3.8 there is a small ledge that provides ventilation to the basement rooms, where students are sometimes observed leaning while waiting for a pick-up. Other than this ledge, the building is raised a few steps before one can enter, thus not providing any spatial opportunity for students to meet and interact informally.

Like Putnam, Moore Hall also has an elevated covered space that one passes through before entering the building as shown in figure.3.9. This space is accessed by a small flight of stairs and is enclosed by railings on all four sides. It is important to mention that the space before Moore Hall is larger in area than that in front of Putnam. A ramp is provided for access to the hall by handicapped people. The steps provide a good space for seating, as they have low risers and long treads. Also, the covered space has a garden chair that is predominantly used by resident smokers. The rear-elevated entry, facing the basketball court and picnic area, also provides enough opportunity for socializing. The space is enclosed by limestone on all four sides, and is partially covered.

Goodnow Hall proves to have the least effective relationship with surrounding external areas that might promote a sense of territoriality and opportunity for social interaction. On the other hand, the large covered space in front of Moore's main entrance is better than the uncovered small space in front of Putnam. Thus, we can conclude that Moore Hall has the best territorial relationship with its surroundings, followed by Putnam and Goodnow.

c. Building-Street Relationship

The third quality of territoriality is the *building's relationship with the street*. Newman argues that the building should be located close to the street in order to provide the building with an identity. Buildings that do not look into the street fall into misuse, as the expression of territoriality is lost. A good street building relationship is established when the residents, being present in the areas adjacent to the building, can observe the activities on the street.

As shown in figure.3.10, Putnam Hall, positioned parallel to Petticoat Lane, does not provide a full view of the street from inside the building's small lobby, but there is a good view from the main entrance lobby, with the help of ceiling-high windows. From inside Putnam, at the reception desk or from the small lobby, nothing can be seen outside, owing to their positions. Also, Putnam's entrance door is made of solid wood (figure.3.7) thus preventing any visibility in or out.

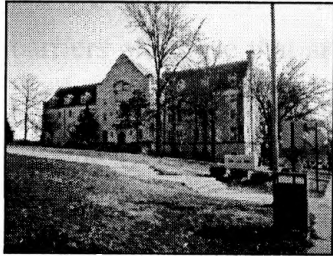


Figure.3.10. Putnam Hall from Petticoat Lane.



Figure.3.11. Goodnow's building-street relationship.

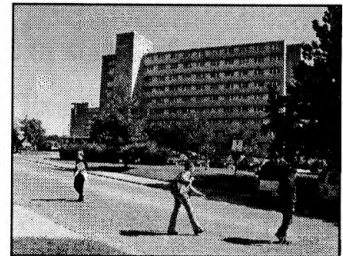


Figure.3.12. Moore Hall from Claflin Avenue.

Likewise, Goodnow Hall provides good visibility from its interior to its adjacent street. As seen in figure 3.8, the entrance lobby has a glass wall on three sides and the doors are also glass, providing a good street-building relationship visually. Figure 3.11 shows the street-building relationship between Goodnow and the street. Goodnow's rear entrance is set back from the street, thus not providing a good building-street relationship.

Figure 3.12 shows Moore Hall, which has a better building-street relationship than Putnam, and this is true for all parts of the building—entrance lobby, reception desk and elevator lobby. The wide glass window along the entrance lobby helps people using the space as well as those at the reception desk to gain a good view of ongoing activity at the street level. Also, the main entrance door to Moore is not made of wood but of glass. In contrast Moore's rear entrance provides no such views.

All three halls have a marginally good building-street relationship. Though both Moore and Goodnow Hall have rear entrances, neither entrance is directly accessible from the street, and Putnam has no rear entrance at all. Both Moore and Goodnow have direct access to street from their main entrance unlike Putnam, which is set at a ninety-degree

angle with the street. Therefore, we can conclude that each of the three halls have advantages as well as disadvantages with respect to building-street relationship.

d. Physical and Symbolic Barriers

The fourth quality of territoriality is *physical and symbolic barriers*—the boundary definers creating interruptions in the sequence of movement along access paths and thus serving to create perceptible zones of transition from public to private zones. Physical barriers are those that are present physically, indicating a shift in status of a space from public to semi-public or semi-private to private and so forth. Examples of real barriers include U-shaped buildings, high walls, fences, locked gates, and doors. In contrast to physical barriers is what Newman calls *symbolic barriers*, which can be defined as barriers not present physically, but symbolically indicating a change in status of a space—for example, a shift from public to semi-public space. Some examples of symbolic barrier are open gateways, a short run of steps, color changes, or shifts in texture of a walking surface. We shall first describe physical barriers before describing the symbolic barriers present in the three halls.

Putnam Hall enforces strong physical barriers with a pair of wooden doors that lead to the building (figure.3.7) along with an elevated space before the main entrance and limestone parapet enclosing this elevated space (figure.3.7). The path that leads to the hall is paved in contrast to a lawn on either side. The small limestone sign that announces the name of the hall also acts as a real barrier. In the corridors of the hall, nameplates and some decorations made by the residents act as real barriers informing a stranger that he/she is in a semi-private territory of the building.

Unlike Putnam, Goodnow Hall announces its name over and over again, as can be seen in figure 3.8, thus making the user aware of where he/she is. The doors that lead to the hall also act as real barriers. The interiors of the hall have the same character as Putnam Hall, where the students personalize their space using posters in the floor lounges and nameplates in the corridors.

Like Putnam, Moore also has an elevated, covered space before its main entrance as shown in figure.3.9. The railings around the elevated space and the glass doors leading into the building act as real barriers.

All three halls exhibit physical barriers in their spaces before the main entrance—Putnam in the form of an elevated space before main entrance with limestone railings, Goodnow with its name being announced over and over again, and Moore with the elevated covered space before the main entrance—demonstrating the way in which these halls inform a person that he is entering a semi-public area.

In Putnam Hall, symbolic barriers are present in the form of steps leading to the hall, the different style of architecture—Gothic—and the elevation of the building from the street level (see figure.3.1). The presence of a courtyard enclosed by three similar looking buildings and the similar height of these buildings also exercise territoriality through symbolic barriers.

Turning to Goodnow, its uniqueness, like Putnam's, comes in the form of appearance, since the building with its redbrick facade stands out among other campus limestone buildings, as seen in figure.3.2. Also as figure.3.8 illustrates, its steps painted red leading to Goodnow's main entrance also act as symbolic barriers, since they indicate a contrast between the sidewalk concrete and the entrance steps.

Likewise, through its height (see figure 3.3), Moore also has a unique appearance, partly because it belongs to a group of the tallest buildings on the Kansas State campus, thereby marking its presence quite visibly. The obvious steps leading to Moore's covered space before its main entrance also create a sense of transition from public to a semi-public area.

For all three halls, the semi-private areas use the presence or absence of carpet to demarcate different areas in the halls. In the case of symbolic barriers, the most common feature present in the three halls is the change of material from outside to inside and the

change of material in the interiors that demarcates public, semi-public and semi-private areas. In conclusion, it can be said that all three halls are equally strong in terms of symbolic barriers.

e. Size of Residential Units

The last quality of territoriality discussed here is the number of residential units for each building and the way these units are subdivided by floor, wing, and corridor. The key point in terms of defensible space is that a lower number of residents sharing a space or subspace is usually a stronger expression of the territoriality and defensible space. The responsibility of maintaining a space is more likely if fewer people share it, rather than a larger group.

	Total students living in the building	Students per floor	Students per corridor	Basement facilities (including laundry, TV room, sports area, computer room, study room, and kitchenette)
Putnam Hall	210	48	10-15	210
Goodnow Hall	597	96	32	597
Moore Hall	634	48	24	634

Table.3.1. Number of student residents sharing common spaces in the three residence halls.

Table 3.1 summarizes the number of student residents sharing spaces in the three halls. Note that Putnam Hall overall has fewer residents sharing spaces than Goodnow or Moore Halls in terms of the hall as a whole, each floor, and corridor, and basement facilities. This smaller number may help explain why common facilities such as the TV room, the laundry, and the basement study area are better maintained in Putnam than in Goodnow and Moore Halls. This conclusion is supported by the stark contrast seen in the quality of resources available in Putnam as compared to Goodnow and Moore. The furniture present in these halls, TV rooms, and study rooms and in the main lobbies also shows this difference. The personal interest with which Putnam residents have collected funds to make the common spaces in the hall appear better and have good facilities

should also be noted. In addition, in the corridors of Putnam Hall, one can observe messages left for friends in the same floor or corridor—usually in the form of a poster.

The same cannot be said of Goodnow Hall, where the furniture in the basement TV room and the other basement areas are not of such good quality. It can also be said that these spaces are under-furnished. The same can be said for Goodnow's main entrance lobby that is well furnished but not as impressive as Putnam Hall. Finally, in the corridors of Goodnow, no personal messages for friends in the same corridor or floor can be seen.

Moore Hall's situation is similar to Goodnow's. Moore's basement is spartanly furnished and seems to be rarely used. Moore's basement lobby is more brightly lit than Goodnow's and has a fish tank and some potted plants that makes it look impressive, yet Moore Hall's furniture is of much poorer quality than Putnam's. Like Goodnow's, the corridors of Moore Hall also do not exhibit any personalization other than some name tags and a few photographs on doors.

2. Natural Surveillance

Having considered territoriality as the first central feature of defensible space in the three residence halls, we next must examine *natural surveillance*, which can be defined as the capacity of physical design to provide surveillance opportunities for residents. Natural surveillance operates most efficiently when it is connected with territorial subdivision of residential areas. This division allows the resident to observe public areas, which then become a part of his personal territory. This sense of control brings about familiarity and potentially acts as a ground for social interaction. Here I examine natural surveillance in terms of three aspects: (a) visual permeability; (b) building interiors; and (c) corridors.

a. Visual Permeability

According to Newman, one of the main design features that promote social interaction is visual permeability—in other words, the ability of architecture to enable people to observe each other's presence in space—for example, a view from a lobby outside to the sidewalk and beyond. When a student sitting in a lobby sees his/her friend outside, or

vice versa, he/she has the choice of walking out and talking to him, or to call him in. So it is useful for public spaces as well as semi-private spaces to be visually permeable as far as possible.

Figure 3.13 shows the plan of Putnam Hall, indicating the spaces in the main floor that permit visibility from inside and outside the hall. Putnam has very weak surveillance from its small lobby as well as from its reception desk, as these spaces are hidden behind the wooden entrance door and have no windows. Although the location of the main lobby does not promote visual observance of people using the reception desk or students going up the stairs, the main lobby provides good visibility to the street and outside spaces. Thus, we can say that the visual permeability radius of the main lobby is limited and does not help promote social interaction among students. Since Putnam has no floor lounges, nothing can be said about the surveillance at each floor in regard to semi-private spaces.

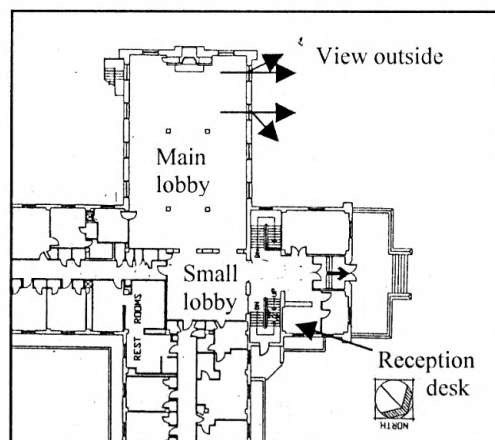


Figure.3.13. Putnam Hall's visual permeability from reception desk, small lobby and main lobby.

Turning now to Goodnow Hall, we can say it has very good visibility in and out of its lobby in relation to exterior surroundings. As shown in figure 3.14, the space before the main entrance can be observed from the lobby, owing to a glass wall present around the lobby on two sides. Also, the lobby space can be observed from the reception desk as well as from the elevator lobby and mailboxes. In addition, the floor lounges provide a situation where students can accidentally meet each other as they enter or leave their corridor, thus entering in conversation that promotes social interaction.

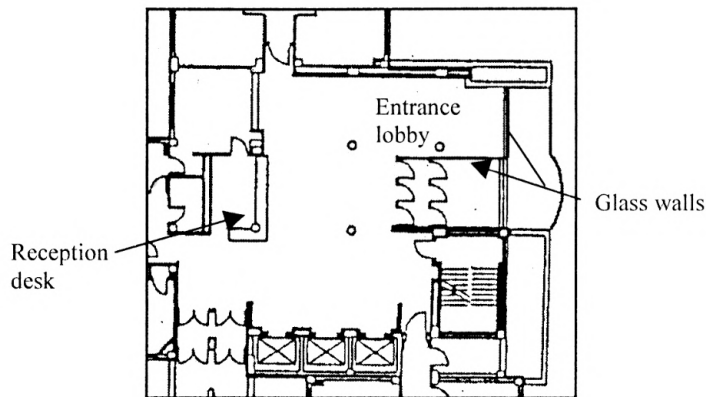


Figure.3.14. Goodnow's visual permeability from the main lobby.

Likewise, Moore has good surveillance features from the lobby to its exterior surroundings as well as within the main entrance lobby. Moore's lobby is designed in such a way that one can see all inside spaces within the lobby wherever he stands. As can be observed in figure 3.15, the lobby also provides good visibility to its external areas, largely because of a long strip of glass window around the lobby. The corridors of Moore Hall, like Goodnow Hall, spill into the floor lounge on each floor, thereby enabling effective surveillance of the floor lounges in the hall.

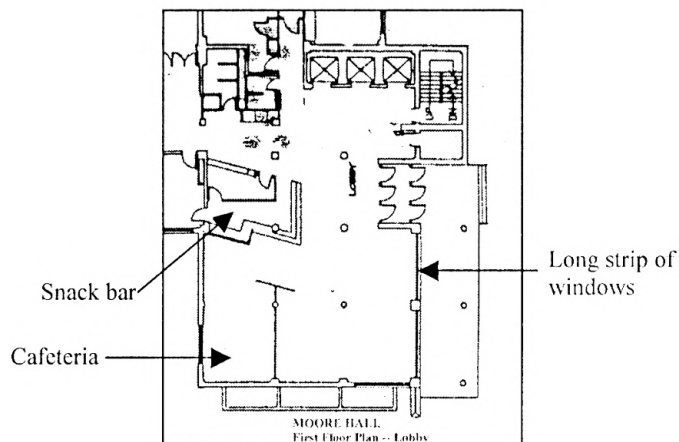


Figure.3.15. Moore's visual permeability from the lobby.

From the above argument we can understand that Moore and Goodnow Halls have better visual permeability features than Putnam Hall. This is because a major part of Putnam

Hall is hidden away behind the wooden doors (figure.3.13), whereas in Goodnow and Moore, the whole main entrance lobby has good sightlines within the hall and from outside the hall.

b. Building Interiors

A building's internal areas—for example, lobby, elevator lounge, and floor lounge—all involve spaces that require surveillance, and it is in these spaces where most of the interaction among student residents takes place. The areas that need surveillance are those of the floor lounge, elevator lobby, corridors, and laundry. For example, the surveillance in a corridor can help foster friendships among residents of the same floor who originally don't know each other. Surveillance may also bring about a conversation between neighbors and help them become friends, thus promoting interaction.

Observations demonstrate that the basement in Putnam Hall (figure 3.16) is the least used space in the residence hall. Putnam's TV room and its lower level study are also mostly empty. Putnam's TV room incorporates a computer room that is locked most of the time. A large screen divides the TV room from the study room. Putnam's laundry is located along a corridor that eventually leads to the passageway connecting Putnam to Van Zile Hall, thus generating some surveillance by people using the underground connection. The problem, however, is that a person waiting to look to see who is using the space must step to the side and check who is in the laundry.



Figure.3.16. Putnam's basement.



Figure.3.17. Goodnow's basement.

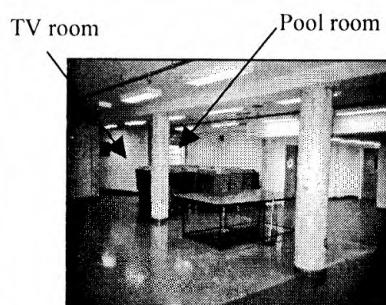


Figure.3.18. Moore's basement.

Likewise, Goodnow Hall (figure 3.17) does not have good surveillance opportunities in its basement lobby. The TV room, kitchenette, music room, and the study room are all located on either side of the same corridor in the basement. These facilities would seem

to have an opportunity to check who is using the facility. The surveillance problem, however is that, other than the TV room and the small pool table, all the other rooms have doors that remain closed most of the time. The laundry can be accessed off the basement lobby and the door is always open but here, also a passerby must go out of their way to check who is in the laundry.

Like in Goodnow, the basement lobby in Moore (see figure 3.18) also provides access to a TV room, poolroom, music room, study room and a small kitchenette. The TV room and the poolroom are hidden behind the walls, and they do not have any doors, so it is possible for a passerby to look in to see who is using the facility. The laundry is located in the corridor that connects Moore Hall to Derby Dining Center, and the door has glass peepholes provided. This enables people passing by to notice the users of the laundry. The kitchenette is an open space with a sink and a small cooking table that can be seen as a part of the basement lobby. The music room is a closed room, but the sound from inside the room can be inviting to a passer-by. Since all these rooms are in the path of Derby Dining Center from Moore Hall, almost all the students walk past them, making the spaces readily available for surveillance.

In summary, Moore Hall can be said to have better basement surveillance features as compared to Goodnow and Putnam Halls. In Moore Hall, any passerby can readily look into the TV room and poolroom as well as the kitchenette and laundry with minimal effort. This ease of surveillance is not the case with Goodnow and Putnam Halls, where the passerby's must go out of their way to see who is using the adjacent facilities.

c. Corridors

The corridors along which rooms are located is another place where residents potentially get to know their neighbors and interact with them. Thus, corridors are another important design element to consider in regard to surveillance.

In Putnam Hall, there are no doors leading to the entrance of each corridor. The absence of doors allows students to see the other users of the corridor when they arrive at the

junction of the four halls. As figure 3.19 demonstrates, these corridors are wide and brightly lit and can be seen down their entire length.

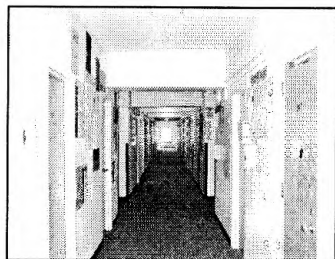


Figure.3.19. Typical corridor in Putnam.

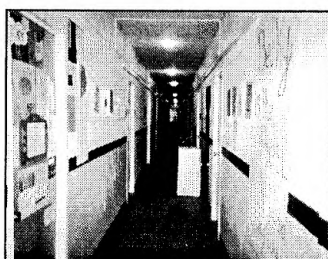


Figure.3.20. Typical corridor in Goodnow.



Figure.3.21. Typical corridor in Moore.

On the other hand, the corridors of Goodnow Hall (figure 3.20) are hidden behind a wooden door with no direct view into the common floor lounge. The door isolates the corridors from each other, thereby inhibiting surveillance. Also, the length of Goodnow's corridors is too long to promote interaction within the corridor itself. The lighting in these corridors also does not really help in providing any surveillance.

Moore Hall's corridors have features similar to Goodnow's. A typical Moore corridor (figure 3.21) is narrow and dimly lit. These corridors are closed from the floor lounge with the use of doors that provide no physical and visual connection between two floor corridors or with the floor lounge. Like Goodnow's, the length of the corridors in Moore Hall is long, and does not help in providing surveillance.

In summary Putnam Hall—with its short, brightly lit, and wide corridors where it is easy for students to know their neighbors—offers much better surveillance than the long, divided corridor of Putnam's compared to Moore and Goodnow Halls, which are also dark, gloomy, and hidden behind wooden doors, unlike Putnam, where there are no corridor doors. Ease of visual and physical connection potentially enables residents to get to know others residing on that floor.

3. Image

Having discussed both territoriality and natural surveillance—the first two principles of defensible space—we need to consider *image*, the third and final principle to be discussed

here. Newman defined image as the capacity of residential design to influence the resident and non-residents perception of a projects uniqueness, isolation, or stigma. In applying the theme of image to the three Kansas State University residence halls, four features are considered: (a) distinctiveness of building height and material and amenities; and (b) distinctiveness of interior finishes and furnishings.

a. Building Height, Materials, and Amenities

The uniqueness of a project in its surroundings may give residents a reason to be proud of and to take responsibility for their building. This uniqueness can be achieved, for example, by using quality materials for construction, providing special facilities to make the residents feel privileged, or using a building height different from other structures in the neighborhood.

As already explained, Putnam Hall is a low-rise, three-story limestone building characterized by Gothic architecture. The building's gable roof, well-detailed bay window and arch wooden entrance door gives Putnam the appearance of a large mansion. The courtyard in front of Putnam—an outcome of the placement of Putnam, Boyd and Van Zile Halls—encloses a basketball court and a lawn, thus giving the building a unique identity not present in the other two residence halls studied.

As mentioned earlier, Goodnow Hall, with its red brick façade and six-story height, creates a distinctive impression on passerbies. The story goes that the architect wanted to provide a different building material for this building to create an atmosphere different from the Kansas State University campus. He believed that by making Goodnow appear different from other campus buildings; he could create a sense for residents of being away from campus. These two features of the height and the material used provide Goodnow with unique identity.

Moore Hall obtains its uniqueness in being one of the tall buildings among three other buildings on-campus. It can be sighted from far away. Moore's building material is very much the same as that used for the rest of the university—limestone. The provision of the

external space before the main entrance, encouraging students to gather, gives Moore the appearance of a residence hall.

For all three residence halls, the height of the building is the common factor used to bring about the unique distinction of the building among its neighbors, with Putnam, along with Boyd and Van Zile being the only three story dormitories on-campus. The red brick façade of Goodnow, the Gothic architecture of Putnam, and the covered space before main entrance at Moore are the other features that help make the three buildings more or less distinctive in terms of image.

b. Distinctiveness of Interior Finishes and Furnishings

The quality of furniture in common spaces of residence halls and maintenance of this furniture and other accessories potentially indicates interest of the residents in common property of the halls. Also the expression of self in common spaces expresses active participation of the residents in hall activities. Basement facilities, entrance lobbies and floor lounges are the three spaces in the residence halls that will be used to evaluate distinctiveness of interior finishes and furnishings.

Distinctiveness of interior finishes and furnishings is very well displayed in Putnam Hall in both the basement and first floor. We shall not be discussing floor lounges, since Putnam, does not have them on upper floors. Putnam's basement is divided into two parts. The first part is the study lounge that compensates for the absence of floor lounges. This study lounge is furnished with different types of furniture to accommodate general gatherings, group study, private study, and play equipment such as table tennis table and foos ball table. A fireplace adorns this space at the far end, and a curtain separates the study lounge from the TV room. As figure 3.22 illustrates, the TV room is furnished with expensive seating that gives it the appearance of a movie theater. A home theater system serves as the television equipment. These spaces in Putnam are extremely clean and well maintained.

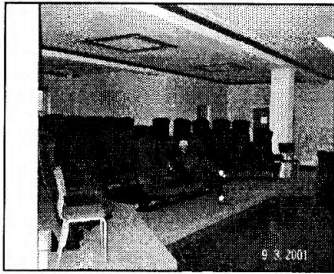


Figure 3.22. Putnam's TV room.

Like its basement facilities, Putnam's lobby on the first floor is also divided into two parts—a small lobby and main entrance lobby. The small lobby (figure 3.23) leads to a main lobby and two corridors on the first floor. The furniture of this space consists of small couches and side tables with lamps. There are some posters that call out names of residents on the first floor, and also present trivia about the residents. The main lobby is an elegantly furnished, well maintained space, adjacent to the small lobby. Figure 3.24 illustrates the couches and single high-back cushion chairs, with center tables, side tables, and lamps, all placed on a red carpet. This space also has potted plants and a large fish tank. The furniture in this lobby also accommodates various purposes, such as studying, gathering, and space to be by oneself. The lighting is dim and provides ample privacy for the user. A piano and fireplace along with concealed lighting, complete the picture of the main lobby. Interestingly, neither the main lobby space nor the basement facility spaces shows any sign of personalization. Figure 3.25 provides a view to the main lobby from the small lobby.



Figure.3.23. Putnam's small lobby.



Figure.3.24. Putnam's main entrance lobby.



Figure.3.25. Putnam's main entrance lobby from the small lobby

A number of differences may be pointed out between Goodnow Hall and Putnam Hall—for example, the presence of a lounge on each floor of Goodnow Hall, signs of personalization in the main lobby, and so forth. Goodnow Hall's basement space can be described as a dark, gloomy space compared to Putnam's. Goodnow's basement, as seen in figure 3.26, has a lobby that leads to the laundry and a corridor accommodating TV room, study room, music room, and a kitchenette. The basement lobby is furnished with vending machines and a swing seat. The laundry is spartanly furnished with a table and two chairs. As can be observed from figure 3.27, the TV room is not in good condition with respect to furniture and maintenance, and neither is the equipment up to date. The rest of the basement spaces are also furnished to accomplish minimum usage. Since these spaces are located along a corridor, they seem to be dark and rarely used.



Figure.3.26. Goodnow's basement lobby, with the entry to laundry at the far end.

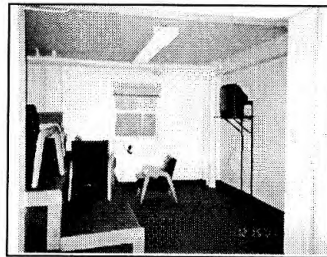


Figure.3.27. Goodnow's TV room.

Goodnow's main lobby, unlike Putnam's, is small, and spartanly furnished with purple couches and side tables. There is also a study table and some potted plants in this space that accommodates a reception desk, elevator lobby (figure 3.29), and two computer terminals. A carpet to match the color of the furniture is used in most of the spaces of the lobby. Figure 3.28 depicts Goodnow Hall from the computer terminal, providing a view to the lobby and main entrance. Goodnow's main lobby, though brightly lit, seems to lack energy and portrays a picture of dullness. Many posters adorn this space.



Figure 3.28. Goodnow's main entrance lobby.

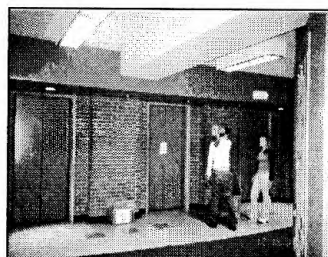


Figure.3.29. Goodnow's elevator lobby.



Figure. 3.30. Goodnow's floor lounge.

Unlike its main lobby, Goodnow's floor lounges are brightly lit, big, and furnished with the aim to promote interaction as well as group studying. The furniture, as can be seen in figure 3.30, seems to be randomly arranged, and displays the freedom with which the students have moved the furniture around the space. Many posters are present, displaying names of residents and slogans expressing the opinion of the residents on various issues. This space is carpeted and the furniture is not of high quality, nevertheless, it serves the purpose.

Finally, Moore Hall's distinctiveness in interior finishes and furniture in the three spaces—basement, main lounge and floor lounges—will be discussed. Moore's basement, like Goodnow's indicates lack of usage in most of the spaces. The basement lobby (figure 3.31) in Moore leads to a TV room, pool room, music room, a kitchenette, and two corridors.

One of these corridors leads to the underground connection between Moore and Derby Dining Center, while the other corridor includes some rooms for residents. A laundry and small gymnasium are located along the connecting corridor to Derby. The laundry is a moderately furnished space with a table and some chairs. As illustrated in figures 3.32 and 3.33, the TV room, and pool room are inadequately furnished and do not show any sign of usage and good maintenance. The kitchenette includes a vending machine and a cooking slab, and the music room includes a piano and some practice space. This basement space is dull and gloomy, not portraying a very different picture from Goodnow Hall's basement.



Figure. 3.31. Moore's basement lobby.

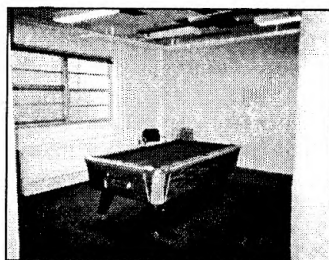


Figure.3.32. Moore's TV room furniture.

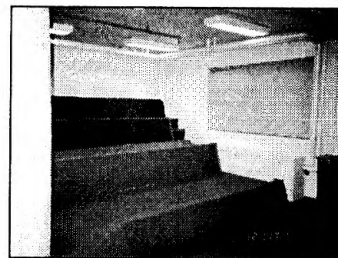


Figure.3.33. Moore's Pool room.

Moore Hall has a better entrance lobby than Goodnow and this lobby is brightly lit and well maintained. As mentioned earlier, this lobby is divided into three parts. The first part is further divided into two parts, with the help of a fish tank (figure 3.34) and some plants. Both parts serve to accommodate visitors or help friends carry a conversation and are furnished with couches, center table, and potted plants that act as a good instrument to promote social interaction. The second part of the main lobby is furnished for the purpose of studying, and has tables placed with four chairs. This part, as figure 3.35 depicts, also includes two computer terminals placed on either side of a column and has seating provided in the form of two high stools. The third part of Moore's entrance lobby has a bar table with a small cafeteria, which is attached to a snack bar at the reception desk. This is the only hall on-campus at Kansas State University to have the provision of such a twenty-four hour snack bar. This space in Moore Hall is brightly lit and presents the user with a wide variety of activities—for example, general gathering, studying, eating, and so forth. Thus, we can say that the main lobby of Moore Hall, though not very elaborately furnished, incorporates good use, maintenance, and a distinct character.



Figure.3.34. Moore's main entrance lobby, with the fish tank.

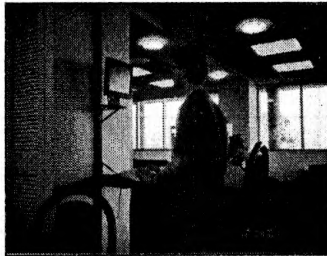


Figure.3.35. Moore's computer terminal in the main entrance lobby.



Figure. 3.36. Moore's tastefully decorated floor lounge.

Moore Hall, like Goodnow, has brightly lit but small floor lounges. Couches used in the floor lounges do not appear very expensive though they serve their purpose. They are arranged as the usage required by students. As figure 3.36 illustrates, the lounge space on each floor is either painted with murals or decorated to indicate the specific floor, giving each lounge a unique appearance. Posters adorn both the floor lounge as well as the main lobby in this hall.

Although Moore has impressive main lobby and floor lounge, its basement space is not up to the mark, whereas neither the basement nor the main lobby of Goodnow is impressive. In conclusion, we can say that, overall, Putnam with its elegant furniture and good maintenance, can be said to possess the most distinctive interior finishes and furnishings, followed by Moore and Goodnow Halls.

Conclusion

We now need to summarize the relative success of the three residence halls in facilitating defensible space as indicated by the physical description presented in this chapter. Table 3.2 lists the various defensible space features examined in this chapter and ranks each of the three residence halls in terms of “high”, “medium”, and “low”.

Defensible Space features	Putnam Hall	Goodnow Hall	Moore Hall
Territoriality			
Site design	High	Low	Medium
External areas	Medium	Low	High
Streets	High	High	High
Real barriers	Medium	High	High
Symbolic barriers	High	High	High
Size of residential units	High	Medium	Medium
Natural Surveillance			
Visual permeability	Medium	High	High
Internal areas	Low	Medium	High
Corridors	High	Medium	Medium
Image			
Building height, materials, and amenities	High	Medium	High
Distinctiveness of interior finishes and furnishings	High	Medium	Medium

Table.3.2. A rating of the three residence halls in terms of defensible space features.

As indicated by the table, Moore and Putnam Halls share the same overall rank with respect to territoriality. Moore Hall is given four “high” ratings for the features of external areas, streets, real barriers, and symbolic barriers. It is also given two “medium” rankings for site design and size of residential units. Putnam Hall, also scores four “high” rankings in site design, street, symbolic barriers, and size of residential units, and two “medium” rankings in external areas and numbers. Goodnow Hall ranks the last under territoriality with three features ranked as “high”, one feature ranked as “medium” and two features ranked as “low”.

Under natural surveillance, Moore ranks above Putnam and Goodnow Halls, with two features ranking “high” under visual permeability and internal areas and one feature ranking “medium” under corridors. Goodnow follow Moore Hall with one “high” ranking under visual permeability and two “medium” rankings under internal areas and corridors. Putnam scores a third place with respect to natural surveillance, with one “high”, one “medium”, and one “low” ranking. Finally, in relation to the last defensible space feature—image—Putnam Hall scores “high” rankings under building height, material and amenities and distinctiveness of interior finishes and furnishings, followed by Moore Hall with one “high” rank for building height, material, and amenities, and one “medium” rank for distinctiveness of interior finishes and furnishings. In turn, Goodnow Hall has two fair rankings under both the features thereby being ranked third.

Overall, table 3.2 demonstrates that Moore Hall with good rankings in all three features—territoriality, natural surveillance, and image—promotes better opportunity for social interaction among residents of the halls. Putnam Hall follows Moore and ranked well in both territoriality and image features. Since Goodnow Hall scored the least “high” rankings in all three defensible space features, we can conclude that this hall promotes less social interaction among the residents and does not adequately comply with defensible space principles.

Now that I have described the three residence halls physically, I next present my research on behavioral mapping for the three halls.

Chapter 4

Behavioral Mapping and the Three Residence Halls

Having discussed the physical features of the three Kansas State University residence halls in Chapter 3, the next step is to present the behavioral mapping study that was carried out in these halls. This chapter provides a detailed analysis of residents' behavior in pre-selected spaces of the residence halls—main entrance lobby, floor lounges, corridors, basement spaces, and the space before the main entrance. The information presented in this chapter was gathered by observing the behaviors of residents in the spaces mentioned above and by counting and recording these behaviors on maps.

Behavioral Mapping as a Research Method

Behavioral mapping, according to Zeisel (1981), means to systematically watch people use their environments—individuals, pairs of people, and small and large groups. He explains that behavioral mapping helps the researcher to understand what people do in their environment—for example, how do activities relate to one another spatially? How do these spatial relations affect participants' social interactions? It is also important for the researcher to understand if the physical environment supports or interferes with behavior taking place, especially the impact that the setting has on interpersonal relationships among individuals and among groups (*ibid.*, p.111). Zeisel argues that observing behavior in physical settings generates data about people's activities and relationships needed to sustain them; about irregularities of behavior; about expected users, new uses, and misuses of a place; and about behavioral opportunities and constraints that environments provide (Zeisel, 1981, p.111).

Zeisel claims that looking at behavior recorded on maps can give an investigator a better overall sense of how a place is used than statistical tables that incorporate no spatial or environmental component. Maps are also useful to record sequences of behavior in settings where people have a choice of several paths. In this sense, map records analyzed in the light of an actual setting can give an idea of the characteristics of popular paths (*ibid.*, p.123).

Zeisel lists four methods of behavior mapping—empathetic, direct, dynamic, and variably intrusive. He explains that an *empathetic* researcher observing people soon gets a feeling for the character of situation, thus, allowing researchers to “get into” a setting and helping them to understand the nuances that users of that setting feel. Zeisel describes the second method—*direct* observations—as intensely personal, trained and sensitive through which researchers are able to perceive relevant nuances. Being present on the spot allows researchers to adjust their observations to a particular setting.

In turn, Zeisel’s third method—*dynamic* observation—is described as a complex situation where an observer gets a sense of the chain reaction or the effects of effects. This method gives an idea of how people bring places to life. Zeisel explains the last method—*variably intrusive observation*—as an approach that determines how far researchers can intrude and from what social and physical vantage point they want to participate in observed events (ibid., p.116). Zeisel summarizes the four methods of observation as both empathetic and direct, dealing with a dynamic subject, and allows the observers to be variably intrusive (ibid., p.116).

Zeisel emphasizes that, for the purpose of observing, an observer must choose how he will be present in the space where the investigation is taking place. Zeisel provides four different vantage points from which the observer can carry out the mapping of the study—*secret outsider*, *recognized outsider*, *marginal participant*, and *full participant* (Zeisel, 1981, p.112).

In the first method, where the observer is present as a *secret outsider*, he remains distant and unobserved by the participants (ibid., p.117). In Zeisel’s second method, the observer is a *recognized outsider*—i.e., known as a person carrying out research in the particular physical setting. Zeisel explains one disadvantage of this method known as the “Hawthorne effect”—that subjects who realize they are being observed as a part of a research project may often change their actions and behavior. This can be remedied by being present at the research site for a long period of time so that people get used to the observer and begin again to act naturally (ibid., pp.117-118).

The third method of observing activities, Zeisel explains, is being a *marginal participant*, where the observer adopts the vantage point of a commonly accepted and unimportant participant and wants to be seen by actual participants as just another user of the space. Zeisel explains that being a marginal participant requires the least amount of preparation time because with a deliberate choice of clothing, appropriate physical posture, one can blend into the crowd, unlike being a secret outsider where one has to locate himself in a place where he cannot be spotted and make observations (ibid., pp.118-119). Finally, Zeisel's fourth method involves the observer as a *full participant*. In this method, researchers use positions they already are in and positions they adopt central to the situation they are studying (ibid., 1981, p.119).

Having described *how* to carry out behavior mapping, Zeisel next enunciates *what* to observe while doing behavioral mapping. He identifies six main features that should be observed during a study—*who, doing what, with whom, relationships, in what context, and where* (settings) (ibid., p.124). The first feature—*who: actor*—explains who has to be observed during the study based on the purpose of the research. Zeisel explains that individuals are treated as representatives of a social group; therefore knowing about the people being observed can throw light on the larger social context (ibid., pp.126-127).

Zeisel's next feature—*doing what: act*—describes what the participant or actor is doing in the study area. Zeisel explains that a researcher needs to decide the level of abstraction he will use to describe behavior and how he will distinguish individual acts from a connected sequence of acts. Zeisel stresses that, apart from an observer's deciding how and what to describe, it is important to describe what the researcher sees with minimum interpretation (ibid., pp.127-128).

The third feature—*with whom: significant others*—is explained by Zeisel as acts people engage in as defined by how other people are or are not included in a setting. Other people whose presence or absence is significant in this way can be seen as participants in the act itself (ibid., p.129).

The fourth feature—*relationships*—analyzes actors and significant others in a situation where there will be specific relationships for researchers to describe. Zeisel explains that, to gather such information, researchers need to agree on a set of categories to describe connections and separations among the researcher, and people must understand how the effects of relationships on activities differ in different behavior settings (Zeisel, 1981, pp.129-130). Zeisel's fifth feature—*context*—describes the *situations* in which a participant is present in the study area and the cultural context of the study area (ibid., p.131).

Finally, Zeisel's sixth feature—*setting*—involves an understanding of the participants' choices and possibilities in relation to what they finally choose to do. Zeisel defines *setting* using four elements—*behavior potentials of settings*, *relational design decisions*, *barriers*, and *fields*. *Behavior potentials of settings*, relate to obvious options of use for the objects placed in the study area. For example, elements that divide and connect places organize potentials for behavioral relationships (ibid., p.132).

Rational design decisions, Zeisel's second feature of context, indicate barriers that determine potentials for relationships between people in settings—for example, walls of various materials and consistencies, screens in different sizes and materials, objects used to mark the edges of places, and symbols from color changes to verbal design (ibid., p.132). *Barriers*, Zeisel's third feature of context, are defined as any physical elements that keep people apart or join them together in terms of seeing, hearing, smelling, or touching, and so on. The different types of barriers Zeisel explains are walls, screens, and symbols (ibid., p.133-134). Zeisel's last feature of context—*fields*—is defined as any characteristics of a place as a whole that can alter people's ability to be together or apart. The shape of a setting, the orientation of one place to another, the possible distance between people, and the loudness, light intensity, and air flow exemplify features that potentially controls it (Zeisel, 1981, p.134-136).

Behavioral Mapping in the Three Residence Halls

In this thesis, behavioral mapping is used as another method to examine dormitory residents' behavior in relation to defensible space concepts. The major aims of this behavioral mapping are:

1. To identify the activities taking place in the different spaces of each hall;
2. To understand and record user patterns and user movements in the building space;
3. To examine these behavioral patterns in relation to such features as gender, group patterning, and activity types.

In recording these behaviors, the five major spaces described in chapter three were observed—i.e. internal space and lobby, floor lounge, basement, corridor, and space before main entrance. These five spaces were studied on November 11, 2001 (Goodnow), December 03, 2001 (Moore), and on December 05, 2001 (Putnam). All five spaces were observed in three twenty minute time units that represented the buildings during some of its busiest time periods. There was a ten-minute break between two observation periods in most cases, which enabled the researcher to move from one space to other and setup her notation materials to make observations. The following table shows the periods during which the five spaces were observed during the observation days. The specific time periods were selected for each space so that the researcher might best understand the time range during which the spaces are utilized to the maximum. For example, the time frame of 6pm-6.20pm was used for the basement space, assuming that this would be the optimum time of student use.

Space	First Period	Second Period	Third Period
Internal space and lobby	11.00am - 11.30am	4.00pm – 4.20pm	6.30pm – 6.50pm
Floor lounge	1.30pm - 1.50pm	4.30pm – 4.50pm	7.00pm – 7.20pm
Basement	10.00am -10.20am 10.30am -10.50am	3.00pm – 3.20pm; 3.30pm – 3.50pm	6.00pm – 6.20pm
Corridor	2.00pm - 2.20pm	5.00pm – 5.20pm	7.30pm – 7.50pm
Space before main entrance	2.30pm - 2.50pm	5.30pm – 5.50pm	8.00pm – 8.20pm

Table 4.1 Observation periods for the five spaces.

The process of behavioral mapping involved recording observations of student activity in a particular space on the map of that space. Student activity was defined as any activity occurring in the space, such as sitting, talking, walking, and so forth. The number of students involved in an activity was also observed. In addition, the researcher recorded how students used a particular space—i.e., for transit, for socializing, for watching TV, studying, playing games, and so forth. All behaviors were recorded on the map for the time duration.

The plans of the three halls used as base maps were obtained from the Housing and Dining Services of Kansas State University. These base plans helped in understanding each building's physical orientation for recording behaviors. In addition, the arrangement of furniture in the various spaces was recorded on the map, thus enabling easy plotting of data. The plans were placed on a clipboard that enabled rapid recording of behavioral data during observations.

The researcher acted as a recognized outsider during the entire study, where people using the space knew that she was an outsider and present for the purpose of research. While mapping behaviors of students in the various residence hall spaces, the points of observation were carefully located, so that there was available a full view of the space under observation, but no interference with regular activities in the space.

On the recording map, a male student was represented by a small shaded circle “●” and a female student by an “x” mark. Movement of students in space was represented with the help of an arrow and superscript that indicated destination. Students' entry points into the space were marked at the reference point with an arrow signifying movement. A circle around two or more students indicated that they were together in a group, and if they were in motion, their movement is indicated with an arrow, notated with their final destination. The various codes used in the behavioral mapping are summarized in table 4.2.

Recording Code	Meaning
X	Female
●	Male
→	Direction of movement
○ Circle around a cluster of users	A users group
○ T	Members of the group are engaged in a conversation
ME	Main entrance
RE	Rear Entrance
E	Elevator
FE	Fire Escape Staircase
CT	Computer Terminal
MB	Mail box

Table. 4.2. Recording “codes” on the behavioral maps and their meanings.

Analyzing the Behavioral Maps

Next, we need to analyze the behavioral mapping data collected for the three halls. Table 4.3 presents a picture of the aggregate student usage of the five pre-selected spaces in the three residence halls. An index is used to compare equitably the usage of the various spaces in the three halls. This index is calculated by dividing the number of users of the particular space by the total number of possible users for that space, based on a total residential population of that space. For the space before main entrance, entrance lobby, and basement spaces—the index is calculated using the total number of residents in the halls. On the other hand, the index value of floor lounges is calculated using the number of students living on a floor, while the index value of corridors is calculated using the number of students residing on that corridor.

Table 4.3. Total number of users in the five spaces in the three halls.

	Goodnow Hall	Moore Hall	Putnam Hall
Total students living in the building	597	634	210
Students per floor	96	48	48
Students per corridor	32	24	10-15
Space before main entrance*	6 ($6/597=0.010$)	11 ($11/634=0.017$)	5 ($5/210=0.02$)
Entrance space and lobby*	340 ($340/597=0.56$)	261 ($261/634=0.41$)	162 ($162/210=0.77$)
Basement spaces*	50 ($50/597=0.08$)	225 ($225/634=0.35$)	5 ($5/210=0.02$)
Floor lounge**	76 ($76/96=0.79$)	43 ($43/48=0.89$)	No floor lounge
Corridor***	38 ($38/32=1.18$)	12 ($12/24=0.5$)	27 ($27/48=0.56$)

* Index calculated by dividing the total number of users of the space by the buildings total residents.

** Index calculated by dividing the total number of users of the space by number of residents per floor.

*** Index calculated by dividing the total numbers of users of the corridor by number of residents per corridor.

In considering the five spaces observed, the entrance space and lobby in the first floor of the three halls are reviewed first. As table 4.3 demonstrates, the entrance space and lobby of Putnam Hall has 162 users while Goodnow's has 340 and Moore's, 261. Although this pattern indicates that Goodnow has the most users by far, we have to consider the fact that the residential population of Goodnow is greater than that of Putnam. Therefore, an index was calculated by dividing the number of residents using the lobby space by Goodnow's total residential population. On comparing these indices, one notes that Putnam Hall in fact is much more used in comparison to Goodnow and Moore, since Putnam has an index of 0.77, while Goodnow's and Moore's are lower at 0.56 and 0.41, respectively. The maximum usage of Putnam's lobby can be explained by the fact that there is only one main entrance leading to Putnam, therefore students have to use it and pass through the entrance space before entering their rooms. However, in Goodnow and

Moore, there are two entrances to each building, and students can bypass walking to the lobby if they are living in a room on corridors adjacent to the rear entrance.

The next space to be examined is the three residential halls' floor lounges. Putnam has no floor lounges, thus table 4.3 presents data collected in Moore and Goodnow only. Moore, with an average population of 48 students per floor, has 43 students using the space during the observation period, while Goodnow, with an average population of ninety-six students per floor has seventy-six students using the space. When adjusting these values for residential population, one notes that Moore has an index of 0.89, while Goodnow has an index of 0.79—a difference that indicates that Moore's lounge is used more than Goodnow's.

Next, we need to consider the basement spaces of the three halls. As table 4.3 indicates, Putnam has only five users during the observation period, while Goodnow has fifty students and Moore, 225 students using the space. After calculating indices for the three halls' basement spaces, one notes that Moore has an index of 0.35, while Goodnow and Putnam have an index of 0.08 and 0.02, respectively. This difference can be explained by the fact that the basement of Moore is connected to Derby Dining Center, thereby generating traffic. In the case of Putnam Hall, it is important to note that there is no basement lobby—only a study lounge and the TV room. Therefore, students using the connection between Putnam and Van Zile Hall do not pass through any common space but directly exit the hall into an underground connection from the fire escape staircase. In the case of Goodnow, there are no such connections and the basement space attracts few users.

Next, we consider the corridor spaces of the three halls. In Goodnow Hall's corridor thirty-eight students were observed using the corridors. This pattern indicates more users than there are corridor residents (each corridor in Goodnow has thirty-two residents). This large number of users could be due to the presence of students from other corridors or floors in Goodnow, thus suggesting considerable social interaction among hall residents. The indices calculated for the three halls demonstrates that Goodnow with 1.18

has a corridor space that is more used than Putnam's and Moore's, which have indices, respectively of 0.56 and 0.5. The difference in index value for the three halls can be attributed to the fact that Goodnow has three corridors per floor, thereby providing an opportunity for more people to interact, while Moore has only two. Also, in both Goodnow and Moore, men and women live in the same floor, while in Putnam the floors are segregated by gender.

The last space to be observed is the residence halls' main entrances. Table 4.3 indicates that only five students are using this space in Putnam, while eleven are using it in Moore and six, in Goodnow. although Putnam has the least number of users in this space, the index calculation shows that the space is better used in Putnam (0.02) than in Goodnow (0.010) or Moore (0.017). the reason for this pattern could be that Putnam has only one entrance or exit route, thus, anybody wanting to smoke or meet a friend must use this entrance space, while in Goodnow and Moore, there are two entrances, thereby potentially distributing users into two separate flows.

Thus, we can conclude that analysis of the behavioral maps demonstrates that each hall has at least one space that is either well used or poorly used. Putnam has a well used lobby space and space before main entrance; in Moore, the basement space and floor lounges. Yet again, Moore has three moderately used spaces (the lobby, floor lounge, and corridor) and Putnam has two moderately used spaces (the corridor, and basement space). On the other hand, Goodnow has one well-used space (the corridor) and four moderately used spaces (the lobby, floor lounge, basement, and the space before main entrance).

Aggregate Movement Maps

Having discussed the aggregate usage of the five spaces, we next need to consider the movement patterns of the four spaces in the three halls. The basis for this analysis is the behavioral maps of figures 4.1 - 4.8. We will not discuss movement maps for the spaces before main entrances, because the main movement in the three building's spaces is between inside and outside of the hall, therefore little can be said about more focused resident movements in these spaces.

Specifically, we examine movements in the following four spaces:

1. Movement pattern in the lobbies;
2. Movement pattern in the floor lounges;
3. Movement pattern in the corridors;
4. Movement pattern in the basement spaces.

1. Movement Patterns in the Residence Halls' Lobbies

From figure 4.1, we can observe the movement pattern in the lobbies of Putnam, Goodnow, and Moore Halls. In Putnam Hall, as figure 4.1a illustrates, one notes that the maximum circulation is from Putnam's main entrance to the stairs. Nobody is seen to be using the main lobby, and the small side lobby is used only to access the two room corridors on the first floor. More students use the space from the main entrance to the stairs because these stairs lead to two floors of rooms over the first floor. As a result, the small lobby receives only those users who live in the first floor.

Turning to Goodnow's lobby, as shown in figure 4.1b, one notes that only a few students use the lobby as we also saw above is the case in Putnam Hall. From figure 4.1b, one observes that the main movement in Goodnow is between the fire escape staircase and rear entrance, the elevator and rear entrance, the rear entrance and elevator, and rear entrance and far-end corridor. From these observations, it is clear that more students use Goodnow's rear entrance than its main entrance. The probable reason for this behavior can be explained by the placement of Kramer Dining Center, which can be easily accessed from the rear entrance. Also, the main parking lot faces the rear entrance, and this entrance also provides more convenient access to school buildings.

Next, we consider the movement pattern in the main entrance lobby of Moore Hall, which is shown in figure 4.1c. In the figure, one notes that the most movement of Moore's residents is between the main entrance and elevator and fire escape, and elevator and main entrance and rear entrance. In Moore, both main and rear entrances are equally used in contrast to Goodnow Hall. Moore's differing pattern can be explained by orientation: its front entrance faces a parking lot and school buildings, while the rear

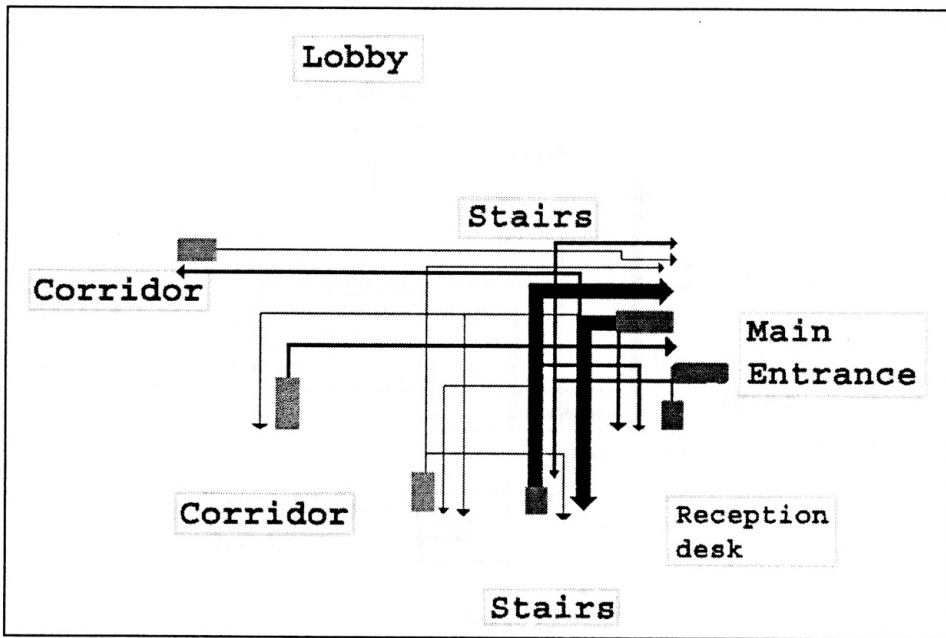


Figure 4.1a. Movement patterns in Putnam's main lobby.

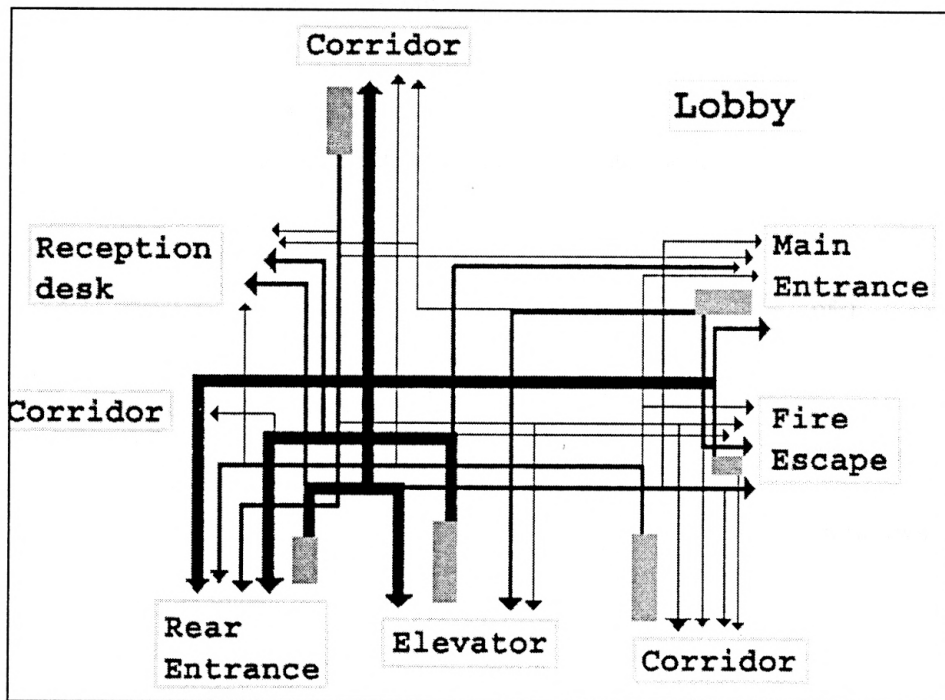


Figure 4.1b. Movement patterns in Goodnow's main lobby.

Figure 4.1a-c. Movement patterns in the residence halls' lobbies.

Key

- 0-5 users
- 5-20 users
- 20+ users

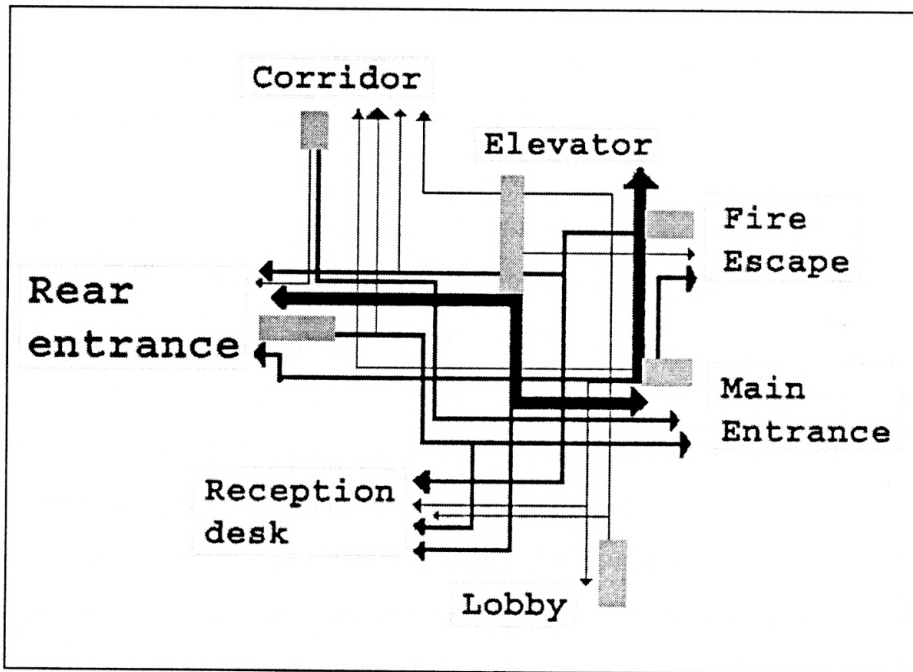


Figure 4.1c. Movement patterns in Moore's main lobby.

Figure 4.1c (Cont.). Movement patterns in the residence halls' lobbies.

Key

- 0-5 users
- 5-20 users
- 20+ users

entrance leads to a path that connects Moore to the southern main campus. Also, the corridor that runs adjacent to Moore's rear entrance includes rooms that are completely residential, thus requiring the occupants to access this space.

In conclusion, one notes in Figure 4.1 that the movement maps for the entrance spaces and lobbies of the three halls clearly indicates minimal use of the lobby space in all three instances. The minimal usage of these lobby spaces also helps explain the defensible space feature of natural surveillance with respect to the entrance space and lobby of the three halls. The location of the lobby, in the case of Putnam and Goodnow, is not adjacent to the path of a majority of users. Putnam's lobby can only be observed easily from the small lobby and by people using the two corridors that are in the small lobby. On the other hand, the majority of residents who use the main entrance to Putnam's stairs are deprived of any view into the lobby. Thus we can conclude that the entrance lobby of Putnam does not enforce strong natural surveillance features for the entrance lobby space.

In contrast, Goodnow's entrance lobby is set back from the main entrance, and anyone entering the hall from the main entrance has to make an effort to observe this space. However, the lobby's large columns and dark interiors visually impair surveillance to a certain extent from other parts of the hall. Finally, we can say that Moore's lobby space supports the strongest surveillance from residents because its lobby is large, brightly lit, and has few visual obstacles. Further, Moore's lobby is adjacent to the main entry, opposite to the elevator, and parallel to fire escape, thus making the space visually open for surveillance.

2. Movement Pattern in the Residence Halls' Floor Lounges

Next, as illustrated in figure 4.2, we discuss the movement patterns for the three halls floor lounges. Here we consider only the floor lounges of Moore and Goodnow Halls, since there are no floor lounges in Putnam. As shown in figure 4.2a and 4.2b, both Moore and Goodnow, display good circulation among all parts of their floor lounges—corridors, lobby, fire escape stairs, and elevators. This easy movement flow from one space to another is enhanced by the halls' floor lounges and demonstrates how these can bring

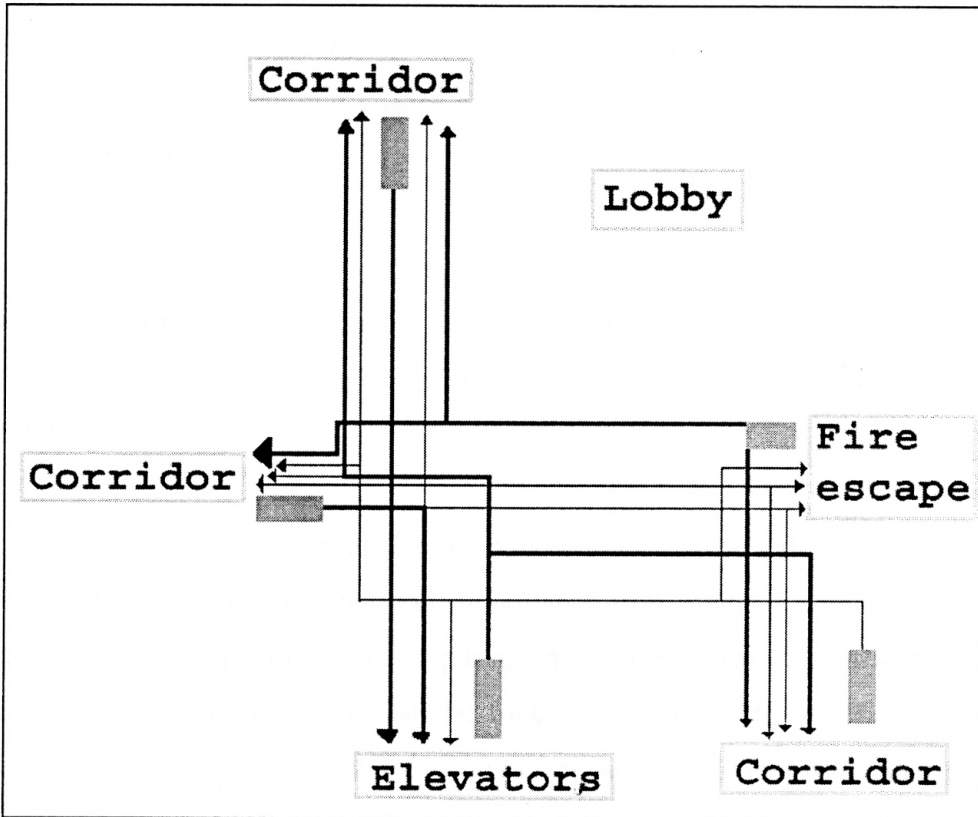


Figure 4.2a. Movement patterns in Goodnow's floor lounge

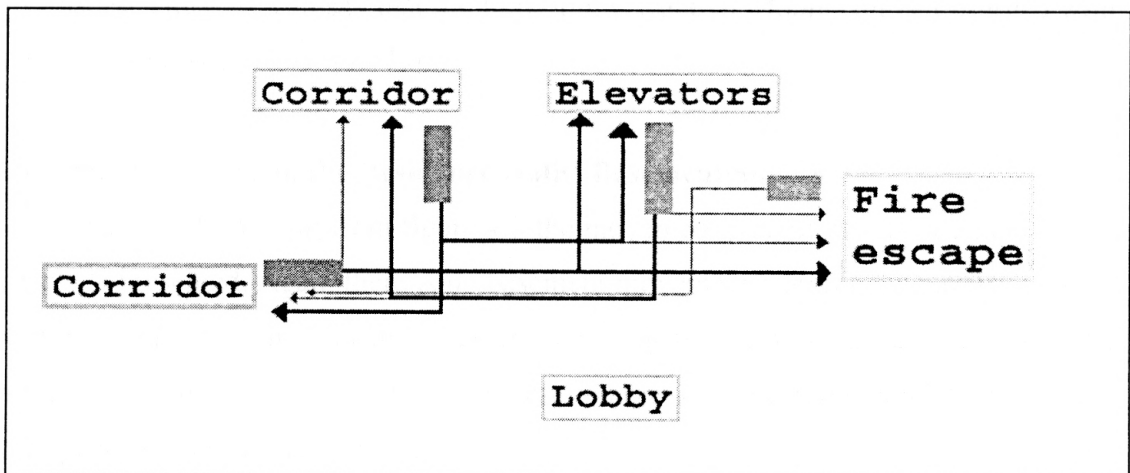


Figure 4.2b. Movement patterns in Moore's floor lounge

Figure 4.2a-b. Movement patterns in the residence halls' floor lounges. No figure for Putnam Hall because the hall has no upper floor lounges.

Key

- 0-5 users
- 5-20 users
- 20+ users

about interaction among users. In short, in both residence halls, a floor lounge is an important asset for providing chance meetings among residents and, thereby promoting social interaction.

If we assume the small lobby on the first floor of Putnam (see figure 4.1a) to be a floor lounge, one notes some movement and interaction among students living on that floor and, if there were floor lounges on Putnam's other floors, there might be more social interaction.

In considering natural surveillance in Goodnow's and Moore's floor lounges, one notices that the lobby spaces stimulate good surveillance from students passing by on their way from their room corridor to other spaces on the floor. Moore's lobby space is more compact than Goodnow's because the lobby space is small, and there are only two adjacent corridors, while Goodnow's floor lobby is large and has three adjacent corridors. This compactness of Moore's lobby makes the space more open to interaction, whereas in Goodnow, a student has to walk a greater distance to interact with other users in the lobby spaces. Thus, we can say that the floor lobby space of Moore can be observed with less effort than that of Goodnow Hall.

3. Movement Patterns in the Residence Halls' Basement Spaces

Next, using the information from figure 4.3 the movement pattern in the basement of the two halls is presented. Again there is no basement movement map for Putnam Hall, as no movement took place in Putnam's basement during the three observed time periods. Turning to Goodnow and Moore halls my observations indicate good circulation between all the spaces in the two halls' basements.

As figure 4.3a demonstrates, in Goodnow Hall, one notices students using vending machines in the basement, whereas in Moore these machines were not used during the observation period. As shown in figure 4.3b, Moore Hall displays good circulation between the corridor that connects to Derby Dining and the fire escape and the elevator. Thus we can conclude that, though Moore's basement space is well used owing to the

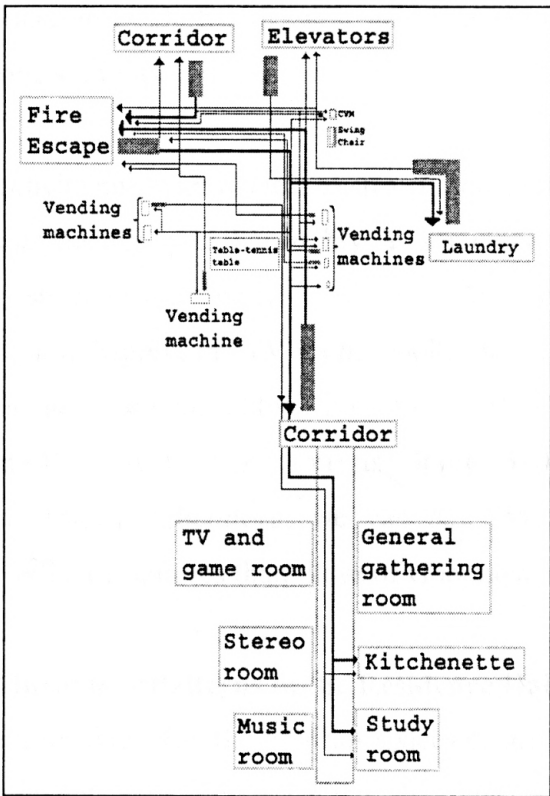


Figure 4.3a. Movement patterns in Goodnow's basement spaces.

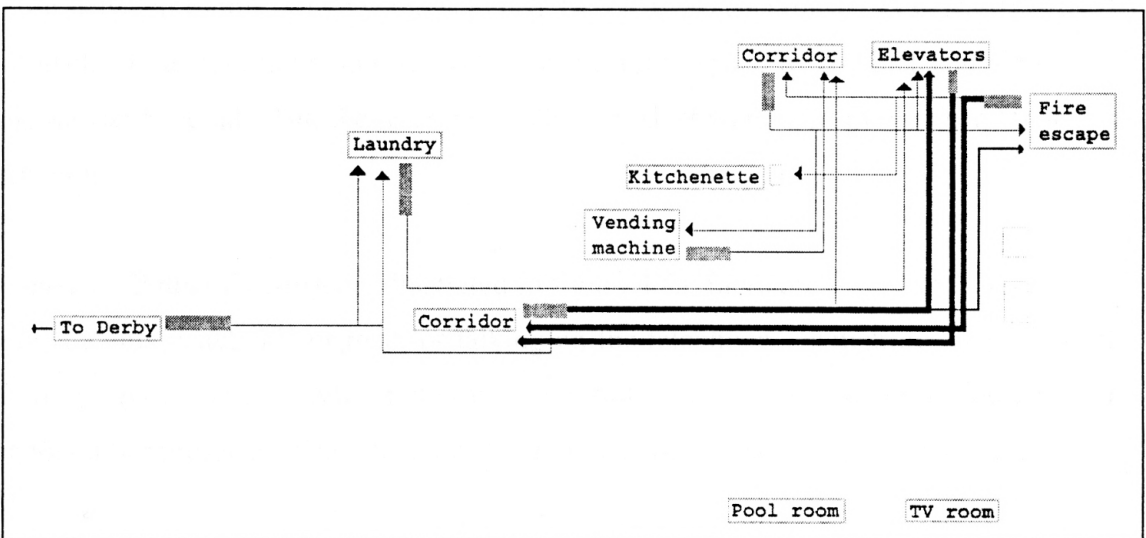


Figure 4.3b. Movement patterns in Moore's basement spaces

Figure 4.3.a-b.. Movement patterns in the residence halls' basement spaces. No figure for Putnam because during observation periods, no movements occurred.

Key

- 0-5 users
- 5-20 users
- 20+ users

connection to Derby, the basement space does not by itself stimulate social interaction among students.

In conclusion, with respect to surveillance, it can be said that Goodnow's basement space cannot be surveyed thoroughly, as some spaces are located along a corridor. In fact, the only space that can be easily observed from the basement lobby is the laundry. In contrast to this, in Moore, the TV room, pool room, kitchenette, and music room can be observed from the basement lobby with little effort. Moore's laundry and gymnasium are located along the corridor that connects Moore to Derby, thus providing ample surveillance of these spaces. Therefore, we can say that the basement of Moore Hall has better surveillance features than those of Goodnow Hall.

4. Movement Patterns in the Residence Halls' Corridors

Next, in figure 4.4, the corridor spaces of the three halls are presented. In looking at these movement maps, one notes that the corridor spaces of the three halls are used more or less similarly. While researcher was mapping, it was observed that a few residents were moving between rooms, while some watched TV or listened to music. Few students used the corridor to access their rooms, while some use the space to conduct conversations. Thus, we can conclude that, the residence halls' corridors were rarely used for social interaction.

However, in Putnam's corridor, illustrated in figure 4.4a, there are rooms off the corridor where students watch TV or read, or talking on the telephone—sometimes with door of their room ajar. The researcher noted two occasions when two students in the corridor questioned her presence. This illustrates the presence of a sense of territoriality in Putnam Hall.

The corridors of Goodnow, as seen in figure 4.4b, also demonstrate considerable movement, with students moving between rooms, with doors ajar. Although some students using the corridor smiled questioningly, none of them challenged the researcher's presence in their hall. The same was true of Moore Hall.

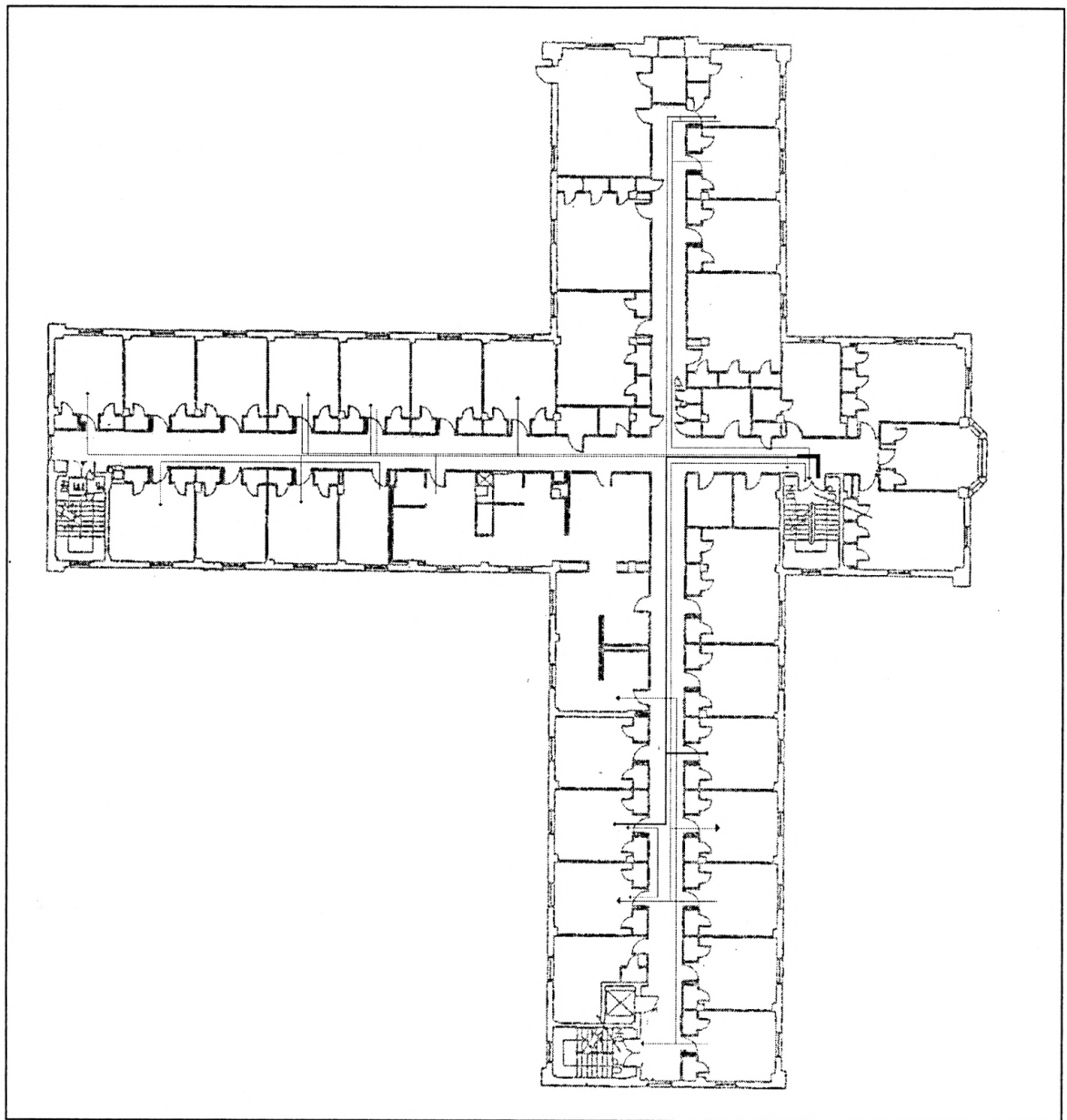


Figure 4.4a. Movement patterns in Putnam's corridor.

Figure 4.4a-c. Movement patterns in the residence halls' corridors (for observation period of one hour).

Key

- 0-5 users
- 5-20 users
- 20+ users

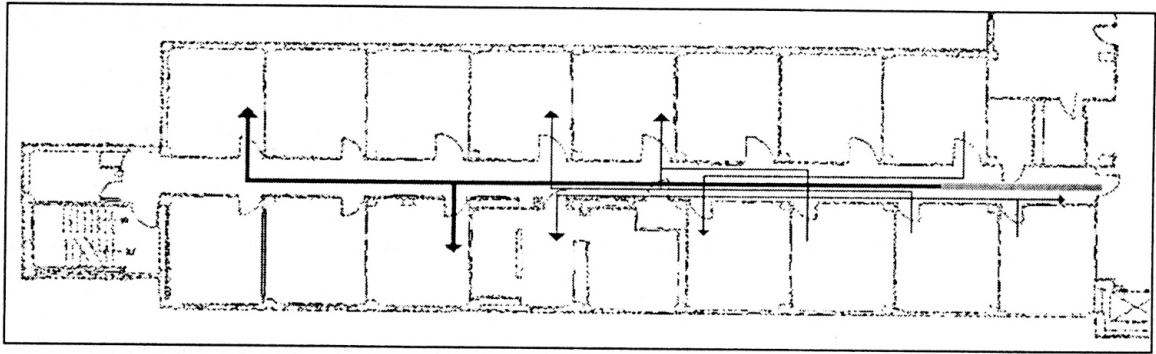


Figure 4.4b. Movement patterns in Goodnow's corridor.

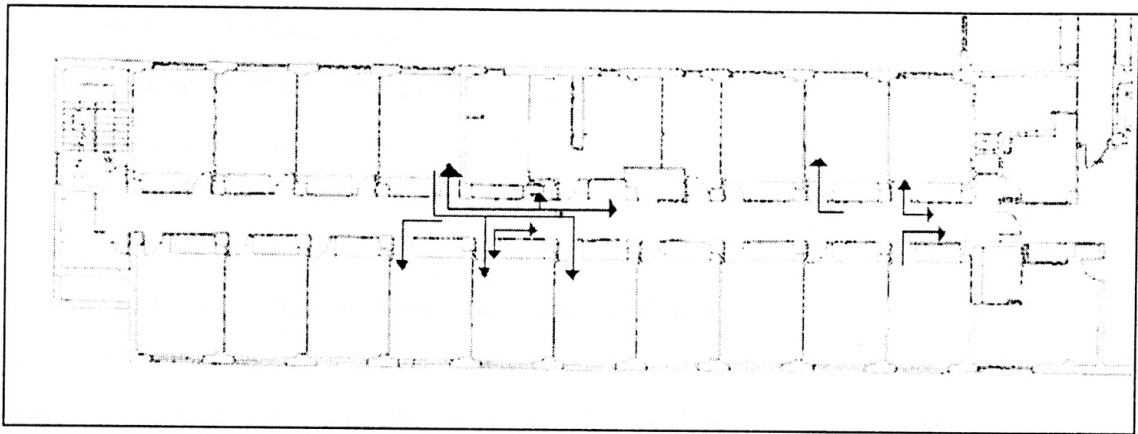


Figure 4.4c. Movement patterns in Moore's corridor.

Figure 4.4a-c (Cont.). Movement patterns in the residence halls' corridors (for observation period of one hour).

Key

- 0-5 users
- 5-20 users
- 20+ users

Aggregate Maps for Users at Rest

Following the discussion of users' movement in the three halls, the aggregate maps for users at rest are next plotted for the five spaces in the three residence halls. These maps indicate the users who are at rest in the observation space for at least thirty seconds. A circle around two users indicates that they are engaged in some mode of social interaction. In the end, gender was not plotted because variations between men and women resting patterns appeared to indicate little variations.

Specifically, we shall discuss the following resting patterns in the three residence halls:

1. Users at rest in lobbies;
2. Users at rest in floor lounges;
3. Users at rest in basement spaces;
4. Users at rest in corridors;
5. Users at rest in the spaces before the three halls' main entrances.

1. Patterns of Users at Rest in Residence Halls' Lobbies

Figure 4.5 presents users at rest in the three residence halls' lobby. Figure 4.5a illustrates the lobby of Putnam Hall, and one notices that a maximum number of people use the reception desk to gather around and talk. There are some friendly "hello's" exchanged, some conversations, and sometimes enquires with the person behind the desk. Two young women stop to have a conversation before parting ways in the space adjacent to the reception desk. The small lobby also has few people using it where two girls meet half way and gave each other a friendly hug and have a conversation before parting ways. Two other young men come from the main entrance sit down on the sofa of the small lobby to have a discussion before they walk over to chat with the person behind the front desk. The lobby was also used by a young woman playing piano before lunch.

As figure 4.5b demonstrates, the entrance space and lobby usage of Goodnow is similar to that of Putnam's, since Goodnow's reception desk receives maximum attention from passersby. Students walk in from all parts of the hall to chat with the person behind the front desk. Not many people are seen using the entrance lobby, but for two girls and a

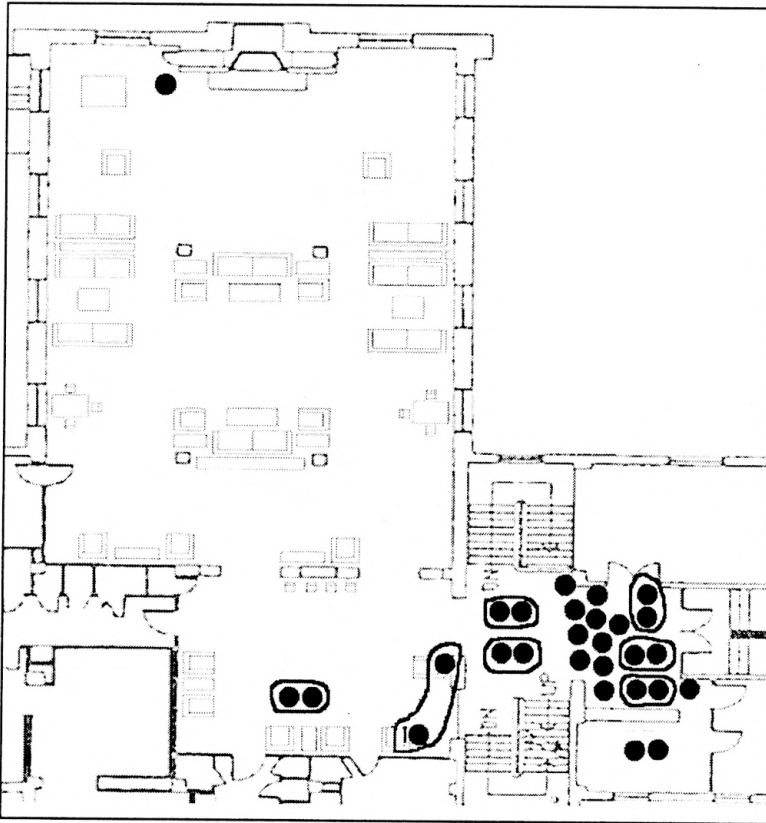


Figure 4.5a. Users at rest in Putnam's main lobby.

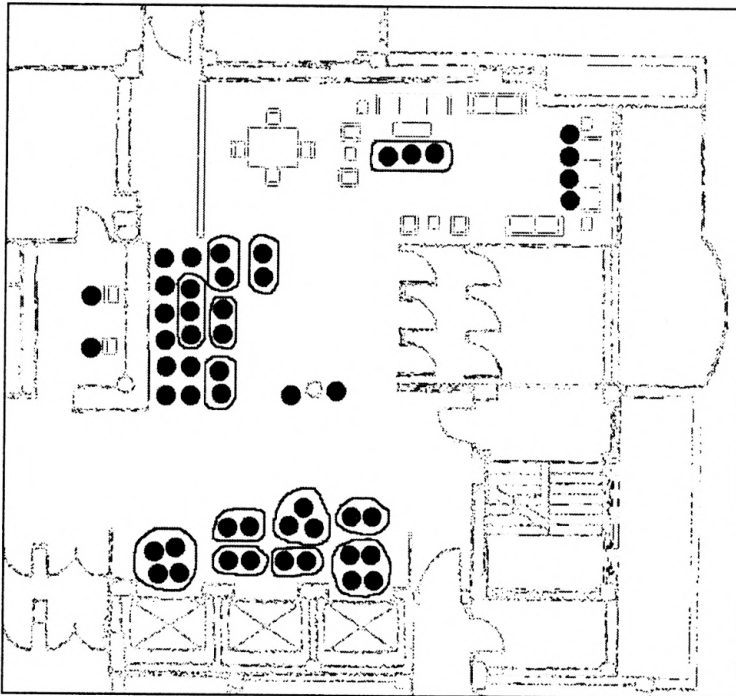


Figure 4.5b. Users at rest in Goodnow's main lobby.

Figure 4.5a-c. Users at rest in the residence halls' main lobby (for observation period of one hour).

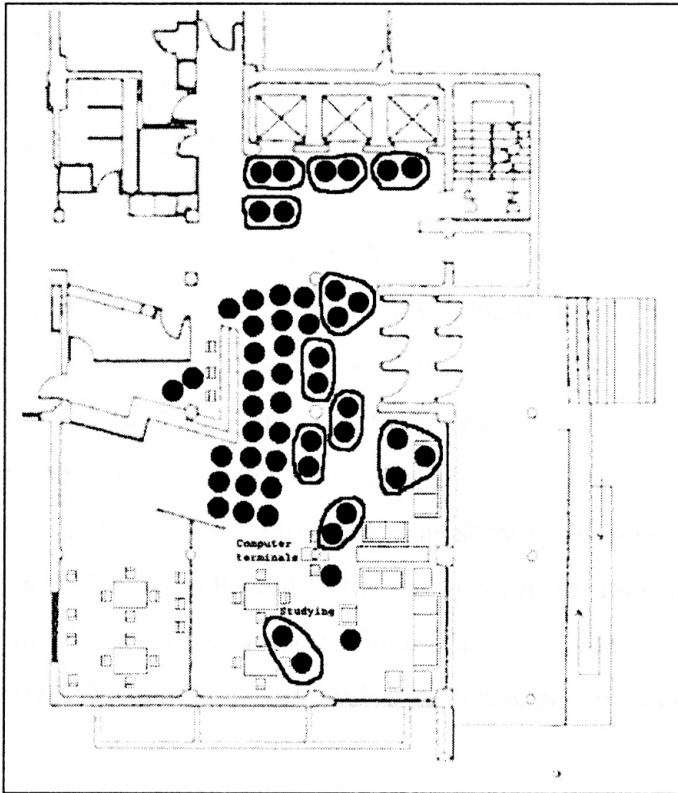


Figure 4.5c.. Users at rest in Moore's main lobby.

Figure 4.5a-c (Cont.). Users at rest in the residence halls' main lobby (for observation period of one hour).

boy who are having a discussion in the lobby and the four young women who are individually waiting for their friends. The elevator lobby, shown in figure 4.5b, also stimulates good interaction among students who are waiting for the elevator.

Next, Figure 4.5c illustrates Moore's residents using the lobby for many different purposes—studying, chatting, using computer, and so forth. Two young men and one young woman are seen chatting in the lobby, while one young woman was observed to be studying in the lobby when her friend joins her for a chat, and two other young men were seen using the computer terminals. Unlike those at Goodnow the computer terminals at Moore Hall have seats provided, thus stimulating residents use. Although Moore's study lounge is located adjacent to the entrance, it has its share of privacy unlike the crowded entrance space of Goodnow alongside which the study table is located. The elevator lobby of Moore, like Goodnow's also stimulates interaction among users.

In conclusion, one notes that in Putnam, the seclusion of the lobby space from the main path of student movement is the main reason for the lobby's minimal usage, while the openness of Moore is probably the reason for the lobby's greater use in comparison with the other two residence halls lobbies. Although Goodnow's lobby is more used than Putnam, the various spaces in the lobby are not well used. Therefore, we can say that the lobby of Moore Hall is more used than those of Goodnow and Putnam.

2. Maps for Users at Rest in Floor Lounges

Figure 4.6 presents the users at rest in the floor lounges of the three halls. The elevator lobbies in the floor lounges, like in the previously discussed main-floor lobbies, also provide a good opportunity for students waiting for the elevator to engage in conversation. Also, the halls floor lounges used as study spaces promote interaction among residents of each floor. Since Putnam does not have a floor lounge, it will not be discussed in this section.

Figure 4.6a illustrates the users at rest map in Goodnow's floor lounge, with one student working with his model on his drafting board. This student was observed to get attention

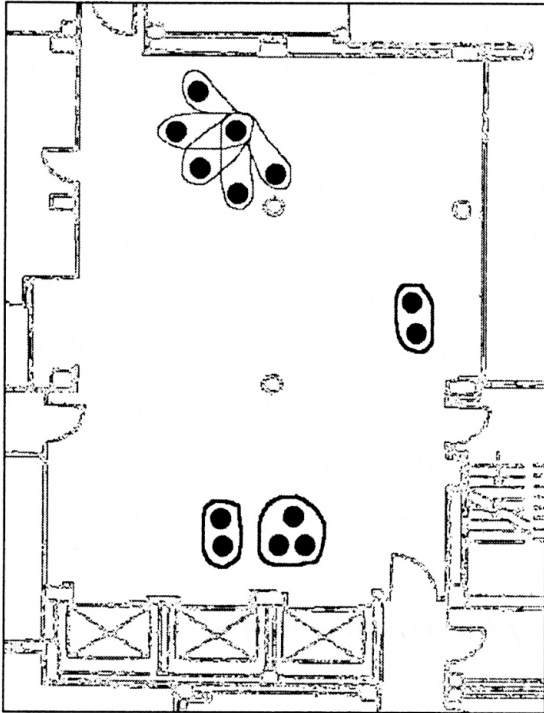


Figure 4.6a. Users at rest in Goodnow's floor lounge.

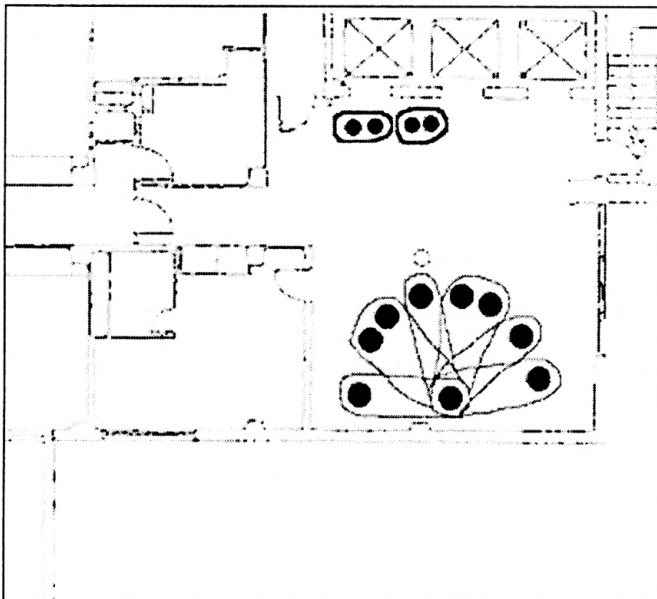


Figure 4.6b. Users at rest in Moore's floor lounge.

Figure 4.6a-c. Users at rest in the residence halls' floor lounge (for observation period of one hour).

from five young women walking in and out of the corridors during different times. Two students walked into the lobby, exchanged books and a few words before they parted. Also figure 4.6a illustrates students waiting for the elevator involved in conversation.

In the floor lounge of Moore Hall shown in figure 4.6b, the same is observed as in Goodnow where again a student working in the lobby attracts a lot of attention. The figure shows a student preparing for her exams while four individuals and two couples stop by her to talk and wish her luck. This user pattern indicates that students leaving their corridor survey the lobby space before leaving a floor lounge and may interact with the lobby space user, thereby promoting social interaction. Thus, we can say that the design of the floor lounges of Moore and Goodnow promote natural surveillance.

3. Maps for Users at Rest in Basement Spaces

Figure 4.7 illustrates the maps for users at rest in the basements of the three residence halls. In Putnam Hall (figure 4.7a) only two students were together out of the five that were present and they were watching TV. Two young women present in the basement were doing their laundry during different observation periods, and one was working in the computer room.

Figure 4.7b presents the map for users at rest in Goodnow's basement space, showing a lone user in the laundry and two other young women in conversation in the basement lobby. During the observation period the kitchenette and the study room had few visitors, and the other basement spaces also show lack of use. If the kitchenette, study room, music room, and stereo room were organized in an open manner, would it draw more users to it? Does the appearance of the space have anything to do with the number of users?

In turn figure 4.7c presents observation of Moore's users at rest in the basement. The laundry and kitchenette are the only two spaces that seem to be in use in Moore's basement, while the TV and pool room show lack of usage. The vending machine is seen to be used by two young women, who buy something before going back to their rooms.

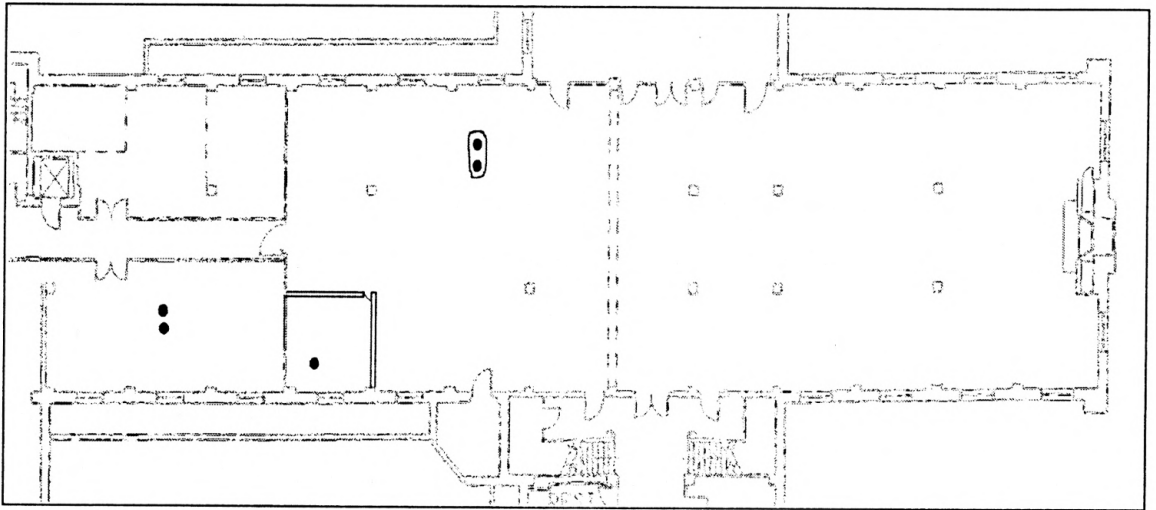


Figure 4.7a. Users at rest in Putnam's basement spaces.

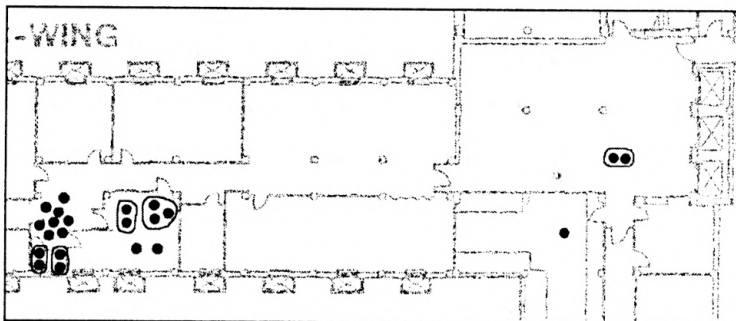


Figure 4. 7b. Users at rest in Goodnow's basement spaces.

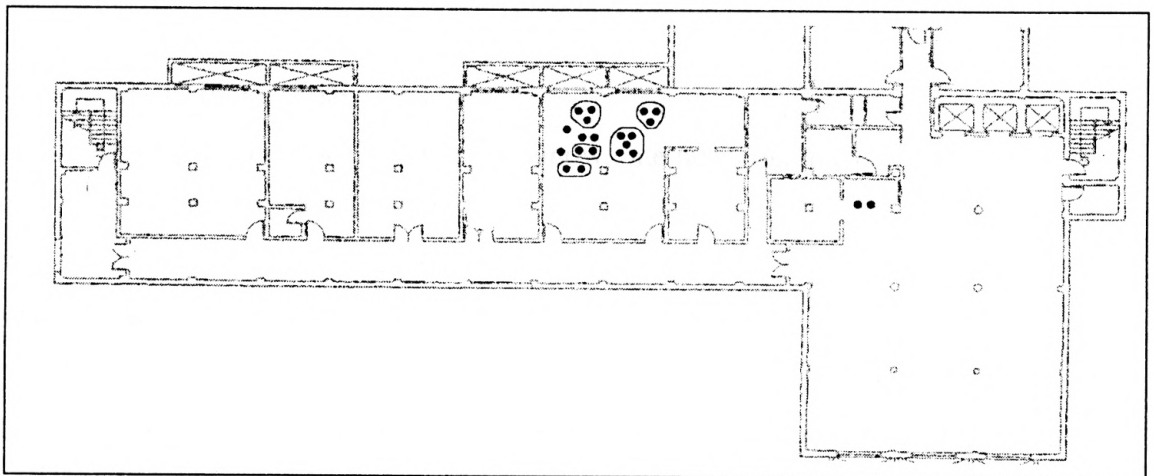


Figure 4.7c. Users at rest in Moore's basement spaces.

Figure 4.7a-c. Users at rest in the residence halls' basement spaces (for observation period of two hours).

From figure 4.7, one notes that most of the spaces in Goodnow's basement are used, while only a few spaces in both Moore's and Putnam's are used. Moore has a better used basement only because of the corridor connection to Derby, but otherwise the main users of Moore's basement space use the laundry. Therefore we can conclude that Goodnow Hall residents make better usage of the basement space as compared to Moore and Putnam residents who use only a few of the basement spaces.

4. Maps for Users at Rest in Corridors

Next, figure 4.8 presents users at rest for the three residence halls' corridors. Figure 4.8a illustrates Putnam's corridor with only four young women standing in conversation. But for the four users in conversation, the other users are moving between rooms or are in rooms with friends. In fact, several doors leading to student rooms are ajar, thereby inviting neighbors to join them. In one of the rooms, a young woman was playing guitar while four of her neighbors joined her and gathered in her room, while in another room, two young women and a young man were having a loud dispute with the door to their room open. The ambience of Putnam's corridor can be described as a space with several doors open or ajar, and music or TV noises flowing out of many rooms into the corridor. Thus we can say that the small length and the openness of Putnam's corridor make it easy for neighbors to interact.

As illustrated in figure 4.8b, Goodnow's corridor presents good interaction among neighbors in the corridor space. Even in Goodnow, one notes that the doors were left ajar in some of the rooms thereby stimulating the students in room to interact with the users of the corridor. In one instance, a young woman walked out of her room to join her friend in the corridor and helped her with the Christmas decoration while chatting. Two young women were moving between rooms giggling and talking in the corridor, while two other young women met halfway in the corridor to discuss evening plans. And several young women were seen meeting in the corridor halfway to have a chat before they parted. As far as the ambience of this hall corridor, some of the room doors were open with music flowing out and TV blaring and the corridor in general appeared busy.

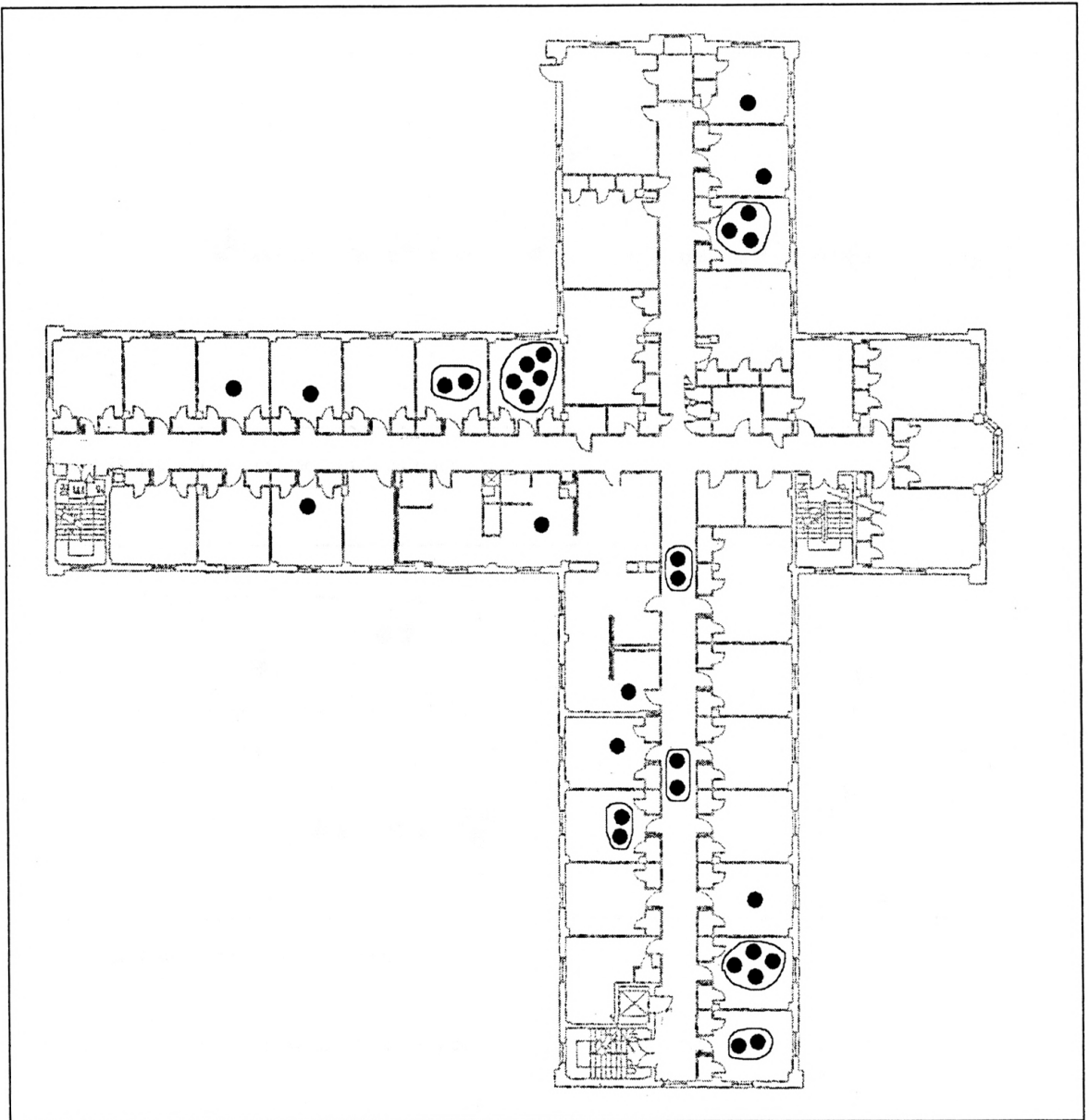


Figure 4.8a. Users at rest in Putnam's corridor.

Figure 4.8a-c. Users at rest in the residence halls' corridors (for observation period of one hour).

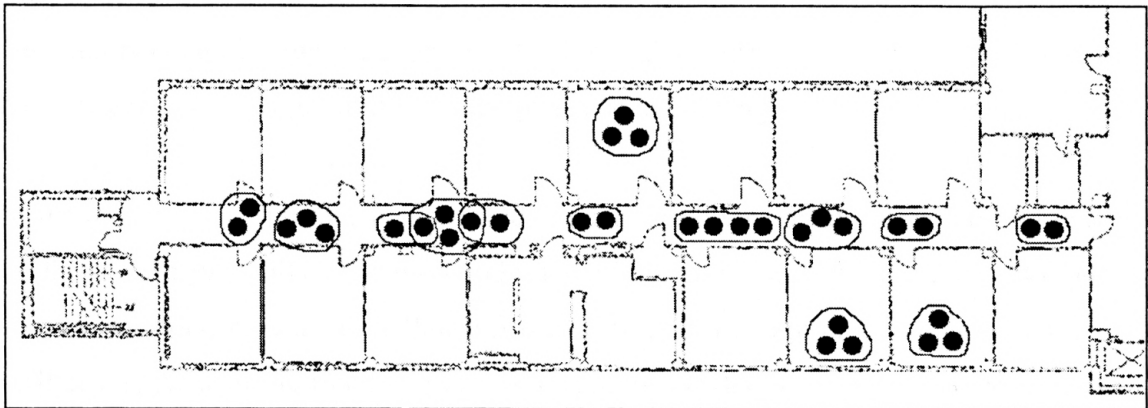


Figure 4.8b. Users at rest in Goodnow's corridor.

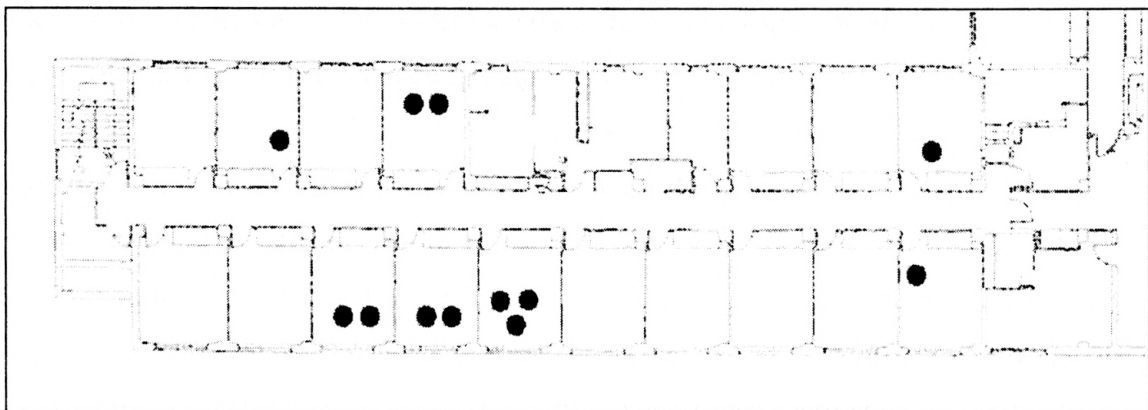


Figure 4.8c. Users at rest in Moore's corridor.

Figure 4.8a-c (Cont.). Users at rest in the residence halls' corridors (for observation period of one hour).

Next, figure 4.8c illustrates Moore's corridor with respect to the users at rest. Although the map shows no interaction taking place in the corridor, a small amount of student movements between rooms were observed. This hall's corridor has a few open doors, with music and TV blaring, but it lacks the presence of students.

From the above discussion, we can conclude that Goodnow's corridors are the best used of the three residence halls, showing good interaction among neighbors in a corridor and also involving good natural surveillance features. In both Putnam and Goodnow, natural surveillance plays a strong role for users, as several of the doors to the rooms are open or ajar thereby stimulating surveillance of the corridors. In Putnam's corridor the interaction among neighbors and interaction promoted by open doors are strong. Lastly, Moore's corridor lacks interaction in the corridor space, and very little sociability takes place among the neighbors because of open or ajar doors.

5. Maps for Users at Rest in the Spaces before Main Entrances

Figure 4.9 presents the space before the main entrances of the three residence halls. Figure 4.9a illustrates the space before Putnam's main entrance, and one notes that only five users used the space. Two young men met before the door to the hall and spoke briefly before they parted. In addition, three other young men were smoking, talking on the phone and for waiting for a friend. The space before Putnam's main entrance is not sheltered but has a level change of five steps between the sidewalk that leads to the hall and the space before main entrance. Though the space before Putnam's main entrance is well maintained, during the period of observation it was not used for student interaction.

Next, figure 4.9b illustrates the space before Goodnow's main entrance, showing four users—one young woman and three young men—waiting for a friend, and a young man and woman in conversation before parting ways. Unlike Putnam's and Moore's, the space before Goodnow's main entrance is not sheltered and is not differentiated from the sidewalk that leads to the hall, and it is not provided with seating. The absence of these above mentioned features could be a reason for Goodnow's space before the main entrance's lack of usage.

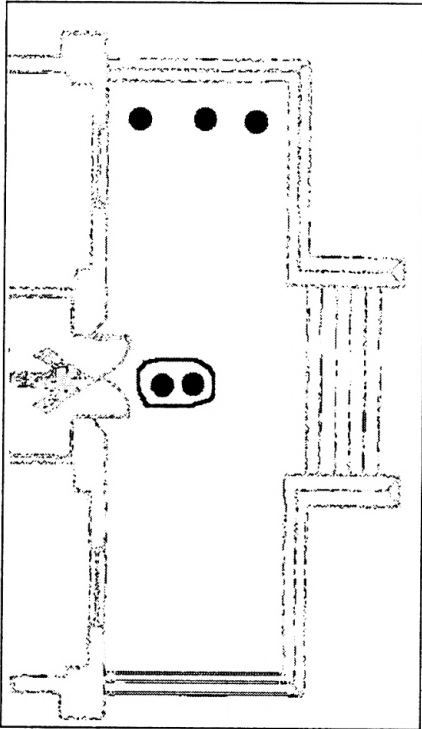


Figure 4.9a. Users at rest in Putnam's space before main entrance.

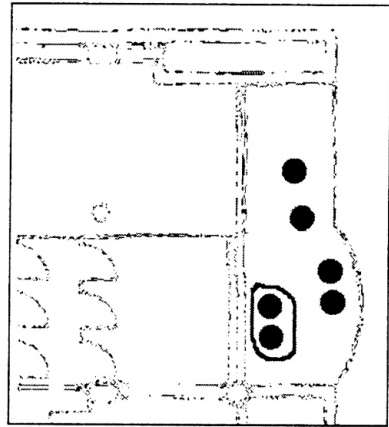


Figure 4.9b. Users at rest in Goodnow's space before main entrance.

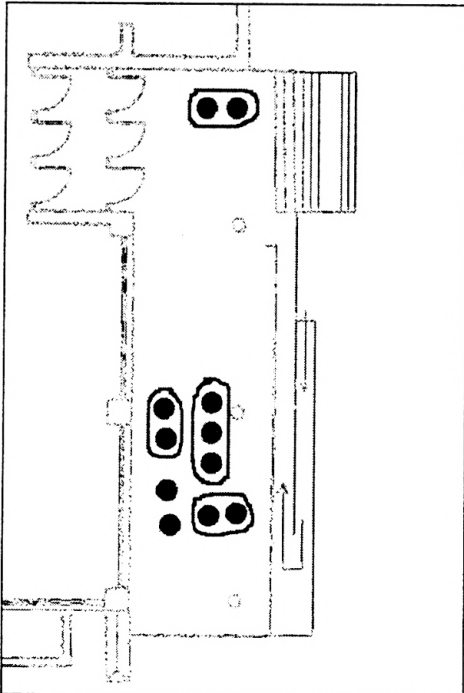


Figure 4.9c. Users at rest in Putnam's space before main entrance.

Figure 4.9a-c. Users at rest in the residence halls' space before main entrance (for observation period of one hour).

Figure 4.9c illustrates usage of Moore's space before the building's main entrance, where many students were seen smoking. Some people smoked alone, while others smoked in a group. Two young women met at the entrance to chat, and one of them went to smoke after the chat. The space before the Moore's main entrance is sheltered and has seating. Also there is a strict differentiation between the sidewalk that leads to the hall and the space before Moore's main entrance present in the form of a level difference.

Thus, we can conclude that Moore with an entrance of sheltered space and seating stimulates more opportunity for interaction than the entrances of Goodnow and Putnam Halls. Though Putnam does have adequate seating, its entrance is not covered, and this lack of shelter probably helps explain the minimal social interaction observed in this space. Finally, Goodnow's lacks of well-demarcated space before main entrance, as well as lack of shelter and seating, could be the reason for the space before Goodnow's main entrance to be poorly used compared to Moore's and Putnam's.

Conclusion

Having discussed the five spaces in the three residence halls with respect to user behaviors, one can summarize the results in table 4.4. This table ranks the five spaces of the three halls with respect to movement and rest maps in relations to two key defensible space features: first, social interaction; and second, natural surveillance.

Looking at table 4.4, we can conclude that Putnam's spaces are the weakest in terms of social interaction and natural surveillance. Out of the four spaces that were observed in Putnam, three of them (the main lobby, the basement spaces, and the space before the main entrance) are ranked "low", while the corridor space in Putnam is ranked "medium" in terms of social interaction. Note that only Putnam's corridor space is ranked "High" in terms of natural surveillance.

Hall's and their spaces	Social interaction	Natural surveillance
Goodnow Hall		
Main lobby	medium	medium
Floor lounge	High	High
Basement spaces	Medium	Low
Corridors	High	High
Space before main entrance.	Low	Low
Moore Hall		
Main lobby	High	High
Floor lounge	High	High
Basement spaces	Medium	Medium
Corridors	Medium	High
Space before main entrance	High	High
Putnam Hall		
Main lobby	Low	Low
Floor lounge	no floor lounges	no floor lounges
Basement spaces	Low	Low
Corridors	Medium	High
Space before main entrance.	Low	low

Table 4.4. Comparison of the three residence halls' five spaces with respect to social interaction and natural surveillance.

Next, when we consider Goodnow's rankings for social interaction and natural surveillance, we note from table 4.4 that the five spaces in Goodnow are rated higher than Putnam but lower than Moore. Of the five observed spaces, two spaces are ranked "high" (floor lounge and corridors), and Goodnow's main lobby is ranked "medium." Further Goodnow's basement spaces are ranked "medium" in terms of social interaction and "low" in terms of natural surveillance. These two spaces—floor lounge and corridor—are ranked "high" for both social interaction and natural surveillance.

Lastly, from table 4.4, we can conclude that Moore's main lobby, floor lounges and the space before main entrance—all ranked as "high"—have the strongest social interaction

and surveillance features as compared to the other two halls. On the other hand, Moore's basement is ranked "low" in terms of social interaction and natural surveillance features, while Moore's corridor is ranked "medium" in terms of social interaction and "high" in terms of natural surveillance.

Therefore, we can conclude that Moore Hall is the strongest in social interaction and natural surveillance than Goodnow and Putnam Halls. Goodnow ranks second followed by Putnam, which has the weakest social interaction and natural surveillance features with respect to the five spaces observed.

The next chapter discusses the results of the questionnaires and interviews conducted with residents of the three residence halls.

Chapter 5

Questionnaires and Interviews

Having discussed the behavioral mapping for the three Kansas State University residence halls, we next present the outcome of the questionnaire surveys and interviews. This chapter provides detailed analysis of student's opinions of the pre-selected spaces in the residence halls—main entrance lobby, floor lounges, corridors, basement spaces, and the space before main entrance. Questions were also asked in relation to territoriality, natural surveillance, and image—the three defensible space features examined in this thesis.

Questionnaire Surveys as a Research Method

According to Zeisel (1981), standardized questionnaires are used to discover regularities among groups of people by comparing answers to a set of questions. Zeisel explains that questionnaires provide useful data when investigators begin with a well defined problem, knowing what major concepts and dimensions they want to deal with. Analysis of questionnaire responses can provide precise numbers or percentages. Zeisel explains that skilled researchers use standardized questionnaires to test and refine their ideas by beginning with hypotheses that identify attributes other relationship to each other (Zeisel, 1981, p.157).

Zeisel lists three qualities of standardized questionnaires—*control*, *intrusiveness*, and *convincing rigor*. He explains that the researchers must structure questionnaires and *control* their administration. The positive side effect of *control* is efficiency—minimal cost to gather large amounts of comparable data. Zeisel describes that repeating standardized questions with many respondents enables researchers to easily compare and contrast answers (Zeisel, 1981, p.159).

Zeisel describes the second quality—*intrusiveness*—as the level of refinement the researcher wants his or her answers to provide solutions to their problem. Zeisel explains that there is little room for adjustment of the answers once the data gathering begins and, if any important questionnaire is missed, the research will be distorted. To avoid such a

situation, the investigator should pretest the questionnaire with people like the expected respondents (Zeisel, 1981, p.160).

In turn, Zeisel's third quality—*convincing rigor*—is described as quantitative analysis of questionnaire data that not only contributes precision to knowledge, but also can make research data convincing for others. Zeisel summarizes the qualities of questionnaires, explaining that quantitative questionnaire data not augmented by researchers' qualitative insight or qualitative data from other methods can provide a hollow and unscientific understanding of important problems (Zeisel, 1981, pp.160-161).

Zeisel emphasizes that, if the researcher is not careful about the way the questionnaire is structured, then it can antagonize, bore, confuse, or tire respondents. Zeisel provides three methods—*rapport*, *conditioning*, and *fatigue*—around which we can organize, questionnaires. In the first method—*rapport*—Zeisel explains that researcher should introduce oneself and the purpose of the questionnaire clearly, honestly, realistically, and without threatening the respondent. Zeisel also explains that initial questions can request general impressions before moving on to questions requesting answers in depth. Zeisel emphasizes that for every situation and problem, each investigator must work out the most appropriate way to begin (Zeisel, 1981, p.161).

In the second method—*conditioning*—Zeisel warns the researcher that early questions can influence the way respondents answer later ones (ibid., pp.160-161). In turn, Zeisel's third method—*fatigue*—emphasizes that a researcher has to choose between gathering a great deal of information and not tiring the respondent. Zeisel explains that, to maximize information gathering and minimize fatigue, questions relating to a topic should be grouped, and for clarity each group can be introduced with a unifying sentence. Zeisel summarizes that good organization of a questionnaire can be achieved with clear layout and written instructions to keep the questionnaire flowing and to avoid confusing the respondents with irrelevant questions (ibid., p.162).

Having described the qualities and methods of organizing the questionnaires, Zeisel explains the coding of open-ended responses under three coding characteristics—*mutual exclusiveness*, *exhaustiveness*, and *single level of abstraction*. According to Zeisel, *mutual exclusiveness* means that responses carefully fall into either one or another category and there can be no overlapping, either numerically or conceptually. The next character discussed by Zeisel is that of *exhaustiveness*, which means that every possible response fits into some category, and researchers can include an “other” to achieve exhaustiveness in complex questions. Lastly, the third coding characteristic to be discussed is that of *single level of abstraction*, which means that response categories are conceptually parallel and they do not partition responses into misleading categories (ibid., pp-164-165).

Zeisel next discusses the pre-coding of responses for questionnaire questions in order to partition possible response alternatives into a set of categories for respondents to choose from that are exhaustive, mutually exclusive, and have a single level of abstraction. Zeisel explains that codes organize things parallel to one another or in rank order (Zeisel, 1981, p.165). The first are *nominal* and the latter *ordinal* categories. Zeisel explains that a simple nominally pre-coded response asks respondents to reply “yes” or “no” to a question or offers two or more choices to select from. These nominal codes are useful to collect information, to offer non-ranked choices, and to find attitudinal data useful in a binary “yes” or “no” form (ibid., pp-165-166).

Zeisel’s second category for pre-coded responses—*ordinal*—is used to analyze intensity, direction, and quality of such variable as verbally expressed attitudes and perceptions. It may be helpful to arrange responses in a rank order representing different degrees or magnitudes. Further, Zeisel lists four characteristics of ordinal pre-coded responses as *information*, *attitudes*, *meaning*, and *rank ordering of items* (ibid., p. 166).

Zeisel describes *information* as the first characteristic of ordinal pre-coding which can be used for questions gathering information that reasonably are seen as “how many” or “how much.” The second characteristic—*attitudes*—is useful for response categories

following questions that ask respondents to judge intensity of an attitude about something, such as a situation, person, object, or setting (ibid., pp.166-167).

The third characteristic—*meaning*—tries to analyze the range of meanings things have to people. The principle that people express the meaning things hold for them more completely when presented with a set of alternatives is used in this characteristic to derive quantitative answers. Lastly, the fourth characteristic—*rank-ordering of items*—explains that it may be useful to pre-code responses to questions asking respondents to rank a group of items relative to one another on a single attribute (ibid., pp. 168-169).

The next feature of questionnaires Zeisel discusses is *visual responses*. He explains that some cognitive, expressive, and perceptual information about respondents' physical surrounding may be better expressed visually than verbally, through non pre-coded techniques such as free hand area maps, base map additions, and drawings, photographs taken by respondents, and games (ibid., pp.169-170).

Zeisel summarizes his discussion of standardized questionnaires by explaining that they are useful if we know what we want to find out from people. Zeisel explains that visual data useful in assessing respondents' "cognitive maps" cannot be pre-coded but provides material for both quantitative analysis and for qualitative visual presentations in the form of charts and maps. Finally, he explains that using standardized questionnaires together with focused interviews and observational methods can be useful to gather information about such topics as people's perceptions, their attitudes, their values, and the meaning the environment holds for them (ibid., pp.176-177).

Interviews as a Research Method

According to Zeisel, asking questions in research means posing questions systematically to find out what people think, feel, know, believe, and expect. Zeisel explains that we can use focused interviews with individuals or groups to find out in depth how people define a concrete situation, what they consider important about it, what effects they intend their actions to have in the situation, and how they feel about it (Zeisel, 1981, p.137).

Zeisel emphasizes that to understand thoroughly how someone reacts to a situation, one must first analyze the structure of that situation, using theory and observational research methods known as the *pre-interview analysis*. Next, Zeisel defines the *interview guide* as a loose conceptual map. He explains that skilled focused interviewers modify their original plans to correspond to the conceptual map reflected in the respondent's answers. That conceptual map, Zeisel explains, is the respondent's definition of the situation for which the interviewer is searching. Zeisel emphasizes that for surveys in which questions are posed with prescribed rigidity, a "good interviewer" is one who adheres to text and never develops initiative of his own, but in a focused interview the opposite is true (Zeisel, 1981, pp.137-138).

Next, Zeisel discusses the three objectives of focused interviews as *definition of the situation*, *strength of respondents' feelings*, and *intentions*. Zeisel describes the first objective—*definition of the situation*—as an individual's definition of a situation in the way she sees and interprets it. He explains that knowing how participants define a situation—the meaning they give it—help to interpret data gathered through other methods, no matter how unreasonable the respondent's definition sounds (ibid., p.138).

Zeisel defines the next objective of focused interviews—*strength of respondents' feelings*—as the tradeoffs that are made by researchers to control the side effects of their decisions. Lastly, Zeisel discusses the third objective—*intentions*—as the intentions of the respondent while doing a particular action in a space (ibid., p.139).

In turn, Zeisel lists four basic characteristics of focused interviews as:

1. Persons interviewed are known to have been involved in a particular *concrete situation*.
2. An environmental-behavior researcher has carried out a *situational analysis* to provisionally identify hypothetically significant elements, patterns, and process real aspects of the situation.
3. On the basis of this analysis, the investigator develops an *interview guide*, setting forth major areas of inquiry and hypotheses.

4. The interview about subjective experiences of persons exposed to the already analyzed situation is an effort to ascertain their *definitions* of the situations (ibid., p.139).

Next, Zeisel lists six types of *probes* that help in making the interview flow—*addition probes*, *reflecting probes*, *transitional probes*, *situational probes*, *emotion probes*, and *personal probes*. He explains that probes are primarily questions that interviewers interpose to get a respondent to clarify a point, to explain further what he or she meant, to continue talking, or to shift the topic. Zeisel emphasizes that the probe is the systematic development of an everyday device used in conversation when one person is interested in precisely what another has to say (Zeisel, 1981, p.140).

Zeisel defines the first type of probe—*addition probe*—as that which encourages the respondents to keep talking. Zeisel explains that addition probes may be *encouragements*: such as “uh-huh,” “I see,” “yes,” and so on. He further states that encouragements can be combined with *body movement probes*, such as nodding head, leaning forward, and so on. If it seems inappropriate to make utterances, interviewers can combine attentive body movements with *attentive silence*, during which an interviewer waits for the respondent to begin speaking (ibid., pp.140-141).

Zeisel next, describes *reflecting probes*, which determine in a non-directed way which of the analyzed topics in the interview guide are significant to the respondent and which new topics to add. Zeisel discusses the *echo probe* under the reflecting probe as one in which the interviewer literally repeats in the form of a question the respondent’s last phrase. Zeisel also discusses the *question-to-question probe*, where the interviewer answers a respondent’s question with a question, to avoid stating an opinion. A third reflective probe, *the attentive listening probe*, demands the interviewer to listen for the implied meaning of the respondents’ remarks and repeat back to the respondent as a question what the interviewer believes the respondent has said (ibid., pp.141-144).

Zeisel describes the third probe—*transition probe*—as a probe that make sure that the respondent discusses a broad range of topics. Again, there are three different categories under the transition probes—*cued probes*, *reversion probes*, and *mutation probes*. Zeisel explains that the *cued transition probes* use analogy, association of ideas, or shifts in emphasis to effect smooth transition. The *reversion probe* takes advantage of at least a superficial connection to bring up a topic insufficiently covered earlier. A third transition probe, *the mutation probe*, blatantly changes the subject by raising questions out of context, and with no reference to the previous discussion (ibid., pp.144-146).

In turn, Zeisel's fourth probe—*situation probe*—stimulate the respondents to *specify* what parts of the situation prompted the responses. The three categories that Zeisel discusses under situation probes are those of *representation*, *environmental walk-through*, and *re-constructional probes*. According to Zeisel, a *re-presentation probe* is an active probe where the interviewer presents the respondent with a photograph or drawing of some part of the setting being discussed. Zeisel discusses a special case of the re-presentation, the *environmental walk-through probe* that can be used if the focused interview takes place in an environment that is the topic of the interview. During a walk-through, the interviewer asks the respondent to point to and describe places and objects that are important. Lastly, Zeisel explains *re-construction probes*, which ask respondents to think back to particular events in a place and to recall their reactions at the time the event took place (ibid., pp.146-150).

Zeisel's fifth probe is an *emotion probe*, which encourages discussion in depth of how the respondent feels about each specified part of the situation. The three categories of emotion probe are *feeling probe*, *projection probe*, and *attentive listening probe*. Zeisel describes *feeling probes* as those that continually use the term "feel" or "feeling" in questions or repeatedly ask respondents to explain what they mean by a generally expressed feeling. Zeisel explains the second probe for depth of emotion as the *projection probe*, in which interviewers ask respondents to project feelings about a situation onto another, hypothetical person. A final emotion probe discussed by Zeisel is the *attentive-listening probe*, in which the interviewer listens for the meaning implied in the

respondent's answer and then makes this implicit meaning explicit in a follow up probe (ibid., pp.150-152).

Zeisel's final probe—*personal probe*—gets respondents to describe how the contexts of their lives influence their reactions. The two categories that Zeisel explains under personal probe are *self description probes* and *parallel probes*. The *self description probes* directly request respondents to describe themselves and why they react to situation the way they do and the *parallel probes* help respondents talk about themselves in one setting by requesting them to find parallel situations in their own lives (ibid., pp.152-154).

Zeisel summarizes his discussion of focused interviews by explaining that one cannot find out how people see the world and feel about it unless one asks them. Zeisel explains that the focused interviews are uniquely suited to discovering a respondent's personal definition of complex environment-behavior situations. He emphasizes that to achieve full courage and depth of insights, the interviewer's main tool is the probe: an indication by the interviewer to the respondent to provide more information about depth of feelings, other topics, the respondent's personal context, or details of a situation. Zeisel explains that interviewers use probes to keep an interview flowing without directing it (ibid., p.156).

Questionnaires and the three Kansas State University Residence Halls

One-hundred-seventy-five questionnaires were distributed to residents of Putnam, Goodnow and Moore Halls through respective hall representatives. The questionnaires were randomly placed in student mailboxes, and replies were collected and analyzed for patterns in liking and disliking the different spaces in the residence halls along with general information. Fifty questionnaires each were distributed in Goodnow and Putnam Halls, while seventy-five was distributed in Moore Hall. Twenty-five completed forms were returned from Goodnow, nine from Putnam, and seven from Moore Hall.

The analysis of the questionnaire data presents information regarding the ranking of the halls by residents and also demonstrates whether the halls meet the expectations of the residents. The tables presented in this chapter use percentages as a means to arrive at rankings for the three halls, but one must note that, because of such small sample sizes, these percentages are only roughly indicative and cannot be used for anything more than broad comparisons among the three residence halls.

Ranking of the Three Halls by Residents

In the questionnaire, the residents were asked to rank their residence halls in relation to all ten Kansas State University residence halls. In another question, the residents were asked to rate how their hall met their expectations in terms of *very successful*, *successful*, *somewhere in the middle*, and *very unsuccessfully*. After having analyzed the data from these two questions, the next step was to compare their responses. Tallies from the question regarding expectations portray the resident's opinion of his/her hall, while the ranking of the halls provide a general view about how the residents rate their hall in relation to all other Kansas State University on-campus halls.

	No. of times ranked 1 st
Putnam Hall	7 (78%)
Goodnow Hall	21 (84%)
Moore Hall	5 (71%)

Table 5.1. Ranking of the three halls by residents.

Table 5.1 presents the number of residents ranking their hall first out of a choice of all ten on-campus residence halls. The table demonstrates that twenty-one out of twenty-five Goodnow residents ranked their hall in first place over Putnam's seven residents (out of nine) and Moore's five (out of seven). Thus, there is tentative evidence that Goodnow Hall, with twenty-one out of twenty-five residents (84%), is ranked highest among the three halls, followed by Putnam Hall (seven out of nine, or 78%), and Moore Hall (five out of seven, or 71%).

Along with the question on ranking, an open-ended question was included asking the respondent to give reasons for his or her ranking. As shown in table 5.2, out of the

twenty-five Goodnow residents, eleven responded by listing the ambience of their residence hall, while another seven responded by listing co-educational living. Yet again, five Goodnow respondents listed the location of their hall, and three more listed the quality of the furniture in the hall. Out of the nine respondents in Putnam Hall, six mentioned the ambience of their hall, and out of the seven respondents from Moore Hall, three listed the ambience of their hall, while one listed co-education living, and one listed Moore's location.

	Ambience of the hall	Co-ed dorm	Location of the hall	New furniture
Putnam Hall	6 (67%)	0	0	0
Goodnow Hall	11 (44%)	7 (28%)	5 (20%)	3 (12%)
Moore Hall	3 (43%)	1 (14%)	1 (14%)	0

Table 5.2. Reasons why residents ranked their hall in the first place.

From table 5.2, one notes that more students (six out of nine, or 67%) from Putnam Hall listed the ambience of their hall as an important factor for ranking their hall first as compared to Goodnow Hall (eleven out of twenty-five, or 44%) and Moore Hall (three out of seven, or 43%). Also one notes from the table that Goodnow residents (seven out of twenty-five, or 28%) feel strongly about the co-educational living conditions of their hall as compared to fewer Moore residents (one out of seven, 14%). With respect to the location of the halls, it can be seen that Goodnow residents (five out of twenty-five, or 20%) mentioned this factor more often than that of Moore residents (one out of seven, or 14%). Lastly, one notes that only three students out of twenty-five respondents in Goodnow mentioned the quality of furniture in their hall. This response indicates that in most cases, the furniture in Goodnow Hall was in poor condition and that its replacement with new was important to its residents. In addition, one observes in table 5.2 that the respondents of Moore did not mention furniture quality as a reason for having ranked their hall first. Yet again, Putnam respondents did not rank their hall in terms of co-education living, hall location or furniture quality.

Thus, from table 5.2, one notes that ambience of the hall is the reason given by most respondents from the three halls for ranking their hall first. As the table illustrates, Putnam clearly has been ranked first by a larger percentage of people as a successful place to live followed by Goodnow and then by Moore Halls.

Following the ranking of the three halls by their residents, table 5.3 presents respondents' opinion of how their hall has met their expectations. In the table, one notes that, relatively, a larger percentage of residents in Moore Hall (four out of seven, or 57%) feel that their hall has very successfully met their expectation, as compared to Moore and Goodnow Halls.

	Extremely pleased	Pleased	Somewhat pleased	Not pleased
Putnam Hall	1 (11%)	7 (78%)	1 (11%)	0
Goodnow Hall	6 (24%)	18 (72%)	1 (4%)	0
Moore Hall	4 (57%)	2 (28%)	0	1 (14%)

Table 5.3. Students ranking of their hall based on their expectations met in their residence hall.

Specifically, one notes from table 5.3 that out of seven Moore respondents, four (57%) ranked the hall to be a very successful place to live in. In turn, six out of twenty-five Goodnow residents (24%) ranked their hall to be a very successful place, while only one Putnam respondent out of seven (11%) ranked Putnam as a very successful place to live in. Thus, we can broadly conclude that Moore Hall residents feel strongly that their hall has met their expectations as compared to Goodnow and Putnam Halls.

The conclusion is presented in the form of table 5.4, which illustrates the summary rankings of all three halls with respect to three factors—hall ranking, reason for ranking, and satisfied expectations. In this table, one notes that Putnam is ranked “first” for reasons given by respondents for ranking their hall first; is ranked “second” with respect to ranking of the hall; and is ranked “third” with respect to satisfied expectations. In turn, Goodnow is ranked “first” for ranking, and “second” for both reasons given by respondents for ranking their hall first, and expectations met, while Moore is ranked “first” for reasons given by the respondents for ranking their hall first and third for both ranking and expectations met.

	Ranking of halls by respondents	Reason for ranking the hall first	Expectations met
Putnam Hall	2 nd	3 rd	1 st
Goodnow Hall	1 st	2 nd	2 nd
Moore Hall	3 rd	3 rd	1 st

Table 5.4. Final ranking of the three halls with respect to questionnaires

Therefore, we can conclude that Moore Hall, with two “third” ranking and only one “first” ranking, can be said to be less appreciated by its residents, while Goodnow with one “first” and two “second” can be said to be the second best among the three halls. In turn, Putnam Hall with one first, second, and third ranking each, can be said to be the best among the three halls in terms of resident satisfaction and liking.

Interviews with Hall Residents

When respondents completed the questionnaire forms, they were also asked to volunteer for an interview. Three students volunteered from Goodnow; three from Putnam Hall; and two from Moore Hall. The interview was conducted in a second floor lounge in the Student Union of Kansas State University. With permission from participants, the interview was recorded. The interview lasted anywhere between thirty to forty minutes, and participants were asked questions about their respective residence halls. A copy of the interview protocol is provided in appendix B.

Interview questions revolved around the three defensible space qualities—territoriality, natural surveillance, and image. Students were also asked some general questions regarding how they selected their current hall and why it was chosen over other residence halls. Later, these responses were organized by defensible space qualities and analyzed.

Table 5.5 presents summary information about the eight participants, including their residence hall, their major, the floor they live in, and years they had lived in their hall. This information is a part of the general description collected from the participants during the interview. To protect his or her identity, each participant was assigned a number and is identified by that number in the following discussion. From this table, one notes that

most of the interview participants have lived in Goodnow and Putnam Halls for only one year.

Table 5.6 presents information about why the residents chose to live in their respective halls. In this table, participants 1-3 all lived in Putnam Hall. Participant 1 moved into Putnam because he was from another town and wanted to get to know the university better before he lived off-campus; now that he had lived a year in Putnam, he planned to move off campus in the new academic year. Participant 2 lived in Ford Hall a year before she moved into Putnam Hall; she disliked Ford Hall because of its sorority atmosphere. She also believed that it is difficult to get along with large groups of other women and she preferred the much smaller Putnam. Participant 3 moved into on-campus housing, as she felt that it is easier and close to classes.

Participant	Hall	Floor	Years lived in current hall	Other halls lived in	Official position held	Major
1	Putnam Hall	Second	1	None	Resident	Pre-vet
2	Putnam Hall	Third	1	Ford Hall	Resident	Feed science
3	Putnam Hall	Second	1	None	Resident	Psychology
4	Goodnow Hall	Third	1	Smurthwaite Scholarship House	Resident Assistant	Speech communication
5	Goodnow Hall	Fourth	1	Bessie West Hall	Resident Assistant	Family life & community service
6	Goodnow Hall	Sixth	2	Marlatt Hall	Resident Assistant	Architectural engineering
7	Moore Hall	Ninth	2	West and Haymaker Hall	Chief Justice	Physics
8	Moore Hall	Fourth	2	None	Resident	Agricultural business

Table 5.5 General Information about the interview participants.

Participants 3-5 all lived in Goodnow Hall and were resident assistants in that hall. Out of these three Goodnow residents, two moved into the hall only because of this employment. One resident also mentioned that she would have left the residence halls but for this employment position. Participant 6, who moved from Marlatt Hall to Goodnow Hall, selected Goodnow because he had problems with his Marlatt roommates and preferred the co-educational atmosphere of Goodnow to the all-male atmosphere of Marlatt. Participant 5, who moved from Bessie West Hall, believed that interaction among both genders is better than single-sex interaction (Bessie West Hall is an all-women residence hall).

Participant 7 and 8 lived in Moore Hall. Participant 7 had moved there from West Hall, as she preferred the co-ed atmosphere as compared to the all-women situation of West Hall. She felt that Moore Hall was a friendlier place than West Hall. Participant 7 was also on the “committee for justice,” holding the position as a chief justice (her main responsibility was to make sure that there is no trouble in the hall). Participant 8 had lived all his six semesters in Moore Hall, and felt that it is the best hall on campus and that it has a unique character.

Participant	Reason for Moving to Current Hall
1	Moved to Putnam Hall because he was from another town and wanted to know the university better before he moved off-campus.
2	Lived in Ford Hall for one year, and disliked the sorority atmosphere in the hall, and moved into Putnam Hall .
3	Moved into Putnam Hall as she felt that it was easier and closer to classes.
4	Moved into Goodnow Hall from Smurthwaite Scholarship House because she got employed as a resident assistant.
5	Moved into Goodnow Hall from West Hall, as she preferred co-educational hall.
6	Moved into Goodnow Hall from Marlatt Hall, as he had problems with his roommates and preferred the co-educational living atmosphere better.
7	Moved into Moore Hall from West Hall, as she preferred the co-educational living atmosphere better,
8	Had always lived in Moore Hall .

Table 5.6. Reasons the participants chose their respective halls.

Thus, summarizing reasons why the interview participants chose their respective halls, one notes that three students who had lived in an all-male/all-female residence hall did not like the atmosphere and had moved into residence halls that provided co-educational living. Participants 1, 2 and 3, moved for employment reasons as a resident assistant. The freshmen students—participants 1,3 and 8—moved into their halls without having any knowledge about the halls they were going to live in.

Analysis of the Interviews

Having discussed briefly the eight interview participants, we next analyze the information gathered during the interview with respect to the three defensible space characteristics—territoriality, natural surveillance, and image. A synopsis of the eight participants' commentaries on their residence hall is provided in table 5.7, from which most of the information for this following analysis will be drawn. This information is used to better understand the three residence halls in terms of (1) territoriality, (2) natural surveillance, and (3) image. Table 5.8 presents the questions that were asked relevant to the three defensible space themes.

Table 5.7

Synopsis of Participants' Commentaries

1	Participant 1, a resident of Putnam since fall 2001 expresses that her ideal type of residence hall would be a place where she doesn't have to share her room with anyone. She likes people and likes to meet them in the main lobby, which she thinks is a very nice place in her hall. She expressed no opinion about doubly loaded in her corridors and neither has she done anything to express herself in front of her room. She thinks that it is none of her business to interfere if there is any trouble in her hall and would mind her own business. Though she thinks that her hall has to be a clean place, she would not pick up trash or any leftover stuff on the floor and throw them in the bin. She likes to interact with her friends if her door is open, but the presence of a stranger in the hall would not bother her at all. She thinks that Putnam portrays the image of a study group and appears more like a castle than a residence hall. overall she thinks that Putnam is a very nice place to live in.
2	Participant 2, a freshman student moved into Putnam in the fall of 2001, and he hasn't yet formed an opinion about the ideal type of residence hall where he would like to live, although he feels that Putnam meets all his needs very satisfactorily. He likes the Putnam's basement spaces, and likes to spend a lot of time there. He also likes the furniture in the main lobby of Putnam and thinks that is a very nice space to spend time at. He believes that doubly loaded corridors contribute to interaction among students and would not mind having a floor lounge. He likes to express himself in the hall by sticking a lot of posters and also paper cuttings and would surely intercede if there were any trouble in the hall, at least he would complain to the necessary authorities. He also likes to interact with people in his corridor when his door is open and would pay attention to the presence of a stranger in his hall. he thinks that Putnam portrays the image of an old building and that it is a friendly place to live in.
3	Participant 3, a third floor resident of Putnam Hall moved in during the fall of 2001. Her ideal type of residence hall would be the one where she doesn't have to share the bathroom with many people and though Putnam doesn't match her image of an ideal dorm, it is surely one of the nicer halls on-campus. She likes doubly loaded corridors and believes that it does promote interaction among the residents. She also explains that she does not miss the presence of a floor lounge in her hall. She is expressive about herself on her door and she is not bothered about trouble in her hall, but she believes in having the place clean. She likes to interact with her friends in the rooms and in the corridor and thinks that Putnam appears to be more a residence than a residence hall. Her overall impression about Putnam is that it is a clean and nice hall.
4	Participant 4, a resident assistant moved into the fourth floor of Goodnow Hall in the fall of 2001. According to her an ideal dormitory would be a place that has a large gathering area separate from the room, so that one can interact and study in that space. She thinks that Goodnow Hall meets her image of a perfect residence hall to satisfaction. She absolutely likes the presence of a floor lounge in each floor and explains that it is the best part of her hall. She also believes that doubly loaded corridor supplement to the interaction among neighbors living in the same hallway. She likes to express herself in the form of posters and paper cuttings on her door, and believes that she has to be responsible to see that her hall is clean. She prefers to have her door open and interacts with people moving in the corridor, she also likes to be aware of the presence of strangers in her hall. She likes the big windows in her hall and thinks that it is the best part of Goodnow Hall.

<p style="text-align: center;">Table 5.7</p> <p style="text-align: center;">Synopsis of Participants' Commentaries</p>	
5	Participant 5, a resident assistant in the third floor of Goodnow Hall, moved into this hall during the fall of 2001. According to her an ideal dormitory is a place where one feels connected with and there is a sense of getting involved, and a sense of community. She likes living in a residence hall because there are people around in the hall, and the people are there all through. She thinks that Goodnow has undergone a lot of improvement and the floor lounge with new carpet and furniture has given the floor lounge a welcoming appearance. She also believes that a floor lounge at each level promotes interaction among the residents of that floor. She would also interact with students using the corridor when her door is open and would be bothered by the presence of strangers after midnight. She thinks that Goodnow is a very friendly and nice place to live in, and she loves it there.
6	Participant 6, a resident assistant in the sixth floor of Goodnow Hall, moved into Goodnow in the fall of 2001. His image of an ideal residence hall would be, one that is definitely co-ed and is six floors, and has a floor lounge. He believes that it is important to have things to do in a hall. He thinks that Goodnow meets his ideal residence hall image. He likes the main lobby as well as the floor lounges. He likes to express himself on his door, and also like to keep an eye on the corridor when he is in his room and has the door open. He also likes to chat with his residents when they pass by his room, and believes that he has to make sure that his hall is clean. He likes to use his basement space a lot, and also the space before main entrance. He thinks that Goodnow portrays the image of an open and friendly place, and a place where one has many things to do.
7	Participant 7, a resident of Moore Hall moved into Moore during the fall of 2001, and she did so because she had many friends in Moore and she thought it was a friendlier place compared to West Hall. She thinks that the best part of her hall is that there are so many people around doing some activity that keeps her busy. She likes the floor lobby in her hall where one can meet and play games, and also likes the doubly-loaded corridor, which she thinks makes people get closer to each other. She thinks that it is her responsibility to make sure that there is no trouble in her hall and would intercede if there is any. She interacts with students passing by her room, if it is open and also has her door filled with posters and other stuff. She also cares about the presence of strangers in her hall. She thinks that Moore portrays the image of a utilitarian box, where is no extra stuff and no extra walls. She doesn't like the basement in her hall, and overall she thinks that it is a friendly and warm place, and not strict and boring.
8	Participant 8 is a resident of Moore hall since the fall of 2000, and his ideal type of residence hall would be the one, which is a good community, with nice people to get along with, and strongly believes that Moore satisfies all his needs as an ideal dorm. He likes the floor lobby one each floor and he doesn't care much about the doubly loaded corridor, but thinks that one can spend hours if need be in that space. He doesn't think that there is a need to express himself, but thinks that he would keep an eye on any stranger in his corridor, and also would chat with friends if they are passing by while his door is open. Moore he thinks looks tall and reminds of the 60s and from outside, he says that it looks plain, but once inside he says that the place has a lot of character. His overall impression about his hall is that it is a friendly place as well as a cool place to live in.

Territoriality	(1) Have you tried to express yourself personally in your hall? (2) Do you feel a need to be responsible for making sure there is no trouble in your hall? (3) Do you feel a need to be responsible for making sure that your hall or your floor or your corridor is neat and in good repair?
Natural Surveillance	(1) While you are in your room, do you like to have your door open or closed? (2) While in your room, do you usually “keep an eye” on the happenings in your corridor? (3) How do you react if you see a stranger in your corridor?
Image	(1) What do you think is the best part of your hall in terms of appearance? (2) What do you think is the not-so-good part of your hall in terms of appearance?

Table 5.8 Questions Asked Relevant to the Defensible Space Characteristics.

Territoriality

I earlier defined territoriality as the ability of a resident to perceive zones of influence. The residents can display territorial behavior, by expressing himself or herself personally in his or her environment or, by informing a stranger that the space belongs to a particular individual or groups and should not be encroached upon.

As one notes in table 5.8, the questions asked with respect to territoriality included whether the respondent was able to express himself or herself in the hall, if he or she thought that it was his or her responsibility to keep the hall clean, and what one would do if there were trouble in her hall. According to Newman (1972, pp.), expressing one’s self is also an expression of one’s zone of influence in any residential setting. Yet again, trying to make sure that the place where one lives is clean and free from trouble also indicates a personal involvement with place.

As table 5.7 illustrates, participant 1 from Putnam said that she was not interested in expressing herself in the hall, while participant 2 was enthusiastic about having his door decorated. In turn, participant 3 said that, though there are some personal pictures on her door, she usually doesn’t make many changes in her dormitory environment. Again, Putnam’s participant 1 responded negatively when asked if she felt that it was her responsibility to keep the hall clean, while participants 2 and 3 did feel it was their

responsibility to do so. Participant 1 explained that she did not care if there is any trouble in the hall, and said that she does not see any need to be concerned or involved, while participant 2 explained that she would not be bothered about trouble in her hall if it does not affect her personally. Only Putnam's participant 3 felt that it is necessary to inform the necessary authorities if there was any trouble in the hall.

These responses indicate that only one participant (2) consistently said that he would like to express himself in his hall, take responsibility to keep the hall clean, and to try to intercede if there were trouble in the hall. One other participant (3) did not want to express herself in the hall, neither did she want to take responsibility in having the hall clean nor would she interfere in any trouble in the hall. The last participant (1) is not fully interested in expressing herself, would like to keep her hall clean, and would not bother herself about troubles in the hall. Therefore Putnam Hall may be ranked "poor" in terms of the territoriality feature of defensible space.

Next, we turn to Moore participants (participants 7 and 8 in table 5.7). Participant 7 does not see any need to express himself in his hall, while participant 8 has decorated her door so much that now she is working over the doorframe. Both participants 7 and 8 feel that they are responsible to make sure there is no trouble in the hall, and also to keep the hall clean. Thus with one negative reply and two positive replies, Moore may be ranked "moderate" territoriality-wise as compared to Putnam Hall.

Last, we consider Goodnow's participants (4, 5, and 6 in table 5.7), who like to decorate their dormitory doors with posters, pictures, and paper cuttings. Also these three participants felt that it is their responsibility to have their halls clean and say they would be bothered by trouble in their hall. Participant 6 explained that there is a mutual feeling in the hall to make sure that there is no trouble in the hall. Positive replies from all the three participants earn Goodnow Hall a "good" in terms of territoriality.

Thus, we can say that Goodnow Hall is ranked first in terms of personal expression, cleanliness, and self-policing; Moore, is ranked second; and Putnam, third.

Natural Surveillance

Natural surveillance can be defined as the surveillance that a resident exerts over the spaces adjacent to his or her living quarters. In a residence hall, in terms of natural surveillance we consider the spaces adjacent to the room participant's, such as the corridor. As table 5.8 illustrates, questions relating to natural surveillance included whether the participant liked to have her dormitory door open or closed, whether the participant kept an eye on corridor happenings, and how the participant reacted if he or she saw a stranger in the corridor. Most of the participants responded positively for these questions. When a resident keeps an eye on the corridor, this is a form of natural surveillance, while a resident's reaction to strangers in the hall indicates that residents not only survey the place but also make sure that it is protected.

As indicated by participant's summaries in table 5.7, Putnam's participant 1 explains that she liked to have her room door open most of the time and also interacted with the users of the corridor, while she explained that the presence of a stranger would not bother her. Participant 2 explained that he also liked to have his door open and liked to chat with friends in the corridor, but he would surely pay attention to strangers in the hall. Putnam's participant 3 explained that she liked to have her door closed most of the time, as she has many friends in her room and does not like to disturb her neighbors. She also explained that whenever her door was open, she talked to her friends using the hall. Participant 3 also explained that she would only cast a quizzical glance if she spotted a stranger in the hall.

With participant 1 not interested in the presence of strangers and participant 3 not having her room door open for most of the time, it may be that Putnam is not as strong as it should be in terms of natural surveillance. Only one participant answered affirmatively for all the three questions, while the two other participants answered in the negative to at least one question. Therefore, we may rank Putnam as "poor" in terms of natural surveillance.

Next, in regard to Moore Hall, one notes that participant 7 liked to have her door open most of the time unless she is studying, and she conversed with friends using the corridor. She explained that she would not question the presence of a stranger who knew what he was doing, but would surely question a stranger if he were acting suspicious. Participant 8 explained that he liked to have his door open most of the time, and also conversed with his friends using corridor and would observe a stranger and where he is heading. Although both Moore participants answered all these questions in affirmative, participant 7's answer to her reaction about a stranger in the hall was not straightforward. Therefore, Moore may be ranked "moderate" in terms of natural surveillance.

Lastly, in regard to Goodnow Hall, all three participants preferred to have their door open most of the time, and also conversed with friends using the corridor. They also thought that it was necessary to know who is using their hall, and to be wary. Participant 5 said that she would be bothered by strangers in her hall during the night and would surely question their presence, while participant 6 mentioned that he would question strangers in the hall if they were seen unaccompanied by any Goodnow resident. Participant 7 also mentioned that she would question the presence of a stranger in her hall. Thus, with no negative replies to any question, we may rank Goodnow Hall "good" in terms of natural surveillance.

Thus, we can conclude by saying that Goodnow Hall residents express better natural surveillance qualities as compared to those of Moore and Putnam Halls. In Putnam Hall, only one participant answered in affirmative to the questions that were asked on natural surveillance, while one Moore participant was not very sure what she would do if a stranger was present in her hall. Therefore, we can rank Moore Hall second and Putnam Hall third in terms of natural surveillance.

Image

The third feature of defensible space—image—can be understood as twofold: first, the interior image of a building with respect to furniture and maintenance; and second, the exterior image of the building. In this section, we discuss only the interior image of the

hall with questions listed in table 5.8, including the participant's image of her hall, the best part of her hall, and the not-so-good part of his hall.

With respect to Putnam's interior image, one notes from table 5.9 that participants 1, 2, and 3 thought the best part of their hall is the main lobby. Participant 1 did not like any other place in her hall other than the main lobby, while participant 2 thought that the rest rooms in the hall were the only not-so-good part of her hall. In turn, participant 3 thought that there were no bad spaces in his hall.

Participant	Spaces liked	Spaces disliked
1	Main lobby	The rest of the hall
2	Main lobby	None
3	Main lobby	The rest rooms
4	First floor lounge, floor lounge	Basement
5	Floor lounge	Trash rooms
6	First floor lobby, floor lounge, study room	Restrooms
7	First and ninth floor lobby	Basement
8	Front lobby	Basement

Table 5.9 Spaces Liked and Disliked by Participants with Respect to Image

The above discussion shows that Putnam's best part according to the interview participants is the main lobby. In terms of Putnam's image, one notes that participant 1 did not like any space in the hall but the main lobby, and participant 2 did not like the rest rooms, while participant 3 liked all the spaces in the hall. Thus, we can rank Putnam as "poor," since there is one participant who does not like anything in the hall.

From table 5.9, one notes that all three Goodnow participants (participants 4-6) mentioned the floor lounge as the best space in their hall in terms of appearance, while participants 4 and 6 mentioned the floor lounge and participant 6 mentioned the study room. Also in terms of spaces that are not-so-good in Goodnow Hall, participant 4 discussed the basement and participant 5 mentioned the trash rooms, while participant 6 mentioned restrooms the in the corridors.

From the above discussion on Goodnow's appearance, one notes that the most favorite space among all three Goodnow participants was the floor lounge. The mention of more

than one common space in the hall indicates that Goodnow has more than one not-so-good part in the hall as compared to Moore Hall. Therefore we can rank Goodnow “moderate” in terms of image.

Last, we turn to Moore participants (7 and 8 table 5.9). Both Moore participants mentioned that their favorite space in terms of appearance was the first floor lobby. Participant 7 also liked her floor lobby and considered it be another favorite of hers. The not-so-good space in Moore mentioned by both participants was the basement, which according to participant 7 looks derelict and unused. Thus we can say that Moore Hall may be ranked “good” since both students disliked only one space in the hall.

Thus, we can conclude by saying that Moore Hall presents a better image as compared to Putnam and Goodnow Halls. In Putnam Hall, one participant did not like any features in the hall other than the main lobby, and in Goodnow Hall, all three participants mentioned three different spaces that they did not like, whereas in Moore Hall, both participants mentioned the same space in the hall that they thought was not good, thus indicating that there was only one included space in the hall.

Conclusion

In conclusion we turn to table 5.10, which presents a summary of the three defensible space features that have been discussed above. From this table, one notes that with respect to territoriality, Goodnow Hall is ranked “high,” while Moore Hall is ranked “medium,” and Putnam is ranked “low.” Yet again, in terms of natural surveillance, Goodnow Hall is ranked “high,” and Moore Hall is ranked “medium,” while Putnam Hall is ranked “low.” In turn, with respect to image, Moore Hall is ranked “high,” while Goodnow Hall is ranked “medium,” and Putnam Hall is ranked “high.”

	Putnam Hall	Goodnow Hall	Moore Hall
Territoriality	Low	High	Medium
Natural surveillance	Low	High	Medium
Image	High	Medium	High

Table 5.10. Ranking of the three halls in terms of the three defensible space features.

From the rankings, one notes that Putnam Hall is characterized as “low” in terms of all three features of defensible space, and can be said to possess the least defensible space features among the three halls, while Moore Hall with one “high” for image and two “medium” for territoriality and natural surveillance, can be said to be better than Putnam Hall in terms of defensible space features. In turn, Goodnow Hall with two “high” for both territoriality and natural surveillance and one “medium” for image feature can be said to be best among the three halls in terms of defensible space features, followed by Moore and Putnam Halls.

The next chapter summarizes chapters three four and five, and provides concluding remarks along with some guidelines for the design of future residence halls.

Chapter 6

Summary and Design Guidelines

Having discussed empirical findings in Chapters 3-5, the next step is to relate our conclusions to Newman's defensible space theory. To that end, this chapter presents a summary of the empirical findings derived from the descriptive analysis, behavioral mapping, questionnaires, and interviews. Also, a description of the three key defensible space features—territoriality, natural surveillance, and image—is presented as these features relate to the three residence halls. Finally I discuss several design guidelines that may facilitate a deeper sense of community.

Comparing the Results from Different Data Sources

Thus far, in the previous chapters, four different research methods were discussed and presented with various findings relating to the three key defensible space features of territoriality, natural surveillance, and image. The first method—descriptive analysis—provided a detailed presentation of the three halls, using plans and photographs. The second method—behavioral analysis—showed resident usage of different spaces in the hall, while the third and fourth methods—questionnaires and interviews—presented residents' view about their halls. A summary is presented using concluding tables from chapter 3 to chapter 5, discussing the ranking of each hall with respect to each method. Lastly a comprehensive analysis of the three halls' ranking is presented.

First, we review chapter 3 that provides a detailed physical description of the three residence halls through a depiction of their architectural features as related to the three defensible space features. The spaces selected for observation were: (1) space before main entrance; (2) entrance lobby; (3) floor lounge; (4) corridor, and; (5) elevator lobby. Table 6.1 presents summary data from chapter 3, presenting the rating of the three halls in terms of defensible space features.

	Putnam Hall	Goodnow Hall	Moore Hall
Territoriality	1 st	3 rd	1 st
Natural surveillance	2 nd	3 rd	1 st
Image	1 st	3 rd	2 nd

Table 6.1. Summary table for Chapter three.

From table 6.1, one notes that both Putnam and Moore Halls are ranked first for two defensible space features, while Goodnow Hall is ranked third for all three of them. Both Putnam and Moore Halls share the same first rank with respect territoriality while Goodnow is ranked last. Again Moore Hall is ranked first with respect to natural surveillance, followed by Putnam and Goodnow Hall. Lastly, Putnam Hall is ranked first with respect to image followed by Moore Hall in second place, and Goodnow in third. Thus, with two first rankings and one second ranking it can be suggested that both Putnam and Moore Halls promote better social interaction among residents and comply better with the defensible space features than Goodnow Hall, with two third ranks and one second rank. Therefore, we can say that Moore and Putnam Halls may be ranked first, as compared to Goodnow Hall that may be ranked second.

Next, the empirical findings from chapter 4 are discussed. This chapter provided an observational analysis of residents' behaviors in pre-selected spaces of the residence halls—main entrance lobby, floor lounges, corridors, basement spaces, and the space before main entrance. The information presented in this chapter was gathered by observing the residents' behavior in the spaces mentioned above and by counting and recording these behaviors on maps. Table 6.2 presents a summary table for the findings in chapter 4.

In chapter 4, as the information was gathered through behavioral mapping, little could be inferred about the territoriality and image features of defensible space. Therefore the main features that were discussed were those of natural surveillance and social interaction. Social interaction patterns were displayed by behavioral maps and it was

found that these patterns coincided with the natural-surveillance rankings for the three halls.

	Natural surveillance
Putnam Hall	3 rd
Goodnow Hall	2 nd
Moore Hall	1 st

Table 6.2. Summary table for Chapter four.

Table 6.2 presents the summary ranking of the three halls based on natural surveillance. From this table, we note that Moore Hall is stronger in terms of natural surveillance than Goodnow and Putnam Halls. Goodnow ranks second with respect to natural surveillance features, followed by Putnam, which has the weakest natural surveillance features with respect to the five spaces observed.

Next we review chapter 5, which presented the outcome of questionnaire surveys and interviews with the residents. This chapter provided detailed analysis of residents' opinions of pre-selected spaces in the residence halls—main entrance lobby, floor lounges, corridors, basement spaces, and the space before main entrance. Questions were also asked in relation to territoriality, natural surveillance, and image. Also, Chapter 5 discussed the interview data presented information regarding ranking of the three halls by the residents—whether the hall met the expectations of the residents, their favorite spaces in the hall, and residents' opinions on the three defensible space features.

	Questionnaire surveys	Interviews
Putnam Hall	1 st	3 rd
Goodnow Hall	2 nd	1 st
Moore Hall	3 rd	2 nd

Table 6.3. Summary table for chapter five.

As shown in table 6.3, the ranking of the three halls based on questionnaire and interview data was categorized under the defensible space features of territoriality, natural

surveillance, and image. From this table, we can say that Goodnow Hall with one first rank and one second rank can be scored first, followed by Putnam Hall with one first rank and one third rank, while Moore Hall with one third and one second ranking may be scored third. Thus, we can conclude that Goodnow Hall may be ranked first in terms of resident responses with respect to satisfaction as well as defensible space features, followed by Putnam and Moore Halls.

After having discussed the three halls in terms of defensible space features, the next step is to present a summary ranking for the three halls based on their aggregate rankings just discussed above. This final ranking is presented in table 6.4 and illustrates the number of times a hall has been ranked first, second, or third in the three chapters. One must remember that the rankings presented in this table are extremely tentative owing to the very small samples used in the questionnaire and interview methods. It can be said that this study can be used for development of future research on residence halls. Further research with larger samples stratified according to key factors like gender, floor level, and so forth, would facilitate more complete and accurate findings and relationships.

	Putnam Hall	Goodnow Hall	Moore Hall
Ranked first	Once	Once	Twice
Ranked second	Once	Twice	None
Ranked third	Once	None	Once

Table 6.4. Summary table for Chapters three to five.

From table 6.4, one notes that Putnam Hall has been ranked first, second, and third once, while Goodnow Hall has been ranked first once and second twice. In turn, Moore Hall has been ranked first twice and third once. Thus we can say that Moore Hall, having been ranked first the most times as compared to Goodnow and Putnam Halls, may be said to work the best in terms of student community, followed by Goodnow and Putnam.

A Fourth Lifestyle Group and Design Guidelines for Residence Halls

Having discussed the overall rankings of the three residence halls, the next step is to consider what these results mean for the design of on-campus undergraduate student housing. In Newman's *Community of Interest* (1980), he identifies three lifestyle groups—families with children, retired elderly, and working adults—and presented their housing needs in terms of architecture and landscape architecture. Here, I argue that my results point towards a fourth lifestyle group—*undergraduate students living on a university campus*. In the following sections, I identify some of the design needs of this group and then offer some design guidelines for facilitating on-campus student community in a way similar to Newman.

As explained in my literature review in chapter 2, in his *Community of Interest*, Newman discusses three lifestyle groups—*families with children, retired elderly, and working adults*. According to Newman, these three lifestyle groups serve to identify the primary pursuits of individuals within the group and their resultant demands from residential environments. Newman also explains that the three lifestyle groups identified use their homes in different ways. Families with children and retired elderly tend to occupy their home environments continuously, while working adults tend to use their environments in the evenings and weekends (Newman 1980, pp.158-159).

Newman first discusses the *families with children* category, which contains two distinctly different age groups—children and adults. He explains that in this lifestyle group, children are so much the focus and purpose of the family with children that much of the form of home environment and its surroundings is directed towards satisfying their needs. The children, according to Newman require good access between indoors and outdoor play areas, therefore high-rise buildings may not satisfy the needs of families with children. Hence, Newman recommends single-family housing or walk-ups as a preferred solution for the lifestyle group of families with children (Newman 1980, pp.159-160).

The next lifestyle Newman discusses is that of the *retired elderly*, which he explains contains people of a distinct age group. Newman explains that for this lifestyle group all

building types will be suitable except for the walk-ups, where the problem faced is that of easy access. Newman explains that retired elderly seek the companionship of other elderly families in most cases, and therefore would prefer to live among other elderly families. Newman therefore recommends the high-rise elevator building as the preferred solution for the elderly group. Newman suggests auxiliary services such as health clinic, a meal service center, and other special amenities in the high-rise housing for elderly, and explains that the high-rise building should have a common space where these elderly people can meet and gather on their floor. He also recommends the placing of an elderly building adjacent to buildings housing families with children or working adults so that they don't feel isolated (Newman 1980, pp.160-162).

Lastly, Newman discussed the *working adult's* lifestyle group that contains people of different ages who, whether married or single, young or old, spend greater part of their day at work and do not have children. As a consequence, these households' members' activities are centered away from home. These people perceive their home environment like a base of operation and not as their living milieu. The minimal presence of working adults in their apartments and their sparse use of the areas outside their building combine to make the public areas of their buildings and grounds difficult to control. Therefore, Newman suggests that working adults be provided with housing in high-rise elevator buildings which are provided with round-the-clock doorman and a custodial staff to control the interior public areas of the building (Newman 1980, pp.162-163).

Newman summarizes his recommendations regarding the suitability of various building types to the needs of different types of residents. He presents his summary in a table, reproduced as table 6.5 that lists the four main categories of building types and juxtaposes them against the three basic family types identified by lifestyle.

	1. Single Family	2. Walk-ups	3. Medium High-Rise		4. Elevator High-Rise	
Family Type			Doorman	Non-doorman	Doorman	Non-doorman
Families with children	**	**	*	●	●	■
Elderly	*	■	**	*	**	*
Working adults	■	●	**	■	**	■

** strongly recommended

* recommended

● barely acceptable

■ not recommended

Table 6.5. Assignment of family types to building types (Newman 1980, p. 163)

Now that we have discussed Newman's three lifestyle groups, we must briefly identify the differences between the first three lifestyle groups discussed by Newman and my lifestyle group of undergraduate students living in on-campus housing. We must remember that both *Defensible Space* (Newman 1972) as well as *Community of Interest* (Newman 1980) was written providing housing solutions for low-income families, and not for students. The families for which Newman sought design solutions did not move into their residences by choice. These families did not have common aspirations or a shared lifestyle, unlike students who move into residence halls by choice and more or less have a common aspiration and lifestyle. In spite of these lifestyle differences, one notes that there are a few similarities between the four lifestyle groups.

The lifestyle of the students in some ways is similar to that of working adults, where the students also spend much time away from home—their room—during the day and are in their halls predominantly during late evenings and weekends. Also, like the elderly group, the students like to have some place to gather around in their hall, as well as on their floor. These students typically like to spend time outside their hall as well as inside. Also students like the provision of a television room, entertainment room, poolroom, and fitness center in their hall. Like some elderly, students also like to have special services such as meal service and access to laundry. Also some of the students tend to have their room door open most of the time. Based on these shared lifestyle needs, I next provide certain guidelines for the fourth lifestyle group, showing how architecture can promote interaction and feeling of a sense of community among students.

In terms of specific appropriate building types, knowing the high densities a residence hall must provide, we must eliminate the choice of single-family housing. Therefore, we are left with the choice of *walk-ups*, *medium high-rise*, and *elevator high-rise*. When we refer to walk-ups, this type does not represent a limited number of apartments grouped around a staircase but, instead, represents a three-story building that accommodates students along a longer corridor and accessed predominantly through stairs and not an elevator. With respect to residence halls, the height of the building does not play a crucial role in bringing students together in a hall but, rather, it is other factors, such as length of the corridors, presence of a floor lounge, and so on, that become important.

In presenting design implications for undergraduate student housing, we discuss design features of the building from larger to small scale and then discuss the building in relation to its surrounding outside spaces, especially main-entry areas. The features discussed are: size of the building, main lobby, floor lounge, basement facilities, and the space outside the residence halls. These features will be discussed, drawing on Newman's defensible space principles (Newman 1972, 1980).

1. Size of Building

The above discussion suggests that the building types that will work best for student housing are walk-ups, medium high-rise, and tall high-rise buildings. The conclusions of chapters 3-5 in this thesis indicate that all these three building types work fairly well for facilitating a sense of student community at Kansas State University. Therefore, in discussing possibilities for building size, we use our three dormitories—Putnam, Goodnow, and Moore Hall—as a tentative basis for establishing a range of building size and design.

As mentioned in earlier chapters, Putnam Hall accommodates around 200 student residents, as compared to Moore Hall, which accommodates around 600 student residents (table 1.1). Therefore, we can set the dormitory size at a lower limit of 200 and at an upper limit of 600. We can also conclude that, if the number of residents living in a hall were to be reduced below 200, then economy of scale would be too low and the residential hall

could not probably be justified financially. In turn, if the residence hall had a student population over 600, one has to worry about how the large size might erode a sense of community among the students. Hence, I conclude here that dormitories with a residence size of 200-600 students are probably most effective in meeting both student needs and economic considerations.

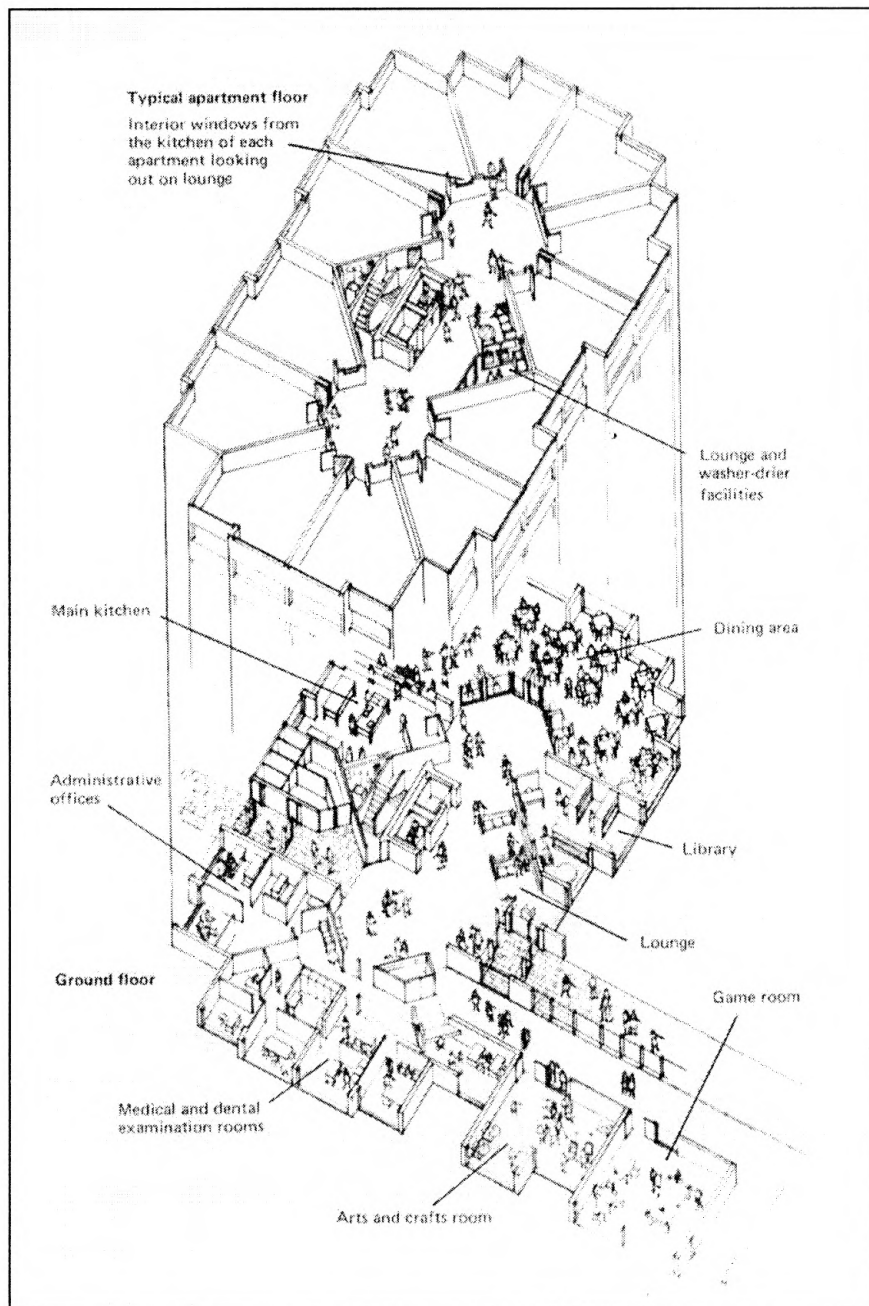


Figure 6.1. Isometric drawing of the building for the elderly, showing ground floor (below) and a typical upper floor (above) (reproduced from Newman's *Communities of Interest* (1980)).

Next, we need to examine the issue of building shape as it is determined by room arrangement. We first begin by discussing the issue of clusters versus double-loaded corridors. Newman made use of a cluster arrangement for an elderly complex as shown in figure 6.1. In this floor plan, there are twelve apartment units that open onto interior courts, and there are two such courts per floor, each court serving six such units. Each apartment has a space that looks into the interior court to stimulate natural surveillance of that space. On each floor the area opposite the elevator is provided with a sofa, chair and table, making it appear like a lounge. There are also common facilities provided on each floor, including a laundry. The first floor of this building largely accommodates communal facilities, such as a library, kitchen, dinning area, arts, crafts, and game room.

Such a cluster arrangement would probably work for undergraduate student housing except for the fact that the cluster would need to accommodate a larger number of student rooms. The interior court is certainly a positive design element that potentially could promote a sense of community for the students living off the courts, since students would meet each other accidentally and over time become familiar with each other.

In contrast to the cluster arrangement is the more conventional double-loaded corridor design for residence halls. The three halls examined in this thesis are designed based on this double-loaded corridor arrangement. As demonstrated in previous chapters, it was found that floor lounges played an important role for a sense of student community on a double-loaded corridor because these floor lounges provide a common space where the students can meet and get to know each other, thereby promoting interaction and hence creating a sense of community.

2. Main Lobby

Based on our conclusions from three Kansas State University residence halls the main lobby space in a residence hall should be on the first floor and it should stimulate student interaction and sociability by the fact that all students must pass through on their way in and out of the building. Key design features of this main lobby include main entrance lounge, reception desk, and elevator lobby.

In relation to main lobby design, the architect must make sure that the lounge space is visible from all the important spaces in the main lobby, such as the reception desk and the elevator lobby, so that residents using the main lobby to access their rooms or waiting for the elevator will be able to survey the lounge space for friends. Good natural lighting and internal lighting will also help ensure that the space is being effectively surveyed.

The main-entrance lounge area should be set immediately to one side of the main entrance so that people entering the hall can observe users of the lounge. This lounge should be large enough to accommodate more than one activity, such as a visiting and a snacking area with a round-the-clock snack bar if possible. Such a facility would invite students to use the main entrance lounge for snacking and relaxing alone or with friends.

Another important feature of the main lobby is the reception desk, which should face the main entrance, so that students walking into the hall can drop in and talk to the resident-in-charge. During behavioral mapping of the three halls, it was noticed that the largest numbers of interaction took place at the reception desk where residents stopped to ask questions or to chat. Finally, the elevator lobby should be clearly visible from the main entrance, the entrance lounge, and the reception desk, so that the students using the elevator can interact with other students present in the first floor.

3. Floor Lounges

The next space to be discussed is floor lounges, the presence of which as suggested in chapters 3-5 can contribute considerably to students' sense of community. With no floor lounges present in a residence hall, the only common meeting space for students is the main entrance lounge. There is no common space for the residents of a floor to meet, and going to the main floor from another floor to study, spend time, or meet friends requires intentional effort rather than informal encounter. In this sense it is useful for a floor lounge to be closest to the path of users when they leave their corridor. Also, being near to a floor lounge does not require intentional planning as going to a main floor lounge

would. Therefore, the presence of floor lounges is strongly recommended in a residence hall to facilitate a sense of student community.

This floor lounge should be placed at the intersection of the wings of hall corridors, so that students leaving or entering their corridor from the floor lounge will be able to observe friends using the floor lounge and can stop by for a chat. The elevator lobby should also be incorporated into the floor lounge, so that people using the elevator can easily survey the lounge space for friends.

The floor lounge space should be bright from natural lighting during the day so as to invite users to use the space for studying, and should have adequate lighting at night. The furniture in the floor lounges should provide for both socializing as well as casual studying. Each floor's lounge space should have a unique identity that can be achieved through murals, posters, and different furniture arrangement, portraying a sense of user territoriality and pride. Floor-lounge design should be done in collaboration with floor residents so as to bring about a group unity. In addition well-designed floor lounges portray a positive image of the hall as well as the floors.

4. Basement Facilities

Basement facilities may include TV room, sports room, music room, game room, study room, kitchenette, dining room, vending machines, laundry, and other such auxiliary facilities. During the behavioral mapping study, it was observed that few residents used the various facilities in the three residence halls' basements. One reason is that the basement was not in the path of the possible users, who had to make an extra effort to go there. The only space that was used by almost all the residents was the laundry. Therefore, the location of the above mentioned activities in the basement are not entirely appropriate to stimulate residents' use.

One alternative is to relocate the various activities located in the basement to the first floor of the hall. This change in location would most probably stimulate more residents to use the functions, as they would be in the regular path of residents as they access their

rooms through the main floor. When making such changes, one must remember that the spaces used for different facilities must be well equipped and attractive, thus tempting residents to use them. Also, these spaces should have glazed doors or walls to enable residents to spot friends in these spaces and join them. The ambience of these spaces should match that of other spaces in the hall, and these spaces must not look unused, and badly maintained.

5. Spaces outside Residence Hall's

The space outside residence hall's entrance is an important place where interaction may be stimulated. Residents walking in and out of the building can use this space for chatting and relaxing alone or in the company of fellow residents. Resident smokers use this space for smoking, as building regulations prohibit smoking inside the rooms.

The main entrance of the hall should be elevated from its circulation approaches to create a real barrier and inform the user that he or she is entering semi-public grounds. The steps that lead to this space should have low risers and wide tread, so that they can be used as seating spaces. It is important for this space to be sheltered so that residents can use it on days when the weather is not too unpleasant. There should be adequate furniture to accommodate as many users as possible. One should remember while designing this space to provide a separate area for smokers, as many non-smokers will not be able to enjoy this space along with smokers.

The next space is the one in front of the building. A cluster formed by other residence halls is always a preferred model, as this shared space can enhance interaction among residents from different halls. Also care must be taken to enclose a common space such as a courtyard in the cluster so that residents of the three halls will have a common space to meet. This space may be maintained with lawn and basketball and volleyball courts, thereby encouraging residents to use the space.

Conclusion

Defensible space theory has been the main conceptual foundation of this study. Each space and the various design features in the three halls—Putnam, Goodnow, and Moore—were compared, drawing on Newman's three elements of defensible space—territoriality, natural surveillance, and image. The conclusion of this research indicates that some concepts of the defensible space theory were not found in the residence hall situation. First, it was determined that providing double-loaded corridors is not necessarily detrimental in residence halls. Also, it was established that building height did not appear to play a crucial role in residence hall design. On the other hand, it was observed that both site design and building image could influence a sense of student community. It was also noted that visual permeability in the building helps promote interaction among residents.

Therefore, having presented a study based on the literature from defensible space theory, largely derived from the needs of low-income housing, several defensible space features did not seem to play a crucial role in terms of undergraduate student residence halls. Therefore, we must remember that each lifestyle requires a different set of design guidelines for each building type assigned, as the needs of each lifestyle group is different.

My research also points to the importance of the smaller architectural parts of a residence hall are integrally joined in the larger building through circulation, as architectural theorist Bill Hillier (1984, 1996) has pointed out. Good spatial circulation in a hall can foster a sense of community, as it seems likely that the frequency of involuntary, personal, and face-to-face contact is one of the most important factors in the formation of student groups and informal friendships. Thus, careful attention has to be given to circulation between different spaces in a hall in order to stimulate interaction among residents. Also, one has to design spaces in such a way that they help to draw residents together and thereby facilitate friendship and belonging.

Finally, we conclude by emphasizing that there exists a strong relationship between undergraduate residence-hall architecture and a sense of student community. When providing design suggestions for creating a better residence hall, one must remember that it is impossible to design a residence hall that would suit every student's needs, but rather, one must make the best attempt to make it a universal design that will work for many of the students who live in the residence hall. This result can be achieved through post-occupancy evaluation studies such as this research, which will present information regarding how a hall is used and information on resident satisfaction. Though this study has attempted a post-occupancy evaluation of the three residence halls using various research methods, the sample size used for questionnaires and interviews was much too small for definitive conclusions, and a complete post-occupancy study would require a much larger number of student respondents—ideally at least one-hundred questionnaire respondents from each hall and at least twenty-five interview participants from each hall.

Overall, the results presented here suggest that there is much more to be learned about designing undergraduate residence halls, and the hope is that this study will be one useful starting point.

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Appendix A

1. Human Subjects Approval form
2. Informed Consent Letter
3. Questionnaire Protocol

Committee for Research Involving Human Subjects (IRB)

Application for Approval Form

ADMINISTRATIVE INFORMATION:

- **Title of Project:** (if applicable, use the exact title listed in the grant/contract application)
Designing On-Campus Student Housing: A Planning Model Based on the Experiences of Student Residences of Goodnow Hall, Moore Hall, and Putnam Hall at Kansas State University.
- **Type of Application:**
☒ New, ☐ Addendum/Modification, ☐ Other (explain) _____
- **Funding Source:** (identify all source(s) of funding for the project) Self
- **Principal Investigator:** (must be a KSU faculty member)
Name: Dr. David Seamon Degree/Title: Professor
Department: Architecture Campus Phone: 785-532-1121
Campus Address: 202C Seaton, KSU, Manhattan Fax #: _____
E-mail: triad@ksu.edu
- **Contact Name/Email/Phone for Questions/Problems/Emergencies:** Anu Russell A. Tharanath
anu@ksu.edu, 785-532-0659
- **Does this project involve any collaborators not part of the faculty/staff at KSU?** (projects with non-KSU collaborators may require additional coordination and approvals):
☒ No
☐ Yes
- **Project Classification** (Is this project part of one of the following?):
☒ Thesis
☐ Dissertation
☐ Class Project
☐ Faculty Research
☐ Other: _____
- **Please attach a copy of the Consent Form:**
☒ Copy attached
☐ Consent form not used
- **Please attach a copy of the sponsor's grant application or contract as submitted to the funding agency:**
☐ Copy attached
☒ Not applicable
- **Based upon criteria found in 45 CFR 46 – and the overview of projects that may qualify for exemption explained at <http://www.ksu.edu/research/human/exempt.htm>, I believe that my project using human subjects should be determined by the IRB to be exempt from IRB review:**
☒ No
☐ Yes (If yes, please complete Section X. C. 'Exempt Projects'; remember that only the IRB has the authority to determine that a project is exempt from IRB review)

If you have questions, please call the University Research Compliance Office (URCO) at 532-3224, or comply@ksu.edu

Human Subjects Research Protocol Application Form

The KSU IRB is required by law to ensure that all research involving human subjects is adequately reviewed for specific information and is approved prior to inception of any proposed activity. Consequently, it is important that you answer all questions accurately. If you need help or have questions about how to complete this application, please call the Research Compliance Office at 532-3224, or e-mail us at comply@ksu.edu.

Please provide the requested information in the shaded text boxes. The shaded text boxes are designed to accommodate responses within the body of the application. As you type your answers, the text boxes will expand as needed. After completion, print the form and send the original and two photocopies to the Institutional Review Board, Room 1, Fairchild Hall.

Principal Investigator: Dr. David Seamon
Project Title: Designing On-Campus Student Housing: A Planning Model Based on the Experiences of Student Residences of Goodnow Hall, Moore Hall, and Putnam Hall at Kansas State University.
Date: 10/05/01

- I. **BACKGROUND** (concise narrative review of the literature and basis for the study):
Based on the design theories of architect Oscar Newman in his Defensible Space (1973) and Community of Interest (1982), I plan to establish a model of on-campus student housing.
- II. **PROJECT/STUDY DESCRIPTION** (please provide a concise narrative description of the proposed activity in terms that will allow the IRB or other interested parties to clearly understand what it is that you propose to do that involves human subjects. This description must be in enough detail so that IRB members can make an informed decision about proposal).
Taking photographs, mapping student behavior, and interviewing student residents living in the Goodnow Hall, Moore Hall, and Putnam Hall.
- III. **OBJECTIVE** (briefly state the objective – what you hope to learn from the study):
To provide a set of design recommendations for student housing that fosters social interaction and a sense of at-homeness for student residents
- IV. **DESIGN AND PROCEDURES** (succinctly outline formal plan for study):
- A. Location of study: Goodnow Hall, Moore Hall, and Putnam Hall at Kansas State University
 - B. Variables to be studied: Students at the Residence Halls of Kansas State University
 - C. Data collection methods: (surveys, instruments, etc – Photography, drawing and, observation of student behavior please attach)
 - D. Factors that would lead to halting study None
due to emotional or physical stress:
 - E. Biological samples taken: (if any) No
 - F. Debriefing procedures for participants: A copy of the thesis results will be provided to the Housing and Dining Services of Kansas State University
- V. **RESEARCH SUBJECTS:**
- A. Source: Graduate and Undergraduate Students
 - B. Number: approximately 10 per dormitory x 3 sites = 30
 - C. Characteristics: (any unique Participants will be the selected student residents living in Goodnow qualifiers for participation) Hall, Moore Hall, and Putnam Hall
 - D. Recruitment procedures: (attach any Student participants will be identified with the help of the fliers, posters, etc. used in recruitment) Association of Residence Halls (ARH), a Kansas State University group that sponsors an ongoing dialogue between student resident in on-campus dormitories and Housing and Dining Services.
- VI. **RISK – PROTECTION – BENEFITS:** The answers for the three questions below are central to human subjects research. You must demonstrate a reasonable balance between anticipated risks to research participants, protection strategies, and anticipated benefits to participants or others.

- A. **Risks for Subjects:** (Identify any reasonably foreseeable physical, psychological, or social risks for participants. State that there are “no known risks” if appropriate.)
None
- B. **Minimizing Risk:** (Describe specific measures used to minimize or protect subjects from anticipated risks.)
NA
- C. **Benefits:** (Describe any reasonably expected benefits for research participants, a class of participants, or to society as a whole.)
Useful design and planning recommendations for future on-campus housing, both for undergraduate and graduate students.

In your opinion, does the research involve more than **minimal risk** to subjects? (“Minimal risk” means that “the risks of harm anticipated in the proposed research are not greater, considering probability and magnitude, than those ordinarily encountered in daily life or during the performance of routine physical or psychological examinations or tests.”)

☐ Yes ☒ No

VII. CONFIDENTIALITY: (Explain how you are going to protect confidentiality of research subjects and/or records. Include plans for maintaining records after completion. Usually, the best case is to maintain complete anonymity for research subjects. It is a federal requirement to maintain consent forms for 3 years after the study completion.)

When interviewed, students will be identified by a number; In the thesis report, no individual's name will be used.

VIII. INFORMED CONSENT (Informed consent is a critical component of human subjects research. A schematic for determining when a waiver or alteration of informed consent may be considered by the IRB is found at <http://www.ksu.edu/research/human/slide1.jpg> and at <http://ohrp.osophs.dhhs.gov/humansubjects/guidance/45cfr46.htm#46.116>. Even if your proposed activity does qualify for a waiver of informed consent, you must still provide potential participants with information that informs them of their rights as subjects, i.e. explanation that the project is research and the purpose of the research, length of study, study procedures, debriefing issues to include anticipated benefits, study and administrative contact information, confidentiality strategy, and the fact that participation is entirely voluntary and can be terminated at any time without penalty, etc. Even if your potential subjects are completely anonymous, you must provide them (and the IRB) with this information. See informed consent example <http://www.ksu.edu/research/human/index.htm>)

- | | |
|---|--|
| <p>Yes No</p> <p><input checked="" type="checkbox"/> <input type="checkbox"/></p> <p><input type="checkbox"/> <input checked="" type="checkbox"/></p> <p><input checked="" type="checkbox"/> <input type="checkbox"/></p> <p><input checked="" type="checkbox"/> <input type="checkbox"/></p> <p><input type="checkbox"/> <input checked="" type="checkbox"/></p> | <p>Answer the following questions about the informed consent procedures.</p> <p>a. Are you using a written informed consent form? (If “yes” include a copy with this application. If “no” see next paragraph.)</p> <p>b. In accordance with guidance in 45 CFR 46, I am requesting a waiver or alteration of informed consent elements (See Section VII above). If “yes,” provide a basis and/or justification for your request.</p> <p>c. Are you using the online Consent Form Template provided by the URCO? If “no,” does your Informed Consent document has all the minimum required elements of informed consent found in the Consent Form Template? (Please explain)</p> <p>d. Do you preserve the anonymity of subjects? (if “no” explain why and describe how you will protect the identity of subjects).</p> <p>e. Are subjects debriefed about the purposes, consequences, and benefits of the research? Debriefing refers to a mechanism for informing the research subjects of the results or conclusions, after the data is collected and analyzed, and the study is over. (If “no” explain why.)
 Once the thesis is completed, the researcher will present a public presentation on her work for the Housing and Dining Services and students who participated in the survey will be invited.</p> |
|---|--|

* It is a requirement that you maintain all signed copies of informed consent documents for at least 3 years following the completion of your study. These documents must be available for examination and review by federal compliance officials.

IX. PROJECT INFORMATION: (If you answer yes to any of the questions below, you should explain them in one of the paragraphs above)

Yes	No	Does the project involve any of the following?
<input type="checkbox"/>	<input checked="" type="checkbox"/>	a. Deception of subjects
<input type="checkbox"/>	<input checked="" type="checkbox"/>	b. Shock or other forms of punishment
<input type="checkbox"/>	<input checked="" type="checkbox"/>	c. Sexually explicit materials or questions about sexual orientation, sexual experience or sexual abuse
<input type="checkbox"/>	<input checked="" type="checkbox"/>	d. Handling of money or other valuable commodities
<input type="checkbox"/>	<input checked="" type="checkbox"/>	e. Extraction or use of blood, other bodily fluids, or tissues
<input type="checkbox"/>	<input checked="" type="checkbox"/>	f. Questions about any kind of illegal or illicit activity
<input type="checkbox"/>	<input checked="" type="checkbox"/>	g. Purposeful creation of anxiety
<input checked="" type="checkbox"/>	<input type="checkbox"/>	h. Any procedure that might be viewed as invasion of privacy
<input type="checkbox"/>	<input checked="" type="checkbox"/>	i. Physical exercise or stress
<input type="checkbox"/>	<input checked="" type="checkbox"/>	j. Administration of substances (food, drugs, etc.) to subjects
<input type="checkbox"/>	<input checked="" type="checkbox"/>	k. Any procedure that might place subjects at risk
<input type="checkbox"/>	<input checked="" type="checkbox"/>	l. Any form of potential abuse; i.e., psychological, physical, sexual

X. SUBJECT INFORMATION: (If you answer yes to any of the questions below, you should explain them in one of the paragraphs above)

Yes	No	Does the research involve subjects from any of the following categories?
<input type="checkbox"/>	<input checked="" type="checkbox"/>	a. Under 18 years of age
<input type="checkbox"/>	<input checked="" type="checkbox"/>	b. Over 65 years of age
<input type="checkbox"/>	<input checked="" type="checkbox"/>	c. Physically or mentally disabled
<input type="checkbox"/>	<input checked="" type="checkbox"/>	d. Economically or educationally disadvantaged
<input type="checkbox"/>	<input checked="" type="checkbox"/>	e. Unable to provide their own legal informed consent
<input type="checkbox"/>	<input checked="" type="checkbox"/>	f. Pregnant females as target population
<input type="checkbox"/>	<input checked="" type="checkbox"/>	g. Victims
<input type="checkbox"/>	<input checked="" type="checkbox"/>	h. Subjects in institutions (e.g., prisons, nursing homes, halfway houses)

XI. PROJECT COLLABORATORS:

A. KSU Collaborators – anyone who is collecting or analyzing data: (list all collaborators on the project, including undergraduate and graduate students)

Name:	Department:	Campus Phone:
Anu Russell A. Tharanath	Architecture	785-532-0659
_____	_____	_____
_____	_____	_____

B. Non-KSU Collaborators: (KSU has negotiated an Assurance with the Office for Human Research Protections (OHRP), the federal office responsible for oversight of research involving human subjects. When research involving human subjects includes collaborators who are not employees or agents of KSU the activities of those unaffiliated individuals may be covered under the KSU Assurance only in accordance with a formal, written agreement of commitment to relevant human subject protection policies and IRB oversight. The Unaffiliated Investigators Agreement can be found and downloaded at (<http://www.ksu.edu/research/human/invagree.pdf>). The URCO must have a copy of the Unaffiliated Investigator Agreement on file for each non-KSU collaborator who is not covered by their own IRB and assurance with OHRP. Consequently, it is critical that you identify non-KSU collaborators, and initiate any coordination and/or approval process early, to minimize delays caused by administrative requirements. If you are collaborating with another institution or performing human subjects research at another site, you should review

Name:	Organization:	Phone:
NA		

Does your non-KSU collaborator's organization has an Assurance with OHRP? (for Federalwide Assurance and Multiple Project Assurance (MPA) listings of other institutions, please reference the OHRP website under Assurance Information at: <http://ohrp.osophs.dhhs.gov/polasur.htm>).

☒ No
☐ Yes If yes, Collaborator's MPA # _____

Is your non-KSU collaborator's IRB reviewing this proposal?

☒ No
☐ Yes If yes, IRB approval # _____

C. **Exempt Projects:** 45 CFR 46 identifies six categories of research involving human subjects that may be exempt from IRB review. The categories for exemption are listed on the KSU research involving human subjects home page at <http://www.ksu.edu/research/human/exempt.htm>. If you believe that your project qualifies for exemption, please indicate which exemption category applies (1-6). Please remember that only the IRB can make the final determination whether a project is exempt from IRB review, or not.

Exemption Category: _____

If you have questions, please call the University Research Compliance Office (URCO) at 532-3224, or comply@ksu.edu
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INVESTIGATOR ASSURANCE FOR RESEARCH INVOLVING HUMAN SUBJECTS

(Print this page separately because it requires a signature by the PI.)

P.I. Name: Dr. David Seamon

Title of Project: Designing On-Campus Student Housing: A Planning Model Based on the Experiences of Student Residences of Goodnow Hall, Moore Hall, and Putnam Hall at Kansas State University.

XII. **ASSURANCES:** As the Principal Investigator on this protocol, I provide assurances for the following:

- A. **Research Involving Human Subjects:** This project will be performed in the manner described in this proposal, and in accordance with the Federalwide Assurance FWA00000865 approved for Kansas State University available at <http://ohrp.osophs.dhhs.gov/polasur.htm#FWA>, applicable laws, regulations, and guidelines. Any proposed deviation or modification from the procedures detailed herein must be submitted to the IRB, and be approved by the Committee for Research Involving Human Subjects (IRB) prior to implementation.
- B. **Training:** I assure that all personnel working with human subjects described in this protocol are technically competent and have completed the required IRB training modules found at: (<http://www.ksu.edu/research/human/modules/index.htm>). I understand that no proposals will receive final IRB approval until the URCO has documentation of completion of training by all appropriate personnel.
- C. **Extramural Funding:** If funded by an extramural source, I assure that this application accurately reflects all procedures involving human subjects as described in the grant/contract proposal to the funding agency. I also assure that I will notify the IRB/URCO, the KSU PreAward Services, and the funding/contract entity if there are modifications or changes made to the protocol after the initial submission to the funding agency.
- D. **Study Duration:** I understand that it is the responsibility of the Committee for Research Involving Human Subjects (IRB) to perform continuing reviews of human subjects research as necessary. I also understand that as continuing reviews are conducted, it is my responsibility to provide timely and accurate review or update information when requested, to include notification of the IRB/URCO when my study is changed or completed.

(Principal Investigator Signature)

(date)

Informed Consent Statement (Questionnaire)

Thank you for your interest in participating in this study. The following information is being provided so that you will be as informed as possible about the study in which you have been asked to participate. If you have any questions about this information or need further qualification, please ask before signing this form.

Researcher

Anu Russell A. Tharanath, P.O. Box 603, Manhattan, KS 66502 Phone # (785) 565-9577. You are asked to take part in a research study that I am conducting as a requirement in the Masters of Architecture program at Kansas State University.

Purpose and Benefits

The purpose of this study is to understand your experiences of living in on-campus student housing at K-State. I am especially interested in knowing about how the architectural features in residence halls help to promote social interaction. I would therefore like to know your opinions and ideas about various spaces in the hall, such as the lobby, the entrance portico, the floor lounge, etc. I will also be asking you questions in regard to how often you use these places and if your residence hall brings about a “sense of student community”.

By participating in this study, you will contribute to a better understanding of what “sense of student community” means in an on-campus housing. Once I have completed this study, a copy will be available at the Housing and Dining Services, and I will gladly provide you with a personal copy of my study if you wish.

Survey Procedure

The questionnaire should take no more than thirty minutes, and you have the right not to answer any question that you think is irrelevant. You also have the right to withdraw your participation anytime you wish. A copy of your responses shall be made and both the original and the copy shall be used for the purpose of the thesis and carefully stored. Responding to this questionnaire will not bring any personal risk to the participant.

Important Issues

1. Confidentiality: All your responses to the questionnaire will be kept strictly confidential. I will keep the original copies of all the responses in a safe place. One copy shall be made of your responses to be held as a back up, in case of loss of the originals. If you wish, a copy of your responses will be made and provided to you.
2. Anonymity: No names shall be used in the thesis report. All the respondents will be referred by a number and not by a pseudonym (for example, respondent1).
3. If you have questions about the rationale or method of the study, you may contact my major advisor, Dr. David Seamon at (785) 532-1121. If you have questions about the right of subjects in this study or about the manner in which the study is conducted, you may also contact Dr. Rick Scheidt, chair, Committee on Research

Involving Human Subjects, 103 Fairchild Hall, Kansas State University,
Manhattan, KS 66502, at (785) 532-1843.

Consent of Respondent

I understand this project is study on on-campus student housing at K-State, and that my participation in the research is completely voluntary. I also understand that if I decide to participate in this study, I may withdraw my consent at any time, and stop participating at any time without explanation, penalty, or loss of benefits, or academic standing to which I may otherwise be entitled.

I verify that my signature below indicates that I have read and understood this consent form, and willingly agree to participate in this study under the terms described, and that my signature acknowledges that I have received a signed and dated copy of this consent form.

Participant Name: _____

Participant Signature: _____ Date: _____

Witness to signature: (project staff): _____ Date: _____

During the course of the study you can e-mail me at anu@ksu.edu to discuss any questions or concerns you may have.

Questionnaire

On-Campus Student Satisfaction with Kansas State University Residence Halls

This questionnaire is part of a larger architectural masters thesis study that examines students' perceptions of several Kansas State University residence halls, particularly their architectural elements. I would appreciate your cooperation in responding to the following questions and rating several physical elements of your residence hall. As a resident, you are most familiar with the living spaces and features of this building, and your suggestions and comments may be very helpful in providing information for designing future residence halls. The information is confidential, to be seen only by the researcher.

Part I. General Information: Check or fill the appropriate box. Please write NA if you think that a question is not applicable to you.

- **Class Standing** ☐ Fresh. ☐ Soph. ☐ Jr. ☐ Sr. ☐ Grad
- **Sex** ☐ Male ☐ Female
- **Residence Hall** ☐ Goodnow Hall ☐ Moore Hall ☐ Putnam Hall
- **Floor you live on** _____
- **Your major** _____
- **No. of semesters lived away from home**... _____
- **No. of. Semesters in this hall**... _____
- **No. of. Semesters in other halls on campus**... _____
- **Name of any other Kansas State University residence hall (s) you lived in before you moved to your current hall**... _____
- **If applicable, please indicate any other residential situations in which you have lived while at Kansas State University.**
 - ☐ Apartment, living alone ☐ A house, living alone
 - ☐ Apartment sharing it with 5 others ☐ A house, with 2 others
 - ☐ Apartment, with 2-4 others ☐ A house, with 5 or more than 5
 - ☐ Other, please specify... _____ ☐ Not Applicable
 - ☐ _____
 - ☐ _____

- **How successfully has your residence hall met your expectations as a good place for a student to live?**

☐ Very successful
 ☐ Successful
 ☐ Somewhere in the middle
☐ Unsuccessfully
 ☐ Very Unsuccessfully

Please explain your reasons for the

selection_____

To what extent has living in this hall been helpful to you in relation to the following needs. (Check the box that best describes your experience).

	Very helpful	Helpful	Somewhat helpful	Not helpful	Detrimental	No feeling either way
Academic needs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Social needs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Personal needs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Recreational needs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Part II. Rate the following features of your hall based on your experience.

1 = excellent

2 = fair

3 = average

4 = poor

5 = very poor

	<i>Excellent</i>	<i>Fair</i>	<i>Average</i>	<i>Poor</i>	<i>Very Poor</i>	<i>Not Applicable</i>	
	1	2	3	4	5	NA	Any additional comments
Main entry space immediately outside the building							
Appearance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Location	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Furniture	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Furniture arrangement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Overall rating	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Entrance Lobby							
Location	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Size	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Furniture	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Furniture arrangement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Wall Colors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Privacy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Lighting of the space	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Overall rating	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Floor Lounge							
Location	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Size	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Furniture	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Furniture arrangement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Wall Colors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Lighting of the space	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Privacy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Overall rating	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
	1	2	3	4	5	NA	Any additional comments
	<i>Excellent</i>	<i>Fair</i>	<i>Average</i>	<i>Poor</i>	<i>Very Poor</i>	<i>Not Applicable</i>	

	<i>Excellent</i>	<i>Fair</i>	<i>Average</i>	<i>Poor</i>	<i>Very Poor</i>	<i>Not Applicable</i>	
	1	2	3	4	5	NA	Any additional comments
Hallway							
Appearance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Wall Colors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Lighting of the space	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Sound Proofing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Overall rating	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

Your Room							
Size	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Study space	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Furniture	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Furniture arrangement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Sound proofing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Wall colors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Overall rating	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

Bathroom							
Location	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Privacy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Lighting of the space	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Wall colors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Size	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Overall rating	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

Study Lounge							
Appearance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Wall Colors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

	1	2	3	4	5	NA	Any additional comments
<i>Excellent</i>							
<i>Fair</i>							
<i>Average</i>							
<i>Poor</i>							
<i>Very Poor</i>							
<i>Not Applicable</i>							

	<i>Excellent</i>	<i>Fair</i>	<i>Average</i>	<i>Poor</i>	<i>Very Poor</i>	<i>Not Applicable</i>	
	1	2	3	4	5	NA	Any additional comments
Location	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Furniture	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

Furniture arrangement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Lighting of the space	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Comfort to study	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Overall rating	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

Laundry

Appearance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Location	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Lighting of the space	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Furniture	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Furniture arrangement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Overall rating	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

Recreational Facilities

Sports lounge

Appearance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Location	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Color	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Lighting of the space	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Furniture	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Overall rating	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Furniture arrangement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Overall rating	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

	1	2	3	4	5	NA	Any additional comments
	<i>Excellent</i>	<i>Fair</i>	<i>Average</i>	<i>Poor</i>	<i>Very Poor</i>	<i>Not Applicable</i>	

Excellent
Fair
Average
Poor
Very Poor
Not Applicable

1 2 3 4 5 NA

Any additional comments

Music Room

Appearance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Location	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Color of room	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Lighting of the space	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Furniture	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Furniture arrangement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Overall rating	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

Overall satisfaction ☐ ☐ ☐ ☐ ☐ ☐

at your Residence Hall

1 2 3 4 5 NA

Any additional comments

Excellent
Fair
Average
Poor
Very Poor
Not Applicable

Name any facilities or functions which are not in your hall now but which you feel would be important for more enjoyable campus living.

Estimate the number of hours *per week* you study in each of the following places.

- a. Your room.... _____(Hrs.) b. Study lounge.... _____(Hrs.)
 c. Floor lounge... _____(Hrs.) c. Friends' room... _____(Hrs.)
 d. Main lobby.... _____(Hrs.)
 e. Other places? _____(Hrs.)
 please specify where: _____

Please provide a rough estimate of the number of hours *per week* you usually spend in each of the following places within your hall.

Place in the hall	More than 7 hours	5-7 Hrs.	3-5 Hrs.	2-3 Hrs.	1-2 Hrs.	Less than one hour	Spend no time
Your room	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Recreation room	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Friends' rooms	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Main lounge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hallway	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Floor lounge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other ()	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other ()	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other ()	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please tell me in what room(s) or space(s) you carry out the following activities in your residence hall.

- (a) Be with large group of friends... _____
 (b) Be with a few friends... _____
 (c) Be by yourself... _____

- (d) Find exciting and interesting things to do... _____
- (e) Be with a friend... _____
- (f) Other activities, please specify... _____
- (g) _____
- (h) _____

Assuming you were to select your living quarters now, rank the following residential choices from 1 (most preferred) to 5 (least preferred). Indicate your reasons for 1 and 5 only.

Marlatt Hall..... _____

Goodnow Hall..... _____

Moore Hall..... _____

West Hall..... _____

Haymaker Hall..... _____

Ford Hall..... _____

Boyd Hall..... _____

Van Zile Hall..... _____

Putnam Hall..... _____

Do you prefer to live in on-campus housing rather than in off-campus housing?

- ☐ Yes, briefly specify reasons... _____
- ☐ No, briefly Specify reasons... _____

Please estimate roughly the number of people you know from the following places.

(a) Corridor _____

(b) Floor _____

(c) Hall _____

In the people you just estimated please provide a rough estimate of who they are, in the following categories.

	As Friends	As acquaintances	By sight	Any others, please specify
(a) Your Corridor	_____	_____	_____	_____
(b) Your Floor	_____	_____	_____	_____
(c) Your Hall	_____	_____	_____	_____

If you are interested, I would like to schedule a short interview with you to further help me with my study. If so, please provide me with the following information and I will contact you shortly.

Name. _____ Room #. _____

Phone #. _____ Or e-mail. _____

Please return this questionnaire to your student representative as soon as possible. If you are interested, the results of this study will be available after June at the Housing and Dining Services office. Thank you for your cooperation and time.

Informed Consent Statement (Interview)

Thank you for your interest in participating in this study. The following information is being provided so that you will be as informed as possible about the study in which you have been asked to participate. If you have any questions about this information or need further information, please ask before signing this form.

Researcher

Anu Russell A. Tharanath, P.O. Box 603, Manhattan, KS 66502 Phone # (785) 565-9577. You are asked to take part in a research study that I am conducting as a requirement in the Masters of Architecture program at Kansas State University.

Purpose and Benefits

The purpose of this study is to understand your experiences of living in on-campus student housing at K-State. I am especially interested in knowing about how the architectural features in residence halls help to promote social interaction. I would therefore like to hear your opinions and ideas about various spaces in your hall, such as the lobby, the entrance portico, the floor lounge, etc. I will also be asking you questions in regard to how often you use these spaces and if your residence hall brings about a “sense of student community”.

By participating in this interview, you will have the opportunity to tell your story and to contribute to a better understanding of what “sense of student community” means in an on-campus housing. Once I have completed the study a written copy will be available at the Housing and Dining Services, and I will gladly provide you with a personal copy of my study if you wish.

Survey Procedure

The interview should take no more than an hour, and you have the right to stop an interview anytime you wish. I would like to tape record your interview and transcribe it so that you can have a copy of what has been said. You will then be able to review your interview and decide if you want to add or change anything. I will also review the interviews and where necessary ask you to make clarifications or additions. Participating in this interview will not bring any personal risk to the participant.

Important Issues

1. Confidentiality: Everything you say during the interview will be kept strictly confidential. I will keep the original tapes of all interviews in a safe place. Two transcribed copies of the original tape will be made. One copy will belong to me and will remain confidential except for the three members of my thesis committee. The second copy will belong to you.
2. Anonymity: No names will be used in the thesis report. All the participants will be referred by a number and not by a pseudonym (for example, participant1).
3. If you have questions about the rationale or method of the study, you may contact my major advisor, Dr. David Seamon at (785) 532-1121. If you have questions about the right of subjects in this study or about the manner in which the study is

conducted, you may also contact Dr. Rick Scheidt, chair, Committee on Research Involving Human Subjects, 103 Fairchild Hall, Kansas State University, Manhattan, KS 66502, at (785) 532-1843.

Consent of Participant

I understand this project is study on on-campus student housing at K-State, and that my participation in the research is completely voluntary. I also understand that if I decide to participate in this study, I may withdraw my consent at any time, and stop participating at any time without explanation, penalty, or loss of benefits, or academic standing to which I may otherwise be entitled.

I verify that my signature below indicates that I have read and understood this consent form, and willingly agree to participate in this study under the terms described, and that my signature acknowledges that I have received a signed and dated copy of this consent form.

Participant Name: _____

Participant Signature: _____ Date: _____

Witness to signature: (project staff): _____ Date: _____

During the course of the study you can e-mail me at anu@ksu.edu to discuss any questions or concerns you may have.

Residence Hall Interview Questionnaire

Hall _____

Location of room:

- | | |
|---|--------------------------|
| End of the corridor near the fire exit | <input type="checkbox"/> |
| At the entrance of the corridor | <input type="checkbox"/> |
| In the middle | <input type="checkbox"/> |
| Near the restrooms (opposite or adjacent) | <input type="checkbox"/> |
-

1. When did you move into on-campus housing and why?
2. Have you lived elsewhere other than this hall, while you have been a student at K-State? [If answer to above question is yes, then probe reasons for moving to this hall.]
3. Could you please describe the ideal type of dorm or hall you would like to live in? How does this hall match up to your expectations?
4. What would you say you like the most about your hall? [Probe – reasons]
5. Are there any particular things that you don't like in your hall? [Probe – reasons]
6. Are there any design or architectural features that you like or dislike in your hall? [If yes, then probe what features they are and the reasons]
7. What is your opinion about having the rooms in your hall located on either side of a doubly loaded corridor? [Prompt – define “doubly-loaded” corridor if necessary; prompt -- like it, dislike it, don't care, etc., and also the reasons for their opinions.]
8. Do you think that a common lounge in each floor is necessary? [Probe – reasons; For residents of Putnam Hall – probe if the students miss the presence of one or don't care about it]
9. Giving me a rough guess, how many people in your hall do you know as friends, acquaintance and, by sight? [Ask for approximate numbers]
10. Did you know any of these people mentioned above in your hall prior to moving in? [Probe – how many and in what relation.]
11. How did you get to know people when you first moved into your hall?
12. How many students do you know well enough in your hall to visit with quite often in their rooms? And vice versa?

13. Would you say that your hall is a friendly place to live in?
14. Have you tried to express yourself personally in your hall or in your room? [Probe – where, why, how and why not?]
15. Do you feel a need to be responsible for making sure there is no trouble in your hall?
16. Do you feel a need to be responsible for making sure that your hall or your floor or your corridor is neat and in good repair?
17. While in your room, do you usually “keep an eye” on the happenings in your corridor?
18. How do you react if you see a stranger in your corridor? [Probe – offer some suggestions – eg. cast a suspicious or curious glance at the stranger, peep out of your room to check what he is doing, question his presence, etc.]
19. If there were some kind of trouble on your floor would you be willing to intercede?
20. Do you believe that the students living in your hall take responsibility of the public space in your hall?

[Action: Providing the students with a piece of white paper, a pencil, a map and five different color crayons.]

21. I would like you to draw a quick map of your building, as you would describe it to somebody who doesn't know your hall. [If necessary, prompt: begin first by drawing your floor and then any other floor in the building that is important for you].
22. Please mark your favorite spaces in your hall using the purple crayon on the map.
23. Please use the red crayon and mark the spaces best (in your opinion) to meet people in your hall.
24. Using the green crayon please mark the spaces best (in your opinion) for studying in your hall.
25. Please use the blue crayon and mark any other spaces that you consider important for me to know. Also please give reasons.
26. Please use the brown crayon to mark any spaces immediately outside your hall that you use. Also please tell me the purposes for which you use these spaces.

[Prompt -- the lawn outside the hall, the space immediately before the main entrance, etc.]

Thank You, now that we have completed the map, lets get back to a few more questions before we finish.

27. For the people who don't know what Putnam Hall/ Good now Hall/ Moore Hall (depending on the hall of the respondent) is, what do you think is the impression they get on seeing it from outside? And inside? [Prompt: residential, home-like, institutional, etc.]
28. What do you think is the best part of your hall in terms of appearance?
29. What do you think is the not-so good part of your hall in terms of appearance?
30. What is your overall impression about the appearance of your hall?
31. If you were to leave the hall tomorrow, what would you be most pleased about leaving behind?
32. If you were to leave the hall tomorrow, what would you miss the most in your hall?
33. If you were asked to make some changes to your hall, what changes would you suggest?

Thank you for your assistance. If you'd be interested in the results of this research, let me know and I will send you a summary once I am finished.