244

SECURITY IN UNIVERSITY RESIDENCE HALLS: EFFECTS OF PHYSICAL DESIGN AND MANAGEMENT POLICIES

by

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TABLE OF CONTENTS

page

List of Tables and Figures - - - - - - - - - - - - - - - - i

Acknowledgements - iii

I. Introduction - 1

1) Environment and Behavior - - - - - - - - - - - - - - 2

2) Crime and Environmental Design in Public Housing - - - 3

3) Vandalism in Institutional Settings- - - - - - - - - - 6

4) Satisfaction in Residence Halls- - - - - - - - - - - - 8

5) Security in Residence Halls- - - - - - - - - - - - - 9

6) Summary of the Literature Review - - - - - - - - - - 12

II. Setting and Objectives - - - - - - - - - - - - - - - - 14

1) The Setting- 14

2) Objectives of the Study- - - - - - - - - - - - - - - 18

3) Research Questions - - - - - - - - - - - - - - - - - 20

III. Methods and Procedures - - - - - - - - - - - - - - - - 23

1) Literature Search - - - - - - - - - - - - - - - - - 23

2) Incident Reports - - - - - - - - - - - - - - - - - - 24

3) Interviews - 25

4) Observation- 27

5) Questionnaire and Sample - - - - - - - - - - - - - - 30

IV. Results and Discussion - - - - - - - - - - - - - - - - 34

1) Incident Reports - - - - - - - - - - - - - - - - - - 34

2) Interviews - 36

3) Observation- 42

4) Questionnaire- 54

page

V. Recommendations and Guidelines - - - - - - - - - - - - - 69

1) Design Guidelines- - - - - - - - - - - - - - - - - - 70

2) Retro-fit Recommendations- - - - - - - - - - - - - - 79

3) Further Study- 84

Bibliography - 87

Appendix I - 89

LIST OF TABLES AND FIGURES

Table #	Title	Page #
1)	Residence Hall Descriptions on the KSU Campus	15
2)	Interrelationships Among Variables and Measures	22
3)	Types and Frequencies of Violations Reported to the Department of Student Housing in All KSU Residence Halls; 1/76 - 10/77	35
4)	Questionnaire Return Rate	54
5)	Reliability Coefficients of the Four Measures	56
6)	Average Scores on Overall Satisfaction for Residents of Each Residence Hall	57
7)	Average Scores on Perceived Security for Residents of Each Residence Hall	58
8)	Average Scores on Territoriality for Residents of Each Residence Hall	59
9)	Average Scores for Overall Satisfaction, Perceived Security and Territoriality for Residents by Type of Residence Hall	60
10)	Average Scores for Overall Satisfaction, Perceived Security and Territoriality for Residents of Coed and Single Sex Residence Halls	61
11)	Average Scores for Overall Satisfaction, Perceived Security and Territoriality for All Male and Female Residents	62
12)	Average Scores for Overall Satisfaction, Perceived Security and Territoriality for All Residents of Lower and Higher Floors	64
13)	Correlations Among Overall Satisfaction, Perceived Security and Territoriality for Entire Sample	66
14)	Correlations Among Scores for Overall Satisfaction, Perceived Security and Territoriality for Residents of Each Residence Hall	67

Table # Title Page #

15) Correlations Among Scores for Overall Satisfaction, Perceived Security and Territoriality for All Males, All Females, Residents of Coed Halls, Residents of All Male Halls, Residents of High Rise 2 and 3 Wing Halls and Low Rise Halls, and Residents of Higher and Lower Floors - 68

Figure # Title Page #

1) Kansas State University - Central Campus Area - - - - - 16

2) Haymaker Hall - Second Floor - - - - - - - - - - - - - 28

3) Pedestrian Traffic Through Residence Hall Groups I and II - 43

4) Haymaker Hall Second Floor Behavior Settings - - - - - 47

5) Five Territory Types as Identified on the Second Floor of Haymaker Hall - - - - - - - - - - - - - - - 49

6) Sociopetal Structure Orientation- - - - - - - - - - - - 71

7) Four Story Limit - - - - - - - - - - - - - - - - - - - 71

8) Group Size and Territoriality - - - - - - - - - - - - - 72

9) Occupancy Mix - 73

10) Appropriate Facilities- - - - - - - - - - - - - - - - - 74

11) House Porch/Street - - - - - - - - - - - - - - - - - - 75

12) Public to Private - - - - - - - - - - - - - - - - - - - 76

13) Proposed Corridor Renovation- - - - - - - - - - - - - - 80

14) Possible Application of Corridor Renovation to a 2 Wing Residence Hall - - - - - - - - - - - - - - - - 80

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I. INTRODUCTION

This thesis is a study of the relationship between resident behavior and the physical and social environment in Kansas State University residence halls. With declining visitation restrictions in student housing on many campuses in recent years has come an increased potential for crimes against person and property. This thesis identifies physical design and management policy factors that affect criminal behavior in residence halls.

A resident's overall well being may be more affected by his or her perceptions of how secure the environment is than by actual contact with crime. Therefore, there was an emphasis in this study on measuring residents' levels of perceived security as well as their levels of satisfaction with the living conditions and their degree of identification with the residence hall as home territory. These measures were then used to make comparisons among the residence halls studied on this campus in an attempt to discover predictors of satisfaction and security of the residents.

Results of this investigation were then combined with results from the other studies discussed on the following pages to develop retrofit recommendations for the specific residence halls used in this study and a set of design guidelines for promoting resident security to be used for other renovation projects or for new residence hall construction.

1) Environment and Behavior

Studies by sociologists, psychologists, anthropologists and others attempting to discover and understand determinants of human behavior have focused on many different factors such as childhood development, peer pressure and social customs. These efforts have produced much information regarding the relationship between behavior and the psychological make-up of the individual and the social environment.

However, many researchers have argued that behavior is also in part due to design elements in the physical environment. Edward T. Hall (1959) was one of the first to investigate "spatial behavior" and define some of the behavioral similarities common to most of mankind. Robert Sommer (1969), then explored the human's dependence on his physical environment and later the relationships among professions responsible for the manipulation of man's physical surroundings. Barker (1968) pioneered methods for studying behavior in the environment through extensive observations of people functioning in their everyday environments and identified behavior settings illustrating relationships between group behavior and the physical and social environment. In his descriptions of the behavior settings of Midwest, Kansas Barker described in detail the basketball game setting. The rules and physical apparatus of the game clearly affect the behavior of the players. The location of the bleachers and the accepted method of watching a basketball game affects how the spectators act. Likewise, the referees, cheerleaders, vendors and all others involved also adapt their behavior to the physical and social environment.

2) Crime and Environmental Design in Public Housing

Crime can be viewed as one specialized type of human behavior. Approaches to the study of criminal behavior have been as varied as those who study the phenomenon. Jeffery (1971) argued that criminal behavior involves at least four elements:

1) The reinforcement available from the criminal act.

2) The risk involved in the commission of the act.

3) The past conditioning history of the individual involved.

4) The opportunity structure in which to commit the act.

At least two of these elements are related to the physical environment in which the crime occurs. In many cases residence halls provide a low risk situation in which to commit a crime. There may be public spaces inside a building where there is no effective control extended by the residents such as blind areas of large lobbies, hallways out of sight of any normal activity and laundry rooms in otherwise unused basements. In most residence hall situations it is fairly easy for an outsider to mingle unchallenged with the residents, especially in the larger halls where it is unlikely that a person would know everyone on even his or her immediate corridor. Unlocked doors and unlighted areas provide the opportunity structure in which to commit the act.

Criminal behavior can be influenced directly through environmental design in addition to behavioral therapy, education or job training. A successful crime control model must deal with behavior before and after the crime occurs, must deal directly with the effects of the criminal act and must deal with environmental design to control (minimize) that behavior. This model can then serve in a preventive capacity, as well

as in a remedial capacity when either designing new structures or retrofitting existing structures.

Richard M. Rau (1975) wrote a historical perspective of Crime Prevention Through Environmental Design (CPTED) for the U.S. Department of Justice. The CPTED literature includes those studies that attempt to link certain types of crime with identifiable design elements in the environment and develop theoretical frameworks to direct further inquiry concerning those links. Rau indicated that the main thing to be learned from CPTED literature is that the proper design and effective use of physical space can lead to better citizen control over the environment, thus to a reduction of crime and the fear of crime, and ultimately to an improvement of the quality of life.

Jane Jacobs (1971) contributed the idea that the 'public peace' is not maintained by the police, but rather by a set of voluntary controls and standards of the people themselves supported by the environment. Jacobs argued that a neighborhood must have three main qualities in order to be safe from crime:

1) A clear demarcation between public and private spaces.

2) "Eyes" on the street - buildings must be oriented toward the street, not turn their backs to it.

3) Sidewalks must have users on them fairly regularly.

It can be argued that university residence halls have distinct neighborhoods within them, or are themselves parts of larger neighborhoods and should also adhere to these qualities in order to allow those voluntary social controls to function normally.

Oscar Newman (1975) noted that crime prevention occurs when and where residents feel capable of assuming authority for determining the type of activity allowed in the area surrounding their dwelling units. He describes this area within the realm of the residents' control as defensible space. While working with the Law Enforcement Assistance Agency he developed a set of physical design guidelines directed at producing defensible space in public housing projects. The basic concepts of those guidelines are:

1) Assignment to different resident groups the specific environment they can best utilize and control; according to age, life style, socializing proclivities and background.
2) Territorial definition of space to reflect zones of influence of specific inhabitants; should minimize the number of people having control over any one zone of influence.
3) The degree to which residents identify with an area as being their own influences the nature and extent of their use and control of that area.

These concepts apply to residence halls as well as to public housing. If the residents are not able to divide the residence hall into commonly agreed-upon zones of influence, there is less chance they will all be concerned with the activities of strangers. An inability to do this may be design related or may be due to social or policy influences.

A study by Frank Becker (1975) concerning multi-family housing dealt in part with residents' perceptions of factors affecting their sense of security and an analysis of design factors related to security.

Residents studied did not think of security as being related to the environment except for outside lighting. Areas identified as being insecure were corridors, elevators, laundry rooms, stairwells, parking lots and exterior areas immediately surrounding the housing. A clear design implication here is to provide for better observation of these areas by residents and/or guards and include them in small group territories wherever possible. Part of this study was devoted to determining where insecure areas are in KSU residence halls.

Becker also found that knowing other residents well, not simply knowing that they are neighbors appears to be an important influence on feelings of security. There was a significant negative correlation between the percentage of residents who had "no good friends" in the development and the percentage who felt "very insecure" in the development at night.

Becker's findings indicated that the real significance of design related to the deterrence of crime lies in the way in which the design facilitates some types of social organization over others. Also, objective indices of criminal activity may be less important to peoples' feelings of security than their perception of the probability that they may be one of the actual victims. For this reason, part of this study was designed to measure perceived security.

3) Vandalism in Institutional Settings

In a very extensive study of vandalism, Ward (1973) identified a wide range of types of vandalism based on the point of view of the observer. He organized those types into three main categories:

1) Vandalism as institutionalized rule breaking - includes ritualism, protection, play, normal wear and tear, and liscenced breakage (such as during the course of a celebration).

2) Ideological vandalism - to advance an end.

3) "Conventional" vandalism - not meaningless as is often assumed.

   a. Acquisitive vandalism - acquiring property

   b. Vindictive vandalism - revenge

   c. Malicious vandalism

Ward observed that much vandalism arises out of a combination of the desire for adventure and excitement, together with the opportunity presented in certain spaces by the presence of property (old houses, street lamps, easily accessible fixtures, etc.) and the lack of any discernable control of the space. Vandalism flourishes in sterile environments where there is little choice of activity and is less of a problem in richer environments that provide a wider range of potential activities. If environments can be designed to fully satisfy the needs of their inhabitants then vandalism (and presumably other forms of crime as well) will no longer be an attractive pastime. One of the main intentions of this study was to determine satisfaction levels among residents of KSU residence halls and relate those to levels of perceived security.

A study relating vandalism to environmental design in an institutional setting was done by John Zeisel (1975) in an attempt to reduce property damage to schools. He began by redefining "vandalism" to include malicious vandalism, misnamed vandalism, non-malicious property damage and hidden maintenance damage. Malicious vandalism includes the conscious social or educational based acts of destruction and accounts for less

than fifty percent of school damage. He argued the designer can do little to respond to malicious vandalism except provide screening and stronger locks. However, the other three types can be affected by the designer to a large extent if he is equipped with sufficient knowledge about how users will actually use the space as opposed to how he intended for them to use it. Part of this study was designed to systematically investigate how residence halls are used by the residents.

4) Satisfaction in Residence Halls

Sim Van der Ryn (1967) found that at Berkley there were really four main types of students he classified as academic, collegiate, non-conformist and vocational. Each of these types approached college life in a different manner in relation to study patterns and social needs, indicating there may be different housing needs for each group. He also found that space in which people get together must be integrated with reasons for people being there. Casual or routine activities (laundry, coffee break, participating in work groups, etc.) are often better social integrators than formal lounges. He found that corridors in residence halls were an important setting for those activities. However, the halls were not designed to cope with those conditions and there were many conflicts as a result. It may be that these activities make the corridors more of a public space and thereby reduce satisfaction among the residents.

The Educational Facilities Laboratory (1972) did a study of residence halls at a number of different schools. One of their main findings was that students want to live in situations they can control and change.

Environments that limit student control are seen as authoritarian and inspire apathy, rebellion, or rejection and in many cases higher crime rates. The ability to control and change is a major contributing factor to overall satisfaction with the residence hall.

A study that corroborated the EFL study was done by Reiman and Weisenburger (1968) on the KSU campus. They found that one of the most important things KSU students want from student housing is an opportunity to learn independence and self-reliance. To have this opportunity there must be a minimum of administration imposed regulation. This study investigated the manner in which behavior policies are set and enforced in the KSU residence halls.

Davis and Roizan (1970) did a study contrasting five types of living areas on different campuses. 25 variables concerning the environment were rated by the respondents to a questionnaire in an attempt to determine those factors that influenced satisfaction. The results indicated that the single best predictor of overall satisfaction is residence hall type. Conventional type residence halls had a consistently low rating on overall satisfaction. These results were retested in this study on the KSU campus.

5) Security in Residence Halls

Franklin D. Becker (1977) argued that if a residence hall's relationship to the resident, expressed by management policies and physical design, is perceived by the resident as restricting behavioral alternatives, the residents may then become more negative and act in more

unusual ways than they would if they felt they were free from pressures or expectations to behave in a certain way. His research also indicates that the opportunity for personalization seems to result generally in more satisfaction for those involved, along with less property damage and better maintenance of the physical environment. This arguement delineates a clear relationship between satisfaction and the occurrence of vandalism. This study pursued that relationship further in an attempt to explore the link between satisfaction and perceived security on the part of the residents.

A study by Hood and Hodges (1974) started out as an assessment of student attitudes toward residence hall security and security-related behavior on a large midwestern university campus. Soon after the survey was taken a murder occurred in one of the residence halls. The survey was then repeated and the scope of the study expanded to include a measure of the effect of a serious crime upon attitudes toward resident hall security. Some of the more significant findings were:

1) There were no significant differences detected in security-related behavior between respondents living in open and closed visitation floors. It seems that there should have been a difference because on closed visitation floors there would be much less reason to run into a non-resident than on an open floor.
2) There were no significant differences noted in security-related attitudes or behavior between respondents living in high and low traffic areas. It seems that there should have been a difference noted here, too, in that a high traffic area could bring better control from a defensible space standpoint if that

high traffic is mostly familiar people. However, if the high traffic is predominately strangers, there could conceivably be a reduction of security. There was an attempt to retest and further examine both of these first two findings in this study.

3) There was no significant difference between before and after the murder responses. In this case, the murder did not bring about any discernable increased demand among students for increased security measures, nor did it affect any appreciable change in students' security-related behavior.

Jean Shorett (1975) did a study concerned mainly with theft in university residence halls. She first identified three different types of loss within residence halls:

1) In structure "borrowing" - personal use of institutional facilities.

2) Out structure theft - off campus households supplementing with residence hall equipment.

3) Private property loss - from all locations in the residence halls.

All three of these types have also been identified in KSU halls.

Shorett found no difference in theft rates between upper and lower sections of tall residence halls. It would appear, however, that thefts by people from outside the residence hall would be less in number on the higher floors due to the increased distance from exits. This could mean there are other variables at work in this case or that most of the thefts are by residents themselves. This study will address this issue from a different standpoint in that levels of perceived security will be compared between upper and lower floors.

She also found that where baths, corridors and lounges served fifty or more people, control by the residents of people or activities in any area outside private rooms was very difficult. Her study corroborated Van der Ryn's observation that corridors were used for more than simple circulation.

In summary, she argued that rather than a single solution, the best contribution may be a series of spaces that can be adjusted without structural change. The lowest common denominators of theft were identified as:

1) A disparity between perceived needs and facilities available, especially in room furnishings.
2) Inability to control an area, either through policy constraints or environmental blocks such as poor surveillance.
3) Lack of incentive to control the area.

6) Summary of the Literature Review

Security-related attitudes and behavior among residence hall residents are as inextricable imbedded in the man/environment relationship as are most other types of behavior. The studies discussed preciously have begun to identify what may be some of the more significant determinants of security-related attitudes and behavior.

The amount of risk involved in the commission of a criminal act and the opportunity structure in which to commit the act were seen by Jeffery as being important determinants of crime. Jacobs and Newman both discussed the importance of physical demarcations between public and private

spaces to assist the resident in establishing control of those spaces. Becker argued that perceived security may be more important than real security in the well being of the residents. Ward and Zeisel discussed some of the real causes of vandalism in institutional settings. Studies by Van der Ryn, the EFL, Reiman and Weisenburger, and Davis and Roizan identified various determinants of satisfaction in residence halls and Becker, Hood and Hodges, and Shorett looked specifically at determinants of real and perceived security in residence halls.

This thesis started with those observations and built on them in an attempt to investigate the following variables and measures in the Kansas State University residence halls:

1) Residence hall type
2) Residence hall size
3) Sex makeup of the residence hall
4) Floor level within the residence hall
5) Freedom to personalize the living space by the residents
6) Amount of social control by the residents
7) Amount and type of pedestrian traffic near living spaces
8) Crime rate
9) Overall satisfaction of the residents
10) Perceived security of the residents
11) Degree of territoriality shown by the residents

II. SETTING AND OBJECTIVES

1) The Setting

Kansas State University has a wide range of residence hall types. For the purpose of this study three groups of halls have been identified on the basis of residence hall type. These groupings and their relative locations on the campus are illustrated in Figure 1. Table 1 shows some of the main characteristics of those halls. Floor plans of all the residence halls selected for inclusion in this thesis are shown in Appendix I, page 90. The basis of that selection is discussed in the next chapter.

Groups I and II are located in close proximity to each other in the northeast section of the campus as shown in Figure 1, page 16 , and serve as a good study in contrasts. The Group I halls are older than the other halls on campus. They are low rise with a structure of native limestone surrounded by large shade trees and green lawns. They are oriented toward each other across a central court which opens onto a green belt that bisects the campus. Beyond that green belt is the central part of the campus. Each of the three halls has its own dining facility. Behind those three halls in the opposite direction from the central campus is a through-campus street that marks the transition from the area of the Group I halls to the area of the Group II halls.

Beyond that street are the four Group II halls that are of the unfortunately stark high-rise design similar to those that have appeared on many campuses in the last fifteen years. There are no trees and very little grass beyond the street and surrounding these halls. Asphalt has become the dominant ground cover. There is a central dining facility

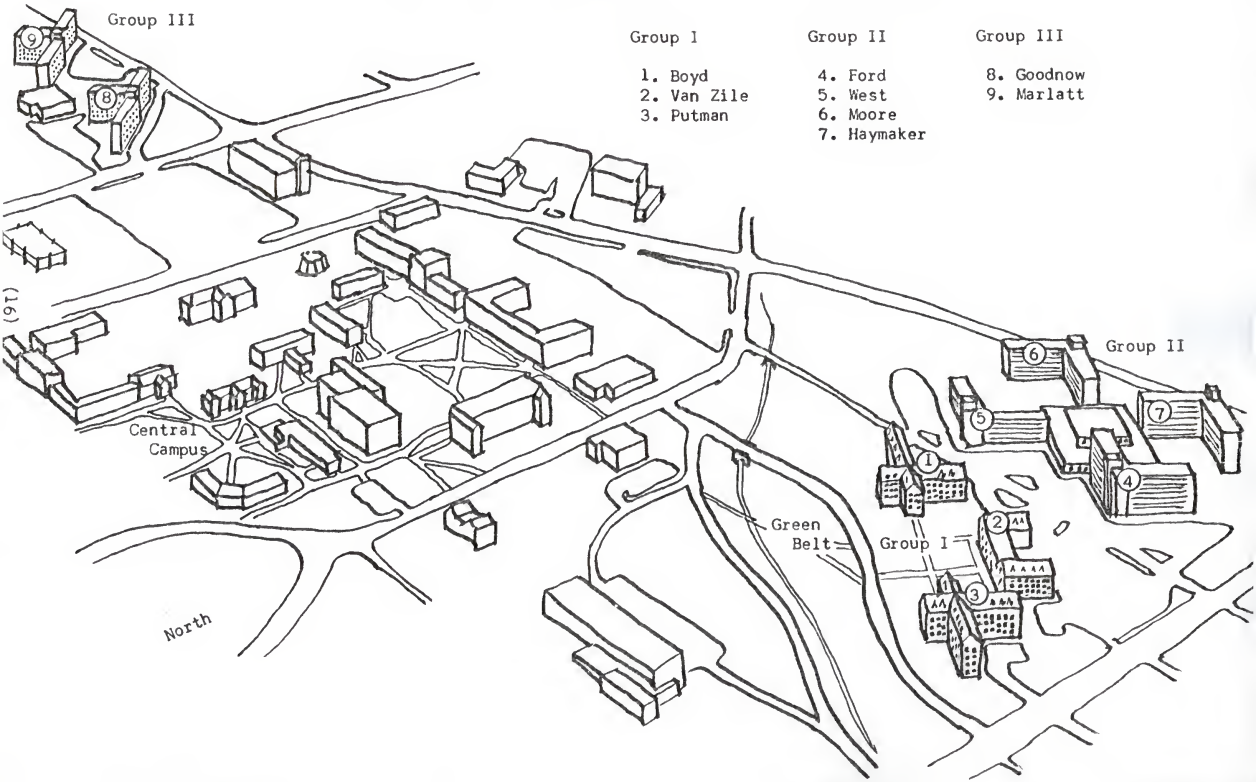
Table 1. Residence hall descriptions on the KSU campus.

O - indicates that residence hall has that characteristic.

Residence Hall			Characteristic											
			large	small	open visitation	restricted visitation	2 wing plan	3 wing plan	coed	single sex	number of floors	floor population *	wing population	total population
	Group I	Boyd		O		O				F	4	73	NA	226
		Van Zile		O	O				O		3	68	NA	160
		Putman		O		O				F	4	73	NA	225
	Group II	Ford	O			O	O			F	9	69	34	644
		West	O			O	O			F	5	69	34	314
		Moore	O			O	O		O		9	69	34	646
		Haymaker	O		O		O			M	9	69	34	646
	Group III	Goodnow	O		O			O	O		6	102	34	632
		Marlatt	O		O			O		M	9	102	34	628

* floor population refers to number of residents on full residential floors. First floors and basements generally have a lower population due to increased area devoted to public spaces.

Figure 1. Kansas State University - central campus area



located in the center of the complex that serves all four halls. The halls are oriented away from the dining facility onto the surrounding parking lots. The structure used is steel frame with limestone bricks used merely as a facade. Each building is a mirror image of the others and monotony becomes the dominant aesthetical issue. The interiors are of the standard institutional quality where hard, blank surfaces are the rule. Ease of cleaning, durability and an overriding concern for costs produces the institutional style with the hospital/correctional facility image (which is not appropriate even for hospitals and correctional facilities). Actually, there was but one design for all four halls which was used twice and simply reversed for the other two halls.

The Group III halls are located on the western edge of the campus at approximately the same distance from the central campus as are the other halls. The designs of the two halls are identical and are three wing versions of the institutional style. Both halls are served by a central dining facility. There may be a little more grass around these halls than around the Group II halls but the dominant theme is still asphalt parking lots.

2) Objectives of the Study

This is a study of the relationship between the physical design and administrative policies of Kansas State University residence halls and the residents' levels of satisfaction, security and identity with the halls as home territory. The primary objectives of the study are:

1) Record and describe the types of criminal acts occurring in the residence halls, the physical environments where the acts occur and the management policies relevant to those environments.

2) Compare crime rates, types of crimes and residents' perceptions of satisfaction and security among the different residence halls on the KSU campus.

3) Study the management policies in the residence halls and their relationship to residence hall usage.

4) Identify the physical design elements that may contribute to the occurrence of the different types of criminal acts.

5) Develop a set of re-design recommendations for use in retro-fitting the residence halls involved in the study.

6) Develop a set of general design guidelines for crime control in residence halls that could apply to retro-fitting any existing structure as well as to new residence hall construction.

Following are a number of terms that appear here often and need to be defined in the context of this study:

1) Overall Satisfaction - how well the resident likes his/her present living conditions.

2) Perceived Security - residents' perceptions of the probability of being a victim of a crime in the residence hall and of the general security of their residence hall.

3) Conventional Residence Halls - high rise residence halls with long, straight double loaded corridors and gang baths.

4) Large Residence Halls - those halls with a population of over 600 residents. On this campus Goodnow, Marlatt, Moore, Haymaker and Ford would then be considered large residence halls.

5) Small Residence Halls - those halls with a population of less than 250 residents. On this campus Boyd, Putman and Van Zile would then be considered small residence halls.

6) High traffic areas - areas near stairways, lobbies, elevator stops and any other location that generates a high rate of pedestrian traffic.

7) Territoriality - the degree of identity with the residence hall as home territory.

8) Home Territory - area as perceived by the resident as being under his/her personal (or group shared) control.

9) Personalization - painting, decorating, furnishing, arranging or otherwise modifying one's living space to one's desires.

10) Crime - theft, vandalism, and unauthorized entry into or use of facilities.

11) Lower floors - the transition between lower and higher floors is considered here to be the fourth floor. Below the fourth floor would be considered a lower floor and above the fourth floor would be considered a higher floor.

3) Research Questions

In pursuing those objectives listed above it was intended that the data collected shed light on the following assumptions:

1) Large, conventional residence halls will have higher crime rates than smaller halls will have.
2) Most crimes in the residence halls will occur in public spaces of those halls.
3) Residents living in smaller residence halls will have higher levels of overall satisfaction, perceived security and territoriality than residents living in larger residence halls.
4) Residents living in coed residence halls will have higher levels of overall satisfaction, perceived security and territoriality than residents living in single sex residence halls.
5) Residents living on the lower floors of the residence halls will have higher levels of overall satisfaction, perceived security and territoriality than residents living on higher floors.
6) Overall satisfaction, perceived security and territoriality are all positively related to each other.
7) High levels of pedestrian traffic when most of those pedestrians are known to the immediate residents will have positive effects on the residents' levels of overall satisfaction, perceived security and territoriality.
8) High levels of pedestrian traffic when most of those pedestrians are unknown to the immediate residents will have negative effects on the residents' levels of overall satisfaction, perceived security and territoriality.

The matrix shown in Table 2 graphically represents the hypothesized interrelationships discussed above among the variables and measures used in this study. Some of those relationships are one-way in that one of the variables may be an independent variable in relation to the other variable. However, some of those relationships are two-way in that the first variable can affect the second and the second can also affect the first. Therefore, the matrix is set up so that when a variable or measure appears on the left side of the matrix it is assigned the role of the independent variable. The connection points then show how that variable affects the other variables and measures listed across the top of the matrix.

Table 2. Interrelationships Among Variables and Measures

Dependent / Independent	Amount of social control	Amount of unknown pedestrian traffic	Amount of known pedestrian traffic	Crime rate	Overall Satisfaction	Perceived Security	Territoriality
Hall size	−	+	−	+	−	−	−
Hall type	|	|	|	|	|	|	|
Sex breakdown	0	0	0	|	|	|	|
Floor level	+	−	+	+	−	+	+
Freedom to personalize	+	0	0	−	+	+	+
Amount of social control	·	|	|	−	+	−	+
Amount of unknown pedestrian traffic	−	·	−	+	−	−	−
Amount of known pedestrian traffic	+	−	·	−	+	+	+
Crime rate	−	|	|	·	−	−	−
Overall satisfaction	|	|	|	|	·	+	+
Perceived security	|	|	|	|	+	·	+
Territoriality	|	|	|	|	+	+	·

Variables on the left are considered independent in relation to all other variables.

\+ - positive effect (as independent rises, dependent rises)
− - negative effect (as independent rises, dependent falls)

\| - relationship (but not positive or negative; simply related)
0 - no relationship

III. METHODS AND PROCEDURES

A range of methods and procedures were used to deal with the assumptions outlined in chapter I. Those methods occurred in a more or less sequential order during the 1977 - 1978 academic year beginning with the literature search and culminating in a questionnaire administered to 325 residents of six residence halls on the KSU campus. That sequence was as follows:

1) Literature search

Much of the literature search preceeded the formulation of the assumptions. Some of those assumptions were taken directly from other studies, with the intention of either verifying or refuting the findings depending on each particular case. Other assumptions were developed by adjusting and combining other concepts in the studies or making different applications of those concepts, such as from public housing to university residence halls.

Oscar Newman's concept of defensible space appears to be important when considering security in any type of housing. There was an attempt in this study to determine if one type of residence hall will allow the residents to exert more control over their area than other types of halls will. Frank Becker's discussion of the relationship between the opportunity to personalize and the incidence of vandalism was investigated here. Van der Ryn's collection of real residence hall uses served as a model to uncover some of the conflicts between the design and use of the KSU residence halls; conflicts which John Zeisel indicated were

a major factor in the occurrence of vandalism. Davis and Roizan stressed the importance of residence hall type as a predictor of overall satisfaction of the residents, which was re-tested here. Hood and Hodges came to specific conclusions concerning residence hall security which were also re-tested in this study:

1) There were no significant differences in security-related attitudes or behavior between respondents living in open and closed visitation floors or halls.
2) There were no significant differences in security-related attitudes or behavior between respondents living in high and low traffic areas.

Jean Shorett listed what she termed common denominators of theft in residence halls which were:

1) A disparity between perceived needs and facilities available, especially in room furnishings.
2) The inability to control an area, either through policy constraints or environmentsl blocks such as poor surveillance.
3) A lack of incentive to control the area.

There was an attempt in this study to link those variables and others to the level of perceived security in residents.

2) Incident reports

Kansas State University has a specific section of its administrative hierarchy devoted primarily to student housing called the Department of Student Housing. That department is responsible for setting policy and for administrating any program or effort that affects the residence halls.

One method by which the department maintains contact with and gains information from the residence halls is the incident report. This is a standardized form that is intended to be filled out for every regulation violation that occurs in the residence halls. An example of that report form is shown in Appendix I, page 95.

Upon receipt of a report by a resident concerning an incident the resident has knowledge of, one of the student assistants or the director of the hall fills out an incident report. On that report are places to indicate the type of crime or violation, the location where the violation occurred, the date and time of occurrence, any witnesses and additional comments. A copy is then forwarded to the Department of Housing and filed. Those reports served in this study to identify the types of violations that were occurring in the KSU residence halls and in what locations they were occurring.

3) Interviews

A personal interview was conducted with each of the directors of the residence halls selected for the study. A standard list of questions was asked of each person interviewed. (See the Directors Interview Format in Appendix I, page 96.) The Director of the Department of Student Housing, Mr. Tom Frith, was also asked the same questions although it was done in more than one sitting whereas the hall directors interviews were conducted in one sitting. All interviews were conducted by the author.

An introductory phone call was made, at which time an appointment was made for the interview. All of the directors of the residence halls were quite cooperative and all appeared to take the interview and the questions

seriously. I had attended a directors meeting two months prior to the interviews at which time I briefly explained what I intended to do so there was at least a general awareness among the directors concerning who I was and what I was involved with. Conversations with Mr. Frith were very helpful and provided many of the issues included in the interviews of the other directors. The interviews then contributed to the formulation of the questionnaire by identification and description of potential problem areas within the residence halls, behavioral and administrative policies and potential questionnaire distribution methods.

More informal interviews were conducted by the author with students who were then or had previously been residents of the residence halls. Some of these conversations occurred in the residence halls, others in classrooms, and others in outside areas near entrances to the residence halls. Most of these interviews were conducted in conjunction with either the observation times or some aspect of the questionnaire distribution.

There was no formal list of questions for these interviews. I would simply attempt to identify a student that did not appear to be in a hurry to get somewhere or to be very engrossed in any particular task, such as reading. I would briefly explain the research to the student and ask what his or her feelings were about residence hall life. From there I would attempt to steer the conversation to issues of satisfaction and security as well as any specific issues that the resident brought up. For fear of restricting the spontaneity of the conversation, I refrained from taking notes while the interview was in progress, but immediately upon completion of the conversation I would take note

of any relevant issues discussed. I found that when I was able to put the resident at ease, most were quite willing to expound on residence hall life. The more I was able to follow the line of thought of the resident and pursue issues brought up by the resident, the more information I was able to obtain.

4) Observation

Observation within the residence halls took two forms. First was informal observation. My daily route to and from campus took me through the courtyard formed by the three smaller Group I halls. (See Figure 1, page 16) The Group II residence halls are in close proximity as explained earlier. This meant I usually passed through the area twice a day. This frequent contact gave me the opportunity to encounter residents and to see how people were behaving. It was possible to take a short detour through one of the residence halls I had access to and see what was going on inside at that particular time. This method did not apply to the Group III residence halls on the other side of the campus because of their location.

The second type of observation was part of a formal evaluation I conducted on the second floor of Haymaker Hall. Haymaker Hall is made up of two wings connected at a 90 degree angle to each other.(See Figure 2, page 28) Each wing is made up of a long, straight, double loaded corridor with the individual rooms opening directly into the corridor. At the connection of the two wings are three elevators, the lobby and a stairway. Approximately halfway down each corridor is a common bathroom for the use of all the residents on that corridor. All rooms are two person rooms except for one room on each corridor that resulted not so

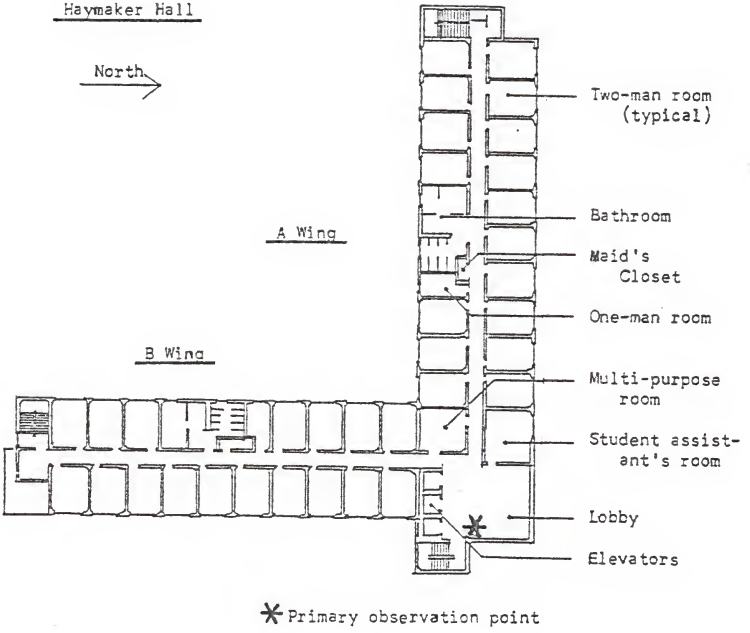


Figure 2. Haymaker Hall second floor

much from design, but from the size of the bathroom. The bathroom is the size of two and a half regular residence hall rooms and the remaining half room space is now used as a single room. Some residents feel that this room began as a maid's closet and was later converted to a single room, althouth this argument could not be verified.

The main objective of this brief study was to identify conflicts between the design of the residence hall and the ways in which the residents use the hall and to suggest solutions to those conflicts. The results would have been more generalizable had there been the opportunity to verify the findings in other residence halls, but time limits did not allow further studies to be done.

The methods I used in the study were observation, informal interviews with residents and cognitive mapping. Most of the observation was conducted from the point indicated in Figure 2. Only the A wing and the lobby were observed because the plan made it impossible to observe the B wing without stationing myself directly in the circulation path. Informal interviews came from residents who approached me as I was observing and asked what I was doing and from me stopping residents at random as they passed by me. The diagrams were filled out by students selected in the same manner as those interviewed. The observation schedule was as follows:

3 different week days; periods of from 1 to 1 1/2 hours in the morning
3 different week days; periods of from 1 to 2 1/4 hours in the afternoon
2 different times in the evening; once for 1 hour, once for 1 1/2 hours

5) Questionnaire and Sample

Early in the development of the project, it became clear that real crime rates may be less of an influence on the overall well being of residents than their expectations of being victimized in the residence halls. This realization suggested some formal method of determining attitudes and opinions of the residents. Most of the assumptions listed in chapter I could also be approached in this manner. A questionnaire was developed for use in the residence halls. See Appendix I, page 97.

The questionnaire was designed to determine:

1) Resident satisfaction with the residence hall, the individual room and the social structure within the residence hall.
2) Residents' perceived security; fear of crime and opinions on whether they are likely to be victimized, and where.
3) How strong a sense of territory the resident has developed.
4) How the residents use the residence hall.
5) Trouble spots in the residence halls as perceived by residents.

The questionnaire was divided into eight main sections. Each section asked for a different type of information and provided a different response format. The overall length also indicated it may be better to divide it up into more manageable sections in an attempt to retain the involvement of the respondent. Those main sections are:

1) Demographic data - sex, class standing, age, etc.
2) Residence Preference and Study Habits - included a breakdown of where and for how long studying is done each week.
3) How Your Day Goes - this was a modified daily activity log that listed activities and a space to estimate the amount of time spent involved in each.

4) Your Residence Hall - this section provided a five point scale to rate seven specific features of the residence hall. Most of the features had been found in other studies to be good indicators of the respondent's overall satisfaction rating. They were used in this study as part of a total satisfaction rating as well as with the intention of verifying the findings of the other studies.

5) Attitudes and Opinions - this section provided 22 questions concerning residence hall life and again a five point response format was provided. In addition to the satisfaction issue mentioned above, these questions also formed the basis for measuring perceived security and territoriality. Again, some of the issues concerning satisfaction were taken from other studies. The questions related to perceived security and territoriality were developed by the author from the pertinent literature and with the assistance of the thesis committee.

6) Neighborhood and Crime - this section included a plan of the residence hall in an attempt to determine how much of the residence hall is considered to be within the residents' "home territory". Other objectives were to attempt to determine if there is any relationship between territory definition and the physical design, and if there were differences among different residence halls or in different areas within a specific hall. A final objective was to determine areas perceived by residents as being potential crime areas.

7) Friends - this section was intended to determine the respondents' feelings concerning other residents in the residence hall and

on his/her particular corridor.

8) Security Precautions - this section solicited response on a five point scale to the possibility of adding four different types of security measures to the residence hall. A final issue was designed to determine if the respondent had been the victim of a crime, and if so, where.

The questionnaire design went through many drafts. There was one pre-test conducted where fifteen students in a freshman graphics class and twelve residents of one residence hall were administered the questionnaire. The Neighborhood and Crime section was further tested in conjunction with the observation of Haymaker Hall. These tests helped to identify the more significant questions in order to reduce the length to a manageable size and helped to identify problems with the format of the activity log and the cognitive map.

The questionnaire sample was selected on the basis of the assumptions listed earlier, the hall types available on the campus and a manageable sample size. (See Table 1, page 16 for Residence Hall Descriptions.) It was thus determined that the sample should include two and three wing large residence halls, small residence halls, higher and lower floors, coed and single sex residence halls and high and low traffic areas within each hall. The sample selected was:

Hall and floor	Rooms/floor	Total rooms
Boyd Hall, 2nd floor	33	33
Goodnow Hall, 2nd and 5th floors	52	104
Haymaker Hall, 3rd and 8th floors	37	74
Marlatt Hall, 2nd and 5th floors	52	104
Moore Hall, 3rd and 8th floors	37	74
Van Zile Hall, 2nd floor	28	28
Total Sample Size		417

In order to keep the sample size manageable, it was decided that only one resident of each room would be given the questionnaire. See Appendix I page 90 for the plans of these halls and floors.

The method used for administering the questionnaire was for the staff/ resident assistants on each floor selected for the study to be responsible for the distribution and collection of the questionnaires on that floor. This decision was based on interviews with each of the six residence hall directors involved and many of the staff who indicated their willingness to participate. The selection was also based on the assumption that the personal contact with the residents would improve the level of participation and the return rate.

Two meetings with the staff of the designated floors in each hall were organized. The first was to explain the project and request participation. None of the staff refused to participate. The second meeting was scheduled one or two days in advance of the target distribution date. At this time sufficient copies of the questionnaire were provided for the staff and a discussion of how to proceed with the distribution was held. The distribution date for all questionnaires was the evening of February 1, 1978. On Friday of that week and Monday of the following week I returned to each hall and picked up all completed questionnaires. Arrangements were made to pick up the few additional copies that were returned later.

IV. RESULTS AND DISCUSSION

This chapter discusses the results of the data collected in order to address the objectives and assumptions listed in chapter 1. The incident reports are discussed first and relate to the first objective and the first two assumptions. The results of the interviews and observations are then discussed. Objectives 2, 3, and 4 and assumptions 3, 4, 5, 6, 7, and 8 are then discussed in terms of the results of the questionnaire. The assumptions are each first re-stated and then discussed with contributing information added where appropriate from the interviews and observations. Objectives 5 and 6 are covered in the next chapter.

1) Incident Reports

When comparing frequencies of various types of crimes among the residence halls it appeared as if some of the halls were relatively free from crime whereas some of the other halls were heavily plagued by thefts and vandalism. Comparison of those figures with the results of the director interviews revealed the fact that the directors of those residence halls that appeared plagued with crime placed much more emphasis on filling out an incident report whenever an infraction of the rules occurred than did the directors of the other halls. This realization effectively nullified any attempt to compare residence halls on the basis of the incident reports.

However, there was much information in the reports that could be utilized when considering the total from all halls. Table 3 shows all the types of infractions that were reported in the time frame indicated.

Table 3. Types and Frequencies of Violations Reported to the Department of Student Housing in all KSU Residence Halls; 1/76 - 10/77

Type of Violation	Frequency	% of Total
Theft	70	37.2
Vandalism	46	24.5
Pot Violations	26	13.8
Unauthorized Entry	13	6.9
Unauthorized Use	11	5.3
Excess Noise	4	2.1
Exhibitionists	3	1.6
Assaults	3	1.6
Beer Violations	3	1.6
Attempted Arson	2	1.1
Attempted Suicide	2	1.1
Water Fights	2	1.1
Rapelling Down Dorms	1	.5
Making Wine	1	.5
Pornographic Movies	1	.5
Cohabitation	1	.5
Total	188	99.9%

Theft includes loss of money from individual rooms, furniture from lobbies and activity rooms and clothes from laundry rooms. Vandalism refers primarily to broken furniture in lobbies, false fire alarms, fire extinguisher discharge, broken windows, discharge of fireworks and throwing objects out the windows.

Theft and vandalism account for the majority of violations in all of the residence halls; 61.7 %. Pot violations were next at 13.8 % and most violations were reported to occur in individual rooms. It appears there is no real link here between the physical design of the environment and the violation beyond the ability of the smoker to obtain the privacy of his/her own room. However, there is a definite link to administrative policy in that pot smoking is designated as a violation by law and this designation is adhered to by the university administration.

Unauthorized use of facilities (including unauthorized entry) comes next at 12.2 %. The remaining 12.2 % of the violations are a number of less significant violations that are in most cases hard to even define as such although they were reported. There were 7 incidents of assualt, attempted arson and attempted suicide combined that were together 3.8 % of the total of all violations.

Assumption 2 states that more crimes in the residence halls will occur in public spaces of those halls. When public spaces are defined as lobbies, recreation rooms and laundry rooms 44 of the total of 70 thefts occurred in public spaces which is a significant difference ($x^2 = 4.6$; @ d.f. = 1 is significant to the .05 level).

2) Interviews

In the interviews with the directors, the first issue discussed was usually the first issue on the Directors Interview Format (DIF) (See Appendix I page 96). That issue was the general impression of crime in the residence halls. Thefts and vandalism were continually

indicated as the most frequent violations. The predominant feeling among the administrators was that crime was not a major issue in any of the residence halls.

In response to DIF question 2 which asked if that particular residence hall was a secure environment there was general agreement among the directors that the residence halls were at least moderately secure. There was also agreement that it was hard to determine the actual extent of thefts because many were not reported to them.

Vandalism is of course much easier to detect in that there is generally an observable result. Directors of the larger halls indicated the size of the hall made it harder to apprehend suspects because it was hard for people to know even everyone on the same floor and therefore harder to detect the presence of strangers. This of course implies non-residents are responsible for those acts. Most directors felt the responsibility was mixed between residents and non-residents with differing opinions of which group was more responsible. There was general agreement that at present there was no way to tell the actual breakdown.

Some of the directors suggested that those acts of vandalism committed by residents were largely alcohol related in that they occurred mostly when students came back from the local taverns after a session of drinking beer. Another suggestion concerning resident vandalism was that there was an education issue involved. Acts of vandalism generally cause repairs to be required that cost money from general operating funds. The amount of money then available for other purposes is reduced. Although this relationship of more repairs to less operating funds is no secret there is a feeling on the part of at least some of the directors

that if more emphasis were placed on stressing that relationship to the residents there may be a decline in those costs.

Question 3 on the DIF asked the directors if they felt the residents thought the residence hall was a secure environment. In response, most of the directors indicated that the residents did feel secure. This feeling was usually based on the fact that very few residents expressed security fears to the directors.

Question 4 asked what areas within the residence hall seemed conducive to crime. The lists given by the directors were very similar and usually included the following spaces:

1) Laundry rooms - usually mentioned with reference to theft of clothes from machines, vandalism and unauthorized use of facilities.
2) Stairwells - considered dangerous even though there were not very many actual reports made of crimes occurring in them. References were made to the lack of lighting and the strong physical separation made between stairwells and the rest of the hall due in a large part to fire codes.
3) Lobbies - theft of personal items left in floor lobbies was agreed to be at least a moderate occurrence in most residence halls, though not in some. Stolen furniture by both residents and non-residents was also identified as a major problem.
4) Basement TV and vending machine areas - usually referred to as a location where there is vandalism to vending machines and an occasional stolen TV.
5) Corridors - characterized as being subject to fire extinguisher discharge and general vandalism.

6) Main floor lobbies and social rooms - generally associated with stolen furniture and personal items.

As was noted earlier it turned out that different directors placed different amounts of emphasis on filling out incident reports. This made it impossible to compare residence halls on the basis of the incident reports. Question 5 on the DIF was the source of this information. Question 6 was simply a check to determine if I had the correct information concerning persons per floor, sex breakdown of the residents and room numbers. Question 7 asked for opinions on the best time and method of distribution of the questionnaire, and the responses received contributed significantly to the method and time selected.

DIF question 8 asked if there was anything special about the floors selected to receive the questionnaire. Responses uncovered the fact that there are some differences between floors. It appears that each floor actually develops its own social character, some to higher degrees than others. For instance, some floors may be more study oriented whereas other floors may be inclined to party more frequently. In extreme cases some floors are "dry" in that no alcoholic beverages are permitted and some are made up of people from predominately one curriculum. It turns out though that there are different perceptions as to what the character of a particular floor is depending on who you are talking to. There were no differences strong enough to really stand out so it was assumed that any differences would be minimized in the questionnaire results due to the sample size. The differences of opinion also indicate that some observers may only know of a small group of residents on a particular floor and generalize that to include the entire floor.

Question 9 on the DIF inquired as to how behavior policies are set in the residence halls. All the hall directors were in agreement on this issue. To begin with, all federal and state laws are applicable. Then the main policy setting body on the campus for the residence halls is the Kansas State University Association of Residence Halls (KSUARH). This body is made up of two persons from each of the residence halls and sets general behavioral policies for all the residence halls. Within each hall is a hall governing board that has the power to set additional policies but not to exceed those set by the KSUARH. In effect the hall governing baords have restrictive powers. Each floor and wing can then further restrict those policies set at the hall level. Enforcement is primarily the responsibility of the staff. For serious or continued violators there is the Hall Judicial Board that has the power to evict violators from the residence hall. This power is backed by the Student Governing Association and ultimately by the Board of Regents of the university.

Question 10 on the DIF was designed to discover the differences in policy among the residence halls. Visitation differences are displayed in Table 1 of chapter 1 page 14. Freedom to personalize individual living spaces is restricted in two ways. First are the rules of the KSUARH which prohibit structural changes, restrict any altering of the present wiring system, limit placement of articles near the convection heating units and stipulate that when the resident moves out the room must be returned to its original condition. This policy is flexible and has been quite satisfactory to residents and staff. However, the second restrictive policy was initiated at the beginning of the year in

the form of newly developed state fire codes that are much more restrictive than the previous guidelines had been. See Appendix I page for a complete listing of these codes. These restrictions apply equally to all residence halls so there are no differences among the residence halls concerning the ability to personalize. There may be differences in the sense of different interpretations of the restrictions but if there are it has not been detected at this point.

Many of the issues discussed in the more informal interviews with students were the same as those discussed in the interviews with the directors. In most cases there was general agreement on the issues. Most of the residents interviewed expressed agreement with administration that the residence halls were relatively secure environments. Theft and vandalism were cited as the most common violations.

Areas within the residence halls that were identified as potentially high crime areas were the same as those identified by the directors and for the same reasons. There was agreement also with the observation that there were differences in the social atmosphere among floors, although there was some disagreement as to the exact characteristics of those differences.

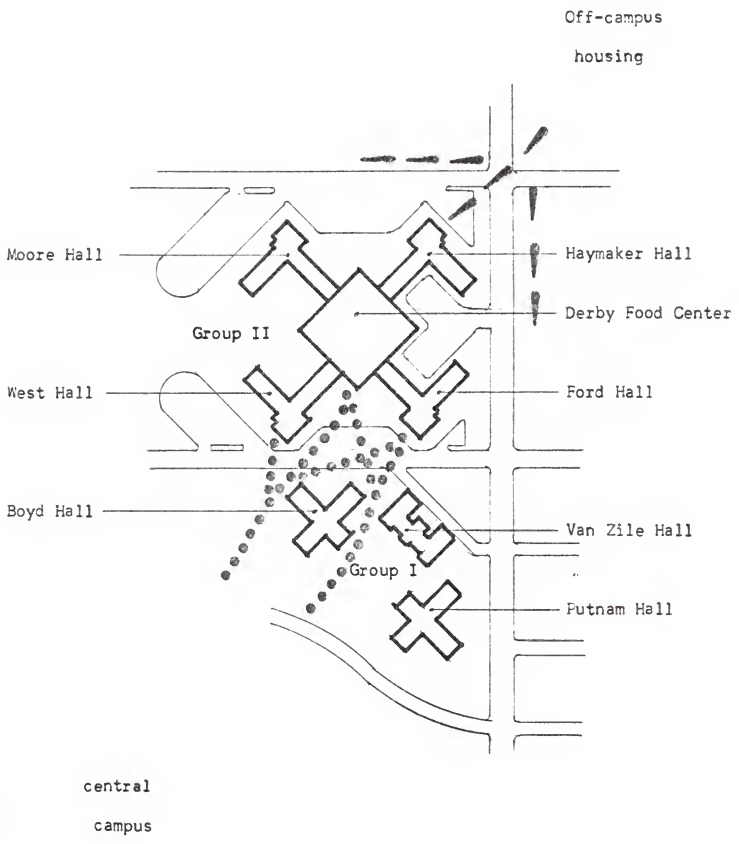
One issue that came up frequently was that many residents agreed there is a trade off between open visitation policies and good security. Most residents felt that open visitation was a necessity since the residence halls were actually home for the residents while they are in college, but they also felt the open visitation policy lowered security in the halls.

3) Observation

From informal observations I learned some things about the Group I and Group II halls. (See Figure I page 16.) One interesting observation was the paths to campus from the Group II halls. There was an option of two main paths for a portion of the residents of the Group II halls to the central campus which were approximately equal in length. (See Figure 3 page 43). One path went through the courtyard area of the Group I halls and one went around the backs of those halls. A much larger percentage of students with a choice chose the path around the outside than chose the path through the courtyard. It may be that the path through the courtyard is perceived as being longer because it is not quite as straight as the other path and because there are more steps to be traversed. There also could be some realization that the courtyard is the neighborhood property of those three halls surrounding it and is not meant to be a thoroughfare. Whatever the cause, it seems as if those three halls would be less secure if the courtyard did act as a thoroughfare.

Traffic patterns did appear to cause problems in the Group II halls. Derby Food Center becomes a major path to the campus for the residents of Haymaker Hall. Derby is a two story structure with dining facilities on the second floor and services and offices on the ground floor. There are direct connections from the ground floor to the vasements of all four residence halls. This arrangement allows residents to patronize the food center without having to go outdoors. It also greatly increases pedestrian traffic on the one wing in the basement of each hall that connects to the food center. Fortunately, there was enough foresignt to

Figure 3 Pedestrian Traffic Through Residence Hall Groups I & II



- pedestrian traffic routes from the newer halls to campus

- pedestrian traffic routes from off-campus housing to campus

not locate any living rooms on that particular corridor. However, the TV rooms and laundry rooms are located on that corridor and it may be that the greatly increased traffic with no surveillance may be related to the many complaints of thefts and vandalism in the laundry and TV rooms. It would be very easy to stop in the laundry room and steal a pair of jeans on the way back from dinner.

The biggest problem with this arrangement may be that it pulls people from outside the entire complex into the center of it and through the food center at least and sometimes through the halls also. There are quite a number of qpartments located to the north and the east of the Group II halls. The shortest path to the campus for many people is straight through the complex. Some of those people go around Haymaker Hall and through Derby, but some simply use the main entrance of Haymaker and the underground connection to Derby, thus presenting potential security problems.(See Figure 3 page 43).

Another observation is that there seems to be much more social contact among the Group I halls than among the Group II halls. Of course, this conclusion is based on casual observation and further research would be required to determine some of the other possible variables. However, there are some major differences that could affect contact among residents of the halls.

The Group I halls, Boyd, Van Zile and Putman, are sociopetal in orientation. Their main entrances are directed inward and focus on the central courtyard mentioned earlier. They are close enough for a resident to stand at the entrance of one hall and recognize a person that comes out of the other halls. This arrangement at least has the potential for promoting contact, and it appears to happen.

Even though the Derby Food Center is in the center of the Group II complex, it does not serve as a focal point. Those residence halls are sociofugal in orientation. The main entrances are directed outwards, thus in effect making each hall a completely separate unit even though they are situated in a group. They are also too far apart to readily recognize someone from one entrance to another even if the orientation were correct.

There seems to be a cohesion promoted among the Group I halls that appears to be lacking completely in the other complex. When applying this same observation to the Group III halls, Goodnow and Marlatt, that cohesion appears to be lacking there also. It seems those natural social controls referred to by Jacobs, Newman and others in reference to security would be able to flourish much easier in a situation such as the Group I situation whereas they would have a hard time functioning at all in the other situations.

Existing traffic patterns through the site must be recognized and dealt with when siting a structure. Buildings can turn into thoroughfares that draw outsiders through the building and provide an extra opportunity for acts of vandalism and theft to occur. When more than one structure is to be used on a site considerations should be made to allow those buildings to relate to each other. Orientation and distance are the critical factors. There will then be more chance for the continual surveillance of the exterior areas that is a contributing factor to the prevention of crime.

The more formal observation took place on the second floor of Haymaker Hall as outlined in chapter 1. Barker (1968) developed a system for analyzing behavior settings. Using his method I identified four main settings on the second floor of Haymaker Hall.(See Figure 4 page 47).

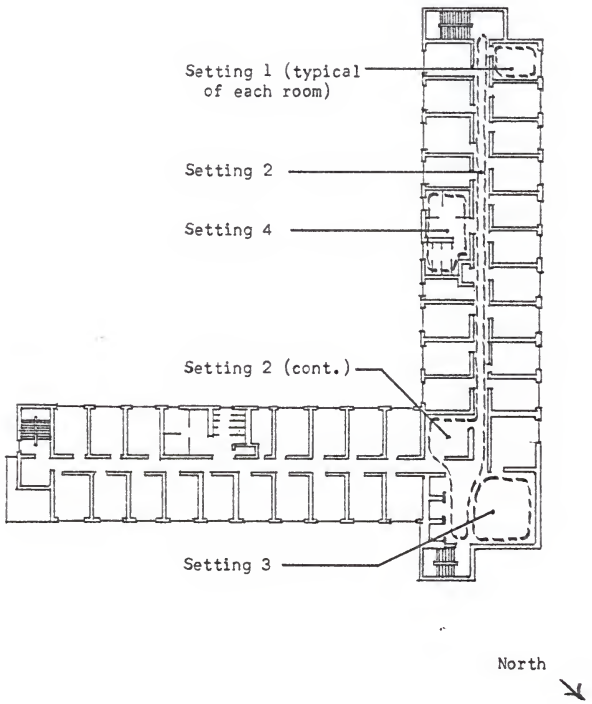
In the individual rooms there were problems between roommates in the sense that it was impossible to escape and isolate one's self from the activities of the other person.

The corridors are constructed of exclusively hard surfaces with the resultant noise problems. Many casual encounters occurred there between residents but protracted conversation is hard to maintain because there is nowhere to get out of the flow of traffic or to sit down without being in the middle of the corridor. There is no transition between the private room and the public corridor.

The lobby may not be used to the extent it was anticipated when it was designed. Although it is very effective for formal hall meetings it may not be getting used that much at other times. Informal use requires that the space be readily accessible to the users. Those types of activities, such as "bull sessions", that could occur in the lounge end up happening in the corridor because the lounge is not readily accessible. As a result further conflicts may then arise. In the case of the bull session occurring in the corridor there may be conflicts between the noise generated there and students studying in nearby rooms. There may also be a circulation conflict.

Many residents expressed at least an initial uncomfortable feeling with the lack of privacy in the bathrooms. The bathrooms also present a security problem where small items are sometimes lost.

Figure 4. Haymaker Hall 2nd Floor Behavior Settings



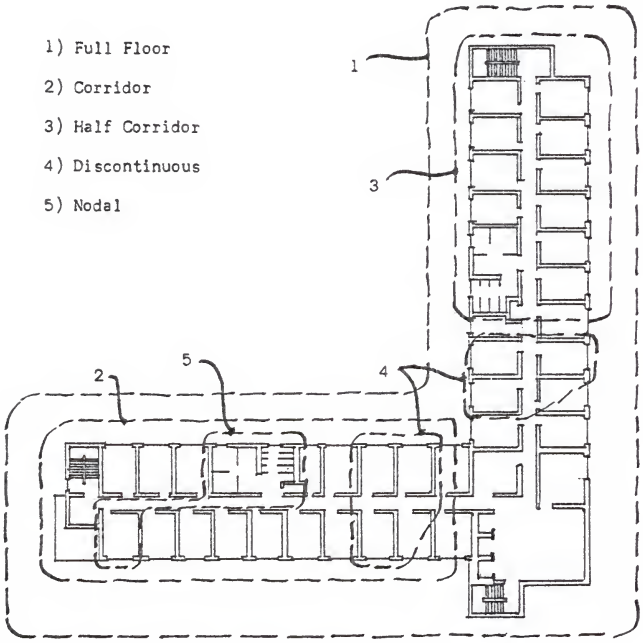
The second part of this study utilized the floor plans mentioned in chapter 1 on which the respondent was to circle his/her "home territory". Half of the sheet was left blank for the respondent to make a sketch of his/her room. A form of this same diagram was later used in the questionnaire in the section titled "Neighborhood and Crime" and this use in conjunction with the formal observation served as a pretest for the questionnaire.

There were a total of 29 filled out. Although no two circled areas on the diagram were exactly alike, I was able to group them into five main types which are listed below. The number in parentheses after the type name is the frequency of occurrence of that particular type within the sample of 29.

1) Full floor (8) - these residents drew a line around the entire floor.
2) Corridor (3) - these residents circled one full wing, not including the lobby.
3) Half corridor (8) - these residents circled the half of the corridor their rooms were located on, usually including the bathroom, but not the lobby.
4) Discontinuous (5) - these residents broke theirs up into at least two separate areas.
5) Nodal (5) - these residents included at least two different spaces in them and connected those spaces together by including only the hallway between those spaces.

Figure 5, page 49 is an example of the diagram that was used for this study and on it are shown examples of the five main types of territories.

Figure 5. Territory Types as Identified on the 2nd Floor of Haymaker Hall



The numbered areas are examples of the five types of "home territory" delineated by the respondents.

Edney (1976) summed up some of the more predominant definitions of human territoriality as a set of behaviors that a person displays in relation to a physical environment that he terms "his", and that he uses more or less exclusively over time. The sketches of their rooms that the residents drew on the diagram all showed different arrangements, indicating most residents were trying to put marks on "their" environment. Many students indicated they felt somewhat restricted by the new fire codes put into effect this semester in the residence halls. I talked to one student who even moved out after being informed of the impending changes because he felt it was an unnecessary restriction. These observations help to substantiate the link between the freedom to personalize and satisfaction.

Chance encounters among friends occur frequently in the corridor and some develop into conversations with the participants naturally separating themselves at a distance of approximately 1 1/2 to 4 feet; what Hall (1976) refers to as the personal distance, far phase. In attempting to maintain this spacing, one person would usually be on each side of the corridor. When someone else comes down the hall, he is forced to go between the two people engaged in conversation. In most cases he would stoop noticably as he passes; there may or may not be apologies extended; those people conversing will be disturbed, and everyone will be inconvenienced. There is no way for those people conversing to step out of the line of traffic. Even if both stay on one side of the corridor any passerby will still have to violate that personal space.

Westin (1967) defines privacy as "the claim of individuals, groups, or institutions to determine for themselves when, how and to what extent

information about them is communicated to others." Through the interviews it was soon determined that according to the majority of residents privacy was a non-existent thing in the residence halls, especially the type of privacy Westin referred to as "solitude". One resident even confided that he sometimes went down to the first floor to use the bathroom because he could go in there and lock the door and not worry about someone coming in.

Many residents indicated that even though they liked their roommate, they would have liked to at least have the opportunity to live in a single room. Most expressed the realization that single rooms would quite likely mean an increase in the cost, but many indicated they would pay the extra fee for the added privacy. This question of choice has been explored in a broader sense by Proshansky et. al. (1976). They argue that "in any situational contest, the individual attempts to organize his physical environment so that it maximizes his freedom of choice." There is very little freedom of choice in accommodations within the residence hall and the residents are for the most part dissatisfied with that situation.

The room sketches included on the diagrams given to the residents were diverse in design. Many, though, had one feature in common. Usually there was some type of space set aside at the entrance. This was done by means of from simple furniture arrangements up to full height, semi-permanent partitions. Common characteristics of this space were the small scale of the space, a lack of personal amenities in the space, (possibly indicating the space is actually not part of the "living" area), and the fact that to enter the room through the space required at least

one change of direction and in many cases more than one. It is probably safe to say that the buffer zone created there may well be used partially as the porch link in the house/porch/street behavior phenomenon, a manifestation of the concept of freedom of choice. It should be noted that the basic dorm structure lacks this feature entirely.

There are additional issues that were mentioned by more than one of the residents in the course of the informal interviews that may not have been covered in any other place:

1) The entire environment is excessively noisy.
2) Corridors and lobbies are used as mini-gyms for frisbee, wrestling, general rough-housing and letting off steam even though there is a weight room in the basement.
3) The different floors may well be radically different in the use of corridors and lobbies depending on the personalities of the residents.
4) It is very inconvenient for the laundry facilities to be in the basement.

A brief re-statement of the conflicts between behavior and environment that have been identified and discussed in the preceeding analysis:

1) Privacy is hard to come by in all parts of the residence hall.
2) There are few entrance and exit choices, making it hard to move around without being observed by someone.
3) Although there is some agreement among portions of the population, there is no generally accepted territorial definition to assist the residents in feeling more satisfied with and secure in the residence hall.

4) Some residents feel restricted in the amount of personalization they are able to engage in.

5) The corridors are poor social interaction supporters, yet at certain times during the day, the high rate of pedestrian traffic produces many chance encounters that result in social interaction.

6) Noise is both a disturbance in its own right as well as being a contribution to the lack of privacy perceived by many of the residents.

7) There is no freedom of choice in occupancy per room and in the house/porch/street sense.

8) It is inconvienent for the laundry facilities to be located in the basement.

4) Questionnaire

Analysis of the questionnaire begins with a report of the return rate and is followed by a discussion concerning the reliability of the measures. Individual residence hall scores on all usable measures is then reported. Assumptions 3, 4, 5, 6, 7 and 8 from chapter 1 page 19 are then analyzed in sequence. Each assumption is first re-stated and followed by a display of the relevant data from the questionnaire. Statistical significance and implications of the results are then discussed with contributing information added where appropriate from the interviews and observations.

The return rate of the usable questionnaires is reported in Table 4.

Table 4. Questionnaire Return Rate

Residence Hall	Questionnaires Distributed	Questionnaires Returned	Return Rate
Boyd	33	22	67%
Goodnow	104	102	98%
Haymaker	74	45	61%
Marlatt	104	91	88%
Moore	74	41	55%
Van Zile	28	24	86%
Total	417	325	78%

One of the first concerns of analyzing survey data should be to determine the reliability of the measures used in the survey. Many of the questions used had originally been grouped together to obtain measures of overall satisfaction, satisfaction with the social environment, perceived security and territoriality. The original grouping was done in accordance with question type. The pre-test discussed earlier was then used to verify those assumptions and to identify those particular items that were more highly correlated with the total. The items on the questionnaire that were grouped to form the total score for each of the four measures are shown below.

Measure	Question Numbers
1) Overall Satisfaction	30,31,41,43,46,52,59
2) Satisfaction with the social environment	37,42,45
3) Perceived Security	38,39,40,48,49,53,56,57,58,63,64,65,66
4) Territoriality	32,47,50,51,54,55,60,61,62

As is shown on the questionnaire, (See Appendix I page 97), all of these questions have a five point response format ranging from strongly agree to strongly disagree. A numerical scale of one to five was then applied to that response format with the high score corresponding to either end of the response scale depending on the wording of the particular item. The pre-test of the questionnaire helped identify the more significant questions and insure the scoring sequence for each item was correct.

The computer program selected to test the reliability of the four measures for this questionnaire was the Item Analysis of an Attitude Scale, number G2 in the Funstat Package. The entire sample of 325 returns

was used. This test reads all items intended to constitute each measure, calculates totals with averages and standard deviations and then calculates a correlation coefficient between each item and the total score. A listing is compiled showing the number of respondents giving each response to each item in the measure. The reliability of the total based on all items in the measure is then calculated. The results of this test showed that the measures of overall satisfaction, perceived security and territoriality are acceptable but that the measure of satisfaction with the social environment is not acceptable. It may be that the low coefficient obtained for that last measure is due mostly to the fact that there are only three items in that measure, but it will not be used further in this study. Table 5 shows those coefficients.

Table 5. Reliability Coefficients of the Four Measures

Measure	Corrected Odd-Even Reliability Coefficients
Overall Satisfaction	.6166
Satisfaction with the Social Environment	.0275
Perceived Security	.8076
Territoriality	.5912

Analysis of assumptions:

3) Residents living in smaller residence halls will have higher levels of overall satisfaction, perceived security and territoriality than residents living in larger residence halls.

Tables 6, 7 and 8 are all part of the analysis of this assumption.

Individual Residence Hall Scores:

Table 6. Average Scores on Overall Satisfaction for Residents in Each Residence Hall

Residence Hall	N	$\bar{X}$	S.D.
Boyd	22	30.5	1.9
Goodnow	102	27.4	3.6
Haymaker	45	26.8	4.5
Marlatt	91	27.5	3.6
Moore	41	25.6	3.6
Van Zile	24	29.2	3.4

The total possible range of scores is 8 - 40; high scores indicate a high level of satisfaction with the residents' present living conditions.

An analysis of variance indicates that the differences among the means is significant. ($F = 7.12$ which is greater than the critical value of 3.02 at the .01 level of significance.) Although we do not know exactly where these differences lie, it appears rather obvious from the sample data that the residents of the smaller halls have higher levels of overall satisfaction than do the residents of the other halls.

Table 7. Average Scores on Perceived Security for Residents of Each Residence Hall

Residence Hall	N	$\bar{X}$	S.D.
Boyd	22	54.3	6.5
Goodnow	102	40.7	6.6
Haymaker	45	46.9	6.4
Marlatt	91	44.9	5.6
Moore	41	41.8	6.8
Van Zile	24	55.7	5.4

The total possible range of scores is 13 - 65; high scores indicate a high level of perceived security in the residents' present living conditions in that expectations of being a victim of a crime within the residence hall are low and perceptions of the general security of the hall are high.

An analysis of variance indicates that the differences among the means is significant. ($F = 36.52$ which is greater than the critical value of 3.02 at the .01 level of significance.) It appears that the residents of smaller halls have higher levels of perceived security than do the residents of the other halls. Haymaker and Marlatt Halls have medium levels and Goodnow and Moore have lower levels of perceived security.

Table 8. Average Scores on Territoriality for Residents of Each Residence Hall

Residence Hall	N	$\bar{X}$	S.D.
Boyd	22	34.9	3.4
Goodnow	102	32.9	3.9
Haymaker	45	33.4	3.6
Marlatt	91	31.5	4.3
Moore	41	31.1	3.5
Van Zile	24	35.9	3.7

The total possible range of scores is 9 - 45; high scores indicate a high degree of identity with the residence hall as home territory.

An analysis of variance indicates that the differences among the means is significant. ($F = 8.15$ which is greater than the critical value of 3.02 at the .01 level of significance.) It appears as if the residents of the smaller halls and of Haymaker Hall have higher levels of territoriality than do the residents of the other halls.

Therefore based on these data displayed in Tables 6, 7 and 8, assumption (3) is verified for the residents of the residence halls in this study.

Table 9. Average Scores for Overall Satisfaction, Perceived Security and Territoriality for Residents by Type of Residence Hall.

Residence Hall Type	N	Overall Satisfaction		Perceived Security		Territoriality	
		$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.
Low Rise (Boyd and Van Zile)	46	29.8	2.9	55.0	5.9	35.4	3.6
2 Wing High Rise (Moore and Haymaker)	86	26.3	4.1	44.5	7.1	32.3	3.7
3 Wing High Rise (Goodnow and Marlatt)	193	27.5	3.6	42.7	6.5	32.2	4.2

Overall Satisfaction range is from 8 - 40.
Perceived Security range is from 13 - 65.
Territoriality range is from 9 - 45.

An analysis of variance among means on all three measures indicates that the differences are significant. The critical F value for significance at the .01 level is 6.63. Obtained F values were:

Overall Satisfaction - F = 13.76
Perceived Security - F = 65.03
Territoriality - F = 12.45

Therefore it appears that based on these data residents of Low Rise residence halls score significantly higher on all three measures than do residents of the other types of residence halls. Assumption (3) is thus further verified here.

4) Residents living in coed residence halls will have higher levels of overall satisfaction, perceived security and territoriality than residents living in single sex residence halls.

Table 10. Average Scores for Overall Satisfaction, Perceived Security and Territoriality for Residents of Coed and Single Sex Residence Halls

	N	Overall Satisfaction		Perceived Security		Territoriality	
		$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.
Coed (Goodnow, Van Zile and Moore)	167	27.3	3.7	43.1	8.3	32.9	4.1
Single Sex (Haymaker, Marlatt, Boyd)	158	24.8	3.6	46.8	5.9	32.5	3.9

Total possible range of scores for Overall Satisfaction is 8 - 40; high scores indicate a high level of satisfaction with the residents' present living conditions.

Total possible range of scores for Perceived Security is 13 - 65; high scores indicate the residents feel that there is little chance of being the victim of a crime in the residence hall and that the general security of the hall is good.

Total possible range of scores for Territoriality is 9 - 45; high scores indicate a high level of identity with the residence hall as home territory.

Comparison of two population means indicated that the differences in the Overall Satisfaction means is not significant. ($z = .99$) Therefore it appears that based on these data residents of coed residence halls have similar levels of satisfaction as do residents of single sex halls.

Another comparison of two population means indicated that the difference between the Perceived Security means is significant ($z = 4.65$ which is larger than the critical value of 2.58 for significance at the .01 level). Therefore it appears that based on these data, instead of higher levels of perceived security, residents of coed residence halls have lower levels of perceived security than do residents of single sex halls.

The comparison of the two Territoriality means indicated that the difference is not significant ($z = .90$). Therefore it appears that based on these data residents of coed residence halls have similar levels of Territoriality as do residents of single sex halls.

Table 11 explores the differences between the scores for male and female residents regardless of residence hall.

Table 11. Average Scores for Overall Satisfaction, Perceived Security and Territoriality for all Male and Female Residents.

		Overall Satisfaction		Perceived Security		Territoriality	
Sex	N	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.
Male	201	27.1	3.7	45.4	6.8	32.3	4.1
Female	124	28.1	3.8	44.2	9.2	33.4	4.2

Overall Satisfaction range is from 8 - 40
Perceived Security range is from 13 - 65
Territoriality range is from 9 - 45

Comparisons of population means indicates the differences between Overall Satisfaction and Territoriality means are significant (z scores are 2.32 and 2.92 respectively which are both larger than the critical value of 1.96 for significance at the .05 level), but the difference between the means for Perceived Security is not significant (z = 1.26). Therefore it appears that based on this data female residents have significantly higher levels of both Overall Satisfaction and Territoriality than do male residents. Males seem to have slightly higher levels of Perceived Security than do females although that difference is significant only to the .20 level.

Assumption (4) was thus essentially refuted by these data. In Table 10 scores for Overall Satisfaction and Territoriality were not significantly different between residents of single sex halls and coed halls and residents of single sex halls had significantly higher scores on Perceived Security than did residents of coed halls. It would have been easy to explain the higher Perceived Security scores for residents of Single Sex halls based on the fact that the Single Sex group was highly over-represented with males except for the findings in Table 11 which indicated no significant differences between scores by males and females for Perceived Security.

These data tend to indicate that when living separate, males and females have similar levels of Perceived Security, but when living together the level of Perceived Security declines for all persons. Further research should be conducted to determine if this is actually the case in other residence halls.

5) Residents living on the lower floors of the residence halls will have higher levels of Overall Satisfaction, Perceived Security and Territoriality.

Table 12. Average Scores for Overall Satisfaction, Perceived Security and Territoriality for all Residents of Lower and Higher Floors.

Floor Level	N	Overall Satisfaction		Perceived Security		Territoriality	
		$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.
Lower Floors (Boyd, Goodnow Marlatt, Van Zile 2nd)	196	27.7	3.5	45.7	6.0	31.7	3.7
Higher Floors (Goodnow and Marlatt 5th; Haymaker and Moore 8th)	129	26.9	3.6	43.9	6.2	32.3	3.8

Overall Satisfaction range is from 8 - 40
Perceived Security range is from 13 - 65
Territoriality range is from 9 - 45

Comparison of the population means indicates the difference between the means for Overall Satisfaction scores is significant. ($z = 1.98$ which is larger than the critical value of 1.96 for significance at the .05 level.) Therefore it appears that based on this data the assumption of higher levels of Overall Satisfaction for residents of lower floors is substantiated.

A comparison of the difference between the Perceived Security means also indicated significance. ($z = 2.59$ which is larger than the critical value of 2.58 for significance at the .01 level) Therefore it appears

that based on this data the assumption of higher levels of perceived security for residents of lower floors than for residents of higher floors is substantiated.

Comparison of the two Territoriality means again indicated significance. ($z = 3.3$ which is larger than the critical value of 2.58 for significance at the .01 level) Therefore it appears that based on these data the assumption that levels of Territoriality will be higher for residents of lower floors than for residents of higher floors was unsubstantiated. It appears instead that residents of higher floors have higher levels of Territoriality.

Assumption (5) was verified by these data for Overall Satisfaction and Perceived Security, but refuted for Territoriality. Further study should be conducted to determine why residents of higher floors have higher degrees of identity with the residence hall as home territory. It may be that residents of higher floors spend more time in the residence hall than do residents of lower floors because it takes a little more time and effort to leave the hall from their rooms and thus a stronger identification of the hall as home territory develops.

6) Overall Satisfaction Perceived Security and Territoriality are positively related to each other.

Table 13. Correlations among scores for Overall Satisfaction, Perceived Security and Territoriality for the Entire Sample

	Overall Satisfaction	Perceived Security	Territoriality
Overall Satisfaction	1.0000	.3194	.1176
Perceived Security	.3194	1.0000	.1765
Territoriality	.1176	.1756	1.0000

The Pearson Product Moment Correlation Matrix was chosen to determine the correlation among the three scores. All correlations are significant for the sample size used to the .01 level of significance. It appears as if Overall Satisfaction and Perceived Security share some variance with each other, but that Territoriality does not share much variance with the other two measures.

Table 14. Correlations Among Scores for Overall Satisfaction, Perceived Security and Territoriality for Residents of Each Residence Hall

Note: OS - Overall Satisfaction
PS - Perceived Security
TR - Territoriality
/ - indicates insignificance

Residence Hall	N	OS/PS r	OS/PS significance	OS/TR r	OS/TR significance	PS/TR r	PS/TR significance
Boyd	22	.6639	.01	.1701	/	.3763	.10
Goodnow	102	.0592	/	.3374	.01	.1676	.10
Haymaker	45	.5500	.01	-.4392	.01	-.2992	.10
Merlatt	91	.1734	.10	.5288	.01	.4033	.01
Moore	41	.2220	/	.3617	.02	.1920	/
Van Zile	24	.4447	.05	.4704	.05	.4456	.05

Most of the correlations between scores are significant but indicate the sharing of variance between the scores varies widely from hall to hall. For instance, the variances of scores for Overall Satisfaction and Perceived Security are shared to a large extent for residents of Boyd, Haymaker and Van Zile Halls, but hardly at all for residents of the other three halls. Further analysis of the data and other studies will be required to determine the meaning of these differences.

Table 15. Correlations Among Scores for Overall Satisfaction, Perceived Security and Territoriality for All Males, All Females, Coed Halls, All Male Halls, High Rise 2 and 3 Wing Halls and Low Rise Halls, Higher and Lower Floors

Note: OS - Overall Satisfaction
PS - Perceived Security
TR - Territoriality
/ - indicates insignificance

	N	OS/PS		OS/TR		PS/TR	
		r	significance	r	significance	r	significance
Males	201	.2957	.01	-.0221	/	.0676	/
Females	124	.3979	.01	.4336	.01	.4030	.01
Coed Halls	167	.2370	.01	.4240	.01	.3023	.01
All Male Halls	136	.3394	.01	-.1023	/	.0222	/
High Rise 3 Wing	193	.1009	/	.4270	.01	.1936	.05
High Rise 2 Wing	86	.4264	.01	-.2704	.02	-.0792	/
Low Rise	46	.4771	.01	.3482	.02	.4127	.01
Higher Floors	129	.1604	.10	.3830	.01	.1981	.05
Lower Floors	196	.3790	.01	.0082	/	.1588	.10

V. RECOMMENDATIONS AND GUIDELINES

The recommendations and guidelines were formulated on the basis of the literature search, observation in the residence halls, interviews with administrators and residents and the results of the questionnaire. Some are more substantiated by the data presented than others are, but even where there is little or no supporting data, the proposals are the best guesses of the author at this time based on close association with the subject.

It should be understood that even the most highly substantiated proposal is still but a hypothesis as in effect are all design proposals. An evaluation must follow the realization of the resulting design to determine the validity of that design hypothesis. This means that when confronted with a design decision, the designer must make the best guess at that time based on the information he has on hand as he is not able to take the time to conduct further research, so even educated guesses should be communicated as they will probably be better than uneducated guesses.

It was in this sense that these recommendations and guidelines were written and it was intended that they serve in that capacity and that they may in addition also serve as directions for further research. The final section of this chapter makes more explicit recommendations for further research.

1) Design Guidelines

This is a set of design guidelines that can be applied to retro-fit projects in existing residence halls or to new construction of high density student housing. For the guidelines that deal with physical design issues, the format for presentation is adapted from Christopher Alexander's format in A Pattern Language (1977). A context statement with supporting data is first presented for each issue. An IF-THEN testable hypothetical statement follows and an imageable diagram illustrating the nature of the suggested solution completes the pattern.

1) Sociopetal Low Rise Structures

Of all the residence halls in this study, the smaller ones within a sociopetal grouping consistently had higher scores on Overall Satisfaction, Perceived Security and Territoriality than did the larger halls. The data also supported the assumption of higher scores for Overall Satisfaction and Perceived Security on lower floors as opposed to higher floors. Christopher Alexander argues that people who live above the fourth floor have lower levels of mental health than do residents below the fourth floor. Newman delineated problems with high rise living in public housing.

If there is a requirement for high density housing for students, then design groups of smaller halls that are sociopetal in orientation. Make them low rise walk-ups (four story limit) rather than high rise.

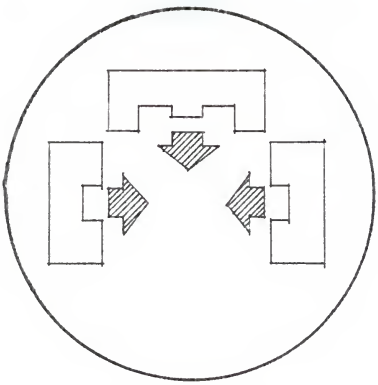


Figure 6. Sociopetal Structure Orientation

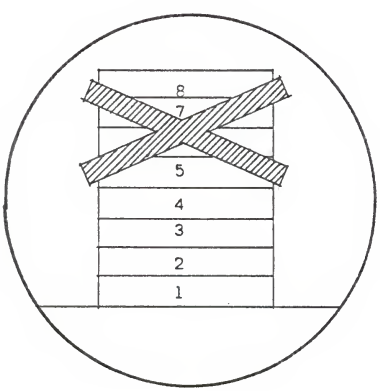


Figure 7. Four Story Limit

2) Group Size and Territoriality

The smaller the size of the living group, the higher the chance that each member will readily recognize other members and thus be able to recognize strangers. Clearly defining a group territory by providing physical cues will help that group establish its territory which will then increase the security of that group.

If there is to be housing for a large number of small groups of students in a high density situation, then provide clearly defined areas in a cluster type arrangement. Provide each cluster with at least one entrance for the exclusive use of that cluster's residents.

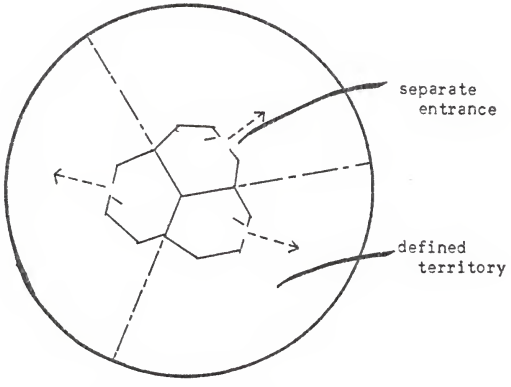


Figure 8. Group Size and Territoriality

3) Occupancy Mix

Satisfaction is heavily dependent on freedom of choice. In housing this can mean a freedom of choice as to occupancy type. Many students would prefer to live in single rooms if there were the opportunity.

If high density student housing is to be designed, then a mix of occupancy types should be provided, with an emphasis on single rooms. Further research is required to determine the exact mix.

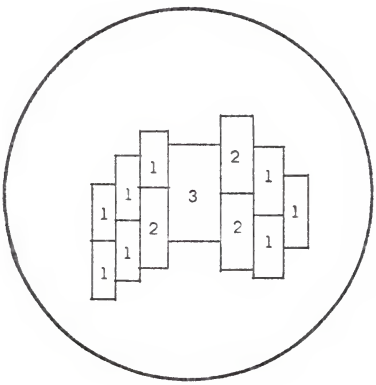


Figure 9. Occupancy Mix
(numbers refer to possible numbers of occupants in a prototypical mix.)

4) Appropriate Facilities

Certain types of facilities are in constant demand by students. Two of the most important general ones are laundry and cooking facilities. When those facilities are too far separated from the residents' living areas their use can become very stressful situations. In the case of this study, there was a high expectation of encountering some form of crime in connection with doing the laundry which was in most cases separated from the living spaces by a large distance.

If certain facilities are in constant demand by a group of students, then locate the facilities in close proximity to the living areas of those students.

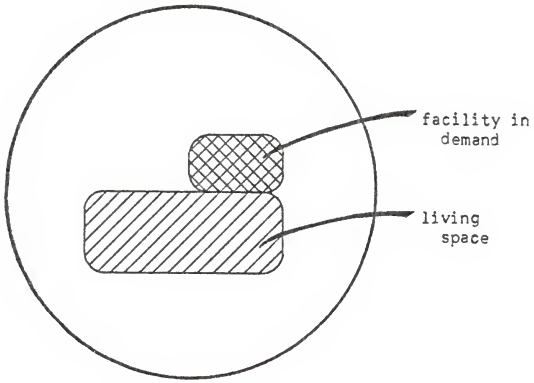


Figure 10. Appropriate Facilities

5) House/Porch Street

The literature indicates that an important aspect of man's social interaction is that he be given the ability to control the amount of interaction he has with others. The concept is of paramount importance in the dwelling where a lot of time is spent. This study found that KSU students are very aware of this need and feel that it is very important in residence halls.

If student rooms open onto a public pathway, then some type of transition space should be provided so the resident can control his/her social interaction. This concept also applies to the interface between building and site.

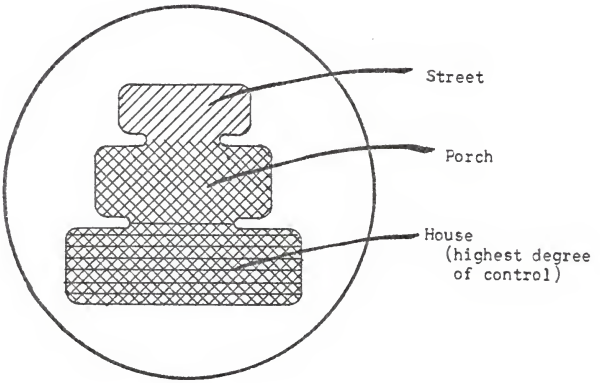


Figure 11. House/Porch/Street

6) Public to private

An important factor in the security of a structure are the signals it sends to people concerning when its territory ends and the public domain begins. Oscar Newman suggested a well defined heirarchy of spaces ranging from public to private as an effective method for promoting security.

If there are exterior areas around these clusters of housing where there will be any type of public use, then the area immediately surrounding the cluster should be provided with a well defined transition from public to private. There should be visual access to all exterior areas from the interior.

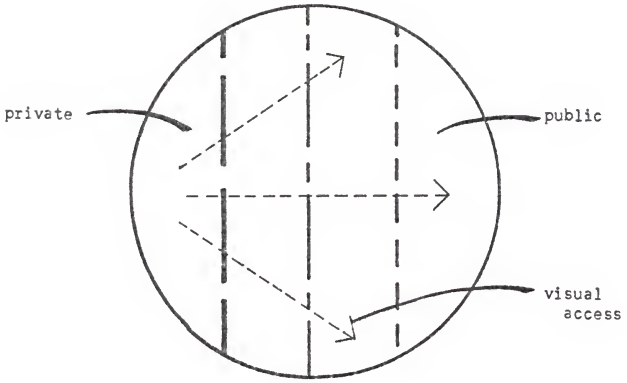


Figure 12. Public to Private

7) Thoroughfares

There are cases in the KSU residence halls where residential corridors are functioning as thoroughfares for people from outside the hall. The result is a more stressful environment for the residents of that corridor as they lose their privacy. There is also a good potential for crimes to occur in this situation. Therefore make sure no residential corridor acts as a thoroughfare because of its location in relation to surrounding activities.

8) Acoustical Privacy

Many residents of the KSU residence halls expressed a real dislike for the general level of noise in the residence halls. Other studies also found that acoustical privacy was a good indicator of satisfaction with the residence hall.

If there are potential or existing noise problems, then use more soft materials and less hard materials to help reduce noise levels and provide better acoustical separation among all spaces.

9) Personalization

Personalization was found to be a high priority with KSU students. Other studies have verified this finding. Therefore, finish materials and furniture used in the rooms should be such that the maximum amount of personalization is provided for the residents. An important point is the knowledge that a succession of users will move in and out of the units, all wanting to personalize the space differently for themselves. Fixed furniture should not be used. In fact it may be that little or no furniture should be provided as residents may prefer to bring their own,

especially if the cost difference is substantial. Further research is required on this issue also.

10) Administration

Administer the housing in as similar a manner as possible to the general methods used in off campus housing. In other words, apply all state and federal laws, but place no added restrictions on behavior (with specific reference to visitation, alcoholic beverages and personalization.) Use contracts similar to those used off campus where the resident is responsible for damages done to the unit and the landlord is responsible for normal upkeep. Where residence hall renovation or new student housing projects are planned, include representatives of the resident population in the planning process from the very beginning.

2) Retro-fit Recommendations

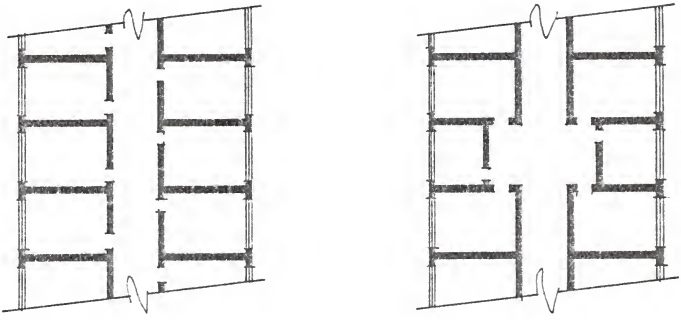
This set of retro-fit recommendations is intended for the residence halls included in this study and is based in part on the design guidelines.

1) Proposed Corridor Renovation

This proposal is based on Guideline 3 of the previous section of this chapter which illustrates the House/Porch/Street relationship between the room and the corridor and on Guideline 5 which proposes an Occupancy Mix. In addition it is quite conceivable that Kansas State University will begin to experience the declining enrollment in the near future that is being felt in other schools already. At some point there will be a decreased demand for the student housing and it will become more of a reasonable idea to consider converting some of the rooms to single occupancy. The recommendation here is to accept that reality and attempt to solve some of those problems discussed in Guidelines 3 and 5 at the same time.

If it is deemed appropriate to attempt to stimulate social interaction, to provide a choice of occupancy types and to attempt to introduce the porch element between the room and the corridor to assist the resident in developing an identity with the residence hall as home territory, then it is appropriate to look for ways to adapt the existing institutional design to provide those elements. Figure 13 on page 80 is a proposed method for accomplishing those ends.

Figure 13. Proposed Corridor Renovation



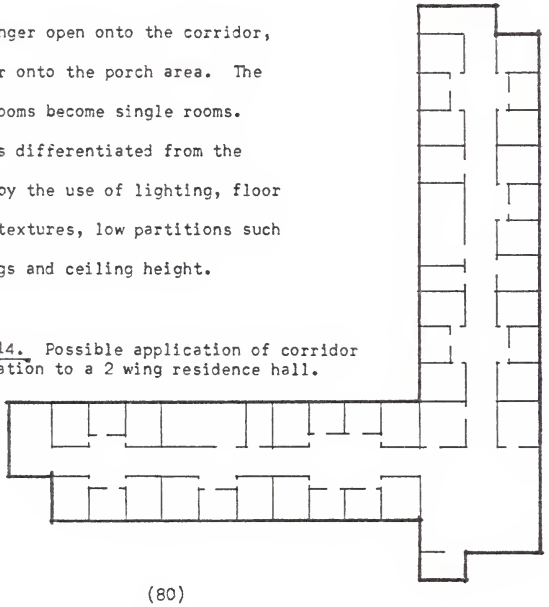
Renovate from this - - - to - - - - - - - - - this

Design Criteria:

1) Doors no longer open onto the corridor, but rather onto the porch area. The smaller rooms become single rooms.

2) The porch is differentiated from the corridor by the use of lighting, floor and wall textures, low partitions such as railings and ceiling height.

Figure 14. Possible application of corridor renovation to a 2 wing residence hall.



2) Thoroughfare Restriction

This recommendation is based on guideline 7, Thoroughfares. Thoroughfare use of any residential corridor by non-residents should be identified and stopped. Possible ways to stop this type of use would be simply making regulations concerning the use of that corridor, providing an easier route to the destination being sought by those passing through or actually locking the access to that corridor except to residents for a specified length of time in an attempt to alter those circulation patterns. Each case will have to be evaluated on its own characteristics to determine the solution that will fit the best.

3) Fire Code Restrictions on Room Remodeling

This recommendation is based on guideline 9, Personalization and guideline 10, Administration. The fire restrictions placed on materials and styles of personalization are perceived by the residents as being highly restrictive. The first directive from the Fire Marshall's Office listed only the Statements without the clarifying reasons as shown in Appendix I page 104. These statements seemed to outlaw everything except the bare walls. The clarifying reasons that came later provided the insight that those original standards were really not as well defined as had been assumed. Interpretation of the statements on the local level should provide a reasonable amount of latitude. Eventual inspections by the Fire Marshall's Office will be required to set the limits. Those limits should be as loose as possible to allow the maximum amount of personalization by the residents without running a real danger of fire.

4) Acoustical and Surface Treatment

This recommendation is based on guideline 8, Acoustical Privacy and guideline 9, Personalization. Apply soft finishes to walls and acoustical insulation between spaces wherever possible in an attempt to reduce the noise levels in corridors and rooms. Those soft surfaces should be of a material that will readily accept tacks, pins, etc. to facilitate personalization by the residents.

5) Relocation of Laundry Facilities

This recommendation is based on guideline 4, Appropriate Facilities. Consider the benefits of providing laundry facilities on each floor rather than congregate facilities in the basements as is the case now. Loss of items from laundry rooms is a major irritation to many of the residents and it seems quite feasible that these losses would not occur as often if there were facilities on each floor for the use of the residents of that floor. There would also be less unauthorized use of facilities by persons from outside the residence hall than occurs presently if those facilities were on each floor. Location of the machines would have to be by concensus of the residents on a space available basis on each floor.

6) Education System

An effective education system should be designed to convey the realities of the costs of vandalism to the residents. Large graphic displays in prominent locations communicating the amount of money spent on repairs as a result of vandalism that could have been spent otherwise may be a good start.

7) Incident Reports

Develop a set of guidelines for filling out the incident reports including all directors in the formulation so they all are in agreement with that policy. This will then help to make the incident reports something that can have some meaning and be useful rather than merely filing and forgetting them because there is no overall policy and thus encouraging inconsistent reporting. For most of the infractions there is no real need to fill a report out, and many of the directors would agree. Concentrating on a few of all the possible types of infractions should help to stimulate more consistent reporting. A suggested list of types to concentrate on are:

a. All incidents that result in bodily injury - assault, rape, etc.

b. All vandalism cases that result in damages over a set dollar amount.

c. All thefts that result in losses over a set dollar figure.

8) Back Stairwells

In Group II and Group III residence halls the back stairwells (at the opposite end of the corridor from the lobby) were constantly referred to as potential crime areas. The very strong separation of that space from the rest of the hall was the typical reason given for that assesment. That separation is another manifestation of the fire codes. If there is no way to open the stairwells up and give them more open connections to the corridor then there should be some way to give the residents in the immediate vicinity of those doors some control over who uses them. It may even be desirable to make those doors lockable by the residents, retaining the crash bars on the inside, based on the desires of the residents.

3) Further Study

To begin with there still remains much that can be done with the data collected for this study. For example, the section on the questionnaire entitled Your Residence Hall (See Questionnaire in Appendix I, page 97.) should be analyzed further to determine if there are significant differences on how those features listed are rated from hall to hall. The same analysis could also be done for the preceeding section, How Your Day Goes.

Another item of interest would be to compare use patterns for residents of higher and lower floors. One finding of this study indicated that residents of higher floors have a higher degree of identity with the residence hall as home territory than do residents of lower floors. It would be instructive to find if residents of higher floors are spending more time in the residence hall than residents of lower floors are, possibly causing that difference.

Further study should be conducted to determine why residents of coed halls have lower levels of Perceived Security than do residents of single sex halls when at the same time males and females have similar levels of Perceived Security.

There is a need to determine those residential corridors on the KSU campus that are acting as thoroughfares and deal with them as outlined in the recommendations.

The finding that residents of higher floors have higher levels of Territoriality did not seem to be congruous with the rest of the findings. It may be that height is not as important a variable as is simple rate of

pedestrian traffic which may be higher on the lower floors. This issue should be pursued further.

As it was determined here that female residents have higher levels of Overall Satisfaction and Territoriality than do males it should be instructive to find the causes of these differences. To what specific features of the social or physical environment are the females responding to in determining those measures? What features of that environment allow females to develop a higher sense of territoriality than males? It could also be that these differences are due more to the stage in life most students are at than to specific features of the environment.

There needs to be some type of method developed to determine actual occupancy mix needs within the residence halls. This will have to be a study which first attempts to discover user preferences for single, double and other types of rooms. Assuming there is an increased demand for single occupancy rooms it will be important to find out what the students would be willing and able to pay to be able to have those rooms. Cost would obviously be a factor when considering a renovation project which may be similar to that proposed in retro-fit recommendation number 1.

More different types of residence halls need to be studied in the same manner as were the residence halls on this campus. The differences found among the types of halls here may not be directly attributable to the type itself, but to some attribute of those types that was available to this study. For example, the higher satisfaction in the smaller halls may not be only a function of the size. The smaller halls are in a much more natural setting than are the larger halls, the image is much less

"institutional" which is not necessarily a result of size, the orientation among the halls is different as noted in the observations, the construction materials and systems are also different, the windows and doors are very different, the dining facilities are much different with the facilities located within the smaller halls but in a different structure for the larger halls. The list could go on forever and each issue suggests a research thesis in itself.

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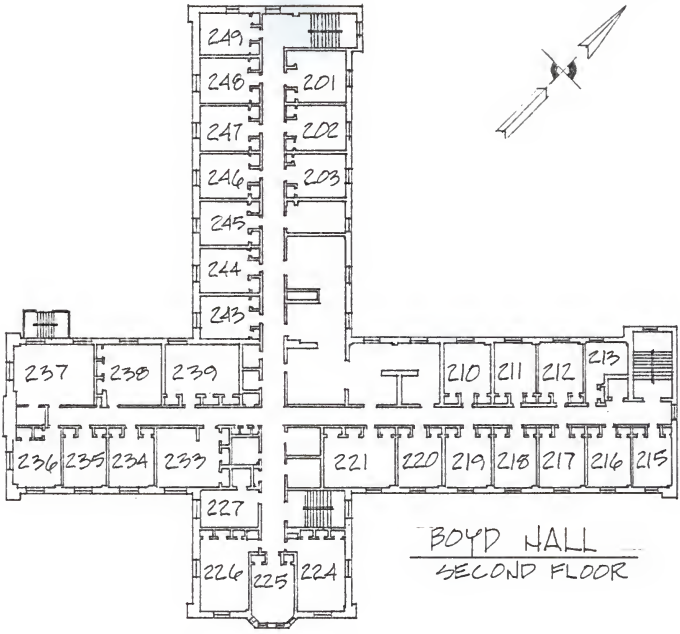
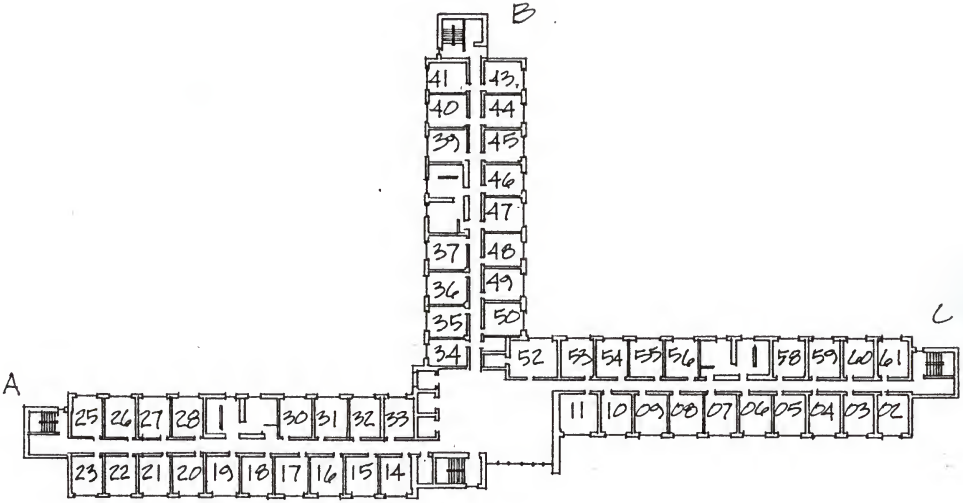
APPENDIX I

Appendix I includes most of the tools used in this study. Those included are as follows:

Item	Page
Floor plans of residence halls used in this study	90
Residence Hall Incident Report Form	95
Directors Interview Format	96
Questionnaire	97
Fire Codes	104
Abstract	



BOYD HALL
SECOND FLOOR



GOODNOW AND MARLATT HALLS

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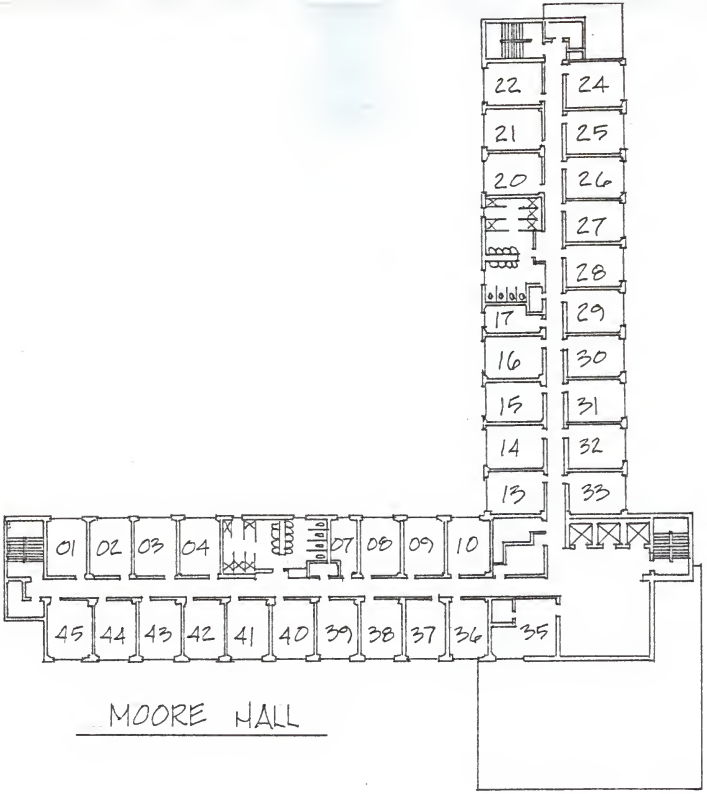
HAYMAKER HALL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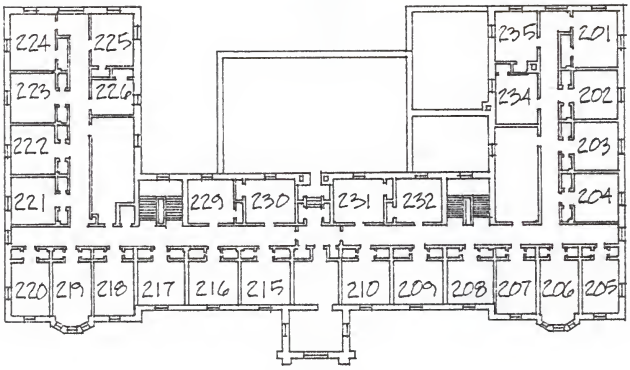
MOORE HALL



VAN ZILE HALL

SECOND FLOOR

RESIDENCE HALL
INCIDENT REPORT FORM

RESIDENCE HALL _____ DATE _____

PLACE OF INCIDENT _____ TIME _____

NATURE OF INCIDENT _____

DESCRIPTION OF INCIDENT, CIRCUMSTANCES SURROUNDING IT, AND ACTION TAKEN:

RECOMMENDED CORRECTIVE ACTION:

PERSONS DIRECTLY INVOLVED:

WITNESSES		VIOLATION PARTY(S)	
NAMES	ADDRESSES	NAMES	ADDRESSES

REPORT FILED BY: _____ DATE _____

DIRECTORS' INTERVIEW FORMAT

1) What is your general impression of crime in this residence hall?

2) Do you think this residence hall is a secure environment?
   Why or why not?

3) Do you think the residents feel it is a secure environment?
   Why or why not?

4) What areas within the residence hall seem dangerous or conducive to crime?
   Why?

5) What is your policy concerning the incident reports?

6) Is the information I have concerning this residence hall correct?
   This question referred to some additional information I had with me at the interview which included a set of floor plans with room numbers and indicating number of occupants in each room and sex.

7) What is the best time and method for distribution of the questionnaire?

8) Is there anything special about the floors designated to receive the questionnaire that may affect the results?

9) How are behavior policies set in this residence hall?

10) What is the behavior policy in this hall in general, and specifically concerning visitation? Also concerning room personalization? Also are there any other regulations either stipulated by the Department of Housing or by the residents themselves?

RESIDENCE HALL SECURITY QUESTIONNAIRE

This questionnaire is part of a study concerning security in university residence halls. The study is an attempt to further define the link between satisfaction and security related attitudes of residents in KSU residence halls and the physical design and management policies of those halls. Information gained from this study should contribute to the attempt to improve the quality of life for residents of university residence halls. Your participation is a significant and necessary contribution to this effort.

Please read the following statements and sign at the bottom indicating your understanding of those statements and your willingness to participate.

1) Participation in this study through completion of this questionnaire is completely voluntary and you may at any time and for any reason terminate your association with this study without fear of any type reprisal.
2) All information given on this form will be held strictly confidential. Any results publicly reported will be in the form of anonymous numerical data untraceable to any individual.
3) Any questions you may have concerning this questionnaire or the study itself will be answered as fully as possible.

If you sign this and agree to complete the questionnaire, I request that you give full consideration to each question and the best possible answer from your standpoint. The results of the study can only be as good as the data that goes into it. Thank you very much.

YOU AND YOUR RESIDENCE HALL

1) Dorm: _____

2) Floor: _____

3) Room number: _____

4) Your age: _____

5) Your room type: Single ____; Double ____; Other ____ (specify number)

6) Class standing: Fresh.___; Soph.___; Jr.___; Sr.___; Grad.___; Other ___.

7) Sex: Male ___; Female___.

8) Major: _____

9) Number of semesters, including present semester, you have lived in this room: ____.

RESIDENCE PREFERENCE & STUDY HABITS

10) Which residence hall on campus do you consider the most desirable to live in?

_____.

11) Aside from financial considerations, which type of living arrangement do you prefer? Dorm ___; Frat/Sor ___; Off campus room ___; Off campus apt. ___

Please indicate the number of hours spent studying in each place per week.

Place	Hours
12) Dorm room	
13) Other areas in dorm (specify)	
14) Library	
15) Other (specify)	
16) Total	

HOW YOUR DAY GOES

Please indicate the amount of time spent by you in each activity on an average 24 hr. day:

	less than 1 hour	1-2 hours	2-4 hours	over 4 hours
17) Your room, asleep				
18) A friend's room, socializing				
19) The hallway, coming and going				
20) The floor lounge				
21) The designated recreation room				
22) Your room, studying				
23) Your room, socializing				
24) Your room, eating				
25) The main lounge				
26) The hallway, socializing				
27) Cafeteria/dining room				
28) Laundry room				
29) Other (specify)				

YOUR RESIDENCE HALL

Rate the following features of your residence hall: (check appropriate box)

	excellent	good	average	poor	very poor
30) Size of room					
31) Size of windows					
32) Opportunity to develop friends					
33) Ability to control the amount of social contact I have with others					
34) Ability to fix up my room like I want it					
35) Image of the residence hall exterior					
36) Quietness of my room					

SOME ATTITUDES AND OPINIONS

Please circle the appropriate response:

37) I am concerned about the lack of security in my residence hall.

strongly agree agree neutral disagree strongly disagree

38) Security measures in my hall are designed primarily to protect university property rather than students and their property.

strongly agree agree neutral disagree strongly disagree

39) The grounds immediately surrounding my residence hall are areas in which crimes are likely to occur.

strongly agree agree neutral disagree strongly disagree

40) I could leave my books in the hall outside my room in the evening and they would still be there in the morning.

strongly agree agree neutral disagree strongly disagree

41) I am able to obtain sufficient privacy in my dorm room.

strongly agree agree neutral disagree strongly disagree

42) My roommate and I get along well.

strongly agree agree neutral disagree strongly disagree

43) I can always be found in my dorm room.

strongly agree agree neutral disagree strongly disagree

44) I spend most of my study time in my dorm room.

strongly agree agree neutral disagree strongly disagree

45) I spend most of my socializing time in the dorm.

strongly agree agree neutral disagree strongly disagree

46) Overall, I am satisfied with my dorm room.

strongly agree agree neutral disagree strongly disagree

47) The residence hall in which I live is a secure environment.

strongly agree agree neutral disagree strongly disagree

MORE OPINIONS

48) I would feel insecure if I were alone in the lobby of my floor late at night.

strongly agree agree neutral disagree strongly disagree

49) I am likely to lose clothes out of the laundry room if I leave them unattended.

strongly agree agree neutral disagree strongly disagree

50) I can tell when a person walking down the hall is a stranger and not a resident of the residence hall.

strongly agree agree neutral disagree strongly disagree

51) I feel responsible for the security of person and property in my entire corridor as well as in my own room.

strongly agree agree neutral disagree strongly disagree

52) Thefts occur regularly in my residence hall.

strongly agree agree neutral disagree strongly disagree

53) If I left my jacket in the lounge on my floor in the evening, it would still be there in the morning.

strongly agree agree neutral disagree strongly disagree

54) Pedestrian traffic near my dorm room is relatively high.

strongly agree agree neutral disagree strongly disagree

55) Pedestrian traffic near my dorm room is mostly people I know.

strongly agree agree neutral disagree strongly disagree

56) I always lock my room when I go to class and when my roommate is gone.

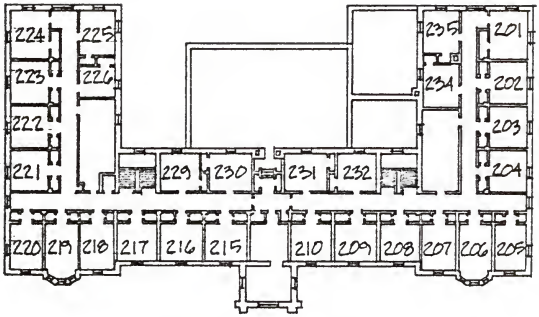
strongly agree agree neutral disagree strongly disagree

57) I always lock my room when I to to visit someone on the corridor and when my roommate is out.

strongly agree agree neutral disagree strongly disagree

58) If I left my jacket in the main lobby of my dorm in the evening, it would still be there in the morning.

strongly agree agree neutral disagree strongly disagree



VAN ZILE HALL
SECOND FLOOR

NEIGHBORHOOD AND CRIME

1) Please indicate which room is yours. (X)

2) Draw a line around what you consider to be your "home territory". Consider "home territory" as that area within your residence hall where you feel the most relaxed, comfortable and in control of what you and other people do in that space. This could feasibly include the entire residence hall, the full floor, part of the floor, one room, or nowhere at all in this residence hall. Indicate in writing any area you would include that is not shown on this sheet. Please consider this definition carefully before drawing the line.

3) Please name and indicate on the plan areas in your residence hall where you feel some type of crime is likely to occur and indicate what type of crime you would expect.

FRIENDS

59) The percentage of my good friends at school who live in this residence hall is:

100% 75% 50% 25% 0%

60) I am on first name basis with the following percentage of the people on my corridor:

100% 75% 50% 25% 0%

61) I am close friends with the following percentage of the people on my corridor:

100% 75% 50% 25% 0%

62) I consider the following percentage of people on my corridor to be people I can rely on under any circumstances:

100% 75% 50% 25% 0%

SECURITY PRECAUTIONS

Please circle the appropriate response according to your opinion of adding each type of security measure in your residence hall.

63) Unarmed security guard at the main entrance:

strongly agree agree neutral disagree strongly disagree

64) Armed security guard at the main entrance:

strongly agree agree neutral disagree strongly disagree

65) Unarmed night watchman patrolling residence hall:

strongly agree agree neutral disagree strongly disagree

66) Pass keys to enter residence hall between midnight and 7:00 am.

strongly agree agree neutral disagree strongly disagree

Please use this space to indicate if you have ever been the victim of a crime in this residence hall. If so, what type of crime was it and where did it occur? Thank you very much for your cooperation.

The following is a copy of the directive received from the State Fire Marshall's Office concerning room remodeling. All K-State residents will be expected to comply.

August 30, 1977

To: All Housing Directors

From: Floyd H. Dibbern, State Fire Marshall

On July 12, 1977 our office sent a memo to all residents of dormitories regarding room remodeling.

We thought our first statement was self-explanatory when we stated, "Since many students change their room configuration to the point where the rooms are not fire safe."

It was our intention that if the room was furnished in a conventional way, it would meet all fire safety requirements. We will take each item listed on the July 12,.1977 memo and define what was meant.

Statement #1:

"Any material used must have a flame spread number no greater than 75. A label or manufacturers statement to this effect, must be available for fire inspectors."

Reason:

Our object was to prohibit old barn wood, burlap draped on the walls and across the doors, walls from being completely covered with paper posters, plywood used for room dividers, paper covering the lights for lighting effects, ceilings covered with flammable materials, etc.

Regular furniture items such as beds, desks, dressers, bookcases, tables, etc. are acceptable. Regular curtains or drapes at the windows, sheets, pollowcases, blankets, bedspreads, etc. are also acceptable.

Statement #2:

"Carpets and ruge may be used, but floors may not be elevated".

Reason:

Our object was to prohibit the use of lumber to elevate the floors and use the room floor (most floors being fire-resisteve). We have observed cases where the floors were elevated out of old wood with cracks in them where cigarettes could fall through and cause fire problems and elevated floors also prevent easy exiting. Reguler carpeting and throw rugs are acceptable.

Statement #3:

"Regular beds may be bunked only to the height of the standard bunk beds (now in use in some halls). Sleeping lofts will no longer be permitted".

Reason:

Our objest was to prohibit students from sleeping next to the ceiling. As everybody knows, if there is a fire incident, all the gases rise to the ceiling level. Regular bunk beds are acceptable.

Statement #4:

"Doors or passageways which limit egress, shall not be installed".

Reason:

Our object was to eliminate cloth or burlap from being draped across the doorways or structures made from lumber which would hamper easy exiting.

Statement #5:

"Additional wiring for electrical equipment or lighting effects, may not be used. This refers to improvised wiring. Wiring approved by the authority having jurisdiction and installed by a licensed electrician is acceptable".

Reason:

Our object was to prohibit the students from improvising the wiring in the room by tying electrical wiring together and wrapping in friction tape, thus making the wrong type of connections. A moderate number of extension cords are acceptable.

Statement #6:

"Construction may not obstruct air circulation through the convector units. This regulation pertains to all heating units. No construction will be allowed which hampers the building heating system."

SECURITY IN UNIVERSITY RESIDENCE HALLS: EFFECTS OF PHYSICAL DESIGN AND MANAGEMENT POLICIES

by

John K. Boal

B. Env. Dn., North Carolina State University, 1975
B. Arch., Kansas State University, 1977

AN ABSTRACT OF A MASTER'S THESIS

submitted in partial fulfillment of the

requirements for the degree

MASTER OF ARCHITECTURE

Department of Architecture

KANSAS STATE UNIVERSITY
Manhattan, Kansas

1978

SECURITY IN UNIVERSITY RESIDENCE HALLS
EFFECTS OF PHYSICAL DESIGN AND MANAGEMENT POLICIES

Abstract

Resident security is important in any housing facility. With the declining visitation restrictions in student housing on many campuses in the past few years there has been an increased potential for crimes against person and property. This study identifies physical design and management policy factors that affect residence hall security.

The literature search discussed in chapter 1 concentrates on security-related studies concerning public housing and residence halls, studies dealing with crime and security in general as they relate to the physical and social environment and studies that have investigated satisfaction determinates in university residence halls.

As a resident's overall well-being may be more affected by his perceptions of how secure his environment is than by his actual contact with a crime, there was an emphasis in this study on measuring the residents' level of perceived security as well as the level of satisfaction and a rating on the degree of identification with the residence hall as home territory. These three measures were obtained through the use of a questionnaire distributed to 326 residents of six residence halls on the Kansas State University campus. This distribution allowed the comparisons of those three measures among residence halls of various sizes, types, and management policies. Interviews with residents and administration and observation of those environments were used to augment the information collected through the questionnaire. All research methods used are described in chapter 2. Chapter 3 discusses the results of the questionnaire and the other methods of inquiry.

The final chapter includes retrofit recommendations that were written for the specific residence halls used in the study and a set of design guidelines for promoting resident security that was written for use with other renovation projects or for new residence hall construction.