

AN EXPLORATIVE STUDY TOWARD
A NEW HOUSING DEVELOPMENT
FOR M.I.T.

by

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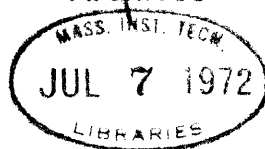
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SUBMITTED TO THE DEPARTMENT OF ARCHITECTURE ON MAY 12, 1972 IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF ARCHITECTURE.

ABSTRACT

This study is meant to be an exploration, not a recommendation. It examines, within a limited context, various small scale physical configurations of spaces which might accomodate life styles current or projected at M.I.T. and the organization of such small scale configurations with certain supporting facilities on a given site.

Three assumptions were made at the beginning of the study: (1) The investigation would be framed primarily in the context of new housing for undergraduate students. (2) Such a housing development would be located between Memorial Drive and Amherst Alley just west of MacGregor House and (3) would serve 250-300 residents.

As a preparation for determining the general nature as well as the physical space requirements for the new development two brief studies were made--one of the history of M.I.T.'s involmnet in housing, and the other an examination of current housing facilities available to undergraduates at M.I.T. The latter involved investigation both of physical accomodations and of use patterns. An evaluation was also made of the assumed site including an examination of its potential as a location for support facilities to serve the West Campus residential community and even communities beyond.

Based on these brief inspections a determination was made of physical requirements for a new housing development. Facilities were defined at four levels according to the size of the group they were meant to serve: (1) facilities for the community, (2) facilities shared by the development as a whole, (3) facilities shared by small groups within the development and (4) private spaces. Brief descriptions were outlined for each facility with attention to space requirements, access, relationship to other facilities and potential uses.

The design approach which followed involved two steps: (1) the organization on the site of large scale shared

facilities (both for the community and for the residential development itself) and general areas for more private use according to access, contiguity, views, wind, sun etc.; (2) the organization of small scale shared facilities and private spaces to accommodate demands of various living arrangements which could then be applied to previously defined general areas designated for these more private uses.

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INTRODUCTION

This study is meant to be an exploration, not a recommendation. It examines, within a limited context, various small scale physical configurations of spaces which might accomodate life styles current or projected at M.I.T. and the organization of such small scale configurations with certain supporting facilities on a given site.

In order to create a framework within which the study could be undertaken, several limits were accepted without extensive exploration or evaluation of alternatives:

1. Since M.I.T.'s present commitment in housing is more clearly defined in relation to undergraduates as opposed to other segments of the university community, the study was framed in the context of exploring housing forms for that group. Accomodations for other members of the community were examined primarily in their relation to a facility for undergraduates.

2. A general project size was assumed, i.e. a new development to accomodate 250-300 residents.

3. A site was accepted--the parcel of land on Memorial Drive just west of MacGregor House which is presently designated by the M.I.T. Planning Office for future undergraduate housing development.

It should be emphasized that acceptance of these limits does not imply any evaluation of their advisability. All three points rely strongly on recommendations resulting from the most recent comprehensive examination of M.I.T.'s role in university housing which was written almost a decade ago (see Committee on Student Environment, 1963). New determinations of (1) what responsibility the university has in the realm of providing housing and (2) what effectiveness M.I.T. has had in recent years in accomplishing the stated goals of its residential system as well as (3) an evaluation of present housing policy are called for before more concrete determination of size, mix, location and general nature of new facilities can be made. The need for such a comprehensive study is apparant.

CHAPTER I

Background: M.I.T.'s Involvement in Student Housing

When M.I.T. first contemplated moving from its Copley Square location in 1902 one of the major arguments given for seeking a larger new location was to "make it possible to establish a dormitory system and to develop an intellectual and social center for the students worthy of a great institution." (Prescott, 1954, p. 193) That intention found physical expression in 1915 when the first M.I.T. dormitory, the present Senior House, was begun as part of the initial construction phase on the Institute's new Cambridge site. According to S. C. Prescott in his account of M.I.T.'s first half century, "this marked an important step toward that broader social life which had been the hope--much deferred--of the presidents since the early days of President Walker." (Prescott, 1954, p. 267)

In spite of this longstanding interest in an on-campus student housing system, however, it was not until after World War II that M.I.T. actually became a predominantly residential university. Prior to that time, financial and leadership problems had hampered the realization of an M.I.T. residential community, and students residing in Institute-owned housing, which included Senior House (completed in 1916) and the East Campus Parallels (East Parallel completed in 1927, West Parallel in 1930), represented only a small fraction of the total undergraduate

population. Fraternity Chapters, the first of which had been established in 1882, comprised an appreciably larger portion of the student body and the "independent" or "com-muter" groups who resided in apartments, rooming houses, or with their own families, also formed a far larger group than did the dormitory residents. (Committee on Student Environment, 1963, p. 5) It was, in fact, not until Baker House was completed in 1949 and Burton-Conner was acquired in 1951 that the dormitory system became the largest re-source for undergraduate student housing at M.I.T.

Since the early fifties two major reports by dis-tinguished committees have been made outlining a compre-hensive residential program for M.I.T. In 1956 the Commit-tee on Student Housing (Ryer Committee) reported on its study of problems related to developing "a residential sys-tem with the furtherance or the education of students as its primary function." (Committee on Student Housing, 1956) In 1963 the Committee on Student Environment completed an Interim Housing Report based broadly on the work of the Ryer Committee but greatly expanded in scope and thorough-ness. From the work of these committees came policy deci-sions for major additions and alter~~er~~ations in the M.I.T. residential program. The physical results of these deci-sions were MacGregor House completed in 1970 and a major renovation of the old Burton-Conner complex in 1971.

Today (academic year 1971-1972) about three-fourths of M.I.T. undergraduates and about one-fifth of the graduate students live on campus, i.e., in an Institute-owned dormitory, a fraternity or the M.I.T. Student House. Of the undergraduates living on campus, about 60% reside in dormitories. For the past decade, M.I.T. faculty and administration have readily accepted the fact that one of the more important Institute responsibilities is to provide on-campus residence for every undergraduate who desires to live on campus. (Committee on Student Environment, 1963, p. 5)

Because of the Institute's location, M.I.T. students have always found available living space convenient to the campus restricted. (Lambrinedes, 1970, p. 50) In recent years as the number and size of schools in the Boston area has increased and as the "youth culture" of Cambridge has attracted many additional non-students to seek housing in the area, the problem has become especially critical. If M.I.T. does not accept the responsibility of providing housing for at least all of its students who desire such accommodations it runs the risk of damaging the housing environment in the adjoining communities as students increase (or even continue) their demand on the existing local housing stock. This demand creates a seller's market which increases rents and displaces the poorer

residents with whom the students are in competition, and over whom they often have economic advantage. A seller's market encourages lower landlord responsibility, resulting in dilapidation of the housing stock, increase in absentee landlord ownership and other effects detrimental to the community. This cycle leads to the community's resenting the university which is seen as taking much while giving little in return. Students often, therefore, end up in a living environment which neither fulfills their needs nor the university's social intentions.

It has been the stated Institute policy for many years that "students should be given freedom of choice in where they live." (Committee on Student Housing, 1956, p. 37) Thus it is not M.I.T.'s intention at present to prevent students from tapping non-Institute housing resources if they so desire. Yet, at present, there exist several groups of students who are normally not accommodated by on-campus housing stock solely because of lack of facilities. These students are forced to seek housing in the local market whether they want to or not. They include transfer students, students who are dissatisfied with their initial choice of on-campus housing but who cannot move to more suitable on campus housing because their priority is too low and students whose particular residential needs are not met by the present housing types available at M.I.T.

Current projections indicate a probable increase in the number of students excluded from the on-campus residential system due to lack of facilities in the near future unless some new housing stock is added. It is the consideration of this factor that has led to the current study being conducted by the Committee on Student Environment and to a projected study by the Office of the Dean for Student Affairs seeking guidelines regarding the nature of housing to be built by M.I.T. in the near future.

CHAPTER II

Current and Potential Living Arrangements at M.I.T.

A. Housing Alternatives Presently Available to M.I.T. Undergraduate Students

1. Fraternities. Approximately one-third of M.I.T. undergraduates are currently housed in the 29 fraternity chapters active at the Institute. The fraternity system has long been an important part of M.I.T.'s residential program, offering not only an essential housing supply but also a diverse set of social, academic and intellectual living styles necessary to accommodate various interests of M.I.T. students.

Fraternities solicit members from the incoming freshman class in much the same way that "rush" is carried on at other schools. Names and addresses of new students are distributed to all chapters early in the summer. Through literature and often through personal visits from fraternity upperclassmen incoming freshmen are acquainted with the "personality" and amenities of several houses before they come to Cambridge in the fall.

Residence Orientation Week, the week before school starts, is planned to allow freshmen to visit the fraternities that interest them, as well as other residential facilities available on-campus. All fraternity upperclassmen are present to meet potential new members and to extend

"bids" to those who they would like to join. At the end of the week freshmen may accept any "bids" they may have received or they can indicate preferences for an M.I.T. dormitory and get assigned. Many fraternities still have a period of "pledging" (up to two terms after the bid is accepted) which is a trial period to allow new residents to reserve final judgement on whether they want to become an active member. During this period M.I.T. will guarantee dormitory housing to any freshman who decides not to become active in the fraternity. After a freshman joins a house, however, he loses that guarantee and because of lack of space it becomes difficult for him to get into an M.I.T. dormitory.

There is no characteristic life style of M.I.T. fraternities. They vary significantly in size, cohesiveness, degree of affiliation with national fraternities and with M.I.T., moral standards, social activity, academic emphasis and physical amenities. Their membership, which is usually 30-40 in number (although the extremes are as few as 20 and as many as 70), may be largely homogeneous or may draw from as rich a variety of background as M.I.T. has to offer. Two fraternity chapters are co-ed. Some houses take great pride in being close-knit social cliques with a strong group identity. They support this identity with many collective activities--parties, athletic events,

frequent group meetings, etc. Other chapters take equal pride in the independence of their members degrading any sacrifice of individuality. Their collective activities may be kept to the minimum necessary to keep everyone fed and keep the bills paid.

Most of the M.T.T. fraternities are located across the river from the Institute in the Back Bay section of Boston. Four, however, are in Cambridge on Memorial Drive and two are in Brookline. They are generally housed in large old rowhouses most of which were originally very lavish single family homes. Several fraternity houses are extraordinarily fine nineteenth century mansions highly decorated in elegant French Imperialist style. Many chapters are very proud of their physical facilities as evidenced by their careful maintenance. Most are also pleased with their location even though it may require several daily treks across Harvard Bridge. The Back Bay is an exciting place for a student to live--full of "old Boston" as well as a bounty of students from Boston University and Northeastern University plus many smaller colleges, junior colleges and business schools.

Fraternities own their own houses and are responsible for upkeep and maintenance of them. Although alumni corporations oversee the business affairs of most fraternities the day to day running of the house is conducted by

its members. Planning and buying for meals is done by individuals within the chapter although a cook is usually employed for meal preparation. Budgeting, billing, collecting and payments are done by the chapter itself, as well as preparation of financial reports to the house corporations. In general, the system works very well and there is no lack of responsible leadership in the fraternities themselves. There are, however, some unavoidable instances of neglect and misplaced responsibility which occasionally result in disturbing inconveniences to fraternity residents.

Because of the deteriorating condition of some of the older fraternity facilities and because there has been some interest in establishing closer relationships between fraternities and the Cambridge campus several studies have been conducted since 1951 exploring the feasibility and desirability of building new homes for fraternities on or near the M.I.T. campus. Land-use limitations, financing problems, legal requirements and a reluctance among some fraternities to sacrifice their present locations have hampered any large scale action of this sort. (Stratton, 1962) It does seem, however, that in the very near future at least two fraternities will build new homes in the West Campus residential development.

2. M.I.T. Student House. Student House is a

co-operative co-ed living group with about 30 members. It operates on much the same basis as the fraternities except that cooking is done on a rotational basis by the students themselves and the individual space allotment for each student is perhaps somewhat smaller than at most fraternities. As a result of these factors, rents in Student House are probably lower than any other type of residential arrangement at M.I.T. For this reason M.I.T. gives names of incoming freshmen from low income homes to the President of Student House who sends information on the house to these students. The co-operative arrangement is very popular among residents and Student House never has any trouble getting enough members.

3. Dormitories. About half of M.I.T.'s undergraduates are currently housed in Institute-owned dormitories. Like the fraternities, the dormitory system offers a variety of living styles and involves a wide diversity of students.

Incoming freshmen who do not receive bids from fraternities during Residence-Orientation Week or who choose not to accept the bids they receive are asked to rank the M.I.T. dormitories according to their preference. All freshmen must live either in a dormitory, fraternity or Student House. Each dormitory has

approximately one-fourth of its spaces reserved for freshman occupancy. The freshman spots are generally evenly distributed throughout the house (same number per floor or entry) although they tend to be the least desired rooms since priority is based on length of residence.

Freshmen choices of dormitories are satisfied as optimally as possible by the Housing Office. Once a student is assigned to a dormitory it is up to the house government to determine his room placement. Different houses use different means, but the standard procedure is supposed to be a random matching of freshmen and rooms. This phase of the system, however, is known to be greatly corrupted and, in fact, if a freshman indicates a desire to live in a certain area of a dormitory to residents of that area who have some "pull," he will often "coincidentally" end up there.

Moving between dormitories after initial placement is only possible if one finds someone with whom to exchange places of residence; hence, only about 35 moves between dormitories occur per year. (Lambrinedes, 1968, p. 52) Moving within dormitories is, on the other hand, very common--especially movement within the same floor or entry. Priority systems governing such moves are developed by residents themselves. Since the primary factor in such systems is usually length of residence, most students move to even slightly more desirable accommodations each year.

Any upperclassman may move out of the dormitory system at any time he wishes. In fact, because of the high demand, room contracts are often waived and reimbursements, prorated according to time of residence, are made to students wishing to move out in mid-semester. At one time a significant number of juniors and seniors took the option of living off-campus. Recently, however, this trend has been diminished. Of freshmen students living in Institute-owned dormitories Spring Term '71 who returned to M.I.T. Fall term '71, 98% returned to dormitory housing. The explanation for this development undoubtedly relates to the significant improvement in dormitory facilities in recent years. The 1963 Interim Housing Report had indicated a desire for such a development by their statement: "We should concentrate on developing our facilities for those who wish to take advantage of them; in so doing, it is our belief that more students will in the long run choose to live on Campus." (Committee on Student Environment, 1963, p. 18) For those who do move out, the step is almost certainly final since re-entrants to the system have low priority.

The seven M.I.T. undergraduate dormitories fall generally into three physical-form categories--corridor systems (East Campus Parallels, McCormick West and Baker House), apartment systems (Burton-Conner, McCormick East

and Bexley) and entry/suite systems (MacGregor and Senior House). Because of their significantly different physical layouts and because of the nature of the selection process the dormitories tend to develop strong group characteristics--even stereotypes. (Lambrinedes, 1968, p. 57) (See Appendix E)

East Campus Parallels consists of two buildings which face each other across a large tree-lined lawn. Each building contains five floors of double loaded corridors. The location is convenient to classes which may be one reason for the dorm's stereotype as home of "nurds," "tech-tools" and "animals;" i.e., students who study constantly and have little social awareness. The image has perhaps slackened a little in recent years with the major "face-lift" given to the building and with the advent of coed living on some floors in 1970. Rents are among the lowest on campus, and there is a high concentration of single rooms. Kitchen and lounge facilities are minimal. Commons meals for the approximately 420 East Campus residents are available in Walker Dining Hall.

Senior House, the oldest M.I.T. dormitory is located on Memorial Drive beside and behind the President's home. It houses almost 200 students, male and female, in a suite/entry system--ten students to a suite, four suites to an entry. Senior House is seemingly a collection of

friendly, fairly close-knit groups. There are about equal numbers of single and double study/bedrooms in the dorm mixed with a few triples. No kitchen facilities or lounges are specifically provided. Students are, however, allowed to have hot plates and refrigerators as well as being able to paint and in other minor ways alter their rooms as they wish. Commons meals are available at Walker.

Bexley Hall, an apartment-style dwelling opened partially in 1963 and fully in 1964, was considered from the beginning "at best, a stop-gap solution." (Committee on Student Environment, 1963, p. 8) It was deemed inadvisable to do major renovation on the building prior to its opening because the Massachusetts Avenue site was considered inappropriate for residential development. The rooms are big with high ceilings and large windows. Students are allowed a great deal of freedom in making minor alterations to the apartments. The 130 or so Bexley residents are housed in about equal numbers of doubles, triples and quads--all amply supplied with generous kitchen facilities. The life style is free, and detached. Although Bexley is the most centrally located dormitory facility, it is probably the most removed from the mainstream of life at M.I.T. which is exactly the way many of its occupants seem to want it. A few Bexley residents take Commons meals in Ashdown.

Baker House, located on Memorial Drive with most of its rooms overlooking the Charles, is undeniably an architectural work of great distinction. The long, wide winding corridors of the six floor structure are lined on the river side by a mixture of single and double study/bedrooms. The opposite side of the corridor is more irregularly marked by some doubles and triple study/bedrooms, bathroom facilities and Aalto's distinctive fire stair as well as occasional lounges which seem to grow out of the widened corridors. For twenty years the dorm was easily the most popular facility in the system. It was the most social house and seemed to have a great deal of cohesiveness--particularly among residents on each floor. With the addition of MacGregor and the remodeling of Burton-Conner, however, the attitude toward Baker House has changed somewhat. The lack of kitchens is a major complaint and the general maintenance of the building in recent years has been somewhat haphazard. Minor renovations are in planning stages now. Most Baker residents are sold on the corridor dorm system as an excellent means of encouraging student interaction but many would personally gladly trade for the privacy of a suite with a few close friends--especially during junior and senior years. Baker has its own dining facility.

McCormick Hall is presently the only all-female dormitory in the system. The ground floor contains several elegant living rooms, study rooms, a gym, a courtyard and a dining room. Above the first floor are two residential towers--each seven stories tall. The west tower, the earlier of the two, organizes a mix of single and double study/bedrooms peripherally around a central utilities and access core. The twenty-two girls who live on a floor share a small kitchen and laundry room. The east tower, built several years later, utilizes more of an apartment style organization--a floor being divided into two separate units, each housing eight to ten students with common bathroom, kitchen and living room. McCormick on the whole is very elegant and expensive. There is currently a great deal of discussion about converting one tower into co-ed living facilities.

Burton-Conner was for two decades a poorly organized, poorly maintained, but always lively, expedient housing solution for up to 600 M.I.T. undergraduates. Its long double-loaded corridors which, toward the end of its days, were covered with student murals and collages were the focus of many M.I.T. students' lives. Its "coffin singles," gang showers, and "walk through" bedrooms made the makeshift dormitory a real part of M.I.T. folklore. Strong floor identities were developed and

carried on over many years, adding to the legend that was Burton House.

In June, 1970, the old Burton died and the complex was gutted for renovation. The new Burton-Conner retains the form of the long corridors of its predecessor, but none of the original character. The long rows of doors accessing student rooms were replaced by a few lockable suite doors which access apartment type housing for from five to eight students. Each floor of Burton and each floor of Conner are nominally an "entry" with a common room and tutor's suite. However, because of the strong isolation between apartments little entry identity has developed in the short time the facility has been occupied.

The intention of the new design was to allow for a large degree of flexibility by providing "self-contained apartments which could be used by various groups over the years: men, women, undergraduates, faculty, married students, etc." (Goody, Clancy and Associates, Inc.) It was also thought that "by putting the maximum space behind a lockable suite door as the responsibility of a small group of people, problems of theft and maintenance are minimized."

The apartment seems to work very well for small close-knit groups of upperclassmen who enjoy the privacy and independence of the system. The ample lounges and kitchens allow residents to do their own cooking (often

co-operatively among the apartment group) and even to do some group entertaining. There have been some problems, however, among freshmen and other "unattached" entrants in the house. Since housing policy dictates that available spaces for freshmen must be evenly distributed among suites, many new students find themselves "odd-man-out" in an already closely-knit upperclassman clique. They further find their contacts with other freshmen severely limited by the isolation of the apartments. The old "floor indentities" involving groups of forty to fifty students which were so common in the original Burton have almost completely disappeared. The strong house identity which also once characterized Burton seems as well to have diminished. The closing of the dining hall and the independence of the apartments are certainly contributing factors in this regard.

Burton-Conner now houses just under 350 students, one-tenth of whom are women (concentrated in one entry). In addition to the apartments on the upper five floors there are generous common spaces on the lower floors--a study library, seminar room, a hobby shop, vending machines, laundry room and club rooms. Only the ping-pong room and laundry facilities seem extensively used at present.

MacGregor House, new and expensive, is in many

ways the fullest physical embodiment of the goals of M.I.T.'s recent residential policy. Its 324 residents occupy single study/bedrooms (with the exception of two doubles) assembled by various means into suite and entry sub-groups. The house as a whole shares a dining facility, a large lounge (dubbed the "T.F.L." by residents-- "tastefully furnished lounge"), two seminar rooms, a study library, a music practice room, a ping-pong/pool room, a laundry, a darkroom, an electronics lab, vending machines and a squash court. Dining and laundry facilities are used by a large percentage of the residents while library, hobby and recreation rooms tend to be supported by small but active core groups from within the house. The lounge and seminar rooms are notably little used.

The four entries which make up the "low-rise" section of MacGregor consist generally of six suites with eight students in each suite. The lower floor of an entry includes the entry tutor's apartment and the entry lounge. The upper three floors have two student suites on each floor with access from the lower floor by a fire stair. The eight students in a suite share kitchen and bathroom facilities as well as a small living room.

The "high-rise" section is divided into five entries--each covering three floors. The skip-stop

elevator opens on the middle floor of an entry which includes the tutor's apartment, a large lounge, a student suite plus two single student rooms not identified with any suite. The floors above and below, connected by an open stairwell, each contain two student suites. A "high-rise" suite includes only six study/bedrooms with shared kitchen, bathroom and living room.

Entries in the tower section are characterized by a great deal more connectedness than those in the walk-up section. Although there are doors to separate suites in the tower, they are usually left ajar. This being the case, the open stairwell provides an adequate link between suites on different floors and between suites and the entry lounge such that circulation throughout the entry is unimpaired. In the walk-up section, on the other hand, suites are connected only via the fire stair so that their doors must shut mechanically. Suites are completely separated from each other visually and communication within the entry is hampered by many barriers.

The tower is generally considered to be the preferable place to live. The views are better (often quite spectacular), there is indoor access to common facilities downstairs and many details (trash disposal, etc.) seem to be worked out more conveniently. Although in terms of floor area per student the two systems are almost identical,

it seems likely that rent differentials will reflect the preference for the high-rise section in the future.

4. Off-Campus. M.I.T. undergraduates living off-campus fall into two general categories:

a. Students who came to M.I.T. as transfers, special students or greater Boston residents and who have never been in the on-campus housing system.

These include students who, because they were not required to live on-campus, found housing more suitable to their desires elsewhere as well as students who, because the demand was high and their priority was low, were not allowed to live on-campus and were forced to find accommodations elsewhere.

b. Students who once lived in M.I.T. dormitories, fraternities or Student House but who became dissatisfied with their accommodations and chose to leave the on-campus system. These include both students who prefer the off-campus way of life for reasons of cost, independence, social mix, etc., and students who would prefer on-campus housing, but not the type available to them. Among those in the latter group are fraternity members who might like to move into a dormitory but cannot due to

lack of space and residents of one dormitory who would like to move to another but who cannot find anyone willing to trade with them.

Altogether nearly 1000 M.I.T. undergraduates, or about 24%, live in off-campus private housing. (M.I.T. Planning Office, Fall, 1971)

In the last ten years satisfactory off-campus housing at a cost students can afford has become increasingly difficult to find in the M.I.T. area. This fact is reflected in the apparent slow movement of off-campus students to housing farther and farther from M.I.T. (M.I.T. Planning Office, Fall, 1971) Whereas the apartments and boarding houses of the Back Bay and Cambridge once accommodated almost all students' off-campus housing needs there is now an increasing necessity to look to Somerville, Allston, Brighton, etc., for reasonably priced, decent housing. The search for private housing is often time-consuming and somewhat depressing. Problems after occupancy related to lease tenure, rent increases, parking, maintenance, etc., are frequent. The fact that many students only want to live in the Cambridge area nine months out of the year places them in a particularly problematic situation since most rent contracts are for no less than one year.

A source of off-campus housing for many undergraduates is the M.I.T. affiliated but privately operated

Northgate Housing Corporation. Northgate owns over 500 units of housing in the greater Boston area, 290 units of which are in Cambridge. Apartments vary widely as to location, size of complex, size of unit, price and amenities. Over one-half of the Northgate tenants are M.I.T. students, faculty or staff--the remainder being primarily long term tenants. An M.I.T. student can normally be assured of getting a one bedroom furnished apartment within walking distance of M.I.T. for between \$150 and \$175 if he applies in June for September housing, according to Ms. Carol Bostick, Northgate Housing Corporation. Northgate apartments are operated on a free market basis within the M.I.T. community so that mixes of single and married students and professionals are generally not planned according to any particular scheme.

Many other "contacts" are available at M.I.T. to aid students in finding off-campus accommodations. The M.I.T. Community Housing Office, for example, carries current listings of apartments available in almost all areas of the city. In addition some academic departments have devised informal means of encouraging students who are vacating housing to pass their apartments on to new students or other students within the department who are looking for housing. Bulletin boards and classified ads in campus papers are other resources.

B. Two Housing Prospects for the Future

It has been the policy of M.I.T.'s housing program in recent years to provide as wide a diversity of housing alternatives as there seems to be enough demand to support. The previous section which reviewed present housing alternatives is an evidence of that policy. As was stated in the 1963 Interim Housing Report, "Each type of housing possesses distinct qualities which collectively satisfy the interests of our diverse student body... A basic element of our residential philosophy is to give our students the opportunity to choose their mode of living. Giving them this choice creates a balanced system to support their diverse interests which would not otherwise exist." (Committee on Student Environment, 1963, p. 17)

The following is a discussion of two among many student housing alternatives which have been suggested as potential options for implementation at M.I.T., at least on a trial basis, in an effort to more adequately meet diverse housing needs.

1. On-Campus Housing for Mixed Demographic Groups.

The present housing policy at M.I.T. segregates single undergraduates, single graduate students and married faculty and graduate students into three housing categories. Separate facilities are provided for each. Recently

several studies have been conducted to investigate the desirability of mixing housing for these three groups in the same facility. (See Lambrinedes, 1970, and Sommerkorn, 1971. The mix of single and married graduate students with single and married faculty was, in fact, suggested as a projected housing goal in 1968. (See M.I.T. Planning Office, 1968, p. 34.)

a. Resident Preferences. In a series of interviews held with students in Baker House in 1970 it was determined that slightly under one-half of the undergraduates interviewed felt that a residential arrangement involving the mix of faculty, students and administration should be implemented at M.I.T. (Lambrinedes, 1970, p. 111) Just under one-third of a group asked if they would like a greater degree of integration with graduate students, married students and staff answered that they would. (Lambrinedes, 1970, p. 110) A similar investigation of undergraduate feelings in this regard was conducted at MacGregor House as part of this study. The results of the questionnaire distributed there can be found in Appendix A. Thirty-four percent of the respondents in MacGregor indicated a preference for a facility which housed undergraduates and graduate students; thirty percent favored a mix of single and married students; ~~forty-three~~ percent wanted to live with students from other Boston schools. Although these

findings do not, by any means, suggest an overwhelming demand for housing facilities for mixed demographic groups, they do suggest a significant preference among some undergraduates for such living arrangements.

Similar studies of desired neighbors have been carried out by the M.I.T. Planning Office among graduate staff members. (See Appendix B.) Of the nine demographic groups offered for multiple response selection in that study, M.I.T. undergraduates were the least preferred. About one-fifth of married student staff members and about one-fourth of single student staff members indicated a desire to live with undergraduates. (M.I.T. Planning Office, 1970)

b. Ideological Issues. Several social and philosophical advantages have been suggested to result from mixing undergraduate housing with housing for other groups. Such an integration is seen by some to be closer to "real world conditions and therefore a more appropriate stage for development of human relations attitudes. (Lambrinedes, 1970, p. 119) Others suggest that such an arrangement would reduce the present dichotomy between living and learning. (Sommerkorn, 1971, p. 79) The 1963 Interim Housing Report did, in fact, suggest ~~that~~ contact between undergraduates and faculty members in a living situation was a mutually beneficial arrangement: "If student housing

is to support M.I.T.'s educational objectives then it is imperative that the faculty be strongly involved in the program. For in what better way may a student gain insight into the professional estate and the values of those who comprise it than through frequent personal associations with members of the faculty . . . Faculty members may also come to know students, and perhaps understand them and their problems better as a result of contact outside the classroom." (Committee on Student Environment, 1963, p. 19)

The House-master/Tutor program outlined in that report and presently in effect in the M.I.T. dormitory system is based on the assumption that undergraduates should, ideologically, live with at least some graduate students and faculty members. The current practice makes that mix fairly sparse and indicates a special service to be rendered to the undergraduate by the selected graduate students and faculty. The general indications are that students find this integration of non-peers into their environment to be "socially beneficial" although, as might be expected, the extent of contact is somewhat limited. (Lambrinedes, 1970, p. 99) Proponents of a residential system with a larger degree of integration of non-peer groups suggest that such an action would increase contact among various groups and make that contact more informal resulting in less isolation of undergraduates from other groups and an even more "socially beneficial" environment.

There is, on the other hand, some evidence that a degree of isolation of student peer groups serves a beneficial purpose. Howard S. Becker at Stanford, for example, states that, "The solution to situational problems which comprise student culture are collective in character. They develop in a process of interaction among people who share the same problems and have an opportunity to interact with one another in the search for the solution to their problems . . . If students do not have the opportunity to interact with one another extensively and intensively, they will not be able to engage in the discussion necessary to arrive at a common solution . . . Solutions to student problems are typically not imposed on the group from outside; they are developed by the group itself in the course of its interaction." (Becker, 1963, p. 112) Becker emphasizes the importance of a student culture comprised primarily of peers which can act as an effective context for experimenting with socialization means, proving one's worth and gaining confidence for later encounters. He further states that among the students with whom he was working "the major effect of student culture is clearly to give students an alternative view to that offered by the faculty as to how they should act. It provides the basis for deviation from faculty norms of student behavior. (Becker, 1963, p. 13) Thus, it seems

possible that any significant mixing of undergraduates with other non-peer groups might have a detrimental effect on socialization and independent thinking.

Certainly no one who has observed dormitory living at M.I.T. for any length of time could deny the fact that similar schedules, similar patterns of living, similar problems and similar responsibilities serve as a unifying factor even among students of varied interests and backgrounds. To inject on any significant scale the diverse schedules, patterns of living, problems and responsibilities characteristics of other groups might easily fragment residents, depriving them of a solidarity which might be beneficial.

2. A Single Facility Composed of a Variety of Living Arrangements. The present dormitory system as described above provides a variety of physical space arrangements which imply several rather typical social grouping patterns. Each facility, as noted, is largely characterized by one of these arrangements, i.e., Baker House is made up of several large "hall" groupings of 50-60 students; Burton-Conner is made up of many small apartment groupings of 5-8. In the present self-selection process of student placement an individual may choose the social grouping pattern he prefers. In so doing, however,

because of the relative homogeneity of facilities within each house, he is also choosing to live with people who selected the same living arrangement he did. For example, a student who values personal privacy strongly and who is not very social or outgoing may well find that by satisfying his personal housing preferences he is also placing himself largely among others who are equally individualistic. The result of such homogeneity is the dormitory stereotype and a rather unfortunate lack of variety in student personalities within a living group.

Sim Van der Ryn and Murray Silverstein found the same disadvantage in their study of dormitories at Berkeley. They noted that if the dormitory contains all the same physical accommodations it tends to attract one kind of person with one kind of life style--filtering out students whose presence adds diversity and a sense of dialogue between various elements of the university community. They continue, "Mass facilities which house only a very homogeneous group result in poor communication among diverse interests, destroying the integrity of the campus community." The Committee on Student Environment in its 1963 report showed some cognizance of this issue when it made the following statement in reference to architectural treatment to promote social and cultural intercourse among student groups within a single facility, "We believe it is

not only possible, but most desirable to handle the architectural solutions in a broad variety of arrangements to provide the necessary flexibility to satisfy the preferences of different individuals and groups." (Committee on Student Environment, 1963, p. 35) The implications of this statement could be interpreted to go far beyond simply providing several different sizes of discrete social groups. It could be taken to suggest a whole range of living dispositions with various degrees of community/privacy and with various numbers of people sharing different amenities. Such an arrangement might truly attract "different individuals and groups."

Another benefit which would accrue from having a large variety of living arrangements within a single housing facility would be a greater flexibility to accommodate a student's changing needs as he progresses through his undergraduate career. The desirability of maintaining an approximately equal mix of freshmen, sophomores, juniors and seniors within a dormitory has been validated in the minds of M.I.T. administrators over and over again. The recent study in Baker House bore out the value of assistance received as a result of this mix. (Sommerkorn, 1971, pp. 334-35) Yet it is inevitable that a student's housing needs will change over time. To accommodate this change it has been suggested that

"dormitories need to be built which are 'everything to all people,' that is, buildings which fulfill the needs of both freshmen and seniors." (Sommerkorn, 1971, p. 74)

A facility with the variety of living arrangements suggested above might come close to accommodating those needs.

CHAPTER III

General Description of Physical Facilities for a New Housing Development

A. Facilities for the Community

Since the middle fifties M.I.T. has followed a planning policy which calls for a concentrated residential development in the West Campus area. The unique amenities of the 25 acre Briggs Playing Field and the long frontage on the Charles River Basin make this area an extremely valuable university resource and certainly an excellent urban residential setting. Long range plans for the West Campus call for university related housing along both sides of Briggs Field with underground parking beneath the open space between. The 200 foot wide strip of land between the playing fields and Memorial Drive from MacGregor House east to Westgate has been allocated to new undergraduate housing.

As the last undeveloped stretch of the Charles River Basin this site must be utilized with consideration for many factors besides just the needs of those who will live there. Views of the site and views from the site are spectacular and should be developed so as to benefit the communities surrounding in the best possible way. As has been stated, for the purposes of this study the piece of land

just east of MacGregor House will be assumed to be the location of the next new residential house at M.I.T. Several particular characteristics of that site, as opposed to the remainder of the frontage allotted to undergraduate residential purposes, make it especially important as a potential asset for the surrounding community.

For example, the site under discussion marks the point of transition between Memorial Drive as a divided trafficway to the west and Memorial Drive as a single 4-lane artery to the east. Along most the southern face of M.I.T., Memorial Drive is a scenic, treelined, but discouragingly wide buffer between the campus and the river. From the site mentioned to the west, however, the thoroughfare narrows, becoming a smaller but, at present, equally discouraging buffer. The potential of this closer proximity of the site to the actual river bank than is typical downstream should not be ignored.

Another important characteristic of the site relates to the form of the river bank across from it. The Charles River Basin along its northern edge is typically delineated by a vertical stone wall 8-10 feet high above the water line. Behind the wall is the land fill on which much of M.I.T. is built. A narrow strip of that land between Memorial Drive and the water's edge is reserved for a bicycle and foot path which boasts a spectacular view

of Boston, Beacon Hill and the Back Bay.

The only variation of this form occurs at the west end of the Basin where the stone wall gradually is replaced by a gently sloping bank. Even here the strip of land between the water's edge and Memorial Drive is typically fairly narrow. The one point where the bank slopes down to the water's edge and there is a significant amount of land between the roadway and the river is directly across from the site under discussion. On a spring day during crew season the approximately 100 foot deep grassy bank is covered with spectators out for the races. Otherwise, the difficult-to-reach stretch is little used. This is in contrast to the similar stretches of wide bank up-river near Harvard which can be reached by crosswalks with traffic signals and which receive extensive recreational use in all but the poorest weather. It is also in contrast to the southern banks of the basin, both near the Back Bay and near Boston University, where footbridges over Storrow Drive provide access and where sunbathers and people-watchers flock by the hundreds on pleasant days during the spring, summer and fall.

Considering the large residential development presently occurring in the West Campus area and considering the projected large scale development of the nearby Simplex site it would seem inexcusable to neglect the

utilization of this stretch of bank as a valuable recreational resource. The site under consideration should certainly be developed with attention to this factor.

A third attribute of the site just west of MacGregor which should be considered in this study is its relatively central location with respect to the West Campus residential development--a factor which makes it a potential location for commercial service facilities for the area. With the completion of Westgate II in September 1972 the population of M.I.T. owned housing west of Massachusetts Avenue will climb to approximately 2750. At present the only really convenient commercial facilities which service the population are a very small grocery store for the exclusive use of Westgate residents and the facilities in the Student Center--the Coop, the Lobby Shop and Twenty Chimneys Cafe. Additional services of this sort seem to be needed now and the demand for them will certainly increase with the advent of Westgate II and any other new housing.

In the previously mentioned survey conducted in MacGregor House as part of this study residents were asked which of ten service facilities, ranging from a restaurant to a study library, they would consider beneficial to have in close proximity to their residence. Multiple responses were to be ranked preferentially. The results of that

query are listed in Appendix C. The preferences indicated express a significant desire for commercial facilities presently unavailable or inconvenient not only for MacGregor residents but for many other West Campus residents as well.

The most outstanding of these preferences was for a conveniently located small grocery store. Eighty-six percent of the respondents in MacGregor considered a small grocery store beneficial to have in close proximity to their residence, and for 51% it was considered the most beneficial of the ten facilities listed. It is likely that these figures would be even higher in other M.I.T. houses since MacGregor has a larger percentage of residents on regular commons meals than most of the other dormitories. The development of this preference is recent and is a result of the fact that in the last year many undergraduates in MacGregor, as well as in Baker, Burton-Conner and McCormick, have begun cooking for themselves. Beginning Fall 1972, in fact, only two of these four houses will be able to support commons dining at all. This trend toward independent meal preparation is reflected in the design of the new Westgate II which will provide ample kitchens and no central dining facility, indicating that most of its residents will do their own cooking.

As a result of these developments, by the fall of

1972, a rather large new demand will have been created for shopping facilities to support the new wave of independent meal preparation. It can be assumed that the building of a new housing facility will add again to this demand. These new demands, when seen in the context of the more longstanding ones created by Bexley residents (who have always done the bulk of their own cooking) and by the married student residents of Westgate, indicate a significant collective market for grocery supply in the West Campus area.

At present, most West Campus residents do their food shopping at "Stop and Shop" on Memorial Drive--about a mile from the nearest M.I.T. house. Some residents of McCormick, Bexley and Baker go to "Purity Supreme" at Central Square which is about the same distance. Because the large majority of West Campus residents have no car, shopping trips to these facilities must be made by foot and must be made frequently since usually only one sack of groceries can be carried back per trip. The inconvenience of shopping facilities makes the responsibility of preparing one's own meals doubly time consuming and annoying. Some solution to this growing problem is needed.

A second commercial amenity strongly supported in the MacGregor survey was a cafe similar to the 20 Chimney's Cafe in the Student Center. More than half of the

respondents indicated that such a facility would be beneficial to have near their residence (See Appendix C). Both students who cook for themselves and those who take their meals on commons need some place where they can get a light meal occasionally--especially late in the evenings and on weekends. Twenty Chimneys serves this purpose well for those who live near it, but it is fairly inconvenient for residents to the western end of the campus. To satisfy the needs of these residents several temporary measures have been attempted. For example, before Burton dining hall closed residents of that house sporadically operated their own snack shop in the evenings using the dining hall kitchen. More recently a "Mr. Pizza" truck has been parking in the alley behind the dormitories several evenings a week and has been doing a thriving business. Vending machines, although very unpopular, have offered a third answer to the problem. These solutions are sufficient to stave off student hunger but they make little more of the snack than just that.

Relaxed discussion over a meal or snack has been widely recognized as a desirable part of any university community. The 1963 CSE recommendation that each house be equipped with complete dining facilities reflected their concurrence with this idea. (Committee on Student Environment, 1963, p. 37) The fact that economic circumstances

since that time have made such extensive facilities impractical does not diminish the advisability of having some place where students can gather to eat and talk very near their quarters. The more intimate and casual environment of a small cafe might even be more conducive to the ends desired by the Committee on Student Environment than the rather institutional atmosphere of a dining hall.

Such a cafe facility could serve several of the dormitories and could, as well, be a welcomed asset for the Briggs Playing Fields--providing a place for refreshment for the hundreds of athletes and spectators who gather there on weekends in the fall and spring. It has been the stated goal of the Institute, as part of an effort to enhance the physical and cultural development of the areas on and around the M.I.T. campus, to "enliven" the West Campus area. (M.I.T. Planning Office, 1968, p. 6) The addition of this service facility would certainly be a step toward that goal.

A fourth characteristic of the site under consideration which should not be overlooked in this study is its potential for service to a larger community than that which immediately surrounds it. Located on Memorial Drive--a major artery serving the Greater Boston area--the site is easily accessible to people from many parts of the city. It is prominently located--visible from great distance and

marked by changing physical features, i.e., the thinning of the trees along Memorial Drive, a narrowing of the Basin, the altered bank condition. All of these features contribute to make the site a prime spot for the sort of special commercial activity which draws from a large geographical area.

The site has, in fact, served this purpose in recent years, providing a home for two large restaurants--"the Clipper Ship" and "Joyce Chen's." Such facilities in this location offer much to the city as well as to the immediate surrounds. Suburban Bostonians find here, as in few other locations in the city, a place to enjoy good food with a fine view of one of the area's greatest public assets--the river. Because the expressways and institutions have largely monopolized the banks of the Charles, few other locations offer this opportunity for public enjoyment.

It should be pointed out, as well, that few available sites in the M.I.T. area could support such a restaurant facility. Without a location which could draw patrons from a larger area there would probably be no really good eating establishment to serve the needs of M.I.T. people. Presently Joyce Chen's provides a rather special place for luncheons, dinners, celebrations and even classes for students, faculty and staff at the Institute. The deletion of such a facility from the area would be a disappointment to many including

the restaurants' neighbors--the residents of the West Campus area. (Twenty-five percent of MacGregor residents surveyed felt that it was beneficial to have a restaurant near their residence. (See Appendix C)

From the preceding discussion of the site under consideration four special facilities seem appropriate to provide services not only for the residents of a new housing facility, but also for members of the West Campus Community, the M.I.T. community and even the Greater Boston Community:

(1) Community means to cross Memorial Drive. This facility should provide access to the grassy bank on the north western end of the Charles River Basin as well as the bicycle and foot path which is continuous on all sides of the Basin. It should serve primarily residents of the West Campus and users of Briggs Field for the present, but some use by residents of Cambridgeport and the new Simplex Development should be anticipated in the future. Special care should be taken to relate the crossing as strongly as possible to the pedestrian walkway along Amherst Alley to the north of the existing houses.

(2) Community Small Grocery Store. This facility should serve the entire West Campus area replacing the existing market in Westgate (The area now used by the Westgate market could be converted to a much needed common lounge space

for that building) and supplementing the minimal food sales at the Lobby Shop. It should be freely accessible via a separate public entrance located near the pedestrian walkway to the north of the site. It should also be provided with a convenient service entrance. The store should be larger than the existing Westgate facility and should be able to work either as a cooperative food clearing house or as a regular food market.

(3) Community Cafe. Access to the cafe should be clear from the pedestrian walkway and should be carefully related to the playing fields, the house and the means to cross Memorial Drive. A small short-order/grill space with a separate service entrance should be provided. Provision should be made for eating outdoors in nice weather.

(4) Community Restaurant. This provision is for lease space to be planned in detail by the tenant. Space should be provided for a kitchen, dining areas, an entrance lobby and a service area. Major patron access to the restaurant facilities should be from Memorial Drive although secondary access from the north of the site would be desirable. Parking should be planned both for the immediate and for the long range future.

The four community facilities outlined here, working in conjunction with a new housing facility, should create

an active and lively environment which could serve as a minor focus for the West Campus area. The presence of the community facilities should give the residential facility itself a special character as well as providing useful and convenient services for its residents.

B. Facilities Shared by the Development as a Whole

The Committee on Student Environment in its 1963 Interim Housing Report gave two major rationale for the present practice of maintaining complete houses of large capacity. (1) Certain economies are effected by spreading the cost of providing fixed items such as lobby, desk, study library, housemaster quarters, etc., over large numbers to reduce "per student" costs. (2) A large house population insures a cosmopolitan character and the existence of sufficient numbers to operate extracurricular affairs such as athletic teams. They further stated, "After careful consideration and observation of experience at M.I.T. and other institutions, we have concluded that the optimum house size for new construction is in the range of 250 to 300 students." (Committee on Student Environment, 1963, p. 37) As has been stated, for the purpose of this study their research will be assumed to be accurate and applicable to the present situation.

It was the opinion of the Committee on Student

Environment that each house should be developed as a complete residential unit with ample provisions for recreation, eating and study, as well as for sleeping, within the building. (Committee on Student Environment, 1963, p. 1) Several specific spaces were listed by the committee as being desirable for use by the entire house.

A survey was conducted among residents of MacGregor House as part of this study to evaluate student opinion on the usefulness of providing the sort of spaces suggested by the Committee on Student Environment as well as other spaces for common use not projected by the committee. The results of that survey are listed in Appendix C. On the basis of the survey results and a careful observation of the use of present common facilities in Baker, MacGregor and Burton Houses it seems advisable that the following spaces be included in a new residential facility:

(1) House Entry Hall/Foyer/Reception Area. This space or series of spaces should be the information, business and control center of the house as well as a transition space between inside and outside (especially in inclement weather). It should include a reception desk, mailroom, attendant's office, public telephones, and bulletin boards as well as a small lounge area for waiting or for small group gatherings. Men's and women's public toilets should

be easily accessible. The arrangement of these facilities seems preferable in Baker House as compared to Burton or MacGregor. The spaces should be positioned in such a way as to encourage people to stop and talk with their friends on their way out of the house or to other parts of the building. It should also be the sort of space where a bridge game might occur or where one could read a magazine or newspaper while waiting for a friend. Access to the area should be from the pedestrian walkway to the north of the site.

(2) House ping-pong/pool/pinball rooms. Even though only 35% of the respondents to the questionnaire in MacGregor indicated that they considered such a facility beneficial, it seems fairly clear by the use of the game rooms in MacGregor, Burton and Baker that a space for ping-pong, pool and pinball machines serves a useful socializing purpose for some residents. Especially near meal times and in the evenings such a general recreation facility serves as a place where students can take a short break outside their immediate surrounds and yet convenient enough so that they need not go outdoors. The facility should be located near other common spaces and should be sufficiently open to invite passers-by to linger for a moment. Appropriate natural and artificial lighting should be provided as well as an outdoor view.

(3) House Laundry Room. Since almost all students do their own laundry this facility is an obvious necessity. It should be centrally located and easily accessible from all residents' quarters. It should also be near the game room, study library and entry foyer so that those who do not wish to return to their rooms while their laundry is in the machines will have convenient places to wait.

(4) House Trunk and Dead Storage Space. Although primary provision for storing residents' belongings should be made near their own quarters some excess space is desirable to shelter items not frequently used as well as to provide a depository for extra furnishings, etc. Easy access to the elevator should be the major consideration in location of these facilities.

(5) House Offices. A set of rooms should be provided for the use of the House Superintendent and student members of the House Government. These should be located near the desk in the reception space and should be easily accessible from the common areas.

(6) House Study Library. In the previously mentioned survey of MacGregor House residents (see appendix C), 42% of the respondents indicated that they considered having a study library near their quarters to be beneficial. Although the facilities of this sort presently available in Burton and MacGregor are not extensively used, it seems that those

who do use them consider them quite important. The library space generally serves two purposes: it is an alternate study environment for those who tire of "the same four walls" and it is a casual area for reading periodicals or other light material in a relaxed atmosphere of peace and quiet.

Assuming that there will be indoor connection between the new residence house and MacGregor House there should be no need for extensive "stacks" space in the new study library. The MacGregor library should adequately serve both houses as a source of browsing and pleasure reading material. To divide the resources available for this purpose would serve no function. Several shelves of general reference materials and a rather extensive periodical collection should serve as sufficient stock for the new study library. The space should be arranged so that the area containing books and periodicals could be locked separately from the rest of the study areas. This would enable use of the library facilities even when an attendant is not on duty. The library should be located near other common facilities but should be carefully protected from acoustical disturbance. Natural and artificial lighting should be carefully planned and non-active outdoor view should be provided.

(7) House Activity Rooms. The results of the MacGregor survey (see Appendix C) indicate a small, but significant,

quantity of interest in the provision of small activity spaces for largely individual use--music practice room, computer room, dark room or hobby shop. Because such activities are to be encouraged among residents and because alternative spaces for these purposes are often unavailable or inconveniently located with respect to the site some provision should be made for them in the house. Space allocations for these activities, however, should reflect the relatively small demand indicated in the survey and the availability of some special activity spaces in Burton and MacGregor which are not presently being used to capacity and which might easily be shared. Activity spaces in the new house should vary in amount of natural light, view, etc., to accommodate the diverse needs of the several activities which might take place there.

(8) House Custodial Spaces. A general support and storage area as well as scattered janitor's closets will be required for those who are responsible for minor repairs and maintenance of the building. The support area should be located near elevator access as well as near the service entrance. Janitor's closets should be distributed fairly evenly throughout the building.

(9) House Linen Storage. Many residents will undoubtedly want to subscribe to the optional linen service available through M.I.T.'s housing system. A space for pick-up and

delivery should be provided. The facility should have easy access to the service entrance.

These nine house facilities should serve to give the house some identity as a self-sustaining social and physical unit. They should aid in carrying out the day to day business of the House as well as providing for certain extra-educational and recreational activities unavailable among smaller groups. Special care should be taken to discourage pilfering and malicious damage in these areas and to make them as easy to maintain as possible.

As a supplement to the facilities listed, several spaces presently available in MacGregor House which are underused could be shared by the new house if proper connection were provided. These include the ample house common room, the dining room and related spaces and the shipping and receiving facility. Maximum effort should be made to integrate these spaces into the plans for the new house in such a way as to utilize them more effectively and, in so doing, to provide added amenities to residents of the new house.

C. Facilities Shared by Small Groups Within the Development

Several recent studies exploring university housing, particularly singles housing, support the advisability of

allocating shared facilities and organizing patterns of circulation in such a way as to create a "comprehensible community" in which a resident can function more easily as a social being than within the whole. (See Committee on Student Environment, 1963, p. 36; M.I.T. Planning Office, 1967, p. 38; Van der Ryn and Silverstein, 1967, p. 41; Bush-Brown, 1962, p. 176; Farmer, 1965, p. 109; and Riker and Lopez, 1969.) Identification with a small environment and a domestic scale are seen as effective means for nurturing contact among students, encouraging common participation in group activities and creating a collective identity which may result in both social and educational benefits. Experiments with such arrangements at Harvard, Yale, University of Pennsylvania, Washington University and University of Chicago are often cited as among the most successful recent university housing efforts.

A widely varying factor among housing types which attempt an intentional physical grouping pattern is the size of the groups created. University of Chicago's Pierce Hall, for example, uses as a primary group size the 83-man house, while Harvard's Quincy House is based on multiples of a basic four-man suite unit. The rationale given for group sized is usually based on some concern for socialization patterns or consideration for ideal numbers to support some specific activity deemed educational or otherwise

worthwhile. Clear definition of how these groups work and what functions and goals are actually characteristic among them, however, seems to elude analysis, making general statements about truly optimum social group sizes difficult at present. (See Farmer, 1965, p. 119 and Van der Ryn and Silverstein, 1967, p. 41) In addition, stated student preferences of social group sizes seem to vary considerably, at least in the M.I.T. context. In the survey conducted in MacGregor, respondents were asked to state the ideal number of people with whom they would like to share an identity as a social group (see Appendix D). No single consensus can be drawn from the data.

In light of these considerations, the most successful physical subdivisions would seem to be those which combine physical groupings of various sizes and various degrees of formality. (Farmer, 1965, p. 119) Into such a framework organizational subdivisions can be injected to create a system of social group sizes consistent with the specific needs and desires of the residents involved. The success of such a system depends largely on the flexibility of the physical means of potential subdivision chosen. Overlapping and ambiguous boundaries should be carefully planned.

A major criticism of existing university housing using the social-grouping concept has been its failure to provide this flexibility. In Quincy House at Harvard, for

example, administrators have found the boundaries between suites to be too rigid--isolating the 4-student groups in a restrictive manner. (Bland and Schoenauer, 1966, p. 21) A similar rigidity has been noted as a disadvantage of the M.I.T. Burton-Conner system of fairly isolated suites. Van der Ryn and Silverstein in their study of dormitories came to the following general conclusion in this regard:

A rigidly planned hierarchy of social groupings encourages a static-clique-ridden social structure. This generates a self-fulfilling prophecy. In the act of predicting his social order the planner makes it difficult for variations on that order to occur.... Design should allow residents options as to which groups they would like to belong. (Van der Ryn and Silverstein, 1967, p. 42)

Thus in planning a new house at M.I.T. special consideration should be given to circulation routes, patterns of adjacency, room clustering and allocation of shared amenities which will maximize flexibility in the formation of social groups.

The following are spaces which for reasons of economy, convenience or desire for social contact have been commonly shared by small numbers of residents implying, by use, a unit or group. It is the arrangement of these shared facilities which constitutes a major concern of the previous section. It should be noted that not all living arrangements will involve utilization of all types of shared facilities.

(1) Living Rooms. Some living arrangements in the new house should provide residents with a small common living room to be shared with from four to twelve other residents. (See Appendix D.) The space should accommodate such activities as card games, small group entertaining, television viewing, eating, "bull-sessions," etc. with special attention being paid to variations in size, view, finish, etc., so that each living room might be as different as possible from others around it. Living rooms should be located adjacent to major access points if possible so that contact with them will be frequent. Noise transmission to more private spaces should be kept to a minimum.

(2) Kitchens. Full kitchens including refrigerator, sink, oven, cook-top and storage should be provided for all residents of the new house in groups varying in size from two to eight residents. (See Appendix D.) Facilities should be planned to accommodate consistent use for meal preparation. If possible, kitchens should be located near a living room or some other space where meals could be comfortably eaten and should be isolated visually and acoustically from private study/bedroom spaces.

(3) Bathrooms. Bathrooms should be provided for all residents in groups of from two to ten residents (see Appendix D). Number of lavatories, water closets and shower/tubs will vary with the number of residents served. Each resident

should have access from his study/bedroom to a bathroom without having to pass through a living room or a public corridor.

(4) Storage Spaces. Local storage areas should be supplied for all residents in groups of up to 15 students.

(5) Common Rooms. Common rooms should be provided for all residents in groups varying in size from 20 to 50. The spaces should accommodate such activities as group meetings, parties, seminars, and discussions as well as card games, "bull-sessions" and perhaps even ping-pong or darts. The common room should be located near a major point of access serving the entire group for which the space is planned. Although the room should be large enough to accommodate sizable groups, it should be so defined that it maintains a residential scale. Maximum acoustical isolation from private spaces should be maintained.

All small group spaces should be planned in such a way that the individuals using them feel responsible for as much of the environment as possible. Precaution should also be taken to provide adequate security so that "community property" can be left unwatched in small group spaces.

D. Private Spaces

Of primary importance in student housing at M.I.T. is the provision of adequate private spaces for individual study, contemplation, sleep or just undisturbed relaxation. The spaces which serve these functions should also be able to be used as places for small group discussion, entertaining and casual conversation. They may further be called upon to provide outlets for individual expression and to become very specific "addresses" identified with the people who inhabit them. Thus design of the multi-functioning private space presents one of the most important challenges of planning new housing.

Much comment has been made in recent years on the importance of providing individual private spaces in university housing facilities, at M.I.T. as well as at universities in general. (See Van der Ryn and Silverstein, 1967, p. 31; Katz, 1968, p. 443; Bland and Schoenauer, 1966, p. 19; Lambrinedes, 1970, p. 78.) Single occupancy study/bedrooms have been recommended for single students over double occupancy rooms which previously were a widespread norm. At present, a large majority of undergraduates at M.I.T. seem to prefer an individual study/bedroom for their private use. (See Lambrinedes, 1970, p. 78 and Appendix D.) However, some students still prefer to share a private room with a roommate. Since there is no apparent

severe unavailability of either option in the present housing system and since a desire has been expressed for a wide variety of living arrangements in the new House, it would seem reasonable to include both single and double occupancy study/bedrooms in a new facility. The ratio of singles to doubles should be approximately 4:1. Possibilities should be explored for providing private spaces which could be easily combined or separated to be used as double or single rooms or which could be used, with minor furniture adjustment, as separate studies and separate bedrooms.

Private spaces should be capable of providing acoustical isolation from adjoining rooms. They should not, on the other hand, be so physically isolated from small group areas so as to inhibit contact with those spaces. Access to private rooms should be protected in such a way that residents may come and go without a feeling of being constantly observed by many neighbors.

Special effort should be involved in refining size and dimensions of study/bedrooms to provide maximum efficiency and flexibility in use and furniture arrangement. Economies in construction and furnishing resulting from standardization of unit design should be considered. The Study/bedroom with its furnishings should provide a comfortable environment by themselves for those who do not wish to

significantly alter their personal environment as well as providing a flexible back-drop for those who wish to personalize their space.

CHAPTER IV

Design

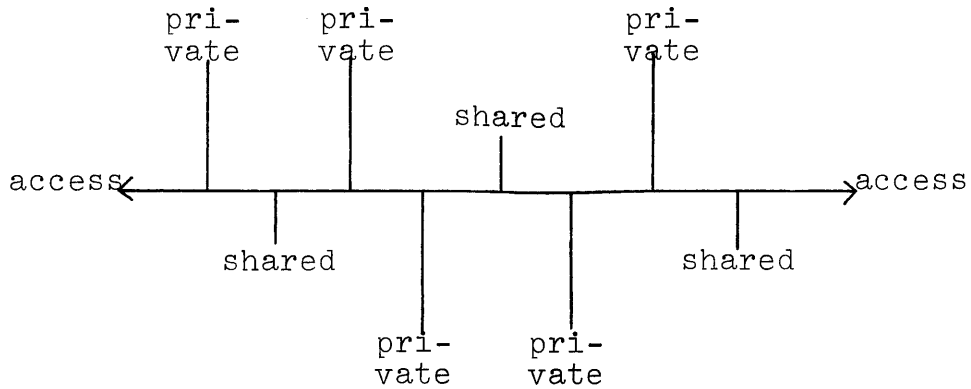
A. The General Design Approach

The general design approach involved two steps: (1) the organization on the site of large scale shared facilities (both for the larger community and for the residential development itself) and general areas for more private use according to access, contiguity, views, wind, sun, etc.; (2) the organization of small scale shared facilities and private spaces to accommodate demands of various living arrangements which could then be applied to previously defined general areas designated for these more private uses.

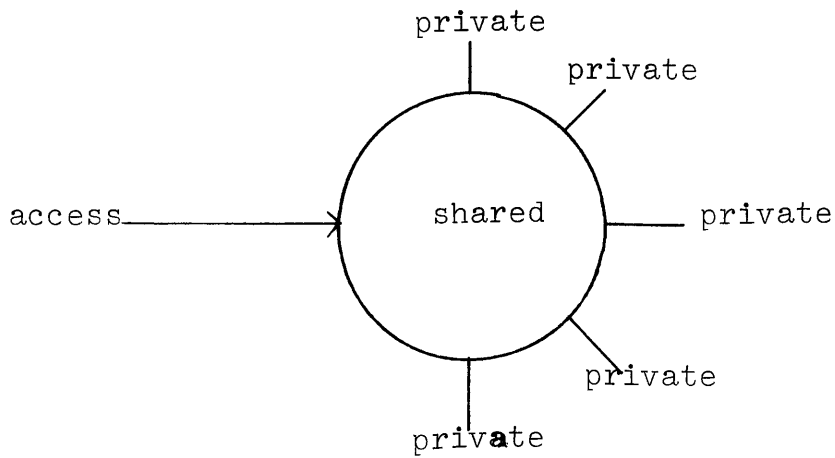
Particular attention was paid in the first step to creation of an area of intensified transaction for the West Campus Residential Development. The cafe, grocery store and bridge over Memorial Drive occur at an opening in the otherwise fairly rigidly defined southern face of the east-west pedestrian street which forms the spine of that development. Potential for movement of people to and from these amenities as well as to and from the residential facility occur at several levels within a partially enclosed place. Terraces, balconies, activity and lounge spaces are organized around the place.

Three organizational patterns were utilized to structure ordering of spaces in the second step:

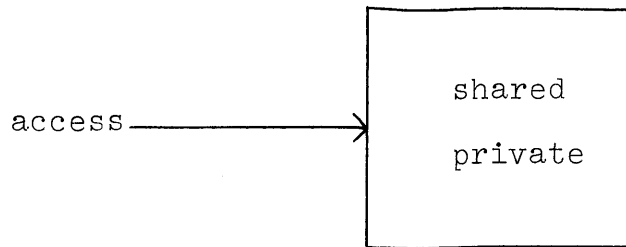
(1) A linear organization with access to small scale shared and private spaces along an axis.



(2) A nodal organization in which shared spaces create a point at which subsidiary private spaces center.



(3) A discrete organization in which defined grouping of shared and private spaces are clearly bounded.



No attempt was made to correlate specific life styles with specific patterns of spatial organization. The intent was rather to provide a variety of spatial arrangements which might be claimed by users in yet a greater variety of ways.

The linear pattern consists of a series of potentially private spaces of several sizes organized along a distributor with kitchen and bathroom facilities arranged at fairly even intervals along it. The potentially private spaces could be used as single or double study/bedrooms or separate study rooms, lounge rooms and bedrooms. No strongly defined boundaries occur within the organization system.

The nodal pattern creates a focus consisting of shared facilities servicing a group of from four to thirteen residents. Potentially private spaces in the form

of single or double study/bedrooms are subsidiary to the focal area. The private spaces could be used, as well, as separate study and sleeping spaces. Boundaries of nodally organized areas are more defined than in the linear system but some ambiguity is still present.

The discrete pattern of organization creates a complete entity consisting of shared and private spaces. Interior boundaries are secondary to a strong exterior definition. Because the major public/private boundary is on the exterior, continuity is greater within the unit. As a result the ratio of shared space to private space may be somewhat higher than in the other patterns.

The structural framework into which these patterns are organized was developed in such a way as to allow as much flexibility as possible in mixing various living patterns within an economical general framework. A system of grouted masonry bearing walls with prestressed concrete spanning elements was chosen for (1) its economy, (2) its adaptability to structure of varying heights and (3) its continuity with other building materials in the immediate vicinity of the site.

A split-level framing system was used in order to provide an intermediate definition between a flat plane and a full floor change in level. The purpose of such a provision was to allow a greater potential for vertical spatial differentiation within a "floor." Support and

spanning members were framed in such a way as to provide, by overlapping and by placement of stair openings, horizontal continuity as well.

Bearing walls were placed parallel to the long dimension of the building system for three reasons. First, it was thought that because the structural framework and the exterior treatment are two major expense factors in residential construction, some economy might be gained by using the same system as a solution to both problems as much as possible. Second, such a framing system provided more horizontal continuity than the normal framing pattern where bearing walls cut the long dimension into definable segments. Third, the framing plan allowed construction of the split-level system without requiring that any bearing wall be loaded by half levels, thus easy construction by allowing the masonry walls to be built by full floors.

The major flexibility intended by the use of a general structural system was in allowing a variety of use patterns initially without the expense of a variety of construction systems. A secondary flexibility also considered was a lack in altering living patterns in later years to accommodate changing needs.

B. Drawings

1. Structural System--framing diagram.
2. Small Scale Space Configurations--actual plan

- with diagrammatic plan and section.*
- A. LINEAR L5--Linear pattern, segment for 5 residents.
 - B. LINEAR--general linear pattern.
 - C. LINEAR--linear pattern, segment for 7 residents.
 - D. COMMON--common space.
3. Small Scale Space Configurations--actual plan with diagrammatic plan and section.*
- A. COMMON--common space.
 - B. DISCRETE D3s--discrete pattern, small 3 resident unit.
 - C. DISCRETE D3l--discrete pattern, large 3 resident unit.
 - D. DISCRETE D4--discrete pattern, 4 resident unit.
4. Small Scale Space Configurations--actual plan with diagrammatic plan and section.*
- A. DISCRETE D2l--discrete pattern, large 2 resident unit.
 - B. DISCRETE D2s--discrete pattern, small 2 resident unit.
 - C. NODAL N4--nodal pattern, grouping for 4 residents.
 - D. NODAL N6--nodal pattern, grouping for 6 residents.

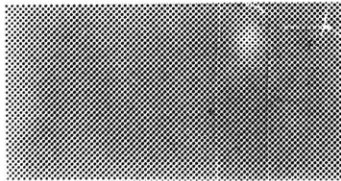
5. Small Scale Space Configurations--actual plan with diagrammatic plan and section.*
 - A. NODAL N9--nodal pattern, grouping for 9 residents.
 - B. NODAL N13--nodal pattern, grouping for 13 residents.
6. Diagrams of Four Sample Organizations of Small Scale Configurations in 3 Floor Sections of Structural System.*
 - A. 37 Occupants--28 in linear pattern, 9 in discrete pattern.
 - B. 43 Occupants--41 in linear pattern, 2 in discrete pattern.
 - C. 36 Occupants--12 in linear pattern, 22 in nodal pattern, 2 in discrete pattern.
 - D. 34 Occupants--32 in nodal pattern, 2 in discrete pattern.
7. Actual Plans and Diagrams of a Sample Organization of Small Scale Space Configurations in a 3 Floor Section of Structural Systems--35 occupants--7 in linear pattern, 26 in nodal pattern, 2 in discrete pattern.*
8. Plan of Total Development at $4\frac{1}{2}$ Feet Below Grade.
9. Plan of Total Development at 9 Feet Above Grade.
10. Longitudinal Section Through Total Development.
11. Axonometric of Total Development.

12. Site Diagram.

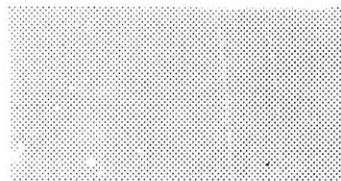
- * Note: On all diagrams the lightest tone indicates potentially private spaces; the middle tone indicates somewhat more public areas used primarily for circulation; the darkest tone indicates shared spaces where some intensification of activity might occur.



SHARED AREA - INTENSIFIED
ACTIVITY

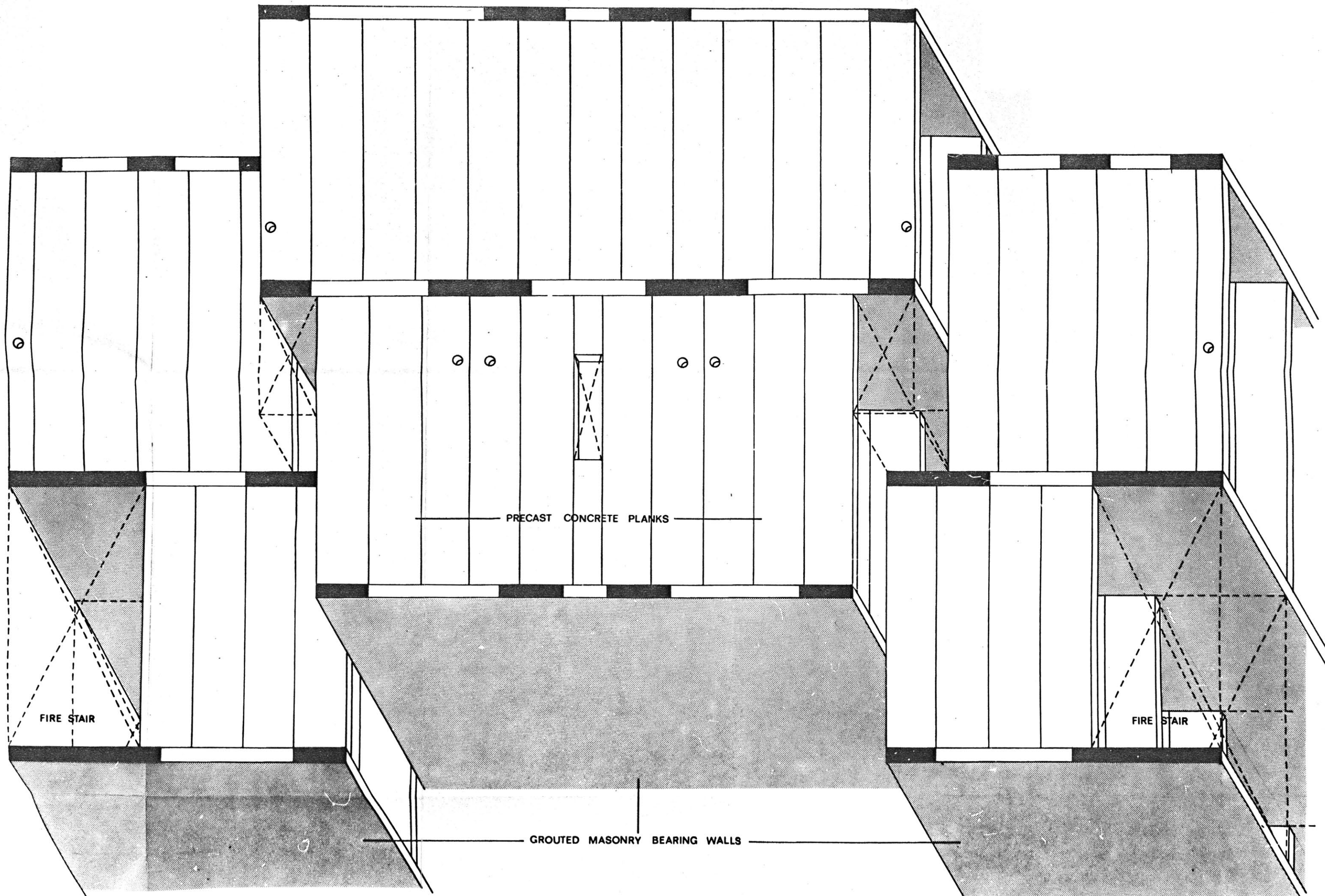


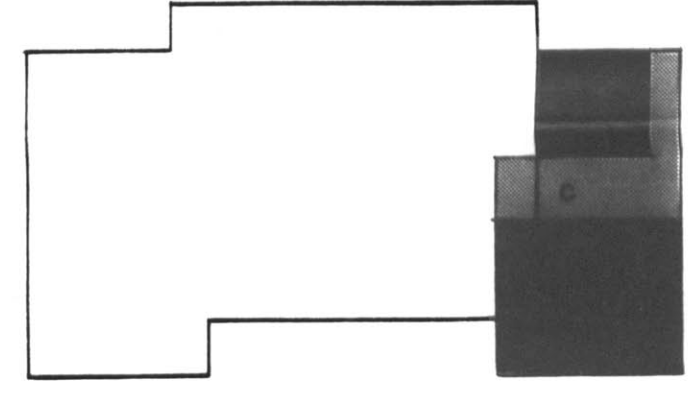
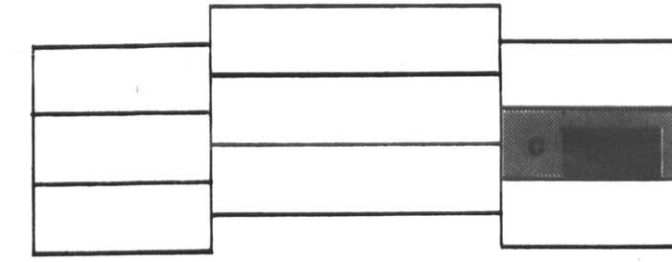
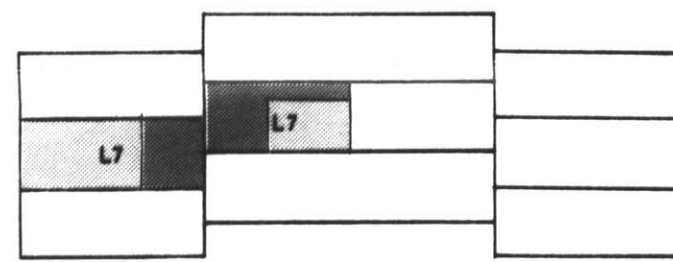
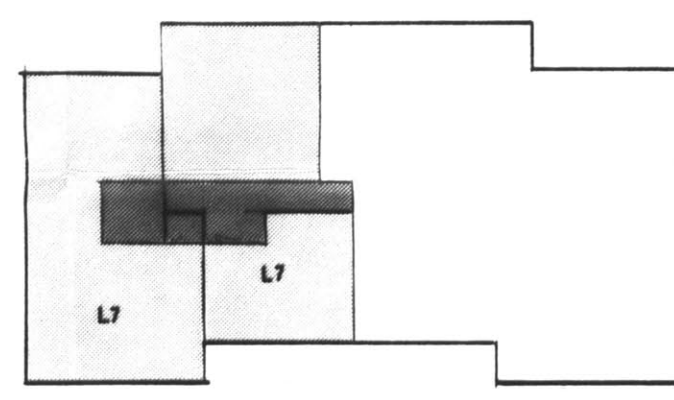
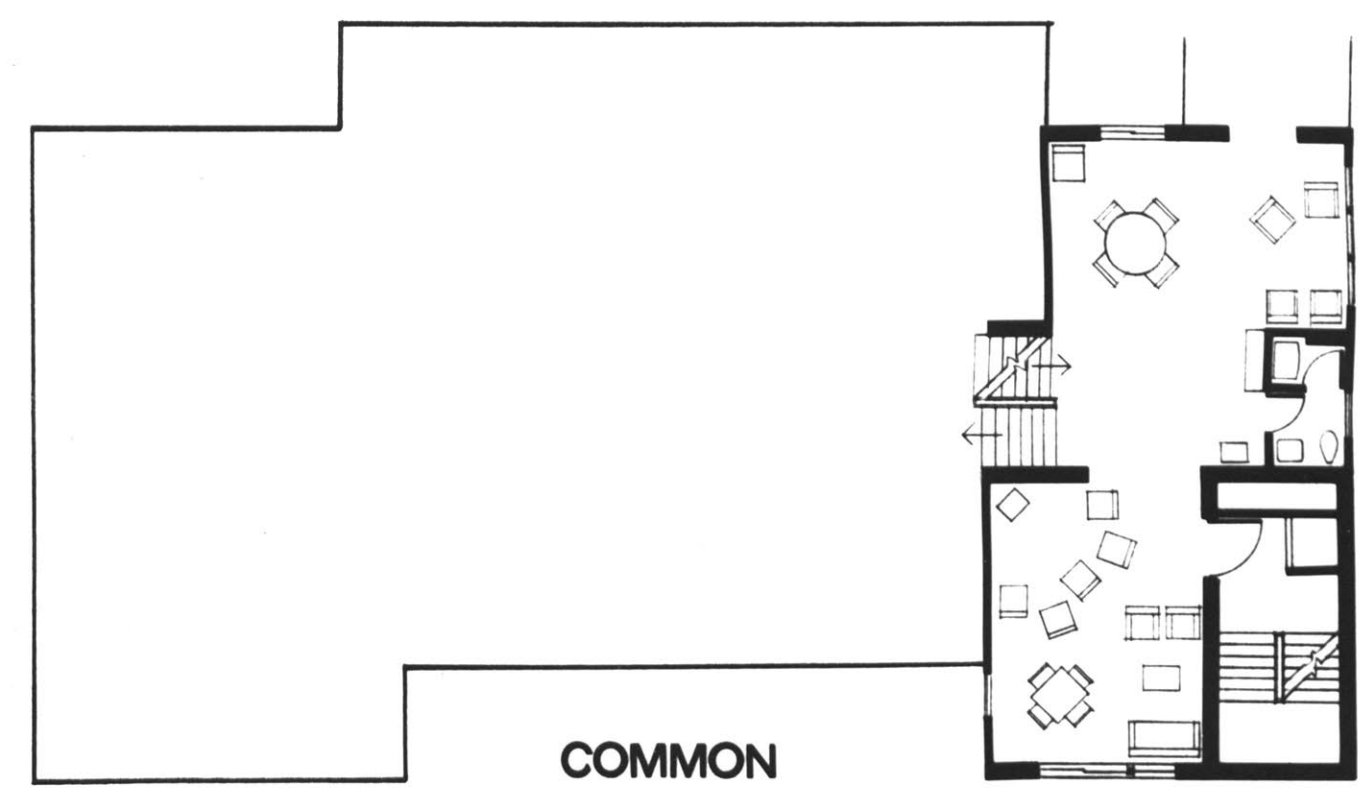
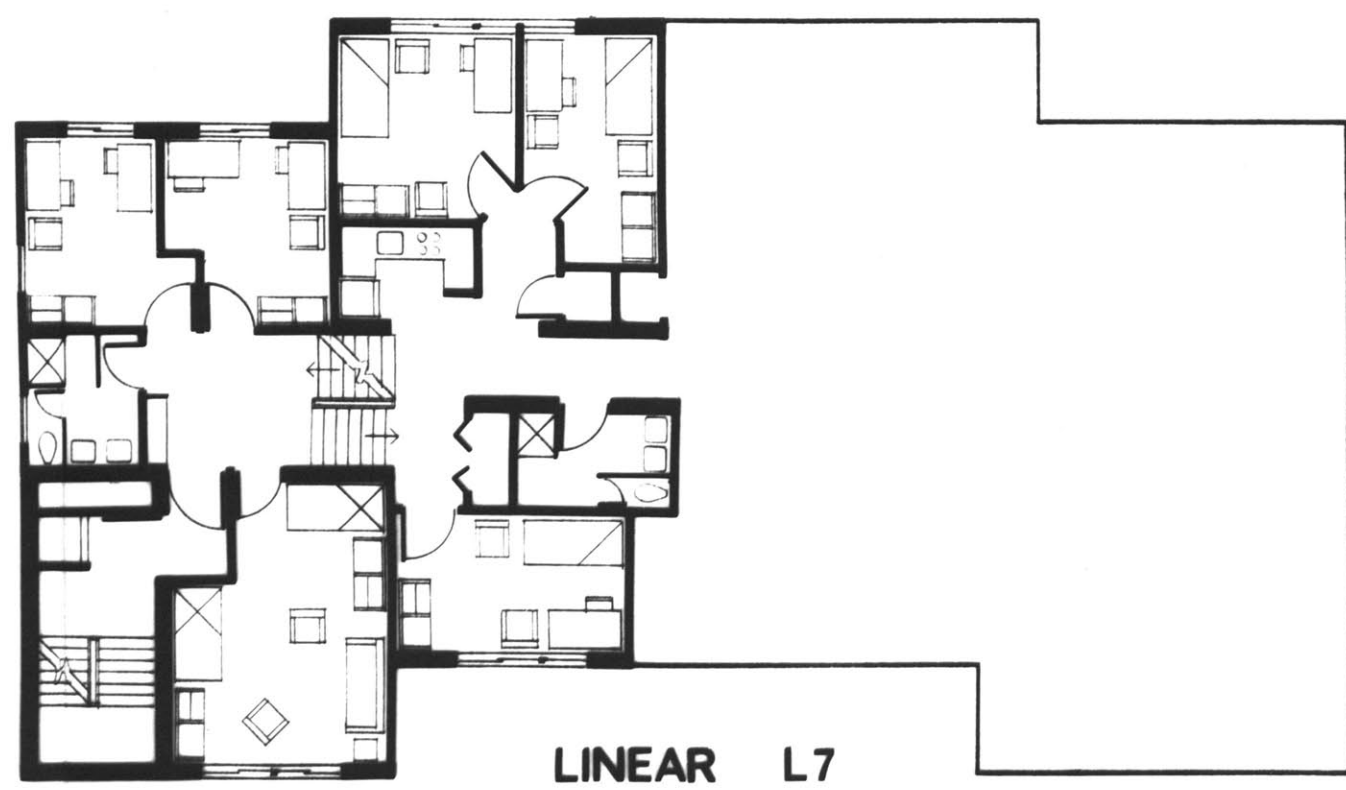
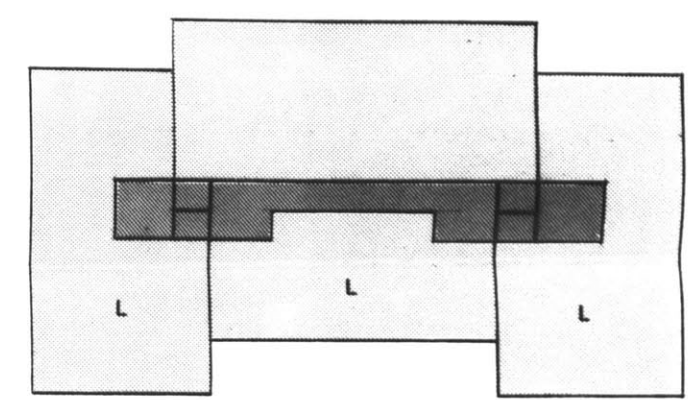
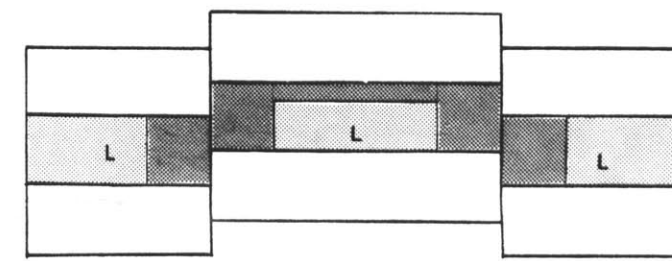
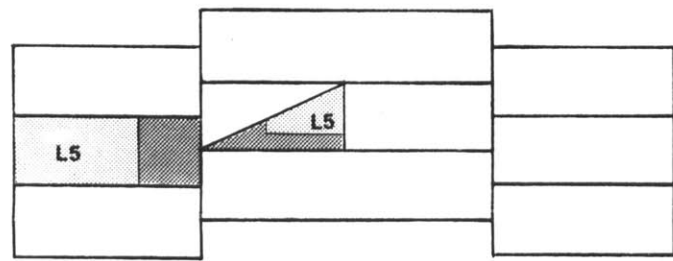
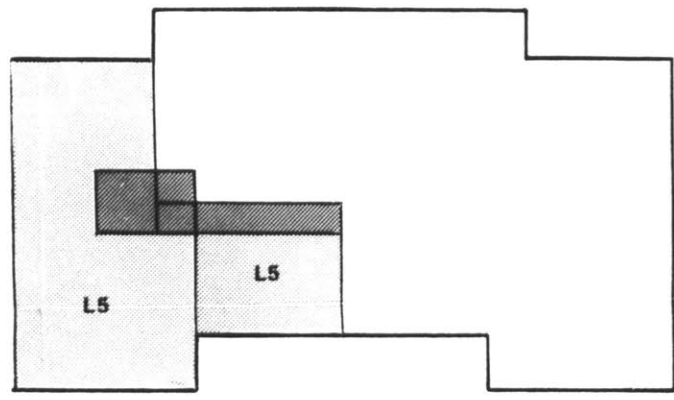
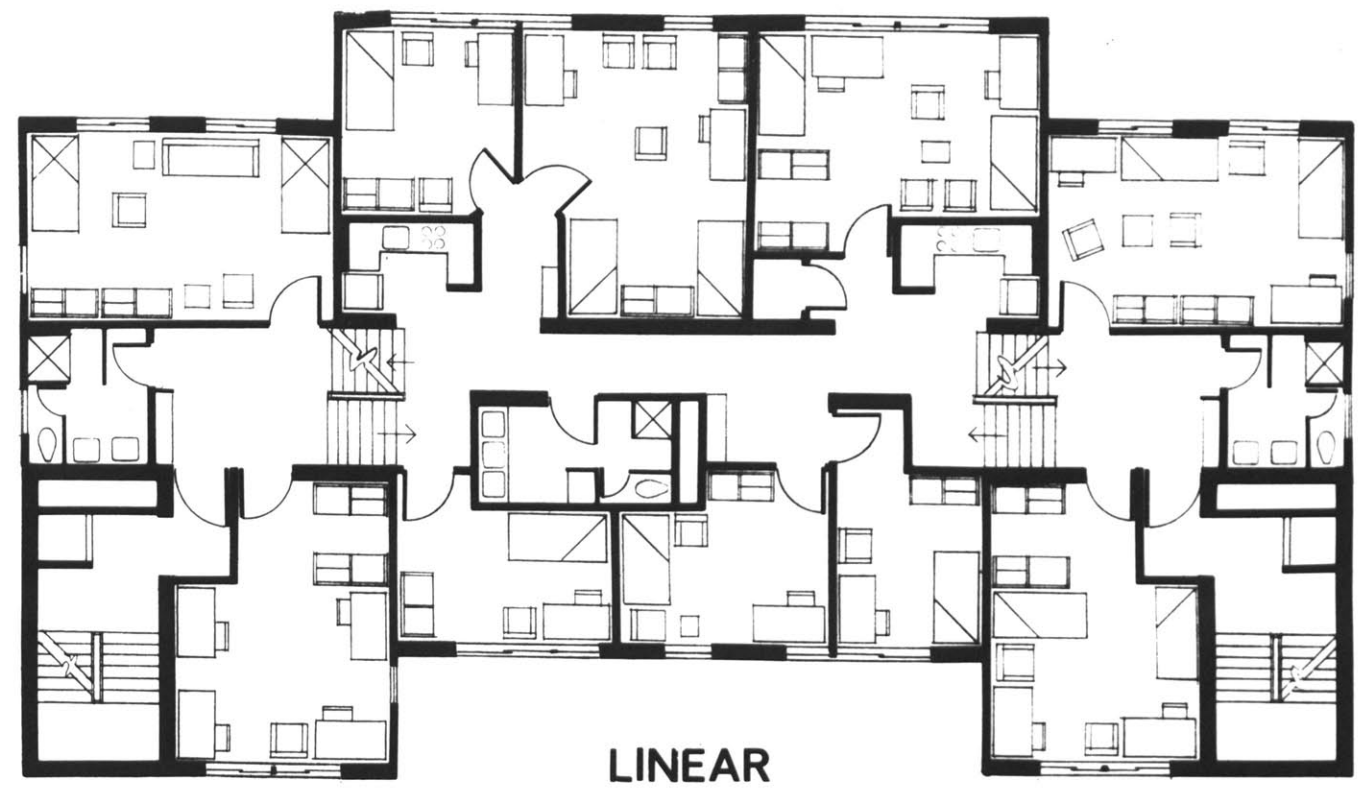
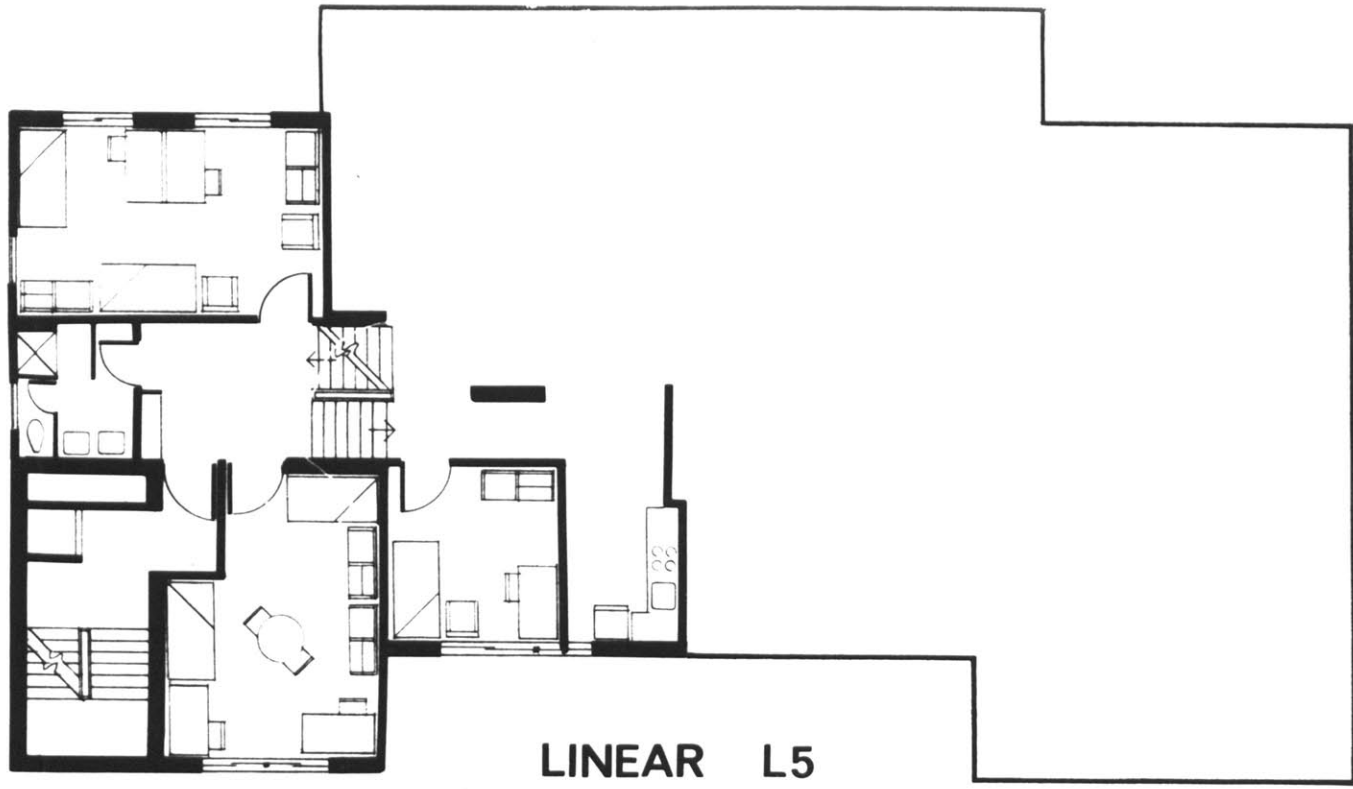
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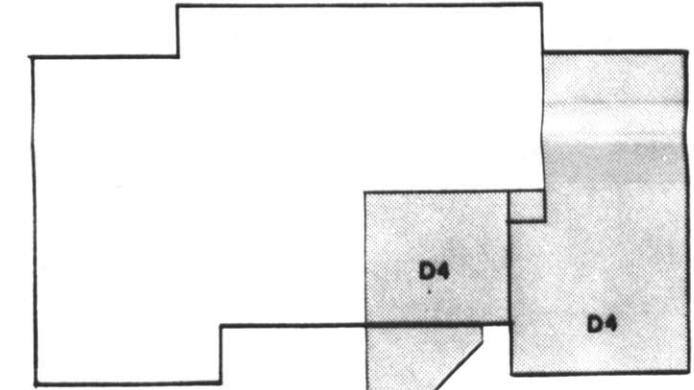
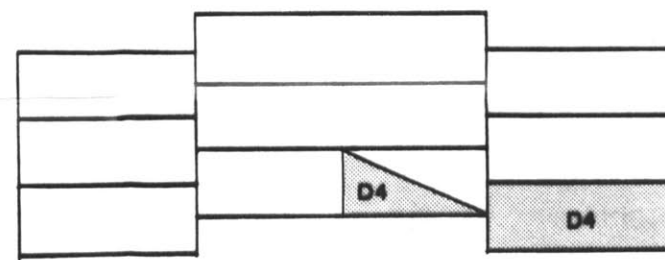
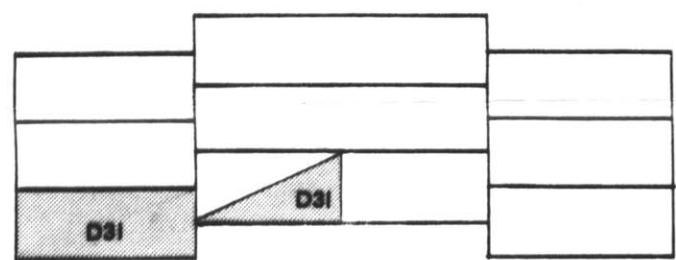
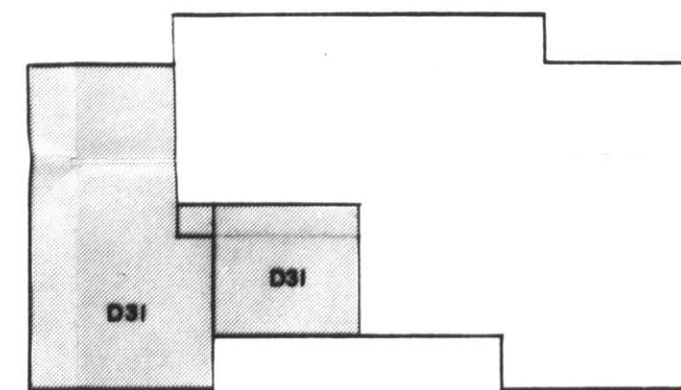
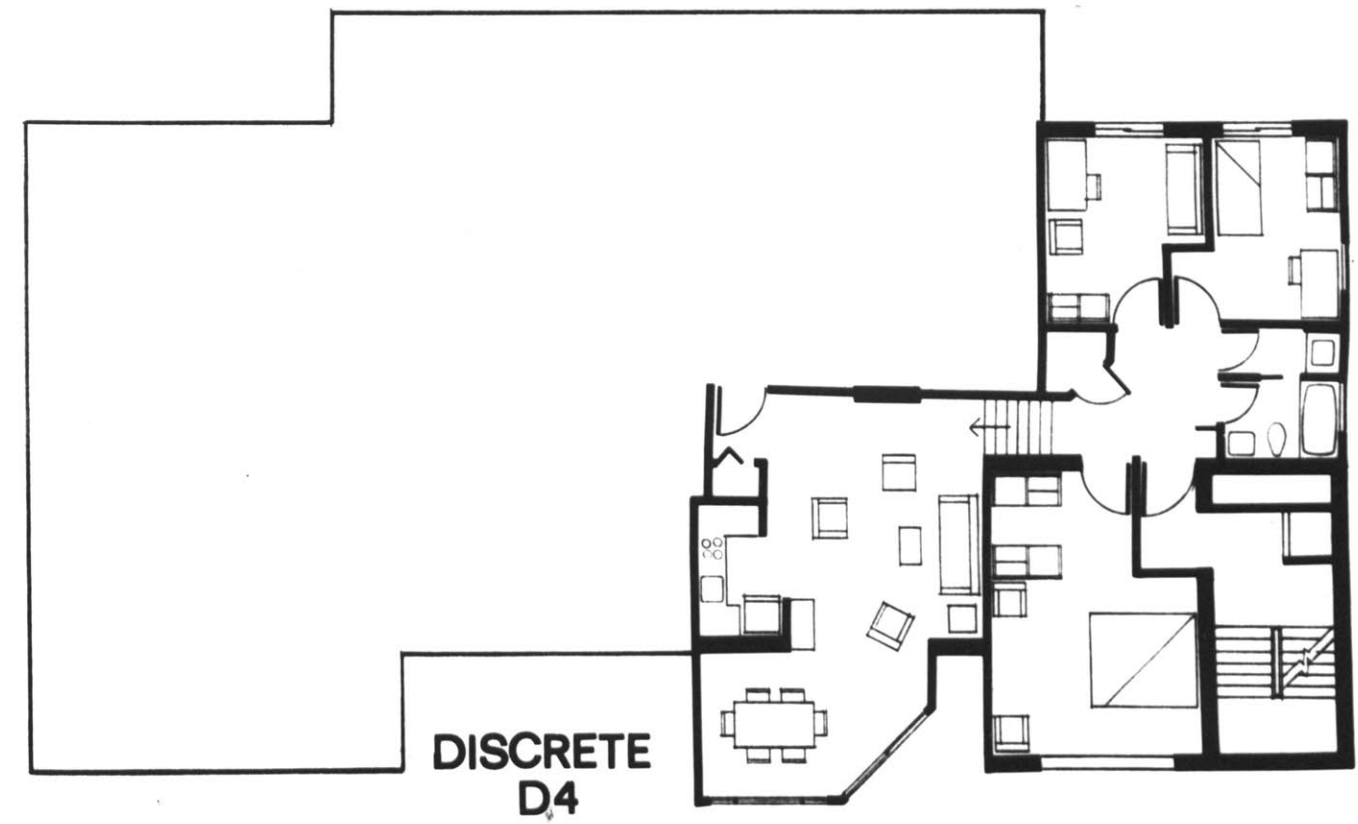
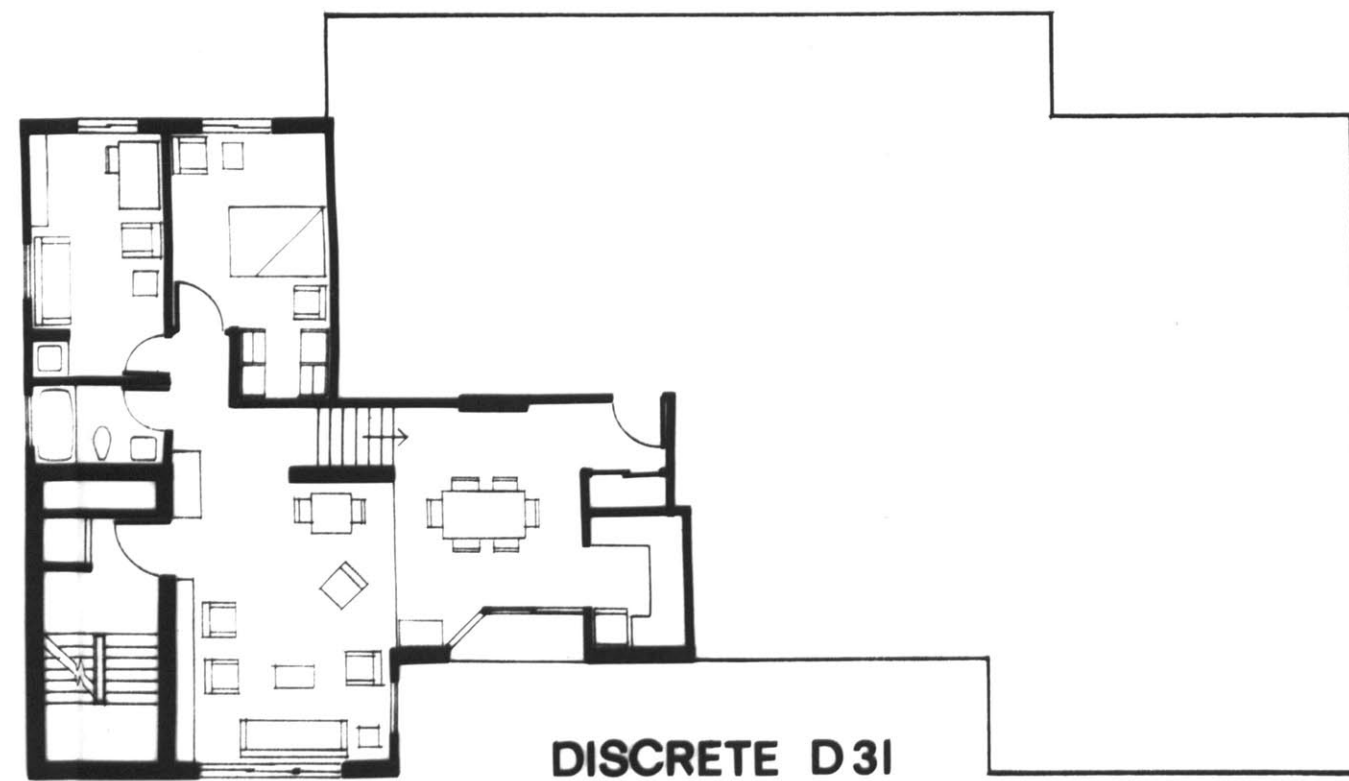
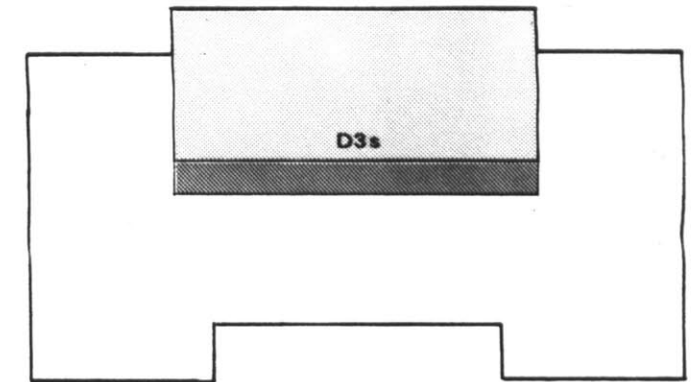
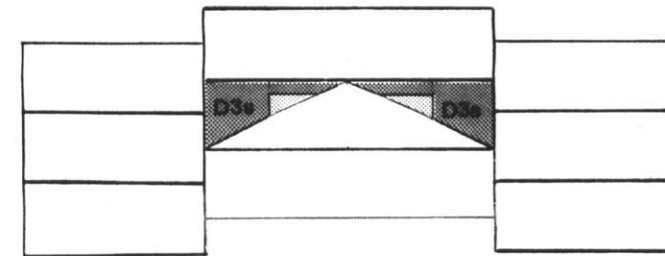
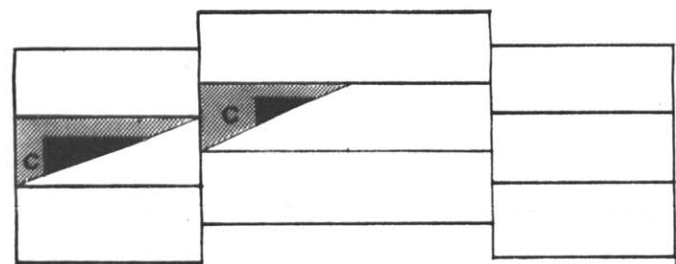
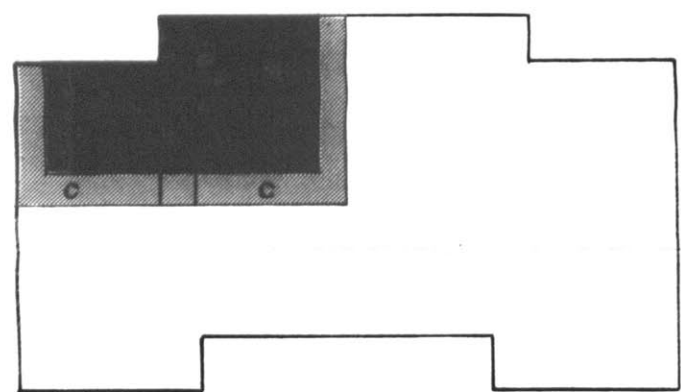
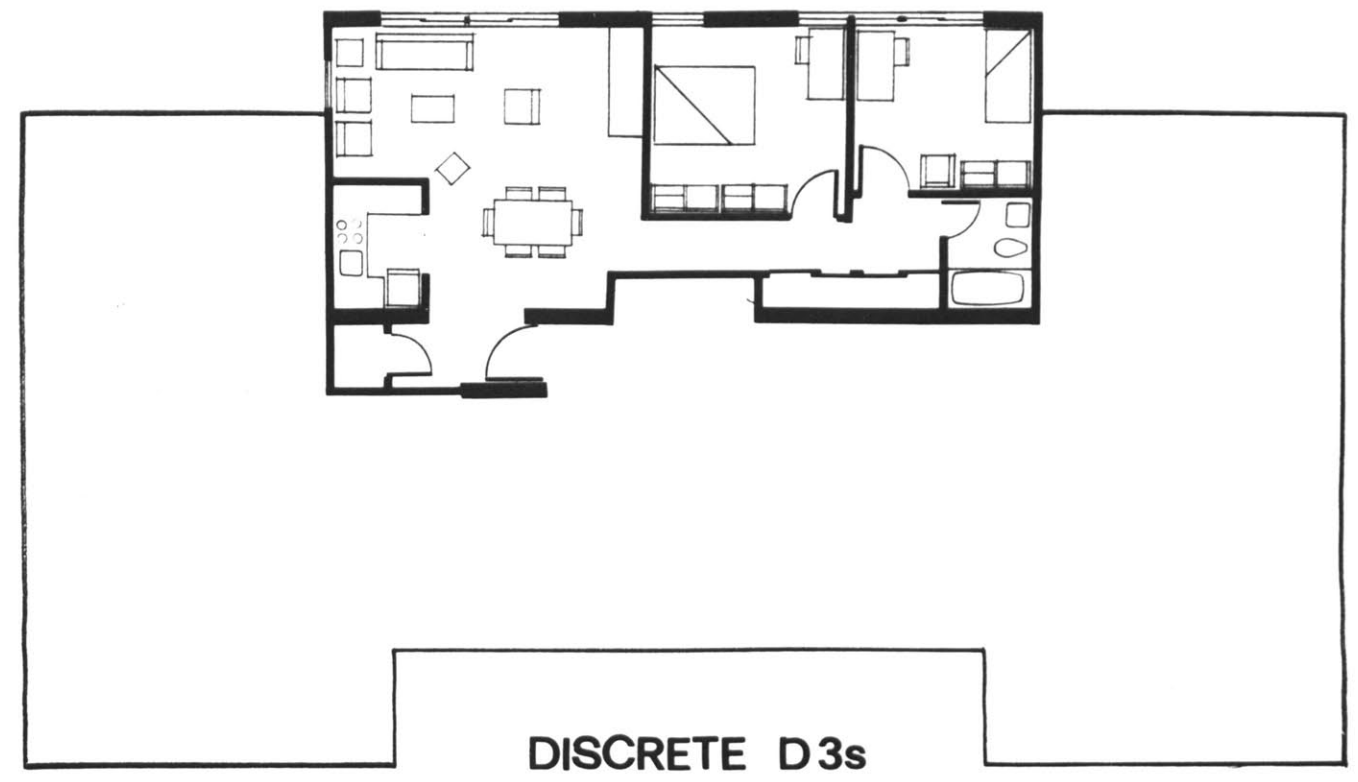
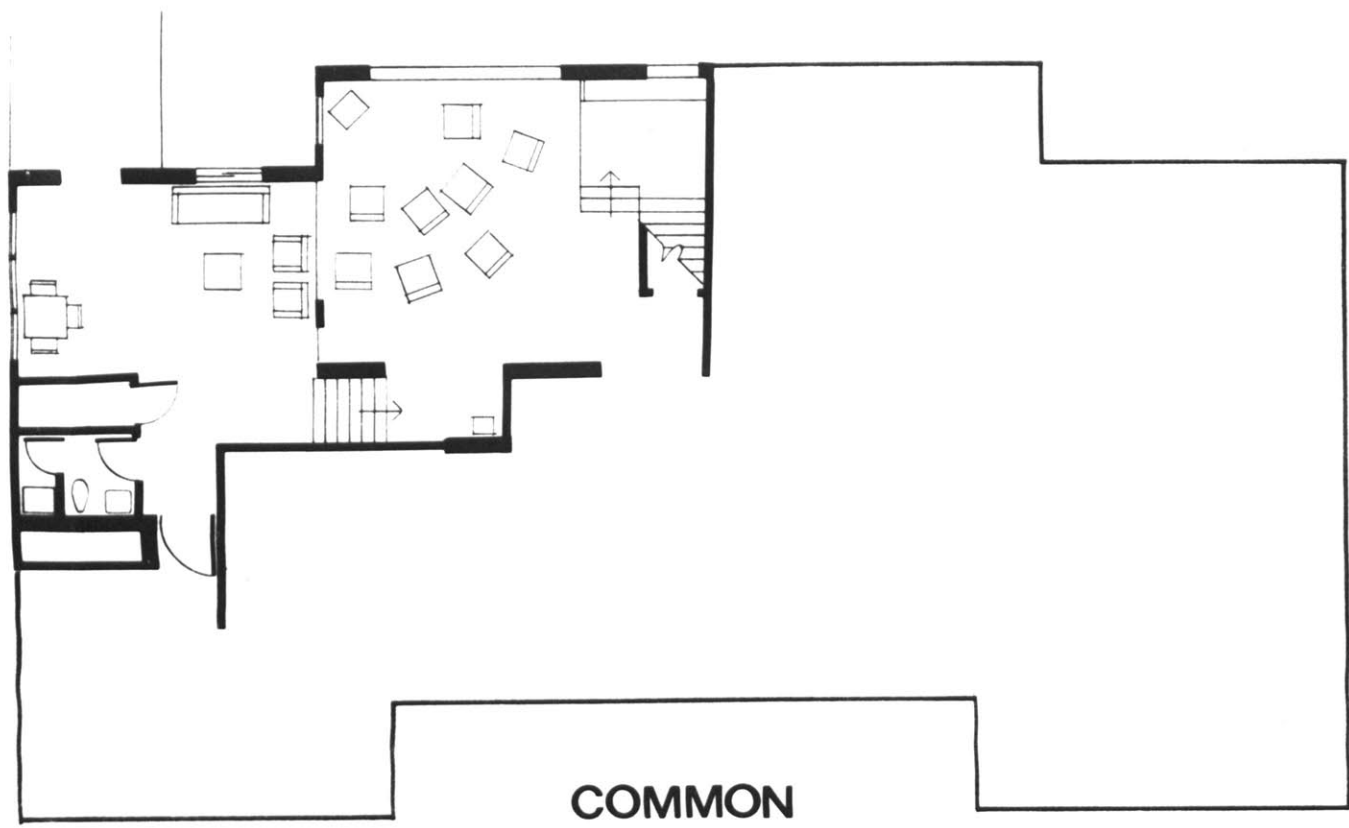


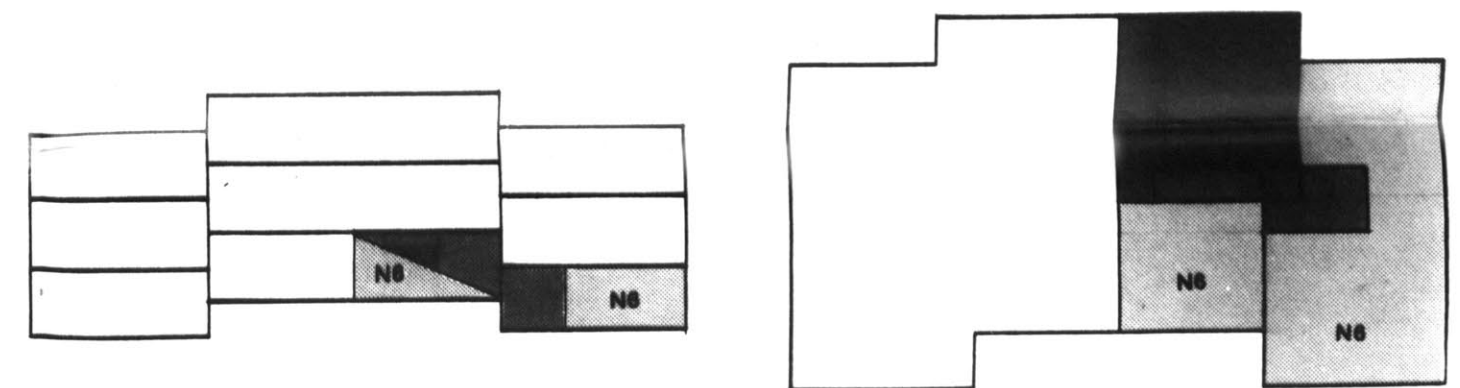
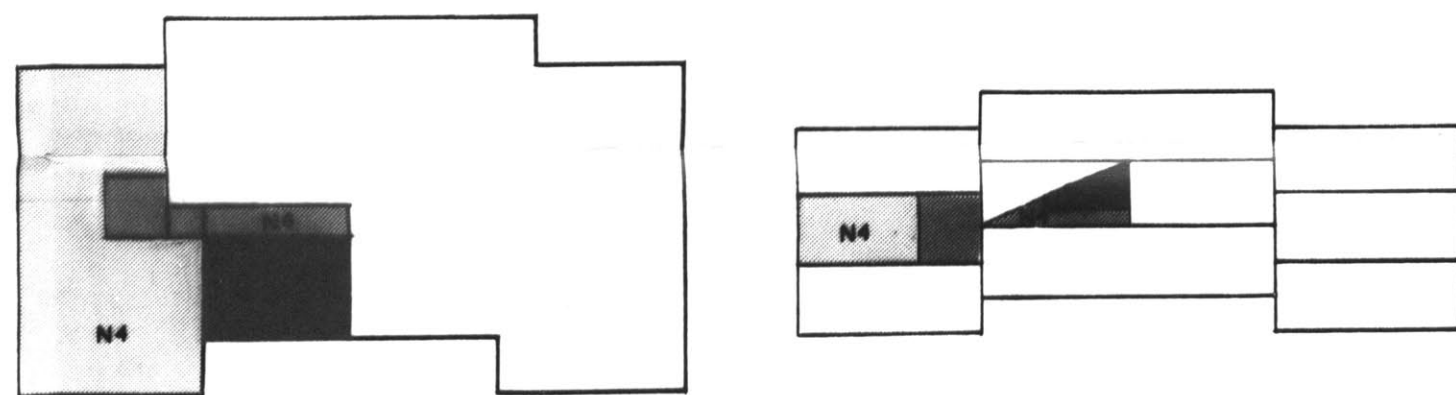
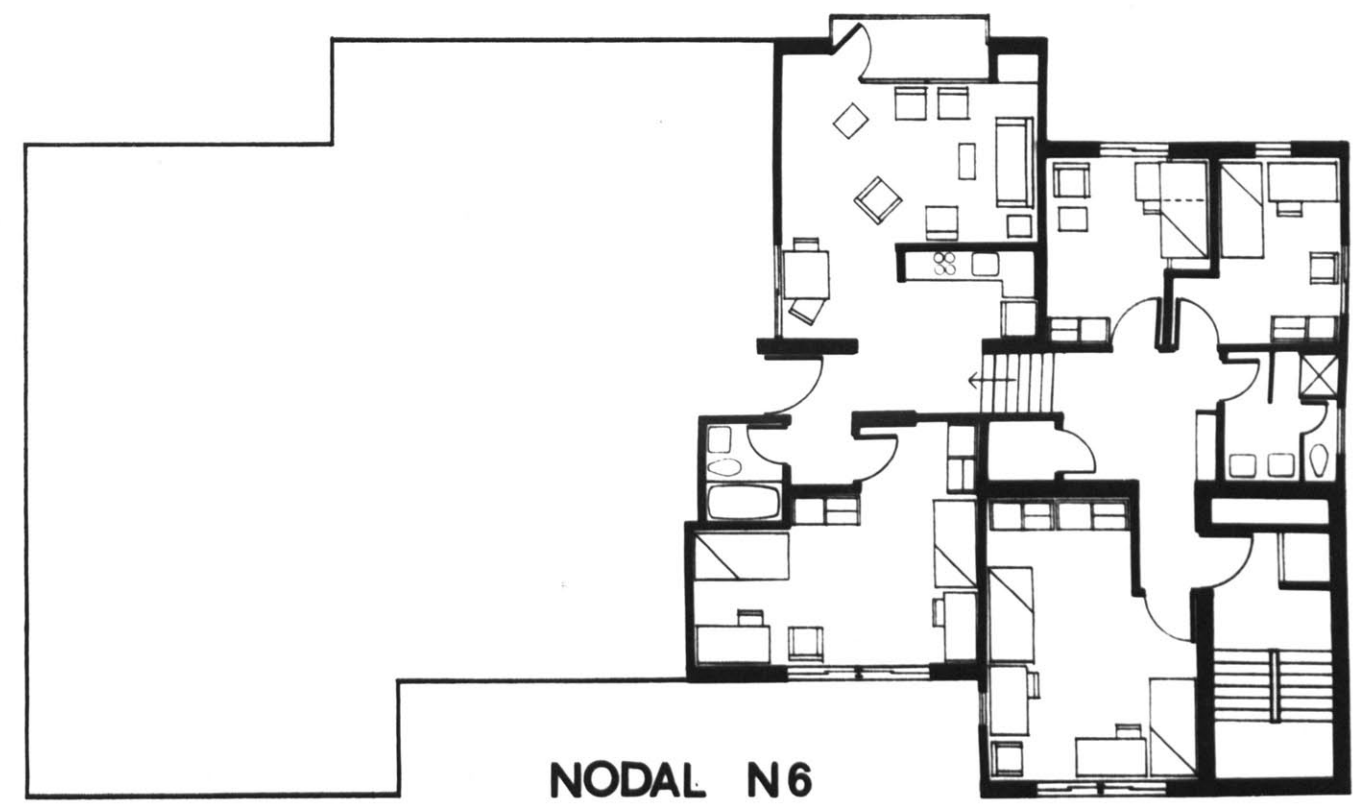
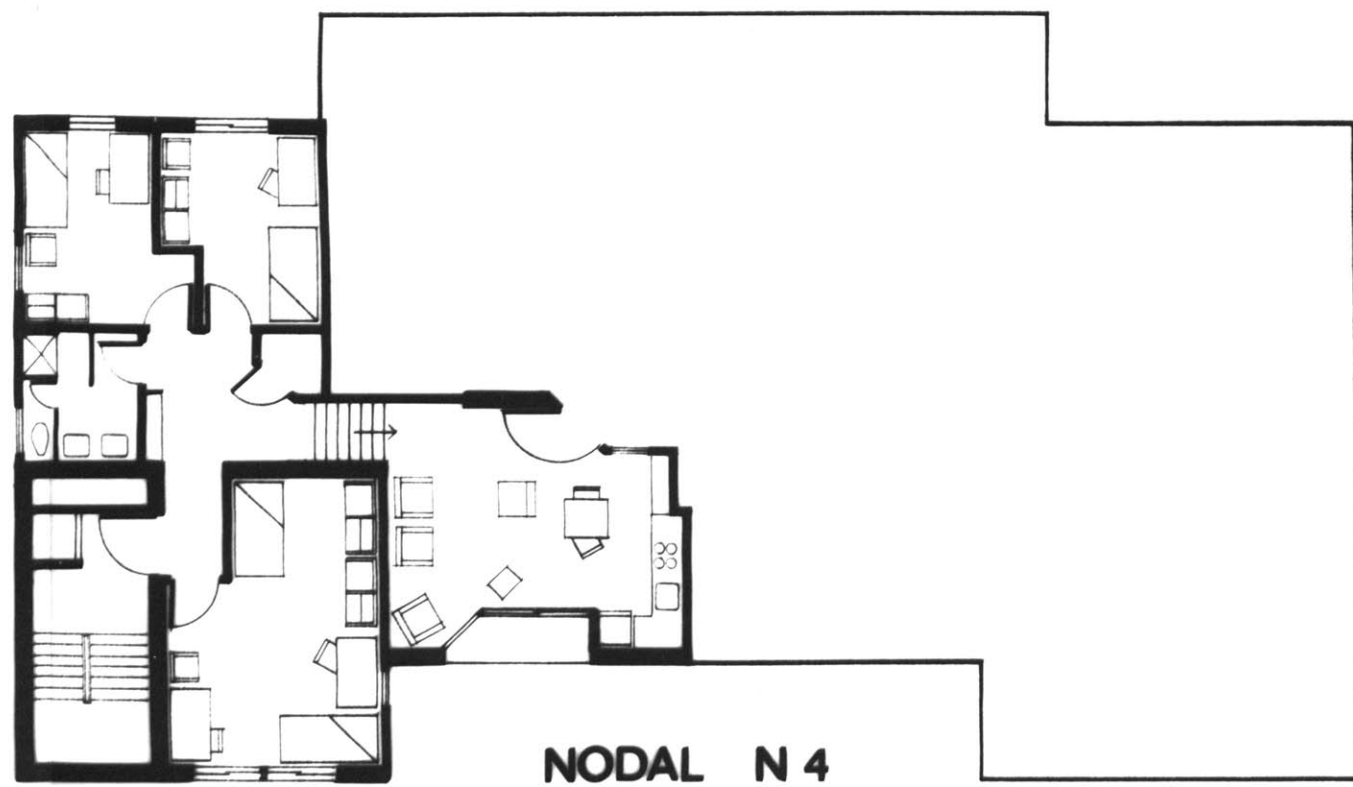
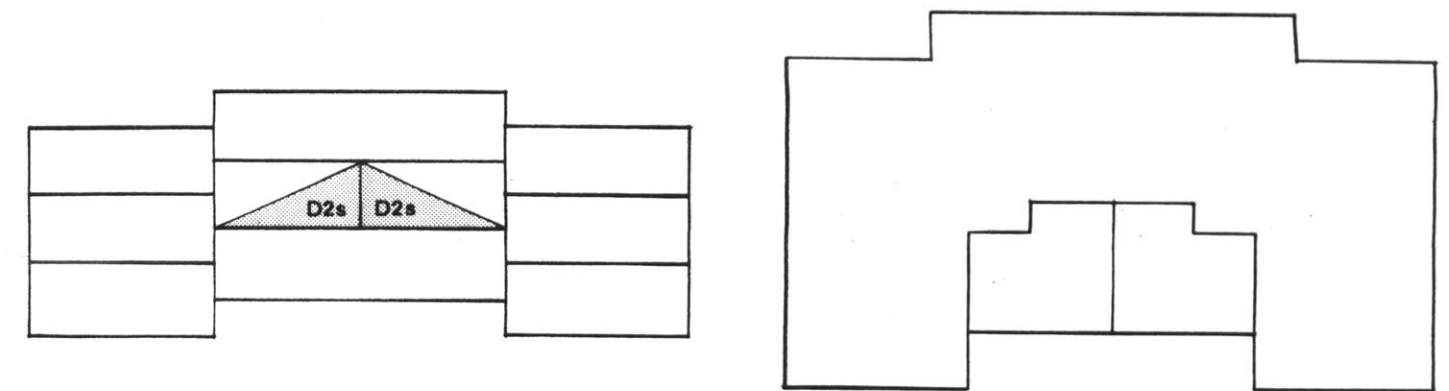
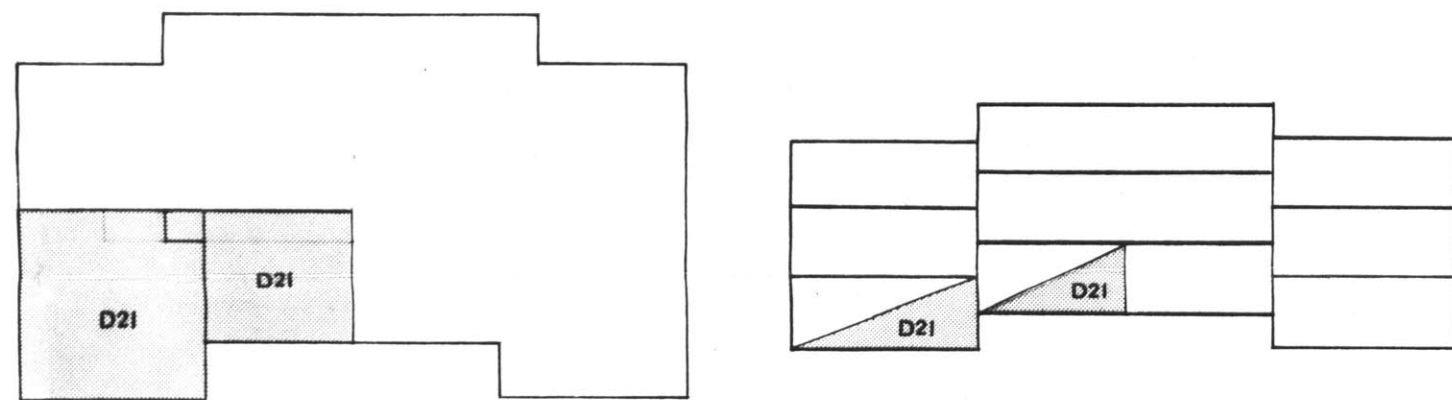
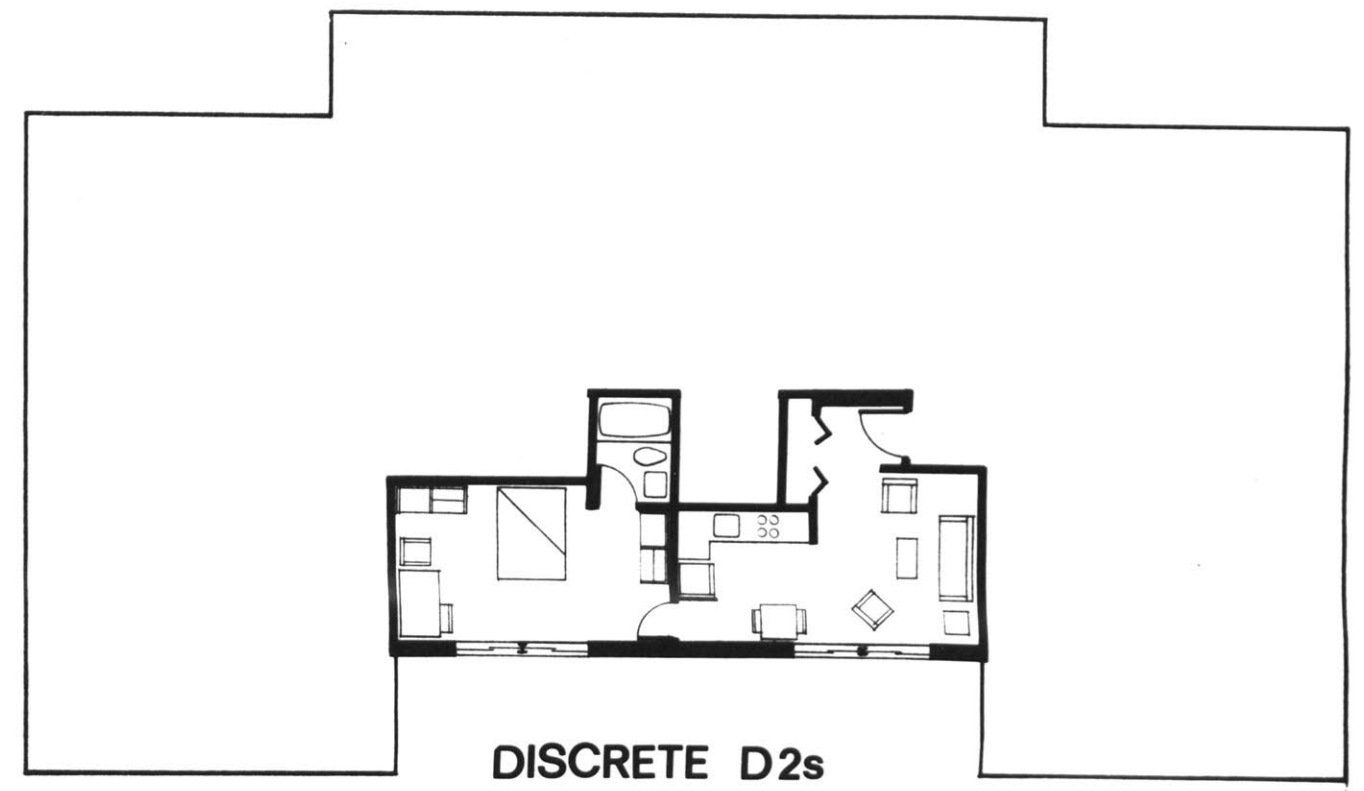
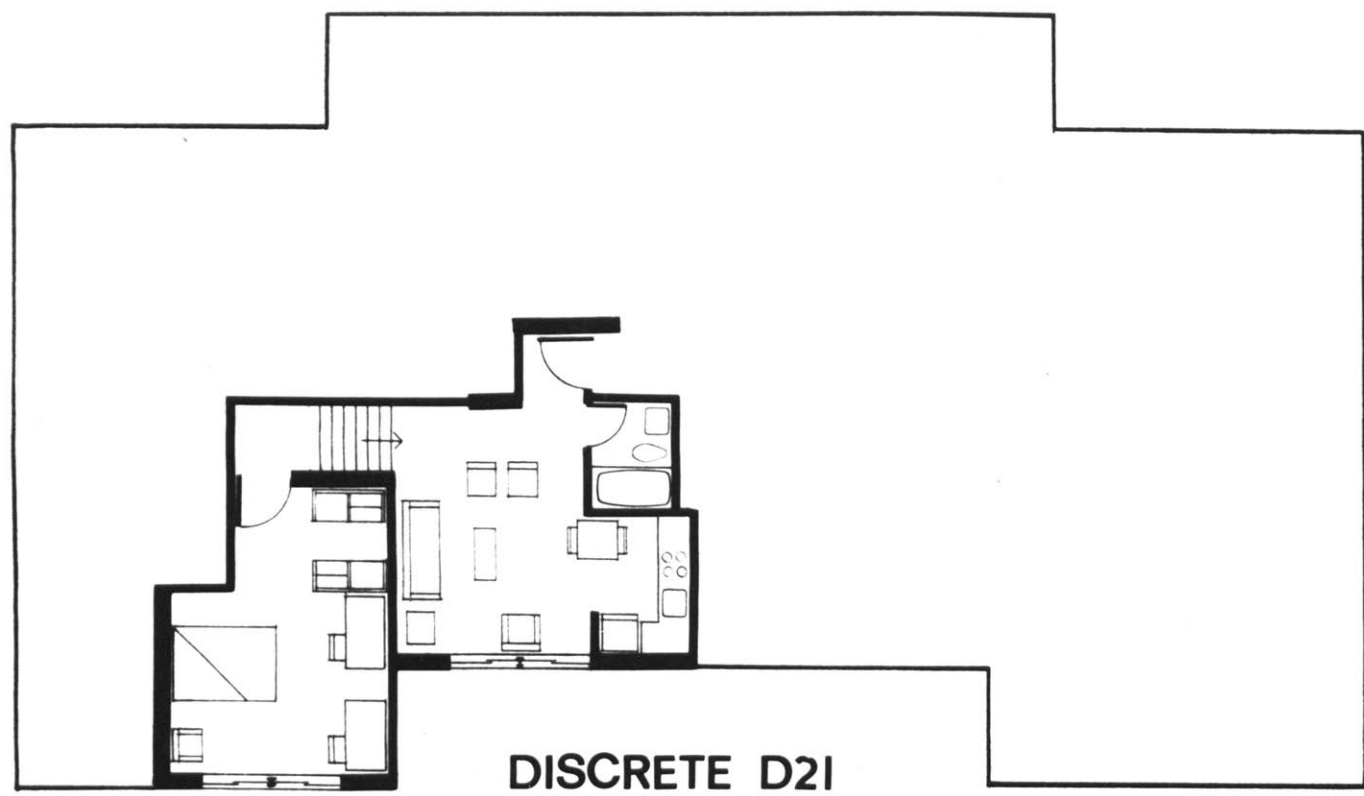
PRIVATE SPACE

diagram coding key



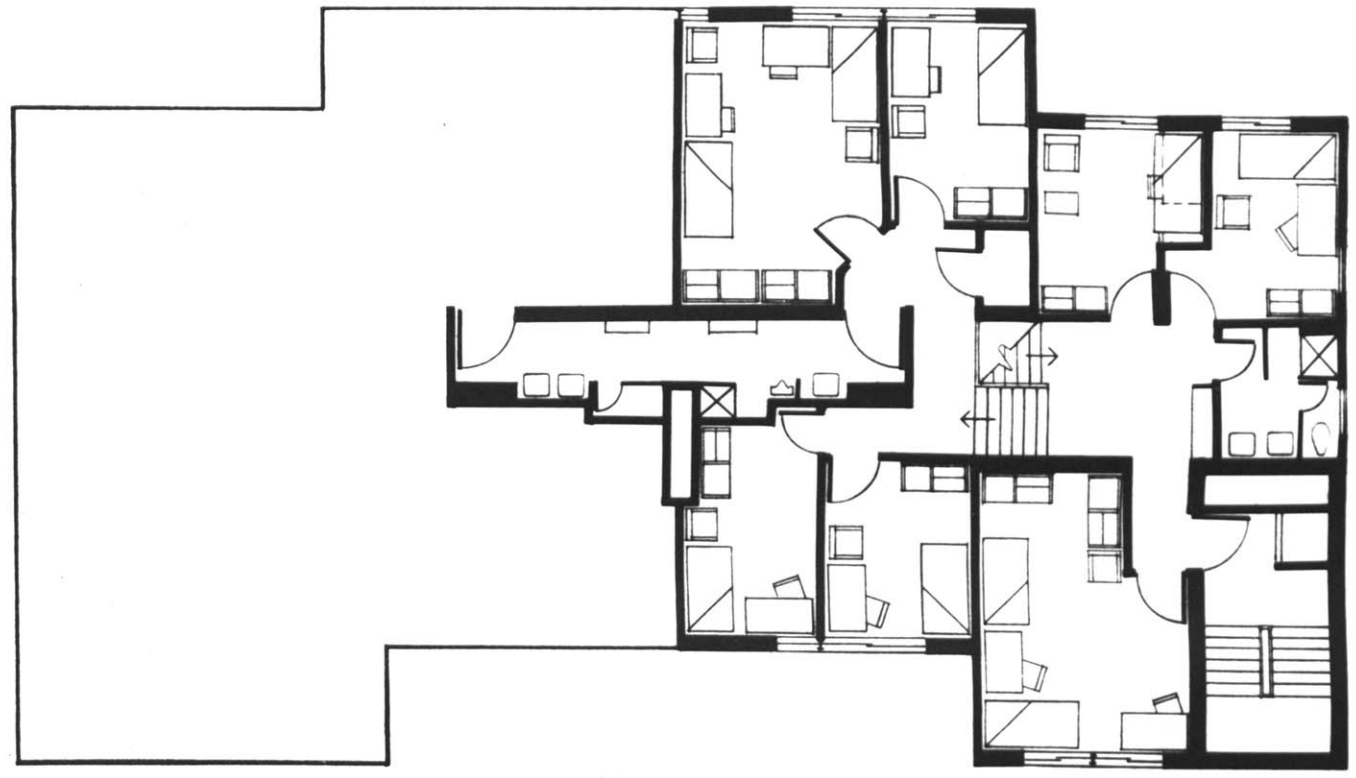




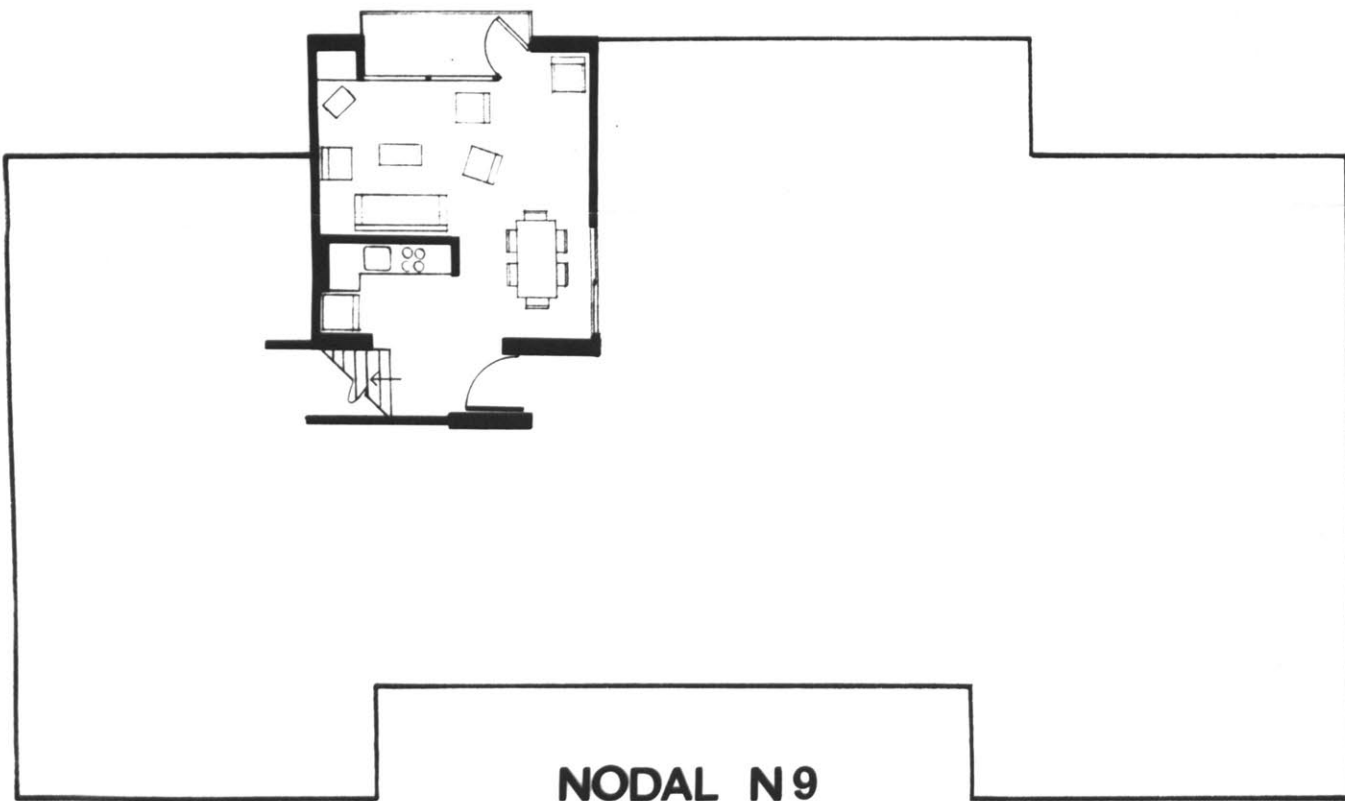




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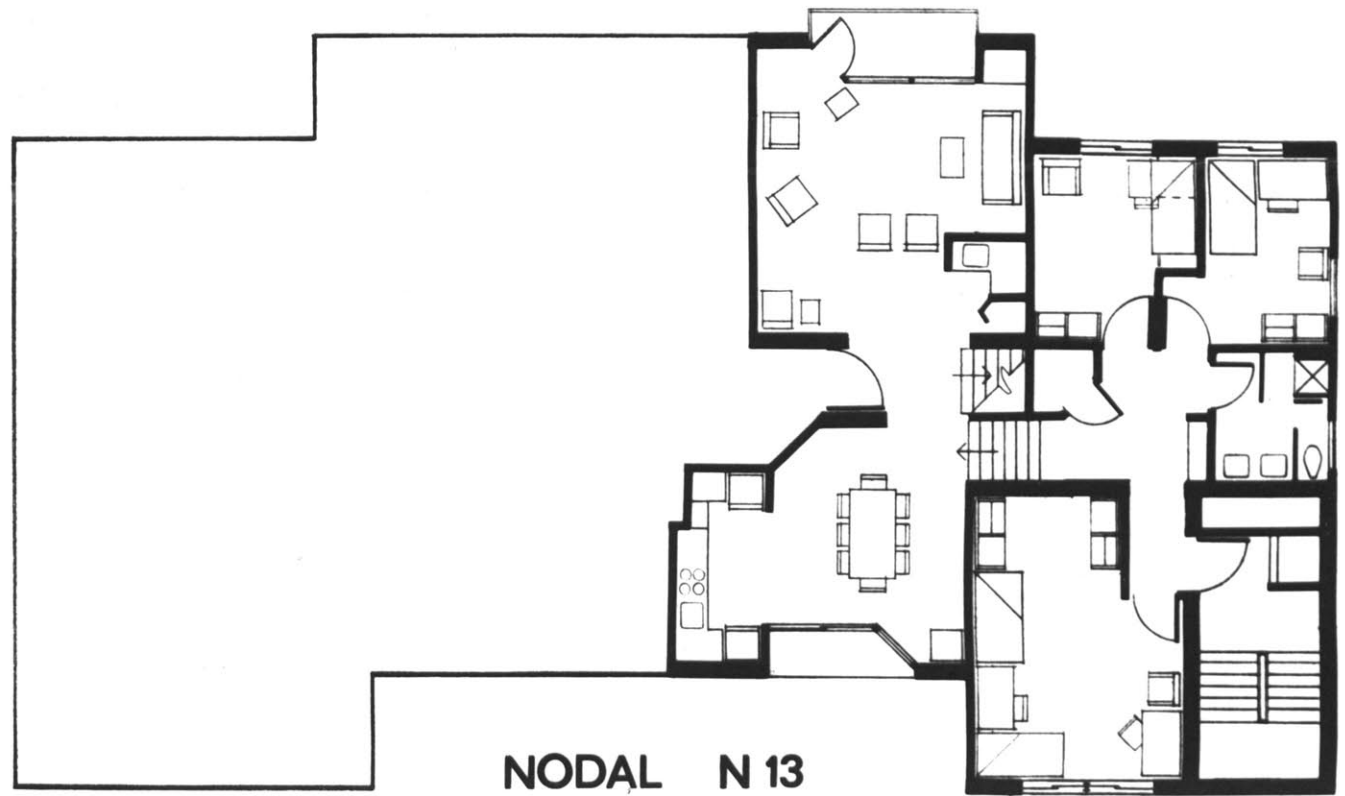


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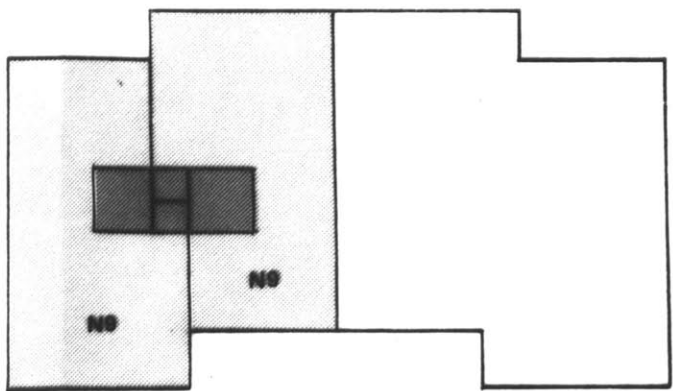
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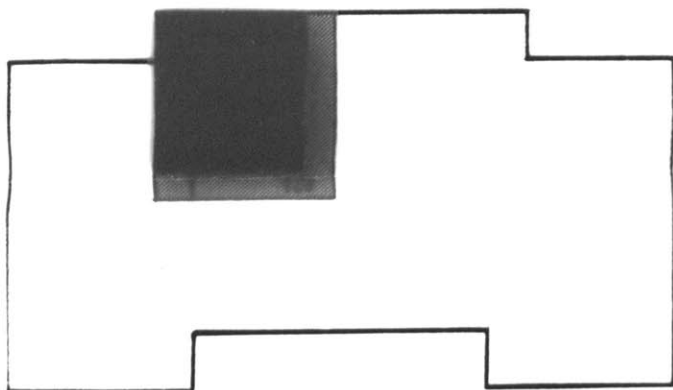
NODAL N13

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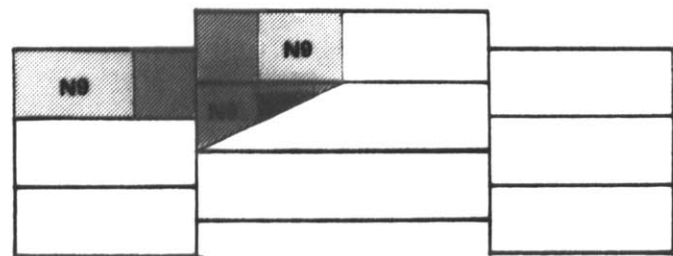


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N9

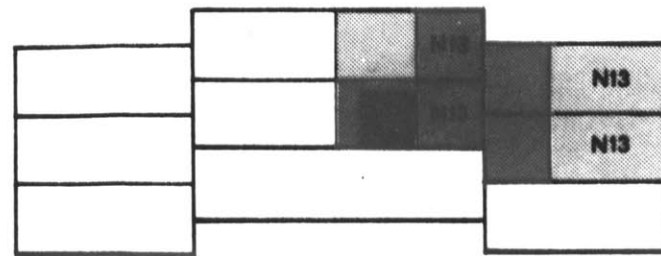


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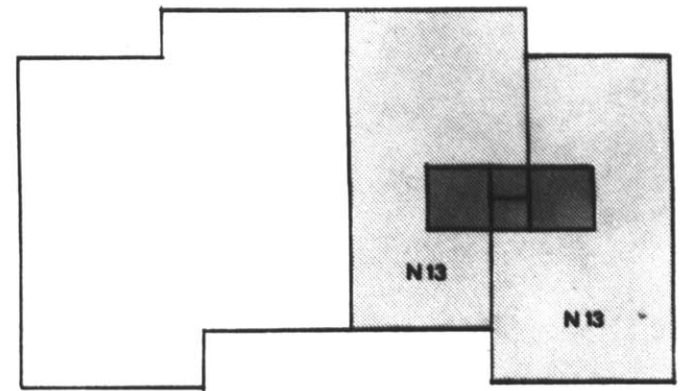
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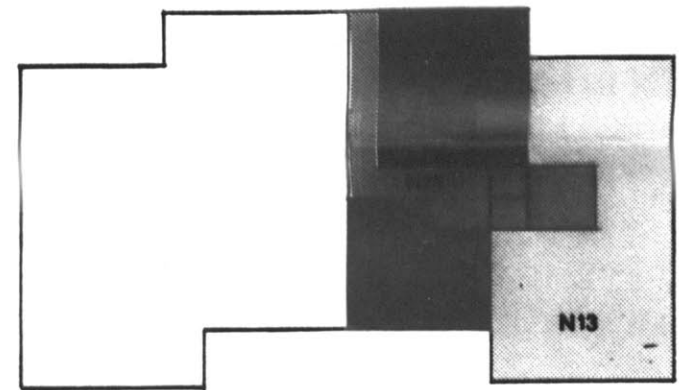
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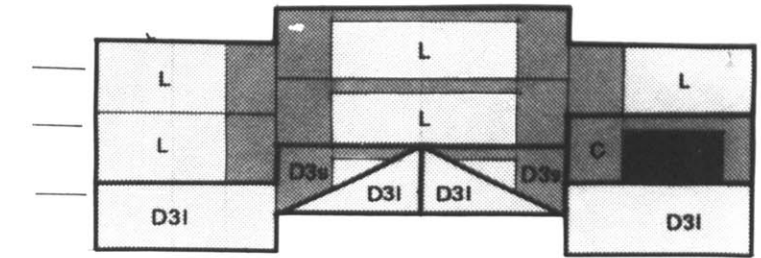
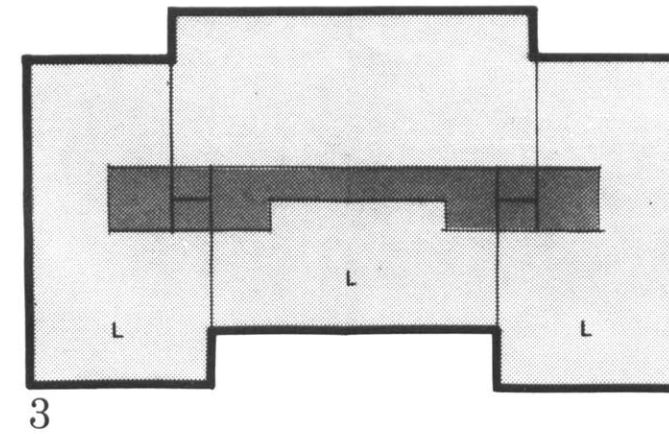
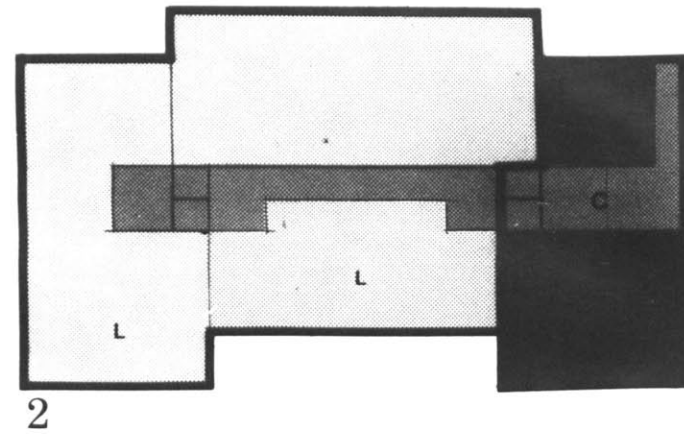
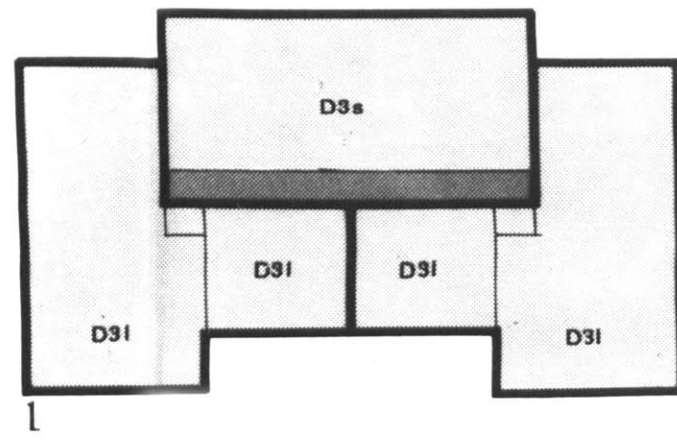


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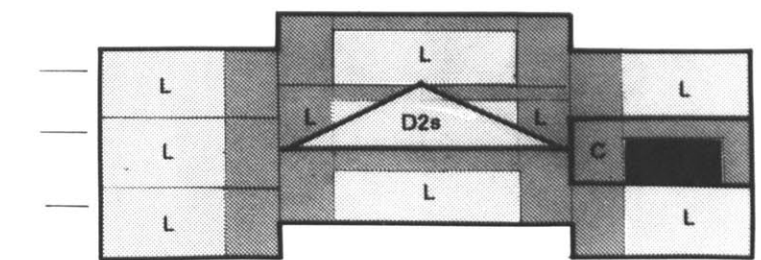
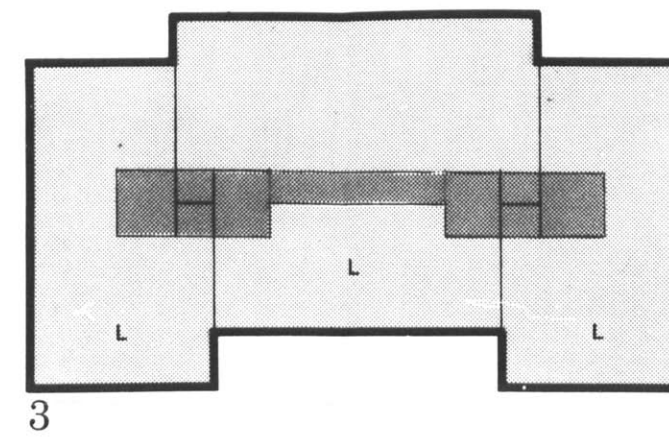
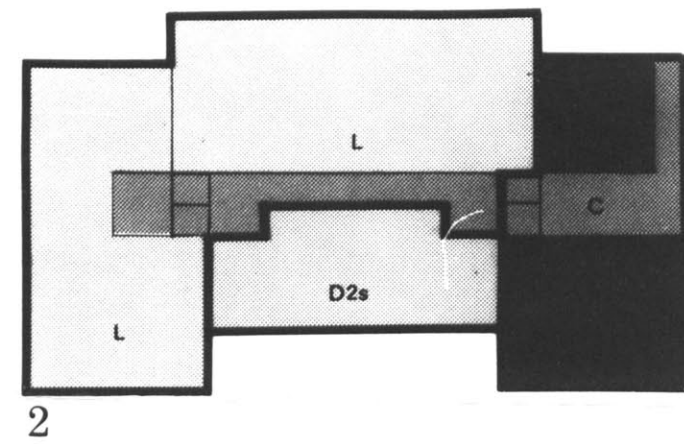
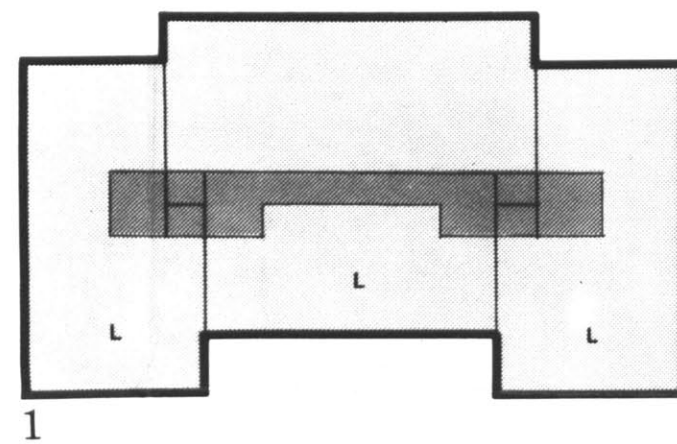
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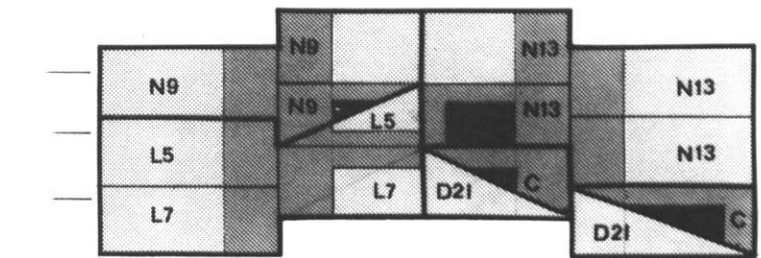
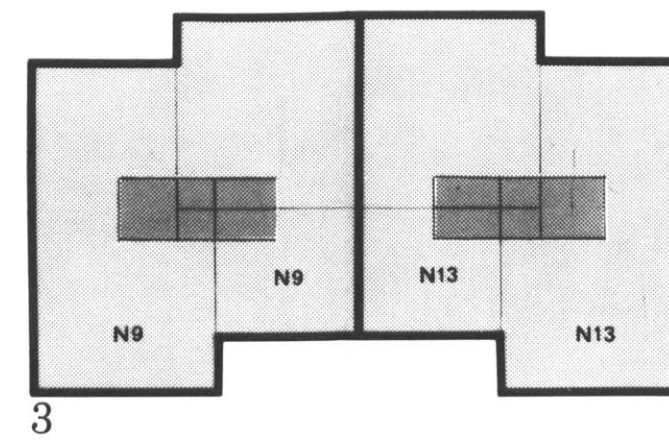
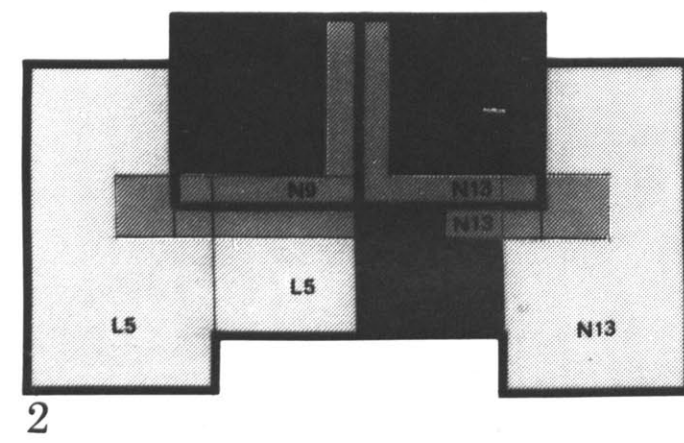
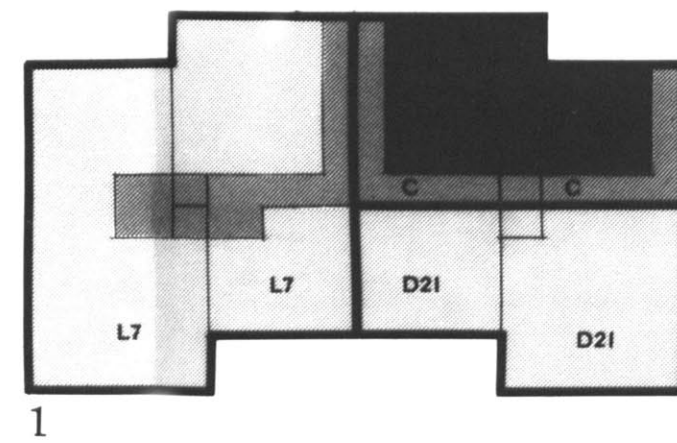
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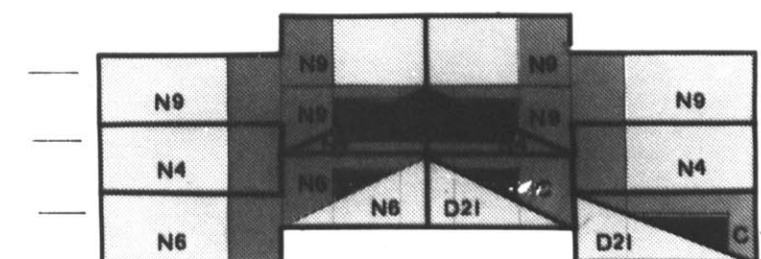
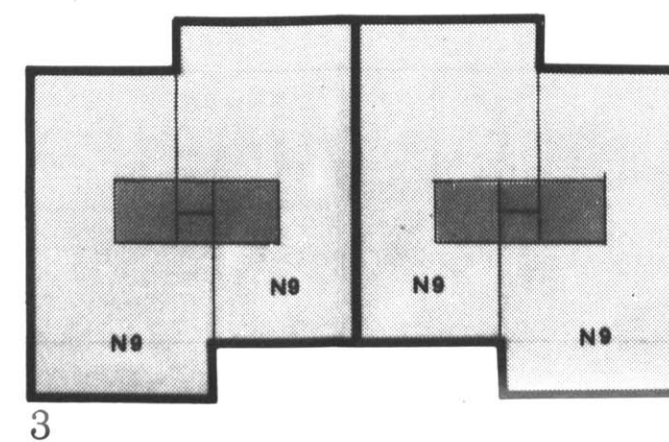
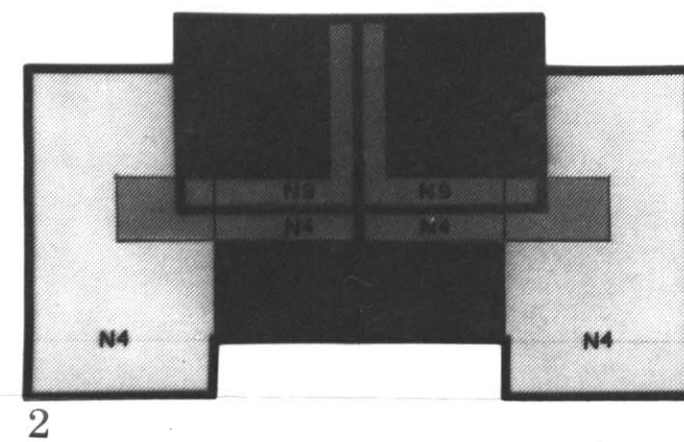
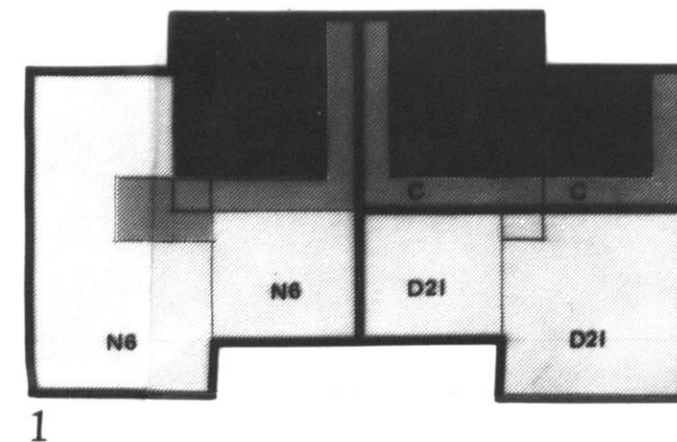
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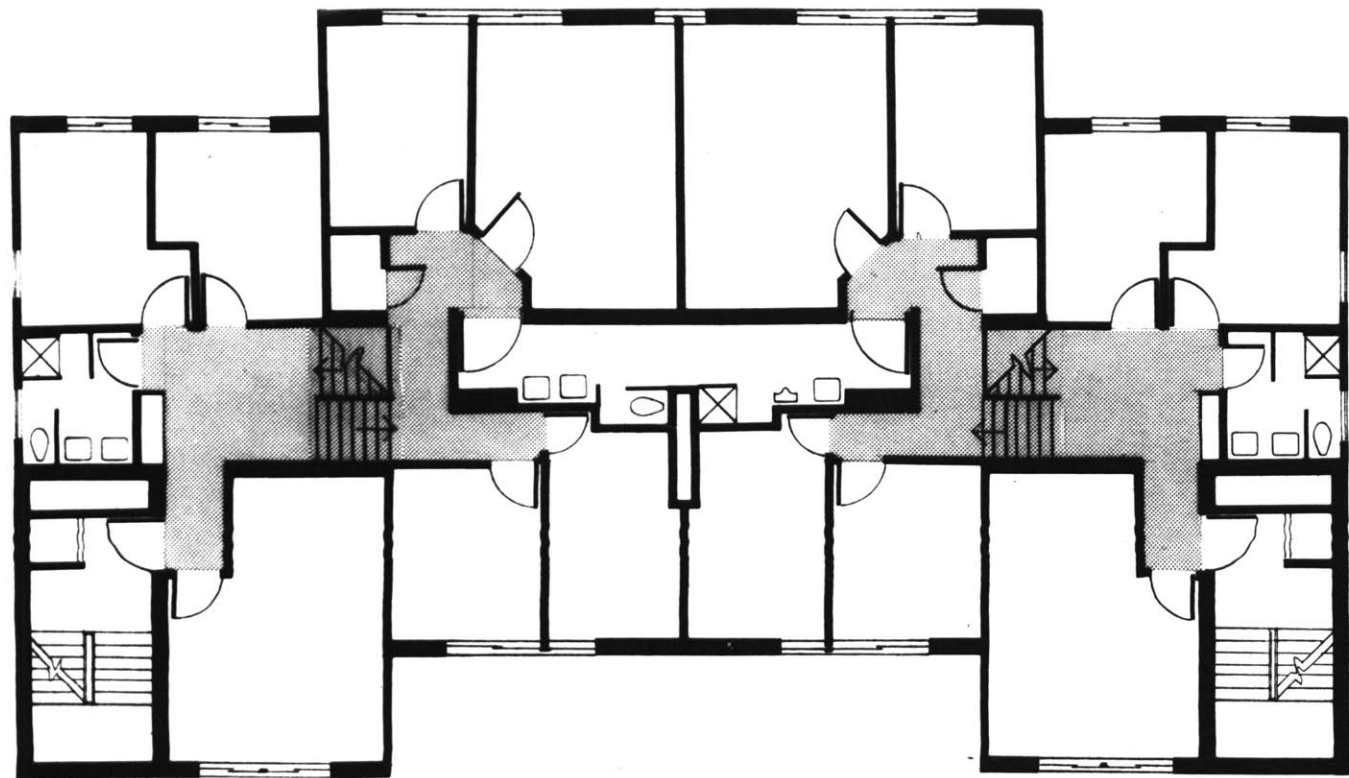
B. 43 occupants 41 linear 2 discrete 225 sf/person



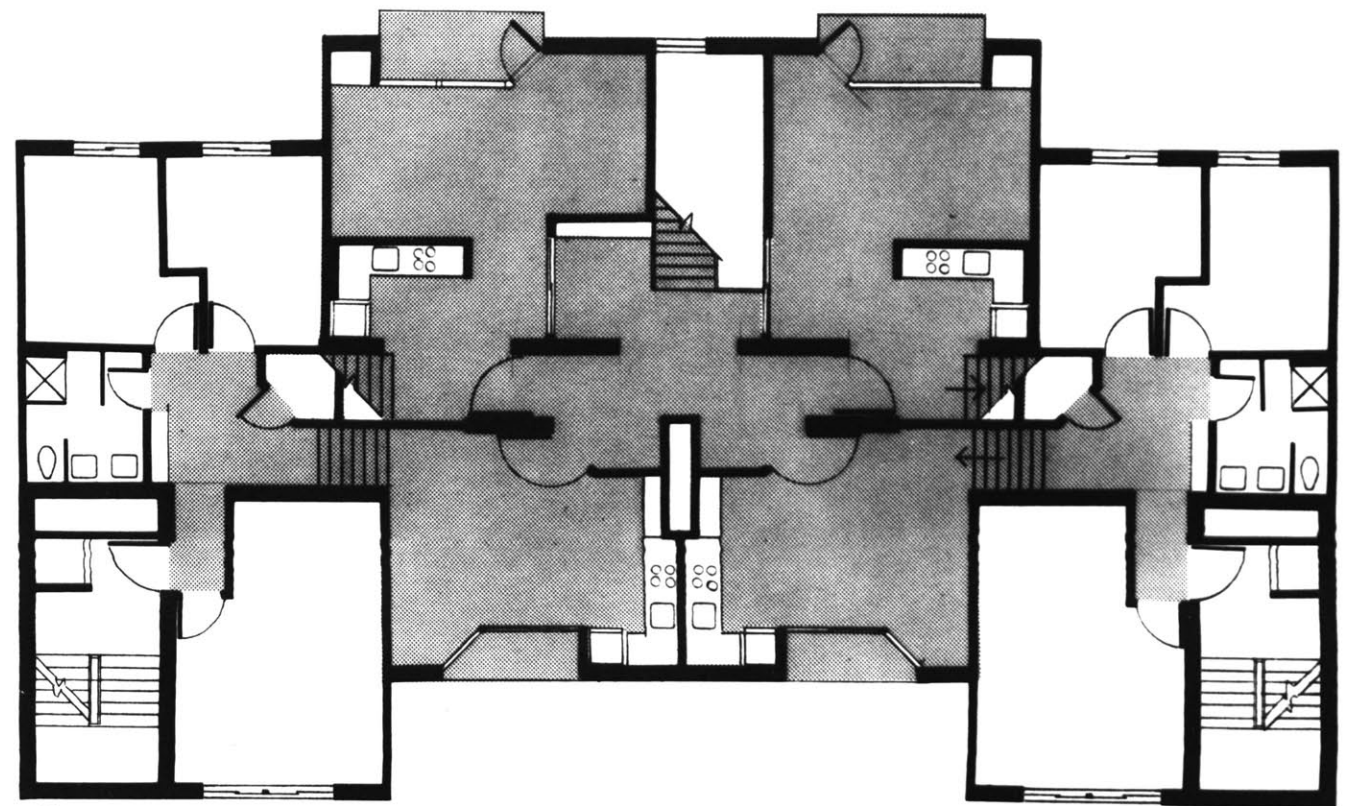
C. 36 occupants 12 linear 22 nodal 2 discrete 268 sf/person



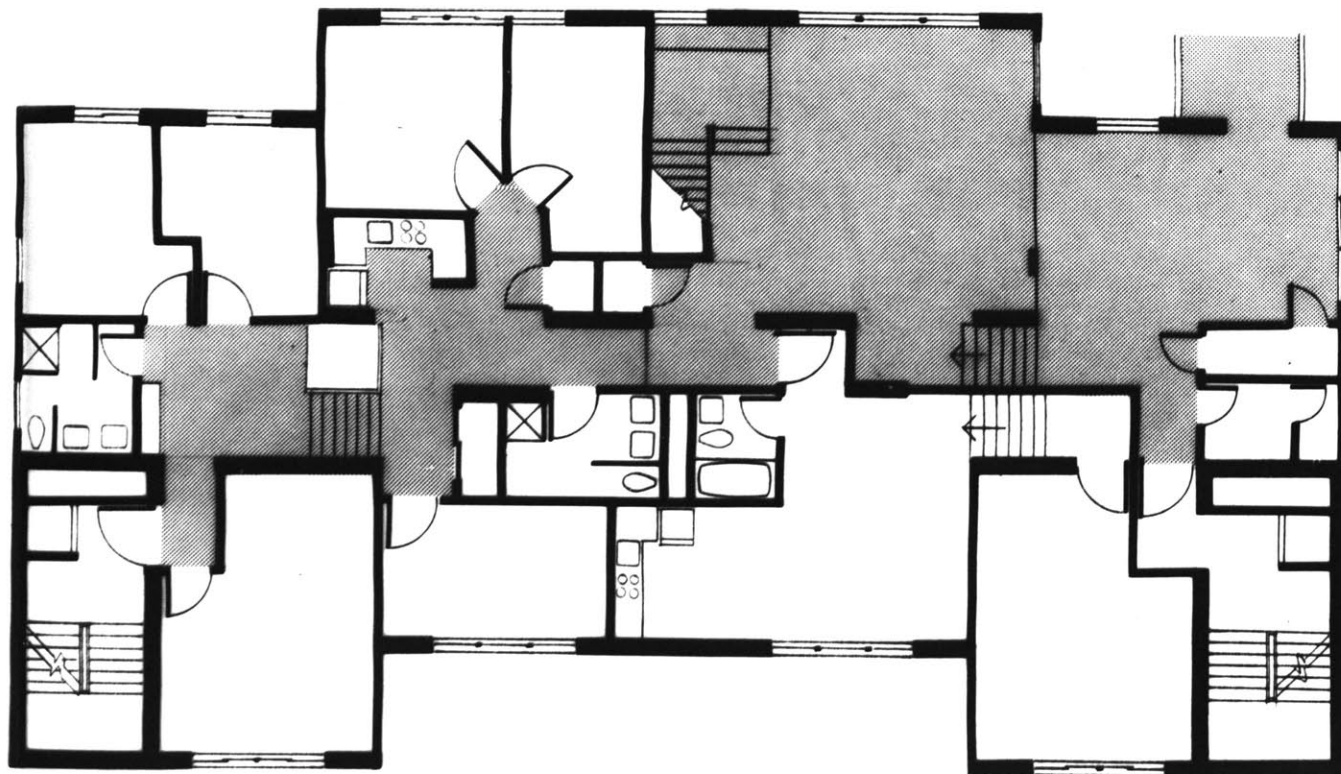
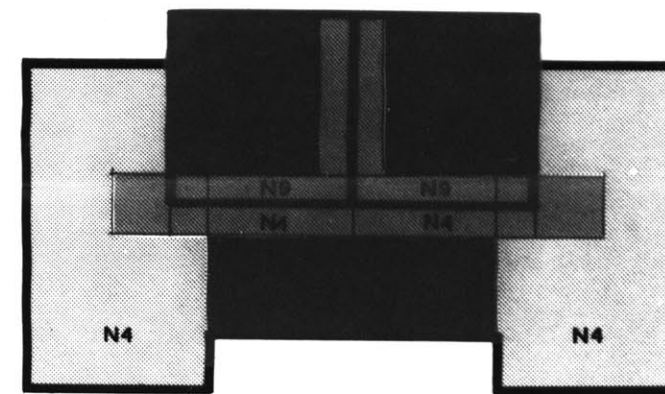
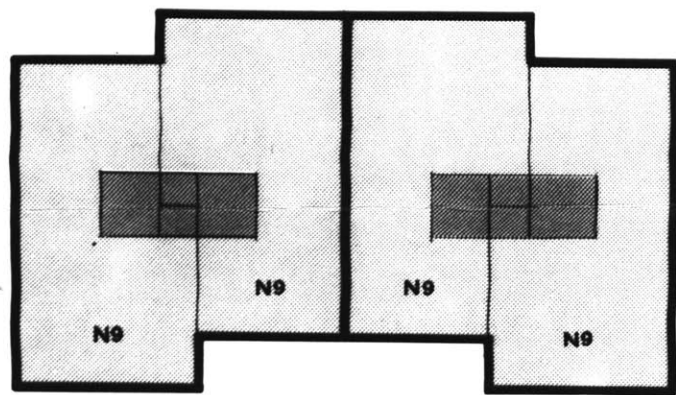
D. 34 occupants 32 nodal 2 discrete 284 sf/person



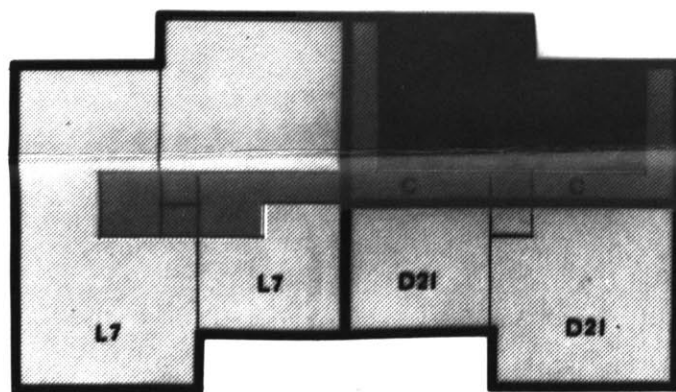
3



2



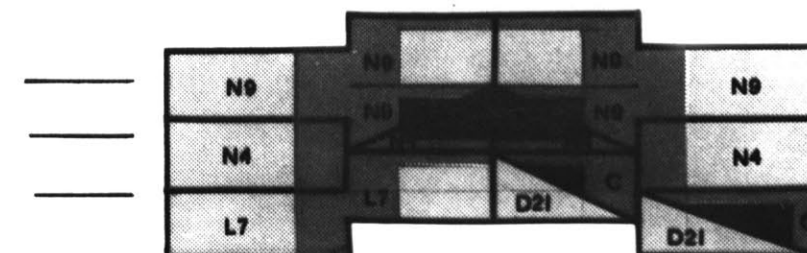
1

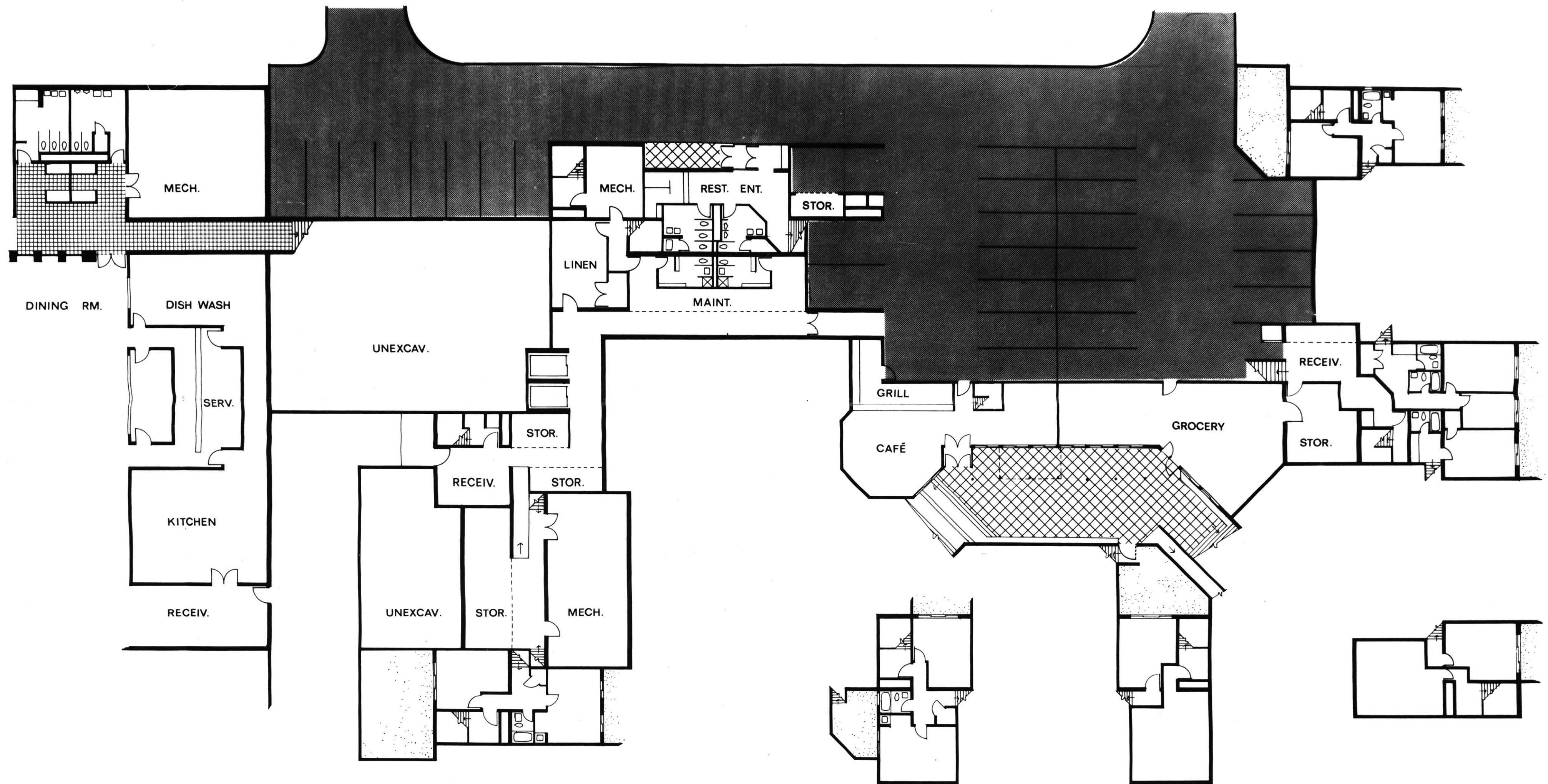


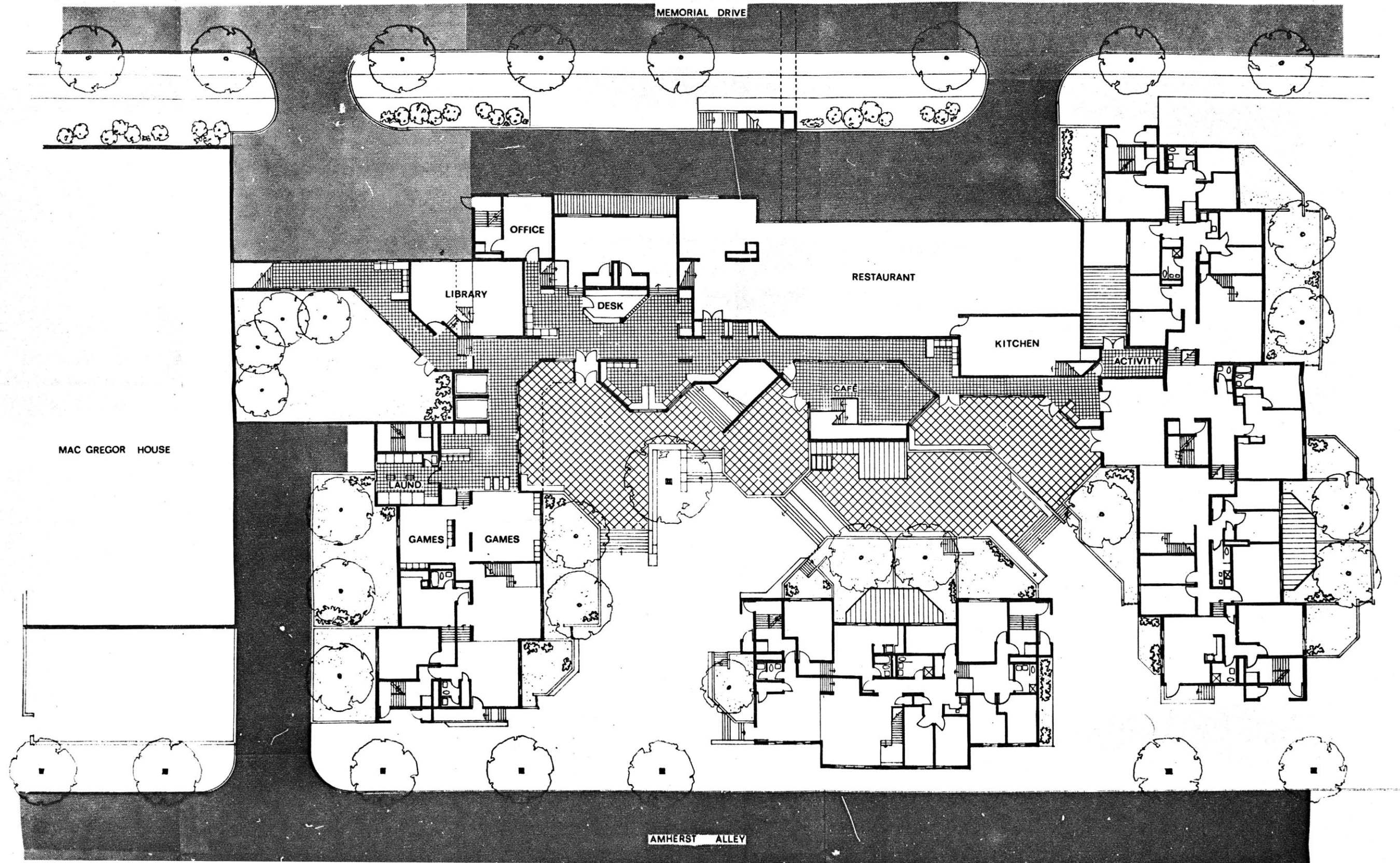
E. 35 occupants

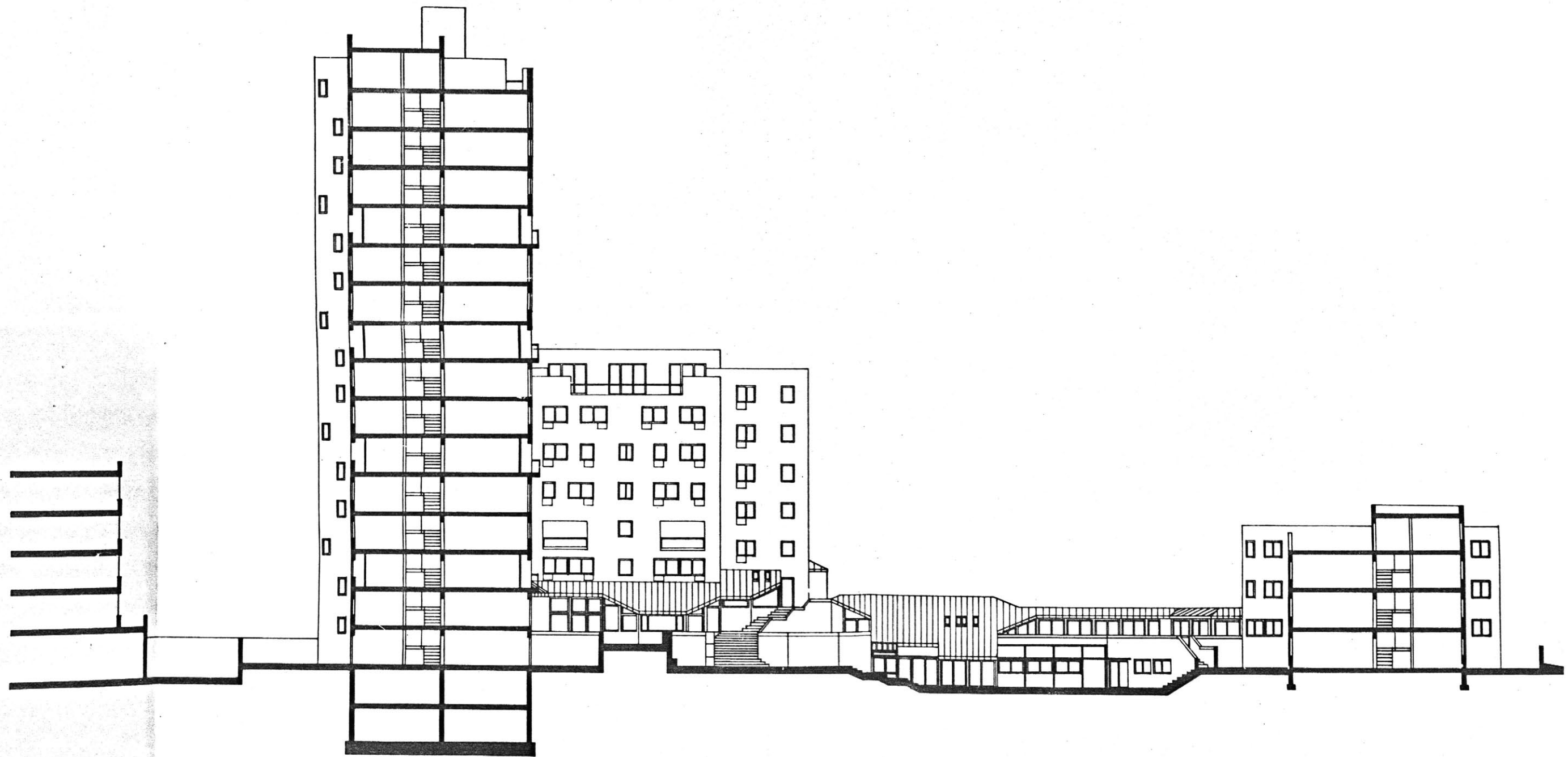
**7 linear
26 nodal
2 discrete**

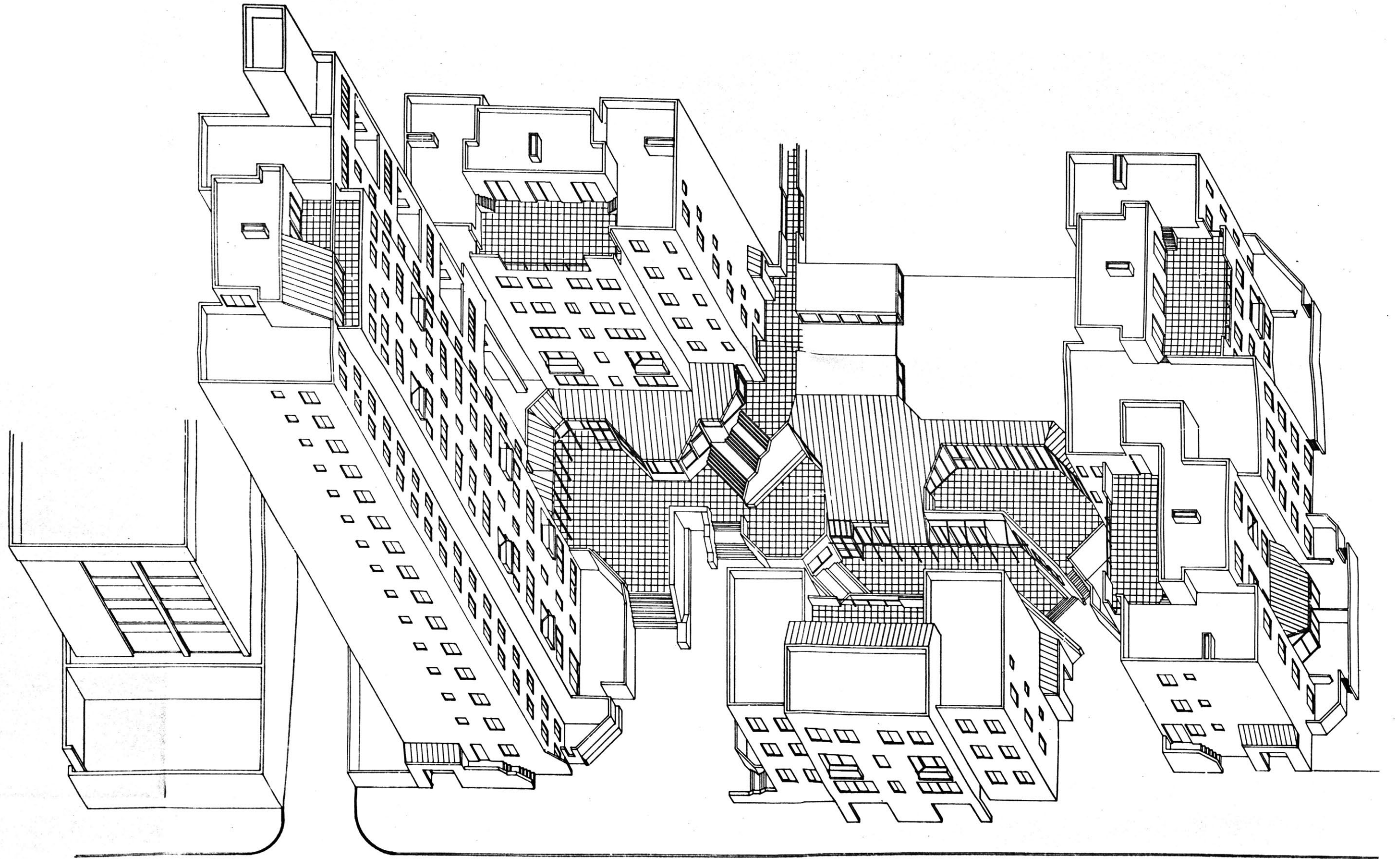
276 sf/person

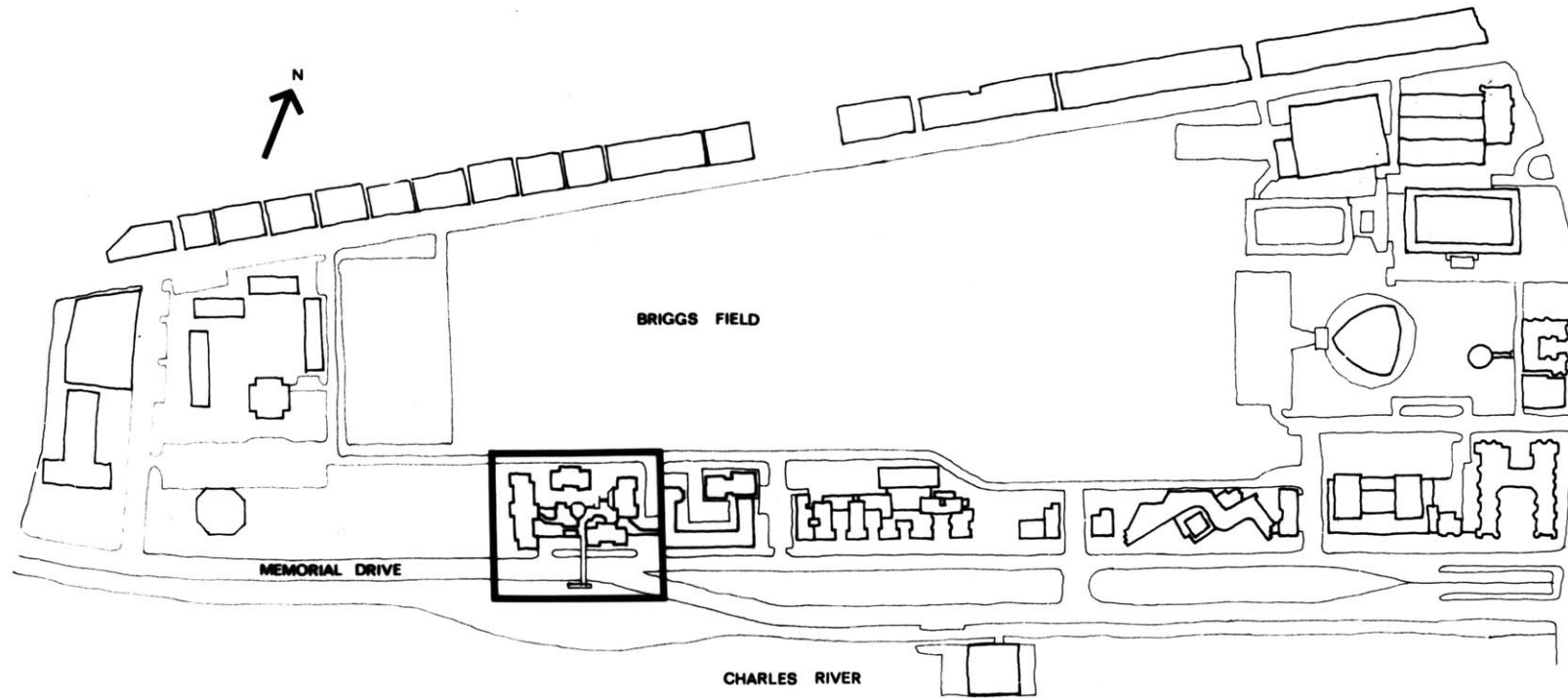












APPENDICES

APPENDIX A

Record of Response of Undergraduate Students in MacGregor House to Questions Regarding Desired Neighbors

Source: Survey Conducted through MacGregor House Committee 1972.

- Question 1: Desired neighbors in suite situation.
Question 2: Desired neighbors in entry situation.
Question 3: Desired neighbors in house as a whole.

Question	1	2	3
# of respondants	116	118	118
Other M.I.T. Undergraduates only	47%	36%	32%
M.I.T. Graduate Students	25	29	34
Married Students	19	23	30
Faculty or Staff Members	17	30	35
Students from Other Boston Schools	32	41	43

Note: Respondants gave multiple responses. Thus, columns are not per cent distributions totaling 100%.

APPENDIX B

Record of Response of Graduate Student Staff Members to Question Regarding Desired Neighbors in Future M.I.T. Housing Facility

Source: M.I.T. Planning Office: 1970 Housing Survey: Graduate Student, Technical Report, Table 13.2.

	Married		Sing- le	Camb- ridge
	Off Campus	Staff	Staff	Staff
# of respondants	207	156	153	169
M.I.T. Undergraduates	20%	19%	24%	25%
M.I.T. Single Graduate Students	37	35	78	63
M.I.T. Married Students without Children	73	81	70	76
Students from Other Universities	41	45	59	54
Other M.I.T. Faculty and Staff	70	79	73	76
M.I.T. Employees	41	42	41	43
Other Professional People	64	69	61	62
Members of the General Cambridge Community	43	39	39	38

Note: Respondants gave multiple responses. Thus, columns are not per cent distributions totaling 100%.

APPENDIX C

Record of Response of Undergraduate Students in MacGregor House to Question Regarding Desired Recreational and Service Facilities Near Residence

Source: Survey Conducted through MacGregor House Committee 1972.

Question: In your opinion, which of the following are beneficial to have in close proximity to your residence?

# of respondents	112
------------------	-----

Small Grocery Store	86%
20 Chimney's Type Cafe	51
Restaurant	25
Drug Store	29
Study Library	42
Ping-Pong/Pool Room	35
Seminar Rooms or Class Rooms	16
Music Practice Room	22
Computer Terminal Room	19
Dark Room or Hobby Shop	33

Note: Respondants gave multiple responses. Thus, columns are not per cent distributions totaling 100%.

APPENDIX D

Record of Response of Undergraduate Students in MacGregor House to Questions Regarding Size of Groups Sharing Certain Amenities

Source: Survey Conducted through MacGregor House Committee 1972.

Question: What is the ideal number of people with whom you would like to share a _____?

	bath- room	living room	kit- chen	bed- room
# of respondants	107	107	107	117
0	5%	0%	0%	79%
1	6	0	4	21
2	5	3	13	0
3	6	0	20	0
4	12	9	24	0
5	34	31	22	0
6	13	21	11	0
7	7	6	3	0
8	8	10	2	0
9	0	0	0	0
10	2	15	1	0
Above	1	6	0	0

APPENDIX D continued

Question: What is the ideal number of people with whom you would like to be identified as a social group?

# of respondants	92
------------------	----

0	3%
5	4
10	15
15	11
20	12
25	7
30	15
35	12
40	13
45	1
50	3
Above	6

APPENDIX E

Data Used by Rates Committee 1972 as a Basis for Distribution of Residential System Costs

Source: M.I.T. Housing Office

House	Variables and Values (Ratings)			
	Initial Occupancy	Net Use-able Area/Resident	Judged Quality	Total Rating
Baker	1949 (4)	322 (2)	2	8
Burton	1971 (6)	400 (4)	6	16
East Campus	1928 (2)	341 (3)	2	7
Senior House	1916 (1)	275 (1)	1	3
McCormick	1963 (5)	469 (5)	6	16
MacGregor	1970 (6)	423 (4)	4	14

APPENDIX F

Space Summary

(1) Community Means to Cross Memorial Drive

(2) Community Small Grocery Store

Floor Area: 1000 nsf

Requirements:

- space for refrigerated food storage/display
- space for produce storage/display
- space for canned goods storage/display
- check-out area
- stock room

(3) Community Cafe

Floor Area: 1000 nsf

Requirements:

- grill and service area
- seating at tables for 40 people

(4) Community Restaurant

Floor Area: 2000 nsf

Requirements: to be specified by tenant

(5) House Entry Hall/Foyer/Reception

Floor Area: 1500 nsf

Requirements:

- 40 sf bulletin board space
- reception counter, about 10 ft. long with space behind for 2 desks and chairs, sorting and supplies
- mail boxes
- several vending machines
- couches, lounge tables and several other seating spaces
- drinking fountain

(6) House Ping-Pong/Pool Rooms

Floor Area: 600 nsf

Requirements:

- spaces for one ping-pong table, one pool table and several pinball machines
- chairs or benches for observers

(7) House Laundry Room

Floor Area: 350 nsf

Requirements:

- 6 coin operated washers and dryers
- about 6 running ft. of counter top
- about 6 running ft. of hanging space
- laundry sink and shelving
- several chairs

(8) House Trunk and Dead Storage Space

Floor Area: 400 nsf

Requirements:

- several small individually lockable storage spaces

(9) House Offices

Floor Area: 300 nsf

Requirements:

- Superintendent's office with space for desk, chair, filing, storage and typing table
- student offices with space for several filing cabinets

(10) House Study Library

Floor Area: 900 nsf

Requirements:

- 8-10 individual study spaces
- reading, lounge chairs for 15
- 60 running feet of shelf space
- periodicals rack
- table and chairs

(11) House Activity Rooms

Floor Area: 400 nsf

Requirements:

- several small spaces to accomodate undesignated activities, each equipped with plumbing and ventilation outlets and acoustical isolation

(12) House Custodial Spaces

Floor Area: 1400 nsf

Requirements:

- 30 janitors' closets
- central storage facility with workbench and racks for tools and supplies
- locker, dressing and washroom area
- temporary trash storage spaces

(13) House Linen Storage

Floor Area: 400 nsf

Requirements:

- space for linen lockers accessible to residents
- adjoining space for storage and sorting

(14) Small Group Living Room

Floor Area: 25-40 nsf per resident using the space--
will vary with size of group

Requirements:

- space for couches, chairs, tables etc. appropriate to number of residents using space
- balcony if appropriate

(15) Small Group Kitchens

Floor Area: 5-15 nsf per resident using the space
will vary with size of group

Requirements:

- 30 inch stove
- at least 2 ft. of free counter space
- sink
- 34 inch opening for refrigerator
- 3 drawer cabinet
- over-the-counter cabinets

(16) Small Group Bathrooms

Floor Area: 20-25 nsf per resident using the space
will vary with size of group

Requirements:

- appropriate number of lavatories, water closets and shower/tubs
- space for storage of toilet articles, towels and bathroom supplies

(17) Small Group Storage

Floor Area: 2-5 nsf per resident using the space
will vary with size of group

Requirements:

- storage for assorted articles from books, clothes and personal articles to athletic equipment and hobby apparatus--easily dividable

(18) Small Group Common Room

Floor Area: 10-25 nsf per resident using the space
will vary with size of group

Requirements:

- space for couches, tables, chairs and possibly game table
- water fountain
- 2 unit bathroom for visitors

(19) Private Spaces

Floor area: 115 nsf for single room served by separate living room
220 nsf for double room served by separate living room
130 nsf for single room not served by separate living room.
235 nsf for double room not served by separate living room

Requirements:

per resident

- 75 cu. ft. of wardrobe space for storage of clothes, linens and other personal items
- 50 running ft. of open shelving for books, periodicals, stereos, records, clock, etc
- wall space for hanging posters, note boards etc.
- desk 54" x 28" x 30" high (minimum)
- bed 72" x 36" (minimum)
- chairs for use at desk as well as for lounging, reading

REFERENCES

- Adelman, Howard, The Bids of Academe, Praxis Books, Toronto, 1969.
- Ashley, Myer, Smith, Inc., Worcester State Housing Program, prepared for Massachusetts State College Building Authority, Cambridge, Mass., 1971.
- Becker, Howard S., Student Culture, in Lunsford, T. F. (ed.), The Study of Campus Culture, University Microfilms, Ann Arbor, 1963.
- Bland, John and Schoenauer, Norbert, University Housing in Canada, McGill University Press, Montreal, 1966.
- Browning, K. C., Study of the Socialization of M.I.T. Undergraduates in Two Academic Departments, S. M. Thesis, M.I.T., June, 1968.
- Bush-Brown, Albert, Dormitory Design: Economical Housing Is Not Enough, in Apartments and Dormitories, McGraw-Hill, New York, 1962.
- Clark, B. R. and Trow, Martin, The Organizational Context, in Newcomb, T. M. and Wilson, E. K. (eds.), College Peer Groups, Aldine, Chicago, 1966.
- Commission on M.I.T. Education, Creative Renewal in a Time of Crisis, M.I.T., Cambridge, Mass., 1970.
- Committee on Student Environment, Interim Housing Report, M.I.T., Cambridge, Mass., 1963.
- Committee on Student Housing, Report to the President, M.I.T., Cambridge, Mass., 1956.
- Cook, Nathan et. al., Status and Evaluation of the Faculty-Tutorial Residence Program at MacGregor House, M.I.T. (internal document), 1970.
- Cook, Nathan et. al., Residential Program Activities at MacGregor House, M.I.T. (internal document), 1971.
- Farmer, Margaret, Dormitories, in Bricks and Mortarboards, Educational Facilities Laboratories, Inc., New York, 1965.
- Goody, Clancy and Associ., Inc., M.I.T. - Burton-Conner, Description of Facility and Its Intentions, office paper.

- Katz, Joseph et. al., No Time for Youth, Jossey-Bass, San Francisco, Calif., 1968.
- Lambrinedes, Margaret, The Organizational and Psychological Effects of Student Housing on Students, S. M. Thesis, M.I.T., Cambridge, Mass., June, 1970.
- Leonard, George B., Education and Ecstasy, Dell Publishing, New York, N.Y., 1968.
- M.I.T. Planning Office, A Program for Undergraduate Men's Housing, August, 1967.
- M.I.T. Planning Office, Outline of a Program to Meet the Housing Needs of the M.I.T. Community 1968-1980, April, 1968.
- M.I.T. Planning Office, Statement of Goals and Objectives for M.I.T. Housing, Excerpts of statements from various Institute Reports, December, 1969.
- M.I.T. Planning Office, 1970 Housing Survey Graduate Students Technical Report.
- M.I.T. Planning Office, Residential Location of M.I.T. Students, Fall Term, 1971.
- Miller, Erving H., Put a Behavioral Scientist on Dormitory Design Teams, College and University Business, February, 1968, pp. 68-71.
- Pace, C. R. and Baird, Leonard, Attainment Patterns in Environmental Press of College Subcultures, in Newcomb, T. M. and Wilson, E. K. (eds.), College Peer Groups, Aldine, Chicago, 1968.
- Prescott, Samuel C., When M.I.T. Was 'Boston Tech' 1861-1916, The Technology Press, Cambridge, Mass., 1954.
- Riker, Harold and Lopez, Frank, College Students Live Here, Educational Facilities Laboratories, New York, N.Y., 1961.
- Rubin, Irwin M., Freshman Socialization: The Psychological Contract Between the Individual and the Institute, M.I.T. Working Paper No. 543-71, June, 1971.
- Snyder, Benson R., Student Stress, in Lunsford, T. F. (ed.), The Study of Campus Culture, University Microfilm, Ann Arbor, Mich., 1963.

Sommerkorn, Ingrid N., Education and Student Residence--
M.I.T.'s Undergraduate Residential Program Re-considered,
Education Research Center, M.I.T., Cambridge, Mass.,
March, 1971.

Stratton, J. A., The Institute and Its Fraternities, M.I.T.,
1962.

University Facilities Research Center, High Rise or Low
Rise? A Study of Decision Factors in Residence Hall
Planning, New York, N.Y., 1964.

Van der Ryn, Sim and Silverstein, Murray, Dorms at Berkeley,
Educational Facilities Laboratory, New York, N.Y., 1967.