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**RESTRICTIONS**

See Attached government Supplemental Information Sheet for Additional Requirements.

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LIVING IN THE COMMUNITY:
A STUDY OF GROUP HOMES FOR
MENTALLY RETARDED PEOPLE

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INTRODUCTION

All people are touched by the policies and practices of environmental design, obviously some in more complex and profound ways than others. Similarly, in a given situation, all of us consider ourselves special; in any particular person-environment transaction, it is the actor involved who feels profoundly affected. Yet, when it comes to the interaction of design and human populations, some populations have characteristics which add an extra dimension to design considerations. Design may have to be oriented to a special population's unique needs. Or, a special population may have unique outcomes to even sensitive design.

The purpose of this project is to examine the role of design for one "special" population and to focus on one particular situation: community homes for mentally retarded people. There are currently over 6,000 group homes for mentally retarded people in the U.S. alone, with many additional group homes being built, purchased or leased each year (Janicki, Mayada & Epple, 1983). Although many design and health resource practitioners have developed considerable experiences with such dwellings, the field is still beset with confusing and often contradictory recommendations (some authors advocate separating house parents' accommodations from that of residents; others recommend integrating them. Some authors suggest that homes should be large and open; others suggest they should contain many small private spaces, etc.) The purpose of this report is to examine these and other apparently conflicting claims and provide recommendations. The report is organized in three parts. First, a conceptual model is proposed, then previous work by other researchers is discussed. Finally, we discuss a study of sixteen group homes in Illinois and Georgia and provide recommendations.
Targeting, Customary Assumptions and Fit: A Model

Much of the discussion about homes for mentally retarded persons revolve around the extent to which that group should be targeted as potential users of the homes (as opposed to providing "normal" everyday settings) and the extent to which they meet customary assumptions about environmental capability.

Targeting

What do we mean by targeting? It is the extent that a person or group which uses or want to use an environment had their behavioral needs explicitly considered in the design and/or management of this environment. This view assumes the division of labor noted by nearly a century of urban sociologists as accompanying modern, urbanized societies (c.f. Fisher, 1976). For example, until the Nineteenth Century, almost all homes were built by the prospective occupants or were crafted for them (Fitch, 1973). In the years since, however, financial concentration and technological advances have increased the scale of design projects and separated designer and user by a welter of bureaucracies (Zeisel, 1975). Housing is now only rarely customer-designed by an architect for an individual user. Most housing is now built speculatively with support from financial institutions (with their own conservative design prerequisites for loans) and targeted for users who will only appear after construction, seldom having any contract with the designers. Public buildings are negotiated by offices of public works, as surrogates for employee and public users. City plans are more likely to be considered as subject to public (i.e., user) opinion and influence, but it is difficult to argue the public input has much precedent as a potent influence in comparison to professional, political, and economic interest (see, for example, Meyerson & Banfield, 1955; Michelson, 1976).
Targeting a user group varies in the amount of guesswork involved. In some forms of housing, an understanding of the make and the need to follow strict financial eligibility criteria make possible a relatively reliable production of subsequent users; knowledge or research about them helps to create a congruent design. In other situations, conditions may be more volatile, leading to inexact predictions or to heterogeneous user group. In some institutional settings and in large public environments, there will be multiple user groups, including socially-diverse subcultures, employees and customers, and different degrees of users (e.g., primary vs. secondary users, frequent vs. occasional users, year-round vs. seasonal users, etc.).

Substituting in certain respects for one-to-one contact between designers and users has been the development of both formal and informal sets of standards and guidelines regarding various levels of the environment, from plumbing and wiring to dwelling size and configuration to residential density on a site to land use mixtures to park and recreation access. These standards are intended to ensure no less than the minimum acceptable situations for what professionals and public officials view as the average citizen. The effects of some standards have been pervasive (such as FHA in the U.S. and NHA in Canada). Those accompanying government housing loans after World War II, for example, had far-reaching effects on the extent and relatively uniform design of suburban single/family housing, built to the virtual exclusion of alternatives for about twenty years.

Designers are not necessarily callous, but their structural removal from their ultimate clients and the need to target the latter in the process of design ends up in a situation where some users or potential users have simply not considered very explicitly. And while congruence in design is in any case not determinative regarding behavior, it is less likely that a person or group whose behaviors were not considered fully in the design process will find
a person-environment fit in the particular environment, particularly if someone has little power and is inarticulate, which is frequently the case with mentally retarded people.

Customary Assumptions

Nonetheless, all targeting persons will not react to or treat a given environment the same. Customary assumptions are made about the strength, sensory capabilities, means of access, time commitment, literacy, language capability, financial resources, and more, of users of a designed place or aspect of city infrastructure. Certain minimum levels of environmental competence are assumed.

How a group that differs from the modal person or group in a setting is treated depends partly on the philosophy behind design or planning. In some municipalities, states, and nations, design and planning are oriented to make possible participation by the greatest part of the population; the customary assumptions are consciously (usually by law) widened to include the handicapped, the illiterate, and the poor. Wheelchair accessibility, for example, has become the standard design procedures in certain jurisdictions, and even as far back as the building of the New York subway, color codes were adopted to enable use by those unable to read. Airports and highways are increasingly fitted with picture signs giving universal information without the need to know the local language. In other jurisdictions, however, customary assumptions are more restrictive. If those not meeting them are considered worthy and in need of services which customary assumptions do not permit, separate programs are created, usually on a restricted scale reflecting the degree of perceived size and influence of the targeting group. Institutions for those unable to meet the customary assumptions of the "normal" world have been an outgrowth for those with physical, sensory or mental handicaps. A major point of this report is to address the question: Do mentally retarded people fit the customary assumptions embedded in the design of group homes?
A REVIEW OF RESEARCH ON HOUSING
FOR MENTALLY RETARDED PEOPLE

Mentally retarded persons are a special population distinguished by their vulnerability: as individuals and as a group they often lack the training, ability, or power to determine their own fate. They are sometimes targeted in design but do not meet customary assumptions of environmental competence. As a result, mentally retarded persons are often provided with environments incongruent with their needs for development. Although environments for mentally retarded people have seldom been discussed explicitly in environmental psychological terms, the debate among policymakers, designers and others about appropriate models of care has often revolved around such issues. For example, questions have been asked such as: "How viable are large institutions for housing mentally retarded persons? What are the critical dimensions of living environments for such individuals?"

Within the past century and a half, public attitudes toward mentally retarded people have undergone several significant shifts. Many retarded people have been seen as objects of dread, reverence, menace, charity, obligation and love and these attitudes been reflected in the environments provided mentally retarded people and in the level and orientation of case (Heal, Seligman & Switzky, 1978; Wolfenberger, 1972). Previously cared for at home or crowded into poorhouses or lunatic asylums, in the 1840's and 1850's mentally retarded people began to be "targeted" by being housed in separate institutions in Europe and the U.S. Facilities in Europe were dominated by the anti-urban neo-romantic thinkers of the day. In an effort at rehabilitation, mentally retarded residents were given a short-term regimen of simple diet, clean air and exercise (Heal, Seligman & Switzky, 1978). In the U.S., Samuel Gridley Howe adopted the European model to American needs and produced a boarding home where students spent their school-age years, returning home during vacations and after their studies were
completed (Richard, 1909).

These early goals of preparing mentally retarded people for re-entry into society were quickly subverted: parental and social pressures caused institutions to grow and become custodial (Wolfenberger, 1972). By 1900, there were twenty-five state institutions housing over 15,000 residents in plantation-like settings complete with active farms, dairies and "villages" of dormitories. Residents were classified according to age, sex and mental abilities. By 1925 there were 50,000 mentally retarded people institutionalized in state facilities, and this reached a peak of over 200,000 in 1967 with over 135 facilities, which had a median capacity of over 1,000 residents (Scheerenberger, 1978). Since 1967, this has decreased to 150,000 or less, with the reduction mostly due to discharge of higher-functioning residents (Scheerenberger, 1978; Wiler, Scheerenberger & Intaglia, 1980).

This deinstitutionalization reflects the impact of several trends. First, over the past decades the definition of "mental retardation" has become more precise. Although still a somewhat crude classification, it has evolved from a vague notion of subnormal functioning, which might in fact have represented lack of education, senility or dyslexia, to a definition where the person must be both very low in intelligence as measured by a standard intelligence test and have very poor everyday adaptive functioning (Grossman, 1977). A considerable proportion of the people institutionalized in the 1960's and before are now not considered mentally retarded.

In addition, the concept of "normalization" has had considerable influence on deinstitutionalization of mentally retarded people. Normalization is defined in current accreditation standards as "the use of means that are as culturally normative as possible to elicit and maintain behavior that is as culturally normative as possible, taking into account local and subcultural differences" (Joint
Commission on Accreditation of Hospitals, 1971, p.1). Developed in
Scandinavia (see, for example, Bednar, 1976; Nirje, 1969) this
colorful concept has recently been whole-heartedly adopted in the United
States. (Even in 1983, some ten years after its broad U.S.
acceptance, it is difficult to find a single issue of a professional
journal in mental retardation without normalization being
discussed.) Normalization has motivated the recent creation of a
large number of group homes, foster homes and other "community
settings," with a recent survey finding over 6,000 group homes in
the U.S. alone (Janicki, Mayada & Epple, 1983).

The normalization principle has at its core an analysis of the
causes of social stigmatization: a theory about why some groups
such as mentally retarded people are labelled different, strange,
subnormal or intimidating. Advocates of this position argue that,
rather than flowing from some immutable physical characteristic,
these labels come from the physical isolation of some groups and
their relegation to abnormal and inferior standards of treatment
(Wolfensberger, 1972). Particular attention has been focused on the
destructive impacts of large custodial institutions, where residents
lack the freedoms enjoyed by most people in everyday society:
residents wake up at a common hour, independent of their
individual needs or schedule, go to sleep at the same time, eat the
same food at a pre-arranged hour, wear assigned (and often cast
off) clothing, live and work in the same building (see, for example,
Gunzberg, 1973). It is argued that this routine is dulling and limits
development and may in fact cause many of the bizarre behaviors
normally associated with mental retardation.

It is also argued that the physical isolation of mentally retarded
people deprives others of the opportunity for everyday contact with
them and makes it difficult for mentally retarded people to be
viewed by society as individuals who are diverse and non-
threatening.
As it has been adopted in the U.S., normalization has several underlying axioms and assumptions (Butler & Bjaanes, 1978):

1. It is right of everyone to have patterns of everyday life that are as similar to the mainstream as possible, such as having a sexual and romantic life, a physical separation between work and living, a homelike living environment, and so on;

2. Institutions are inherently incapable of supporting growth and development and as a result should be used only for people requiring medical support;

3. Smaller, more homelike community facilities are inherently more supportive of development by residents.

These statements have interesting environmental psychological implications. The first is an ethical position which is independent of any real-world implications -- normalization should be accomplished because it is "right," regardless of an impact on residents or society (Knight, Zimring & Kent, 1976). However, the last two are environmental-psychological hypotheses: institutions have negative impacts on residents' behavior and well-being, and community facilities have salutary ones.

Based on these principles and because they can be less expensive to run than large institutions, small group homes and other community-oriented living facilities have burgeoned, but the empirical evidence supporting them is limited and provides a mixed picture (Landesman-Dwyer, in press, b). In the next several sections we will consider this evidence and consider some necessary further research.
Specific Research On Environments For Mentally Retarded People

In this review we will consider research of primary interest to environmental designers: research linking the behavior or mentally retarded people to their physical setting. However, as the model described above would suggest, it is impossible to ignore social and organizational dimensions of treatment. Especially for mentally retarded people, who tend to be dependent on care-providers, the style and orientation is critically important. However, because of the scope of this project, we will only consider research that links treatment to environment and resident behavior. Also, because of the scope of this project we will not cover the impact of physical disability in depth.

Ergonomic Studies

Early theoretical discussions of normalization stressed the importance of the near environment, of normal door handles and bed design and furnishing, to therapeutic progress by mentally retarded people (see, for example, Dybwad, 1970; A. Gunzberg, 1968; Norris, 1969). H. Gunzberg (1973), although emphasizing the importance of training practices, also stressed the importance of hot and cold taps for hot water, hooks for hanging clothes, and domestic-type furniture. Gunzberg and others see at least two kinds of advantages as resulting from designs like those found in everyday settings: development of the individual because he or she is dealing with a more stimulating and variegated environment, and an alteration of attitudes by staff and community because symbols of inferiority and stigmatization are eliminated.

The rapid proliferation of group homes with normal furnishing is testimony to the persuasiveness of such arguments. However, there have been relatively few empirical studies considering the impacts of normalized settings and even fewer specifically focusing on ergonomic elements. (In the next section we will review the
studies that consider normal environments more generally.) In one exception, Reizenstein and McBride (1973) evaluated a small village for mentally retarded people that housed residents in two small houses and had a sheltered workshop and meetinghouse on the campus. Although Reizenstein and McBride performed no numerical analysis, their interviews suggested that the generally-positive attitude of staff was due at least in part to the homelike furnishings.

Similarly, in a larger study, Bakos et al (1979) studied group homes for psychiatric patients and for mentally retarded people and found that small-scale ergonomic issues, such as provision of adequate storage, were very important in predicting resident satisfaction.

In sum, the results of the handful of available ergonomic studies are suggestive but hardly definitive. Also, these studies lack an empirical analysis of the physical, ergonomic environment -- it is unclear the precise dimensions of the environment that are most important. However, there is a reoccurring theme: ergonomic designs which are simple, durable and well designed can increase the competence of mentally retarded people. (This conclusion is even more significant for multiply-handicapped mentally retarded people, who may have mobility, vision, hearing or coordination problems.)
Research On The Nature Of Living Environments

In comparison to the relatively small amount of research considering ergonomic qualities of settings, there has been a relatively large literature examining the nature and impact of environments more generally.

As we have suggested, the assumption that the sum total of the experience of living in a large institution is harmful has been a major influence in deinstitutionalization. Typically, a resident of such a facility may sleep on a ward with from four to twenty-five other residents, and the entire facility may house 1,000 residents or more; all residents generally wake up, eat and sleep at the same time; training opportunities are limited and staff themselves may be poorly trained and unmotivated. However, the consensus about the destructiveness of institutions is often based on ideology rather than data and it is unclear which of many factors -- size of ward or institution, rigidity of routine, etc. -- affect residents and in what ways. As a result, several studies have focused on institutional change, where traditional institutions were altered to provide smaller wards or more control over individual space.

In addition, the rapid growth of community living facilities has generated a number of studies looking at the impacts of moves to community settings or comparing the impacts of different sizes and types of facilities. Although the results of these studies are complex, they seem to indicate that common intuitive descriptors of environments such as "institution" or "community alternative" are not well defined and are not good predictors of the well-being of mentally retarded people or of the quality of care they receive (Landesman-Dwyer, 1981).
Research On Institutional Change

Several researchers have studied the impact on residents and staff of the alteration of large institutions. These studies have been motivated both by an interest in identifying key elements of institutional environments and by an interest in demonstrating to decision-makers that institutional reform has practical impacts on residents and staff.

Three recent large, longitudinal, observational studies suggest that the transition to smaller, more easily controllable institutional settings may have positive impacts on residents. Zimring, Weitzer and Knight (1983) studied design changes at a large state institution. Because of a court mandate, the facility was gradually renovating forty-year-old "cottages" that each housed fifty-five residents into somewhat more homelike facilities. The staggered renovation schedule allowed for a multiple baseline research design, with some groups in unrenovated buildings serving as natural controls for those in renovated ones. Whereas there was not random assignment of residents of buildings, groups were matched on key demographic variables such as IQ and length of institutionalization, and the two and one-half year data collection allowed multiple measures to be recorded on most of the mentally retarded residents, with within-subject comparisons.

Ninety-two randomly selected residents and thirty-three staff were observed using structured behavior mapping techniques. In addition, several other measures were used such as analysis of resident records, interviews, participant observation, analysis of critical incidents, experimental simulation of the acoustic environment, and measurement of light, heat and noise (see Knight, Weitzer & Zimring, 1978; Zimring, Weitzer & Knight, 1983 for more detail).

The renovation schedule allowed the comparison between the traditional institution -- which had undifferentiated sleeping wards
for twenty-five residents and hard, unadorned dayhalls -- with three renovated schemes: modular units, where hospital doors on their sides were used as four and one-half foot-high partitions to create semi-private spaces in the existing dayhalls and dorms; a suite-type arrangement, where three 3-to-4 person bedrooms were clustered around a small lounge; and a college-dorm-type renovation of a more recent (1968) building which provided two wings of single and double bedrooms flanking a central bathroom-and-lounge core.

Although the architects and administrators felt that the suite arrangement would be best because of its grouping of residents into small clusters and its more homelike appearance, the college-dorm arrangement was most positive by far. In that design, even very low functioning nonverbal residents were more alert and less withdrawn. Higher functioning residents were more verbal and less aggressive, and were more positive in their verbalizations. Results of the interviews, participant observation and other methods suggested these impacts were not apparently due to the "normalization" of the setting, at least as interpreted by the architects and administration. Rather, the changes could be explained, at least in part, by the increase in opportunity for control of social interaction provided by physical characteristics, such as the dorm's single and double bedrooms, its corridors which provided semi-private under the control of a small group, and other clear territorial markers, such as fire doors which separated the hallways and indicated they "belonged" to residents on the given hallway.

In a similar study, MacEachron (1983) studied 289 mentally retarded people in a large state facility. Residents were assigned to fifteen homogenous sampling groups. From within each group, residents were randomly assigned to one of two settings: fifteen new cottages on the grounds, or the existing traditional wards. Residents were evaluated after one year using the Adaptive
Behavior Scale (ABS), a diagnostic test administered by building staff or supervisors (Nihira, Foster, Shellhaas & Leland, 1974). In addition, MacEachron recorded a large amount of information about each setting (size, staff-client ratio, etc.) and administered standard instruments to assess treatment orientation and "normality" of setting. Her results were quite complex. She found that whereas only seven of the fifteen experimental groups in the cottages had statistically higher means than their controls on adaptive behavior, the overall pattern of means revealed a positive change from institution to cottages. When she disaggregated her data she found three measures to be the best environmental predictors of positive difference in adaptive behavior: greater ability for physical environment to be used by people at their own discretion (a dimension similar to the "opportunity for control" found to be important in the Zimring, Weitzer & Knight, 1983 study); management practices that were more resident-oriented as opposed to being institution-oriented; and participation in programs. The strongest predictor overall of adaptive behavior was IQ.

In a third study, Landesman-Dwyer (in press [a], in press [b]) compared the adaptive behaviors of mentally retarded residents who moved into new duplexes on the grounds of a large institution to others who remained in the traditional institution. Because of the policies of the facility, some residents were randomly assigned to settings, whereas others were assigned to the new settings for clinical reasons. Landesman-Dwyer and her research group used a 69 category code to observe 160 residents for a two year period: from one year prior to the move to one year after. Her findings were somewhat equivocal, with only limited behavioral changes occurring after the moves to the duplexes. The largest change was a significant increase in TV watching. She did find residents with different initial behavioral patterns reacted differently to the move. For example, the group who was the most social at the outset was originally paid most attention by the staff, but lost this distinction by the end of the observation.
In a similar study, Hemming, Lavender and Pill (1981) arrived at somewhat different results. They compared fifty mentally retarded people who stayed in a large facility to a matched sample who moved to small bungalows on the hospital grounds. All residents were assessed periodically for three years using the Adaptive Behavior Scale and the treatment orientation was assessed using the Child Management Scale developed by King, Raynes and Tizard (1971). They found treatment in the bungalows to be more resident-oriented than that in the traditional dorms. Residents in the bungalows significantly increased their level of positive adaptive behaviors.

Taken together, these studies of institutional change suggest that a general improvement in the living environment, including providing small groups of residents and new surroundings, generally seem to aid adaptive behavior in residents. Although it is hard to separate specific elements, several of the studies suggest that an increase in the opportunity for personal control by residents may be contributor to improvement in adoptive behavior.

Comparisons Between "Community Alternatives" And "Institutions."

Although the superiority of "community" facilities over large institutions is well accepted on moral grounds, until recently little data has been available to judge this supposition. However, several studies in the past few years suggest that greater growth in adaptive skills does occur in community settings, but that it is unclear what the relevant dimensions of "community" and "institution" are.

For example, two recent studies compared matched samples of people living in community settings to those living in institutions and found differences favoring community living. Schroeder and Henes (1978) tested the adaptive functioning of nineteen mentally
retarded people in four group homes and of a matched sample in an institution, and retested this group one year later. They found that the community group had progressed significantly further, with most of the difference due to improvements in communication skills. Similarly, Conroy, Efthimiou, and Lemanowicz (1982) compared seventy people who moved to community settings to a matched sample who remained in the institution. The movers improved their adaptive behavior as measured by the Adaptive Behavior Scale, whereas the people who remained in institutions did not. (Given the potential inferential problems that may occur with quasi-experiments, including situations where matching may have unanticipated consequences, these studies need to approached somewhat cautiously.)

Whereas the above studies discovered fairly general progress, Kleinberg and Galligan (1983) found patterns of improvements in adaptive behaviors after twenty mentally retarded adults moved to community residences: significant improvement in adaptive behaviors occurred only among behaviors already in the residents' repertoires, such as socializing, and not in others that they did not currently employ such as self-direction. This is similar to findings of other researchers such as Aanes and Moen (1976), Fiorelli and Witt (1981). Kleinberg and Galligan (1983) concluded that this pattern of improvement was due to the everyday life patterns of the residences which required a large amount of domestic and hence these behaviors were in the repertoires of many residents. However, activity and social interaction improvement in realms such as vocational skills are not likely to occur without conscious training because they were not normally present in the homes. Kleinberg and Galligan (1983) suggest that the quality and orientation of training may be more important than whether a facility is located in the community or in an institution.

A possible contaminating factor in research focusing on the impacts of moves from institutions to the community is the impact of the
move itself. Several earlier studies of institutionalized elderly people being involuntarily relocated have suggested that such a move may be extremely stressful and may in fact result in a higher death rate (see, for example, Aldrich & Mendkoff, 1963; Bourestom & Tars, 1974; Jasnau, 1967. Heller, 1982, provides a careful recent review.) Such dramatic effects in geriatric populations raise questions about the impacts of moving on younger mentally retarded people. The literature does not provide evidence of increased mortality, but several studies show some negative impacts on adaptive functioning. Cohen, Conroy, Fraser, Snelbecker & Spreat (1977) administered the Adaptive Behavior Scale to ninety-two severely and profoundly retarded people who moved from a large (1,100 residents state facility to a somewhat smaller (150 resident) one. They found that higher functioning residents became more withdrawn after the move and decreased their language functions, whereas lower functioning residents actually improved in domestic activity, self-direction and responsibility, but also increased maladaptive behaviors. In contrast, Carsrud, Carsrud, Henderson, Alisch and Fowler (1979) found that profoundly retarded residents decreased their adaptive behavior after relocation. Preparation may at least partially ameliorate these effects. Weinstock, Wulkman, Colon, Coleman and Goncalves (1979) found that when residents were provided a tour and extensive explanation of the new facility prior to the move, they showed no difference in adaptive behavior from a matched sample remaining in the institution.

Population, environmental and treatment differences may account for the different effects found in these different studies. A number of studies have found differential reactivity to environments for people with different intellectual and functional abilities (see, for example, Hull & Thompson, 1980; Landesman-Dwyer, Stin and Sackett, 1978; MacEachron, 1983; Zimring, Weitzer and Knight, 1983) and the relocation studies have examined individuals with somewhat different abilities. The Weinstock et al. (1979) study, particularly, involved quite capable residents, and such a
preparation procedure may be less effective for lower functioning individuals. Evidence from other, non-retarded populations suggests that people pre-disposed to depression or neurosis have more severe reactions to relocation (Heller, 1982). We are unaware of studies of relocation of mentally retarded people that have examined these variables. Also, Heller (1982) suggests that for non-retarded people, the impact of moving may be mediated by the perception of the relative quality of the new and old setting. Whereas the Weinstock et al. (1979) study suggests that this mediator may affect at least some mentally retarded people, its generality has yet to be determined.

To summarize the research on comparisons between community alternatives and institutions, it appears that community alternatives often foster greater improvements in adaptive behavior, and particularly in self-help, socialization and communication. However, it remains unclear which of the many differences between those setting types are most important, although several studies suggest that the everyday domestic patterns required in these facilities may account for many of the differences. Interpretation of this research is complicated by the disruptive impacts of the relocation itself.

Studies Of Community Residences

Several studies have examined differences between community facilities, and have found that environmental differences affect behavior. For example, in a large study of 245 mentally retarded residents of eighty-seven facility care homes, Eyman, Demain and Lei (1979) studied the relationship of PASS 3 ratings of the normalization of the residences to three consecutive annual Adaptive Behavior Scale ratings of the residents. Using path analysis they found that high PASS 3 facility scores on location of services, comfort and appearance appeared to predict significant positive change in personal self-sufficiency by residents. In an
observational study of 406 residents and staff living in twenty

group homes in the State of Washington, Landesman-Dwyer, Stein

and Sackett (1978) found that residents in older buildings left the

residence more often than did residents of buildings built specially

as group homes. Also, group homes that were owned as part of a

chain had more inactivity by residents than did homes under single

ownership.

In a study that included both group homes for psychiatric patients

and group homes for mentally retarded people Bakos and his

colleagues (Bakos et al, 1979) studied fifteen residences using

observation, questionnaires, interviews and other methods. They

found that a more resident-oriented treatment orientation predicted

several positive differences in resident behaviors, including more

cooperation and more talking with others. One longitudinal study

has found, however, that the positive results found by Landesman-

Dwyer and her colleagues and by Bakos and his colleagues may not

persist. Birenbaum (1980) found that as residents lived in the

community for several years they made progressively fewer visits

outside the home and had a more constrained range of activities.

In addition, several studies have examined differences between

group homes and family-care homes, with mixed results. Baker,

Seltzer and Seltzer (1974) examined a range of living alternatives

and found that residents in group homes were given more in-home

responsibility and were more likely to have contact with the

community than were family-care residents. Schreerenberger and

Felsenthal (1977) found that family-care homes tend to have a

structured schedule. Willer and Intaglia (1982) found that family-

care residents displayed fewer behavioral problems than did group

home residents, but were also more passive and less assertive. (It

would seem plausible that this finding might result from a lower

amount of activity in family-care homes.)

In sum, there seems to be evidence for the differential impact on
residents of different community living alternatives. Good comfort and appearance seem to be related to improved self-sufficiency by residents. Difference in treatment, such as orientation of care, also seem to affect resident behavior. However, the research literature does not yet allow a critical question to be answered: what environmental and treatment qualities allow the salutary effects of a group residence to persist?

Size

Size, defined as overall capacity or the size of the living unit, enters into most general discussions of environments for retarded people, with the most overall conclusion being that settings that are larger are dehumanizing and impersonal and have a negative impact on residents. (It is interesting to note that without acknowledging the link, many discussions of size of living environments for mentally retarded people describe large settings in terms similar to those ecological psychologists use in describing "overmanned" settings: the individual's contribution is devalued, each person performs fewer activities, and so on.) However, the research on overall capacity of the facility has not borne this out (see Balla, 1976; Baroff, 1980; Landesman-Dwyer, 1981 for reviews). Most studies considering size have found that whereas there were differences between general types of facilities -- such as group homes versus large public institution -- there were no consistent relationships between size and quality of care on resident behavior within type. For example, King, Raynes and Tizard (1971) developed a Child Management Scale to assess the treatment orientation of a setting (resident-oriented versus institution-oriented). In a field study of ten institutions including a large array of facility types (children's homes, hospitals, hostels, etc.) they found great differences between types -- hostels were much more resident-oriented than hospitals -- but that the difference within type were apparently unrelated to overall capacity. In any case, there is no necessity that size be related to the relationship
between number of persons and number of valued roles to be fulfilled in an institution, even though this ratio was found to vary by size in studies of overmanning in schools (Barker & Gump, 1964.)

McCormick, Balla and Sizler (1975) used the Child Management Scale to compare four size classes of facilities: large central institutions (with a population of over 1,000 residents); medium-sized regional centers (150-300 residents); small regional centers (10-116 residents); and, group homes (7-57 residents). As in the King, Raynes and Tizard (1971) study, they found dramatic differences between facility types yet few differences attributable to size within type. However, they did find that the size of the living unit (defined as number of residents) predicted orientation of care, with smaller units being more resident-oriented. This finding is corroborated by Witt (1981) who found that the social maturity of a group of ninety-five mentally retarded residents increased when ward populations were decreased from 30-35 to 14.

An interesting question about research considering the impact on resident progress of environmental qualities such as size is what baseline growth to expect. Balla, Butterfield and Siegler (1974) studied 103 mentally retarded children in four institutions ranging in size from 2,012 residents to 383 residents. They found overall improvements in mental age in all settings over time but no relationship to the size of the facility.

An overall conclusion of research focusing on size is that within a facility type, overall size is not a reliable predictor of treatment orientation or quality of care. In fact, in an observational study of twenty group homes in the State of Washington, Landesman-Dwyer, Sackett and Kleinman (1980) found that residents in larger group homes were actually more social than those in smaller settings. Bjaanes and Butler (1974) found similar results when they compared the behavior of ten individuals in two group homes. And
compared the behavior of ten individuals in two group homes. And in a study of 160 facilities in southern California ranging in size from one to ninety-five residents, Butler and Bjannes (1978) found that smaller facilities were often actually less therapeutic than larger ones because they tended to take less advantage of outside resources. Size of the individual living unit does seem to be important, with smaller units generally contributing to increases in adaptive behavior by residents and treatment practices that are more resident-oriented by staff.

Summary And Conclusions: Research On Environments For Mentally Retarded Persons

This research can be viewed from the perspective of the model we have described above, where the impact of the environment on behavior can be defined in terms of individual needs and abilities, design of the physical environment and social and temporal organizational factors. For mentally retarded people, individual needs and abilities have been demonstrated to affect environment-behavior interaction in a variety of complex ways. In terms of predictor variables, many studies have found that IQ is a significant predictor of the effects of normalization of living facilities on residents. As for outcome variables, several studies have shown that living in smaller, more homelike community facilities can have positive impacts on adaptive behaviors, and primarily on communication and socialization. One training program that improved residents' skill prior to relocation found that the training ameliorated the negative impacts of the move (Weinstock et al, 1979).

This research has also focused on the design of the physical environment. Whereas several authors have attempted to catalogue the physical qualities of normality or institutionalization (see, for example, Gunzberg, 1968; Pederson, 1970; Rivlin, 1978; Rivlin, Bogert & Cirillo, 1981), empirical research has only recently begun
to untangle the critical issues. As we have discussed above, studies comparing significantly different building types, such as large institutions with small group homes, have emerged with reasonably consistent findings: community living enhances growth in adaptive behavior. However, it is difficult to separate the effects of physical environmental differences from those caused by varying approaches to training. Several studies have suggested that the overall size of a facility may be less important than the size of a living unit. Several studies have also suggested that ergonomic qualities of environments may be important: the simplicity of controls, availability of props, and so on. In addition, several studies have found that a critical aspect of environments for mentally retarded people is the extent to which they support the control of social interaction by residents. Even for people labelled severely or profoundly retarded it is important to provide private rooms and well-marked, controllable semi-private spaces.

A number of social and organizational factors have emerged as well, and in fact, some researchers have proposed that treatment orientation by staff may be more important than physical environment. The relationship between size and treatment is not always what had been expected: larger community facilities may have more community contact than do smaller ones. Also, there is apparently at least in some residences, a decrease in community contact over time.

Research on environments for mentally retarded people is marred by serious methodological and inferential problems. Because of ethical and therapeutic concerns, few studies have employed random assignment, sample sizes tend to be small, and causal inferences are difficult to make (see Cook & Campbell, 1979). A larger number of studies have used matching, but matching may have serious unpredictable systematic effects on the results depending on the relationship of the matching variables to the predictor and outcome variables. More attention needs to be given to these inferential
problems, and wherever possible experimental or even quasi-experimental design should be employed (Cook and Campbell, 1979).

There are several significant points of interaction between design, treatment and residents' skills and abilities. The design of the physical environment provides or eliminates training opportunities; it allows mentally retarded people to operate independently or only with help; it establishes mentally retarded people as equal or as inferiors. What remains is to better understand the relationship between specific needs and abilities, specific physical settings and specific social and temporal factors. Studies such as those by Zimring, Weitzer and Knight (1983) suggest that whereas non-retarded people may thrive in suite-type settings, mentally retarded people who may be less socially skilled, may require more concrete ways to control social interaction: private rooms, closeable doors defining semi-private space, and so on. In other words, to actually understand person-environment fit, we need to develop a taxonomy of person, situation and environment. The old labels of "institution" or "community" are not of much value in targeting environments for this special population, and neither are customary assumptions that accompany the labels "retarded" or "normal." What should replace them? In the study of community homes, described below, we attempt to develop more inclusive and robust descriptions of settings as a vehicle for understanding how such environments for mentally retarded people actually operate.
A STUDY OF GROUP HOMES FOR MENTALLY RETARDED PEOPLE

Introduction

As was described above, the evolution of group homes represents a shift in targeting and in conventional assumptions. Whereas early approaches to mental retardation by reformers such as Samuel Gridley Howe focused on its transitory and changeable nature—they sent "students" home during vacations and at the end of training -- assumptions about the immutability of "idiocy" and the economic advantages of centralization soon led to the development of large institutions. More recently, the broad acceptance of the normalization principle has resulted in a lack of special "targeting" for mentally retarded persons (in fact, diagnostic procedures such as PASS3 downgrade a facility if it contains elements not resembling a loosely-defined suburban home). To help guard against "targeting," many jurisdictions emphasize on the rental and purchase of existing homes rather than designing new specially-built group homes.

The shift in targeting (or lack of it) and in customary assumptions raises a significant question: to what extent is the suburban home the appropriate model for housing independent mentally retarded persons? (Whereas there is no easy definition of appropriateness, for the purposes of this study it was defined as the satisfaction of residents and staff as well as the ability of the facility to support training and day-to-day living).

The Homes And Residents

Like community homes nationally, the homes studied in this project are diverse in architectural style and in the residents who live in them. Most of the homes, 10 of 14, were not designed as group homes and reflect both the diversity of private homes in Illinois.
and Georgia, and the politics and economics of the group home movement. They often have special characteristics that make them relatively inexpensive to lease or purchase. Many homes are larger than suit most 1980's families or are isolated in the country or in transient light industrial or lower middle class areas. These conditions reflect the resources available to groups who support homes and their sensitivity to community resistance. The homes that are newer or in better neighborhoods tend to be supported by church or volunteer groups with political skill. The homes were chosen to reflect a relatively narrow range of sizes -- they house from four to twelve residents -- and to primarily serve residents who are ambulatory. (Non-ambulatory residents present an additional set of problems and concerns that need to be targeted. While these are critical, they are beyond the scope of the present study.) All the homes had house managers or other staff present at all times, and most had live-in staff.

A description of several of the homes may provide a clearer image of the sample. "Oakdale" (names have been changed) houses 12 moderately-retarded residents. It is one of three homes that is co-ed (eight homes had all male residents, four had all female). It was HUD-financed and was occupied in 1983. It is a one-story brick building that has some institutional elements due to HUD regulations: ceiling sprinklers, fire doors, and epoxy wall finishes. The home is larger than others in the neighborhood and, with its two bedroom wings, feels quite institutional. The furniture is older and is tightly clustered around the television. Houseparents have a separate bedroom, bath and office. Most residents recently moved out of a nearly state institution and require considerable help in activities of daily life.

"Willow" is a 100 year old Victorian home in a lower middle class area. It houses seven residents and two house managers in five bedrooms with three baths. The kitchen is large -- 16 feet by 15 feet and has a large food preparation table. The residents, all
women, are quite independent and spend most days working in sheltered workshops or other activities. The home has thirteen rooms and feels spacious, comfortable, and a bit tattered.

"Kingbrook" is a leased duplex in an upper-middle class suburb of well-tended modern homes on large lots. The church association has leased both sides of the duplex: one principally houses residents; the other, houseparents and administration. In each side, three bedrooms open directly out to a "great room." Most residents, all men, are highly independent. They have girlfriends and dates. Sex and privacy are major issues of discussion.

In this study we focus on social interaction and privacy, training, house manager accommodations, choice and flexibility, and image and attractiveness. Fifteen group homes were studied; eight in Georgia and seven in Illinois. Staff running the homes filled out a detailed questionnaire (see Appendix B) and were interviewed. Where possible, residents were also interviewed and the settings were observed and documented. Each home received several visits over a two to three-week period.

Methodology

The primary instrument for data collection was a survey questionnaire (see Appendix A) which was distributed to the house managers in each residence being evaluated. Three areas of information were addressed: (1) overall satisfaction with the home for various activities, and the importance of various features of the home; (2) room-by-room assessment of frequency of activities, overall satisfaction and satisfaction for each activity, and potential improvements; (3) background information about the staff, the residents and the home itself. The format of the questionnaire was largely multiple-choice (satisfaction scales, frequency of activity); however, within each section open-ended question(s) probed for
further explanation. Questionnaires were distributed to the house managers of the fifteen group homes. All questionnaires were returned.

At the time the survey was distributed, objective data on the physical setting was collected, including age, location, condition of the residence, sizes of spaces, layout, furnishings, and so forth. Once the questionnaires were returned, a follow-up interview with the house managers was scheduled to clarify responses as well as provide more detailed information about critical concerns. In addition to the interview, managers were asked to accompany the researchers on a walk through the residence (touring interview) to describe the activities that occurred in each space, and to point out aspects of the building design or use that were particularly positive or problematic.

An attempt was made to interview residents: group interviews as well as touring (walk through) interviews were conducted. Questions were asked such as: What goes on in this room? What do you like best about this room? What don't you like about it? If you could change something about this room, what would you change? However, after several sessions it was determined that this method did not produce useful information. Difficulties encountered included lack of verbal skills, desire to please the researcher (agreement with all questions), perhaps a fear of saying anything that would indicate dislike of the home (out of fear of being moved elsewhere), and difficulty eliciting responses concerning the physical environment.¹

¹ An example session went something like this:

Interviewer: "Let's say you could snap your fingers and change something in this room.... Snap! What would you change?"

Resident: "Snap.... and Tony wouldn't be late for breakfast ever again. He's always late for breakfast" or

Resident: "Snap.... It's Christmas!"
Results, Conclusions And Recommendations

Social Interaction and Privacy

In the "Ozzie and Harriet" model of the typical household, we see the family gathered in the den, father reading the paper, mother sewing, and children playing games or watching television. This household model fits well with the design of the typical suburban home. The living room, if there is one separate from the family room, is used by the family together, although there may be a playroom or gameroom for more boisterous activities.

In evaluating the effectiveness of this model for group homes, some interesting observations can be made. In the homes that were studied, if, as in the "typical" suburban home, there was a living room separate from the family room, it was most often retained for entertaining guests. The den/family room was heavily used. However, it appeared that, particularly in homes with higher functioning residents, the household did not function as a unit as much as a typical suburban household might. Therefore, there was a need for multiple common spaces. House managers felt that more than one den/family room or recreation room was important for several reasons. First, simply to provide for potentially conflicting activities (e.g., to accommodate both quiet and noisy; individual, and group activities). Second, to accommodate the different personalities and activity preferences of residents. Managers reported several instances of residents who did not get along with one another. Managers voiced a preference for several separate common areas rather than one large one.

As important as is communal space, private space is needed where residents can retreat when activities become overly stimulating,
when they desire time to reflect, or when they simply want to be alone. Without this kind of space, available when it may be needed, residents will be less likely to participate fully in social situations.

It is interesting to note that the den and the bedrooms were used quite often for both privacy-related and social activities, yet satisfaction with the space was high for both uses. Similarly the dining room was used for both social activities and eating alone.

Social Interaction And Privacy-Related Activities

Social activities included conversation, discussions, visiting with family and friends, active and quiet games, and other group activities. These social activities occurred most often (more than once per day) in the den/family room and in the dining room. Residents engaged in group activities once a day in the dining room and several times a week in the den. Conversations occurred about once a day in the dining room. Residents engaged in active games three or four times per month in the den; quiet games three or four times per month in the dining room. Visiting with family and friends occurred less frequently (almost never to one to three times per month) and about equally often in most spaces in the house.

Bedrooms were also places for socialization. Bedrooms were used four or five times a week for conversation and several times a month for discussions. A porch or deck area was used one or two times a week for social activities, while the front and back yards
were used about once a week.

Privacy-related activities included being alone and reading/studying. The location house managers reported residents most often went to be alone was the bedroom (more than once per day), while the second most frequent location was the den (two or three times per week). Reading/studying occurred less often (almost never to one to three times per month) and about equally often in most spaces in the house.

TV watching appeared to be both a social and privacy-related activity. Residents watched TV more than once a day in the den and several times a week in the bedrooms.

Communal Space

Of the fifteen community homes surveyed, nine had a den/family room, three had more than one den/family room or recreation room, and eleven had a formal living room in addition to a den/family room or recreation room.

House managers reported that residents used den/family rooms most often for watching TV (more than once per day) and conversations (once per day). They also reported that the den/family rooms were used nearly as often as a place residents went to be alone (four to five times per week).

As illustrated in Figure 1, house managers were satisfied with the location and size of the den/family rooms. However, house managers of newer homes (less than ten years old) rated the size of the den/family rooms as more satisfactory than those in older homes (over ten years old). Although the den/family rooms in the newer homes were larger, this rating may also be due to a more positive overall feeling about a newer space. House parents were satisfied with the den/family room as a place to socialize. They
were slightly less satisfied with the degree of soundproofing of
den/family rooms, but reported that noise was not a serious
problem in the house. They felt residents also were satisfied with
the den/family room.

After eating, dining rooms were reported as used most often for
conversations and group activities (about once a day). They were
used less frequently for discussions, quiet games, being alone,
reading/studying, active games, visiting and watching TV.
House managers were moderately satisfied with the dining room as a place to socialize, gather and have guests. Although the reasons are not clear, house managers of homes with all female residents were more satisfied with the dining room as a place to socialize than were those of homes with all male or coed residents. Perhaps this was due to better housekeeping/cleaning of these rooms in the all female residences.

Residents Bedrooms

The large majority of the homes surveyed housed two permanent residents per bedroom. Several houses provided an extra bed in some bedrooms to offer respite care for temporary residents.

House managers reported that bedrooms were frequently used for being alone and conversations. Numerous residents have their own televisions and watching TV in bedrooms was reported to occur several times per week.

House managers were minimally satisfied with bedrooms as a place to socialize and be alone as well as with the amount of privacy bedrooms afforded residents. As might be expected, in houses with coed residents, house managers were less satisfied with bedrooms as a place to socialize. Although the reasons are unclear, in homes with lower functioning residents and those with all female residents, house managers were more satisfied. Perhaps this relates to a reduced need to visually control the activities of these groups. House managers of homes less than ten years old were more satisfied with the bedrooms as a place for residents to be alone than were houseparents of older homes. Similarly, they were more satisfied with the bedrooms as a place to be alone in residences designed as community homes. In the newer homes and those specifically designed as community homes, resident bedroom were less likely to be on a separate floor from communal spaces.
Perhaps again house managers were more satisfied with these homes due to the ease of control (visual/auditory) of the activities of residents.

Most of the homes surveyed housed two residents per bedroom. Conflicts over the use of space, or reports of residents being kept awake by others were minimal (occurring several times per month). House managers reported this arrangement provided residents with companionship. One house manager suggested that single-occupancy accommodations could lead to feelings of abandonment for recently
deinstitutionalized individuals accustomed to high density living situations. However, managers felt that more than two residents per bedroom could cause friction. They believed more private, single-occupancy rooms should be available for use by higher functioning individuals preparing for a move to more independent living situations as well as those residents who were not compatible with other residents.

Training And Independent Activity

As described in the review of literature, the design of the physical environment can enhance training opportunities and support independent activity or it can inhibit or deter these activities. Two factors emerge from the literature as particularly relevant:

1). The design of ergonomic elements: *ergonomic elements which are simple, durable and well-designed can increase competence*;
2). Opportunities for control: *the ability to use the physical environment at one's own discretion can encourage adaptive behavior*.

Training in daily life skills is one of the primary activities that takes place within the group homes that were studied. House managers and staff are actively involved in training residents and reinforcing their performance. It became clear very early in our research process that a supportive environment could facilitate this learning process.

Training occurred in a variety of spaces throughout the group homes studied including the den, dining room, kitchen, bedrooms, bathrooms and laundry. Training in grooming occurred several times per week in the bedroom and several times per month in the bathroom. Training in cooking occurred daily, and in doing laundry several times per week.
House managers and staff did most of their training with one or possibly two residents at a time. This required that two adults and sometimes three would need to work in spaces often designed for one person. Lack of space was a particular problem in bathrooms and the laundry. It was also reported that, although most instruction in cooking involved primarily one or two residents at a time, often a larger group would watch or be involved in more peripheral roles such as setting the table and other preparations for meals. In these situations, the size of the space, its organization, and supportive props such as counter or storage space becomes critical.
Kitchens

Kitchens were used most frequently for training in cooking, meal preparation and clean-up. Managers of homes with "eat-in" kitchens enjoyed the convenience this provided, not having to carry the food longer distances, especially for meals such as breakfast or lunch when not all residents would be eating at the same time.

As Figure 2 illustrates, the survey indicates that house managers were minimally satisfied with the kitchen as a place to teach cooking and prepare meals efficiently, and were minimally satisfied with the size of the kitchen and its ability to be cleaned. Managers of homes with all male residents were more satisfied with the kitchens than managers of homes with all female or coed residents, perhaps due to perceptions of the lower priority of cooking skills for male residents.

House managers indicated that in addition to being too small, in general the kitchens lacked adequate counter space for all the activities that occurred there and the number of people involved. Given the number of people to be fed on a regular basis and the amount of groceries to be stored, house managers reported the need for more cabinet space and room for two refrigerators and a freezer. In addition, house managers reported standard height stoves were too high for some small stature residents. Push button stove controls were recommended as better for training than dials, and controls on the front of the stove were considered safer than those on the back panel.

One example of a kitchen that appeared to work well for both training and convenience was one with an "L" shaped counter separating the kitchen from the dining area. This design allowed the house manager or staff member to work with one or two residents in the kitchen area while other residents could view
these activities or participate in support activities, such as salad preparation, from the dining room.

Bedrooms

House managers reported bedrooms were used about once a day for training in general daily life skills and training in grooming. House managers were satisfied with bedrooms as a place to support training, but were slightly less satisfied with their ability to be cleaned and maintained.
House managers reported that when lower functioning residents share bedrooms, they should be provided with individual closets to minimize confusion over the ownership of clothes. In contrast, higher functioning residents did not have problems with sharing closets but needed more closet space than was provided.

Bathrooms

Bathrooms were used several times per week to teach residents personal skills. Only infrequently were there conflicts about cleaning of shared bathrooms.

House managers were minimally satisfied with bathrooms as places to support training, to be cleaned and maintained, and with their size (see Figure 3). House managers were less satisfied with the ability to clean bathrooms when residents were all male than when they were all female or coed.

House managers reported that traditional bathroom layouts (e.g., toilets placed close to tubs) make it difficult for them to reach residents in the tub. The use of sliding glass doors on tubs also interferes with teaching. Separate controls for hot and cold water were considered better for training than single control, mixer faucets. Some also suggested that automatic shut-off valves for faucets could minimize problems with running water. House managers noted that more handrails in and around bathtubs were needed as well as additional towel bars and separate storage space for the personal items of each bathroom user. Carpeting and other permeable finishes should be avoided in bathrooms to facilitate cleaning and minimize odors. Ventilation also was needed.

Laundry

Laundry rooms were used several times per week by house managers and residents for training and doing laundry. House managers were
minimally satisfied with the laundry room as a place to support training in daily skills, its ability to be kept clean and its size (see Figure 4). In general they were satisfied with the location of laundry rooms, although some reported laundry rooms could be farther from main circulation routes. Laundry rooms located off the kitchen were considered problematic. Since both the kitchen and laundry are high use areas, the activities were often in conflict.
As is true in the kitchen, the organization and availability of props in the laundry area are important to successful training and the encouragement of independent activity. Appliances should be at a convenient height for loading and unloading clothes (standard heights may be problematic for some residents of small stature), controls should be simple and within easy reach. Counter space for folding clothes, a bar for hanging clothes, and storage shelving for cleaning supplies are also important aspects of design.
House Manager Accommodations

House managers are engaged throughout the day and night with residents: in social interaction, skills training, monitoring behavior, and so forth. Although it is essential that the house manager be an integral part of the life of the home, past history clearly indicates that turnover is high, and burnout is an occupational hazard of a house manager's job. In our experience as well, many of the house managers were young married couples, some of whom
had children. Clearly it is important that these family units have some time to themselves if they are to remain intact. These factors have led to a recognition of the need for "off-stage" and private space, preferably with a separate entrance, apart from that used by residents. The houses surveyed included a variety of accommodations for house managers. Approximately half of those accommodations were a combination bedroom and sitting/work area in the same area as residents bedrooms (N=8); others (N=7) had some type of distinct separation, such as being located on a separate wing or floor level. Half of these also had a private bath.
House managers were minimally satisfied with the amount of privacy of their bedroom, its location to other bedrooms, and with the overall arrangement of the house for raising their own children. While house parents did not have as much privacy as they would like, they did not believe that a lack of privacy made it difficult for them to live in the group home. As one might expect, house managers considered bedrooms or bathrooms shared by a resident and house manager to be unacceptable.

For the house managers who had children (n=6), they were less satisfied with the arrangements of their children's bedrooms in older homes (over ten years), and in homes with older residents (over thirty-five years) whose residents were all male.

House managers indicated a suite for themselves, separate from the residents' bedrooms, was very important. While they needed to be able to hear residents, they did not believe this could only be achieved through physical proximity of house managers and residents bedrooms. They desired a sitting area separate from their sleeping area and would prefer their own private entrance. One was identified by many of the house managers interviewed as being a particularly good model for house manager accommodations. This home was designed with a house manager suite located above the main living area, with a balcony overlooking the living room and main entry. Residents understood that they could come to the bottom of the stairs to the house manager's suite and ask for assistance, but not up the stairs. This arrangement allowed house managers some privacy and separation, yet at night with their doors open they could monitor resident activities.

Another area of need in almost every home was space to accommodate administrative tasks. In most homes, a make-shift office area was crowded into the manager's bedroom. Dedicated space with a desk, filing cabinet, and lockable storage for medications was
desperately needed.

Choice And Flexibility

As with any other population group, developmentally disabled persons, even those all classified as "moderately retarded," do not have the same needs and desires, and may not require or prefer the same physical settings. Over time requirements may change as persons mature and/or learn new skills. Thus, the goal for the design of community homes should not be a single prototype, but a
range of model solutions, and within any model home, there should be considerable flexibility. This need for choice and flexibility is best illustrated through several examples.

**Common Space**

From our observations during the course of this study, it appeared that, in homes with lower functioning residents, residents more often participated in activities as a group (often house manager led activities) than singly or in small groups. This suggests there may be less need for multiple common spaces in homes with lower functioning residents than in those where residents are more likely to engage in independent activity.

**Bedroom Occupancy**

Choice and flexibility are important issues in decisions about bedroom occupancy. As described previously, house managers were in agreement that double-occupancy rooms were probably the most satisfactory solution; however, there was need for at least one extra single-occupancy room to provide the flexibility to accommodate personal preferences and sometimes personality conflicts. This "extra" space would also provide respite care accommodation.

**Transition Space**

One of the homes in the study was designed with a resident bedroom located on the lower floor adjacent to the game room. This bedroom was separate from the main bedroom wing of the home and had its own entry. The house managers of this particular home felt this arrangement was quite useful in providing a transition space for residents who were preparing to move to a more independent living situation.
As previous research suggests (see literature review), moving from one care setting to another can negatively affect resident behavior. However, with appropriate preparation, these effects may be at least partially ameliorated. Particularly in homes with higher functioning residents, a resident bedroom somewhat apart from other bedrooms, and perhaps with a separate entry, allows the opportunity for a resident to experience greater independence in preparation for a move.

**Image And Attractiveness**

House managers believed that an overall home-like appearance was very important, and that their own homes fitted well into their neighborhoods. However, they were minimally satisfied with the porch, front yard and back yard as a place to represent the house (and presumably its residents) to neighbors.

House managers were minimally satisfied with the attractiveness of each room type (i.e., den/family room, dining room, kitchen, resident bedrooms, and back yard). They also were minimally satisfied with the appearance of their own accommodations.

An important design issue seemed to be the durability and ease of maintenance of materials and finishes and exterior planting materials. In all of the homes residents were responsible for some of the cleaning and maintenance tasks. Thus, ease of maintenance was critical if spaces were to appear well-kept.

The adequacy of storage space was also related to appearance problems. Storage spaces within easy access was important to maintaining a "clean" appearance. This was especially true in high use areas within the home such as the kitchen, den or family room, and for the storage of outdoor furniture, game equipment and lawn and garden tools.
The majority of the homes in this study were built in the same "style" as the homes in the surrounding neighborhood. In part this was because most were not built as group homes. Nevertheless, they did blend well with the other homes in the surrounding area. On the basis of recommendations from this and other studies, and simply the number of residents accommodated in an average home, an ideal group home would be larger than those on a typical suburban street. If one were designing a group home, in addition to blending with the character of the surrounding neighborhood, it would be important to maintain similar dimensions to other homes along the street facade (the side of the house facing the street). Special amenities such as handicapped access ramps should be integral to the design so as not to appear different in character. Most homes require some additional parking and/or space for a van. This parking should be provided to the rear of the home or screened from the street.

Recommendations

We have found that some of the customary assumptions about family life that are embodied in suburban homes also apparently fit the lifestyle and needs of group home residents. For example, living rooms were typically used for more formal socializing while informal, "family" activities went on in the den or recreation room. (This is probably due, at least in part, to the patterns and expectations the house parents bring to the homes).

The major divergences we have found from the "normal" suburban family model tend to reflect the problems of several adults living together, rather than any special problems related to mental retardation. Training of personal grooming skills also put special demands on the homes.

The functional skills and recent experience of the residents seems also to be very important. The homes where residents were of
lower functional levels, or where they were recently institutionalized seemed to place greater emphasis on surveillance of residents by house staff. Staff wanted larger, undivided spaces so that they could more easily watch residents. Staff also wanted to be able to monitor residents from the staff quarters to be able to hear if anyone wandered off or if there were any disturbances).

Higher functioning residents put more emphasis on autonomous activities. Rather than having one or two large social spaces, this group benefits from having multiple areas in which to socialize. They use their bedrooms much more as an independent base of operations (as a place to socialize, watch TV, etc.)

To summarize, whereas little targeting is needed for the mentally retarded people who participated in this study (more is needed for multiply-handicapped individuals), some specific concerns did emerge:

**Common Areas.** All homes need multiple common areas (living room plus den/family room/recreation room); this is particularly important in homes with higher-functioning residents.

**Resident Bedrooms.** *Double-occupancy bedrooms seem acceptable for most residents* -- they provide companionship and privacy-- *but at least one single-occupancy room should be provided* to accommodate personal preferences and personality conflicts. Singles are also useful for providing respite care.

If possible, one bedroom should be located away from other bedrooms, perhaps with a separate entry, to provide a transition for a resident preparing to move to an independent living situation.

Resident bedrooms should have some separation from common spaces, such as a separate bedroom. More separation, such as location on a separate floor appears to reduce satisfaction with the
use of bedrooms for social and privacy-related functions.

Because resident bedrooms often function almost as independent apartments, closets should be large enough to store most of a resident’s personal items. To avoid confusion, individual closets should be provided.

**Kitchen.** Kitchens are sometimes used for training, sometimes used for institutional-type food preparation by a cook, and sometimes need to support snack or breakfast preparations by six or eight independent adults. To support this wide range of functions, *kitchens should have a place where 3-4 residents can view cooking and should have room for institutional refrigerators and bulk food storage.* Sinks should have separate hot and cold water controls (rather than an integrated mixer wand); burner controls should be on the front of stoves.

**Bathrooms.** Bathrooms should be large enough to accommodate two residents or one resident and an instructor, with room for the instructor between the toilet and bath. Separate storage should be provided for toilet articles of each resident who uses the bathroom. Floor surfaces should be impermeable -- ceramic tile or seamless vinyl rather than carpet or vinyl tiles. As in the kitchen, separate easily-graspable hot and cold water controls should be provided.

**Laundry.** The laundry area should be large enough to accommodate a resident and instructor. It should be separated from the kitchen or den so that dirty or unfolded laundry does not disrupt other activities or look unsightly.

**House Manager’s Area.** If possible, the house manager’s suite (bedroom(s), bath, and sitting area) should be somewhat apart from the main sleeping areas of the home. Although this, on the surface, seems to deviate from the dictates of the normalization principle, it emerged as highly important if burnout of resident
house managers is to be avoided. House managers also need an office area for administrative functions that has lockable storage for medication.

Image And Siting. Although not the principal focus of this study, several siting and image issues emerged as significant. The street facade should be compatible with neighbors in setback, height and materials. A screened parking area should be provided for vans or other specialized vehicles.
Perhaps the best recommendation is that the image of mentally retarded people living in the community needs to be changed. All too often they are still thought of as docile and dependent. If designers think of community home residents as independent adults who need space for privacy, socializing, storage of personal items, personal display, and all the other functions homes serve for adults, they cannot go wrong.
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LIVING IN THE COMMUNITY:
A STUDY OF GROUP HOMES FOR MENTALLY RETARDED PEOPLE

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Introduction
All people are touched by the policies and practices of environmental design, obviously some in more complex and profound ways than others. Similarly, in a given situation, all of us consider ourselves special; in any particular person-environment transaction, it is the actor involved who feels profoundly affected. Yet, when it comes to the interaction of design and human populations, some populations have characteristics which add an extra dimension to design considerations. Design may have to be oriented to a special population’s unique needs. Or, a special population may have unique outcomes to even sensitive design.

The purpose of this project is to examine the role of design for one "special" population and to focus on one particular situation: community homes for mentally retarded people. There are currently over 6,000 group homes for mentally retarded people in the U.S. alone, with many additional group homes being built, purchased or leased each year (Janicki, Mayada & Epple, 1983). Although many design and health resource practitioners have developed considerable experiences with such dwellings, the field is still beset with confusing and often contradictory recommendations (some authors advocate separating house parents’ accommodations from that of residents; others recommend integrating them. Some authors suggest that homes should be large and open; others suggest they should contain many small private spaces, etc.). The purpose of this report is to examine these and other apparently conflicting claims and provide recommendations. The report is organized in three parts. First, a conceptual model is proposed, then previous work by other researchers is discussed. Finally, we discuss a study of sixteen group homes in Illinois and Georgia and provide recommendations.

Targeting, Customary Assumptions, and Fit

Much of the debate about the appropriate design of homes for mentally retarded persons revolves around the extent to which the home should be targeted to the special needs of that particular user group (as opposed to providing "normal" everyday settings) and the extent to which mentally retarded people meet customary assumptions about environmental capability.

Targeting

What do we mean by targeting? It is the extent that a person or group which uses or wants to use an environment had their behavioral needs explicitly considered in the design and/or management of this environment. This view assumes the division of labor noted by nearly a century of urban sociologists as accompanying modern, urbanized societies (c.f. Fisher, 1976). For example, until the Nineteenth Century, almost all homes were built by the prospective occupants or were crafted for them (Fitch, 1973). In the years since, however, financial concentration and technological advances have increased the scale of design projects and separated designer and user by a welter of bureaucracies (Zeisel, 1975). Housing is now only rarely customer-designed by an architect for an individual user. Most housing is now built speculatively with support from financial institutions (with their own conservative design prerequisites for loans) and targeted for users who will only appear after construc-
Livin in The Community, seldom having any contract with the designers. Public buildings are negotiated by offices of public works, as surrogates for employee and public users. City plans are more likely to be considered as subject to public (i.e., user) opinion and influence, but it is difficult to argue that public input has much precedent as a potent influence in comparison to professional, political, and economic interest (see, for example, Meyerson & Banfield, 1955; Michelson, 1976).

Targeting a user group varies in the amount of guesswork involved. In some forms of housing, an understanding of the accepted model and the need to follow strict financial eligibility criteria make possible a relatively reliable fit for subsequent users; knowledge or research about them helps to create a congruent design. In other situations, conditions may be more volatile, leading to inexact predictions or to heterogeneous user group. In some institutional settings and in large public environments, there will be multiple user groups, including socially-diverse subcultures, employees and customers, and different degrees of users (e.g. primary v. secondary users, frequent v. occasional users, year-round v. seasonal users, etc.).

Substituting in certain respects for one-to-one contact between designers and users has been the development of both formal and informal sets of standards and guidelines regarding various levels of the environment, from plumbing and wiring to dwelling size and configuration to residential density on a site to land use mixtures to park and recreation access. These standards are intended to ensure no less than the minimum acceptable situations for what professionals and public officials view as the average citizen. The effects of some standards have been pervasive (such as FHA in the U.S. and NHA in Canada). Those accompanying government housing loans after World War II, for example, had far-reaching effects on the extent and relative uniformity of design of suburban single/family housing, built to the virtual exclusion of alternatives for about twenty years.

Designers are not necessarily callous, but their structural removal from their ultimate clients and the need to target the latter in the process of design ends up in a situation where some users or potential users are simply not considered very explicitly. And while congruence in design is in any case not determinative regarding behavior, it is less likely that a person or group whose behaviors were not considered fully in the design process will find a person-environment fit in the particular environment, particularly if someone has little power and is inarticulate, which is frequently the case with mentally retarded people.

**Customary Assumptions**

Nonetheless, all targeted persons will not react to or treat a given environment the same. Customary assumptions are made about the strength, sensory capabilities, means of access, time commitment, literacy, language capability, financial resources, and more, of users of a designed place or aspect of city infrastructure. Certain minimum levels of environmental competence are assumed.

How a group that differs from the modal person or group in a setting is treated depends partly on the philosophy behind design or planning. In some
municipalities, states, and nations, design and planning are oriented to make possible participation by the greatest part of the population; the customary assumptions are consciously (usually by law) widened to include the handicapped, the illiterate, and the poor. Wheelchair accessibility, for example, has become the standard design procedures in certain jurisdictions, and even as far back as the building of the New York subway, color codes were adopted to enable use by those unable to read. Airports and highways are increasingly fitted with picture signs giving universal information without the need to know the local language. In other jurisdictions, however, customary assumptions are more restrictive. If those not meeting them are considered worthy and in need of services which customary assumptions do not permit, separate programs are created, usually on a restricted scale reflecting the degree of perceived size and influence of the targeting group. Institutions for those unable to meet the customary assumptions of the "normal" world have been an outgrowth for those with physical, sensory or mental handicaps.

A major point of this report is to address the question: Do the needs and abilities of mentally retarded people fit the customary assumptions embedded in the design of group homes?

Normalization and Attitudes Toward Retarded Persons

Mentally retarded persons are a special population distinguished by their vulnerability: as individuals and as a group they often lack the training, ability, or power to determine their own fate. They are sometimes targeted in design but do not meet customary assumptions of environmental competence. As a result, mentally retarded persons are often provided with environments incongruent with their needs for development. Although environments for mentally retarded people have seldom been discussed explicitly in environmental psychological terms, the debate among policy-makers, designers and others about appropriate models of care has often revolved around such issues. For example, questions have been asked such as: "How viable are large institutions for housing mentally retarded persons? What are the critical dimensions of living environments for such individuals?"

Within the past century and a half, public attitudes toward mentally retarded people have undergone several significant shifts. Many retarded people have been seen as objects of dread, reverence, menace, charity, obligation and love and these attitudes have been reflected in the environments provided mentally retarded people and in the level and orientation of care (Heal, Seligman & Switzky, 1978; Wolfenberger, 1972). Previously cared for at home or crowded into poorhouses or lunatic asylums, in the 1840's and 1850's mentally retarded people began to be "targeted" by being housed in separate institutions in Europe and the U.S. Facilities in Europe were dominated by the anti-urban neo-romantic thinkers of the day. In an effort at rehabilitation, mentally retarded residents were given a short-term regimen of simple diet, clean air and exercise (Heal, Seligman & Switzky, 1978). In the U.S., Samuel Gridley Howe adopted the European model to American needs and produced a boarding home where students spent their school-age years, return-
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ing home during vacations and after their studies were completed (Richard, 1909).

These early goals of preparing mentally retarded people for re-entry into society were quickly subverted: parental and social pressures caused institutions to grow and become custodial (Wolfenberger, 1972). By 1900, there were twenty-five state institutions housing over 15,000 residents in plantation-like settings complete with active farms, dairies and "villages" of dormitories. Residents were classified according to age, sex and mental abilities. By 1925 there were 50,000 mentally retarded people institutionalized in state facilities, and this reached a peak of over 200,000 in 1967 with over 135 facilities, which had a median capacity of over 1,000 residents (Scheerenberger, 1978). Since 1967, this has decreased to 150,000 or less, with the reduction mostly due to discharge of higher-functioning residents (Scheerenberger, 1978; Wiler, Scheerenberger & Intaglia, 1980).

This deinstitutionalization reflects the impact of several trends. First, over the past decades the definition of "mental retardation" has become more precise. Although still a somewhat crude classification, it has evolved from a vague notion of subnormal functioning, which might in fact have represented lack of education, senility or dyslexia, to a definition where the person must be both very low in intelligence as measured by a standard intelligence test and have very poor everyday adaptive functioning (Grossman, 1977). A considerable proportion of the people institutionalized in the 1960's and before are now not considered mentally retarded.

In addition, the concept of "normalization" has had considerable influence on deinstitutionalization of mentally retarded people. Normalization is defined in current accreditation standards as "the use of means that are as culturally normative as possible to elicit and maintain behavior that is as culturally normative as possible, taking into account local and subcultural differences" (Joint Commission on Accreditation of Hospitals, 1971, p.1). Developed in Scandinavia (see, for example, Bednar, 1976; Nirje, 1969) this concept has recently been whole-heartedly adopted in the United States. (Even in 1983, some ten years after its broad U.S. acceptance, it is difficult to find a single issue of a professional journal in mental retardation without normalization being discussed.) Normalization has motivated the recent creation of a large number of group homes, faster homes and other "community settings," with a recent survey finding over 6,000 group homes in the U.S. alone (Janicki, Mayada & Epple, 1983).

The normalization principle has at its core an analysis of the causes of social stigmatization: a theory about why some groups such as mentally retarded people are labelled different, strange, subnormal or intimidating. Advocates of this position argue that, rather than flowing from some immutable physical characteristic, these labels come from the physical isolation of some groups and their relegation to abnormal and inferior standards of treatment (Wolfensberger, 1972). Particular attention has been focused on the destructive impacts of large custodial institutions, where residents lack the freedoms enjoyed by most people in everyday society: residents wake up at a common hour, independent of their individual needs or schedule, go to sleep at the same time, eat the same food at a
pre-arranged hour, wear assigned (and often cast off) clothing, live and work in the same building (see, for example, Gunzberg, 1973). It is argued that this routine is dulling and limits development and may in fact cause many of the bizarre behaviors normally associated with mental retardation.

It is also argued that the physical isolation of mentally retarded people deprives others of the opportunity for everyday contact with them and makes it difficult for mentally retarded people to be viewed by society as individuals who are diverse and non-threatening.

As it has been adopted in the U.S., normalization has several underlying axioms and assumptions (Butler & Bjaanes, 1978):

1. It is right of everyone to have patterns of everyday life that are as similar to the mainstream as possible, such as having a sexual and romantic life, a physical separation between work and living, a homelike living environment, and so on;

2. Institutions are inherently incapable of supporting growth and development and as a result should be used only for people requiring medical support;

3. Smaller, more homelike community facilities are inherently more supportive of development by residents.

These statements have interesting environmental-psychological implications. The first is an ethical position which is independent of any real-world implications -- normalization should be accomplished because it is "right," regardless of an impact on residents or society (Knight, Zimring & Kent, 1976).

However, the last two are environmental-psychological hypotheses: institutions have negative impacts on residents' behavior and well-being, and community facilities have salutary ones.

Based on these principles and because they can be less expensive to run than large institutions, small group homes and other community-oriented living facilities have burgeoned, but the empirical evidence supporting them is limited and provides a mixed picture (Landesman-Dwyer, in press, b). In the next several sections we will consider this evidence and consider some necessary further research.
Research on Housing for Mentally Retarded Persons
In this review we consider research of primary interest to environmental designers: research linking the behavior of mentally retarded people to their physical setting. However, as the model described above would suggest, it is impossible to ignore social and organizational factors affecting environmental competence. Especially for mentally retarded people, who tend to be dependent on care-providers, the style and orientation of treatment is critically important. However, because of the scope of this project, we will only consider research that links treatment to environment and resident behavior. Also, because of the scope of this project we will not cover the impact of sensory or mobility impairment in depth.

Ergonomic Studies

Early theoretical discussions of normalization stressed the importance of the near environment, of normal door handles and bed design and furnishing, to therapeutic progress by mentally retarded people (see, for example, Dybwad, 1970; A. Gunzberg, 1968; Norris, 1969). H. Gunzberg (1973), although emphasizing the importance of training practices, also stressed the importance of hot and cold taps for hot water, hooks for hanging clothes, and domestic-type furniture. Gunzberg and others see at least two kinds of advantages as resulting from designs like those found in everyday settings: development of the individual because he or she is dealing with a more stimulating and variegated environment, and an alteration of attitudes by staff and community because symbols of inferiority and stigmatization are eliminated.

The rapid proliferation of group homes with normal furnishing is testimony to the persuasiveness of such arguments. However, there have been relatively few empirical studies considering the impacts of normalized settings and even fewer specifically focusing on ergonomic elements. (In the next section we will review the studies that consider normal environments more generally.) In one exception, Reizenstein and McBride (1973) evaluated a small village for mentally retarded people that housed residents in two small houses and had a sheltered workshop and meetinghouse on the campus. Although Reizenstein and McBride performed no numerical analysis, their interviews suggested that the generally-positive attitude of staff was due at least in part to the homelike furnishings.

Similarly, in a larger study, Bakos et al (1979) studied group homes for psychiatric patients and for mentally retarded people and found that small-scale ergonomic issues, such as simplicity of controls, availability of props and provision of adequate storage, were very important in predicting resident satisfaction.

In sum, the results of the handful of available ergonomic studies are suggestive but hardly definitive. Also, these studies lack an empirical analysis of the physical, ergonomic environment -- it is unclear the precise dimensions of the environment that are most important. However, there is a reoccurring theme: ergonomic designs which are simple, durable and well designed can increase the competence of mentally retarded people. (This conclusion is even more significant for multiply-handicapped mentally retarded people, who may have mobility,
vision, hearing or coordination problems.)

Research On The Nature Of Living Environments

In comparison to the relatively small amount of research considering ergonomic qualities of settings, there has been a relatively large literature examining the nature and impact of environments more generally.

As we have suggested, the assumption that the sum total of the experience of living in a large institution is harmful has been a major influence in deinstitutionalization. Typically, a resident of such a facility may sleep on a ward with from four to twenty-five other residents, and the entire facility may house 1,000 residents or more; all residents generally wake up, eat and sleep at the same time; training opportunities are limited and staff themselves may be poorly trained and unmotivated. However, the consensus about the destructiveness of institutions is often based on ideology rather than data and it is unclear which of many factors -- size of ward or institution, rigidity of routine, etc. -- affect residents and in what ways. As a result, several studies have focused on institutional change, where traditional institutions were altered to provide smaller wards or more control over individual space.

In addition, the rapid growth of community living facilities has generated a number of studies looking at the impacts of moves to community settings or comparing the impacts of different sizes and types of facilities. Although the results of these studies are complex, they seem to indicate that common intuitive descriptors of environments such as "institution" or "community alternative" are not well defined and are not good predictors of the well-being of mentally retarded people or of the quality of care they receive (Landesman-Dwyer, 1981).

Research On Institutional Change

Several researchers have studied the impact on residents and staff of the alteration of large institutions. These studies have been motivated both by an interest in identifying key elements of institutional environments and by an interest in demonstrating to decision-makers that institutional reform has practical impacts on residents and staff.

Three recent large, longitudinal, observational studies suggest that the transition to smaller, more easily controllable institutional settings may have positive impacts on residents. Zimring, Weitzer and Knight (1983) studied design changes at a large state institution. Because of a court mandate, the facility was gradually renovating forty-year-old "cottages" that each housed fifty-five residents into somewhat more homelike facilities. The staggered renovation schedule allowed for a multiple baseline research design, with some groups in unrenovated buildings serving as natural controls for those in renovated ones. Whereas there was not random assignment of residents of buildings, groups were matched on key demographic variables such as IQ and length of institutionalization, and the two and one-half year data collection allowed multiple measures to be recorded on most of the mentally retarded residents, with within-subject comparisons.
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Ninety-two randomly selected residents and thirty-three staff were observed using structured behavior mapping techniques. In addition, several other measures were used such as analysis of resident records, interviews, participant observation, analysis of critical incidents, experimental simulation of the acoustic environment, and measurement of light, heat and noise (see Knight, Weitzer & Zimring, 1978; Zimring, Weitzer & Knight, 1983 for more detail).

The renovation schedule allowed the comparison between the traditional institution -- which had undifferentiated sleeping wards for twenty-five residents and hard, unadorned dayhalls -- with three renovated schemes: modular units, where hospital doors on their sides were used as four and one-half foot-high partitions to create semi-private spaces in the existing dayhalls and dorms; a suite-type arrangement, where three 3-to-4 person bedrooms were clustered around a small lounge; and a college-dorm-type renovation of a more recent (1968) building which provided two wings of single and double bedrooms flanking a central bathroom-and-lounge core.

Although the architects and administrators felt that the suite arrangement would be best because of its grouping of residents into small clusters and its more homelike appearance, the college-dorm arrangement was most positive by far. In that design, even very low functioning nonverbal residents were more alert and less withdrawn. Higher functioning residents were more verbal and less aggressive, and were more positive in their verbalizations. Results of the interviews, participant observation and other methods suggested these impacts were not apparently due to the "normalization" of the setting, at least as interpreted by the architects and administration. Rather, the changes could be explained, at least in part, by the increase in opportunity for control of social interaction provided by physical characteristics, such as the dorm's single and double bedrooms, its corridors which provided semi-private space under the control of a small group, and other clear territorial markers, such as fire doors which separated the hallways and indicated they "belonged" to residents on the given hallway.

In a similar study, MacEachron (1983) studied 289 mentally retarded people in a large state facility. Residents were assigned to fifteen homogenous sampling groups. From within each group, residents were randomly assigned to one of two settings: fifteen new cottages on the grounds, or the existing traditional wards. Residents were evaluated after one year using the Adaptive Behavior Scale (ABS), a diagnostic test administered by building staff or supervisors (Nihira, Foster, Shellhaas & Leland, 1974). In addition, MacEachron recorded a large amount of information about each setting (size, staff-client ratio, etc.) and administered standard instruments to assess treatment orientation and "normality" of setting. Her results were quite complex. She found that whereas only seven of the fifteen experimental groups in the cottages had statistically higher means than their controls on adaptive behavior, the overall pattern of means revealed a positive change from institution to cottages. When she disaggregated her data she found three measures to be the best environmental predictors of positive difference in adaptive behavior: greater ability for physical environment to be
used by people at their own discretion (a dimension similar to the "opportunity for control" found to be important in the Zimring, Weitzer & Knight, 1983 study); management practices that were more resident-oriented as opposed to being institution-oriented; and participation in programs. The strongest predictor overall of adaptive behavior was IQ.

In a third study, Landesman-Dwyer (in press [a], in press [b]) compared the adaptive behaviors of mentally retarded residents who moved into new duplexes on the grounds of a large institution to others who remained in the traditional institution. Because of the policies of the facility, some residents were randomly assigned to settings, whereas others were assigned to the new settings for clinical reasons. Landesman-Dwyer and her research group used a 69 category code to observe 160 residents for a two year period: from one year prior to the move to one year after. Her findings were somewhat equivocal, with only limited behavioral changes occurring after the moves to the duplexes. The largest change was a significant increase in TV watching. She did find residents with different initial behavioral patterns reacted differently to the move. For example, the group who was the most social at the outset was originally paid most attention by the staff, but lost this distinction by the end of the observation.

In a similar study, Hemming, Lavender and Pill (1981) arrived at somewhat different results. They compared fifty mentally retarded people who stayed in a large facility to a matched sample who moved to small bungalows on the hospital grounds. All residents were assessed periodically for three years using the Adaptive Behavior Scale and the treatment orientation was assessed using the Child Management Scale developed by King, Raynes and Tizard (1971). They found treatment in the bungalows to be more resident-oriented than that in the traditional dorms. Residents in the bungalows significantly increased their level of positive adaptive behaviors.

Taken together, these studies of institutional change suggest that a general improvement in the living environment, including housing residents in smaller groups and new surroundings, generally seems to aid residents' adaptive behavior. Although it is hard to separate specific elements, several of the studies also suggest that an increase in the opportunity for personal control by residents may contribute to improved adaptive behavior.

Comparisons Between "Community Alternatives" And "Institutions"

Although the superiority of "community" facilities over large institutions is well accepted on moral grounds, until recently little data has been available to judge this supposition. However, several studies in the past few years suggest that greater growth in adaptive skills does occur in community settings, but that it is unclear what the relevant dimensions of "community" and "institution" are.

For example, two recent studies compared matched samples of people living in community settings to those living in institutions and found differences favoring community living. Schroeder and Henes (1978) tested the adaptive functioning of nineteen mentally retarded people in four group homes and of a matched sample in an institution, and retested this group one year later.
They found that the community group had progressed significantly further, with most of the difference due to improvements in communication skills. Similarly, Conroy, Efthimiou, and Lemanowicz (1982) compared seventy people who moved to community settings to a matched sample who remained in the institution. The movers improved their adaptive behavior as measured by the Adaptive Behavior Scale, whereas the people who remained in institutions did not. (Given the potential inferential problems that may occur with quasi-experiments, including situations where matching may have unanticipated consequences, these studies need to be approached somewhat cautiously.)

Whereas the above studies discovered fairly general progress, Kleinberg and Galligan (1983) found patterns of improvements in adaptive behaviors after twenty mentally retarded adults moved to community residences: significant improvement in adaptive behaviors occurred only among behaviors already in the residents' repertoires, such as socializing, and not in others that they did not currently employ such as self-direction. This is similar to findings of other researchers such as Aanes and Moen (1976), Fiorelli and Witt (1981). Kleinberg and Galligan (1983) concluded that this pattern of improvement was due to the everyday life patterns of the residences which required a large amount of domestic maintenance, and hence these behaviors were in the repertoires of many residents. However, activity and social interaction improvement in realms such as vocational skills are not likely to occur without conscious training because they were not normally present in the homes. Kleinberg and Galligan (1983) suggest that the quality and orientation of training may be more important that whether a facility is located in the community or in an institution.

A possible contaminating factor in research focusing on the impacts of moves from institutions to the community is the impact of the move itself. Several earlier studies of institutionalized elderly people being involuntarily relocated have suggested that such a move may be extremely stressful, and may in fact result in a higher death rate (see, for example, Aldrich & Mendkoff, 1963; Bourestom & Tars, 1974; Jasnau, 1967. Heller, 1982, provides a careful recent review.) Such dramatic effects in geriatric populations raise questions about the impacts of moving on younger mentally retarded people. The literature does not provide evidence of increased mortality, but several studies show some negative impacts on adaptive functioning. Cohen, Conroy, Fraser, Snelbecker & Spreat (1977) administered the Adaptive Behavior Scale to ninety-two severely and profoundly retarded people who moved from a large (1,100 resident) state facility to a somewhat smaller (150 resident) one. They found that higher functioning residents became more withdrawn after the move and decreased their language functions, whereas lower functioning residents actually improved in domestic activity, self-direction and responsibility, but also increased maladaptive behaviors. In contrast, Carsrud, Carsrud, Henderson, Alisch and Fowler (1979) found that profoundly retarded residents decreased their adaptive behavior after relocation. Preparation may at least partially ameliorate these effects. Weinstock, Wulkman, Colon, Coleman and Goncalves (1979) found that when residents were provided a tour and extensive explanation of the new facility prior
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to the move, they showed no difference in adaptive behavior from a matched sample remaining in the institution.

Population, environmental and treatment differences may account for the different effects found in these different studies. A number of studies have found differential reactivity to environments for people with different intellectual and functional abilities (see, for example, Hull & Thompson, 1980; Landesman-Dwyer, Stin and Sackett, 1978; MacEachron, 1983; Zimring, Weitzer and Knight, 1983) and the relocation studies have examined individuals with somewhat different abilities. The Weinstock et al. (1979) study, particularly, involved quite capable residents, and such a preparation procedure may be less effective for lower functioning individuals. Evidence from other, non-retarded populations suggests that people predisposed to depression or neurosis have more severe reactions to relocation (Heller, 1982). We are unaware of studies of relocation of mentally retarded people that have examined these variables. Also, Heller (1982) suggests that for non-retarded people, the impact of moving may be mediated by the perception of the relative quality of the new and old setting. Whereas the Weinstock et al. (1979) study suggests that this mediator may affect at least some mentally retarded people, its generality has yet to be determined.

To summarize the research on comparisons between community alternatives and institutions, it appears that community alternatives often foster greater improvements in adaptive behavior, and particularly in self-help, socialization and communication. However, it remains unclear which of the many differences between those setting types are most important, although several studies suggest that the everyday domestic patterns required in these facilities may account for many of the differences. Interpretation of this research is complicated by the disruptive impacts of the relocation itself.

Studies Of Community Residences

Several studies have examined differences between community facilities, and have found that environmental differences affect behavior. For example, in a large study of 245 mentally retarded residents of eighty-seven facility care homes, Eyman, Demain and Lei (1979) studied the relationship of PASS 3 ratings of the normalization of the residences to three consecutive annual Adaptive Behavior Scale ratings of the residents. Using path analysis they found that high PASS 3 facility scores on location of services, comfort and appearance appeared to predict significant positive change in personal self-sufficiency by residents. In an observational study of 406 residents and staff living in twenty group homes in the State of Washington, Landesman-Dwyer, Stein and Sackett (1978) found that residents in older buildings left the residence more often than did residents of buildings built specially as group homes. Also, group homes that were owned as part of a chain had more inactivity by residents than did homes under single ownership.

In a study that included both group homes for psychiatric patients and group homes for mentally retarded people, Bakos and his colleagues (Bakos et al, 1979) studied fifteen residences using observation, questionnaires, interviews and other methods. They found that a more resident-oriented treatment orientation predicted several positive differences in
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resident behaviors, including more cooperation and more talking with others. One longitudinal study has found, however, that the positive results found by Landesman-Dwyer and her colleagues and by Bakos and his colleagues may not persist. Birenbaum (1980) found that as residents lived in the community for several years they made progressively fewer visits outside the home and had a more constrained range of activities.

In addition, several studies have examined differences between group homes and family-care homes, with mixed results. Baker, Seltzer and Seltzer (1974) examined a range of living alternatives and found that residents in group homes were given more in-home responsibility and were more likely to have contact with the community than were family-care residents. Schreerenberger and Felsenthal (1977) found that family-care homes tend to have a structured schedule. Willer and Intaglia (1982) found that family-care residents displayed fewer behavioral problems than did group home residents, but were also more passive and less assertive. (It would seem plausible that this finding might result from a lower amount of activity in family-care homes.)

In sum, there seems to be evidence for the differential impact on residents of different community living alternatives. Good comfort and appearance seem to be related to improved self-sufficiency by residents. Difference in treatment, such as orientation of care, also seem to affect resident behavior. However, the research literature does not yet allow a critical question to be answered: what environmental and treatment qualities allow the salutary effects of a group residence to persist?

Size

Size, defined as overall capacity or the size of the living unit, enters into most discussions of environments for retarded people, with the most general conclusion being that settings that are larger are dehumanizing and impersonal and have a negative impact on residents. (It is interesting to note that without acknowledging the link, many discussions of size of living environments for mentally retarded people describe large settings in terms similar to those ecological psychologists use in describing "overmanned" settings: the individual's contribution is devalued, each person performs fewer activities, and so on.) However, the research on overall capacity of the facility has not borne this out (see Balla, 1976; Baroff, 1980; Landesman-Dwyer, 1981 for reviews). Most studies considering size have found that whereas there were differences between general types of facilities -- such as group homes versus large public institution -- there were no consistent relationships between size and quality of care on resident behavior within type. For example, King, Raynes and Tizard (1971) developed a Child Management Scale to assess the treatment orientation of a setting (resident-oriented versus institution-oriented). In a field study of ten institutions including a large array of facility types (children's homes, hospitals, hostels, etc.) they found great differences between types -- hostels were much more resident-oriented than hospitals -- but that the difference within type were apparently unrelated to overall capacity. In any case, there is no necessity that size be related to the relationship between
number of persons and number of valued roles to be fulfilled in an institution, even though this ratio was found to vary by size in studies of overmanning in schools (Barker & Gump, 1964.)

McCormick, Balla and Sizler (1975) used the Child Management Scale to compare four size classes of facilities: large central institutions (with a population of over 1,000 residents); medium-sized regional centers (150-300 residents); small regional centers (10-116 residents); and, group homes (7-57 residents). As in the King, Raynes and Tizard (1971) study, they found dramatic differences between facility types yet few differences attributable to size within type. However, they did find that the size of the living unit (defined as number of residents) predicted orientation of care, with smaller units being more resident-oriented. This finding is corroborated by Witt (1981) who found that the social maturity of a group of ninety-five mentally retarded residents increased when ward populations were decreased from 30-35 to 14.

An interesting question about research considering the impact on resident progress of environmental qualities such as size is what baseline growth to expect. Balla, Butterfield and Siegler (1974) studied 103 mentally retarded children in four institutions ranging in size from 2,012 residents to 383 residents. They found overall improvements in mental age in all settings over time but no relationship to the size of the facility.

An overall conclusion of research focusing on size is that within a facility type, overall size is not a reliable predictor of treatment orientation or quality of care. In fact, in an observational study of twenty group homes in the State of Washington, Landesman-Dwyer, Sackett & Kleinman (1980) found that residents in larger group homes were actually more social than those in smaller settings. Bjaanes and Butler (1974) found similar results when they compared the behavior of ten individuals in two group homes. And in a study of 160 facilities in southern California ranging in size from one to ninety-five residents, Butler and Bjaanes (1978) found that smaller facilities were often actually less therapeutic than larger ones because they tended to take less advantage of outside resources. Size of the individual living unit does seem to be important, with smaller units generally contributing to increases in adaptive behavior by residents and treatment practices that are more resident-oriented by staff.

Summary And Conclusions: Research On Environments For Mentally Retarded Persons

This research can be viewed from the perspective of the model we have described above, where the impact of the environment on behavior can be defined in terms of individual needs and abilities, design of the physical environment and social and temporal organizational factors. For mentally retarded people, individual needs and abilities have been demonstrated to affect environment-behavior interaction in a variety of complex ways. In terms of what predicts resident behavior, many studies have found that IQ is a significant predictor of the effects of normalization of living facilities on residents. As for outcome variables, several studies have shown that living in smaller, more homelike community facilities can have positive impacts on
This research has also focused on the design of the physical environment. Whereas several authors have attempted to catalogue the physical qualities of normality or institutionalization (see, for example, Gunzburg, 1968; Pederson, 1970; Rivlin, 1978; Rivlin, Bogert & Cirillo, 1981), empirical research has only recently begun to untangle the critical issues. As we have discussed above, studies comparing significantly different building types, such as large institutions with small group homes, have emerged with reasonably consistent findings: community living enhances growth in adaptive behavior. However, it is difficult to separate the effects of physical environmental differences from those caused by varying approaches to training. Several studies have suggested that the overall size of a facility may be less important than the size of a living unit. Several studies have also suggested that ergonomic qualities of environments may be important: the simplicity of controls, availability of props, and so on. In addition, several studies have found that a critical aspect of environments for mentally retarded people is the extent to which they support the control of social interaction by residents. Even for people labelled severely or profoundly retarded it is important to provide private or semi-private rooms and well-marked, controllable semi-private spaces.

A number of social and organizational factors have emerged as well, and in fact, some researchers have proposed that treatment orientation by staff may be more important than physical environment. The relationship between size and treatment is not always what had been expected: larger community facilities may have more community contact than do smaller ones. Also, there is apparently at least in some residences, a decrease in community contact over time.

Research on environments for mentally retarded people is marred by serious methodological and inferential problems. Because of ethical and therapeutic concerns, few studies have employed random assignment, sample sizes tend to be small, and causal inferences are difficult to make (see Cook & Campbell, 1979). A larger number of studies have used matching, but matching may have serious unpredictable systematic effects on the results depending on the relationship of the matching variables to the predictor and outcome variables. More attention needs to be given to these inferential problems, and wherever possible experimental or even quasi-experimental design should be employed (Cook and Campbell, 1979).

There are several significant points of interaction between design, treatment, and residents' skills and abilities. The design of the physical environment provides or eliminates training opportunities; it allows mentally retarded people to operate independently or only with help; it establishes mentally retarded people as equal or as inferiors. What remains is to better understand the relationship between specific needs and abilities, specific physical settings and specific social and temporal factors. Studies such as those by Zimring, Weitzer and Knight (1983) suggest that whereas non-
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retarded people may thrive in suite-type settings, mentally retarded people who may be less socially skilled, may require more concrete ways to control social interaction: private rooms, closeable doors defining semi-private space, and so on. In other words, to actually understand person-environment fit, we need to develop a taxonomy of person, situation and environment. The old labels of "institution" or "community" are not of much value in targeting environments for this special population, and neither are customary assumptions that accompany the labels "retarded" or "normal." What should replace them? In the study of community homes, described below, we attempt to develop more inclusive descriptions of settings as a vehicle for understanding how such environments for mentally retarded people actually operate.
A Study of Group Homes in Georgia and Illinois
As was described above, the evolution of group homes represents a shift in targeting and in conventional assumptions. Whereas early approaches to mental retardation by reformers such as Samuel Gridley Howe focused on its transitory and changeable nature -- they sent "students" home during vacations and at the end of training -- assumptions about the immutability of "idiocy" and the economic advantages of centralization soon led the development of large institutions. More recently, the broad acceptance of the normalization principle has resulted in a lack of special "targeting" for mentally retarded persons (in fact, diagnostic procedures such as PASS3 downgrade a facility if it contains elements not resembling a loosely-defined suburban home). To help guard against "targeting," many jurisdictions focus on the rental and purchase of existing homes rather than designing new specially-built group homes.

The shift in targeting (or lack of it) and in customary assumptions raises a significant question: to what extent is the suburban home the appropriate model for housing independent mentally retarded persons. (Whereas there is no easy definition of appropriateness, for the purposes of this study it was defined as the satisfaction of residents and staff as well as the ability of the facility to support training and day-to-day living).

**The Homes and Residents**

Like community homes nationally, the homes studied in this project are diverse in architectural style and in the residents who live in them. Most of the homes, 10 of 15, were not designed as group homes and reflect both the diversity of private homes in Illinois and Georgia, and the politics and economics of the group home movement. They often have special characteristics that make them relatively inexpensive to lease or purchase. Many homes are larger than suit most 1980's families or are isolated in the country or in transient light industrial or lower middle class areas. These conditions reflect the resources available to groups who support homes and their sensitivity to community resistance. The homes that are newer or in better neighborhoods tend to be supported by church or volunteer groups with political skill. The homes were chosen to reflect a relatively narrow range of sizes -- they house from four to twelve residents -- and to primarily serve residents who are ambulatory. (Non-ambulatory residents present an additional set of problems and concerns that need to be targeted. While these are critical, they are beyond the scope of the present study.) All the homes had house managers or other staff present at all times, and most had live-in staff.

A description of several of the homes may provide a clearer image of the sample. "Oakdale" (names have been changed) houses 12 moderately-retarded residents. It is one of three homes that is coed (eight homes had all male residents, four had all female). It was HUD-financed and was occupied in 1983. It is a one-story brick building that has some institutional elements due to HUD regulations: ceiling sprinklers, fire doors, and epoxy wall finishes. The home is larger than others in the neighborhood and, with its two bedroom wings, feels quite institutional. The furniture is older and is tightly clustered around the
The homes studied varied considerably in size, age and suitability.
television. Houseparents have a separate bedroom, bath and office. Most residents recently moved out of a nearby state institution and required considerable help in activities of daily life.

"Willow" is a 100 year old Victorian home in a lower middle class area. It houses seven residents and two house managers in five bedrooms with three baths. The kitchen is large -- 16 feet by 15 feet and has a large food preparation table. The residents, all women, are quite independent and spend most days working in sheltered workshops or other activities. The home has thirteen rooms and feels spacious, comfortable, and a bit tattered.

"Kingbrook" is a leased duplex in an upper-middle class suburb of well-tended modern homes on large lots. The church association has leased both sides of the duplex: one principally houses residents; the other, houseparents and administration. In each side, three bedrooms open directly out to a "great room." Most residents, all men, are highly independent. They have girlfriends and dates. Sex and privacy are major issues of discussion.

In this study we focus on social interaction and privacy, training, house manager accommodations, choice and flexibility, and image and attractiveness. Fifteen group homes were studied (eight in Georgia and seven in Illinois). Staff running the homes filled out a detailed questionnaire (see Appendix A) and were interviewed. Where possible, residents were also interviewed and the settings were observed and documented. Each home received several visits over a two to three-week period.

Methodology

The primary instrument for data collection was a survey questionnaire (see Appendix A) which was distributed to the house managers in each residence being evaluated. Three areas of information were addressed: (1) overall satisfaction with the home for various activities, and the importance of various features of the home; (2) room-by-room assessment of frequency of activities, overall satisfaction and satisfaction for each activity, and potential improvements; (3) background information about the staff, the residents and the home itself. The format of the questionnaire was largely multiple-choice (satisfaction scales, frequency of activity); however, within each section open-ended question(s) probed for further explanation. Questionnaires were distributed to the house managers of the fifteen group homes. All questionnaires were returned.

At the time the survey was distributed, objective data on the physical setting was collected, including age, location, condition of the residence, sizes of spaces, layout, furnishings, and so forth. Once the questionnaires were returned, a follow-up interview with the house managers was scheduled to clarify responses as well as provide more detailed information about critical concerns. In addition to the interview, managers were asked to accompany the researchers on a walk through the residence (touring interview) to describe the activities that occurred in each space, and to point out aspects of the building design or use that were particularly positive or problematic.

An attempt was made to interview residents: group interviews as well as tour-
Livin in The Community (walk through) interviews were conducted. Questions were asked such as: What goes on in this room? What do you like best about this room? What don't you like about it? If you could change something about this room, what would you change? However, after several sessions it was determined that this method did not produce useful information. Difficulties encountered included lack of verbal skills, desire to please the researcher (agreement with all questions), perhaps a fear of saying anything that would indicate dislike of the home (fear of being moved elsewhere), and difficulty eliciting responses concerning the physical environment.

1 An example: Sessions sometimes went something like this:

Interviewer: "Let's say you could snap your fingers and change something in this room... Snap! What would you change?"

Resident: "Snap.... and Tony wouldn't be late for breakfast ever again. He's always late for breakfast" or Resident: "Snap.... It's Christmas!"

Results and Conclusions

Social Interaction and Privacy

In the "Ozzie and Harriet" model of the typical household, we see the family gathered in the den, father reading the paper, mother sewing, and children playing games or watching television. This household model fits well with the design of the typical suburban home. The family room, if there is one separate from the living room, is used by the family together, although there may be a playroom or gameroom for more boisterous activities.

In evaluating the effectiveness of this model for group homes, some interesting observations can be made. In the homes that were studied, if, as in the "typical" suburban home, there was a living room separate from the family room, it was most often retained for entertaining guests. The den/family room was heavily used. However, it appeared that, particularly in homes with higher functioning residents, the household did not function as a unit as much as a typical suburban household might. Therefore, there was a need for multiple common spaces. House managers felt that more than one den/family room or recreation room was important for several reasons. First, simply to provide for potentially conflicting activities (e.g., quiet - noisy; individual - group). Second, to accommodate the different personalities and activity preferences of residents. Managers reported several instances of residents who did not get along with one another. Managers voiced a preference for several separate common areas rather than one large one.
As important as is communal space, private space is needed where residents can retreat when activities become overly stimulating, when they desire time to reflect, or when they simply want to be alone. Without this kind of space, available when it may be needed, residents will be less likely to participate fully in social situations.

It is interesting to note that the den and the bedrooms were used quite often for both privacy-related and social activities, yet satisfaction with the space was high for both uses. Similarly the dining room was used for both social activities and eating alone.

Social activities included conversation, discussions, visiting with family and friends, active and quiet games, and other group activities. These social activities occurred most often (more than once per day) in the den/family room and in the dining room. Residents engaged in group activities once a day in the dining room and several times a week in the den. Conversations occurred about once a day in the dining room. Residents engaged in active games three or four times per month in the den; quiet games three or four times per month in the dining room. Visiting with family and friends occurred less frequently (almost never to one to three times per month) and about equally often in most spaces in the house.

Bedrooms were also places for socialization. Bedrooms were used four or five times a week for conversation and several times a month for discussions. A porch or deck area was used one or two times a week for social activities; while the front and back yards were used about once a week.

Privacy-related activities included being alone and reading/studying. The location house managers reported residents most often went to be alone was the bedroom (more than once per day), while the second most frequent location was the den (two or three times per week). Reading/studying occurred less often (almost never to one to three times per month) and about equally often in most spaces in the house.

TV watching appeared to be both a social and privacy-related activity. Residents watched TV more than once a day in the den and several times a week in the bedrooms.

Communal Space.

Of the fifteen community homes surveyed, nine had a den/family room, three had more than one den/family room or recreation room, and eleven had a formal living room in addition to a den/family room or recreation room.

House managers reported that residents used den/family rooms most often for watching TV (more than once per day) and conversations (once per day). They also reported that the den/family rooms were used nearly as often as a place residents went to be alone (four to five times per week).

As illustrated in Figure 2, house managers were satisfied with the location and size of the den/family rooms. However, house managers of newer homes (less than ten years old) rated the size of the den/family rooms as more satisfactory than those in older homes (over ten years old). Although the den/family room in the newer homes was
2 The suitability of communal space depended on the abilities of residents and the needs the house managers had for visual control.

larger, this rating may also be due to a more positive overall feeling about a newer space. House parents were satisfied with the den/family room as a place to socialize. They were slightly less satisfied with the degree of soundproofing of den/family rooms, but reported that noise was not a serious problem in the house. They felt residents also were satisfied with the den/family room.

After eating, dining rooms were reported as used most often for conversations and group activities (about once a day). They were used less frequently for discussions, quiet games, being alone, reading/studying, active games, visiting and watching TV.

House managers were moderately satisfied with the dining room as a place to socialize, gather and have guests. Although the reasons are not clear, house managers of homes with all female residents were more satisfied with the dining room as a place to socialize than were those of homes with all male or coed residents. Perhaps this was due to better housekeeping/cleaning of these rooms in the all female residences.
Residents Bedrooms.

The large majority of the homes surveyed housed two permanent residents per bedroom. Several houses provided an extra bed in some bedrooms to offer respite care for temporary residents.

House managers reported that bedrooms were frequently used for being alone and conversations. Numerous residents have their own televisions and watching TV in bedrooms was reported to occur several times per week.

As Figure 3 illustrates, house managers were less satisfied with bedrooms than they were with communal space. More than most rooms perhaps, the bedrooms reflected the house managers’ attitudes toward the residents’ independence: whereas some homes encouraged activity out of the house managers’ immediate supervision, and even accepted the residents’ rights for sexual privacy, most demanded much higher amounts of supervision. As might be expected, in houses with coed residents, house managers were less satisfied with bedrooms as a place to socialize. Although the reasons are unclear, in homes with lower functioning residents and those with all female residents, house managers were more satisfied. Perhaps this relates to a higher need to visually control the activities of these groups, resulting in little opportunity or perceived need for residents to use their rooms to socialize.

House managers of homes less than ten years old were more satisfied with the bedrooms as a place for residents to be alone than were houseparents of older homes. Similarly, they were more satisfied with the bedrooms as a place to be alone in residences designed as community homes. In the newer facilities designed as community homes, resident bedrooms were less likely to be on a separate floor from communal spaces. Perhaps again house managers were more satisfied with these homes due to the ease of control (visual/auditory) of the activities of residents. Also, newer homes were generally in better repair.

Most of the homes surveyed housed two residents per bedroom. Conflicts over the use of space, or reports of residents being kept awake by others were minimal (occurring several times per month). House managers reported this arrangement provided residents with companionship. One house manager suggested that single-occupancy accommodations could lead to feelings of abandonment for recently deinstitutionalized individuals accustomed to high-density living situations. However, managers felt that more than two residents per bedroom could cause friction. They believed more private, single-occupancy rooms should be available for use by higher functioning individuals preparing for a move to more independent living situations as well as those residents who were not compatible with other residents.

Training and Independent Activity

As described in the review of literature, the design of the physical environment can enhance training opportunities and support independent activity or it can inhibit or deter these activities. Two factors emerge from the literature as particularly relevant:

1) The design of ergonomic elements: ergonomic elements which are simple,
3 Bedrooms provide places for both solitude and socializing. However, some house managers were concerned about loss of the ability to survey these activities.

durable and well-designed can increase competence;

2) Opportunities for control: the ability to use the physical environment at one's own discretion can encourage adaptive behavior.

Training in daily life skills is one of the primary activities that takes place within the group homes that were studied. House managers and staff are actively involved in training residents and reinforcing their performance. It became clear very early in our research process that a supportive environment could facilitate this learning process.

Training occurred in a variety of spaces throughout the group homes studied including the den, dining room, kitchen, bedrooms, bathrooms and laundry. Training in grooming occurred several times per week in the bedroom and several times per month in the bathroom. Training in cooking occurred daily, and in doing laundry several times per week.
House managers and staff did most of their training with one or possibly two residents at a time. This required that two adults and sometimes three would need to work in spaces often designed for one person. Lack of space was a particular problem in bathrooms and the laundry. It was also reported that, although most instruction in cooking involved primarily one or two residents at a time, often a larger group would watch or be involved in more peripheral roles such as setting the table and other preparations for meals. In these situations, the size of the space, its organization, and supportive props such as counter or storage space becomes critical.

Kitchens.

Kitchens were used most frequently for training in cooking, meal preparation and clean-up. Managers of homes with "eat-in" kitchens enjoyed the convenience this provided, not having to carry the food longer distances, especially for meals such as breakfast or lunch when not all residents would be eating at the same time.

As Figure 4 illustrates, the survey suggests that house managers were reasonably satisfied with the kitchen as a place to teach cooking and prepare meals efficiently, and were less satisfied with the size of the kitchen and its ability to be cleaned. Managers of homes with all male residents were more satisfied with the kitchens than managers of homes with all female or coed residents, perhaps due to perceptions of the lower priority of cooking skills for male residents.

However the site visits and interviews suggested a slightly different view: in most homes where active training in cooking was going on (less than half of the sample), domestic kitchens were typically seen as too small for a trainer and two or three residents to work in. Also, house managers indicated that in addition to being too small, in general the kitchens lacked adequate counter space for all the activities that occurred there and the number of people involved. Given the number of people to be fed on a regular basis and the amount of groceries to be stored, house managers reported the need for more cabinet space and room for two refrigerators and a freezer.

In addition, house managers reported standard height stoves were too high for shorter residents. Push button stove controls were recommended as better for training than dials, and controls on the front of the stove were considered safer than those on the back panel.

One example of a kitchen that appeared to work well for both training and convenience was one with an "L" shaped counter separating the kitchen from the dining area. This design allowed the house manager or staff member to work with one or two residents in the kitchen area while other residents could view these activities or participate in support activities, such as salad preparation, from the dining room.

Bedrooms.

House managers reported bedrooms were used about once a day for training in general daily life skills and training in grooming. House managers were satisfied with bedrooms as a place to support training, but were slightly less satisfied with their ability to be cleaned and maintained (see Figure 6).
4 Homes that taught cooking skills—about half the sample—needed kitchens that allowed several residents to watch a demonstration and to participate.

5 The "I" shaped counter was useful in teaching cooking skills to several residents at a time.
House managers reported that when lower functioning residents share bedrooms, they should be provided with individual closets to minimize confusion over the ownership of clothes. In contrast, higher functioning residents did not have problems with sharing closets but needed more closet space than was provided.

**Bathrooms.**

Bathrooms were used several times per week to teach residents personal skills. Surprisingly, only infrequently were there conflicts about cleaning of shared bathrooms.

House managers were less satisfied with bathrooms as places to support training, to be cleaned and maintained, and with their size (see Figure 7). House managers were less satisfied with the ability to clean bathrooms when residents were all male than when they were all female or coed.

House managers reported that traditional bathroom layouts (e.g. toilets placed close to tubs) make it difficult for them to reach residents in the tub. The use of sliding glass doors on tubs also interferes with teaching. Separate controls for hot

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6 Although they were used less often than bathrooms, bedrooms were also used for training.
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and cold water were considered better for training than single control, mixer faucets. Some also suggested that automatic shut-off valves for faucets could minimize problems with running water. House managers noted that more handrails in and around bathtubs were needed as well as additional towel bars and separate storage space for the personal items of each bathroom user. Carpeting and other permeable finishes should be avoided in bathrooms to facilitate cleaning and minimize odors. Ventilation also was needed.

Laundry.

Laundry rooms were used several times per week by house managers and residents for training and doing laundry. House managers were minimally satisfied with the laundry room as a place to support training in daily skills, its ability to be kept clean and its size. In general they were satisfied with the location of laundry rooms, although some reported laundry rooms could be farther from main circulation routes. Laundry rooms located off the kitchen were considered problematic. Since both the kitchen and laundry are high use areas, the activities were often in conflict.

As is true in the kitchen, the organization and availability of props in the laundry area are important to successful training and the encouragement of independent activity. Appliances should be at a convenient height for loading and unloading clothes (standard heights may be problematic for some residents of small stature), controls should be simple and within easy reach. Counter space for folding clothes, a bar for hanging clothes, and storage shelving for cleaning supplies are also important aspects of design.

House Manager Accommodations.

House managers are engaged throughout the day and night with residents: in social interaction, skills training, monitoring behavior, and so forth. Although it is essential that the house manager be an integral part of the life of the home, past history clearly indicates that turnover is high, and burnout is an occupational hazard of a house manager's job. In our experience as well, many of the house managers were young married couples, some of whom had children. Clearly it is important that these family units have some time to themselves if they are to remain intact. These factors have led to a recognition of the need for "off-stage" and private space, preferably with a separate entrance, apart from that used by residents. The houses surveyed included a variety of accommodations for house managers. Approximately half of those accommodations were a combination bedroom and sitting/work area in the same area as residents bedrooms (eight of the sample of 15); the remaining seven had some type of distinct separation, such as being located on a separate wing or floor level. Eight homes had private baths for staff.

House managers were minimally satisfied with the amount of privacy of their bedroom, its location to other bedrooms, and with the overall arrangement of the house for raising their own children. While house parents did not have as much privacy as they would like, they did not believe that a lack of privacy made it difficult for them to live in the group home. As one might expect, house managers considered bedrooms or bathrooms shared by a resident and house manager to be unacceptable.
The six house managers who had children were less satisfied with the arrangements of their children's bedrooms in older homes (over ten years), and in homes with older residents (over thirty-five years) whose residents were all male.

House managers indicated a suite for themselves, separate from the residents' bedrooms, was very important. While they needed to be able to hear residents, they did not believe this could only be achieved through physical proximity of house managers and residents bedrooms. They desired a sitting area separate from their sleeping area and would prefer their own private entrance. One home that was identified by many of the house managers interviewed as being a particularly good model for house manager accommodations was designed with a house manager suite located above the main living area, with a balcony overlooking the living room and main entry. Residents understood that they could come to the bottom of the stairs to the house manager's suite and ask for assistance, but not up the stairs. This arrangement allowed house managers some privacy and separation, yet at night with their doors open they could monitor resident activities.

Another area of need in almost every home was space to accommodate administrative tasks. In most homes, a make-shift office area was crowded into the manager's bedroom. Dedicated space with a desk, filing cabinet, and lockable storage for medications was desperately needed.

Choice and Flexibility

As with any other population group, developmentally disabled persons, even those all classified as "moderately retarded," do not have the same needs and desires, and may not require or prefer the same physical settings. Over time requirements may change as persons mature and/or learn new skills. Thus, the goal for the design of community homes should not be a single prototype, but a range of model solutions, and within any model home, there should be considerable flexibility. This need for choice and flexibility is best illustrated through several examples.

Common Space.

From our observations during the course of this study, it appeared that, in homes with lower functioning residents, residents more often participated in activities as a group (often house manager led activities) than singly or in small groups. This suggests there may be less need for multiple common spaces in homes with lower functioning residents than in those where residents are more likely to engage in independent activity.

Bedroom Occupancy.

Choice and flexibility are important issues in decisions about bedroom occupancy. As described previously, house managers were in agreement that double-occupancy rooms were probably the most satisfactory solution; however, there was need for at least one extra single-occupancy room to provide the flexibility to accommodate personal preferences and sometimes personality conflicts. This "extra" space would also provide respite care accommodation.
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Mean Satisfaction with Bathrooms
For Training

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Legend:

Bathrooms
A As a place to support daily life skills
B With its ability to be cleaned and maintained
C With its size

7 Bathrooms, a critical place for training, were only moderately satisfactory.
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Laundry areas that were part of kitchens, hallways or dens—often a plus in single-family homes—tended to disrupt other activity in the group home; separation was desired.
Transition Space.
One of the homes in the study was designed with a resident bedroom located on the lower floor adjacent to the game room. This bedroom was separate from the main bedroom wing of the home and had its own entry. The house managers of this particular home felt this arrangement was quite useful in providing a transition space for residents who were preparing to move to a more independent living situation.

As previous research suggests (see literature review), moving from one care setting to another can negatively affect resident behavior. However, with appropriate preparation, these effects may be at least partially ameliorated. Particularly in homes with higher functioning residents, a resident bedroom somewhat apart from other bedrooms, and perhaps with a separate entry, allows the opportunity for a resident to experience greater independence in preparation for a move.

Image and Attractiveness

House managers believed that an overall home-like appearance was very important, and that their own homes fitted well into their neighborhoods. However, they were less satisfied with the porch, front yard and back yard as a place to represent the house (and presumably its residents) to neighbors.

House managers were less satisfied with the attractiveness of each room type (i.e., den/family room, dining room, kitchen,
resident bedrooms, and back yard). They also were less satisfied with the appearance of their own accommodations.

An important design issue seemed to be the durability and ease of maintenance of materials and finishes and exterior planting materials. In all of the homes residents were responsible for some of the cleaning and maintenance tasks. Thus, ease of maintenance was critical if spaces were to appear well-kept.

The adequacy of storage space was also related to appearance problems. Storage spaces within easy access was important to maintaining a "clean" appearance. This was especially true in high use areas within the home such as the kitchen, den or family room, and for the storage of outdoor furniture, game equipment and lawn and garden tools.

The majority of the homes in this study were built in the same "style" as the homes in the surrounding neighborhood. In part this was because most were not built as group homes. Nevertheless, they did blend well with the other homes in the surrounding area. On the basis of recommendations from this and other studies, and simply the number of residents accommodated in an average home, an ideal group home would be larger than those on a typical suburban street. If one were designing a group home, in addition to blending with the character of the surrounding neighborhood, it would be important to maintain similar dimensions to other homes along the street facade (the side of the house facing the street). Special amenities such as handicapped access ramps should be integral to the design so as not to appear different in character. Most homes require some additional parking and/or space for a van. This parking should be provided to the rear of the home or screened from the street.

**Recommendations**

We have found that some of the customary assumptions about family life that are embodied in suburban homes also apparently fit the lifestyle and needs of group home residents. For example, living rooms were typically used for more formal socializing while informal, "family" activities went on in the den or recreation room. (This is probably due, at least in part, to the patterns and expectations the house parents bring to the homes).

The major divergences we have found from the "normal" suburban family model tend to reflect the problems of several adults living together, rather than any special problems related to mental retardation. Training of personal grooming and home skills also put special demands on the homes.

The functional skills and recent experience of the residents seems also to be very important. The homes where residents were of lower functional levels, or where they were recently institutionalized seemed to place greater emphasis on surveillance of residents by house staff. Staff wanted larger, undivided spaces so that they could more easily watch residents. Staff also wanted to be able to monitor residents from the staff quarters to be able to hear if anyone wandered off or if there were any disturbances).

Higher functioning residents put more emphasis on autonomous activities. Rather than having one or two large so-
cial spaces, this group benefits from having multiple areas in which to socialize. They use their bedrooms much more as an independent base of operations (as a place to socialize, watch TV, etc.)

To summarize, whereas little targeting is needed for the mentally retarded people who participated in this study (more is needed for multiply-handicapped individuals), some specific concerns did emerge:

Common Areas.

All homes need multiple common areas (living room plus den/family room/recreation room); this is particularly important in homes with higher-functioning residents.

Resident Bedrooms.

Double-occupancy bedrooms seem acceptable for most residents -- they provide companionship and privacy -- but at least one single-occupancy room should be provided to accommodate personal preferences and personality conflicts. Singles are also useful for providing respite care.

If possible, one bedroom should be located away from other bedrooms, perhaps with a separate entry, to provide a transition for a resident preparing to move to an independent living situation.

Resident bedrooms should have some separation from common spaces, such as a separate bedroom wing. However, further separation, such as location on a separate floor, appears to reduce satisfaction with the use of bedrooms for social and privacy-related functions.

Because resident bedrooms often function almost as independent apartments, closets should be large enough to store most of a resident’s personal items. To avoid confusion, individual closets should be provided.

Kitchen.

Kitchens are sometimes used for training, sometimes used for institutional-type food preparation by a cook, and sometimes need to support snack or breakfast preparations by six or eight independent adults. To support this wide range of functions, kitchens should have a place where 3-4 residents can view cooking and should have room for institutional refrigerators and bulk food storage. Sinks should have separate hot and cold water controls (rather than an integrated mixer wand); burner controls should be on the front of stoves.

Bathrooms.

Bathrooms should be large enough to accommodate two residents or one resident and an instructor, with room for the instructor between the toilet and bath. Separate storage should be provided for toilet articles of each resident who uses the bathroom. Floor surfaces should be impermeable -- ceramic tile or seamless vinyl rather than carpet or vinyl tiles. As in the kitchen, separate easily-graspable hot and cold water controls should be provided.

Laundry.

The laundry area should be large enough to accommodate a resident and instructor. It should be separated from the kitchen or den so that dirty or
unfolded laundry does not disrupt other activities or look unsightly.

**House Manager’s Area.**

If possible, the house manager’s suite (bedroom(s), bath, and sitting area) should be somewhat apart from the main sleeping areas of the home. Although this, on the surface, seems to deviate from the dictates of the normalization principle, it emerged as highly important if burnout of resident house managers is to be avoided. House managers also need an office area for administrative functions that has lockable storage for medication.

**Image And Siting.**

Although not the principal focus of this study, several siting and image issues emerged as significant. The street facade should be compatible with neighbors in setback, height and materials. A screened parking area should be provided for vans or other specialized vehicles.

Perhaps the best recommendation is that the image of mentally retarded people living in the community needs to be changed. All too often they are still thought of as docile and dependent. If designers think of community home residents as independent adults who need space for privacy, socializing, storage of personal items, personal display, and all the other functions homes serve for adults, they cannot go wrong.
References


Kleinberg, J. & Galligan, B. Effects of deinstitutionalization on adaptive be-


Schroeder, S.R. & Henes, C. Assessment of progress of institutionalized and


Living in The Community

Appendices
TOPICAL OUTLINE - HOUSE PARENTS INTERVIEW

1. a. Overall, how satisfied are you with this home?

   1 2 3 4 5
very somewhat neither satisfied somewhat very
dissatisfied dissatisfied nor dissatisfied satisfied satisfied

b. What do you like best about this home?

c. What do you like least about this home?

2. Compared to other group homes in this area, how would you rate this home?

   1 2 3 4 5
very somewhat neither high somewhat very
low low nor low high high

Why?

3. Which rooms in the house get used most?

   living room dining room family room/den
   game room bedroom kitchen

Why?

4. Which rooms in the house get used least?

   living room dining room family room/den
   game room bedroom kitchen

Why?
5. a. Overall, how satisfied are you with the house parent (or equivalent) accommodations?

b. What do you like best about them?

c. What do you like least about them?

6. What training activities go on in the home?

7. a. For each training activity:

   Is the space in which it occurs a good space for that activity?

b. What do you like best about it?

c. What do you like least about it?

8. For the common living areas in a group home:

   Which is better, several smaller common areas or one large common space? Why?

9. Do you think shared bedrooms or separate bedrooms are best for the residents?

10. Are the exterior spaces around the house used much? For what activities?
BASIC RESIDENT QUESTIONNAIRE

Type of space (bedroom, living room, den, etc.) ______________________

Number of space (from Physical Survey) ______________________

1. Do you like this room?
   like it a lot  don't care  don't like it

2. What activities do you do here?
   sleeping  reading  talking
   working  playing games  eating

3. Is this a good place for (activity above)?
   very good  don't care  not good

4. Is this a good place for (activity above)?
   very good  don't care  not good

5. Do you like to do things here by yourself or with others?
   by myself  with others

6. What do you like best about this room?

7. What do you like least about this room?
COMMUNITY HOMES

PHYSICAL SURVEY

I. Group Home Information

A. Address

B. Brief Description

1. Physical description of house
   a. Type
      ____ One story (excluding basement)
      ____ Two or more (excluding basement)
   b. Age
      ____ Built in the last 5 years
      ____ 6-10 years old
      ____ 11-20 years old
      ____ 21 years old or more
   c. Setting
      ____ urban setting
      ____ suburban setting
      ____ rural setting

2. Number of residents:

3. Indicate total number of rooms by type:
   ____ living room
   ____ kitchen
   ____ den/family room
   ____ recreation room
   ____ bedroom(s)
   ____ bath(s)

4. Number of residents per bedroom:

5. Houseparent accommodations (or equivalent)
   a. Spaces (check all that apply):
      ____ bedroom only
      ____ combination bedroom sitting/work area
      ____ separate houseparent den/family room
      ____ separate houseparent bathroom
      ____ children's bedroom(s)
b. Location

_____ on separate wing or floor of home

_____ on resident bedroom level but with distinct separation (e.g., separate doorway to bedroom and bath) Describe separation:

_____ on resident bedroom level but without distinct separation

_____ on resident living level but with distinct separation Describe separation:

_____ on resident living level but without distinct separation

c. Separate houseparent entrance _____ yes _____ no
II. Floor Plan(s) (for each floor)
(Sketch floor plans including approximate dimensions. Number each space and indicate space use (resident bedroom, bath, living room, den, etc.) on key.)
III. Room Analysis (by space, attach as many sheets as needed)

A. Identify Space (indicate space number and type from "1" above)

B. Annotated Space Plan

Sketch room plan including approximate dimensions and ceiling heights. Locate and identify furnishings. Indicate wear and tear, signs of personalization (pictures, plants, etc.), and adaptations (bookcase used as room divider, cardboard over heat vent, etc.)
C. Windows

1.) number of exterior walls _____
2.) percent of outside walls that is glass ______
3.) is there a view from windows to a moderate to heavily used exterior space? ______ yes ______ no

D. Floor Finish (eg: carpet, linoleum, etc.) ________________________________________________

E. Acoustics (check all that apply)

_____ acoustical ceiling
_____ hard floor finishes
_____ other (specify)

E. Acoustics (check all that apply)

_____ carpeting

_____ soft furnishings

F. Evaluation

1. very good condition    good condition    neither good nor bad    bad condition    very bad condition

2. very casual    casual    neither formal nor casual    formal    very formal

3. very poorly kept    poorly kept    neither well-kept nor poorly kept    well-kept    very well-kept

4. very home-like    home-like    neither home-like nor institutional    institutional    very institutional
INTRODUCTION

The following questionnaire is directed at helping uncover the important issues in the design of group homes for mentally retarded people. It is part of a study funded by the National Endowment for the Arts conducted by Jean Wineman and Craig Zimring at the Georgia Institute of Technology and Jim Anderson and Sue Weidemann at the University of Illinois, Urbana-Champaign.

Your responses will be kept strictly confidential, and no names or addresses of homes or names of residents or staff will be used in any description of the study.

We very much appreciate your time in filling out the survey. It will help to improve group homes in the future.
QUESTIONNAIRE – House Parents/House Managers

STAFF
1. Please give us some information about yourself and your family: (Circle the appropriate answer or fill in the blanks)

<table>
<thead>
<tr>
<th>Age:</th>
<th>Sex:</th>
<th>Marital Status:</th>
<th>Employment at this home</th>
<th>Live-in</th>
<th>Length of time at this home</th>
<th>Children:</th>
<th>Age(s)</th>
<th>Sex</th>
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<td>Full-time</td>
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<td>You:</td>
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<td>Yes</td>
<td>No</td>
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<td>Spouse:</td>
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<td></td>
<td>Yes</td>
<td>No</td>
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</table>

2. Who else lives/works in this home, other than the resident:

1. Job/position __________________________________________ Age _______ Sex _______

2. Job/position __________________________________________ Age _______ Sex _______

3. Job/position __________________________________________ Age _______ Sex _______

4. Job/position __________________________________________ Age _______ Sex _______

HOME

Please give us some general information about your home:

1. About when was your home built?

2. Was it built as a group home? (If so, under what program?)
3. How many residents does your home accommodate?
   permanent residents:
   
   respite care:
   
4. Where is your house located?
   ___ rural area
   ___ small town
   ___ moderate-sized city
   ___ large city

5. How would you describe your neighborhood?
   ___ established suburban residential area
   ___ new suburban residential area
   ___ established intown residential area
   ___ new intown residential area
   ___ downtown commercial area
   ___ suburban commercial area
   ___ farms or other area with few other people around
   ___ other, please specify:

6. Who runs your home:
   ___ State
   ___ Local Association for Retarded Citizens
   ___ Church group
   ___ Other, please specify:
7. **Who funds your home? (Check as many as apply).**
   - [ ] State
   - [ ] Local Association for Retarded Citizens
   - [ ] Private contributions
   - [ ] Other, please specify:

8. **Overall, how satisfied are you with this home:**
   - [ ] very satisfied
   - [ ] neither satisfied nor dissatisfied
   - [ ] satisfied

9. **What do you like best about this home:**

10. **What do you like least about this home:**

11. **Compared to other group homes that you know of, how would you rate this home?**
    - [ ] very poor
    - [ ] poor
    - [ ] neither good nor poor
    - [ ] good
RESIDENTS

Please describe the residents in this home.

<table>
<thead>
<tr>
<th>Age</th>
<th>Sex</th>
<th>Previous Residence (e.g. family home, state institution, own home, etc.)</th>
<th>Time at previous residence</th>
<th>Dress self unaided</th>
<th>Dress with some aid</th>
<th>Eat using utensils</th>
<th>Read simple text</th>
<th>Read newspaper</th>
<th>Help prepare food</th>
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</table>
DEN/FAMILY ROOM

1. Do you have a den or family room?  
   
   |   | yes | no |
   -----------------|
   **If yes, please answer the following questions, if no, skip to the next room (dining room)**

2. About how often do the residents use the den or family room for the following activities?

<table>
<thead>
<tr>
<th>Activity</th>
<th>almost never</th>
<th>1-3 times per month</th>
<th>1-3 times per week</th>
<th>4-5 times per week</th>
<th>about once per day</th>
<th>more than once per day</th>
</tr>
</thead>
<tbody>
<tr>
<td>getting together as a group of 3 or more, other than at mealtimes</td>
<td><strong>___</strong></td>
<td><strong>___</strong></td>
<td><strong>___</strong></td>
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<td><strong>___</strong></td>
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<tr>
<td>serious discussions</td>
<td><strong>___</strong></td>
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<tr>
<td>reading or studying</td>
<td><strong>___</strong></td>
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<tr>
<td>active games</td>
<td><strong>___</strong></td>
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<td>quiet games</td>
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<td>casual conversation</td>
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<tr>
<td>training in daily life skills</td>
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<tr>
<td>watching TV</td>
<td><strong>___</strong></td>
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<td><strong>___</strong></td>
<td><strong>___</strong></td>
<td><strong>___</strong></td>
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<tr>
<td>training in grooming and daily activities</td>
<td><strong>___</strong></td>
<td><strong>___</strong></td>
<td><strong>___</strong></td>
<td><strong>___</strong></td>
<td><strong>___</strong></td>
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<tr>
<td>simply being alone</td>
<td><strong>___</strong></td>
<td><strong>___</strong></td>
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<tr>
<td>spending time with family</td>
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<tr>
<td>spending time with a date</td>
<td><strong>___</strong></td>
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<tr>
<td>spending time with a visitor</td>
<td><strong>___</strong></td>
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<tr>
<td>visiting with neighbors</td>
<td><strong>___</strong></td>
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<tr>
<td>other (please write in)</td>
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</tbody>
</table>
3. How satisfied are you with the following characteristics of the den or family room?

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>very satisfied</th>
<th>dissatisfied</th>
<th>neither satisfied</th>
<th>nor dissatisfied</th>
<th>satisfied</th>
<th>very satisfied</th>
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<tbody>
<tr>
<td>as a place to socialize</td>
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<tr>
<td>as a place to support daily life skills</td>
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<td>with its ability to keep cleaned and maintained</td>
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<td>with its location in house</td>
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<tr>
<td>with its size</td>
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<tr>
<td>with its overall attractiveness</td>
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<tr>
<td>the degree of soundproofing</td>
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</table>

Please briefly explain any "very dissatisfied" or "very satisfied" responses:

4. How satisfied would you say the residents are with the den or family room?

<table>
<thead>
<tr>
<th>satisfaction level</th>
<th>very dissatisfied</th>
<th>dissatisfied</th>
<th>neither satisfied</th>
<th>nor dissatisfied</th>
<th>satisfied</th>
<th>very satisfied</th>
</tr>
</thead>
</table>
DINING ROOM

Please tell us about the dining room:

1. Do you have a separate dining room?  yes  no

   If "yes" answer the following questions; if "no" skip to the next room (kitchen).

2. About how often does the following occur in the dining room?

<table>
<thead>
<tr>
<th>Activity</th>
<th>Never</th>
<th>1-3 times per month</th>
<th>1-3 times per week</th>
<th>4-5 times per week</th>
<th>About once per day</th>
<th>More than once per day</th>
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<tbody>
<tr>
<td>everyone eats together</td>
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<td>at least one person eats there</td>
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<td>getting together as a group of 3 or more, other than at mealtimes</td>
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<td>serious discussions</td>
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<td>reading or studying</td>
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<td>active games</td>
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<td>quiet games</td>
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<tr>
<td>casual conversation</td>
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<tr>
<td>training in daily life skills</td>
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<tr>
<td>watching TV</td>
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<td>training in grooming and daily activities</td>
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<tr>
<td>simply being alone</td>
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<tr>
<td>spending time with family</td>
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<tr>
<td>spending time with a date</td>
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<tr>
<td>spending time with a visitor</td>
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<tr>
<td>other (please write in)</td>
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</tbody>
</table>
3. How satisfied are you with the dining room:

<table>
<thead>
<tr>
<th></th>
<th>very satisfied</th>
<th>dissatisfied</th>
<th>neither satisfied nor dissatisfied</th>
<th>satisfied</th>
<th>very satisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>as a place to socialize</td>
<td></td>
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<tr>
<td>as a place to support daily life skills</td>
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<tr>
<td>with its ability to keep cleaned and maintained</td>
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<tr>
<td>with its location in house</td>
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<td>with its size</td>
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<tr>
<td>with its overall attractiveness</td>
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<tr>
<td>the dining room as a gathering place</td>
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<tr>
<td>the dining room for eating</td>
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<tr>
<td>the dining room for having guests</td>
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<tr>
<td>the degree of soundproofing</td>
<td></td>
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</tr>
</tbody>
</table>

4. How satisfied would you say the residents are with the dining room?

<table>
<thead>
<tr>
<th></th>
<th>very satisfied</th>
<th>dissatisfied</th>
<th>neither satisfied nor dissatisfied</th>
<th>satisfied</th>
<th>very satisfied</th>
</tr>
</thead>
</table>

5. How would you change the dining room if you had a chance?
KITCHEN

Please tell us about the kitchen:

1. About how often does the following occur in the kitchen?

<table>
<thead>
<tr>
<th>Activity</th>
<th>Almost Never</th>
<th>1-3 Times Per Month</th>
<th>1-3 Times Per Week</th>
<th>4-5 Times Per Week</th>
<th>About Once Per Day</th>
<th>More Than Once Per Day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residents are involved in food preparation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residents are involved in meal clean up</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Someone eats there alone</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Residents are trained to cook</td>
<td></td>
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<tr>
<td>Everyone eats together there</td>
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<tr>
<td>Getting together as a group of 3 or more, other than at mealtimes</td>
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<tr>
<td>Serious discussions</td>
<td></td>
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<td></td>
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<tr>
<td>Reading or studying</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Active games</td>
<td></td>
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<td></td>
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<tr>
<td>Quiet games</td>
<td></td>
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<td></td>
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<tr>
<td>Casual conversation</td>
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<tr>
<td>Training in daily life skills</td>
<td></td>
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</tr>
<tr>
<td>Watching TV</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Training in grooming and daily activities</td>
<td></td>
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<tr>
<td>Simply being alone</td>
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<tr>
<td>Spending time with family</td>
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<tr>
<td>Spending time with a date</td>
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<tr>
<td>Spending time with a visitor</td>
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<tr>
<td>Other (please write in)</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
2. How satisfied are you with the kitchen as a place to:

<table>
<thead>
<tr>
<th>Activity</th>
<th>very dissatisfied</th>
<th>dissatisfied</th>
<th>neither satisfied nor dissatisfied</th>
<th>satisfied</th>
<th>very satisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>as a place to socialize</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>as a place to support daily life skills</td>
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<tr>
<td>with its ability to keep cleaned and maintained</td>
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<tr>
<td>with its location in house</td>
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<tr>
<td>with its size</td>
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<tr>
<td>with its overall attractiveness</td>
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<tr>
<td>prepare meals efficiently</td>
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</tr>
<tr>
<td>teach cooking</td>
<td></td>
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<tr>
<td>eat in</td>
<td></td>
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</tr>
</tbody>
</table>

3. How satisfied would you say the residents are with the kitchen?

<table>
<thead>
<tr>
<th>very dissatisfied</th>
<th>dissatisfied</th>
<th>neither satisfied nor dissatisfied</th>
<th>satisfied</th>
<th>very satisfied</th>
</tr>
</thead>
</table>

4. How would you change the kitchen if you had a chance?
**RESIDENT BEDROOMS**

Please tell us about the resident's bedrooms.

1. **About how often do residents use their bedrooms for the following activities:**

<table>
<thead>
<tr>
<th>Activity</th>
<th>almost never</th>
<th>1-3 times per month</th>
<th>1-3 times per week</th>
<th>4-5 times per week</th>
<th>about once per day</th>
<th>more than once per day</th>
</tr>
</thead>
<tbody>
<tr>
<td>getting together as a group of 3 or more, other than at mealtimes</td>
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<td>casual conversation</td>
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<td>training in daily life skills</td>
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<tr>
<td>watching TV</td>
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<tr>
<td>spending time with a date</td>
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<tr>
<td>other (please write in)</td>
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</tbody>
</table>

2. **About how often do the following occur?**

<table>
<thead>
<tr>
<th>Event</th>
<th>almost never</th>
<th>1-3 times per month</th>
<th>1-3 times per week</th>
<th>4-5 times per week</th>
<th>about once per day</th>
<th>more than once per day</th>
</tr>
</thead>
<tbody>
<tr>
<td>disagreements over space, furnishings, etc. in a shared bedroom</td>
<td></td>
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<tr>
<td>residents in a shared bedroom are kept awake by others</td>
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<tr>
<td>residents in a single bedroom are kept awake by others</td>
<td></td>
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<tr>
<td>residents use their bedroom to get away from others</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
3. How satisfied would you say the residents are with the following:

<table>
<thead>
<tr>
<th>Item</th>
<th>not applicable</th>
<th>very dissatisfied</th>
<th>dissatisfied</th>
<th>neither satisfied nor dissatisfied</th>
<th>satisfied</th>
<th>very satisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>as a place to socialize</td>
<td></td>
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<tr>
<td>as a place to support daily life skills</td>
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<tr>
<td>with its ability to keep cleaned and maintained</td>
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<tr>
<td>with its location in house</td>
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<td>with its size</td>
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<tr>
<td>with its overall attractiveness</td>
<td></td>
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<tr>
<td>the amount of privacy afforded by bedrooms</td>
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<tr>
<td>opportunity for personalization afforded by bedrooms</td>
<td></td>
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<tr>
<td>bedrooms as a place for socializing</td>
<td></td>
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</tr>
<tr>
<td>the durability of the carpeting or flooring in their bedroom</td>
<td></td>
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<tr>
<td>the ability of the room to accommodate more than one person</td>
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<tr>
<td>the ability of the bedroom to support different furniture arrangements</td>
<td></td>
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<tr>
<td>the bedroom as a place to be alone</td>
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<tr>
<td>the bedroom as a place to sleep</td>
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<tr>
<td>their bedrooms overall</td>
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</tr>
</tbody>
</table>

Please briefly explain any "not applicable", "very dissatisfied" or "very satisfied" answers above, or anything else you think will help us understand your feelings:
4. How satisfied would you say the residents are with the bedrooms?

- very dissatisfied
- neither satisfied nor dissatisfied
- satisfied
- very satisfied

5. How could the bedrooms be improved?
1. Please tell us about the bathrooms: How many resident bathrooms do you have? _____ How many are shared? _____.

About how often does the following occur in the bathrooms?

<table>
<thead>
<tr>
<th></th>
<th>almost never</th>
<th>1-3 times per month</th>
<th>1-3 times per week</th>
<th>4-5 times per week</th>
<th>about once per day</th>
<th>more than once per day</th>
</tr>
</thead>
<tbody>
<tr>
<td>training of personal skills by houseparents/house managers</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>a resident goes there to be alone</td>
<td></td>
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</tr>
<tr>
<td>conflict for a shared bathroom, about who is to use the bathroom</td>
<td></td>
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</tr>
<tr>
<td>conflict for a shared bathroom, about cleaning of the bathroom</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

2. How satisfied are you with the bathroom:

<table>
<thead>
<tr>
<th></th>
<th>very satisfied</th>
<th>dissatisfied</th>
<th>neither satisfied</th>
<th>nor dissatisfied</th>
<th>satisfied</th>
<th>very satisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>as a place to socialize</td>
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<tr>
<td>as a place to support daily life skills</td>
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<tr>
<td>with its ability to keep cleaned and maintained</td>
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<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

3. How satisfied would you say the residents are with the bathrooms?

<table>
<thead>
<tr>
<th></th>
<th>very dissatisfied</th>
<th>dissatisfied</th>
<th>neither satisfied</th>
<th>nor dissatisfied</th>
<th>satisfied</th>
<th>very satisfied</th>
</tr>
</thead>
</table>

4. How would you change the bathroom if you had a chance?
LAUNDRY AREA

Please tell us about the laundry:

1. Where is the laundry located in the house?

2. About how often does the following occur:

<table>
<thead>
<tr>
<th>Activity</th>
<th>almost never</th>
<th>1-3 times per month</th>
<th>1-3 times per week</th>
<th>4-5 times per week</th>
<th>about once per day</th>
<th>more than once per day</th>
</tr>
</thead>
<tbody>
<tr>
<td>residents do their own laundry</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>staff do the resident's laundry</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>everyone does laundry at once</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>the laundry area feels too crowded</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>conflict for washer and dryer, who is to use them and when</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>the laundry area is too messy</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>the laundry area is used for training residents</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

3. How satisfied are you with the laundry?

<table>
<thead>
<tr>
<th>Satisfaction</th>
<th>very satisfied</th>
<th>dissatisfied</th>
<th>neither satisfied nor dissatisfied</th>
<th>satisfied</th>
<th>very satisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>as a place to socialize</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>as a place to support daily life skills</td>
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<tr>
<td>with its size</td>
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<tr>
<td>with its overall attractiveness</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
4. How satisfied would you say the residents are with the laundry?

- very dissatisfied  
- dissatisfied  
- neither satisfied nor dissatisfied  
- satisfied  
- very satisfied

5. How would you change the laundry area if you had a chance?
1. Does your house have a **porch** or **deck**?  
   - yes  
   - no

   If "yes" please answer items the following question, if "no" please skip to "front yard".

2. About how often do residents use the porch or deck?

<table>
<thead>
<tr>
<th>Activity</th>
<th>almost never</th>
<th>1-3 times per month</th>
<th>1-3 times per week</th>
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<tbody>
<tr>
<td>getting together as a group of 3 or more</td>
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<td></td>
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<tr>
<td>serious discussions</td>
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<tr>
<td>spending time with family</td>
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<td>spending time with a date</td>
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<td>other (please write in)</td>
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</tr>
</tbody>
</table>
3. How satisfied are you with the porch or deck?

<table>
<thead>
<tr>
<th></th>
<th>very satisfied</th>
<th>dissatisfied</th>
<th>neither satisfied nor dissatisfied</th>
<th>satisfied</th>
<th>very satisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>as a place to socialize</td>
<td></td>
<td></td>
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<tr>
<td>as a place to support daily life skills</td>
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</tr>
</tbody>
</table>

4. How satisfied would you say the residents are with the porch or deck?

<table>
<thead>
<tr>
<th></th>
<th>very satisfied</th>
<th>dissatisfied</th>
<th>neither satisfied nor dissatisfied</th>
<th>satisfied</th>
<th>very satisfied</th>
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</tbody>
</table>

5. How would you change the porch or deck if you had a chance?
FRONT YARD

1. Does your house have a front yard?  yes  no

If "yes," please answer the following questions, if "no," skip to "back yard."

2. How often do residents use the front yard?

<table>
<thead>
<tr>
<th>Activity</th>
<th>almost never</th>
<th>1-3 times per month</th>
<th>1-3 times per week</th>
<th>4-5 times per week</th>
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</tbody>
</table>
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<table>
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<tr>
<th></th>
<th>very satisfied</th>
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<td></td>
</tr>
</tbody>
</table>

4. How satisfied would you say the residents are with the front yard?

<table>
<thead>
<tr>
<th>very satisfied</th>
<th>dissatisfied</th>
<th>neither satisfied nor dissatisfied</th>
<th>satisfied</th>
<th>very satisfied</th>
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</thead>
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</table>

5. How would you change the front yard if you had a chance?
BACK YARD

1. Does your house have a back yard? [yes] [no]

If "yes" please answer the following questions, if "no" skip to General House Information.

2. About how often do residents use the back yard?

<table>
<thead>
<tr>
<th>Activity</th>
<th>Almost never</th>
<th>1-3 times per month</th>
<th>1-3 times per week</th>
<th>4-5 times per week</th>
<th>About once per day</th>
<th>More than once per day</th>
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</thead>
<tbody>
<tr>
<td>cooking outside</td>
<td>___</td>
<td>___</td>
<td>___</td>
<td>___</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>visiting with neighbors</td>
<td>___</td>
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</tr>
<tr>
<td>getting together as a group of 3 or more, other than at mealtimes</td>
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<td>training in grooming and daily activities</td>
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<tr>
<td>spending time with family</td>
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<tr>
<td>spending time with a date</td>
<td>___</td>
<td>___</td>
<td>___</td>
<td>___</td>
<td>___</td>
<td>___</td>
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<tr>
<td>other (please write in)</td>
<td>___</td>
<td>___</td>
<td>___</td>
<td>___</td>
<td>___</td>
<td>___</td>
</tr>
</tbody>
</table>
3. How satisfied are you with the back yard as:

<table>
<thead>
<tr>
<th>Purpose</th>
<th>very satisfied</th>
<th>dissatisfied</th>
<th>neither satisfied nor dissatisfied</th>
<th>satisfied</th>
<th>very satisfied</th>
</tr>
</thead>
<tbody>
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<td></td>
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</tbody>
</table>

4. How satisfied would you say the residents are with the back yard?

<table>
<thead>
<tr>
<th>very satisfied</th>
<th>dissatisfied</th>
<th>neither satisfied nor dissatisfied</th>
<th>satisfied</th>
<th>very satisfied</th>
</tr>
</thead>
</table>

5. How would you change the back yard if you had a chance?
**GENERAL HOME INFORMATION**

1. Please tell us how satisfied you are with your own accommodations:

<table>
<thead>
<tr>
<th></th>
<th>very dissatisfied</th>
<th>dissatisfied</th>
<th>neither satisfied nor dissatisfied</th>
<th>satisfied</th>
<th>very satisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>with your overall bedroom arrangements</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>with the bedroom arrangements of your own children, if you have them</td>
<td></td>
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<tr>
<td>with the amount of privacy your bedroom affords</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>with the location of your bedroom relative to other bedrooms</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>with the overall arrangement of the house for raising your children, if you have them</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>with the appearance of your accommodations</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>as a place to be alone, when you want to be</td>
<td></td>
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</tr>
</tbody>
</table>
2. If you are very satisfied or very dissatisfied with any of the above items please briefly mention why:

overall bedroom arrangements:

bedroom arrangement of your children:

amount of privacy:

location of bedroom:

arrangements for raising children:

appearance:

as a place to be alone:
3. How satisfied are you with the general ability of your home to support the following activities by residents?

<table>
<thead>
<tr>
<th>Activity</th>
<th>Very Satisfied</th>
<th>Dissatisfied</th>
<th>Neither Satisfied</th>
<th>Satisfied</th>
<th>Very Satisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>getting together as a group of 3 or more, other than at mealtimes</td>
<td></td>
<td></td>
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<tr>
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<tr>
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<td></td>
<td></td>
</tr>
<tr>
<td>casual conversation</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>training in daily life skills</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>watching TV</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>training in grooming and daily activities</td>
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</tr>
<tr>
<td>simply being alone</td>
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<tr>
<td>other (please write in)</td>
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</tr>
</tbody>
</table>
4. Please check to show how much you agree or disagree with the following statements:

<table>
<thead>
<tr>
<th>Statement</th>
<th>strongly disagree</th>
<th>disagree</th>
<th>neither agree or disagree</th>
<th>agree</th>
<th>strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>overall, this house fits the resident's needs very well</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>overall, this house fits the houseparent's/house manager's needs very well</td>
<td></td>
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</tr>
<tr>
<td>noise inside the house is a serious problem</td>
<td></td>
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<tr>
<td>shared bedrooms are a good living arrangement for the residents</td>
<td></td>
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<tr>
<td>the residents have not improved their daily life skills much since moving here</td>
<td></td>
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</tr>
<tr>
<td>the residents need several separate common spaces such as a den, family room and living room</td>
<td></td>
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</tr>
<tr>
<td>the lack of privacy for the house parents/house managers makes living here difficult</td>
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<tr>
<td>the residents have enough places to be alone</td>
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<tr>
<td>the residents need more places to socialize in the house</td>
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<tr>
<td>the residents like to invite friends over</td>
<td></td>
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<tr>
<td>the laundry area is too crowded</td>
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<tr>
<td>the dining area is about the right size</td>
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<td></td>
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<tr>
<td>the kitchen is crowded at mealtimes</td>
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<tr>
<td>this house fits into the neighborhood very well</td>
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</tbody>
</table>
5. Please assume for a moment that you are building a new house to replace your present house. Please rate the following features that you'd ask for assuming you'd house the same residents with the same programs. Also, please put a check (/) next to the 3 most important items.

<table>
<thead>
<tr>
<th>Feature</th>
<th>very important</th>
<th>unimportant</th>
<th>neither important</th>
<th>important</th>
<th>very important</th>
</tr>
</thead>
<tbody>
<tr>
<td>respite rooms for temporary residents</td>
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<tr>
<td>private bedrooms for residents</td>
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<tr>
<td>a deck or porch</td>
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<tr>
<td>a game room/family room separate from the living room</td>
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<tr>
<td>a separate dining room</td>
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<tr>
<td>a usable back yard</td>
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<tr>
<td>a house parent's/house manager's suite separate from the resident's rooms</td>
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<tr>
<td>extra soundproofing between rooms</td>
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<tr>
<td>an extra large kitchen</td>
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<td>carpeting on the floors</td>
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<tr>
<td>tile or vinyl on the floors</td>
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<tr>
<td>highly durable materials on the walls</td>
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<tr>
<td>overall homelike appearance</td>
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<tr>
<td>other, (please specify)</td>
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</tbody>
</table>
6. How acceptable are the following?

<table>
<thead>
<tr>
<th></th>
<th>very acceptable</th>
<th>unacceptable</th>
<th>neither acceptable nor unacceptable</th>
<th>acceptable</th>
<th>very acceptable</th>
</tr>
</thead>
<tbody>
<tr>
<td>a bedroom shared by two residents</td>
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<td></td>
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<tr>
<td>a bathroom shared by two residents</td>
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<tr>
<td>a bedroom shared between a house parent or house manager and a resident</td>
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<tr>
<td>a bathroom shared between a house parent or house manager and a resident</td>
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<tr>
<td>a bedroom shared between a house manager and his or her child</td>
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</tbody>
</table>

7. How satisfied are you with this home, in general?

<table>
<thead>
<tr>
<th>very dissatisfied</th>
<th>very dissatisfied</th>
<th>neither satisfied nor dissatisfied</th>
<th>satisfied</th>
<th>very satisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

ADDITIONAL ISSUES

Please share with us any additional issues that concern you:

1. What are the most significant problems with the design of this home?

2. What do you like best about this home?

Thank you very much for your time and cooperation!