

AN EVALUATION OF THE PHYSICAL ENVIRONMENT OF TWO COMMUNITY BASED HOMES FOR THE MENTALLY HANDICAPPED

TIMOTHY C. AUBURN and SIAN LEACH 1)

- 1) Dr. T. AUBURN and Sian LEACH
Department of Psychology
South West Polytechnic
Drake Circus
Plymouth
Devon
PL4 8AA

INTRODUCTION

Over the past decade or so, ideas about care for the mentally handicapped have undergone radical development. The dehumanizing and negative impact of institution-orientated regimes, as well as the social and material deprivation often encountered within these settings, have been recognised by workers in the area and also, increasingly, by the general public. As a consequence the demand for a move toward community-based provision of services has become increasingly seen as one of the major alternatives to hospitalized care (e.g. DHSS "Services for the Mentally Handicapped", 1971).

There is no simple consensus upon which the nature of multiple provision of services within the community has been based. However, two broad principles of provision can be identified: de-institutionalization and normalization. The role of the large residential institution in inhibiting development of the individual's full human potential has long been recognised (e.g. Goffman, 1961). Critical to the production of institutionalization in such residential facilities appear to be particular types of management practice. In the context of facilities for the mentally handicapped, King, Raynes and Tizard (1971) identified four management practices which were related to institutionalization: rigidity of routine, block treatment, depersonalisation of the client, and social distance between staff and client.

Normalization as a therapeutic philosophy has been in existence for nearly twenty years. When first proposed, it meant little more than providing for the person with a mental handicap an environment which was as similar as possible to the norms and patterns of mainstream society. This seemingly simple principle has been subsequently elaborated by a number of workers in the field. Gunzburg and Gunzburg (1973) have incorporated the notion of personalisation, where a 'normal' environment is seen as the basis for systematic educational guidance and training for improving skills concerned with exercising choice and expressing preferences. More recently, the concept of normalization has been further elaborated by Wolfensberger. Here, normalization is a positive attempt to overcome stigmatization by the "...utilization of culturally valued means in order to establish and/or maintain personal behaviours, experience and characteristics that are culturally normative or valued." (Wolfensberger, 1977, p. 148).

The most common means by which the aims of multiple provision within the community have been achieved is through the small, group-based residential home located within an established urban neighbourhood. This type of provision is, moreover, likely to remain the main means of supporting an improved quality of life for those with mental handicap. Recent evidence suggests that more independent forms of community living, in particular living alone with the support of social workers and other professionals leads to a marginalised and isolated life-style for the mentally handicapped person (Donegan and Potts, 1988).

The two principles of normalization and de-institutionalization provide a broad framework for professionals who are involved in planning the provision of services for the mentally handicapped in the community: they will have implications for policy decisions in a number of areas. Amongst such decisions will be those related to the physical design of the buildings which will house the groups of mentally handicapped individuals and their associated staff. Whether the building is being designed from new or whether existing accommodation is being taken over, decision makers will be concerned with the extent to which the *physical design will support and facilitate the goals and management practices* of the organization which the building will accommodate. It is therefore, important for decision-makers to consider information relevant to the influence of the internal design of buildings on sustaining appropriate management practices and thus on the everyday activities of residents and staff.

Information relevant to design decisions is scattered throughout a diverse literature. Some is readily available in well-known texts (e.g. Gunzburg and Gunzburg, 1973, p. 146), but an additionally large proportion is contained in texts within the discipline of environmental psychology, much of it reported as post-occupancy evaluations (P.O.E.) of existing buildings. A P.O.E. is a multi-method evaluation of an occupied building or small number of similar buildings, with the aim of describing the emergent socio-physical system with a particular emphasis upon the ways in which physical design facilitates or detracts from the goals of the organization housed in the building (see Zimring and Reizenstein, 1980, p. 429).

Many studies relevant to the design of residences for mentally handicapped people have been conducted under the general rubric of P.O.E.'s (e.g. Canter and Canter, 1979; Mazis and Canter, 1979; Reizenstein and McBride, 1977; Zimring, Weitzer and Knight, 1982). For example, Zimring et al. compared three different residential designs (module, suite, and corridor designs) each of which was a conversion of traditional hospital wards and all of which aimed to fulfill the normalization principle. They monitored changes in staff and client behaviour as they moved from the traditional hospital design to one of the modified designs, and found that the corridor design produced more and greater changes in the desired direction compared to the other two. For example, in the corridor design there was a *reduction in staff intrusions into the residents' personal areas*, there was an increase in the residents' use of their own personal areas as well as an increase in overall social interaction between the residents. The beneficial impact of the corridor type of redesign (despite its symbolic associations with institutionalization) can be understood as deriving from the fact that the design offered residents the greatest opportunity for personal control over their environment.

One further important design related issue concerns the size of community-based homes and whether there is any advantage to residents of living among a large or small group of others. In their study of facilities for the mentally

handicapped, King et al. (1971) found that size bore little relation to the facility's management orientation. However, those facilities of a relatively small size (8 to 40) and located in the community were the most likely to be client-orientated.

Although King et al. do not accord size a major role in influencing management practices, further studies have provided additional evidence on this issue. Landesman-Dwyer, Stein and Sackett (1978) found that the larger the home the less the proportion of their time the residents spent eating or participating in organised activities within the house and the more they spent in social behaviours and 'unobservable' activities. In contrast, Thomas, Felce, de Kock, Saxby and Repp (1985) examined the behaviour of residents in small community-based houses (5 residents), larger community units (25 residents) and large institutions. They found that there was greater client engagement in appropriate activities, more interaction with staff, less inappropriate activity and more staff input per client in the small community units compared to both the larger community units and the institutions. However, rather than attribute this difference to size alone, Thomas et al. acknowledge that size is likely to be correlated with a constellation of other factors (e.g. staff-client ratios) which may favourably influence client behaviour.

The present investigation was undertaken as a building evaluation (P.O.E.) of two community-based residential homes for moderate to high ability mentally handicapped adults. This evaluation was initiated at the request of the local joint NHS/Social Services quality assurance committee on provision for the mentally handicapped. It was hoped that the results would contribute to future recommendations on building design and provision. There were two main aims to the study. The first was to describe the emergent socio-physical systems in the two homes, and thereby to assess the extent to which the homes had achieved a 'normal' environment for the residents. The concept of 'normal' was operationalized by reference to (i) evidence that activities occurred which reflected normal household activities in their appropriate location, and (ii) evidence that a range of such activities occurred and were engaged in by both residents and staff. The second aim was to examine the impact of the different sizes of the homes on the experiences and daily activities of the residents in the two homes.

METHOD

The homes for the study were drawn from the same city and were both run by the same charity. Having gained permission from the appropriate authorities to conduct the study, residents and staff in both homes were observed systematically at the same times of day. Subjects for the study were therefore the residents and staff of the homes and any visitors who were present whenever an observation session was in progress.

The Homes

HOME A: This was the larger of the two homes; it accommodated 18 residents who were all high ability and capable of reasonably independent living. Each resident had either a single or a shared double bedroom. The home also contained two offices, a lounge, kitchen, dining room, laundry, and a kiln/crafts room. The rooms were situated on four levels: a basement area (kitchen, dining room, laundry and kiln room), ground floor (offices and lounge), and first and second floors (bedrooms and bathrooms). During the period of the study, approximately 5 to 6 staff worked at the home, though not all at the same times.

HOME B: This home accommodated 8 residents also of high ability. Each resident had either a single bedroom or a shared double bedroom. In addition, the home contained an office, a large lounge, dining room, kitchen and laundry area. There was also a large hallway entrance with a desk which allowed some occasional administration work to be carried out. This home, in contrast to Home A, had a large garden and other outside area. However, since the study was conducted during winter, the garden was not used by residents during observation sessions. The rooms were situated on a ground floor (all main living and service rooms) and a first floor (office, bedrooms and bathroom). During the study, approximately 3 to 4 staff worked at the home, although not all at the same times. Both Home A and Home B had their bedrooms situated on each side of straight corridors.

Procedure

An observational study of behaviour in the two homes was conducted. Since most if not all of the residents in the two homes spent the daytime periods during the week at work places or training centres, observations of behaviour were carried out only during weekday evenings between 4.00 p.m. and 9.45 p.m.

Client behaviours were coded according to a scheme adapted from Thomas et al. (1986). In this adapted scheme client behaviours were coded under the following headings.

- a. **Leisure:** getting ready for, engaged in or clearing away recreational or leisure materials. Specific categories were: watching T.V., listening to radio or records, craft work, playing co-operatively, playing alone, writing.
- b. **Domestic:** getting ready for, engaged in, or clearing away housework (e.g. washing up, cleaning, laying table).
- c. **Personal:** getting ready for, engaged in or clearing away a self-help activity (e.g. eating, getting ready for going out, toileting).
- d. **Inappropriate.** This category combined the inappropriate and neutral client behaviours of Thomas et al's coding scheme. Specific categories were: aggression to self, aggression to others, aggression to property, passiveness, walking/pacing, smoking, unpurposeful, other inappropriate, sleeping.
- e. **Social Interaction.** Specific categories were: staff helping resident, one resident talking to another resident, resident talking to a member of staff, resident talking to another (not resident or staff).
- f. **Bedrooms only.** Since it was felt to be too much of an intrusion for residents if observers were to code activities occurring in their bedrooms, it was merely noted whether the bedrooms were occupied, and if so whether the bedroom door was open or closed.

Having developed the adapted coding scheme, the observer was trained in its use, and approximately ten pilot sessions were conducted in order to ensure consistent and reliable use of the coding categories. The evaluation of the homes consisted of observation of behaviour during weekday evenings between 4.00 p.m. and 9.45 p.m. In total ten observation sessions were conducted in each home, five in the early evening session (4.00 p.m. to 6.45 p.m.) and five in the late evening session. Each session was divided into $\frac{1}{4}$ hour periods. At the beginning of each $\frac{1}{4}$ hour period the observer made a tour of all the relevant locations in the home and noted on the behaviour coding sheets the major activity in which each person was engaged and the location in which that activity was occurring.

The only exception to this procedure concerned, as noted above, the activities occurring in the bedrooms.

RESULTS

The total frequency (i.e. total number of observations) of each of the main categories of behaviour (Leisure, Inappropriate, Domestic, Social Interaction, Personal, (see Table 1), the frequency of behaviours observed in each location (see Table 2), and the frequency of each category of behaviour in each of the main home locations (see Figure 1) were calculated. Finally, the frequency of each category of behaviour, and the frequency of all categories of activity in each separate location were summed for four equal time periods over the course of the evening (see Tables 3 and 4). This last procedure gave an indication of the changes in type of activity and changes in the location of activities over the course of the evening period.

The relative frequency of different categories of behaviour in the two homes during the evenings shows some noticeable differences (see Table 1). A chi-square test showed the distribution of frequencies to be significantly different from those expected (chi-square = 265.6, d.f. = 4, $p < 0.01$). Of all the activities observed (but excluding observations of bedroom occupation), almost half in home A could be defined as social interaction (40%); leisure activities are also well represented with almost a third (31%) of all observations. In home B, by contrast, this patterning is changed with leisure activities forming over a half (59%) of all activities observed. Social interaction forms a fairly low proportion of all activities (10%). In both homes the other categories of behaviour (inappropriate, domestic and personal) form comparably low proportions of the total activity.

	LEISURE	INAPPROP- -RIATE	DOMESTIC	SOCIAL INTERACTION	PERSONAL
Home A	31% (288)	9% (87)	8% (76)	40% (373)	12% (112)
Home B	59% (451)	3% (25)	17% (127)	10% (79)	10% (76)

TABLE 1: Frequency of each category of behaviour as a proportion of total observations. Figures in brackets indicate number of observations.

(N.B. These data exclude observations of occupancy of bedrooms.)

Summing all categories of behaviour and noting how activities are distributed in different locations, also shows some interesting differences between the two homes (see Table 2). A chi-square test conducted on the frequencies in each of the table cells, again showed a high level of statistical significance (chi-square = 444.8, d.f. = 5, $p < 0.01$). In home A the locations with the highest frequency of activities and therefore occupation are the residents' bedrooms (51% of all observations) with the lounge, dining room and kitchen having similar though fairly low levels of activity. The corridors, office, and kiln room are little used during the evening period. In contrast, at home B the lounge is the most frequently used location (39% of all observations). The kitchen and dining room have lower levels of use although the proportions are similar to those in home A. In home B the bedrooms are little used in the evening compared both to the lounge, kitchen and dining room and to their level of use in home A.

	BEDROOMS	LOUNGE	DINING ROOM	KITCHEN	CORRIDOR	KILN ROOM	OFFICE	HALLWAY
Home A	51% (998)	19% (362)	12% (225)	9% (169)	5% (101)	3% (49)	2% (40)	n/a
Home B	13% (118)	39% (343)	25% (216)	14% (127)	1% (9)	n/a	1% (7)	7% (59)

TABLE 2: Frequencies of observations in each location as a proportion of total observations. Figures in brackets indicate the number of observations at each location.

An examination of the distribution of activities in each of the locations provides further elaboration of these findings (see Figure 1). In both homes A and B leisure activities are mainly found in the lounge, and in home B there is also a substantial amount in the dining room. Social interaction as an activity in its own right is fairly widely distributed across locations in home A reflecting the fact that it forms a higher proportion of all the activities observed. It occurs as a significant activity in all the major home locations. This finding suggests that residents and staff are likely to be found in all these locations encouraging both fortuitous, casual social interaction and more deliberately-sought social interaction (see Discussion).

In home B social interaction does not form a high proportion of all observed activities nor does it show a wide distribution through the home. Indeed, the different activities appear to be closely related to the function of the location in which they were observed: thus leisure occurs as the dominant activity in the lounge and domestic activity in the kitchen. The noticeable exception to this pattern is the dining room where leisure is a dominant activity during the evenings.

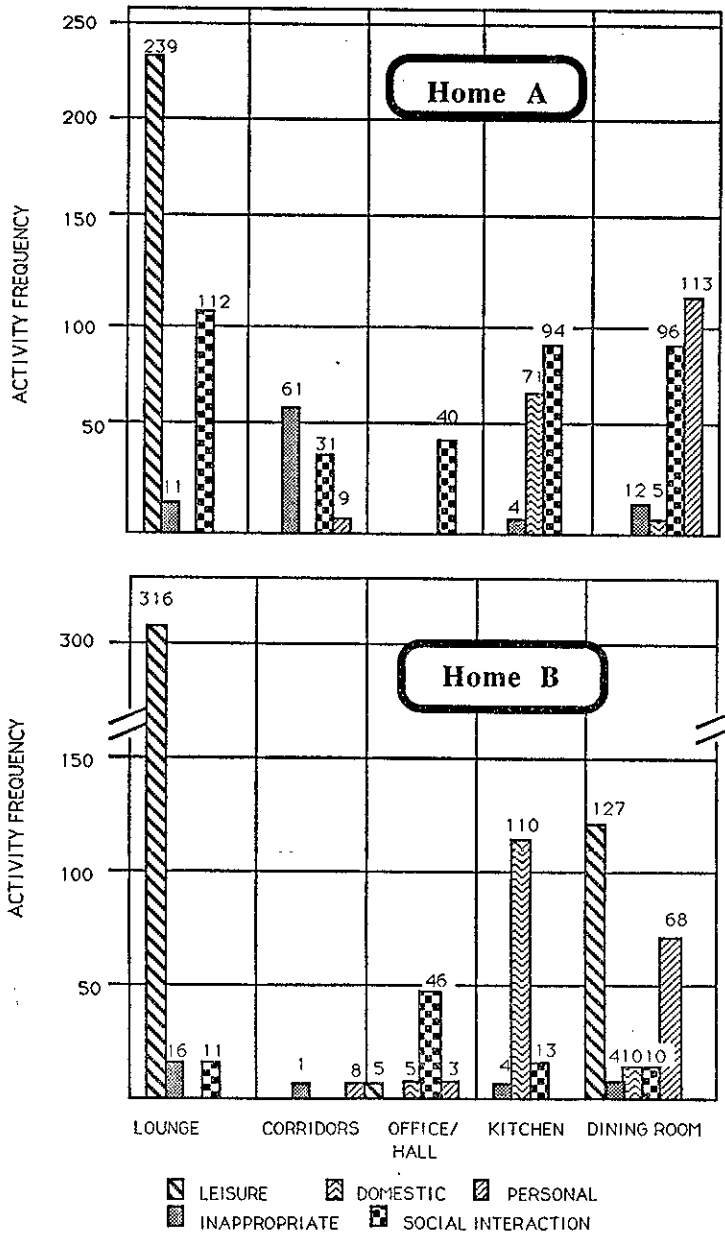


FIGURE 1: Frequency of each category of behaviour in major locations.

Finally, examination of the nature and distribution of activities in different locations over the course of the evening period, provides some further indications of the differences between the two homes (see Tables 3 and 4). During the early evening period (up to approximately 6.15 p.m.) the nature and frequency of the activities in the two homes are similar. Leisure and domestic activities dominate as residents relax after work and prepare for the evening meal. In both homes there is a noticeable peak in personal activity from 5.30 to 6.15 p.m. as the residents in both homes have their evening meal. It is after this period that substantial differences in types of activity between the two homes appear. In home A, a combination of both leisure activity and social interaction is most frequent during the late evening period. In home B, however, there is a high frequency of leisure activities which is maintained at a high level during this late evening period.

	4.00 to 5.15 p.m.					5.30 to 6.45 p.m.				
	L	In	Do	S.I.	P	L	In	Do	S.I.	P
Home A	86	19	23	136	20	47	31	40	101	96
Home B	85	3	37	27	2	79	6	54	33	67
	7.00 to 8.15 p.m.					8.30 to 9.45 p.m.				
	L	In	Do	S.I.	P	L	In	Do	S.I.	P
Home A	60	27	5	74	3	95	10	8	62	3
Home B	146	9	24	10	9	141	7	12	9	1

Key: L - Leisure, In - Innapropriate, Do - Domestic, SI - Social Interaction, P - Personal

TABLE 3: Frequencies of categories of behaviour over the evening period.

(N.B. These data do not include observations of bedroom occupancy.)

Examination of the use of major locations over the evening accounts for this difference in the pattern of activities. During the early evening (up to 5.15 p.m.) the lounge and the kitchen of both homes are used most frequently, then during the evening meal (5.15 to 6.15 p.m.) the dining room is most frequently

used. However, after the evening meal as there is a divergence in the pattern of activities in the two homes, so there is a divergence in room usage. There is a marked tendency for residents at home A to be in their bedrooms during the late evening period (6.15 p.m. onwards) with a noticeable but much lower use of the lounge. It was in the lounge that the mix of leisure and social interaction was mainly observed. Home B, on the other hand, shows a much more diverse use of rooms in the home during the late evening period. The lounge dominates as an area of use, but there is also noticeable usage of the kitchen during the initial part of this period (6.15 to 7.30 p.m.), the dining room throughout the whole period, and the bedrooms especially towards the latter part of this late evening period.

	4.00 to 5.15 p.m.					5.30 to 6.45 p.m.				
	B/R	L	D.R.	Kit	Corr	B/R	L	D.R.	Kit	Corr
Home A	28	50	36	79	42	218	50	171	54	20
Home B	4	52	39	40	0	14	49	109	53	1
	7.00 to 8.15 p.m.					8.30 to 9.45 p.m.				
	B/R	L	D.R.	Kit	Corr	B/R	L	D.R.	Kit	Corr
Home A	380	103	18	5	28	372	159	0	8	11
Home B	28	114	40	21	7	72	128	28	13	1

Key: B/R - Bedrooms, L - Lounge, DR - Dining Room,
Kit - Kitchen, Corr - Corridors

TABLE 4: Frequency of all categories of behaviour in major locations over the evening period.

DISCUSSION

There are clear differences in the way homes A and B are used by the residents during weekday evenings. As a generalization after the main evening meal residents in home A are more likely to spend their evening leisure time in their

bedrooms. Residents in home B, on the other hand, are more likely to spend their evening leisure time in the lounge. These differences reflect the contrasting socio-physical systems which have emerged in the two homes partly influenced by their different physical designs.

It would seem that these patterns of evening activity in the two homes place emphasis upon different aspects of social skills and lifestyle. The pattern which has emerged in home A places emphasis upon an independent lifestyle based around the bedroom as a central territory (especially for those living in single rooms), with activity outside the bedroom characterised by more casual social interaction with other residents or with staff. In contrast the pattern which has emerged in home B seems to place emphasis upon the small interacting group, one where members of the group know each other and their habits reasonably well. Moreover, most members of the group are in each other's presence frequently and for sustained periods. This latter pattern has the potential, at least, to create a more intimate and mutually supportive social environment.

Based upon the observational data and informal interviews with staff and residents, we would tentatively point to two main factors which have contributed to these different patterns. The first factor is the difference in size between the two homes, in particular the number of residents which the homes accommodate. The larger number of residents in home A would seem to be above an optimal size for the formation of a single cohesive interacting group. Furthermore, home A has a larger number of residents distributed over a larger living area. One consequence of this arrangement is that for any one resident there is less predictability about the identity and location of other residents and staff. As it has evolved the only locations where a resident may be reasonably confident of the identity of the occupant are the bedrooms, but these are limited in access since they are private rooms. For the main semi-public living areas (e.g. lounge, dining room) there is a lack of predictability about who occupies them at any one time, thus a resident would not be able to predict with a high level of confidence who they might encounter in these areas. Such a situation would tend to encourage a pattern of more casual and brief social interaction in these areas between those who happened to be occupying them at the time. This situation would also account for the finding that social interaction as an identifiable activity is distributed fairly evenly through many of the semi-public living areas.

In contrast there are fewer people distributed in a smaller living space in home B and this arrangement appears to facilitate sustained social contact. The home B residents are thus able to predict with more confidence the identity and location of others in the semi-public living areas. This situation emerges in the results as sustained leisure activity in the lounge.

The second factor which can be identified again relates broadly to the size difference between the homes, but here refers to the size as reflected in the design. The design and in particular the distribution of locations according to their main function reinforces the differing patterns of evening activities. In home A the kitchen and dining room were both large and so had tended to evolve a relatively institutional and unattractive appearance which would not have encouraged residents to engage in either sustained social interaction or other leisure activities in these locations. Furthermore, most leisure activities occurred in the lounge but there was no clearly marked alternative semi-public location where other leisure-type activities, perhaps incompatible with those occurring in the

lounge (e.g. watching T.V.) could occur. This lack of alternative location where a number of people could gather would seem to be a greater requirement in a home which accommodates a reasonably large group of people. Home B, in contrast has a sufficient number of rooms of sufficient size to accommodate flexibly the number of residents without the need for them to retire to their bedrooms.

Finally, one may point out that both homes in this study would have scored highly on a scale assessing normalization of residences for the mentally handicapped (May, 1986). It is therefore interesting to note that within facilities with similarly high normalization scores, quite different patterns of lifestyle can emerge with different implications for the social development and competence of the residents and these are influenced by the physical design and size of the institutions.

REFERENCES

- CANTER, D. and CANTER, S. (Eds.) (1979). *Designing for Therapeutic Environments: A Review of Research*. Chichester: Wiley.
- DEPARTMENT OF HEALTH AND SOCIAL SECURITY (1971). *Better Services for the Mentally Handicapped*. London: HMSO.
- DONEGAN, C. and POTTS, M. (1988). People with mental handicap living alone in the community: A pilot study of their quality of life. *Br. J. Ment. Subnorm.*, 34, 10-22.
- GOFFMAN, E. (1961). *Asylums*. London: Anchor Books, Doubleday and Co.
- GUNZBURG, H. C. and GUNZBURG, A. L. (1971). *Mental Handicap and Physical Environment*. London: Bailliere Tindall.
- KING, R. D., RAYNES, N. V. and TIZARD, J. (1971). *Patterns of Residential Care: Sociological Studies in Institutions for Handicapped Children*. London: Routledge and Kegan Paul.
- LANDESMAN-DWYER, S., STEIN, J. G. and SACKETT, G. P. (1978). A Behavioural and Ecological Study of Group Homes. In G. P. Sackett (Ed.) *Observing Behavior: Volume 1, Theory and Applications in Mental Retardation*. Baltimore: University Park Press.
- MAY, A. E. (1986). Steps toward normalization: A revision of "39 Steps". *Br. J. Men. Subnorm.*, 32, 108-113.
- MAZIS, S. and CANTER, D. (1979). Physical Conditions and Management Practices for Mentally Retarded Children. In D. Canter and S. Canter (Eds.) *Designing for Therapeutic Environments: A Review of Research*. Chichester: Wiley.
- REIZENSTEIN, J. E. and McBRIDE, W. A. (1977). Design for normalization: A social environmental evaluation of a community for mentally retarded adults. *J. Arch. Res.*, 6, 10-23.
- THOMAS, M., FELCE, D., de KOCK, U., SAXBY, H. and REPP, A. (1986). The activity of staff and of severely and profoundly mentally handicapped adults in residential settings of different sizes. *Br. J. Ment. Subnorm.*, 32, 82-92.
- WOLFENBERGER, W. (1977). The Normalization Principle and some major implications to Architectural-Environmental Design. In M. J. Bednar (Ed.) *Barrier Free Environments*. Stroudsburg, Pa.: Dowde, Hutchinson and Ross, Inc.
- ZIMRING, C. M. and REIZENSTEIN, J. E. (1980). Post-occupancy evaluation: An overview. *Env. Beh.*, 12, 429-450.
- ZIMRING, C., WEITZER, W. and KNIGHT, R. C. (1982). Opportunity for Control and the Designed Environment: The Case of an Institution for the Developmentally disabled. In A. Baum and J. E. Singer (Eds.) *Advances in Environmental Psychology, Volume 4: Environment and Health*. Hillsdale, N. J.: Lawrence Erlbaum Associates.