

Chapter 1

INTRODUCTION



THE PROBLEM

Understanding human needs and requirements is essential for informed and sensitive design of environments for handicapped persons. In this regard, the need for collaboration between those who design and those who use and manage mainstreamed education facilities is of very great importance. In order to most responsibly develop these facilities, problems which must be faced and resolved include:

- Developing a means of communication between users and designers.
- Gaining an understanding of the developmental, educational, and social needs of handicapped children.
- Understanding how accommodation of these needs can be supported by administrative programs and by physical design.

Legislative and courtroom decisions during the past few years have affirmed the rights of handicapped children to free, public education, in environments which permit interaction between handicapped and non-handicapped children. In order to comply with "mainstreaming" requirements, educational programs across the nation are being reevaluated and new models of exceptional education are being developed. Newly emerging methods of educating exceptional children in mainstreamed settings require environments which support the objectives of the educational programs and the developmental processes of children.

Approximately 10% of all school age children in this nation experience some sort of handicap and therefore require special assistance beyond regular classroom instruction. If educational programs for handicapped children are to proceed with placement of these children in integrated settings, a vocabulary for modification of regular school environments must be developed. Architectural standards for making traditional school environments accessible to the physically handicapped have long been available. However, physical accessibility is but one of the many issues which must be addressed in developing school environments which satisfy the broad spectrum of needs of handicapped children.

In the past, handicapped children have been educated completely apart from their non-handicapped peers or they have been placed in regular classrooms where teachers have had little experience in dealing with the handicapped and settings had not been designed with the handicapped child's developmental and psychological needs in mind. The frequent result of either situation was failure, frustration, and social isolation.

Those who will design facilities for mainstreaming will confront the task of acquiring the necessary knowledge base. Oftentimes, architects do not have the skills, or time, necessary to make rigorous investigations of the special human and education requirements associated with these facilities.

Educators and administrators often face problems which are similar to those of the designers. While professionally competent, they usually have little, if any, experience with the programming and design of facilities. Furthermore, when the problem involves new, or unfamiliar, special environments, they may have had no extensive experience in the use of such facilities.

A compounding problem is the lack of communication between researchers, architects, and educators. Researchers of exceptional education seldom relate their findings to the design of physical environments. Architects often do not have the time or skills necessary to sift through traditional research reports to draw out significant design and planning implications. The educator is often unable to express educational objectives in a manner that will be understood by architects, and the architect's jargon is often undiscernable to educators.

REVIEW OF EXISTING LITERATURE

A search of existing literature relating to physical design for environments for exceptional education and mainstreaming confirmed the need for a guide which is more comprehensive, and applicable to design, than those already available.

Most of the available sources provide useful information for dealing with relationships between physical environment and specific handicaps (e.g., the blind, orthopedically handicapped, learning disabled, etc.) (Abeson, Blacklow, 1971; Bayes, Francklin, 1971; Hough, 1971; Bednar, Havilland, 1969; Goldsmith, 1976; Cruickshank, 1977). The limitation of these discussions is that they deal mainly with severe handicap conditions and each deals with a single handicap.

However, environments for mainstreaming must accomodate children with all types and severity of handicaps, as well as non-handicapped children.

Despite the recognition that "physical environment can enhance or inhibit the daily operation of the education program" (Abeson, Berenson, 1970), there are few sources available which relate physical environment to emerging alternative education strategies in the manner that Coates' Alternative Learning Environments (1974) does. Most of the existing design guides still assume a traditional architectural approach to "space/function" programming (Osmond, 1971; Hough, 1971; Aiello, 1976) rather than a developmentally based approach as was attempted by Moore, Cohen, Oertel, and van Ryzin (1979).

A major shortcoming of the few available programming guides and sourcebooks regarding design of environments for mainstreaming is the casual substitution of "barrier-free design" (both conceptually and programmatically) for mainstreaming.

Some sources clearly limit the scope of their discussion to barrier-free design (Bednar, 1977; Goldsmith, 1976). However, as was cited in a recent paper (Cohen, Beer, Cairns, Golden, 1979), there are some sources which

claim to discuss design for mainstreaming, yet still result in discussing "barrier-free" design. One Out of Ten (Molloy, 1974) is an example of a very popular sourcebook which in introductory passages explicitly states that it is "not about architectural standards for barrier-free schools", but rather it is "about the implications of the new laws concerning . . . alternative methods of educating handicapped children in public schools". However, even the case studies presented in this sourcebook concentrate on examples of barrier-free design.

A plan published by a local public school system (Milwaukee Public Schools, 1977) discusses planned modifications of existing facilities to comply with state and federal regulations regarding mainstreaming. The discussion is entirely limited to issues of physical accessibility. No mention is made of intended actions to accommodate environmental needs of children with other types of handicaps. This is indeed a reflection of the universally overriding concern with the overt issues of physical handicaps, while the remaining majority of handicapped persons and their physical-environmental concerns are not identified nor responded to (Cohen, Beer, Cairns, Golden, 1979).

OBJECTIVES AND PROCEDURE

Objectives of the project were to:

- Describe the range of strategies which have been developed to implement mainstreaming programs in public schools, in accordance with all types of children's handicaps.
- Develop a guide for designers to help them understand the educational and developmental needs of handicapped children.
- Identify implications for design which satisfy educational, developmental, and administrative criteria for mainstreamed schools, and identify critical design principles.

While this document identifies basic criteria for mainstreaming facilities, it is not intended to present all the information required for the unique requirements of each design situation and its setting. In addition, the conventional issues of building design are addressed in a variety of useful design guides and texts on educational facilities and related topic areas.

The design criteria contained in this report are derived from a process of applied research, programming, and design based on our earlier work in this field (see Cohen and Moore, 1977; Cohen, 1978; Moore, Cohen, and Team 699, 1977; Moore and Cohen, 1978; and Moore, Cohen, Oertel, and van Ryzin, 1979).

The process had these basic stages:

- Behavioral observations of children and staff, 45 focused interviews with staff, program directors, and in a few cases with children and parents were conducted at approximately 20 sites.
- Systematic review of existing scientific and professional literature together with our own previous research on the handicapped and child-environment relations, for all relevant findings about the relationship of children's behavior to space and to child-care centers in particular. Included in this review were articles and books in exceptional education, child development, early childhood education, architecture, and environment-behavior studies.

- Identification of significant design issues based on information from these two sources plus our own professional experience and the advice of colleagues.
- Collecting and sorting all the scientific and applied information relevant to each issue into specific packets.
- Development of a central design idea-- called a "design principle"--in response to each packet of information, together with the development of more specific criteria and recommendations.
- Organization of the principles into a sequence relevant for planning and design, and preparation of this draft design guide.

The output from this process is a set of 18 design principles for the programming and design of environments for mainstreaming, each with supporting research-based arguments and detailed criteria.