

DOCUMENT RESUME

ED 106 905

EA 007 057

AUTHOR Bartholomew, Robert
TITLE Indoor and Outdoor Space for Mentally and Physically Handicapped Children. Exchange Bibliography No. 503.
INSTITUTION Council of Planning Librarians, Monticello, Ill.
PUB DATE Dec 73
NOTE 11p.
AVAILABLE FROM Council of Planning Librarians, P.O. Box 229, Monticello, Illinois 61856 (\$1.50)
EDRS PRICE MF-\$0.76 HC-\$1.58 PLUS POSTAGE
DESCRIPTORS Architectural Barriers; *Bibliographies; *Design Needs; *Handicapped Children; Mentally Handicapped; Physically Handicapped; *Play; *Playgrounds

ABSTRACT

Properly planned outdoor play areas can be an important aid in the rehabilitation and learning experiences of handicapped children. For a handicapped child the playground becomes a major training and treatment facility as well as a play experience. This bibliography is intended to assist designers in collecting the necessary data and information about the users' requirements in designing facilities for the handicapped. (Author/MLF)

December 1973

U.S. DEPARTMENT OF HEALTH
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

THIS DOCUMENT HAS BEEN REPRO-
DUCED EXACTLY AS RECEIVED FROM
THE PERSON OR ORGANIZATION ORIGIN-
ATING IT. POINTS OF VIEW OR OPINIONS
STATED DO NOT NECESSARILY REPRESENT
OFFICIAL NATIONAL INSTITUTE OF
EDUCATION POSITION OR POLICY.

**INDOOR AND OUTDOOR SPACE FOR MENTALLY AND PHYSICALLY
HANDICAPPED CHILDREN**

Robert Bartholomew
Department of Design and Environmental Analysis
Cornell University

017 057

INDOOR AND OUTDOOR SPACE FOR MENTALLY AND
PHYSICALLY HANDICAPPED CHILDREN

by

Robert Bartholomew
Department of Design and Environmental Analysis
Cornell University

INTRODUCTION

It is estimated that one out of every eight school age children is developmentally disabled, disturbed, mentally retarded or suffers from a physical handicap. There are varying degrees of disability that these children may possess, be it motor, perceptual or psycho-social.

Most of these children are part of a special education program or are institutionalized. The formation of the appropriate physical space can be an important support for these programs or aiding the learning process.

Each year in the U.S. 100,000 to 200,000 individuals join the over 6 million Americans who suffer the effects of mental retardation. Of this 6 million one-half are children and youths under 20 years of age. While the problem of retardation is often a severe mental handicap for the individual the difficulty of physical handicap is not an uncommon compounding of the situation. The loss to society due to the human disfunctioning is obvious though what society does for the multiple handicapped is less clear.

Mental retardation covers a considerable range of intelligence levels, ranging from mildly retarded (educable), to the moderately retarded (trainable), to the severe and profoundly retarded individuals where the mental functioning of self care abilities are quite limited. It should be emphasized that the mental and chronological ages of those that are mentally retarded often do not coincide, for example, a mentally retarded child who is 10 or 12-years of age chronologically may actually have an intelligence equivalent to a normal 2 or 3 year old.

There is a trend in Scandinavian countries toward "normalization" of retarded children, including the need to mobilize children, even the severely handicapped to make them more ambulatory. The problem of architectural barriers to the handicapped (steps, narrow doorways, no handrails, unaccessible toilet facilities). This is particularly important in institutional settings where large percentages of the residents have significant physical handicaps.

Extra demands are often made on the teachers and staff in this situation. Many of the children are hyperactive or have an extremely short attention span, influenced by an over stimulating environment. For other children there is a need for an environment that provides a stimulus to passive children.

There is a definite movement towards providing care and facilities in a community setting rather than the large residential institutions. This is particularly true for children with mild handicaps, though severely and profoundly retarded children are still receiving residential care.

Properly planned outdoor play areas can be an important aid in the rehabilitation and learning experiences of handicapped children. There are special problems to be accommodated in terms of physical and/or mental disabilities, particularly as regards safety, the types of challenges presented and problems of emotional reactions to repeated failures. The outdoor spaces should give an opportunity to develop large muscle control, encourage spontaneity and increase opportunities for socialization with other children.

The teacher may use the playground for special needs of a class. Perhaps the physical therapy program could be expanded to the outdoors. Generally, an outdoor play area should provide a variety of spaces with different textures, patterns and sensory experiences (smell, sound, sight). The ideal playground provides challenges that develop large motor coordination, cognitive skills, imagination and social interaction. The playground design should be consistent with the philosophy of the school and the abilities and limitations of the children. Play knowledge seeking behavior. It is a series of experiments where the child advances to more and more complex physical and mental games. Play is not just athletic development, but is filled with imagination and fantasy.

For a handicapped child the playground becomes a major training and treatment facility as well as a play experience. Physical competence can result in increased self-confidence, a quality absent in many handicapped children. This self-confidence is transferable to the learning process and the child's general attitudes.

There is a need for designers to collect the necessary data and information about the users requirements (staff and children). Other requirements include building codes, life safety codes and hospital codes. For an exterior or interior space for the handicapped to be successful, communication between the designers and special educators plus observation of the children is vital.

- Abeson, Alan. "The Design Process in Special Education Facility Planning," unpublished, 1968, 7p.
- Albarn, Keith. The Design of Educational and Therapeutic Facilities for Autistic Children, London.
- Alt, Herschel. Residential Treatment for the Disturbed Child, New York: International Universities Press, 1960, pp. 197-204.
- American Institute of Architects. Workshop on Educational Facilities for Exceptional Children, New York: Educational Facilities Lab., 1965.
- American Standards Institute. Specifications for Making Building and Facilities Accessible to and Usable by the Physically Handicapped, New York, 1961.
- Bair, Howard V. and Henry Leland. The Utilization and Design of Physical Facilities for the Rehabilitation of Mentally Retarded, Parsons, Kansas: Parsons State Hospital, 1967.
- Bayes, Kenneth. The Therapeutic Effect of Environment on Emotionally Disturbed and Mentally Subnormal Children, Surrey, England: Urwin Brothers, Limited, 1967.
- Bayes, Kenneth. Feasibility Study for Development of Community Based Services for the Mentally Handicapped, Sheffield, England: The Department of Health and Social Security, Architects Department, Research and Development Group and Design Research Unit, 1969 ongoing.
- Bayes, Kenneth. Designing for the Handicapped, London: Godwin Ltd., 1971.
- Bednar, Michael J. and David S. Haviland. The Role of the Physical Environment in the Education of Children with Learning Disabilities, (paper developed for Educational Facilities Laboratories by the Center for Architectural Research), Troy, New York: Rensselaer Polytechnic Institute, March 1969.
- Berenson, Bertram. Architecture for Exceptional Children, Ann Arbor: University of Michigan, Architectural Research Conference, 1965.
- Berenson, Bertram. The Educational Implications of Architecture for the Deaf, Hampton Institute, Virginia, 1968.
- Berenson, Bertram. "Physical Environment and Special Education: An Interdisciplinary Approach to Research," (Research proposal and conference report), Washington, D.C.: Council for Exceptional Children, 1967.

- Brown, P. I. "The Effects of Varied Environmental Stimulation on the Performance of Subnormal Children," J. Child Psychology, 7, 1966, pp. 251-261.
- Built Environment Research Group, The. Environmental Requirements of Preschool Age Handicapped Children, England: The Central Polytechnic, 1971.
- Carter, John Harvey. Educational Environment for the Orthopedically Handicapped Including the Cerebral Palsied, Sacramento, California: Bureau of Special Education, 1962, p. 23.
- Chapman, R. H. Approach to Design - The Functional Space and Utility Programme, State Schools for the Mentally Retarded, Albany, New York: State Department of Hygiene, 1966.
- Child Development Group of Mississippi (QEO). From the Ground Up, Jackson, Mississippi: CDGM, 1967.
- Colvin, Ralph W. The Design Process in Special Education Facility Planning Applied to a Day and Residential Facility for the Emotionally Disturbed and Brain Injured, New York: Child Welfare League, 1968.
- Cruickshank, William M. The Brain Injured Child in Home, School, and Community, Syracuse, New York: Syracuse University Press, 1967.
- Davis, A. R., editor. "Designing for the Mentally Handicapped," Official Architecture and Planning, Vol. 32, No. 9, 1969.
- D.E.S. Building Bulletin 5 - Day E.S.N. Schools, London: HMSO, 1956. (Schools for mildly to moderately retarded children.)
- D.H.S.S. Local Authority Building Note 6 - Residential Hostels for the Mentally Disordered, London: HMSO, October 1967, 10p.
- D.H.S.S. Buildings for Mentally Handicapped People, (prepared by Llewelyn-Davies, Weeks, Forestier-Walker and Bor and representative of D.H.S.S.) London: HMSO, Vol. 2, 1971.
- Dunn, Lloyd M., editor. Exceptional Children in the Schools, New York: Holt, Rinehart and Winston, Inc., 1963.
- Ellis, M. J. and T. T. Craig. "A Note on the Inferiority of Retardates' Motor Performance," Journal of Motor Behavior, Vol. 1, No. 4, 1969, pp. 341-346.
- Esser, Aristide H. "Dominance Hierarchy and Clinical Course of Psychiatrically Hospitalized Boys," Child Development, Vol. 39, No. 1, March 1968.
- Etkes, Asher. "Planning Playgrounds for the Handicapped," JNP and Mental Health Services, November-December 1968.

- Footo, Franklin M. "Classrooms for Partially Seeing Children," Exceptional Children, October 1955, pp. 41-42.
- Friedsam, Hiram. "A Note on Facilities for the Mentally Retarded," Mental Retardation, Vol. 6, No. 4, 1968, pp. 13-17.
- Goldfarb, and Muntz. "The Schizophrenic Child's Reaction to Time and Space," Arch. Gen. Psychiat., 1961, pp. 535-543.
- Goldfarb, W. and R. C. Pollack. "The Childhood Schizophrenic's Response to Schooling in a Residential Treatment Center," in P. H. Hoch and J. Zuben (eds.), The Evaluation of Psychiatric Treatment, New York: Grune and Stratton, 1964.
- Goldfarb, W., N. Goldfarb and R. Pollack. "A Three Year Comparison of Day and Residential Treatments of Schiz. Children," Arch. Gen. Psychiatry, Vol. 14, 1966, pp. 119-128.
- Good, L. R., S. M. Siegal and A. P. Bay. Therapy by Design, Springfield, Illinois: Charles C. Thomas, Publisher, 1965.
- Gordon, Ronnie. The Design of a Pre-school "Learning Laboratory" in a Rehabilitation Center, New York: New York University Medical Center, 1969.
- Gorton, C. E. and J. H. Hollis. "Redesigning the Cottage Unit for Better Programming and Research for the Severely Retarded," Mental Retardation, Vol. 3, 1955, pp. 16-21.
- Gramza, A. F., P. A. Witt; A. G. Linford and C. Jeanrenaud. "Responses of Mongoloid Children to Colored Block Presentation," Perceptual and Motor Skills, Vol. 29, 1969, p. 1008.
- Haring, Norris G. and Richard J. Whelan. The Learning Environment: Relationship to Behavior Modification and Implications for Special Education, Lawrence, Kansas: The University of Kansas Symposium, Department of Education, 1966.
- Harmon, Darrell Boyd. The Coordinated Classrooms as Developed by Darrell Boyd Harmon, Washington, D.C.: American Institute of Architecture, File #35-B.
- Hay, Louis and Shirley Cohen. Perspectives for a Classroom for Disturbed Children, New York: Board of Education, 1967.
- HEW. Architectural Contributions to Effective Programming for the Mentally Retarded. Washington, D.C.: Conference Report of the Architectural Institute, Rehabilitation Services, 1967, 66p.
- HEW. Design of Facilities for the Mentally Retarded, Washington, D.C.: U. S. Government Printing Office, 1966.
- HEW. Planning Facilities for the Mentally Retarded, Public Health Service, 1964.

Hester Adrian Research Unit. Development of Assessment Areas in Training Centres for Severely Subnormal Adults, England, 1970.

Hewett, Frank M. "Educational Engineering with Emotionally Disturbed Children," Exceptional Children, March 1967.

Howard, Alan. "Facilities Design Considerations for Special Education," unpublished, 6p..

Jaslow, Robert I. A Modern Plan for Modern Services to the Mentally Retarded, Washington, D.C., 20402: Superintendent of Documents, U. S. Government Printing Office, 1967, 12p. \$10.00.

Johnson, Warren E. Some Considerations in Designing Facilities for the Deaf, Portland, Oregon: Portland Center for Hearing and Speech, 1967.

Kansas State Department of Special Education. Some Organizational Considerations of Elementary Classrooms for Educable Mentally Retarded, Topeka, 1965.

Kimbrell, Don L., et. al. "Institutional Environment Developed for Training Severely and Profoundly Retarded," Mental Retardation, February 1967, pp. 34-37.

Maier, Henry W. Designing Residential Living Units for Persons with Mental Retardations, Seattle: Washington University School of Social Work, 1967.

Mental Health Materials Center, Inc. Architecture for the Community Mental Health Center; New York, 1967.

Meyen, Edward L. Planning Community Services for the Mentally Retarded, Scranton, Pennsylvania: International Textbook Company, 1967, 394p., \$4.95.

Mitchell, Anna C. and Vincent Smeriglio. "Growth in Social Competence in Institutionalized Mentally Retarded Children," American Journal of Mental Deficiency, Vol. 74, No. 5, March 1970.

Moos, Rudolf H., et. al. "Psychiatric Patients and Staff Reaction to Their Physical Environment," Journal of Clinical Psychology, Vol. XXV, No. 3, July 1969, pp. 322-324.

Murphy, William K. and R. C. Scheerenberger. Establishing Day Centers for the Mentally Retarded: Guidelines and Procedures, Springfield, Illinois: Division of Mental Retardation Services, Department of Mental Health, 1967, 85p. Single copies free.

- National Association for Retarded Children. Architectural Contributions to Effective Programming for the Mentally Retarded, New York, 1967.
- National Commission on Architectural Barriers. Design for All Americans, Washington, D.C.: Superintendent of Documents, 1967.
- New York State Construction Fund. Making Facilities Accessible to the Physically Handicapped, 1967.
- New York University Medical Center. The Design of a Pre-School "Learning Laboratory" in a Rehabilitation Center, New York, New York, 10016: Institute of Rehabilitation Medicine, 400 East 34th Street, \$3.50.
- Hellist, L. Planning Buildings for Handicapped People, London: Crosby Lockwood, 1970, 2.75p.
- Nelson, William. Design Study for Dixon State School, Dixon, Illinois, 1969.
- Nugent, Timothy J. Design of Buildings to Permit their Use by the Physically Handicapped; A National Attack on Architectural Barriers, Chicago: National Society for Crippled Children, 1960.
- Orange County Board of Public Instruction. An Adaptive Playground for Physically Disabled Children with Perceptual Deficits, Orlando, Florida, 1969.
- Ornitz, Edward M., et. al. "Modification of Autistic Behavior," Arch. Gen. Psychiat., Reprint, Vol. 22, June 1970.
- Paluck, R. J. and A. H. Esser. Territoriality in the Operant Conditioning of Severely Retarded Boys, (paper read at the 135th meeting of the American Association for the Advancement of Science). (Abstracted in American Zoologist, Vol. 8(4), 1968.)
- Playground Corporation of America. The Handicapped Child, the Flayscape and the Instructor, New York, 1969.
- Playground Corporation of America. Helping Rehabilitate the Handicapped Child Through Successful Physical Play, New York: Proceedings of the P.C.A. Press Symposium, 1969.
- Pollack, M. and W. Goldfarb. "Patterns of Orientation in Children in Residential Treatment of Severe Behavior Disorders," Amer. J. Orthopsychiat., 1957, Vol. 28, pp. 538-552.
- Ravensbourne College of Art. Day Activity Areas for Subnormal Children, School of Three Dimensional Design, Bromley Common, Bromley Kent (John Barden), 1971, ongoing.

- Research Unit for the Subnormal. Development of Equipment and Environments for the Care of the Mentally Handicapped, London, E.C.1: St. Bartholomews Hospital (Chris Dunk), 1970 ongoing.
- Research Unit for the Subnormal. Development of Equipment and Environments for the Care of the Mentally Handicapped, London, E.C.1: St. Bartholomews Hospital, 1970 ongoing.
- Rosenfield, I., et. al. "A Designed Environment for the Mentally Retarded," Hospitals, Vol. 42, October 1968, pp. 54-57.
- Salmon, F. Cuthbert and Christine F. Salmon. The Blind, Space Needs for Rehabilitation, Norman: Oklahoma State University, 1964.
- Sorosky, Roger and Tanguay. "Furnishing a Psychiatric Unit for Children," Hosp. Community Psychiatry, Vol. 20, 1969, pp. 334-336.
- Spcakman, Peter. Facilities for the Mentally Handicapped, Scotland: The School of Architecture, Strathclyde University, 1968-71.
- State University Construction Fund. "Making Facilities Accessible to the Physically Handicapped-Performance Criteria," Albany, 1967.
- Texas A&M University. "Environmental Criteria: MR Preschool Day Care Facilities," College Station, Texas: Study by the Architecture Research Center, Texas A&M University, 1972.
- Texas Education Agency. Architectural Considerations for Classrooms for Exceptional Children, Austin, 1967.
- Vanston, A. Porke, et. al. "Design of Facilities for the Mentally Retarded; Diagnosis and Evaluation, Education and Training, Living Units," Hospital and Medical Facilities Series, Washington, D.C.: Superintendent of Documents, U. S. Government Printing Office, 1965, 55p.
- Vogel, William, et. al. "Effects of Environmental Enrichment and Environmental Deprivation on Cognitive Functioning in Institutionalized Retardates," Journal of Consulting Psychology, Vol. 31, No. 6, pp. 570-576.
- Welsh School of Architecture. A Case Study Examination of a Local Authority Special School for Physically Handicapped Pupils in Glamorgan, Cardiff, CF1 3NU: Alison Press, U.W.I.S.T., King Edward VII Avenue.
- Wolf, J. B. Physical Facilities for Exceptional Children in the Schools, Balboa, Canal Zone, 1968.

COUNCIL OF PLANNING LIBRARIANS Exchange Bibliography #503

INDOOR AND OUTDOOR SPACE FOR MENTALLY AND PHYSICALLY HANDICAPPED
CHILDREN

Additional copies available from:

Council of Planning Librarians
Post Office Box 229
Monticello, Illinois, 61856

for \$1.50.