



Report of the International Expert Seminar Building Concept for the Handicapped Stockholm, Sweden, April 10-12, 1984

Table of contents

Presentation of the organizers.

Opening Address by Mr. Bengt Lindqvist, M.P.

CIB/W 84 Background and Purpose by Prof. Sven Thiberg.

Prerequisites for Independent Living by Adolf Ratzka, Ph.D.

Steering Systems and Their Application by Hanne Weiss-Lindencrona.

Costs and Benefits of Accessible Environments by Adolf Ratzka, Ph.D.

Research Profiles and Strategies by Prof. Sven Thiberg.

Conclusions: Summary of the Seminar Discussions edited by Adolf Ratzka, Ph.D.

Appendix

List of Participants.

About CIB

Presentation of the organizers

Organized by the International Council for Building Research, Studies and Documentation Working Commission W 84 in cooperation with the Royal Institute of Technology Stockholm, Department of Building Function Analysis 100 44 Stockholm,

Sweden

CIB is the abbreviation of the French title of the International council for Building Research, Studies and Documentation. CIB's purpose is to encourage, facilitate and develop international cooperation in building and housing and in planning research, studies and documentation covering not only the technical but also the economic and social aspects of building and the related environment.

W 84

In May, 1983, the CIB Program Committee and Board approved the establishment of the Working Commission W 84, "Building Concept for the Handicapped". The following objectives and scope are presented for consideration:

- To promote the realization of a barrier-free environment by collecting, analyzing and distributing knowledge and experience based on research and development work, taking into account differences in economic, social, cultural and technical conditions.
- To utilize the results of research and development work and develop methodology in order to strengthen the quality of work in this field.

The Department of Building Function Analysis

Royal Institute of Technology, Stockholm, Sweden

The Department

- is engaged in research and training
- studies the relationship between man, environment and society
- starts from the user's knowledge, demands and abilities
- strives for equal opportunities in the built environment
- aims at economizing human and material resources
- suggests standards for the built environment
- investigates alternative solutions
- develops democratic planning methods

Opening comments

by Mr. Bengt Lindqvist, Member of the Swedish Parliament and Chairman of the Central Committee of Organizations of the Disabled in Sweden (HCK)

Let's Go For Equality

Ladies and gentlemen: "More than 500 million people in the world are disabled as a consequence of mental, physical or sensory impairment. They are entitled to the same rights as all other human beings and to equal opportunities. Too often their lives are handicapped by physical and social barriers in the society which hamper their full

participation. Because of this millions of children and adults in all parts of the world often face a life that is segregated and debased."

What I just now have said are some of the first sentences of the unique document called the World Programme of Action Concerning Disabled Persons, adopted by the General Assembly of the UN in the autumn of 1982. The purpose of this program is to realize the goals of full participation and equality for disabled persons. Many people might ask what it means to link the concept of full participation with the situation of disabled persons. Isn't it obvious from the very beginning that full participation is impossible due to the existence of the disability? And what's the sense of linking equality with disability? Isn't it inherent in disability itself that equality is impossible? We all know that a blind person cannot see, a paraplegic cannot walk and a deaf person cannot hear what we say. But this is a too mechanical and static way to view things.

In the context of the World Programme of Action, full participation means to share the joys and sorrows of your own family, to take part in the social life and development of your community, to share the rights and obligations with others and to have the same freedom and responsibility as other citizens.

Equality between disabled persons and others has many dimensions. Basically, however, it means to regard the needs of all human beings as of equal importance, to make the needs of all persons the basis for planning and development, and to distribute your resources in such a way that each and every one has an equal share.

If you accept this interpretation of equality to be used in all planning and development in our communities, it means that you must include the needs of disabled persons in all future planning and development. It means that everything must be done which can be done from a technical or practical point of view to eliminate physical or social barriers which prevent their participation.

The World Programme of Action is certainly no luxury which you apply when you think you can afford it. It means "opportunities equal to those of the whole population and an equal share in the improvement in living conditions resulting from social and economic development. These concepts should apply with the same scope and with the same urgency to all countries regardless of the level of development".

The World Programme of Action is a unique and progressive document which deserves much more attention than it has received so far. The fact that all member states of the UN have unanimously adopted this programme gives great moral and political support to disabled persons the world over, and to all those who want to contribute to the improvement of their conditions.

To improve the situation of disabled persons we must work in many different ways. One main area is rehabilitation. This means supplying the disabled persons with technical aids, training and knowledge of how to reduce or even eliminate his functional limitations. But we very well know from experience that rehabilitation is not enough. The rehabilitated disabled person - he might be blind, deaf or physically disabled - who wants to integrate into his community very soon meets with obstacles and difficulties which are due to the fact that his situation has not been taken into account when the community was planned. The adaptation of the physical environment therefore forms a key to progress. I will once again turn to the World Programme of Action, and quote what it says about physical environment.

It says:

"Member states should work towards making the physical environment accessible to all, including persons with various types of disability. Member states should adopt a policy of observing accessibility aspects in the planning of human settlements, including programmes in the rural areas of developing countries. Member states are encouraged to adopt a policy ensuring disabled persons access to all new public buildings and facilities, public housing and public transport systems. Furthermore, measures should be adopted that would encourage access to existing public buildings and facilities, housing and transport wherever feasible, especially by taking advantage of renovation."

ladies and gentlemen, in my view the World Programme of Action forms an excellent platform for the activities which are now being initiated by the International Council for Building Research Studies and Documentation. We all know that it takes knowledge, resources and careful planning to achieve the goals of this programme. It also takes the political will to do it. However, governments all over the world are now under an obligation to start planning processes to reach these goals. This, I think, gives special emphasis to the seminar which is now being started. I am sure that organizations of disabled persons all over the world will note this initiative taken by CIB with great satisfaction. I hope that all you who are participants at this seminar will feel involved in a great and world-wide campaign to improve the conditions of disabled persons. In doing so you will make this world a better place for everyone.

I wish you all success in your work during this seminar and in the future.

CIB/W 84 Background and Purpose

By Prof. Sven Thiberg, coordinating chairman of CIB/W 84

In March 1983, the CIB Programme Committee and Board approved the establishment of the Working Commission W 84, Building Concept for the Handicapped.

In accordance with the rules for the work of CIB (see annexes to this document), it is incumbent upon the Co-ordinator of the Working Commission to formulate the Work Programme, including the Terms of Reference.

This document is intended to give a background to the work at the Committee's first meeting. The document also contains proposals for tasks of immediate interest and a time schedule for their implementation.

The object of these proposals is not to anticipate the Commission's decisions but to create a concrete basis for the discussions at the meeting in April 1984.

Corresponding proposals are expected from the delegates during sessions 4-5. The delegates' various proposals will constitute the basis for the final decisions in session 6.

1. Basic considerations

The physical environment affects our ability to function as individuals and as members of society.

This is most obvious when it comes to those whose physical or mental capacity is restricted. In such cases the physical environment can be a handicapping factor and an additional impediment to a normal life. On the other hand, a physical environment designed and equipped to meet the needs of a wide range of the population supports equality and full participation.

2. Proposed objectives

The basic objectives of the CIB working Commission W 84, Building Concept for the Handicapped, are to promote the realization of a barrier-free environment by collecting, analyzing and distributing knowledge and experiences based on research and development work, taking into account differences in economic, social, cultural and technical conditions. The objectives include the exchange of experiences intended for development of research methods and information processes. Direct cooperation with organizations representing the handicapped will be aimed at.

3. Activation of CIB's members

The work of the working Commission shall be done in the first place by members of CIB. These are mostly national building research institutions, usually with a predominantly technical bias, building enterprises and building consultants. The majority of members presumably do not conduct research in this field of concern and probably have little influence on or interest in it. The fact that the matter has been brought up in CIB should therefore be viewed as a positive development, which should be actively taken advantage of in the organization. CIB/W 84 is faced with a "pioneering" task. We must make it clear that the problem field has a relevance for the members, that they can make important contributions, and that CIB/W 84 is a competent and rational forum for these efforts.

4. Work with a global outreach

The work of the Working Commission must be relevant to countries with differing economic, social, cultural and technological conditions. If the developing countries are to benefit from the work, it must not be limited to high-technology solutions or to urban problems in an industrialized country environment. The work should be directed to a study of how the general goals formulated by the UN and by the disabled persons' organizations can be made operational in CIB/W 84 and implemented at different technological and economic levels and in different social and cultural situations.

5. An international framework

The W 84 work will benefit from international activities within other organizations and institutions.

UN Organizations.

An encouraging challenge is provided by the experiences of the world-wide activities undertaken within the framework of the International Year of Disabled persons. Resolutions adopted by the UN General Assembly call for action in the field of physical planning and building. The CIB Working Commission is fully in agreement with the standpoints taken by the UN and its Advisory Committee. (AAC.197/L.19/add.4, 11 August 1981.) The UN ECE, Committee on Housing, Building and Planning, has recently supported a Research Colloquium: The Built Environment and the Handicapped.

The Summing Up of the Colloquium stresses the necessity of international research cooperation, exchange of recommendations and priorities, research results and experiences. (Report and Proceedings, Stockholm and Gothenburg, 1982)

Political organizations at regional level.

At the regional level important political organizations stress the necessity and possibilities of using the physical environment as a means to narrow divisions in society. The Council of Europe, Committee of Ministers, has agreed on a resolution concerning the adaptation of the physical environment to the needs of disabled persons. (Resolution AP(77)8, November 1977.)

DPI, RI and CWOIH.

A high level of competence is available in such specialized organizations as Disabled Peoples International, Rehabilitation International and the Council of World Organizations Interested in the Handicapped. It is essential that the Working Commission should establish meaningful cooperation with those organizations.

International standardization.

Technical work is in progress within the ISO Organization. The aim of ISO/TC 59/WG 1 is to promote the incorporation of specifications meeting the requirements of the handicapped in ordinary building standards.(ISO/TC 59/WG 1, N16).

This short survey stresses both the necessity of collaboration between international bodies and the impressive resources available through uniting their efforts. To reap full benefit from this international network is a challenge that confronts the working Commission.

6. Proposed programme of work

The programme should take into account the following types of functional disorder:

- reduced locomotive faculty
- defective vision
- defective hearing
- mental retardation
- allergy

The various forms should be given equivalent importance, but the work should be adapted to the knowledge situation and to the way in which available knowledge is applied in practice.

The work should be directed principally to general measures in the physical environment and in the last resort to individual-associated aids. Information about the performance of individual aids can, however, be included as a prerequisite for general measures.

7. Priority of areas for immediate measures

The work of the working Commission shall consist of research, studies and documentation. Practice shows that it is a matter of dealing with both research, experiments and model projects with evaluations. Application of research results through standards, regulations, financing systems etc. is an important aspect to be studied. CIB/W 84 thus has the right and reason to deal with a very broad field of activities. Restrictions must be made strategically in relation to what the Commission considers important and effective, and to the fields in which it possesses capability.

8. Time schedule for measures decided upon

A plan of work should be drawn up in the form of a rolling three-year programme, the first period being 1984-1987. The Commission should conduct a number of parallel projects to be reported upon at its next meeting.

For each project a project leader should be appointed who, together with the Co-ordinator, is responsible for its implementation and for reporting upon it.

Time schedules both for the projects and for the Commission's joint work should be decided upon at the meeting in April 1984.

9. Proposed tasks

The following proposals concerning tasks should be presented for discussion:

- a) There exists an extensive material of international and national standards and recommendations for the design of buildings and the local environment to meet the needs of the orthopaedically handicapped. There has been intensive R&D in this field and very extensive data are available to planners. Differences in results and conclusions are sometimes rather bewildering. A comparative study of different design rules and their scientific background should lead to a greater degree of consensus.
- b) Some research is being done today to improve the physical environment with regard to orientational handicaps such as defective vision or hearing and certain types of mental retardation. The research efforts and the level of knowledge, however, differ greatly from country to country. International exchange can therefore save resources and lead to quicker application of existing knowledge.
- c) Allergic ailments due to building and furnishing materials and to air conditioning are considered to be increasing. Because of new materials and new construction principles, knowledge of the effects on persons susceptible to allergy is inadequate and must be constantly renewed. International exchange in this field can have great economic significance for the building industry and should therefore be of especial interest to CIB's members.
- d) Integration of disabled persons in an ordinary housing and working environment requires a combination of general accessibility, special adaptation and a flexible service organization. In many countries experiments to this end are being made, with different objectives and different forms of organization. Exchange of information about such experiments can accelerate progress towards full participation and equality in social life.
- e) The condition for available knowledge being put to practical use is that it is incorporated in the planning process in an active way conformable to the requirements. Different forms of presentation of this knowledge should be studied and evaluated.

Of special interest are educational and informational materials, standardization, norms, regulations and financing conditions.

The participation of disabled persons and their organizations in the planning and decision processes should be supported.

f) Cost factors are often used as arguments against an increased general adaptation of the environment. Assessments are often made on deficient premises and based on suboptimizations. Total cost-benefit studies can cast light on the effects of different measures. For this purpose a well developed technique is needed, and a discussion of what factors should be considered in this type of analysis.

10. Final comments

This brief account of the background, objectives and conceivable tasks for W 84 is intended to serve as a backdrop for our three days' discussion in Stockholm.

The goal for the meeting is that we shall together arrive at a concrete work programme which both indicates the direction for the Commission's long-term engagement and specifies concrete and realistic tasks for which the persons and institutions present take responsibility, in respect of both content and time schedule. This is a difficult assignment, as we are meeting for the first time and time is scarce. On the other hand I know that all delegates have experience, capability and enthusiasm for this work. I therefore have great expectations that we shall achieve a satisfactory result. It is desirable that in our informal conversations during breaks, mealtimes and excursions, we consider the questions of our future work and in this way prepare for the formal deliberations in the last three sessions.

The Prerequisites for Independent Living

By Adolf Ratzka, Ph.D.

Independent Living is a term that was coined in the 1960s by the American disability movement. Today it has become a buzz word frequently used and abused by consumers and professionals alike. In its most common connotation it refers to living in the community as opposed to living in an institution. But Independent Living is also an attitude, an ideology, and a social and political international movement.

If you hear the expression "independent living for disabled people" you might say that you do not know many people who could be called independent. You yourself might have a wife or a husband and four hungry children at home, your boss is breathing down your neck. Worst of all, you may not be independently wealthy. So how can disabled people expect to become independent? We are all interdependent in one way or another. What is important, though, is that within these interdependencies and limitations imposed on us we recognize the options open to us, that we work towards increasing the number of our alternatives and make conscious choices. The aim is to realize that we are responsible for our lives. whether we take this responsibility or place the locus of control over our lives outside ourselves is an attitude that has really nothing to do with our physical characteristics.

Independent Living is also an ideology and a social and political movement. Inspired by the example of the struggle for equal rights by racial and ethnic minorities and the women's movement during the last decades, the Independent Living movement sees itself as a civil rights movement of disabled people and as a political force. An important ideological influence has come from the consumer movement. Consumerism applied to disability postulates that we disabled people are experts on our own lives that we have the right and responsibility of assuming control over our own lives. Thus Independent Living subscribes to de-professionalization and de-medicalization. With the rise of the power of

professionals, society has been all too eager to label those persons as "sick" who deviate from the expected norm.

In the medical model, deviants are treated as individual cases that are to be cured by professional intervention. This view denies that deviation is a function of society's norms, definitions, and physical shape. The "sick" person is expected to be unable to take care of himself and is excused from the responsibilities of everyday life, adult responsibilities. The medical profession calls him "patient" which literally means somebody who is suffering and waiting. This dependency and denial of common adult responsibilities is most pronounced in institutions, where the inmates are often deprived of the right to the most basic decisions such as when to eat and when to excrete.

It is the Independent Living movement's merit to have pointed out most clearly society's patronizing attitude towards and even oppression of disabled people. In the US the movement's major victory is the Rehabilitation Act of 1973, which is an anti-discrimination legislation. In the United Kingdom a move to enact a similar law failed in November, 1983. Thus, it is still legal to discriminate against people on the basis of disability in the UK - not to speak of all the other countries where most people have never had the thought that disabled people could be discriminated against, where special kindergartens, special primary schools, special secondary schools, sheltered workshops, special housing, special transportation, special public toilets, special resort hotels are still not seen as evidence of an - at best - overprotective and patronizing attitude, and of outright oppression at worst.

The growing Independent Living movement is working towards ending "handicapism" - a form of discrimination just as widespread as racism or sexism. The aim is the emancipation of disabled people in all respects. We demand the same degrees of freedom as the rest of the population in education, work and leisure, in economic, social, and political life. To this end we need to generate a multitude of options and alternatives for ourselves. We have to be able to make choices. We have to make these choices ourselves, and we reserve the right to make the wrong choices, to fail and to succeed. Only then can we advance from being the objects of planners and administrators - however well-intentioned they may be - to being the subjects of our lives exercising responsibility and control.

How do we get there? How can we get the same degrees of freedom as our non-disabled peers in all important aspects of life? What are the prerequisites for Independent Living?

The first requirement is strong consumer organizations; that is, organizations of and not FOR disabled people, organizations that are run and represented by the disabled themselves. Women's organizations, to give an example, are not run by men either. To the extent our organizations are dominated by non-disabled persons, this should be seen as a sign of weakness and not integration, as it is said sometimes here in Sweden. Strong consumer organizations include all disabled people regardless of diagnosis. Today, most of our organizations defend the interest of persons with a certain medical condition, some even call their own members "patients" In this way we perpetuate the medical model and our dependency on medical and other experts, focusing on our "defects" instead of our assets, concentrating on what divides us instead of on what unites us and gives us strength.

Another prerequisite for independent living for many disabled people is personal assistance. We who need assistance in getting up in the morning, with bathing and using the toilet and getting to work, have to have access to this service in the community, wherever we live. In most countries many of us who need this practical help must live in institutions. In West Germany, for example, thousands of physically disabled people live

in mental institutions because they need help in getting dressed or going to bed. In Stockholm, there was an article in the daily newspaper not long ago about a young person living in a nursing home because city officials decided he needed too much help to live in the community. Integration, normalization, full participation and equality - all these fine words will remain empty phrases as long as we do not have the same right to choose where we can live as our non-disabled peers. The assistance we need has to follow us, not the other way around. It is unacceptable that those of us in Sweden who need extensive personal assistance can only live in special houses or - at best - in special apartments. We need flexible attendant care solutions that are not linked to special buildings, that allow us to live in any apartment or single-family home by ourselves or with our families without having to be a burden to them.

Regarding the special apartments which some of you saw yesterday, it would be unfortunate if you went home to your respective countries and said, "Now we know what the disabled need. Everyone of them should have his special apartment with 24-hour attendant care." It must be emphasized that we need options. We are all different individuals with different backgrounds and preferences. ONE solution cannot satisfy all our different INDIVIDUAL needs. We have to be able to choose for ourselves the type of assistance we need. Only WE can define our needs.

Some of us prefer that an agency, public or private, employs, trains, and schedules the attendants who work for us. But those of us who want to decide who is to perform these often very personal, intimate tasks have to be able to do so. It can be a degrading and humiliating feeling to get assistance from somebody one does not know or does not like. We have to be able to hire, train, and fire our attendants ourselves. It all comes down to a question of power: shall we give somebody else - a social worker for example - the power to determine what is best for us or do we want to empower ourselves and take over the control of and responsibility for this important part of our lives?

If disabled people are to be fully integrated and are to participate on equal terms in the community, they have to be able to get anywhere just as their non-disabled peers can. This means that we need an environment built for accessibility, that is to say that all housing, transportation, places of work, streets, public buildings, schools, shops, businesses must be accessible. Accessible construction cannot be left to the good will of landlords and builders: there must be building codes and standards that are enforceable by law. Sweden has had accessibility building codes since the 1960s. Since 1977 these codes also apply to nearly all residential construction. The next speaker will fill you in with all the pertinent information on this legislation. I hope she will also address the difficulty of enforcing the codes in the absence of provisions for punishing builders who do not comply. But even if these laws were enforced 100 percent, we would not achieve full accessibility in Sweden - at least not within the next couple of hundred years, since there is very little new construction now and the accessibility codes referring to the renovation of existing structures are rather lenient. The reason for this leniency is, of course, the high cost of retrofitting old buildings with elevators. But these costs are coming down now, due to some exciting new developments in elevator construction. Also, installing elevators will yield some benefits to both individuals and society, which I will take up in more detail later today. As to new construction, the additional costs of accessibility are estimated to increase total costs by two per cent, an increase that is negligible in comparison to the resulting benefits.

How accessible is Sweden, given its accessibility legislation? If I were to tell you that I see Stockholm as a highly segregated city, that I experience some of the same discrimination that I believe blacks in South Africa feel, then you would not believe me, Perhaps statistics will convince you: in a recent study I estimated that at least 95 percent of the total housing stock in the city of Stockholm is inaccessible to persons using

wheelchairs. As to accessibility in public transportation, in the 1950s black people in the Southern states of the USA had to sit in the back of the bus. In the 1980s in enlightened Stockholm, people in wheelchairs cannot even get on the bus. But you might argue that you have noticed the special busses shuttling disabled people all over Stockholm. True, Stockholm has a very extensive paratransportation system, with a capacity of over 1000 trips daily. But the system does not provide equal service: trips have to be booked at least one day in advance, there is no service after midnight, the bus is often late. But even if the paratransit system delivered services equal to the regular "public" transportation network, it still would be separate. And, as the United States Supreme Court ruled in a famous racial discrimination case in the 1960s, separate is not equal. It is not equal because we are treated special. Special treatment sets us apart from the rest of the population, they think we are different, and we are made to feel different. It is not equal, because we do not have a choice. Those of you here who are not disabled can get to tonight's dinner in the City Hall by bus or subway, you can take a taxi, rent a car, steal a bicycle, hitchhike or, if worst comes to worst, you can always take a walk. My options by comparison are severely limited.

By building environments that exclude and handicap a part of the population, costs are created that have to be borne by individuals and society. These costs are both monetary and non-monetary in nature. Later today I will address some of these costs. Now I would like to focus on one consequence of inaccessible environments, their impact on attitudes towards disability.

Architectural barriers handicap disabled people not only in a physical way. In an environment where most people move about freely, hurry up and down stairs, squeeze themselves through narrow doorways, wind their way through crowded supermarkets, a severely disabled person is handicapped and, even worse, is made to feel handicapped. If you have to ask for help at every step, it is easy to see yourself as a helpless person. If everybody around you goes about their business seemingly efficient and able, it is easy to feel incapable in comparison. In all likelihood a negative self-image based on environmental incompetence can extend into a self-concept of general incompetence.

Not all disabled people and even fewer non-disabled people are aware of this mechanism. Imagine you are about to employ a new worker for your office and among the applicants for the position is a severely disabled person who needs help in getting up the steps to the office. Would it not be easy to view the disabled applicant as less competent than his non-disabled competitors? It is my contention that many of the prejudices against disabled people could be alleviated, if the general public were used to seeing us in all kinds of places and occasions as environmentally competent persons.

At this point I'd like to make a comment on the definition of accessibility. To some planners and builders accessibility merely implies that disabled people can get into a building through an entrance without steps and can use a toilet. This definition does not say anything about which entrance we are to use, and where the toilet is located. We are tired of entering restaurants through the kitchen, museums through the basement, or hotels through the rear, passing truckloads of dirty laundry. The international symbol of access that assigns us to these entrances is the symbol that we are treated as second class citizens. Mainstreaming, the current popular American word for integration, means using the main entrance, not the back door. What do you think when you see a public toilet with three entrances, one for ladies, one for gents, and the third ornated with the wheelchair symbol? Isn't the message that there is a third sex, hermaphrodites on wheels, sexless neuters?

Accessibility has to be non-discriminatory. This implies that design elements that make us needlessly dependent upon other people have to be eliminated. At a similar event in

Gothenburg a few years ago a participant suggested that it was unnecessary to plan public buildings in such a way that wheelchair users could move about independently since - as this distinguished architect said - they always have an attendant with them anyway. This is, of course, nonsense, but the example shows how prejudice or sloppy thinking leads to self-fulfilling prophecies.

I have presented what I think are the main prerequisites for independent living for the disabled as equal members of the community. What are the implications of this list for us here? How do these issues apply to researchers, government officials, and architects?

First, what are the implications of Independent Living for research? As I have tried to show, one of the main ingredients in living independently in the community is to have alternatives. In order to develop choices we, the consumers, have to identify our needs and participate in developing solutions and in determining the criteria for the evaluation of these solutions. So much research is currently carried out the world over on our behalf, where we are merely the objects of observation. Not only is this a form of colonialism reminiscent of the days when white anthropologists studied black tribes in Africa from a white viewpoint, it is also bad science, because there is no guarantee that non-disabled researchers will ask the questions relevant to us. Most research today is oriented towards the needs of government agencies, which do not necessarily coincide with our needs. Much of it is probably irrelevant and some of it may even be detrimental to our long-run interests. We need our own institutes through which we can initiate consumer-oriented research.

There are some interesting methodological problems related to research in this area. One example is the question of how to evaluate a given solution in the absence of other alternatives. I once saw a study intended to evaluate a certain form of housing and attendant care. The residents had been asked how they liked living there, and it turned out that most people liked the place. This result was to be expected, since most of the residents had no other experience of housing except institutions or living with parents. This approach is about the same as testing the quality of several makes of car by interviewing car owners who have had bicycles all their lives and have just bought their first car.

How do we get more consumers to participate in research and the other relevant professions? One way is to invite consumer input through the formation of consumer advisory boards to which disability organizations appoint representatives.

Another way is to introduce internships at your office where on-the-job training is provided for interested disabled persons, regardless of formal qualifications.

You can ask the professional organizations to which you belong to demand that schools of architecture and planning be made accessible to students with disabilities. As a result of this meeting this group here could pass a resolution along these lines and send it to the CIB head office.

You can also work for affirmative action, i.e. the active recruitment of disabled persons to education and jobs through quota systems or by counting disability as a merit, in this way, as it were, reversing the discrimination that many of us have been exposed to for a long time.

The topic has been the prerequisites for independent living for disabled people. The list of requirements can be summarized in a few words. Disabled people are to be regarded as experts on their own lives. As experts we have to participate in the planning of all aspects of the built environment. We are individuals first, disability is only one of many personal

characteristics. As individuals we have different needs. To accommodate this diversity of needs we have to have as many alternative solutions as possible. We have to be able to make choices, just like everybody else. And we have to make these choices ourselves, because we are the only experts on our own lives.

Steering Systems and Their Application

A report by Hanne Weiss-Lindencrona, Swedish Ministry of Housing and Physical Planning

Starting Points/Approach

In connection with the United Nations Year of Disabled Persons in 1981, the concept of "full participation and equality" was launched as an objective for policies for the disabled. This concept is well in line with the objectives of Swedish policies for the disabled in the seventies and eighties.

Swedish policies for disabled persons are based on the principle that the situation of the disabled should be improved mainly by the adaptation of society and not primarily through measures related to the individual.

This is also an assertion of the view that the "problem" is mainly related to the environment and not to the individual. The disease or injury a person suffers from has resulted in a functional limitation. The extent to which this will be a handicap depends on the environment. This approach is in line with the WHO definition.

It also means that disability issues should not be given special treatment. The needs of the disabled must be integrated in assessments, proposals, etc. from the outset, and must not be inserted at a later stage.

The Adaptation of the Physical Environment

With the approach outlined above, it is obvious that in the first place it is the environment which has to be adapted to people's possibilities of using it.

The adaptation of the physical environment to people with various functional limitations is also an important step towards enabling many people to live independently rather than in some form of institution.

Amendments made to the Building Ordinance in the sixties and seventies have stipulated that premises open to the public, workplaces and, finally, homes have to be designed to be accessible to people with impaired mobility and orientation capacity. These regulations stipulate general accessibility. Naturally, they cannot be as far-reaching as special solutions, partly because different individuals have partly different and conflicting requirements. Of course, the intention has also been to identify a reasonable level of costs for adaptations. As a result, individual adaptations must be made to the generally accessible environment to meet the needs of some people. Special grants are therefore available for the individual adaptation of homes and workplaces.

Building legislation

Building in Sweden is chiefly regulated in the Building Act and the Building Ordinance. The Building Act contains regulations concerning the planning of building development. The Building Ordinance contains regulations on the design of buildings and the supervision of building works. The requirements in the Building Act and the Building Ordinance apply to all building regardless of category of owner, form of tenure, etc.

According to the Building Ordinance, dwellings for permanent use, premises open to the public and workplaces should be designed so that they are accessible to, and can be used by, people with impaired mobility or orientation capacity. However, lifts are not required in two-story residential buildings and in residential buildings containing two dwellings at most.

For dwellings on several floors the Swedish Building Code specifies that certain facilities should be located on the entrance floor. The idea is that people confined to wheelchairs should be able to use such dwellings despite the fact that only the entrance floor is accessible. The Building Ordinance does not contain any requirements concerning accessibility in leisure homes.

On the other hand, as mentioned above, premises open to the public and workplaces have to be designed to be accessible to the disabled. For workplaces the municipal Building Committee can grant exemptions if the nature of the activity or the character of the work is such that the workplace cannot be used by disabled employees.

The requirements in the Building Ordinance also include the adaptation of paths from the street, etc., to the building entrance. The municipal Building Committees can also grant exemptions from requirements for accessibility to single-family homes on account of the nature of the terrain. The Building Ordinance does not give authority to set requirements concerning the adaptation of streets, parks and recreational areas to the disabled.

On the authority of the Building Ordinance more detailed regulations concerning how buildings should be designed to comply with the Ordinance have been drafted; they are issued in the Swedish Building Code, and are based on the minimum requirement that dwellings and premises should be accessible to unassisted wheelchair users. The user should have good manoeuvring ability and be able to use a manually propelled wheelchair or a small electric one. This is a relatively good way of meeting the needs of most people with impaired mobility. As yet, not enough is known about the needs of other groups of disabled persons, such as people with impaired vision or hearing and people with allergies. As a result the regulations may have to be supplemented in some respects.

As a result of the regulations in the Building Ordinance, the accessibility standard of dwellings built in recent years is relatively good. This has given the disabled greater freedom to choose between different types of homes and housing areas.

In recent years, however, dwellings which are not accessible to wheelchair users have also been built, such as apartments on the upper floor of two-story buildings. Sometimes single-family houses are built with a difference between the external ground and entrance floor levels which is bridged by steps. It should, however, not be so large that these houses cannot be fitted with ramps.

As regards public premises and workplaces built or substantially altered in recent years, the requirements in the Building Ordinance have generally resulted in good accessibility.

In principle, new construction regulations apply to renovation. The municipal Building Committee may, however, make an assessment of how reasonable it is to apply them in

specific cases. As a result of high costs, technical constraints and attention to cultural, historical or environmental values, therefore, reasonable requirements concerning adaptation for the disabled may not be met. This applies primarily to the installation of lifts in three and four story buildings, where costs and technical constraints may give rise to problems.

Terminal buildings for public transport have been considered to be so important for the opportunities for the disabled to take part in community life that parliament has decided they should be adapted to the needs of the disabled even if there is no other reason for altering them.

This is a more stringent requirement than for other buildings, where adaptation to the disabled and other measures can only be stipulated when the property owner takes the initiative to alteration work.

Economic Instruments

As a rule, no special loans or grants are available to meet the additional costs occasioned by the accessibility requirements. New construction and major alterations are generally financed with state housing loans. In principle, the costs of lifts and other measures are included in the loan value for the project. Some special loans and grants have been introduced to permit the individual adaptation of homes and workplaces or to stimulate measures which increase accessibility in certain types of premises and buildings.

Housing Adaptation Grants.

These grants are available for measures in or in connection with a dwelling to enable a disabled person to use the dwelling in an appropriate way. The grants can also be awarded for measures related to rehabilitation or functional training, or measures which make it possible to use functional aids financed by the medical services. These grants are not means-tested.

Common measures include the adaptation of bathrooms, toilets and kitchens, the removal of door sills and the replacement of floor materials

Improvement loans.

In some cases improvement loans can be granted for the alteration or improvement of single-family homes occupied by elderly or disabled people. These loans are means-tested. They can be given for the installation of water, drainage, heating and electrical equipment or modern kitchen equipment. The main purpose of these loans is to assist elderly or disabled people with low incomes to improve their housing conditions.

State support for the upgrading of public assembly halls

Certain types of assembly halls can obtain grants for adaptation to the needs of the disabled. Common measures for which grants are awarded include toilets for the disabled ramps and induction loop systems.

Environmental Improvement Grants.

State grants are available for improvements to the residential environment. The primary objective of these grants is not to improve accessibility for the disabled but to generally improve the environment for everyone living in the area. The grants are available for hobby and recreation premises, ancillary housing services, improvements of the outdoor environment including play and meeting areas, art works, the reduction of noise and air pollution and improvements in traffic safety. These can also include measures which improve accessibility.

Special Problems

Renovation

In Sweden, as in many other Western countries, new housing construction has decreased drastically in recent years. Instead, renovation work has increased. The Swedish Parliament adopted in the autumn of 1983 a ten-year programme for housing improvements which includes the renovation of 275,000 flats in multi-family housing and of a substantial number of single-family homes.

If these properties are not made accessible to the disabled in connection with this renovation activity, they will remain "inaccessible" for many years to come.

Adaptation for the disabled in connection with renovation can sometimes be costly. This is primarily true of lift installation. In low-rise buildings it can be impossible to gain a full return on this cost, which has led to very generous exemption practices in many cases. The Housing Improvement Programme therefore includes a special state programme of grants for lift installation, amounting to SEK 100 million a year for three years. The state grant can cover up to 30% of the cost, the municipality must meet 20% and the property owner the remainder.

The draft Planning and Building Act currently being considered by the Advisory Committee on Legislation assumes that the municipalities will be given greater responsibility for accessibility planning. The current generous exemption practices are not to continue. The decision on where a lift is needed must be made on the basis of a concerted consideration of the future accessibility standard of the area. These considerations must be articulated in political decisions.

The costs of lifts and their installation are unreasonably high, mainly because existing, approved lift types are traditional models developed for traditional new construction. It may seem remarkable that the level of innovation in this field is so low in both Sweden and other countries. The Swedish Council for Building Research has therefore been commissioned and given some funds to stimulate the development of new types of lifts, mainly for existing low-rise buildings, through technology purchasing.

Even apart from lift installation, adaptations to the disabled can often conflict with sensitive renovation and attention to environmental qualities.

On costs and benefits

It must be stressed that it is important not to take too narrow a view in discussing building costs for adaptation to the needs of the disabled. Naturally, in many cases investments made in accessibility can be balanced by savings on expensive institutional care, home help services, etc. In Sweden, the state, municipalities and county councils are responsible for care and service. Costs for one of these providers may result in savings in operating costs - but for another of them, which may affect their willingness to make investments.

An inter-ministerial working group has been set up to consider such issues among others. They will review the possibilities of improving accessibility to and within homes in connection with housing improvement work. They will identify the social and economic costs of different ways of providing good housing conditions for the elderly, the disabled, and people in need of care and service. Both the total cost implications and the distribution of costs among different parties will be examined.

The lack of a total view

Although there are requirements concerning the adaptation of important parts of the

physical environment to the disabled, some parts are not covered by any sets of regulations. As mentioned previously, requirements concerning the outdoor environment only refer to the building plot, and then only to a passage across the plot from the street, vehicle access point, etc. to the building entrance. The lack of requirements concerning the outdoor environment means that the disabled person's opportunities of moving about outdoors are reduced or lost. It also means that the disabled are excluded from activities which take place outdoors, from meeting places, gathering points, play areas, etc.

The draft of the new Planning and Building Act stipulates that the built environment, building plots, public places, etc. have to be designed to be accessible.

Plan and Reality

If adaptation measures are to result in actual adaptation to the disabled in practice, the intentions behind the legislation must also be realized in the construction and management phases. A lift has partly failed to produce the desired effect if it can only be reached after negotiating a couple of steps or if the control panel is so high that people confined to wheelchairs cannot reach it. An environment which is well planned for people with impaired vision can be jeopardized by inappropriate selection of colours. The highest accessibility standards in the outer environment can be lost through inadequate snow clearance, etc.

One lesson of the work on adaptation for the disabled in the physical environment is that legislation in the field is necessary but - regrettably - not enough. Detailed design, etc., is important - even concerning aspects which neither can nor should be subject to building control, or which are not of the kind indicated in such documents as local plans and building permits.

If the environment is to work as intended, the people who design it must have a good knowledge of and understanding for the requirements of different groups of disabled people, and they must be able to think themselves into the situation of these people. So the dissemination of knowledge to all the professional groups concerned - architects, planners, building control officers, site engineers - and to decision-makers - is of utmost importance both when there are formal, legal instruments and when they are lacking. Organizations of the disabled, and local Advisory Committees for the Disabled in particular, can play an important role in this work.

Housing for Certain Categories

Certain groups of people need specially designed and equipped homes to enable them to live in their own home outside institutions. Such groups include the severely disabled in need of round-the-clock service, the very severely disabled (people with several disabilities), the mentally retarded and the mentally handicapped. If these groups are to live independently they need a great deal of support in the form of service and care in the home. This means that their homes will be workplaces for some people.

The question of how homes should be designed to satisfy these different housing, care and work-environment requirements is being considered by the inter-ministerial working group mentioned above.

The Swedish Experience

This was a short description of the Swedish instruments - and of their shortcomings. The description is static. It applies to here and now. In an international perspective where different countries are at different stages in the adaptation of the physical environment to the disabled it is also of interest to describe the laborious path to our current situation and

what we can see ahead of us.

The problems we have experienced can be characterized by such terms as "negative attitudes," "ignorance", "the growth of myths." As a result of factors like these the disabled have been disregarded, hidden away and forgotten in their own environment and in institutions. Another problem was the fact that adaptation for the disabled was long regarded as synonymous with adaptation for wheelchair users - this still results in some imbalance in the state of our knowledge about different types of disability. One example is people with allergies, about whom we know far too little.

Naturally, increased prosperity and the emergence of a society based on solidarity help to explain why we have managed to come this far. But we would never have made this much progress without the determined struggle mounted by organizations of the disabled to influence attitudes, spread information and scotch myths. Of course, research has played an important role in helping to identify problems and suggest solutions.

As mentioned previously, there are problems today - and additional problems can be anticipated in the future. In view of the weakness of the Swedish economy - by past standards - attention is naturally turning to the costs of housing construction. We can see a tendency to reduce the size (area) of homes and to lower housing standards. In combination with the debate about whether it is desirable to regulate in detail the design of and equipment standard in homes, this tendency may result in the weakening of the legislation we already have. This may have implications for the adaptation of housing for the disabled.

On the Role of CIB

R&D work has always been an important part of efforts to achieve a society based on the principle of normal and integrated participation by the disabled in the community. Much thought, creativity, and research money has been invested in this area.

Despite the fact that it is important to warn countries against naively and uncritically adopting the knowledge and experience gained in other countries and regions without placing them in a social, cultural and economic context, it is also important to underline the significance of exchanging and developing knowledge at an international level in this field.

One starting point for CIB's work must be to make a survey of what systems of regulations (both public ones and the industry's own) apply to the adaptation of the physical environment, and to analyze these. This is not a small task; it requires knowledge - country by country - about the control of community development.

Some information can be obtained for the European region through the cooperation on building matters in the ECE, the United Nations regional commission for Europe, and its project on the international harmonization of building regulations. There is also some cooperation at the Nordic level in this field.

A synthesis should also be made of current knowledge about what problems different groups of disabled people encounter in the physical environment (e.g. people with motor, orientation and mental disabilities and with allergies). This also applies to knowledge about appropriate measures in the environment to improve the situation in connection with the preparation of plans and with new construction and renovation.

The synthesis of national experiences of problems encountered so far and of countries' views about current and future problems can provide an impetus for more direct exchanges of experience between countries and regions in different phases of

"accessibility development," as well as for additional international research work.

Implementation questions are important, and they should also be included in international research cooperation. The role of organizations of the disabled might also be considered in this context

Conclusion

CIB/W 84 is faced with major and important work. The mere fact that this working group has been set up is of great importance - as an indication of the importance of questions concerning the disabled for planning and building - and as an indication that these questions affect all nations and regions. And - last but not least - as an indication of the importance of research and the responsibility the research community feels for gathering and spreading knowledge which can lead to a better physical environment for everyone.

Costs and Benefits of Accessible Environments: A Case Study

By Adolf Ratzka, Ph.D.

In this paper I will first give a very simplified theoretical justification for public subsidization of accessibility measures. I then present the results of a recent study as an illustration both of a methodological approach and of the various costs and benefits involved. I conclude the presentation with a few remarks on the role of economic evaluations in this area.

The built environment that we see around us today is not the result of a series of coincidences, but of a long historic process. This process consists of a multitude of incremental changes, and each change reflects the cultural, social, economic and political values of society at a particular moment in history.

Building and planning decisions are made by both private and public interests. Economists of the last century assumed that if everyone acted in his or her own best economic interest, we would achieve an efficient society with maximized total welfare. Since then economists have realized that there are inherent obstacles towards such an ideal state. These obstacles are often referred to as market imperfections. I will here take up two types that have a bearing on our topic.

One market imperfection arises from the fact that for some goods there is no market where buyers and sellers meet and demand and supply determine the price of the commodity. Take, for example, a small neighborhood park in a central urban area. Assume a private builder wants to build high-rise apartments on the land and offers the city a certain amount for it. How much is the land worth in its present use? People living adjacent to the park will call it invaluable, but how much would they be willing to pay for having access to it? Assume that a citizens' group starts a campaign for the purpose of collecting money to save the park. But for each user of the park it would be rational to let everybody else contribute to the fund and enjoy using the park for free. How is it possible then that we have parks, police protection, street lighting, etc. in our cities? The answer is, of course, that in the case of such goods private individual decisions had to be supplemented by collective decisions. That is, the citizenry decided through the political process to levy taxes which pay for these public goods.

Another type of market imperfection is called externalities. Externalities are present if the decisions of one economic agent affect somebody else's consumption or production. A very current example is the emission from industries and automobiles that turns into acid rain and slowly destroys lakes and forests. To install catalytic emission controls is expensive and reduces a vehicle's mileage. Therefore car owners have no economic incentive to limit their noxious fumes - unless they own forests. This example is intended to show that costs and benefits of a certain action may not necessarily be shared by the same persons.

The contention now is that accessibility in the built environment for disabled and elderly people is a commodity that resembles the two examples I have just given. As with the urban park that everybody is free to enjoy, the use of generally accessible environments is open to everybody, even to future generations, because of the longevity of buildings. But who is willing to pay for it? Why should an owner build an accessible house, if the additional investment does not increase rental income sufficiently? Rental income will not increase unless tenants demand and pay for accessibility. Not many tenants - except for disabled, elderly, or perhaps rich, people - will be willing to pay a higher rent for accessible housing. The possibility that they might need it at some future time might not be a sufficient argument to them today. It is very difficult for many to anticipate their dependence on an elevator some day because of old age, accident or pregnancy - especially if they are male. Thus, as in the case of the fume-producing car owners, they will not support investments in accessibility, since they do not perceive themselves as beneficiaries. And even if they could imagine that accessible housing might come in handy one day, the best economic strategy would be to wait and let other people pay for it. In the case of our dying lakes and forests it has become clear now that it is in the interest of the whole of society to reduce dangerous emissions, and in some countries legislation has been passed or is contemplated to this end. But how is it with an accessibly built environment? Is it in the interest of the whole society to make all housing, shops, schools, public buildings, workplaces, etc., accessible? Would the benefits exceed the costs?

Instead of attempting the impossible - giving a complete catalogue including estimates of all costs and benefits which may be associated with accessibility - I will present an example to illustrate a possible approach. In a recent study I looked into the relationship between the costs of installing elevators in old three-story apartment houses and the resulting monetary benefits as far as they could be estimated. While the costs would be borne by the owners - unless there were some government subsidization - the benefits would mainly accrue to a sample of present and future tenants and to municipal as well as county taxpayers. Obviously, given such a distribution of costs and benefits no landlord would install an elevator without subsidies. The example is summarized below.

Earlier this morning I talked about general accessibility in the built environment as a civil right. In this session you may have the impression that I try to propagate accessibility on the basis of its alleged profitability to society as a whole. It would be very dangerous indeed to attempt to prove that all human and civil rights are profitable to the general taxpayer. Such an argument would imply that we should only support and protect those civil rights which we can "afford" in a strictly monetary sense. It would be an interesting experiment to show how few of our rights would pass this economic criterion. The right to medical care in this country, for example, might have to be reconsidered; each hospital would have to employ economists whose task would be to compare the future expected return on a given operation to its present cost.

The purpose of the type of analysis presented in the case study is not primarily to evaluate whether elevators should be installed or not, but to analyze whether the resources we are spending today and tomorrow are put to their best use. Institutional care is very expensive

and the quality of life for the residents is low. Elderly and disabled people want to live in their familiar environments, but need accessible housing to be able to have that choice. To install elevators in old buildings costs money, to build and maintain institutions also costs money. The question then is where do we invest our limited resources in order to get the largest increase in our quality of life?

The costs of disabling environments

About 95% of Stockholm's housing stock is inaccessible to wheelchair users due to steps and/or lack of elevators. Senior citizens and physically disabled persons are over-represented among the tenants of apartments without access to elevators. Installing an elevator in a three or four story apartment house will increase the break-even rent by approximately 50 to 70 SEK per sq m housing area and year in the absence of any subsidies.

But what are the costs of not installing elevators?

Table: additional costs incurred by absence of elevators.

Staircase accidents	1:40 to 2:40 SEK/sqm /yr
Nursing home and old age home care Accessible housing and community-based services (whose costs are included here) such as 24-hour emergency call system, personal assistance for 7 to 35 hours/week, periodic visits by district nurse enable many elderly and disabled to avoid the move to institutional care.	15:60 to 32:40 SEK/sqm /yr
Personal assistance (home help etc.) The need for these services is decreased by accessible housing.	4:50 to 6:90 SEK/sqm /yr
In addition, elevators are an amenity valued also by non-disabled tenants:	4:80 to 7:70 SEK/sqm /yr
Total	26:90 to 49:40 SEK/sqm/yr

The estimates are based on the present and future population mix in multi-family tenant housing in Stockholm's older suburbs, and on the assumption that elevators are installed in each building upon renovation - regardless of whether disabled persons live there or not.

Not included in the estimate is the value of ending discrimination through physical barriers which make many elderly and disabled people unnecessarily dependent on the help of others, cause social isolation, physical hardship and accidents, deprive a part of the population of most housing choices, and force many into institutions.

This value cannot be expressed in monetary terms - it is a human right regardless of whether it "pays" or not.

The above material is based on the monograph Adolf D. Ratzka, "The Costs of Disabling Environments: A Cost-Revenue Analysis of Installing Elevators in Old Apartment Housing". Swedish Council of Building Research, D9:1984 (in English) available from Svensk Byggtjänst, Box 7853, 103 99 Stockholm, Sweden.

Research Profiles and Strategies

By Prof. Sven Thiberg

The object of this paper is to direct attention to some general problems in and approaches to the design of research profiles and research strategies. I base my presentation on Swedish experience, but it is not my intention to present Swedish research or to hold Swedish research up as example or model. That Swedish research may nevertheless be of interest I consider to be due to the fact that we have had and still have a large volume of research and that we have therefore also encountered many of the problems that arise in everyday research.

View of man, view of society, view of research

What to research, how research resources should be used, and which disciplines and methods to use, are no self-evident questions. The "research policy" - both that at the national level and that of the research institute or individual researcher - is dependent on the view one holds of man, of society, and of the role of research. This perhaps sounds banal but it is important to point out. It also implies the reverse; that if one describes a country's or an institute's research policy, one is at the same time describing the value judgments and conceptions that characterize that society or institute.

The research which proceeds from the assumption that an individual with a functional disorder is precondemned to remain outside the life of the community will be directed to entirely other problems than that which assumes that disabilities can be eliminated or alleviated through community services. A system which accepts rejection and inequality invests its resources in a way different from one which builds on the participation of all and on the right of all to good living conditions. If one accepts that all people are social beings with latent resources that can be set free, one looks for other solutions than if one considers that certain people can be treated as isolated objects to be taken care of.

It is important in the light of this reasoning that research formulates its goals as clearly and honestly as possible. And that its formulations are amenable to discussion and criticism in an open research community. The demands accepted by the UN - "full participation and equality in the society in which you live" - are a challenge and an admirable basis for such a fundamental evaluation of research efforts.

A point of departure for research should be that disablement is a relation to the surrounding world, not a static phenomenon. This way of looking at the matter is especially important for those who are to engage in research concerning disablement and the physical environment. The problem can hardly be dealt with in a fruitful way unless it is accepted that disablement is created/affected by the form of the environment. In some cases this is self-evident: a staircase is an obstacle to wheelchair users. In other cases the

relations between disablement and environment are more complicated, but they are nevertheless a suitable point of departure for formulation of the research task. It should perhaps be emphasized that the "relation" applies not only to the physical but also to the social environment. The attitudes, value judgments and expectations both of neighbours and of the disabled themselves also create or pull down barriers. Full participation and equality cannot become a reality if traditions continue which place persons with functional disorders in fixed roles and lock their freedom of action and their view of themselves. Nor unless charity and condescending solicitude give way to democratic rights to a self-dependent life.

According to Swedish experience, therefore, there is a distinct relation between our views of man, of society, and of research. I do not assert that there is a consensus on this point in the country, nor that all reach the same conclusions.

Some problem fields of immediate interest

I shall now briefly review some important fields for research, taking examples from present Swedish research. My intention is to show how many-faceted the subject is and how important it is that different efforts complement and support one another. I have excluded the medically oriented research that studies the causes and/or effects of functional disorders, treatment methods and results. Nor shall I go into the question of rehabilitation, even though it relates to the design of the environment. The possibilities of habilitation and rehabilitation are dependent in particular, of course, on the environment that the individual encounters thereafter, i.e. the readiness of the open society to receive and assimilate those who have been prepared for a life together with others.

Studies of life situations

No sophisticated research is needed to show that persons with functional disorders have greater difficulties in coping with working life and are restricted in their freedom of movement and in their means for participation in the benefits offered by society. It may nevertheless be important to deepen our knowledge of the deficiencies in equality and of the social and economic consequences of functional disorders.

Such studies are being made in Sweden, both as complement to overriding studies of the entire population - standard of living studies - and in the form of studies in depth of the conditions of different categories or groups.

As regards this type of research, the comment should be added that to altogether too great an extent it may encounter negative conditions, and that it altogether too little takes note of the resources possessed by the exposed groups and which external conditions prevent them from developing.

When these studies have the form of general surveys with a broad but shallow approach, they can be rightly criticized for giving quantitative but little qualitative information. Quantitative data, e.g. on the extent of certain defined functional disorders, may have a strategic significance. It has, for example, surprised many people that the number of individuals in Sweden with considerable locomotive problems is so large that one cannot speak of marginal groups. On the other hand, statistical data can be used with the opposite intention - as counterargument to general environmental measures.

Studies of life situations are proper instruments for acquiring knowledge of changes over time and for evaluating measures taken. They may relate to such diverse matters as the

effects of technological development in the country, of directed economic support, of general changes in the labour market, and so on.

If the point of departure is accepted that disablement is a relation, one must also demand that measurements of life situations place the measured in relation to important environmental factors. Housing standard, transport service, labour market, access to recreational and cultural events decide the possibilities the individual possesses to influence his life situation. As the relations are complicated, they can hardly be studied on a superficial level. Quantitative studies must be supplemented by studies in depth, often on a small scale but with concentration on 'soft data relating to individual cases.

Studies of individual prerequisites

Our longest tradition and perhaps our best store of knowledge today is in research into the physical needs and problems of individuals with different types of functional disorder.

In a class of its own stands the research into the space requirements, extent of mobility and force of propulsion of wheelchair users. This research early became anchored in medical disciplines and has been a natural subject of study, owing to the relative "simplicity" of the problems involved. As the studies have been conducted in parallel at many institutes in the world, there is an abundance of documentation. It has constituted a basis for international standardization both of aids and of specifications for building and furnishing design to meet the needs of wheelchair users.

It must not be believed on this account that the problem has been "solved". There are many differences of opinion. This is not particularly surprising - they are due to the different underlying assumptions, to differences in the interpretation of the results and in the weighting of various factors that is done prior to the final recommendation. There are possibilities of some clearing up in this tangled undergrowth, but we must weigh the resources required for such an analysis against the usefulness of the results achievable.

In other fields the level of knowledge is far lower. The capacity of a person with some form of defective vision or hearing to find his bearings in the surrounding world, and how this capacity is affected by external factors, have not been nearly so well investigated as the problems of wheelchair users.

A deeper knowledge is needed of environmental characteristics that can support the orientational capacity of persons with mental disorders or deterioration.

In the allergy field a race is taking place between research into allergy effects and the introduction of new materials structures and air-conditioning systems.

Our experience in Sweden gives rise to a split attitude to the research needs in these fields. On the one hand we seek better knowledge. On the other, unutilized knowledge exists for application in practical design of the physical environment.

Studies of general measures

As outlined in Hanne Weiss-Lindencrona's paper, we have legislation in Sweden that is intended to ensure general access to the common environment and - in the long term - for visits to all dwellings. She also states that there are reservations and limitations in these objectives. There is no reason for idealization of the Swedish situation.

The legislation and the discussion around it, however, has had the advantage that the interest and efforts have been increasingly directed to general measures. Solutions that can be adopted over the "entire" environment have emerged.

Powerful financial interests are affected, even though it has not been demonstrable that general measures entail major extra costs. It is important that the requirements are optimized and that their economic and technical consequences are continuously studied.

Changes of "practice" are always perceived as disturbing. It is therefore important that they are well defined and substantiated and that new requirements are perceived to be warranted and well considered. Numerous studies and experiences from the field exist as basis for the rules now applying to general environmental measures. On many points the store of knowledge is scarce and in need of reinforcement. This applies, for instance, to the orientation problem. On the other hand, it is not always advisable to await better data, especially not if it is a matter of keeping pace with a rapid rate of reconstruction, as at present, for example, in Sweden.

The implementation of general measures requires that new knowledge and new solutions must be everywhere applied. This is an information problem and a matter of increased professionalism. It is also a supervision and follow-up problem. This supervision must function properly to ensure that the goals are realized. It is therefore important that research is devoted to the question of how regulations and recommendations are complied with and how they function in reality. With such knowledge the measures can be made more effective and compliance guaranteed.

Weak links in the general accessibility system are today the external environment and transport systems. The deficiencies in the design of public transport are partly compensated for by a well developed transportation service for disabled persons. Greater efforts should be made to improve the regular public transportation services.

Studies of individual adaptation measures

The higher the level of general adaptation that can be achieved in the common and private environment, the less become the needs for individual adaptation. There is nevertheless reason to design the general environment so that, without major intervention, it can be changed or additions made to permit individual adaptation. In this case a careful system of fits may be required between individual, aid and environment.

In the case of dwellings, a normal dwelling should have a basic structure such that, without expensive alterations of skeleton and installations. it can be rebuilt for a resident with a functional disorder. It may be a matter of a new and adapted kitchen furnishing, of combination of toilet and bathroom into a larger room with suitable equipment, and/or of installation of signalling systems.

When ordinary dwellings can be adapted in this way, the need to build special forms of housing is no longer so urgent. Nor is there reason to construct institutional buildings. The degree of normalization is dependent principally on whether the necessary service can be given in dispersed form and adapted to the individual.

There is intense R&D and experimentation in this field.

A first step in such "de-institutionalization" has taken place for mentally retarded persons. Also multi-handicapped persons and those with great need of assistance have proved capable of coping with integrated living. They often grow to a greater degree of

independence than we had believed possible. The FOCUS movement in Sweden was another breakthrough for the idea that persons with grave orthopaedic handicaps could live a normalized life in their own homes. In this field, development has progressed to a still greater degree of integration.

The right to work is fundamental. Persons with functional disablement can do thoroughly qualified work provided that the tasks and workplace are adapted to their capabilities. Here again there is a need for engagements in which general knowledge is combined with individual solutions. With creativity and inventiveness, most specific problems can be solved. The organization of places of work and of transport and other services so that persons with functional disorders can use their intellectual resources, be a part of the community, and have a stimulating working life is the most important task for our society today. This requires research, development, and systematic collection of experience from trials in different forms.

Development work and experiments

Theoretical and laboratory studies are valuable in certain spheres. There is still a great need for fundamental research and for systematic comparisons between alternative solutions to technical problems. But at the desk and in the laboratory one cannot make all-round assessments or see different principles for solutions in a broader context.

This leads to two conclusions. One is that studies made in the laboratory must have a strong backing from experience from the field. The other is that development work and trials in the field must be used for bringing experience to all concerned.

Work in the field requires new types of capability in researchers, but also openness and a willingness to collaborate on the part of the field workers. This means that the boundary line between research and development is partly eliminated. It also happens that the boundary line can no longer be maintained.

In other fields of social science research, the concepts "action research" and "participatory observations" have been coined for crossing the boundary between observation and involvement. These concepts have the same relevance in research concerning the conditions of the disabled. It is especially important to make use of the sporadic, sometimes unsystematic, but valuable experience of practical cases that exists in the field. Methods must be developed which combine nearness and empathy with reasonable requirements of perspective and objectivity.

Overall economic studies

Many of the proposals that have emerged in recent years and which have led to increased integration and participation have been counteracted by attitudinal obstacles. It is a difficult process to get away from ingrained attitudes to disablement. Institutional thinking and overprotection are still serious obstacles to independence and full participation.

But cost aspects too - and sometimes staffing aspects - have been an obstacle. "It's too expensive" is a common argument against traditional solutions. It is important to be able to meet reasoned cost arguments with factual information. Cost assessments must be made at the proper level. Suboptimizations which do not take account of the overall economic picture must be avoided. Increased buildings costs can, for example, be compensated for by reduced staff costs if the design of the environment enables the individual to cope on his own.

Apart from the value of increased independence, which cannot be calculated in monetary terms, the adaptation of the environment may lead to a lower social cost. The problem we often encounter is that different cost items are borne by different authorities, which therefore have reason to defend their limited part of the entire expenditure. This is a critical problem in Sweden, with our involved administrative and economic division of responsibilities. Research can provide a basis for reforms in this respect.

The anchorage of research

The research I have discussed is chiefly "applied" research, the results of which should be directly usable in practice. We researchers are often disappointed that the results of our efforts meet with so little attention and are put to so little use. Naturally this may be because they have no real relevance, because they are not needed or do not fit into the reality for which they are intended. But it may also be because the channels are poor from the research out to those who make decisions and work on concrete tasks in planning and building. There are several ways of attacking this problem.

The traditional way is to increase the quantity of information, to "press upon" one's target groups the information one considers they need. That way is not particularly successful. Most decision-makers are today surrounded by a "hum" of information. They are more inclined to close their ears than to accept new knowledge. Especially if the information is contradictory, if it requires analysis and evaluation, it is difficult to receive.

This brings up a more profound question - about the anchorage of research among those whom it chiefly concerns. I think it is extremely important to deliberately attempt an anchorage in the groups who directly benefit from it. And this must be done in at least three stages - when the problems are to be formulated, when the results are to be evaluated, and when they are to be disseminated.

This anchorage is poorly developed in our country, as in others. I guess that our disabled persons organizations hardly know what research projects are going on, even less have they influence on the choice of problems to study, a chance to evaluate the conclusions drawn or to state their opinion as to how, by whom, and when the results should be presented.

It is the responsibility of researchers professionally to attack and solve problems. But the concept of "freedom of research must not be interpreted to mean that the researchers entirely of their own accord shall pose the problems they are to solve. An interplay is needed in which the formulation of problems based on concrete experience is set off against assessments of whether and how the problems can be dealt with by research and of the way in which the results shall be incorporated in the quantity of knowledge they are to supplement or supersede.

On this point there is reason to refer back to the fundamental objective of "full participation and equality". I think that, to a greater extent than at present, research should be a tool in the activities of the disabled persons organizations. This is not to say that it should be so dependent on the organizations that it cannot also uphold interests and investigate problems which for various reasons they consider unimportant or irrelevant.

Nor have I committed myself to the view that there should be special institutes or organs for research concerning the conditions of the disabled. I am rather inclined to believe the opposite.

Integration should apply in this field as well. It is important that other social science research should have contact with the issues we are concerned with. It is also important that research on behalf of the disabled should partake of the rapid development of outlooks and methods that is taking place in the general research community today. All too strict specialization may counteract the openness that is needed for this to be brought about.

A summing up

My presentation is a subjective description of a number of issues which I consider relevant to the discussion we have before us. I build upon experience of Swedish research on behalf of the disabled over a period of more than 20 years. But the last years' experience of renewal and emancipation in the disabled persons« movement also confirms my view of research as a force for change in society.

I hope that the work of CIB/W 84 can advance our positions and that, through our international engagements, we can bring about the breakthrough which on the national level or in our own small groups we cannot do.

Conclusions

Summary of the seminar's discussions, edited by Adolf Ratzka, Ph.D.

The results of the meeting's working group and plenary sessions can be summarized as follows:

Procedural Matters

It was resolved to change the Working Commission's name to "Building Non-Handicapping Environments". The new name is to underline the fact that the built environment presents one of the worst handicapping conditions for people with disabilities today.

A plan of work is to be drawn up in the form of a rolling three-year program. For projects sponsored by CIB/W 84 resource persons should be appointed who together with the Coordinator are responsible for implementation and reporting at the next W 84 meeting.

Overall Objectives for CIB/W 84

The meeting adopted the following overall objectives for CIB/W 84:

- to further the full participation and equality of people with disabilities in their communities through general accessibility measures, and, where necessary, individual adaptation and flexible community-based services;
- to recognize and utilize disabled consumers and their organizations as experts in all phases of the work of CIB/W 84;
- to function as a network of consumers, government planners, designers, builders, and researchers by collecting, analyzing and exchanging information as well as stimulating documentation, research and evaluation of experiments and model

projects;

- to promote implementation of the results of this work by influencing building standards, regulations and financing systems.

Scope of Future Work

In order to expedite application of existing knowledge and to avoid duplication of efforts, CIB/W 84 is to stimulate international exchange and cooperation in the following areas:

- studies of the effect of handicapping environments on the demand for public services such as health care, paratransit, personal assistance, etc.:
- comparative analyses of accessibility codes and regulations with the aim of worldwide coordination of design standards;
- studies of the relationship between different types of disabilities and the means for compensating them in the built environment, including design solutions for individual adaptations;
- analyses of the economic consequences of barrier-free environments which reflect both monetary and non-monetary costs and benefits to society as a whole, as opposed to sub-optimizing evaluations which are based on narrow economic interests;
- identification of building materials and ventilation techniques which cause allergies;
- improvement of the built environment for people with orientational disabilities such as vision and hearing impairment as well as certain types of mental disabilities;
- information on technical aids, their performance and requirements, e.g. in terms of space;
- development of methods that strengthen user participation in planning, research, policy formulation, enforcement and evaluation.

Guidelines for Future Work

The meeting resolved that the future work of CIB/W 84 be governed by the following guidelines:

- All forms of disability are to be given equal priority.
- In promoting a barrier-free environment efforts are to be directed primarily towards developing and strengthening general accessibility measures; individual solutions in the form of adaptations for single persons or technical aids are to be used only as a last resort.
- CIB members are to promote consumers' membership in the relevant professions by encouraging institutions of higher education, professional associations and firms to eliminate physical and administrative barriers and to actively promote enrollment and employment of persons with disabilities.

List of Priorities

The meeting agreed upon the following list of priorities for the future work of CIB/W 84:

- Most physical barriers encountered by people with disabilities are found in the older building stock. Research and documentation on reconstruction and renovation is called for regarding the effects of legislative, financial, organizational and technical solutions on accessibility and on the life of disabled and older citizens.
- Organizations of disabled people are to be invited by CIB members to serve on advisory boards to public and private bodies involved in building issues and products of interest to people with disabilities.
- Methods for better enforcement of building standards are to be designed. One solution is access networks, where consumer representatives are trained in interpreting construction plans in order to assist local authorities in checking building permit applications for compliance with accessibility norms.
- The methodology of cost-benefit analyses for evaluating the effects of increased accessibility has to be improved.
- Systems for monitoring and exchanging information on the allergenic impact of new materials and air conditioning techniques are to be developed.

Appendix

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