European Concept for Acccessibility

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STATEMENT

The European Concept for Accessibility is a result of a request from the European Commission, made in 1987. The Concept is based on the universal design principles. These principles apply to the design of buildings, infrastructure, building and consumer products.

1. The objective is the provision of environments which are convenient, safe and enjoyable to use by everyone, including people with disabilities.

2. The universal design principles reject the division of the human population into able-bodied and disabled

people.

3. Universal design includes supplementary provisions where appropriate. This statement is supported by all members of the steering group present in Doom, The Netherlands, 2 March 1996.

INTRODUCTION

Accessibility is a basic feature of the built environment. It is the way in which houses, shops, theatres, parks and places of work can be reached and used. Accessibility enables people to participate in the social and economic activities for which the built environment is intended.

For the majority of people, the present day built environment is accessible: they use it in an independent and natural way. So naturally, in fact, that they do not even recognise accessibility as being an essential feature. However, this is not the case for everyone all the time.

For a large group of people using the built environment, it is anything but natural. Often those with a physical or sensory handicap 'manage' only with difficulty or only with help from other people nearby. At times they are literally shut out.

At the turn of the century one third of the European population will be elderly and have some sort of disability.

Nevertheless, the link between accessibility and the group referred to as 'the disabled' is too restrictive.

Older people, children, large, tall and short people, those with sporting injuries, people with prams, they can all come up against an unfriendly environment full of obstacles. In the end, it would seem that anyone and everyone can be affected.

To ensure equal chances of participation in social and economic activities, everyone of any age, with or without any disability must be able to enter and use any part of the built environment as independently as possible.

In addition, a society works better when people are not prevented from going where they want to, either to use some facility or to offer their services. An accessible environment is a prerequisite for social and economic success.

Need for new criteria

The criteria for accessibility are determined by human characteristics. In this process it has always been the norm to work on the supposition of people's average measurements and possibilities. However, building for 'the average person' does not mean that built facilities are then automatically equally accessible for everybody.

No-one fits the picture of the average person: in one way or another everyone deviates from the average in height, width, strength, speed, sight or hearing. Rather, these very differences should be the criterion for designing the built environment. In this way, a standard is created which benefits everyone whether 'average' or 'exceptional'.

Mental and technoIogical process

Personal mobility partly depends upon the devices which people have at their disposal. The development of

such devices, adapted to individual circumstances, presents an important challenge to industrial design. But such development is quite distinct from the approach which should characterise the built environment and which is not only the responsibility of, but also a challenge to clients, designers, site workers, managers, legislators and planning inspectors in the architectural and construction industries.

Above all else, within the design process, architects are expected to consider solutions which meet the needs of all. If this principle is systematically followed, it should result in a new awareness of designing for people. No longer would the hypothesis be that of trying to design vaguely for the non-existent average man, nor would it be compounded by the introduction of ad hoc and superficial modifications.

Objective

What is needed in the everyday practice of design, management and rearrangement of the built environment is a universal approach to accessibility; an approach that is based on the following objective.

The environment should be arranged in such a way that it allows everyone, equally, to junction in the most independent way possible.

This means that built facilities should be based on the principle that people are different. This will not be achieved, however, by creating separate facilities for every individual nor for each separate category of people, but by integrating the various needs of people into facilities which can then be used by everyone.

This is the basis of 'universal design' as presented in this 'European concept for accessibility'.

Function of the document

This 'European concept for accessibility' provides the principles and criteria for universal design. In this respect, the concept serves as a reference work for the harmonisation of the concept of accessibility in Europe and provides a basic foundation for a European standard of accessibility.

With this in mind, the document can also be used as a reference for the development or revision of nationally oriented manuals and design directives. Therefore, the document is primarily intended for:

- policy-makers and legislators involved in the harmonisation of this concept or the assessment of accessibility standards at European and national levels;
- internationally and nationally oriented consumer organisations which wish to represent their interests in a European perspective.

Significance of chapters 1 and 2

In addition to this introduction the document consists of two chapters, each with its own special significance.

Chapter 1: 'Principles' considers the premise that accessibility is everyone's basic right. Based on this consideration, the chapter describes the objective of universal design and the criteria which need to be applied. Finally, it provides definitions of the concepts of 'visitability' and 'adaptability'. A link is also established between accessibility and health and safety requirements.

Chapter 2: 'Criteria' sets out a measurement system related to human activities. This system provides the criteria for determining the accessibility of built facilities and should be regarded as an operational

minimum which can be adjusted in the light of new insights. A further explanation of the use of the criteria will be found on page 25.

PRINCIPLES

1.1 OBSTACLES IN OUR PRESENT-DAY ENVIRONMENT

The need for accessibility is implicit in every activity in the built environment. To realise this, you only have to take a journey from your home to the office, the park, a shop, or a friend's house. On your way you will be able to make a sound evaluation of the built environment by constantly checking whether it is adequate for its purpose and whether you can reach your destination without difficulty. That is what accessibility is all about.

Perhaps your journey passes off without problems. Precisely because of the ease with which you move through the streets, enter buildings, use your house, you do not regard accessibility as an essential factor. But just imagine that you are tall, short, accompanied by a child in a pram or that you are in a wheelchair. Then you begin to notice just how many obstacles there are in our environment and how varied and absolute they can be. And at the same time, it will become clear just how essential an environment accessible to everybody really is, because everyone has to have the equal right to participate in activities in the built environment.

public transport

Suppose you want to make use of public transport. First of all you have to look for the timetable, read it and find the right place to board. This is often a problem for blind and partially sighted people and for those with learning difficulties. It is not always clear for them whether the bus, train or tram for their destination has arrived.

The next problem can be the actual boarding. For people without the full use of their arms and legs, those with young children or luggage, it is difficult to mount the often high steps. People with single or twin prams can only get on when they are helped. For wheelchair users, the height difference is insurmountable.

Most aisles in trains and buses are narrow. In the rush hour this often makes it impossible for people to reach a safe place before departure. Straps for standing passengers are fitted too high for small adults and children, and they are often impossible to use by people with impaired arm functions. Seating space for tall and stout passengers or people with stiff legs is usually too restricted. Space for prams and large items of luggage is usually inadequate or non-existent.

Blind and partially sighted people - indeed all those who are not familiar with a particular setting - face the problem of not knowing where, just when or on which side of the vehicle they have to get out, even if it is announced. In general, people who have difficulty enough getting on a bus, train or tram may face even more difficulty getting off.

the external environment

Your destination, a bus stop for example, can be inaccessible because cars are parked in front of it. Very often there are no signs there or if so they may be difficult to read. This means that precisely where you are getting off is not immediately clear. Parking your car may also cause problems, not only because of the shortage of parking bays, but also because of the fact that there is only a very limited space around your car once you have actually parked. People in wheelchairs and people with crutches require extra room for getting in to or out of a car.

As you continue your journey on foot, you may discover a number of obstacles. Narrow pavements and footpaths are difficult for those needing some extra space for moving around. For most people, bumpy streets and streets with extremely smooth or slippery surfaces are difficult or even risky to cross -especially when it is raining or when wintry conditions prevail.

From the point of view of accessibility, hilly areas can present problems for many people, certainly if it is not possible to get close to facilities with cars or other forms of transport. When ramps are used to make gradual transitions between different levels, the obstacles are reduced to minor hindrances. On the other hand, sudden differences in level are insurmountable for people in wheelchairs, and they constitute difficult obstacles for many others. Sudden differences in level which are not signposted in one way or another are even dangerous for blind and partially sighted people.

Street furniture may enhance the surroundings but becomes a obstacle when located on a walkway. It may obstruct free passage for people in wheelchairs or people with prams or luggage. Tall people constantly have to be on the look out and need to stoop to avoid low-hanging objects. It is not just fixtures such as lampposts, statues or flower tubs which cause difficulty, but often the problem is caused by movable objects such as shop displays, advertising boards, pavement cafes, bicycles and rubbish bins. Unexpected objects can be dangerous for blind and partially sighted people or indeed for anyone whose attention wanders for a moment.

In general, it is difficult for blind or partially sighted people to find their bearings out of doors. To do so, they make use of tactile elements, such as pavement edges and changes in the surface of the footpath. Physical indicators of this sort are often absent. Those unfamiliar with the surroundings depend on clear signposting and this is frequently lacking.

buildings

Very often, the first obstacle in a building is the entrance. There may be steps, the door may be too narrow or a lot of strength is needed to open it. In the building itself, the corridors may be too narrow, and difficulties may arise because of the inadequate width of the doors and the space needed to use them.

Different floor levels in a building constitute obstacles for everyone. Many people can use stairs only with great difficulty, if at all. In particular, people with heavy luggage, prams, trolleys or wheelchairs depend on ramps and lifts. These facilities are certainly not present everywhere. Sometimes the lifts are too small and the ramps too steep.

The space in sanitary facilities is often inadequate. This also applies in general to the layout of a building. However, when it comes to using cupboards, telephones and desks, for example, the amount of free space is not the only thing that matters.

Finishing also plays a role. A coat rack that is mounted too high cannot be used by short people, children or people in wheelchairs. The same applies to cabinets, cash desks, telephones, letter boxes, light switches and signs.

People who are partially sighted depend on a well-thought-out use of lighting, colours and tonal contrasts. Contrasting materials and textures are essential for giving blind people their information. For example, the juxtaposition of high-gloss surfaces, monochrome floors and floor-to-ceiling glazing can be a hazard and confusing for those with orientation problems.

People with a hearing problem often cannot distinguish the sound they wish to hear because of the cross-talk effect and superfluous background noise, whereas this can often be avoided by a careful assessment of the acoustics and absorption factors. For instance, people with hearing difficulties also depend on amplified auditory information in halls and at counters. Good lighting is very important for them too.

Finally, the ease with which people can reach, enter or use a building is not the whole story. In emergencies, people also have to be able to leave a building quickly. Having to evacuate in an emergency is a stressful operation demanding good management. Evacuation lifts and refuges included in a design will enhance the safety features of a building.

houses

The structural and spatial design of houses is in most countries the responsibility of the developer. Once the house is occupied the interior design and finish depends primarily on the owner's individual needs, wishes and tastes. This also applies to the extent to which the house has to be accessible, the way the rooms can be reached and how the furnishings can be used.

However, the owner may have relatives or friends with either a physical handicap or temporary injury whom they would like to entertain in their home. But if the house does not meet the physical needs of these visitors it becomes impossible. This is true of so many of our homes: the entrance area, corridors and interior doors are too narrow, the toilet is too small and there are insurmountable differences in floor level. In effect, the would-be visitor encounters exactly the same kinds of difficulties as in the external environment and public buildings.

But at the same time those difficulties could apply equally to the occupants. If a tenant is confronted with a permanent or temporary physical limitation, it may become necessary to adapt certain aspects of the interior design to his individual needs: a new sink unit in the kitchen or a staircase lift to the upper floor, for example.

If a house cannot be altered within reason to meet the needs of an occupant with a physical handicap, the house is then necessarily no longer suitable to live in. The occupant certainly has to move and perhaps even to another area or town. His entire lifestyle will alter whereas, if desired, he could keep on living in a house which can easily be adapted to individual circumstances throughout all phases of a person's life.

1.2 A MATTER OF INCLUSION

Traditionally, planners and architects are inclined to design with 'the average man' in mind or, unconsciously, with their own physical abilities. This is understandable: existing design guidelines are generally based on men or women of average sizes and with average capacities. An example is Ernst Neufert's 'Architects' Data', a widely used international reference point.

beyond the average

The size and physical capacities of 'the average man' have been worked out in detail into some sort of standardised person, but: there is no human being who matches all the average proportions and abilities, a standardised person does not exist. Every person deviates from the average to a greater or lesser extent.

People vary in stature, motor capacities, in hearing or visual faculties. One man differs from the other in the strength of his arms, his physical stamina and his mental faculties.

Furthermore, there are those limited in their ambulatory functions because of old age, illness, allergies or a temporary injury. Some people lack all ambulatory faculties and are totally dependent on a wheelchair. Others are limited in the use of their arms. Another group consists of people who are partially sighted or blind, hard-of-hearing or deaf and some people having learning or orientational difficulties. There are people with impaired cardiac or pulmonary functions and impediments in their respiratory system. They, too, often have to cope with reduced physical stamina. It often occurs that people have to cope with a

combination of the limitations mentioned above.

Finally, there are people who have to cope with temporary restrictions: heavy suitcases, for instance, removal men or people with a pram, a pushchair or tea trolley.

extending the range

The list of major and minor, temporary and permanent deviations from the average makes it clear that human beings have only one thing in common: everyone is exceptional in his physical abilities and restrictions. Individually prescribed hearing aids, lenses, crutches or a wheelchair can compensate for a handicap to some extent. Such resources enable people with physical handicaps to function in society. However, if disabled people are to function as well as possible, it is essential that the designers of the built environment cater for all possible limitations. Basically, to achieve this, the range of people included in the criteria that are being used in the design process must be enlarged.

a natural integration of needs

Despite the fact that everyone is unique in terms of his abilities and restrictions, it is not necessarily so that people have mutually conflicting accessibility requirements. In fact, everybody can benefit from an extension of the range of people included in the study of accessibility.

For example, access to any building is easier for everybody -short, tall, stout, thin, strong or weak - if the door opens smoothly and the passageway is high, wide and contains no steps. Surely a light switch one metre above floor level can be used by a large adult and a small person alike, and a lift between floors is a help to all.

It is not necessary to create separate solutions for each category of personal limitation, a tactic known as the 'group approach'.

The goal can be achieved by integrating people's various needs into one solution which can be used by everyone.

basic features

Space and provision applying to all is possible. In principle the same features recur time and again.

1. Space for horizontal movement
Facilities like footpaths and corridors must be sufficiently broad, high and free of obstacles and so designed that people can orient themselves with ease.

2. Entrances
Facilities like entrance gates and outer and inner doors must be sufficiently broad and high. There must be enough space in which to operate the doors and this should not require too much effort. Furthermore, it should be easy to find the entrances.

3. Facilities for vertical movement
Getting across a difference in height is uncomfortable for everybody to a certain extent. Differences in height along walking routes should be avoided as much as possible, or be bridged by a lift or a ramp in combination with stairs that are easy to climb.

4. User space
Sufficient space should be left around street furniture and the facilities in a building or dwelling, such as the

sanitary facilities, so as to increase the usability of the facilities.

5. Ease of operation
The operating elements of the facilities should be designed and fitted so that they are within everyone's reach, not too much strength is needed for use and the information necessary for using them should be visible, tangible and audible.

1.3 UNIVERSAL DESIGN

Accessibility is the touchstone which determines whether what the built environment has to offer - such as parks, houses, buildings and the spaces and facilities included in them - can be reached and used. Accessibility is the physical answer to questions such as: how do I get to a building? how do I enter and move around inside that building? how do I move between floors and enter the rooms? how do I use the furnishings?

The degree to which any construction has to be accessible depends in part on the specific nature of the facility: a shop has to be suitable for the use of shopping trolleys, a warehouse for the delivery of large goods and a hospital for moving beds. Despite these specific accessibility criteria, there is a basic requirement which is the same for every built facility: it should be accessible by people.

Universal design relates to this basic accessibility. The aim is: everyone must be able to use the built environment in an independent and equal way.

everyone

As already stated, no two people are alike. The term 'everyone refers to an unlimited number of people, each with his or her own, individual characteristics. Of course it is practically impossible to know whether in reality everyone can make use of the facilities provided in a building. To cover this, criteria are used, presented in Chapter 2: 'Criteria'.

The criteria in Chapter 2 state, for instance, the minimum room needed to move around in; just how far people can reach; and what is needed for vertical movement.

These criteria form the basis of the demands which can be made with regards to the route to, the surroundings of, and the interior of buildings. The criteria dealing with mobility are, for example, of importance for the width and finish of footpaths, the width and height of corridors and doors.

independence

The aim is not just that people can make use of a building in the absolute sense but that they can do so independently. This means that everyone can open the doors without help from other people; they can use the lift by themselves; they can easily find their way about in the building itself as well as in the street outside.

The assessment of whether a facility meets these basic demands or not is made in the light of the criteria laid down in chapter 2. Amongst other things this chapter gives the height at which wall elements and door handles should be placed. These are things used by the short as well as the tall, and they also must be within arm's reach of people in wheelchairs.

But there are also people who are unable to use their arms. When using a lift or trying to open non-automatic doors they are dependent upon others. This means that the criteria with regards to independence cannot literally include everyone. However, in a general sense they do guarantee that

everyone can make use of the facilities, albeit sometimes with the help of a personal assistant, companion, porter or passer-by.

equality

The term equality is at the heart of universal design. It is not enough that people can use a building's facilities independently, but that in their use no essential distinction is made between various categories of people. This is both a sensitive matter as well as a difficult concept to measure, therefore an illustration:

It is a fact that in existing buildings, people in wheelchairs and people with prams cannot enter through the main doors: the threshold is too high or the revolving door is too small. In such circumstances they have to use the rear entrance and this is in conflict with the principle of equality: everybody should be able to enter a building in the same way. Thus one entrance for everyone.

Of course equality does not mean that provisions for specific categories - such as Braille lettering for blind people - cannot be implemented.

1.4 VISITABILITY AND ADAPTABILITY

Universal design is applicable to the whole of the built environment. And what should be realised is that any building or home is used by two groups of people: those who are visiting and those who live or work there.

The visitors will make use of facilities based on collective needs. However, the daily users, i.e., residents or employees, have their own individual needs, which are known. The facilities they use must accommodate their own particular circumstances. The universal approach separates two basic requirements, visitability and adaptability, on the basis of these arguments.

two basic requirements

Every visitor must be able to use the facilities appropriate to his visit in an independent and equal fashion. When this is the case a building or home is 'visitable', i.e., accessible or convenient for visitors.

The facilities for daily users should, of course, meet their individual requirements. But at the same time facilities should also be adaptable: needs can change. For instance, someone with 'average physical ability' may become restricted in his mobility through age, injury or illness.

Adaptability means that it is relatively easy, i.e., without any major renovation work, at all times to modify the surroundings to meet the accessibility needs of those using the building or house. In short, it is a quality inherent in a built environment allowing, at some point in the future, an easy rearrangement of space or equipment to meet new and differing requirements.

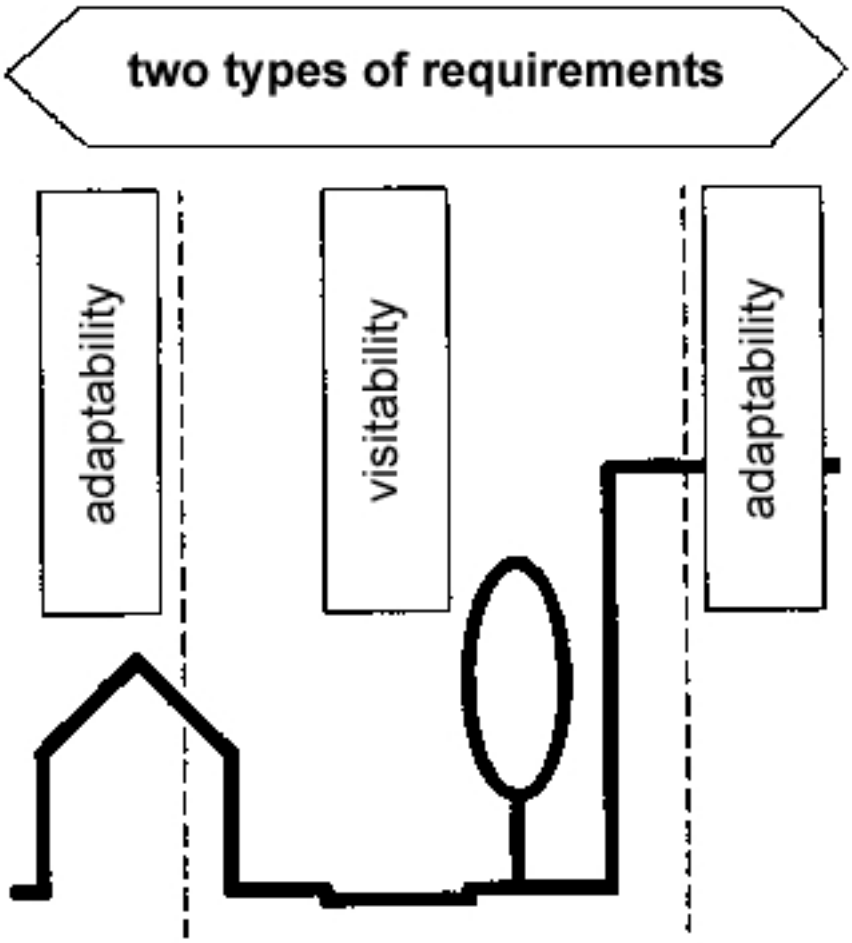
requirements in the external environment

The external environment is 'public domain' and must therefore by definition be based on the collective needs of visitors. This means that all facilities like pavements, zebra crossings and exterior ramps must meet the requirements of visitability.

visitable and adaptable buildings

Customers and clients are examples of visitors to buildings. The occupants are those who work there: the staff. According to these definitions, all facilities that are intended for use by visitors, i.e., the lobby, meeting rooms and toilets, must be visitable.

The facilities which only the occupants (the staff) will use, must be adaptable. This means that it must be simple to rearrange the workplace when the need to do so occurs.



- houses and dwellings
- parks, playgrounds, squares, streets
- restaurants, theaters, cinemas, hotels
- post offices, shops, schools
- commercial offices and buildings

special requirements
(not in the range of the criteria)

- rehabilitation centers
- special flats
- centers for disabled people

adaptable and visitable homes

An adaptable home means that is has the capability of being altered, without major reconstruction, to meet the changing needs of the present and future tenants.

For example, if the staircase in the original design of the home is wide enough, a stairlift could be installed. Also, if the bathroom has sufficient space, a change in the position of fittings, e.g., the WC and bath, can be achieved.

Once an adequate space standard has been established in the design of a flat or house it should then provide a lifetime of use without a family being forced to move elsewhere when their circumstances change.

Once the features of accessibility to and into the dwelling have been incorporated, including the provision of an accessible WC, then any friend and relative will be able to visit that home. If the home is visitable, the requirements of adaptability have to a large extent already been met.

exceptions to the rule

If strictly applied, the requirements for adaptability and visitability based on the criteria of chapter 2 are not always feasible. There are facilities where a special kind of accessibility is demanded: special accommodation for the severely handicapped, rehabilitation centres and hospitals. The criteria are also

not applicable for specific, individually oriented, alterations to workplaces or homes.

1.5 HEALTH AND SAFETY

In addition to accessibility, the built environment must also meet health and safety requirements. Taken together these three factors determine whether any built facility is really suitable for people. With the help of the criteria of chapter 2, accessibility can be measured.

Whoever grants people access to the external environment, buildings or houses is, in part, responsible for their health and safety. And that is why a number of points regarding health and safety are put forward for consideration in this section.

health

The healthiness of the built environment depends upon all kinds of physical and psychological factors. Some examples of the physical factors are temperature, humidity, the level of noise, the circulation of air, light and the presence of gases and dust particles in the atmosphere. Such things as privacy and the extent to which people can influence their immediate surroundings are psychological factors. In buildings and homes peoples' health is artificially influenced by, for example, the heating, the lighting, the air conditioning and the materials used.

Just as with accessibility, everybody is different in this matter of health: there is no such thing as the average person. Some people are unusually sensitive to dust, damp, changes in temperature or background noise. We see this in people who have allergies, who are hard of hearing, those suffering from impaired cardiac and pulmonary functions or respiratory systems.

The heating, lighting, air conditioning and materials used must secure independent and equal opportunities for everyone.

Standards for the internal climate should be evaluated on the basis of this objective. This document confines itself to a number of general recommendations.

- Avoid down-draughts, heat and large differences in radiant temperature.
- Avoid the use of materials, air-conditioning units and equipment which emit any sort of radiation, gases or dust particles.
- Take steps to ensure good acoustics particularly in places where there is dialogue.
- In locations where there is amplification for the purposes of speaking, provision must be made for people with individual hearing aids.
- Make the internal climate adaptable for individual use.

safety

Though the expression 'the safety of built facilities relates to all sorts of matters, this section deals only with user safety and safety in cases of emergency.

What is involved in user safety is, for example, the sturdiness of handrails or the reliability of lifts. Safety regulations are laid down in every European country to cover these things. However, blind and partially sighted people require extra attention, especially in dangerous situations. This relates particularly to the signposting of sudden changes in height and obstacles on paths or in corridors. The dimensional

requirements of handrails, brackets and markings are discussed in chapter 2, 'Criteria'.

Safety in cases of emergency relates to the possibility of evacuation because of a fire or another disaster. Equitable lifesaving options should be provided for people in emergency situations and may include:

- total or partial evacuation,
- phased evacuation;
- the use of safety zones or refuges, and
- non-evacuation strategies.

Whatever the safety features, strategies and procedures in specific situations may be, the objective should always be: safety shall be secured for anybody of any age with or without impairments at all times.

CRITERIA

2.1 WHAT THE CRITERIA STAND FOR

Everyone must be able to use the built environment in an independent and equal way. This is the objective of universal design and the European concept for accessibility.

It should, of course, be possible to determine objectively whether a constructed facility or the design for one meets this objective. This is the purpose of the criteria in this chapter.

Minimum level

The criteria represent the spatial and technical needs of people as they undertake the activities which are relevant for the use of built facilities. As with the principle of universal design, the extremes in human build and possibilities implicitly represent the needs of every separate individual within these limits.

The criteria provide a minimum level which is based on various studies, empirical material and data based on the expertise of the experts in the steering group involved in the concept.

Many countries apply their own criteria, set down in manuals, regulations or standards. The countries which apply more far-reaching criteria should regard their own criteria as the yardstick. In contrast, the countries which adopt a lower level should focus on the criteria of this concept.

As an illustration, the dimensions regarded as desirable by the Nordic countries (Denmark, Finland, Iceland, Norway and Sweden) are given between brackets.

Not rigid

For that matter, the criteria in the concept are not laid down rigidly. The criteria will be up-dated as new research or social or technological developments suggest. In this way, the ultimate goal will be approached: that literally everybody will be able to make use of the built environment in an independent and equal way.

In the mean time, every country and every constructor, of course, is encouraged to strive towards a performance which exceeds the given criteria and the requirements derived from them.

2.2 HORIZONTAL MOVEMENT

People have to be able to move around freely and without obstruction. With regard to walkways, attention must be given to width, turning space, headroom, level surfaces and means of orientation and warning.

widths

The minimum width for any walkway is determined by the intensity of its use. The greater the use, the more often will people meet and have to pass one another.

A = when people never have to pass one another

B = when people pass each other occasionally

C = when people regularly have to pass one another

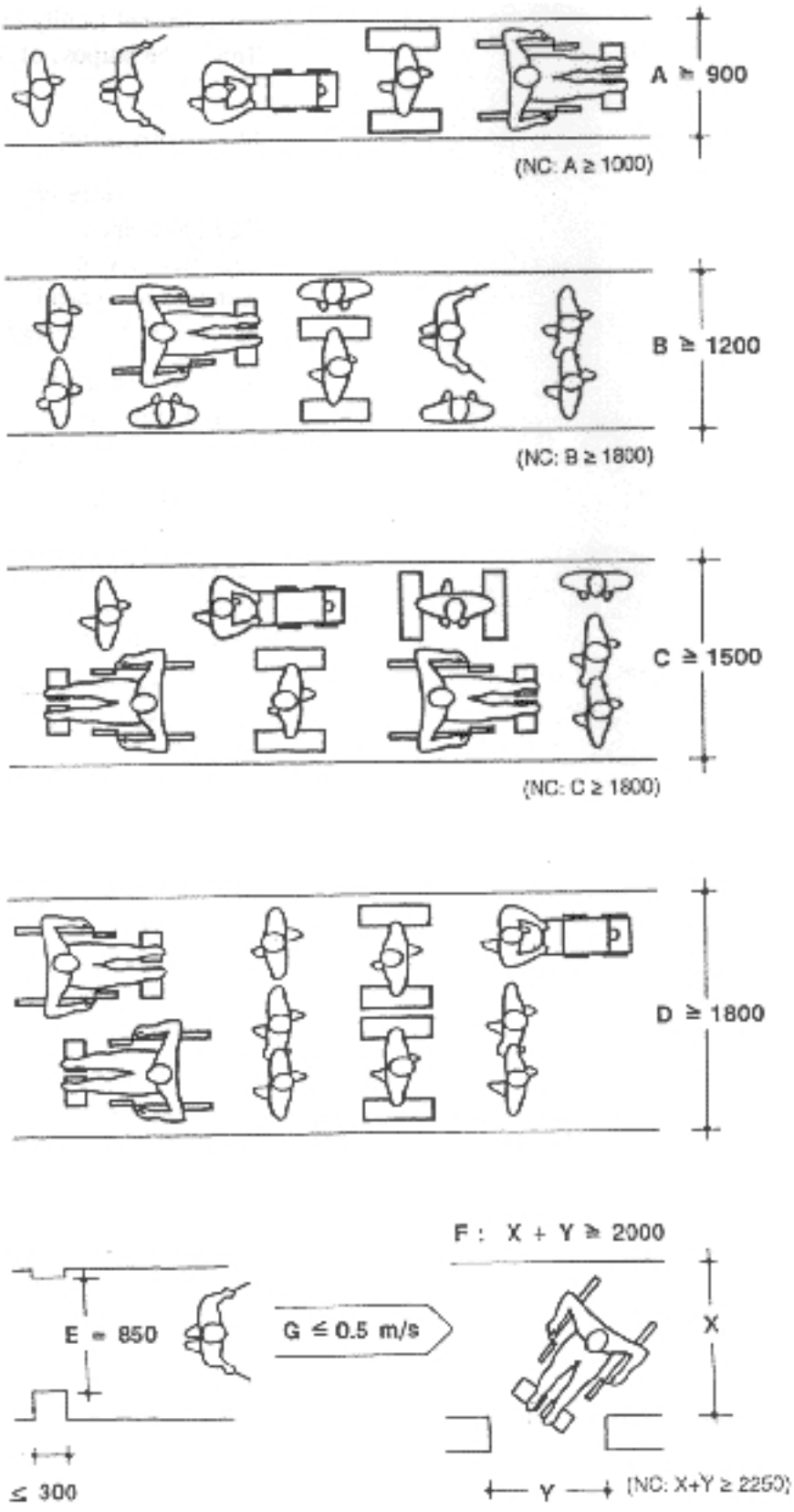
D = when people are continually meeting and passing each other

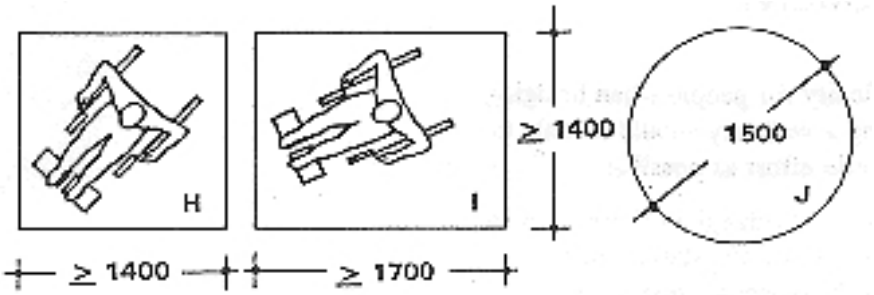
E = when there is an occasional narrowing in the walkway

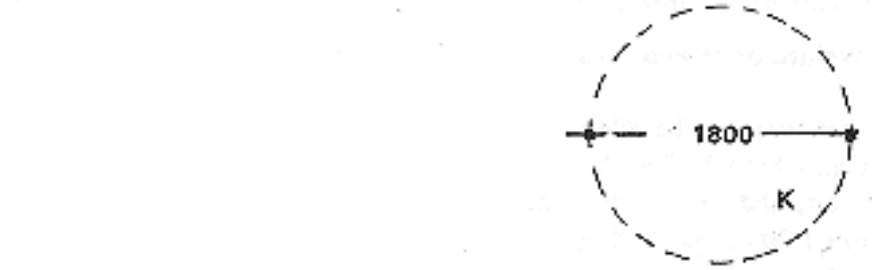
F= when a 90-degree turn has to be made into a porch or a door opening

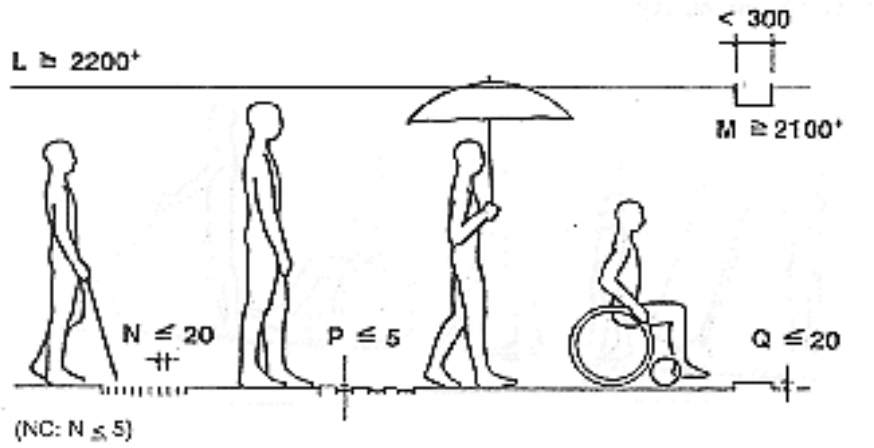
G = the speed at which people are able to move (this criterion is important, for instance, when determining how long automatic doors remain open and the rate at which pedestrian crossing lights change)

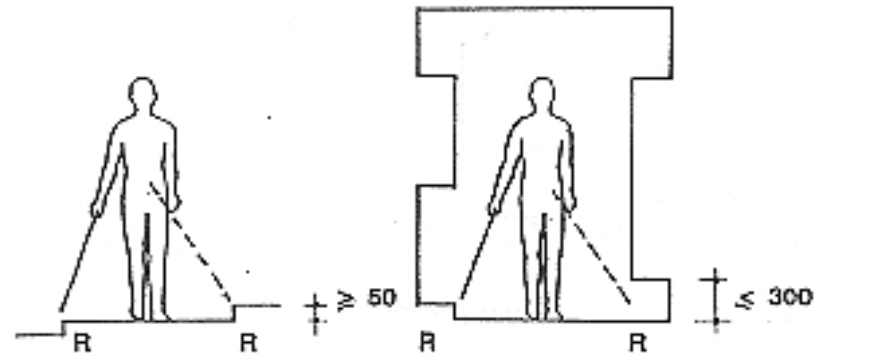
(NC: criterion of the Nordic Countries)











turning space

In walkways with a dead end, when f
and using equipment, space to turn is

H = space needed for a 90-d

I = space needed for a 180-d

J = practical guideline for 90
360-degree) turns

K = practical guideline for ea
360-degree) turns in an electi

headroom

Everyone should be able to use a wal
having to stoop.

L = minimum headroom

M = minimum headroom fo

level surfaces

The surface of walkways must be fre
which create obstacles or may be dan

N = diameter of openings in
such as floor grids or gratin

P = smoothness of walking s

O = acceptable difference in
need for special provisions

means of orientation and warning

When moving around people must be
bearings and be made aware of any o
and partially sighted people are contir
detectable markings clearly defining t
early warning of obstacles.

R = detectable markings defi

S = area to be marked in ord
warning for objects in the wa
furniture or a staircase

(NC: criterion of the Nordic Countrie

2.3 VERTICAL MOVEMENT

There is always an element of difficulty for people when bridging varying heights. But everyone using a walkway should be able to overcome the differences with as little effort as possible.

A lift makes it possible for everyone to bridge the difference with a minimum of effort. Not everyone can use the stairs, nor is a sloping ramp suitable for everyone. This means, therefore:

- differences in height should be avoided or reduced to a minimum
- it is generally considered that for everyone to be able to overcome a difference of more than 20 mm in floor level, either a lift or a combination of stairs and a ramp are needed
- a ramp with a gradient of less than 1:20 can be used by everyone, thus a complementary staircase is unnecessary

(NC: a complementary staircase is always necessary)

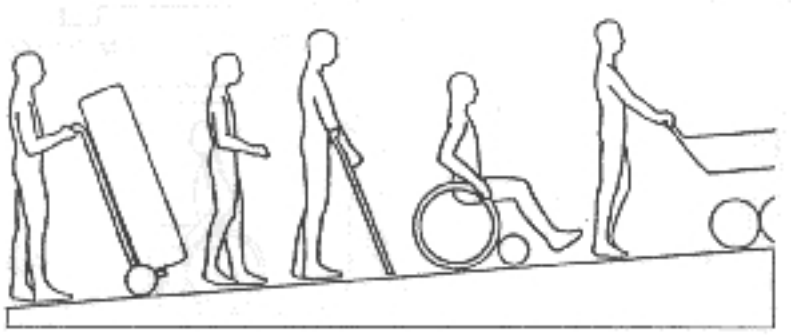
ramps

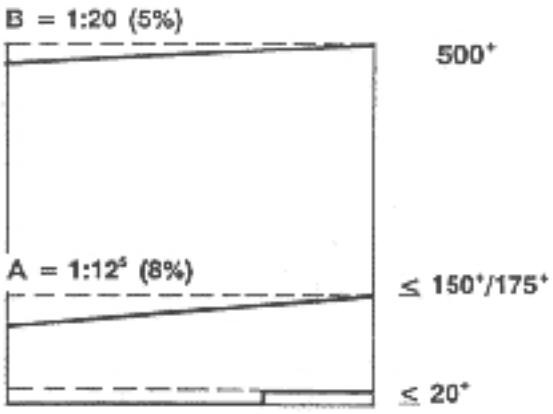
The gradient of a ramp should be kept to a minimum. The maximum angle depends upon the height to be bridged.

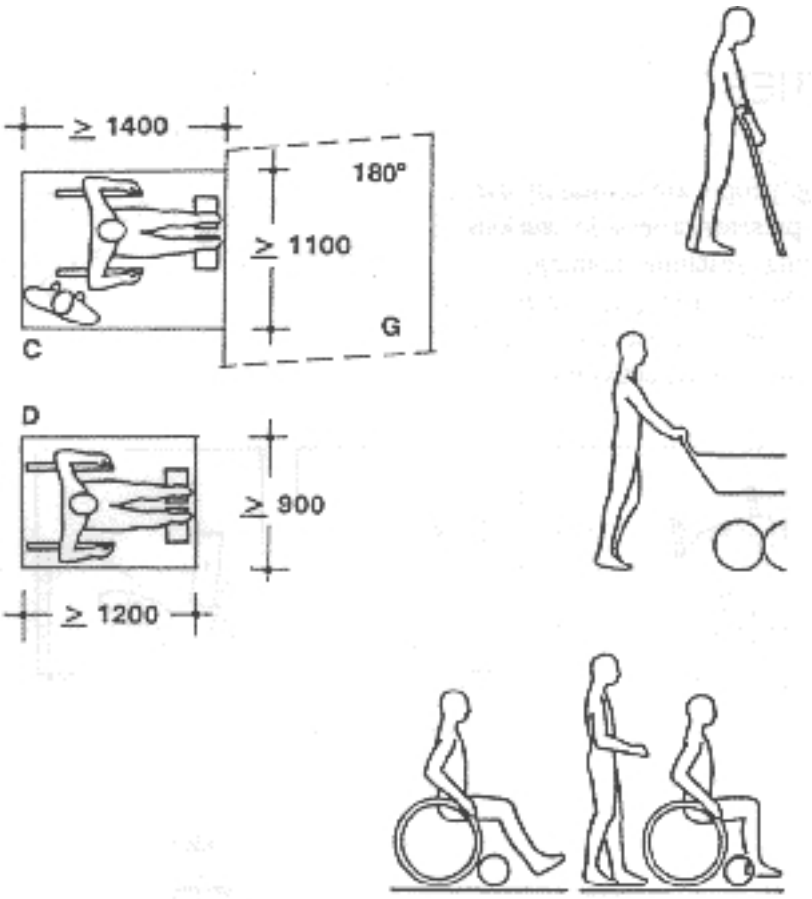
A = maximum gradient of a ramp up to 150/ 175 mm

B = maximum gradient of a ramp up to 500 mm

(NC: criterion of the Nordic Countries)







lifts

The floor area and the hoisting power adequate to take a person in a wheelc accompanies him.

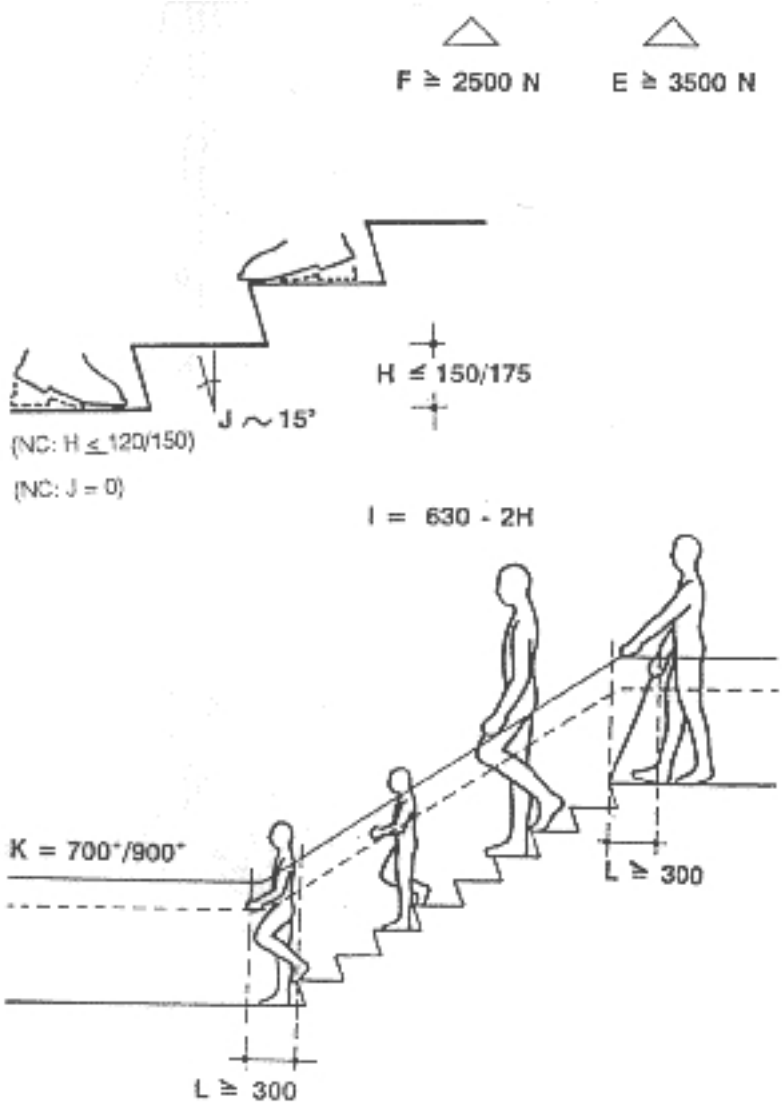
C = minimum floor area for

D = minimum floor area for companion uses the stairs

E = required hoisting power

F = required hoisting power

G = space needed for turning



steps and stairways

The ease and safety with which peop the height and depth of the tread, and Support and assistance when ascendi equally important.

H = height of a tread

I = the depth of a tread accor

J = safe nosing

K = height of a handrail givi

L = length of a handrail at th stairway that provides suffici assistance

(NC: criterion of the Nordic Countrie

use of doors

Firstly, a doorway has to be wide enough to go through. If it is not, some people are quite literally locked out.

To ensure 'independent' use of a door there has to be enough room to operate it. The space required is determined by the opening circle of the door and how the door is approached. For instance, someone in a wheelchair needs enough space to operate the door handle and yet manoeuvre outside the opening arc of the door. Opening a door must cost as little energy as possible.

A = opening without obstacles

B = maximum opening resistance

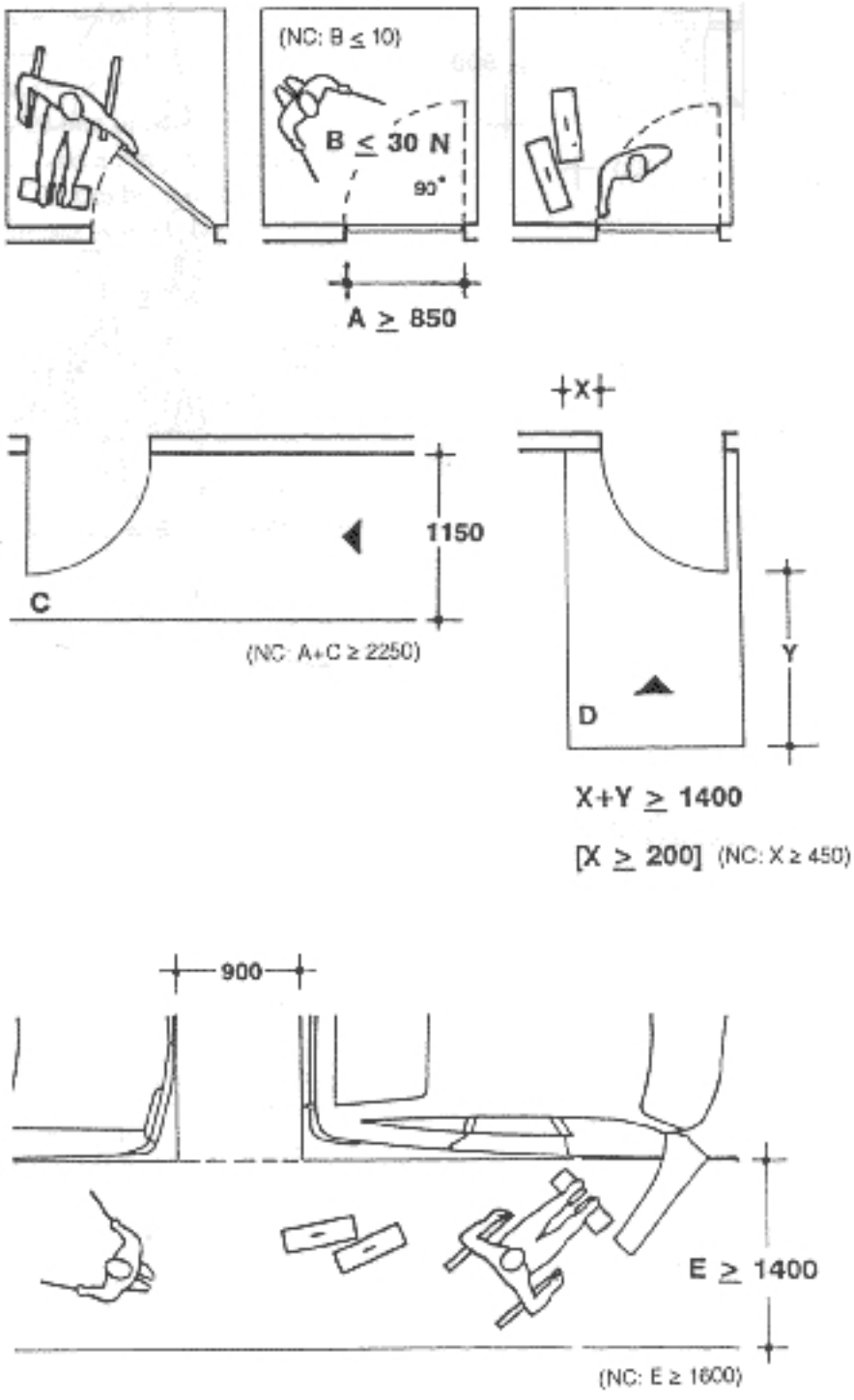
C = a door approached from the side

D = a door approached from the front

X = space needed on the lock side of the door

Y = space needed outside the opening circle of the door

E = space needed for using a car door



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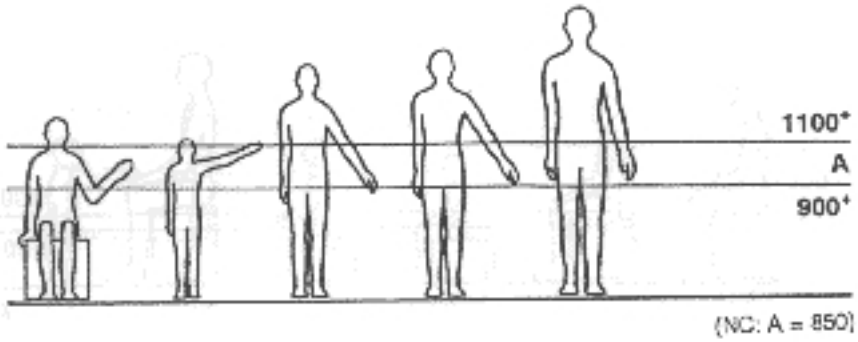
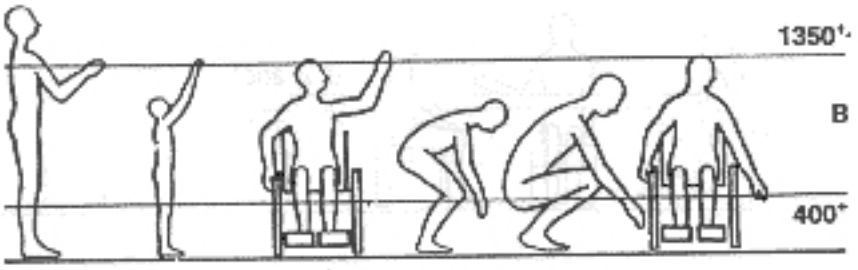
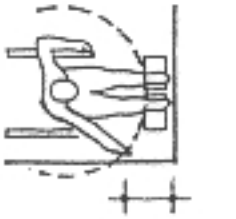
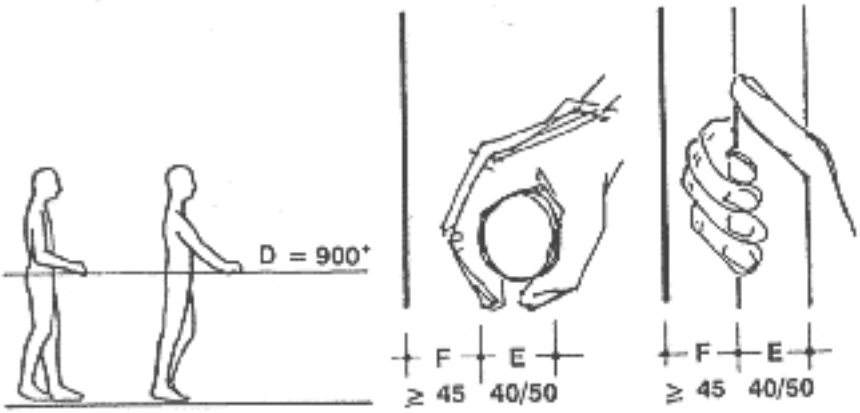








operating, reaching and holding

Strictly speaking, the ideal height for
is decided by the needs of the individ
facilities are used collectively - by thc
who are short, by children and by pec
movements - a suitable height range l

A = suitable height for door
public telephones and the ser

B = suitable height for coat h

C = the space needed to oper
in a corner

Handrails have to be fixed at a height
for as many people as possible to use
firm in the hand.

D = suitable height for hand

E = appropriate diameter for

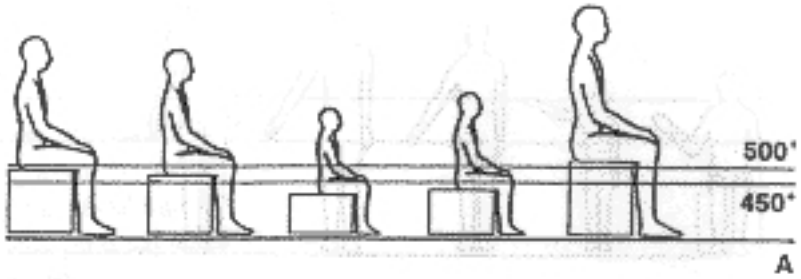
F = space needed between th
surrounding elements such a

(NC: criterion of the Nordic Countrie

sitting

The ideal height of a chair or a

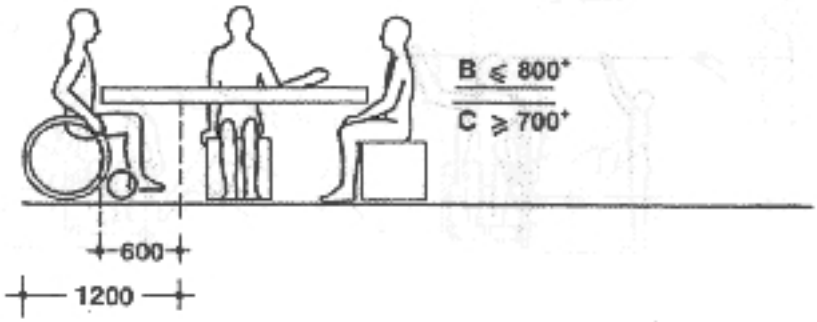
working surface depends on the individual. But when working surfaces (desks, tables and counters) and chairs (in restaurants, theatres, waiting rooms and toilets) are used collectively, the basic measurements have to be based on a certain average.



A = suitable height for sitting

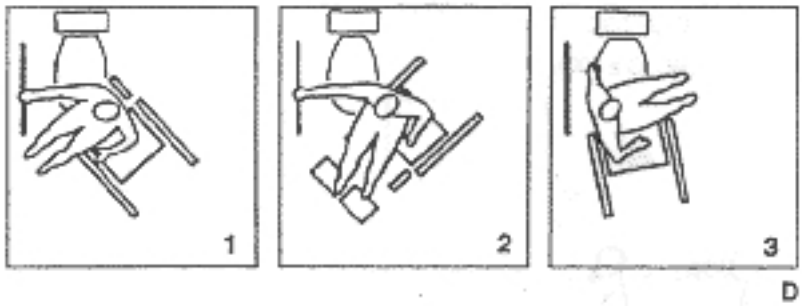
B = suitable height for a working surface

C = free space under a working surface



In a number of situations, people in wheelchairs have to transfer from their wheelchair to another kind of seat. This happens particularly in sanitary areas such as the toilet, the shower and changing rooms, as well as inside the home.

Every person in a wheelchair has his own particular method of transferring to another seat. In general there are three types of transfer techniques (without assistance) , each demanding its own space.

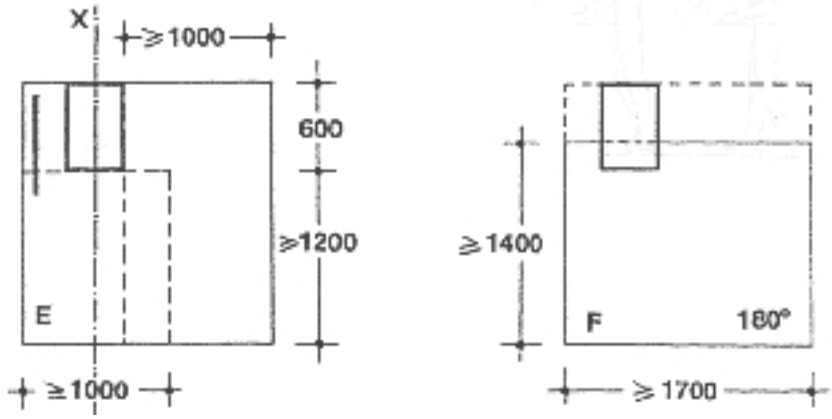


D = the three main types of transfer techniques

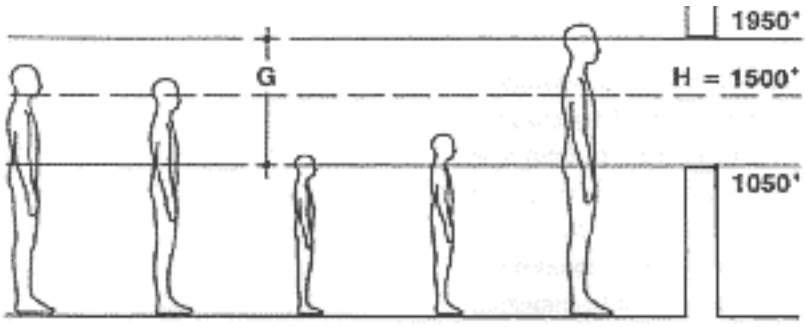
E = space needed for the three techniques in a toilet

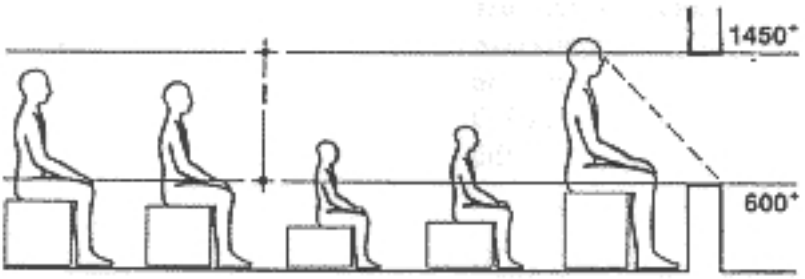
F = space needed to turn in a toilet, changing, shower cubicle

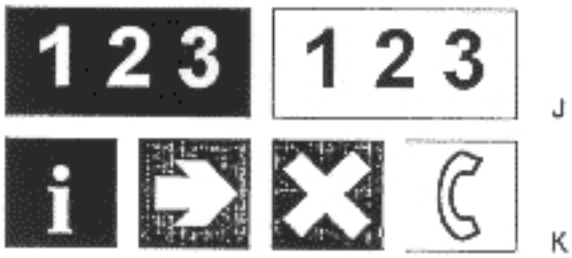
X = line to reflect the transfer space needed if both right and left-sided transfers and/or assistance must be possible

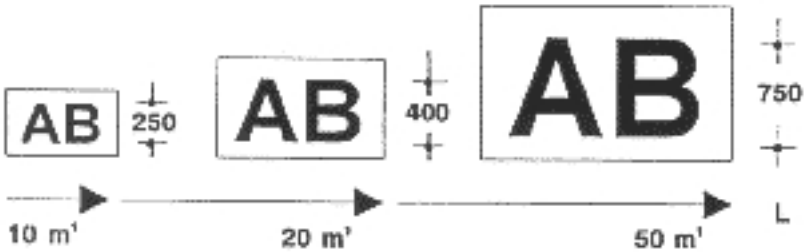


(NC: in public toilets left, and right-sided transfers and transfers with assistance must be possible)
(NC: criterion of the Nordic Countries)









perceiving information

People must have the information wh use of a built facility. This calls for at way in which visual, audible and tacti presented.

The height at which the information i as well as ensuring that there is a clea and the short and everyone in betwee

G = clear line of vision wher

H = the average height for in distance'

I = clear line of vision when

The relevant information for quick ar must be clearly visible and immediat

The following are essential for 'visual

J = sufficient contrast betwe background (text, switches a

K = readily understood syml classic colour use:

- blue for information
- green for safety
- yellow for risky
- red for danger emer

L = sufficiently large symbo distance at which they have t

By definition blind people are unable information and it is difficult for parti so. It is therefore essential that impor be made detectable. This is possible v switch for instance (M) or the inform over an intercom.

For people with a hearing impairmen information is amplified (N) and whe 'visible' for deaf people (P).

(NC: criterion of the Nordic Countrie

STEERING GROUP SINCE 1987

A European conference on 'Access to public buildings for the handicapped' organised by the Dutch

Council of the Disabled was held in Utrecht in October 1987. The aim was to generate new initiatives to improve access to the built environment in the European Community. One of the recommendations of the conference was that the main general-access measures should be harmonised and standardised within Europe The Utrecht conference developed this recommendation further by advising the European Commission to compile a European Manual.

The Central Coordinating Commission for the Promotion of Accessibility (CCPT) subsequently took the initiative for the development of this manual, financed by the European Commission and supervised by a steering group of experts from different European countries, as listed in the colophon.

Mr J. Kaiser, Austria
Mr M.G. Hertecant, Belgium
Ms M. Kyriazopoulou, Belgium
Mr J. Frederiksen, Denmark
Ms M. Franti, Finland
Ms M. Könkkölä, Finland
Mr A. Kurppa, Finland
Ms M. Grimmeissen, France
Mr P. Saint Martin, France
Mr L.P. Grosbois, France
Mr I. Müller, Germany
Mr D.P. Philippen, Germany
Mr F.C.S. Schulze, Germany
Ms A. Leventi, Greece
Mr V.C. Sgoutas, Greece
Mr T. Polinszky, Hungary
Mr S. Ràdai, Hungary
Mr G. Kinsella, Ireland
Ms M. Bollani, Italy
Ms Giovanni Izzi, Italy
Ms Clelia Izzi, Italy
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