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Making Your Home Accessible: A Disabled Consumer's Guide

Carol Kushner
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Canadian Housing Design Council
Conseil canadien de l'habitation



Consumer and
Corporate Affairs
Canada

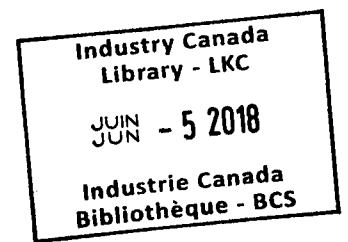
Consommation
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Canada

**En français: Comment rendre votre logement accessible:
guide du consommateur handicapé**

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A DISABLED CONSUMER'S GUIDE

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Canadian Housing Design Council

and

Policy Research, Analysis and Liaison Directorate
Policy Coordination Bureau
Consumer and Corporate Affairs Canada

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The authors would like to express their appreciation to the staff at the Canadian Paraplegic Association and l'Association des paraplégiques du Québec who assisted in the research for this manual by helping us contact many disabled people who had renovated their homes to create access. In addition, we would like to thank the following reviewers of the text who provided helpful comments: Eugene Besruky, Consumer and Corporate Affairs Canada and Persons United for Self-Help (PUSH-Ontario); Réjean Dorval, Coalition of Provincial Organizations of the Handicapped (COPOH); Sylvia Goldblatt, Canada Mortgage and Housing Corporation (CMHC); Selwyn Goldsmith, architect, Department of the Environment, London, England; Larry Hodgson, Direct Access Design; and Raymond Lifchez, Associate Professor, University of California, Berkeley. With respect to the French version of this manual, we are grateful to Mireille Séguin, Bureau on Rehabilitation, Health and Welfare Canada, for her contribution in rendering technical terminology.

The illustrations were executed by Jennifer Reid.

FOREWORD

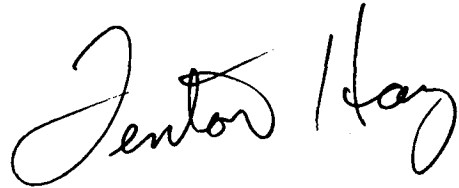
This manual represents a joint venture between Consumer and Corporate Affairs Canada and the Canadian Housing Design Council.

During the summer of 1981, the Council began to investigate a variety of issues related to housing disabled people. This manual is the end product of research begun in 1982 in response to the perception that disabled people often have difficulty getting information pertinent to their special needs. To document the extent of this problem with respect to home modification projects, a national survey was conducted with the cooperation of the Canadian Paraplegic Association and l'Association des paraplégiques du Québec which obtained firsthand information from disabled people who had already renovated their homes to improve access. From the research evolved this text, which provides a comprehensive package of information for disabled consumers with mobility problems. The intention is to offer the reader options rather than directives, choices rather than specifications written in stone, in keeping with the view that the disabled person is likely to be in the best position to judge his or her needs.

The authors of this manual are Carol Kushner, research consultant with the Canadian Housing Design Council, who has also been active in developing a series of Accessible Housing Bulletins written for housing industry professionals; Patricia Ladia Falta, Associate Professor of Architecture at l'Université de Montréal, who acts as a consultant, evaluator and critic on accessibility issues; and Andrew Aitkens, who continues to research products for the elderly and the disabled as a consultant for Health and Welfare Canada.

It is hoped that this manual will encourage the publication of other materials which promote greater self-reliance for disabled consumers.

The interested reader is also referred to Consumer and Corporate Affairs Canada's Consumer Sourcebook for the Disabled (1982), a bibliography intended to meet the needs of disabled consumers who wish to be able to locate up-to-date, comprehensive and reliable reading material on food, clothing, shelter, aids to mobility and services that facilitate work and leisure.

A handwritten signature in black ink, reading "Fenton Hay". The signature is written in a cursive style with a large, sweeping initial "F" and a long, trailing flourish at the end.

Dr. Fenton Hay
Director General
Policy Research,
Analysis and Liaison
Directorate

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INTRODUCTION

This manual has been prepared to provide the wheelchair user with information about improving accessibility within the home. Since few people can afford the luxury of building their own accessible home, disabled homeowners need to find ways of adapting an existing home to suit their particular needs.

In this manual, you will find many suggestions about increasing accessibility in your home. The text is divided into four chapters.

The first chapter gives tips on the spatial needs of the wheelchair user, networking, setting priorities, hiring workers and so forth.

The second chapter explores sources of financial assistance which may be available to you to cover the cost of your renovations. Information on tax exemptions and tariffs on imported goods is included.

The third chapter gives tips on adaptations you might make to improve accessibility at home.

The final chapter lists items useful in improving home access, indicating where they are manufactured and distributed.

Chapter I

PLANNING THE WORK

An accessible home environment can greatly enhance the quality of life for anyone with mobility problems. The advantage of being able to move around freely and to function as independently as possible cannot be overstated.

In this manual, the term "accessibility" refers to physical access inside and just outside your home. What follows are some suggestions which could be helpful in planning renovations to your house to improve accessibility.

ASSESSING YOUR ACCESS NEEDS

Assessing your personal access needs should be the first step in planning the renovations. Obviously these needs will depend on a variety of factors:

- your own physical abilities;
- the layout of your home;
- the extent to which you want to engage in specific activities in the home (i.e., cooking, cleaning, etc.).

Access Problems

As a wheelchair user, chances are that most of the access problems in your home will fall under five main headings:

- tight spaces, due to the amount of manoeuvring space your wheelchair requires;
- changes in level such as stairs, steps, thresholds and steep gradients;
- difficulty reaching things from a sitting position;
- physical obstacles to circulation such as thick carpets, slippery walkways and poorly placed furniture; and
- difficulty manipulating objects due to a lack of strength, flexibility or coordination.

For starters, it's a good idea to make a list of all the access problems in your home. You probably won't want or be able to tackle them all at once, but it makes sense to look at the total picture before developing a work plan. The checklist below is just a guide to help you get started.



You may need to add to it in order to cover everything that gives you trouble.

COMMON ACCESS PROBLEMS

- Steps and stairs
- Steep gradients
- Unsheltered entranceway
- Door swing
- Thresholds
- Narrow doorways
- Layout of house
- Narrow hallways
- Size of rooms
- Bathroom fixtures
- Kitchen fixtures
- Storage
- Other (specify)

Dimensions

It's a good idea to find out just how much space you need to get around. Most material written about creating access for wheelchair users is based on the size of an "average" wheelchair, which measures approximately:

660 mm wide (26 ins.)
1 070 mm long (42 ins.)
500 mm from floor to seat (20 ins.).

If you happen to have a larger or smaller chair, the recommendations we give about how much space you will require may not suit your needs at all. It's worth checking out your own situation by measuring:

- the width and length of your chair;
- how much space you need to do a turning circle and a three-point turn;
- how much height and depth you need to roll your knees under a table or counter; and
- how far you can reach forwards and upwards from a head-on and sideways position.¹

If it is comfortable for you to remove your footrests, you can reduce the overall length of the wheelchair considerably, thereby decreasing the amount of manoeuvring space you need.

The width of some wheelchairs can be altered by using a crank attachment. This might be practical for occasional access

1. In order to measure your effective reach, grasp a pencil in your fist and then reach. Take the measurement from the pencil, rather than from your knuckles.

problems -- entering a seldom used room, for example -- but would be too inconvenient for more frequent use.

Whether you are right- or left-handed may make a difference in how you lay out new fixtures or other installations. Keeping this in mind at the outset will help get things right the first time.

Other Considerations

You may also need to take into account the other users in your home. Will the modifications you are planning create inconvenience for other family members? Compromise may be necessary to accommodate everyone's needs.

In addition, you may need to consider the stability of your physical condition. If you have a progressive illness, you may want to plan for future as well as present needs.

Finally, it is important to remember that your renovations may have an impact on the resale value of your home. In general, the more accessible the home, the more convenient it is for all users, disabled or not. Still, a great deal depends on what is done and how. Minor modifications can usually be integrated into an existing home in an unobtrusive and visually pleasing way, which could well enhance the value of the house. On the other hand, there's no getting away from the fact that major installations of ramps, hoists, elevators and so forth will dramatically alter your home and could make it difficult to sell. One possibility might be to advertise the home as "wheelchair accessible." With so few houses on the market suitable for wheelchair users, you might find that these added features are a selling point rather than a liability.

Whatever you decide, the important question is how much access you require. It's up to you.

CONSULTATION

As a consumer, it makes sense to be as informed as possible about the work you are about to undertake. The more you know about accessibility, the better you will be able to make intelligent choices about the products and services you purchase.

It's important to remember that not everyone has the experience or knowledge to be able to come up with good solutions to create access. In fact, one of the most common problems associated with designing to improve access is the tendency on the part of the professional to go overboard.

Remember that you are the only one in a position to determine what you need and (just as important) what you are willing to do without. The average architect, designer or contractor is not likely to be too well informed about some of the shortcuts to good access, so a certain amount of responsibility rests with you to guide and direct the work done.

Your knowledge of accessibility can pay off financially, too. Often, designers add a "research charge" on top of their regular fees when asked to develop plans for accessible renovations. Similarly, contractors may add as much as 20 per cent to their estimates in order to cover possible mistakes they might make, owing to their lack of familiarity with this type of work. The more you know about solutions to access problems, the better.

Networking

Developing a network of information sources is a good way of ensuring that the choices you make will be good ones. Here are some suggestions about how to develop your own network:

Consult Other Disabled People. Meeting and exchanging information with other disabled people can be very helpful in finding innovative solutions to a variety of problems associated with being disabled. This is a good idea, especially if you have only recently become disabled. Many wheelchair users may have had similar work done on their homes and may be able to offer suggestions or even help you choose an architect, designer or contractor. Experience is a great teacher.

There are a variety of ways of meeting other disabled people. Here are some suggestions:

Join a consumers group. Over the past decade, the consumer movement has grown quickly, establishing a variety of groups of disabled people working towards improving the possibilities for independent living and self-determination. For more information about local consumer groups, contact:

COALITION OF PROVINCIAL ORGANIZATIONS OF THE HANDICAPPED
(COPOH)
926-294 Portage Avenue
Winnipeg, MB
R3C 0B9

Contact a service agency. There are many service agencies actively engaged in providing information and other types of services to disabled people. What follows is a partial listing of some major organizations which have national

offices. Those agencies which are strictly provincial have not been included here. You can write to any of these national offices to locate a regional branch near you.

THE ARTHRITIS SOCIETY
420-920 Yonge Street
Toronto, ON
M4W 3J7

CANADIAN PARAPLEGIC ASSOCIATION
520 Sutherland Drive
Toronto, ON
M4G 3V9

CANADIAN REHABILITATION COUNCIL FOR THE DISABLED
One Yonge Street
Toronto, ON
M5E 1E5

MULTIPLE SCLEROSIS SOCIETY OF CANADA
130 Bloor Street West, Suite 700
Toronto, ON
M5S 1N5

MUSCULAR DYSTROPHY ASSOCIATION OF CANADA
1014-74 Victoria Street
Toronto, ON
M5C 2A5

Consult your occupational therapist. Occupational therapists are trained to offer practical suggestions related to your abilities to function in the home. Use them as a valuable source of information.

Accessibility Specialists. Some service agencies have experts on staff to assist disabled people and their families in resolving access problems in the home. Since this is a free service to members, it can save money in the planning stage. To locate accessibility specialists in your area, contact local consumer groups and service agencies (see above).

RRAP Inspectors. If you qualify for financial assistance under the federal Residential Rehabilitation Assistance Program (see Chapter II, page 14), an inspector may be able to help you in planning your renovations and should also be available to check work in progress and on completion.

Resource Books. The following publications from the United States, Great Britain and Canada might be helpful in your research on home accessibility modifications:

Design for Independent Living. Raymond Lifchez and Barbara Winslow. Berkeley, Calif., University of California Press, 1979;

Housing Adaptations for Disabled People. Terence Lockhart. London, England: Disabled Living Foundation, 1981;

Home in a Wheelchair. Joseph Chasin and Jules Saltman. Washington, D.C.: Paralyzed Veterans of America, 1978;

Housing Disabled Persons. Canada Mortgage and Housing Corporation, NHA 5467, Ottawa, Canada, 1982;

How to Create Interiors for the Disabled. Jane Randolph Cary. New York: Pantheon, 1978;

Ideas for Making Your Home Accessible. Betty Garee, ed. Bloomington, Ill.: Cheever Publishing, 1979;

The Source Book for the Disabled. Gloria Hale. New York: Bantam Books, 1981; and

The Wheelchair in the Kitchen. Joseph Chasin and Jules Saltman. Washington, D.C.: Paralyzed Veterans of America, 1978.

Finding the Right Product

Sometimes you may require a specialized product in order to solve a particular access problem. You should be aware that, in many cases, products which have been specially designed for use by disabled people tend to carry a hefty price tag. There are two reasons for this: first, there is a fairly limited market for these products, and second, they are often classified as "medical" aids, destined for institutional use. Wherever possible, it is recommended that you substitute a product more generally available in hardware and building supply stores for the "special" product.

It's always a good idea to try out a product first before making a purchase. Some retail outlets have their products on display for this purpose. Using your network of contacts is another way to find out about useful products.

Many people find it difficult to locate special aids. Chapter IV of this manual contains a product inventory which lists those items related to home accessibility, indicating where they are manufactured and distributed. As a further resource, here is a listing of some other product catalogues. You should be able to find them at your public library or through a service agency's information office.

They deal mostly with American products, so if you decide to import goods, you might want to refer to Revenue Canada's Importing Goods for the Disabled (1982) and to the subsections under Exemptions (page 19) in Chapter II of this manual.

Manufacturers themselves also put out catalogues and brochures on their products, often giving detailed descriptions and sometimes photographs. Ask your medical supply dealer if you can have a look through these catalogues -- they might give you some ideas for shortcuts.

Accent on Living Buyer's Guide. Bloomington, Ill.: Cheever Publishing, 1982. This catalogue is put out by a publishing company specializing in information services for disabled people; they also issue a magazine, Accent on Living, containing articles and advertisements for useful products.

Aids: Decision and Provision. Toronto, Canada: Community Occupational Therapists Association, 1982. The Association published this catalogue mainly for its own members; it deals primarily with products available in the Toronto area. At \$40.00, it is best used as a reference to what products are made by manufacturers.

The Green Pages Rehabilitation Source Book. Winter Park, Fla.: Source Book Publications, 1982. This thorough directory of American manufacturers is cross-indexed by product.

Product Inventory of Hardware, Equipment & Appliances. Minneapolis, Minn.: National Handicapped Housing Institute, 1981. A thorough description and evaluation of products is given with respect to use by disabled persons.

Building Permits

Depending on where you live and the extent of your planned renovations, you may require a building permit before proceeding with the work. Therefore, you should contact the Building Department in your municipality with regard to your intended modifications. Many minor adaptations can be quickly approved after a short form is filled out, but major renovations involving structural changes will require detailed sketches or plans to determine whether or not the proposed work conforms to the building code and zoning by-laws. If it turns out that your plans contravene any regulations, you have the option of applying to the Committee of Adjustment for a variance, so you can proceed with the work. Obviously, this can hold up the start of your project and should be considered in planning.

DEVELOPING THE WORK PLAN

There are a number of variables which need to be juggled when developing the work plan. Remember, many of the decisions you make at this stage will be final ones.

Priorities

The first step is to reexamine the access problems in your house in terms of those which must be solved right away versus those which may not need immediate attention. In setting your priorities, you might also need to consider the criteria of certain financial assistance programs which may only apply to certain types of modifications.

Financial Considerations

Unless money is no object, the single factor most likely to influence your work plan is how much you can and want to spend on the job. Compromise solutions may have to be found to keep costs reasonable. It's probably a good idea to do the most needed changes first (which are also likely to be the most expensive) in order to get them out of the way.

Potential sources of financial assistance for home modifications to create access are discussed in Chapter II of this manual.

Timing

There are several factors to be considered with respect to the timing of your renovations, as well. Depending on the type of work being done, the season can make a difference. Rates for construction work are generally lower in the winter, but even opening windows to get rid of the dust may be completely impractical in freezing weather.

Also, as mentioned earlier, several things may delay the progress of the work:

- waiting for the building permit;
- waiting for approval from a financial assistance program;
- the availability of workers; and
- the availability of specialized equipment.

Anticipating delays by allowing for them in your work plan will give you a more accurate picture and should help you to avoid some frustration.

Designing the Renovations

Whether or not you will need the help of a professional designer depends largely on the type of renovations needed. Certainly any which involve structural work (additions, elevator installations, etc.) should not be attempted without professional input. Also, major plumbing and electrical work must be handled professionally, by law, in some provinces. However, many minor alterations can be competently handled by you and a home handyperson.

In developing your plans, you might find it helpful to sketch "before" and "after" diagrams of the areas in your home to be modified, using graph paper to help keep your drawings true to scale.

How to Hire a Contractor or Handyperson

1. Use your network to narrow down a list of potential contractors or handypersons.
2. Have a detailed work plan prepared so that estimates can be obtained.
3. Get several estimates. It's surprising how widely prices may vary. Be suspicious of very low estimates.
4. Ask if the contractor or handyperson has had experience in the type of renovations you require.
5. Ask to meet with former "satisfied" customers and see for yourself what was done.
6. For your own protection, let the contractor or handyperson know that you understand the kind of work involved in your modifications.
7. Make sure that the wording of the contract between you and the contractor or handyperson is clear and unambiguous.
8. Keep back at least part of the total payment until the job is done to your satisfaction.

GETTING THROUGH THE PROJECT

One of the most unpleasant side effects of having renovations done is the inconvenience. Dust, noise and, depending on the weather, cold are standard problems. Be prepared for an even greater level of inaccessibility, too. Tools, paint cans, protective cloths and so forth can block your every

move in a wheelchair. If your renovations are extensive, you might have to consider moving out altogether until your home is habitable again.

Be prepared for a lot of decision making as the work progresses. What colour? What material? How high? How much? You'll have to make innumerable choices as you go along.

Your relationship with the worker could be a deciding factor in the quality of the work done. Make sure he or she has a clear understanding of your expectations. Keep your eye on the costs and don't let yourself be bullied.

Finally, remember that it won't last forever; keep your cool.

Chapter II

WHERE DOES THE MONEY COME FROM?

Improving home accessibility can carry a heavy price tag, and unless money is no object, you will want to take advantage of every source of financial assistance available to you. With a little research and careful planning, you will find aid programs and special exemptions that could substantially reduce your portion of the costs.

Before you actually spend that first dollar, you should be aware of all aspects of your aid program. Ask yourself these questions:

- What is the application procedure?
- What are the eligibility criteria?
- How much money is available for my project?
- At what point in the project do I actually receive the money?
- Is there a preferred (lower) rate of interest? A forgivable portion?
- How soon do I have to pay back the loan?
- Can I receive assistance from another plan at the same time?

Most programs require that your work plans be submitted and approved before the work is undertaken. Written confirmation of this approval is essential to prevent misunderstandings or disagreements which could jeopardize your project. Also your contract with the worker should be thorough and explicit, for the protection of all parties. Never be satisfied with vague or ambiguous wording and avoid making assumptions.

Outlined below are the guidelines of federal and provincial assistance programs and other sources of funds, as well as details of customs, excise and income tax legislation designed to help disabled people in purchasing equipment for home modification. Because of the changing nature of these programs, what follows can give only a general idea of policies and procedures. It is up to you to approach the agency involved and get all the information required.

FEDERAL PROGRAMS

Canada Mortgage and Housing Corporation

At the federal level, housing in Canada is the responsibility of the Canada Mortgage and Housing Corporation (CMHC), which administers the National Housing Act. Under CMHC's Residential Rehabilitation Assistance Program (RRAP), the federal government provides loans to homeowners for renovations. The program was originally designed to improve sub-standard housing in certain designated areas, and was expanded in the summer of 1981 to include accessibility modifications, regardless of the location of the dwelling.

Briefly, here is how RRAP works. As the owner of a housing unit where a disabled person lives or intends to live, you apply for a RRAP loan from CMHC through the local RRAP delivery agent, usually your municipality. (CMHC will deliver this program directly for disabled persons not living in a designated RRAP area.) A professional opinion may be required as to the fact or degree of disability. An inspector is appointed to help you identify the work to be done and the best way of doing it. In addition to accessibility modifications, the inspector will check the property against CMHC guidelines to assess what repairs might be necessary to bring the dwelling up to standard in terms of structural soundness, plumbing, wiring and so on. Upon completion of the inspection, the municipal or RRAP inspector will prepare a report with you outlining the work for which you will be applying for a RRAP loan. Based on estimates from contractors, you will arrive at a figure for a loan application. At the time of writing, you may receive up to \$10 000 for alterations made specifically to accommodate a disabled person. Part of the loan may not have to be repaid: the maximum "forgivable portion" is \$5 000, depending on your family's adjusted income. If you need to make additional RRAP eligible repairs, the loan ceiling is \$13 000, with as much as \$6 500 forgivable. Under \$10 000, the loan takes the form of a promissory note; over \$10 000, a mortgage must be arranged. You can spread your payments over a maximum of 20 years, and at any time during the repayment period you may either increase your monthly payment or make a lump-sum payment without penalty.

With written confirmation of your loan approval and a written work contract, your project can begin as scheduled. It is your responsibility to see that the worker lives up to his or her obligations. Periodic advances will be issued to pay for major parts of the work which have been completed. The RRAP inspector will check the work in progress and on completion, at which time the balance of the loan will be

paid to you. Your repayment period normally begins at the start of the month after the work has been completed.

For more information on this program, contact your local CMHC office or RRAP delivery agent. Here are some free publications put out by CMHC about RRAP financing available from: Manager, Distribution Unit, ICOM, CMHC, Montreal Road, Ottawa, ON K1A 0P7.

Standards for the Rehabilitation of Residential Buildings -- RRAP NHA 5132

You've Applied for a RRAP Loan -- What Next? NHA 5265

Homeowners -- RRAP NHA 5405

Financial Assistance to Make Your Home Accessible to Disabled Persons NHA 5575

Health and Welfare Canada

Health and Welfare Canada has also undertaken to share in the cost of home and work station modifications necessary for individual clients through the Vocational Rehabilitation of Disabled Persons Act (VRDP), a cost-sharing agreement with the provinces (except Quebec). The program considers the home and employment environments to be factors in vocational rehabilitation. It is delivered through the provincial ministries of Health, Human Resources, or Community and Social Services. Details of VRDP are found under provincial programs.

Department of Indian Affairs and Northern Development

For disabled native people in Canada, the Department of Indian Affairs and Northern Development (DIAND) has in place a Major Renovations Program. This plan is not designed specifically for accessibility modifications, but grants have been made for such work. Up to \$6 000 is available per project, and these funds may be coupled with CMHC's RRAP. Most bands administer the program themselves; otherwise, applications should be made through DIAND's district or regional offices.

PROVINCIAL PROGRAMS

There are three sources of financial assistance at the provincial level of government. Some ministries of Housing or Housing Commissions administer programs; ministries of

Health, Human Resources, or Community and Social Services deliver the cost-shared Vocational Rehabilitation of Disabled Persons program mentioned above; and Workers' Compensation Boards provide funding in work-related cases.

Housing Agencies

The following provinces or territories do not provide financial assistance for private home accessibility modifications through housing ministries or commissions: British Columbia, Yukon and Northwest Territories, New Brunswick, Prince Edward Island and Newfoundland. The federal RRAP is administered in all the above.

Alberta Housing and Public Works offers a Home Adaptation Program for the disabled. A grant of up to \$1 000 may be awarded to homeowners, landlords or tenants for each housing unit which is modified to facilitate occupancy by a wheelchair user.

In Saskatchewan, a maximum \$2 000 grant is available under the Home Modification for the Physically Handicapped program. There is also a Residential Repair Program similar to the federal RRAP which provides up to 60 per cent forgiveness to a maximum of \$2 500. The loan ceiling is \$8 000, and there is a preferred interest rate. These two programs may be stacked with each other and with the federal RRAP. The Senior Citizens Home Repair Program grants up to \$650 every five years for homeowners over the age of 65. Income may limit eligibility in these plans.

Manitoba has recently revised the guidelines of its two programs. The Critical Home Repair Program is a grant/loan geared to adjusted income, with preferred interest rates on the loan portion. It cannot be stacked with RRAP funds. By contrast, the Core Area Initiatives Housing Repair Program is a "piggy-back" to RRAP, the benefit taking the form of an interest rate write-down on a RRAP loan, proportional to the homeowner's income. Similar assistance is also available to landlords.

Under the Ontario Home Renewal Program (OHRP), low- and modest-income earners are eligible for low-interest loans with a forgivable portion to upgrade their homes. If the dwelling is rated as substandard in structural soundness, plumbing, etc., these repairs as well as accessibility modifications are eligible for funds.

In order to complement the services of CMHC's RRAP, in Quebec the Societé d'habitation du Québec administers a provincial grant/loan residential renovation plan, Loginove, co-

vering several areas not serviced by RRAP. The maximum of \$15 500 can be augmented by a further \$4 000 in the case of accessibility modifications. The funds are awarded according to the cost of work done and family income, and the latter figure determines the grant portion of the amount. Landlords are eligible for funds based on the number of units and net rental.

Four programs have been devised to help the disabled persons of Nova Scotia to modify their homes. Access-A-Home Program (AAHP) offers a grant of up to \$1 350 depending on family income and the cost of work done. Preferred interest rates on loans up to \$10 000 (maximum ten-year term) are available under the Small Loans Assistance Program (SLAP). A one-time grant of up to \$2 000 can be obtained through the Provincial Housing Emergency Repair Program (PHERP), which is designed to upgrade dwellings with severe health and safety hazards. A forgivable loan of \$3 000 (five-year term) is provided under the Senior Citizens Assistance Program (SCAP) but only if no other assistance has been received; the other plans may be stacked.

Most of the provincial housing ministry plans have eligibility criteria in the areas of income (gross family income adjusted by deducting amounts for dependents), length of provincial residency, home ownership or lease agreement and sometimes age. The amount of assistance varies according to the cost of work done, loan/grant rates, preferred interest rates and the terms of the loan. Regional or head offices can provide information brochures, application forms and current rates, and an officer is usually available to answer questions or help you fill out the forms.

Health Agencies

Health and Welfare Canada's Vocational Rehabilitation for Disabled Persons program is delivered at the provincial level by ministries of Health, Human Resources, or Community and Social Services under a cost-sharing agreement with the federal government. As implied by its title, the program focuses on vocational rehabilitation and authorizes the federal government to share in the cost of home and work station modifications required by clients on an individual basis. To be eligible, you must be a client of Vocational Rehabilitation Services, and funding may be made available if home or work station adaptation is necessary for you to prepare for, resume or take up employment, either outside the home or as a homemaker or homebound employee. Major structural alterations and additions are not considered under the program, but ramps, lifts, door-widening and bathroom alterations are typically approved.

Workers' Compensation Boards

If you are a compensable client of your provincial Workers' Compensation Board (WCB), that is, recovering from a work-related accident or condition, you are eligible for funding for home modification as part of your rehabilitation program. Because WCB is a provincial organization, policies vary slightly across the country, but indications are that the guidelines are informal enough to allow for decisions to be made on an individual case basis.

Province of Quebec

The Government of Quebec is not a signatory to the agreement under VRDP. Instead, the cost of assistance and of certain services to the disabled is shared with the federal government under the provisions of the Canada Assistance Plan. L'Office des personnes handicapées du Québec (OPHQ) coordinates government rehabilitation services for the disabled. When you approach OPHQ, a "plan de services" is drawn up in consultation with counsellors to encompass aspects of rehabilitation, medical requirements, academic and/or vocational training, social integration (including housing), job placement, etc. If accessibility modifications are part of this plan, funds will be allocated accordingly.

OTHER FUNDING SOURCES

Here are some examples of sources of discretionary funding, that is, assistance available on a one-time, individual case basis. This is by no means an exhaustive list, but will serve as an indication of the direction your search can take.

Municipal Government

Your city, town or regional council may have a budget allocated to emergencies or special needs in the area of housing or social services. The mechanism of the funding procedure will likely vary with each government.

Service Clubs, Associations

Local and national fund-raising drives often result in monies being made available on a one-time basis to those with needs defined as special by the organization. For information about these groups, such as the Multiple Sclerosis Society or March of Dimes, contact them directly or through your rehabilitation centre or the Canadian Paraplegic Association.

Lotteries

Amounts of money have been awarded by B.C. Lotteries for use in home modification projects, under the administration of a rehabilitation facility. This may indicate a willingness on the part of other lottery groups to consider such requests.

Insurance

If you are injured in an automobile accident, or carry long-term disability insurance, insurance companies and provincial insurance corporations may provide money for home adaptation. This is usually specified in the settlement.

Public Housing

Many disabled people qualify for admission to social housing projects, usually on a rent-geared-to-income basis. Sometimes the units are accessible; when they require modifications the housing supplier may agree to underwrite the costs. For example, the Ontario Housing Corporation has adapted many of its units for disabled occupants.

EXEMPTIONS

Certain goods purchased by or for disabled people qualify for exemptions from taxes of four kinds: customs duty, federal sales tax (excise tax), provincial sales tax and income tax. It is the nature of the goods, not the purchaser, which determines the exemption.

Customs Duty

If you are planning to import goods for your home modification project, you would be wise to find out if duty will be charged. Here are the steps involved:

1. Contact a Dominion Customs Appraiser (DCA). Canada Customs has regional offices across the country which deal with inquiries concerning duty on imported goods. There is usually one appraiser in the office who deals with goods commonly imported by disabled people. If the DCA is familiar with the nature of the goods in question, he or she may be able to give you a ruling over the telephone, confirmed with a follow-up letter. Otherwise, you will be asked to submit the literature describing the article so that an informed decision can be made. The DCA rules on an article by consulting a book of tariffs covering everything one might want to import. In terms of specific products used for home modification, items likely to be ruled free of duty are: ramps; some lifts and stair-glides; hoists and patient lif-

ters; bath, toilet and shower seats; environmental control systems and TOSC (Touch Operated Switch Control) units, excluding the articles they control; accessories and attachments for the foregoing; all specially designed for use by the disabled.¹ However, if the goods are "of a class or kind made in Canada"² where similar Canadian items hold more than 10 per cent of the Canadian market, you will likely have to pay duty. Items falling into a gray area, such as accessible shower stall units, will require a special ruling. If duty has to be paid, it will usually run between 10 and 18 per cent, depending on the country supplying the goods. The procedure of obtaining a ruling takes four to six weeks.

2. Order the Goods. Keep track of all the paperwork, including your order request, money-order receipt and Customs' ruling.

3. When the Goods Arrive. When the goods arrive, you will be notified by Customs at the port of entry. Take along your official ruling and receipts, together with the manifest or bill of sale if it has been sent to you under separate cover, and a Customs Entry form, which is available at the port and can be filled out there. If you cannot pick up the goods yourself, you can authorize an agent in writing (a friend, relative or customs brokerage firm) to look after the transaction.

4. If You Import Goods without First Obtaining a Ruling. In this case if you are charged duty which you feel shouldn't be paid, you can file for a refund. A Redemption of Tariff Classification form, the literature describing the goods, and the papers recording the clearance of Customs and the duty paid must all be submitted to the DCA. Because of the paperwork involved, this process can take up to four months, and should be avoided.

For more information on this matter, Canada Customs has recently published an information brochure entitled Importing Goods for the Disabled, which is available from all regional offices of Revenue Canada, Customs and Excise.

1. See Revenue Canada, Customs and Excise, Importing Goods for the Disabled (Ottawa, 1982), pp. 2, 3, 9 and 10.

2. Ibid., p. 2

Excise Tax

An identical procedure is followed to determine exemption from excise tax, a federal sales tax on imported goods, which is also charged at the port of entry. The only difference is that you apply to the Excise Tax office of Customs and Excise, Revenue Canada, for the ruling; the decision will be based on the Excise Tax Act rather than Customs' tariffs.

Although the categories of goods are similar, they are not identical, and you should check to be sure rather than make an assumption.

Provincial Sales Tax

Sales tax at the provincial level is determined by each government, but in the area of products for accessibility modification the guidelines are similar to those of the federal government. Usually the retailer will be aware of these exemptions; otherwise, check with the Retail Sales Tax division of the provincial Ministry of Revenue.

Income Tax

Under the Income Tax Act, medical devices and equipment may be deducted from your income under medical expenses. Included in this category are some items usable in a home adaptation project such as lifts, hoists, patient lifters, grab bars, stairglides and aids to mobility. You can call Income Tax Information to enquire about an article, but you will get an unofficial opinion. An official ruling is expensive (\$300) and a complicated affair. If you read through the Act and information bulletins yourself and ask Income Tax Information for an opinion, you should get a pretty clear idea of whether a particular article qualifies. Fill out your return accordingly and hope for the best.

Chapter III

COMMON ACCESS PROBLEMS AND SOLUTIONS

GETTING INTO THE HOUSE

Houses come in many shapes and sizes, and often present problems for people in wheelchairs. The first of these is getting into the house.

When you arrive home, which is the most convenient route to take in entering the house? From the street, the garden, a car or van in the driveway, carport or garage? Is one entrance easier for you to use than another -- the front door, side door, patio?

Let's consider the entry problem in relation to:

- the size and characteristics of the site
 - Do you have a large front yard?
 - Is it level?
 - Are there steps up to the main door?
- the location of parking
 - Do you have a carport or garage?
 - Is it adjacent to the house?
 - Is there an entrance to the house from the garage?
- the style of the house
 - Do you live in a bungalow, split-level or multistorey house?
- your own strengths and weaknesses
 - Do you have full use of your arms and hands?
 - Are you always accompanied by a helper?
 - Can you negotiate slopes independently?

The Access Route

The pathways between the street, parking and the entrance door should provide easy and direct movement. Walkways around the house should be hard surfaced, nonslip and as level as possible. Minor changes in level, gently sloped at a gradient no greater than 1:20, are relatively easy to negotiate. This means that for every unit of rise, you will require a slope 20 units long. Steeper gradients should be ramped with a maximum slope of 1:12, or possibly 1:8, but you should first make sure that you can climb the degree of rise (see Exterior Ramps, page 25).

Keeping walkways clear is important for the safety of all users. Is there someone who will take on the responsibility of snow and ice removal? Can you hire someone to do it? In general, it is more practical to spread salt on snow and ice rather than sand, which tends to stick stubbornly to wheelchair tires. Walkways should also be kept clear of berries, leaves, seedpods and other types of debris from trees and shrubs. Exterior lighting provides an added measure of security when coming and going after dark.

Parking

Having a parking space close to the entrance of your home is important for convenience, but depending on the type of vehicle you drive, and your existing parking facility, you may require additional space. The single-car garage is not likely to give the wheelchair user enough room to transfer to and from a car, although it may be suitable for rear-entrance vans. Parking in the driveway or under a carport may be a little roomier. In general, you will need at least 1 200 mm (4 ft.) on the door side of a car, so that the door can open fully for transferring. Side-opening vans may require more space for the ramp attachment or lift.

You should note that some models of vans may be too high to clear your existing garage door; the door height may have to be increased if you want to use your garage for parking.

If you do intend to park your vehicle in the garage, you should consider installing a remote-controlled electric door opener (P5)¹ for convenience.

If your home features a direct entranceway from the garage, you might want to modify it for wheelchair use (see page 30).

Exterior Changes in Level

Most houses have anywhere from one to eight steps leading to a landing of some sort in front of the entrance door(s). This is likely to be the first major obstacle in gaining entry to your home. What should you do? There are three basic options:

-
1. Items marked "P" indicate products which are included in our product inventory in Chapter IV. The number following "P" indicates the keyword heading which corresponds to the product (see page 75).

- construct a ramp;
- install a porch lift;
- develop an alternate entrance.

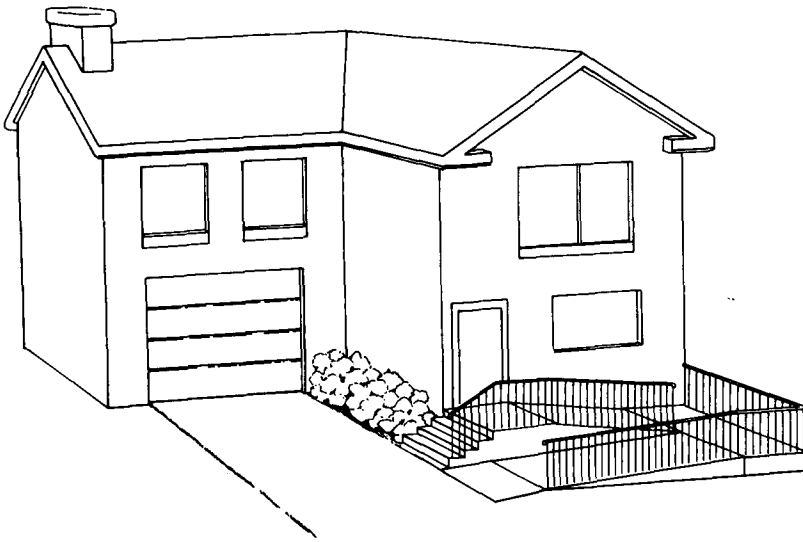
Exterior Ramps. There are several things to consider before deciding that a ramp is the best solution to your entry problem.

- Can you negotiate slopes independently?
- Do you have enough room to construct a ramp with a reasonable gradient, one you can handle?
- What about weather conditions? Can you keep the ramp free from snow and ice?
- Is there a way of designing the ramp so it enhances the appearance of the house? Do you want to feature it? Camouflage it?

If you decide to use a ramp at the entrance to your home, you will probably want to make sure that it is visually integrated with the house, its materials and the surrounding landscape. Its form should blend with the existing layout. Here are a number of different ramp configurations you might use depending on the required length and the location of the chosen point of entry.

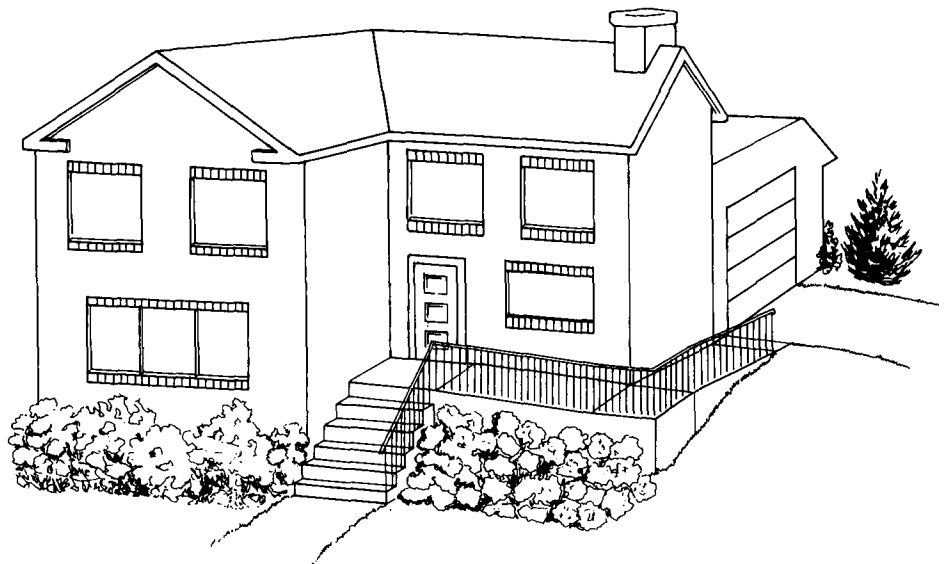


Straight-line ramp

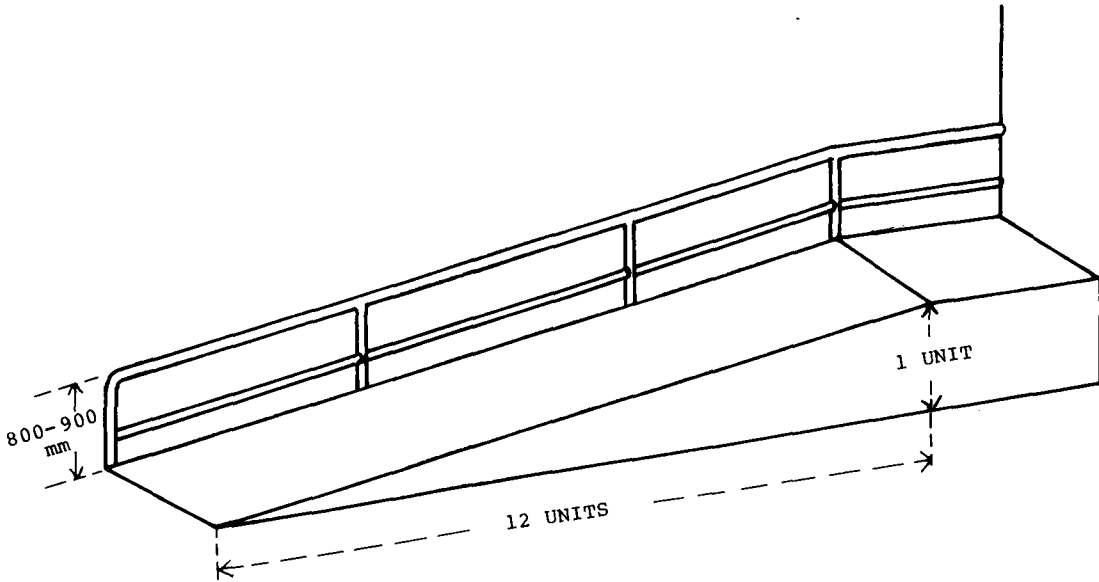


Switch-back ramp

L-shaped ramp



A simple ramp should be about 900 mm (3 ft.) wide. Remember that, for most ramps, you will need 12 units of length for every unit of rise (1:12), but for short distances you may be able to handle gradients of 1:10 or even 1:8, depending on your strength. Any one section of the ramp should not extend more than 10 m (about 30 ft.) between level landings. Similarly, level landings should always be provided wherever the ramp changes direction. Low rails or side curbs will prevent your wheelchair from rolling off the edge. On longer ramps, you might find you need handrails; these should be between 800 mm and 900 mm (32 and 36 ins.) high, depending on what is comfortable for you, and should be easy to grip.



Ramping dimensions



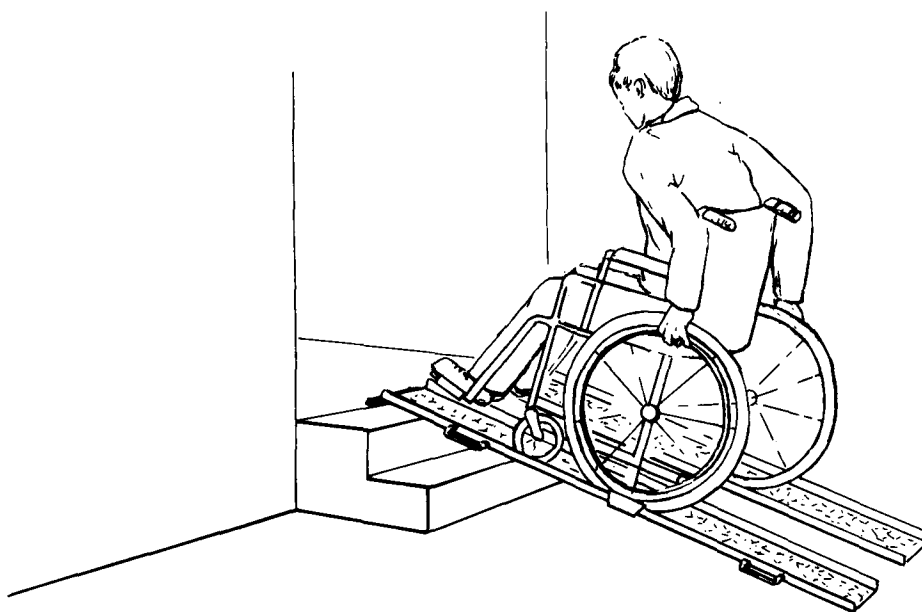
A handrail design option

Ramps can be constructed from a variety of materials: wood (plywood or slats), metal (aluminum or welded expanded steel) or concrete (prefabricated or poured). Whatever material is selected, it is important that the ramp remain stable under freezing and thawing weather conditions. Adequate foundations and structural reinforcing are essential to avoid problems.

For safety, the surface of the ramp must be nonslip. You can use deck paint with silica sand on wood, or indoor-outdoor carpeting, or if the ramp is of concrete, roughing the surface will help. As with walkways, snow and ice removal

from exterior ramps is extremely important. Is it possible or practical to shelter the ramp with a roof or canopy? Could you install electrical heating coils to keep the surface clear? Remember, either of these options will add to the cost of the ramp.

Under certain circumstances, a portable ramp (P9) might be a solution. These are normally of steel or aluminum construction and, if desired, can be permanently installed, folded out of the way or completely removed when not in use. Unfortunately, they tend to be less visually appealing than well-designed, constructed ramps, so this may be a drawback. Unless permanently installed, this option may only be practical if you have the strength and flexibility to position the ramp yourself, or if you always have someone to help you.

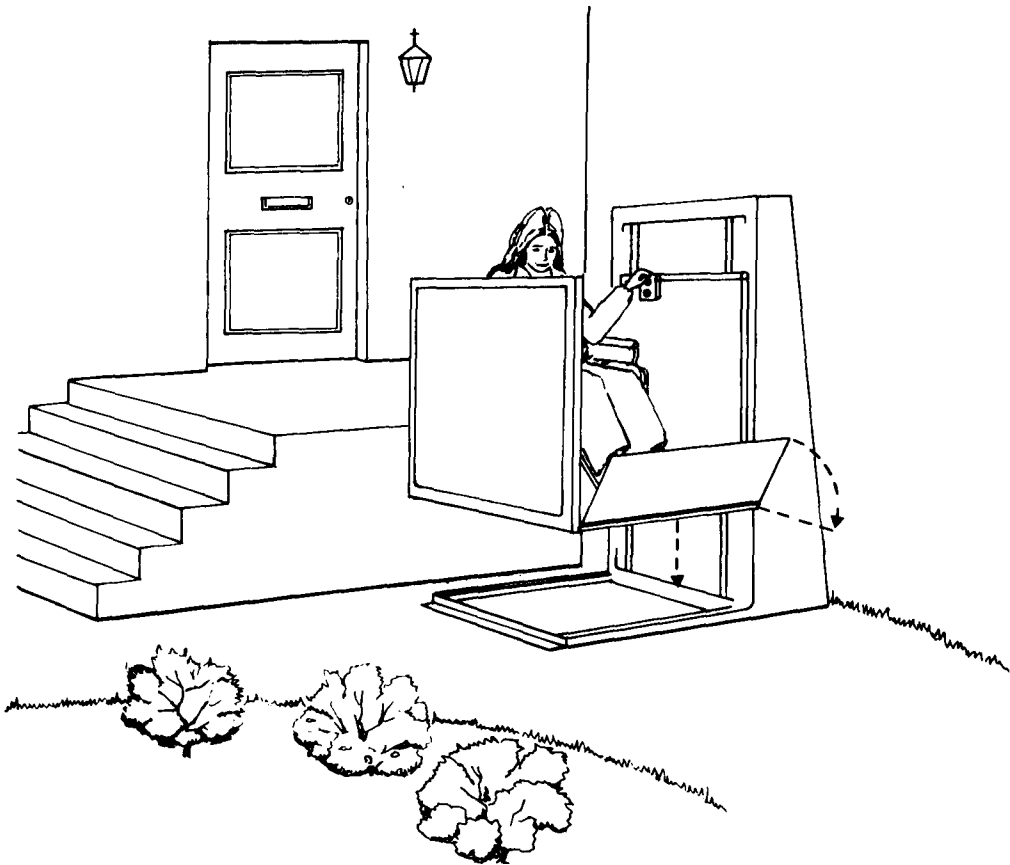


A two-channel portable ramp

Exterior Lifts. Installing an outdoor lift is another way of handling an abrupt exterior change in level. Depending on the model selected, and how much vertical rise is required, the purchase and installation of the lift could cost anywhere between \$4 000 and \$8 000.

Most often referred to as "Porch Lifts" (P7), these elevating devices are used to overcome a change in level between the ground and the porch or landing at the entranceway to the house. Although designed to be weatherproof, they should preferably be covered or fully enclosed, as they can be unreliable under freezing and snowy conditions.

The effective rise of a porch lift ranges up to 2.5 m (about 8 ft.). Most models can lift about 200 kg (440 lbs.), and allow for an attendant to operate the controls, if necessary. Typical features include a fold-up ramp and a railing or solid enclosure to prevent the wheelchair from rolling off the platform; nonskid surfaces; safety devices to prevent uncontrolled descent; keyed control switches; and a hand-operated lowering mechanism for use in the event of power failure.

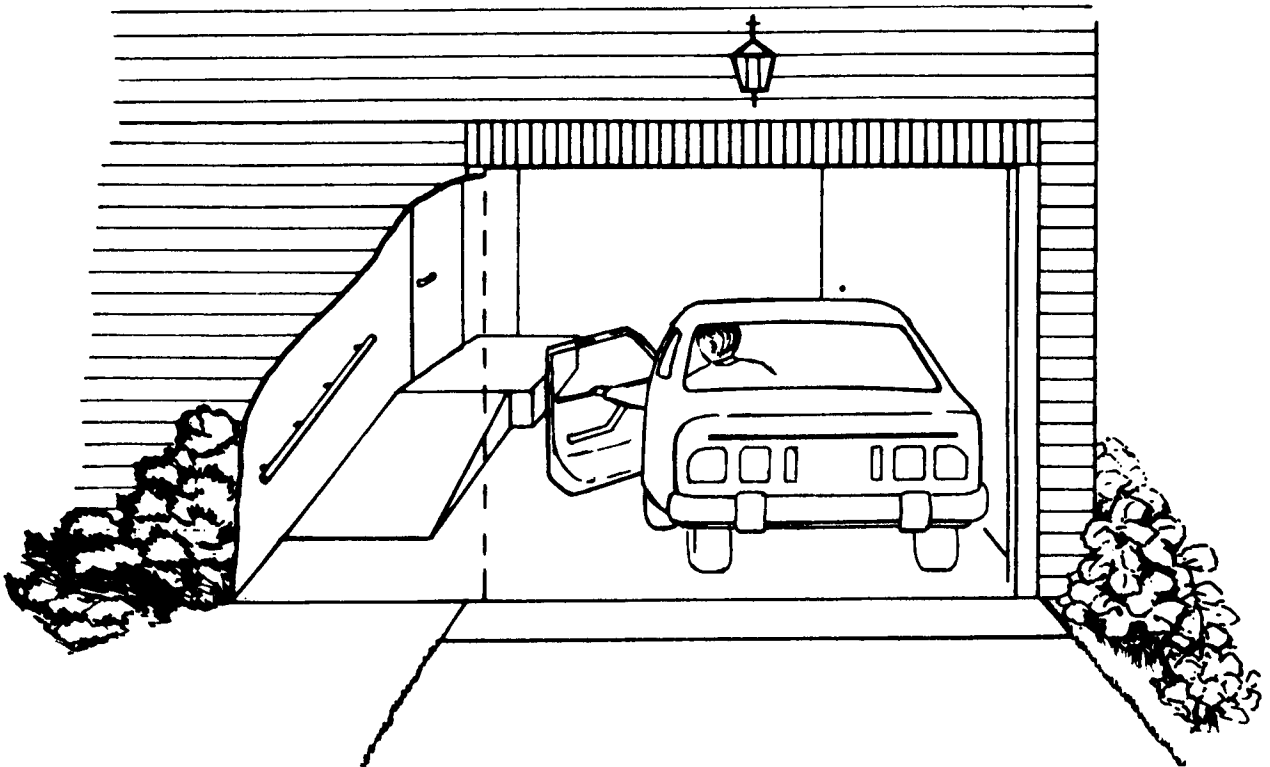


Porch lift

Developing an Alternate Entrance. Depending on the style of your home, it may be easier to find an alternative way to enter the house.

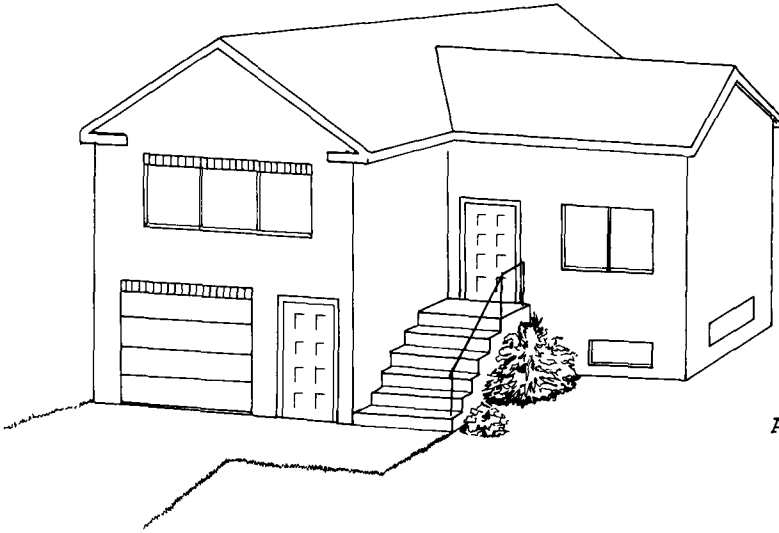
Many homes feature an entranceway to the house from the garage, and there may be several advantages in creating an accessible entrance here. If you use a car or van, being able to transfer in a sheltered area could simplify the process of coming and going. Also, the garage can provide a transition zone where you can wipe off your wheelchair before moving into a clean interior.

However, there is one major drawback to entering via the garage. For reasons of safety, building codes require that the entrance door to the house be on a higher level than that of the garage floor. There are several ways of overcoming this change in level. If space permits, you may be able to install a ramp or a porch lift (see pages 25 and 28) inside the garage. If you plan to use an interior lift, it might be possible to position it so you can reach the garage level as well.



Ramped entrance via garage

Another option is constructing a new entranceway to your home, one that permits direct access from outside to one of the floor levels. This is only likely to be possible in houses built into slopes or in some split-level homes.



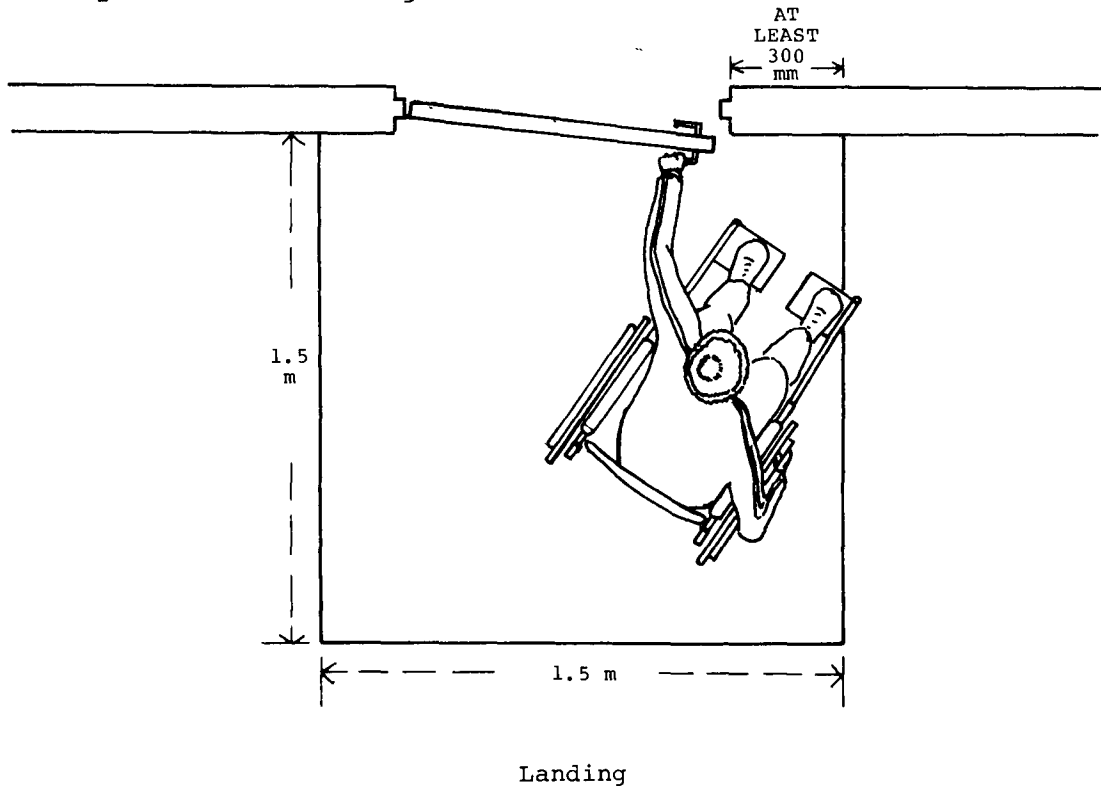
A new ground-level entrance



An exterior elevator shaft with its own entrance

Entrances

Having a level area about 1.5 m square (5 ft. square) on either side of the door makes it easier to approach, open and close the entrance door. Within this level area, it helps to have space on the doorknob side of the door, where you can position your wheelchair, so the door can swing towards you without being blocked.



Most entrance doors tend to be wider than interior doors and, when open, provide enough clear space for a wheelchair user to pass through. If this is not the case in your home, suggestions on increasing the clear opening in doorways are discussed on page 44.

The presence of storm doors creates a tactical problem for the wheelchair user, who has to manage two doors, one opening out and another opening in. If it is possible to do so, removing the storm door entirely may be the best solution. Still, if you feel you need the added weather protection, or ventilation, the storm door should require a force of only 36 N (8 lbs.) to open, and should close gently behind you. Equalizers and adjustable, low-pressure door closers (P5) are available which will accomplish this.

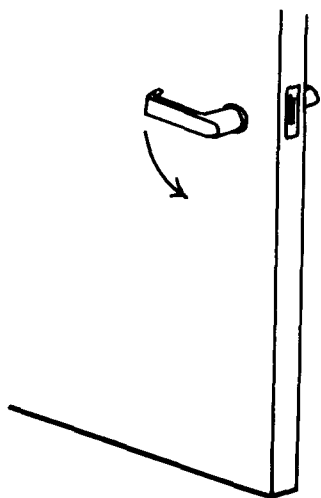
Sliding-glass patio doors are not usually recommended for your main entrance. They tend to be heavy to open, and the tracks can become jammed with snow and ice in winter.

There are a variety of adaptations you can make to an existing doorway to improve accessibility.

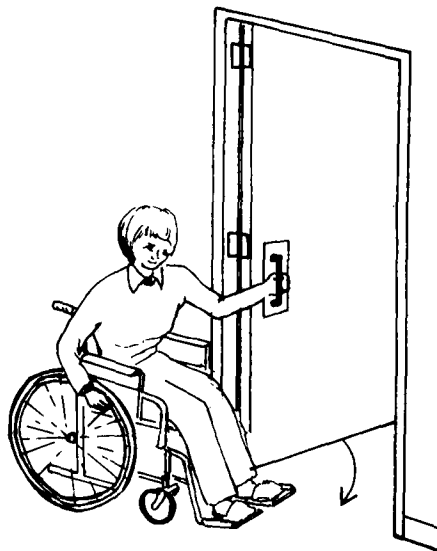
An automatic door opener/closer (P5) can be installed at the entranceway. This device is controlled by a switch near the door, or by remote control, and can be set with a time delay to let you get through the door before it closes. Remember though, this is an expensive option, and these devices are subject to mechanical or electrical failure.

Lever door handles (P5) are easier to operate than conventional round doorknobs, and are widely available in hardware and builders' supply outlets. They are simple to install and come in a wide range of styles. A rubber or metal door-knob adaptor (P1) can be used on a round doorknob to transform it into a lever handle.

Install a pull handle (P5) about 200 mm (8 ins.) from the hinged edge of the door, at doorknob height, to make it easier to close an outward-swinging door behind you; or attach a pull-cord to the knob.



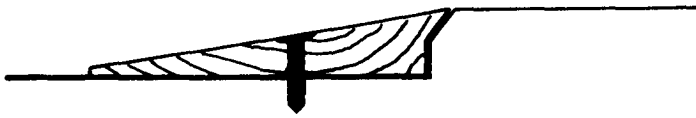
Lever door handle



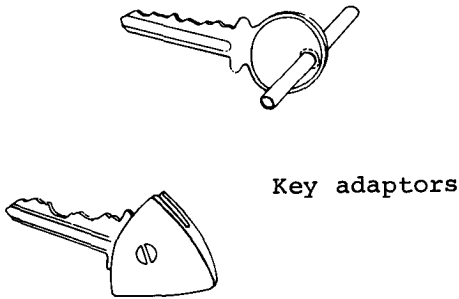
Pull handle to help close door

Placing metal or wooden bevelled strips on either side of thresholds which are too high will make it easier for you to get over the hump.

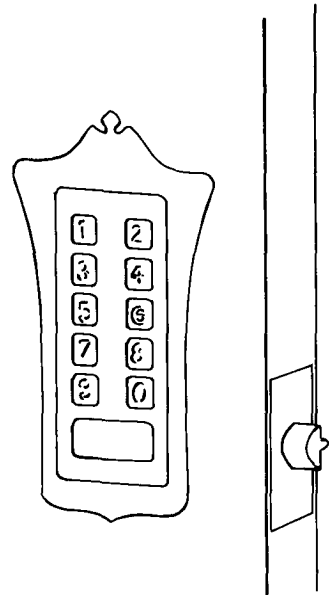
Key adaptors (P1) can be purchased or improvised to make it easier for you to handle a key. Spring-type locks, which force you to hold the key in position while opening the door, are very difficult to operate, so you might consider installing one that is easier to use -- perhaps even a push-button combination keyless lock (P5). These locks usually feature a self-retracting bolt, and require only the manipulation of the numbered buttons and a push to open the door.



Bevelled strip at threshold



Key adaptors



Combination pushbutton lock

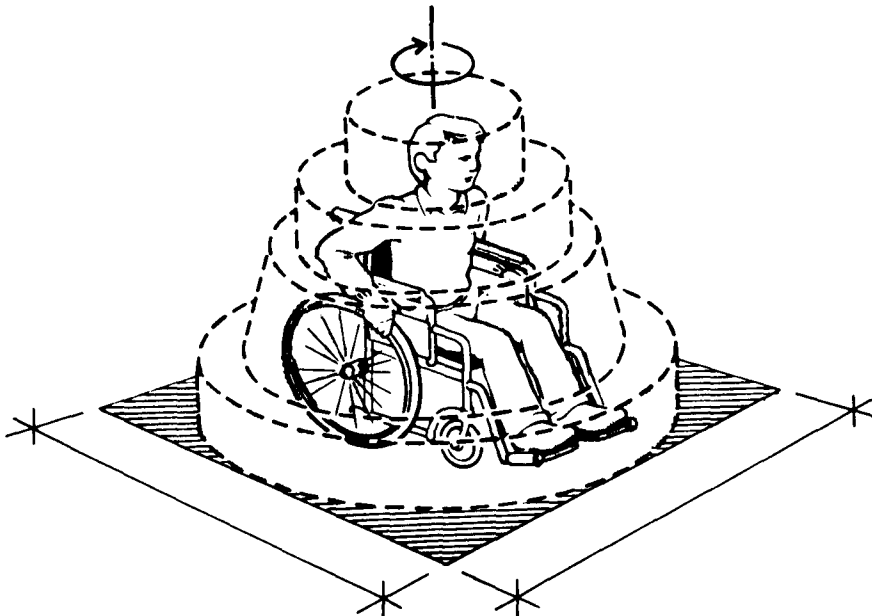
INSIDE THE HOUSE

Once you have entered the house, where are you? Is it a vestibule, the kitchen, the living room? Do you have to manoeuvre in a small area? Does another door cause a barrier?

Is there a place close to the entry where you can clean your wheelchair without dirtying good flooring materials? Unless you are able to clean your wheelchair before entering the house (i.e., on the porch or in the garage), the flooring material where you enter needs to be easy-care (see page 48). A whisk kept handy is useful in removing snow and sand. Waiting for wet wheels to drip-dry can take a long time; a hand-held hair dryer can speed up the process. Some people find it more convenient to have two chairs, one for indoor and the other for outdoor use.

Circulation

Being able to do a complete 360-degree turn in every room in your house is a definite advantage to circulation, but it may not be an absolute necessity. Most standards, which are based on the size of an average wheelchair, suggest that the minimum clear space needed to do a turning circle is 1.5 m square (5 ft. square). In housing specially designed for wheelchair users, this manoeuvring space is provided as a matter of course, but your home probably does not offer this much space in every room. This needn't concern you as long as you can move freely throughout the house and position your wheelchair where needed.



Turning circle

By permission of the Special Office for the Handicapped,
North Carolina Department of Insurance.

There are three main factors which will influence your circulation in the house:

- interior changes in level;
- lack of manoeuvring space for your wheelchair; and
- physical obstacles to movement.

Interior Changes in Level. Stairs are probably the most common obstacle to circulation for a wheelchair user. There are a number of potential solutions. Some people find it possible to hitch themselves up the stairs backwards, transferring to a second chair at the next level. If this is impractical or undesirable there are other possibilities.

How much of a problem changes in level will be depends greatly on the style of your home, whether you live in a ranch-style, bungalow, split-level or multistorey house.

Ranch-style homes are often the easiest to transform into accessible dwellings. Being built all on one level is an obvious advantage, and, since they tend to be constructed without basements, providing an entranceway at ground level is easy to accomplish.

Bungalows also offer all living accommodation on one level, with the exception of the basement. Depending on your responsibilities and activities in the home, access to the basement may or may not be important to you. What do you use your basement for? Laundry? Storage? Recreation? If you decide that you want to reach the basement, you should consider installing an interior elevating device (see pages 37-43).

Split-level homes, where level changes occur in a variety of locations, pose particular problems, since it is virtually impossible to create complete access with only one intervention.

In some cases, particularly when the level changes are minor (i.e., only a few steps), it may be possible to install interior ramps. In order to save space, ramps used inside the home usually need to be steeper than recommended. Before deciding to use a ramp, make sure you will be able to climb the degree of rise needed, which should not exceed 1:8. It may be impossible to locate the ramp so that it does not block doorways or other circulation. In this case a portable or collapsible ramp (P9) might be a solution, although this option is less visually appealing, and the nuisance of having to fold it out of the way should be considered.

It may be possible to install an interior lift or even a porch-type lift (P7); some models have been designed for indoor use, and take up far less space than a ramp. Still, these are expensive options, and not really practical where changes in level occur in several different locations throughout the house.

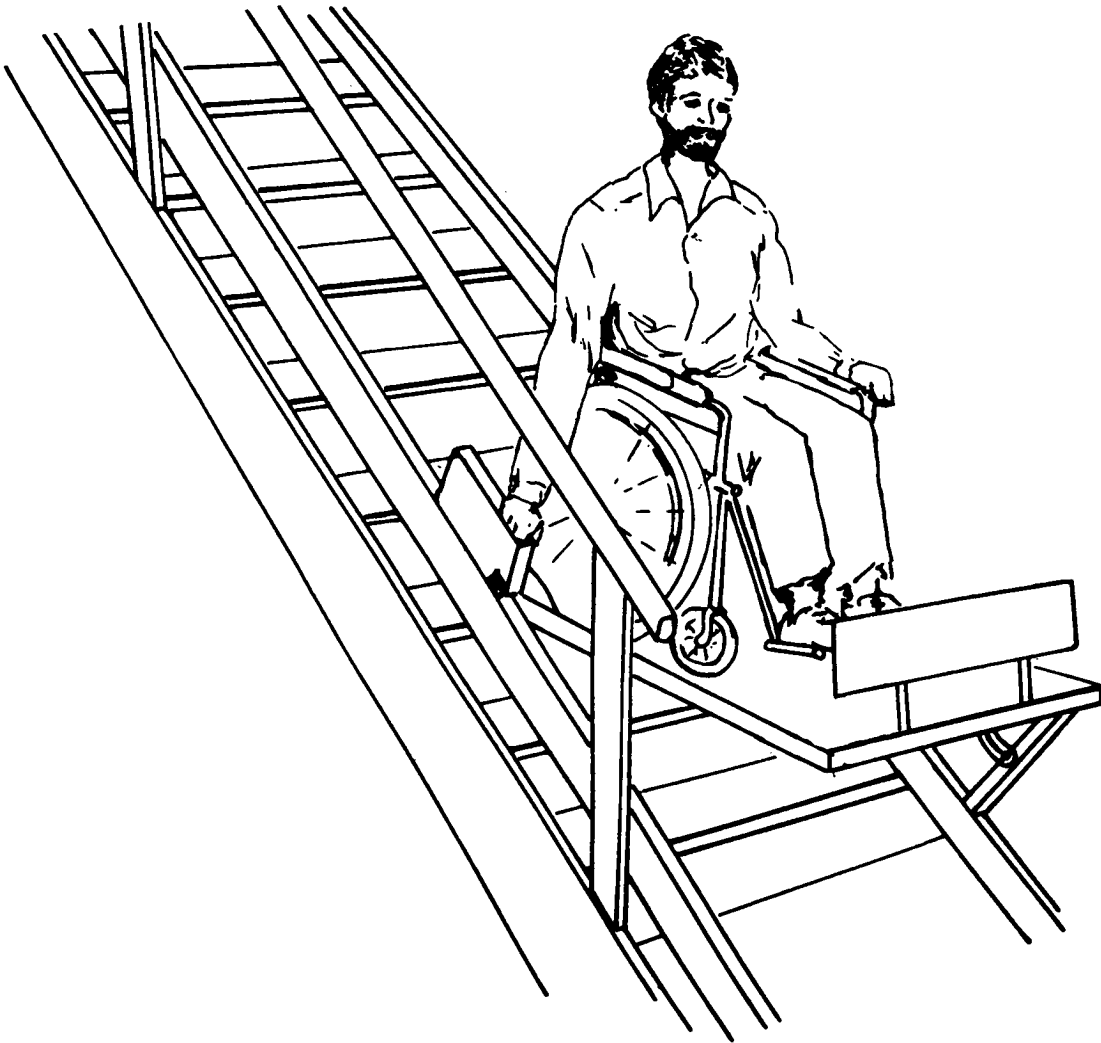
If you live in a multistorey home, in which the common activity areas are on the main floor and the bedrooms and bath on another level, you face a number of options.

Alter the use of existing rooms on the main level to create an accessible bedroom and bathroom. The most important consideration here is whether or not you will be content confining your activities to one level of the house. Also, since you will be changing the current use of the space, you need to consider whether or not this is an acceptable trade-off. For example, is there enough space to create an accessible bathroom, without cramping other rooms? How will these changes affect other members of the household?

Build an addition to your home to provide an accessible bedroom and bathroom on the main floor. Once again, this option implies that you will be confined to one floor of the house. Building an addition is a major undertaking. Is your lot size sufficient to allow for the needed expansion? Can you afford it? Note that none of the currently available financial assistance programs will provide funds for additions. If you do decide to build on to your home, you should consult additional guidelines, because this manual is primarily concerned with renovation.

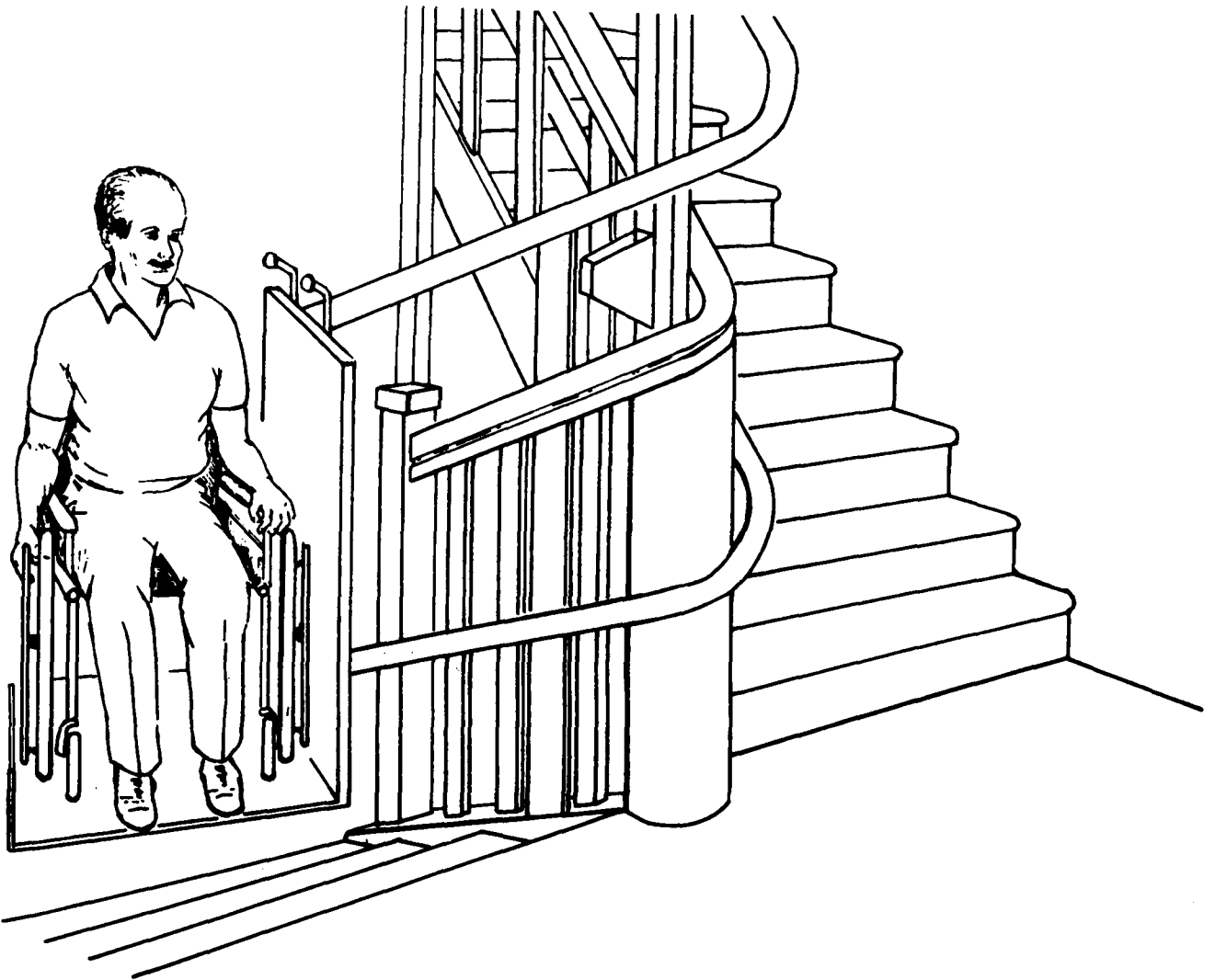
Install an interior elevating device. There are several different types of elevating devices currently available on the market.

Wheelchair stairlifts (P7) move at the same angle and in the same space as the staircase. These models do not interfere with the use of the stairs by other people, since they either remain flat on the floor, or can be lifted up against the wall out of the way. The platform on which the wheelchair rests is about 675 mm by 900 mm (27 by 36 ins.). Control buttons installed at the top and bottom of the trajectory allow the user to call the platform to the desired level.



Wheelchair stairlift for straight-line staircase

There are two models of the wheelchair stairlift. The less expensive of the two is installed on the stair wall, and is visually unobtrusive, but this type can only be used on straight-line stairways. The second, a more sophisticated type, can follow any curve or landing on the stairway, and can mount up to two floor levels, but it is at least three times as expensive as the simpler version. This system can be attached to the stair wall or to the railing, but, if it has to follow complicated configurations, the track can be visually distracting.



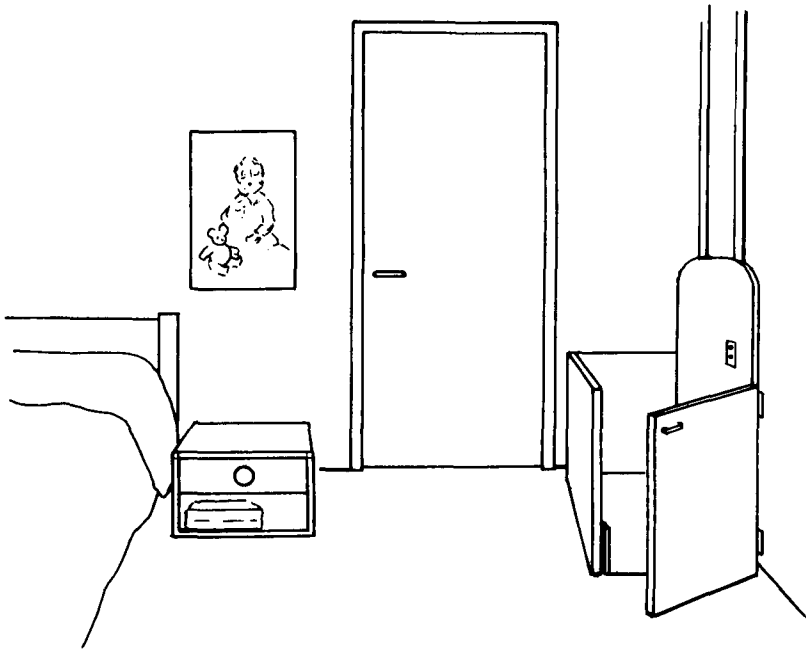
Wheelchair stairlift for curved staircase

There is another stairlift design option available, commonly called the "stairglide." Instead of providing a platform for the wheelchair, the stairglide comes with a seat for the user. This type of lift may be impractical for the wheelchair user because it necessitates transferring twice each time the lift is used, and having another wheelchair in position at the next level.



Stairglide

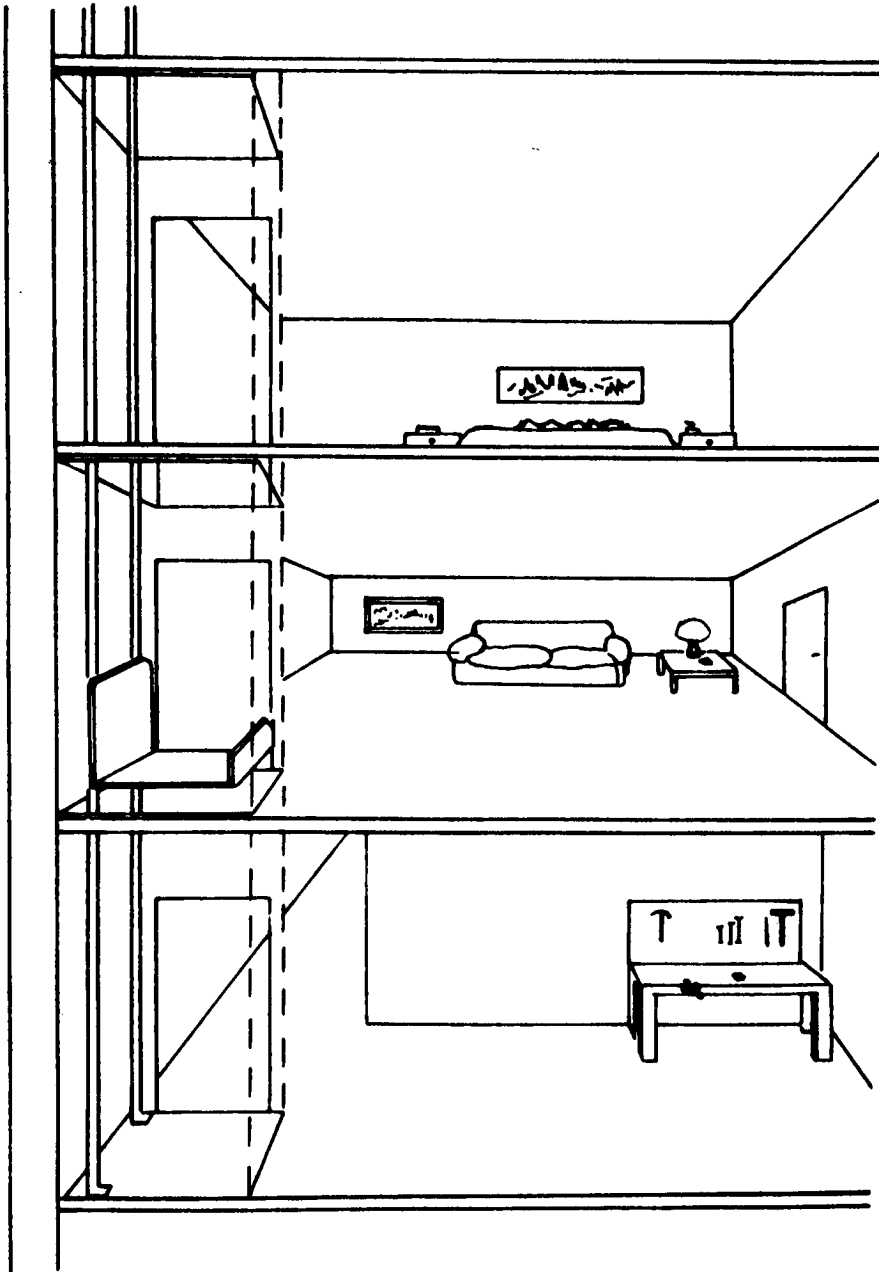
Vertical home lifts are about the same price as inclined lifts, but the installation costs for vertical lifts are considerably higher, since an elevator shaft has to be constructed either inside the house or as an exterior addition to it. Depending on your home, this cost can vary widely.



Vertical lift -- unenclosed model

The main problem in installing a vertical lift is finding the best place for the shaft. Under no circumstance should you take out the only existing stairway and replace it with a lift, because this would impede other users from having a simple means of access and egress. Safety codes require that a nonmechanical system (stairs or ramps) be provided to ensure a fire exit.

The dealer can be helpful as a consultant in choosing the best location for the lift. A closet might be a possibility, although it may have to be enlarged to house the elevator. Most cabins are about 900 mm by 1 200 mm (36 by 48 ins.), and a small space is usually needed at the side of the lift for the mechanical workings. What is on the upper and lower levels of the location selected? Is there enough room on each level to manoeuvre in and out of the cabin?



It helps to think three-dimensionally when selecting a location for the elevator shaft.

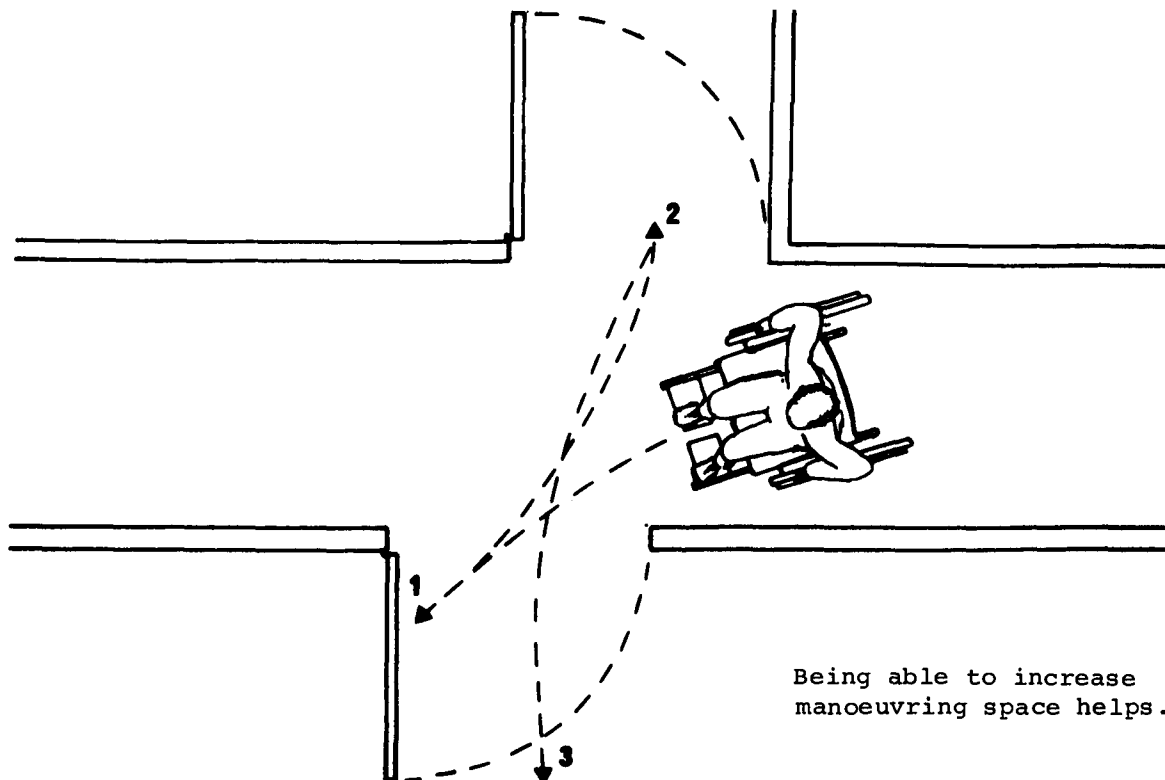
Ordinary swinging doors can be used to access the cabin, with a switch to hold them closed when the lift is moving or at another level. Call buttons are installed at each access point.

Although the lift is designed to stop even with the floor on all levels, you may need to recess the floor at the lowest level to ensure that the base of the cabin is flush with the floor. An alternative to recessing the floor might be to install a short ramp leading to the elevator cabin.

Lack of Manoeuvring Space. Hallways, because they tend to be narrow, can cause circulation problems, not so much in straight-line travel, but in making right-angle turns and getting through doorways.

If you encounter this problem there are several solutions, depending on the width of your hall and doorway. Try to find the easiest answer, because moving walls, no matter how small a distance, can be very expensive, especially if you also have to move plumbing and electrical installations.

If there is another door opposite the one you want to enter, having it open might give you enough room to make a three-point turn. Maybe there's a closet on the opposite wall which you could remove without too much disruption. Widening the doorway you wish to enter is another possible solution (see page 44).

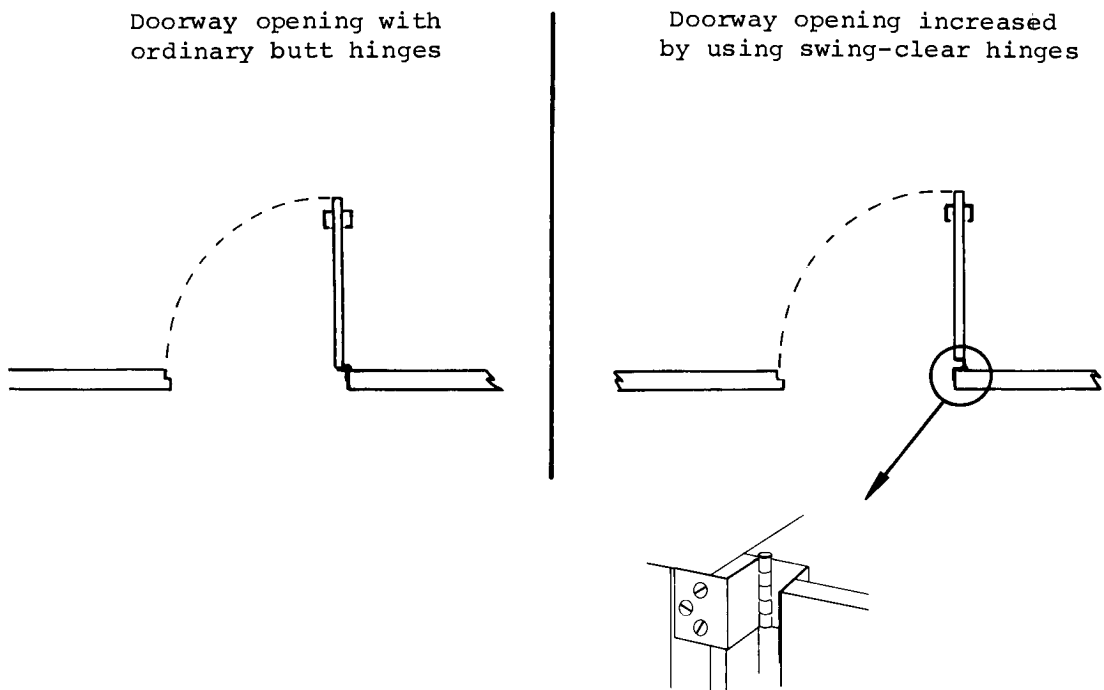


Although enlarging the hallways is a major undertaking, if your wheelchair is long, you may find you have no alternative in order to provide enough space to manoeuvre while turning corners. In this case you would probably require a clear area of about 1 200 mm square (4 ft. square).

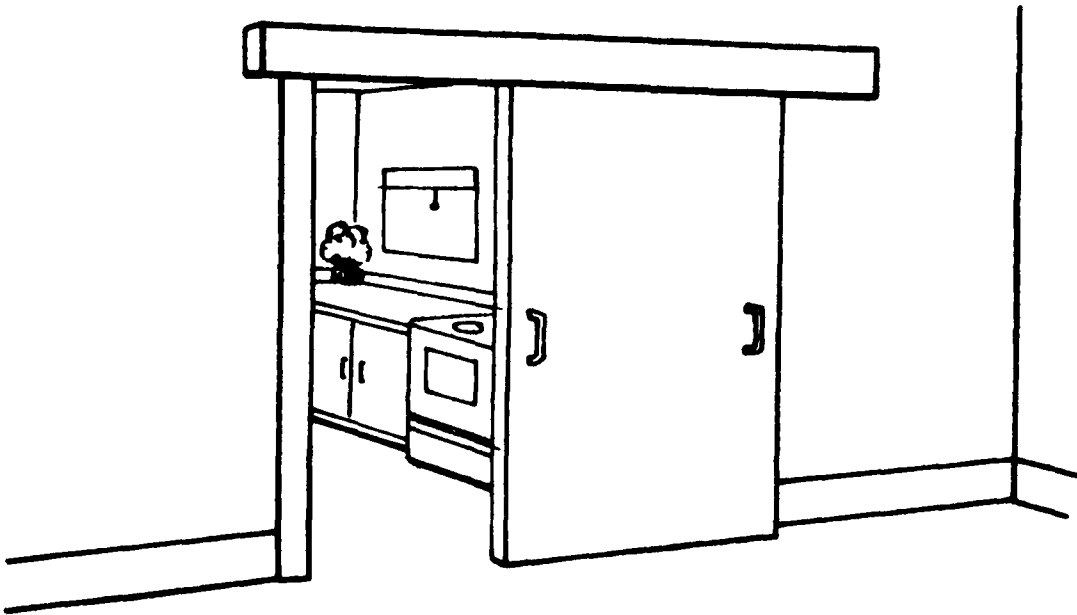
Doorways which provide a clear opening of at least 760 mm (30 ins.) should give you enough room to pass through; this implies that the door itself needs to be at least 800 mm (32 ins.) wide. Bear in mind that these dimensions are based on a standard size wheelchair, so you might need more or less room depending on the model you use.

Before deciding to widen the doors in your house, here are some options which might improve doorway access.

- Remove the door altogether; maybe you can do without it.
- Replace it with a curtain, perhaps.
- Replace existing butt hinges with Swing-Clear hinges (P5).
- Depending on the thickness of the door itself, up to 50 mm (2 ins.) can be gained, because these hinges actually swing the door clear from the doorway opening.

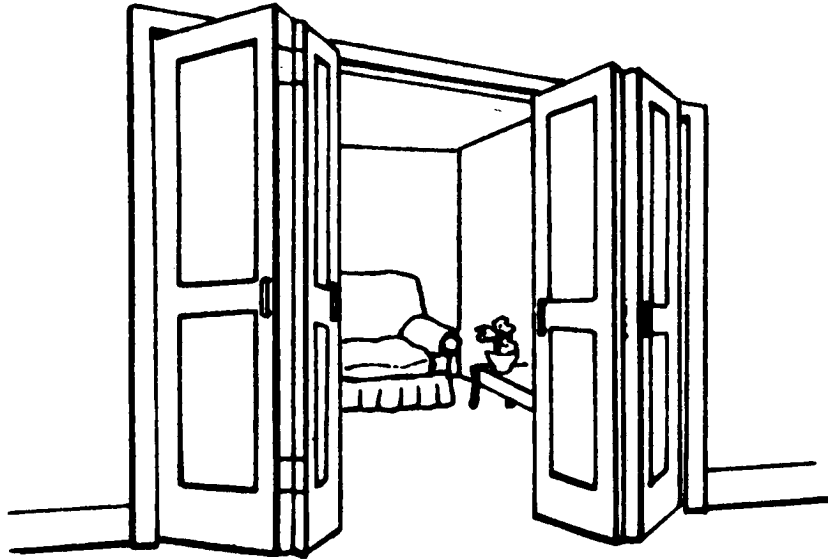


- Rehang the door to open in another direction if its swing obliges you to make an awkward detour around it.
- Take the lower part of the frame off the doorway but check first to see if this will give you the needed clearance.
- Replace the existing door with a sliding one. It is easy to install a track on the wall at the top of the door. Sliding doors do not necessarily have to disappear into the wall.



Sliding door

- Install bi-fold doors, which are practical for wheelchair users because they require much less manoeuvring space and so are easy to operate.



Bi-fold doors

Protecting the door and door frame from becoming scratched and marred by wheelchair footrests may be another consideration. Metal or plastic kickplates can be installed at the base of the door to avoid this problem. It is not as easy to protect door frames. One possibility is to cover them with something sturdy (such as carpeting), but this will prevent the door from closing properly.

If you find using round doorknobs a problem, see page 33.

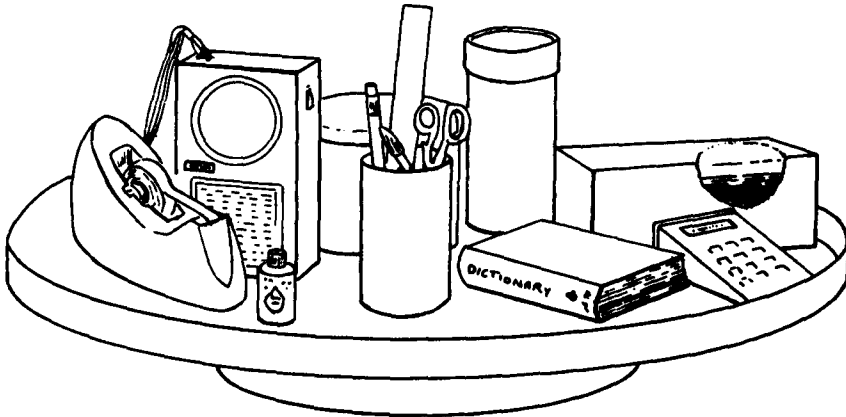
Obstacles to Movement. Furniture is not usually considered to be a barrier to circulation, but its size, shape and placement can affect the ease with which you function at home. In each room, ideally, you should have a free area about 1.5 m square (5 ft. square) so you can make a full turn. Furniture should be placed so you can easily access storage, windows and those items of furniture you use most often (i.e., bed, sofa, table, etc.).

In selecting furniture, you should consider your own home activities. What sort of tables, chairs, sofas, etc., do you need? Do you spend a fair amount of time lying down for rest or work? If so, try placing a day bed in the living room or study, and make that the centre of your activities, where friends can come and socialize, where you feel comfortable.

Consider the height of furniture. Are chairs high enough for easy transfer if you use them? Do tables allow your knees and/or armrests to glide underneath? Make things function well for you, so you can be as independent and comfortable as possible.

Here are some other suggestions:

- Wooden blocks positioned under table legs can give you extra knee room.
- Using a large lazy Susan on a table-top can help bring everything within reach.



Lazy Susan

- A bed set on a smaller pedestal avoids the problem of catching footrests on the legs of the frame.
- Electric beds which can be raised and lowered can help make transferring easier.

- It is possible to order custom furniture, a special chair, workbench, etc., to meet your own needs and specifications.

Flooring can make a big difference in your ability to move unimpeded throughout the house. In general, smooth, nonslip surfaces are the most practical (i.e., vinyl tiles, wooden floors, rolled flooring, etc.), but if you prefer carpets, they should be sturdy and low pile, either backed with foam or over a thin firm underpad. Deep pile carpets and shag rugs make travel in a wheelchair difficult. Similarly, scatter rugs tend to cause problems, bunching up under the force of your wheels.

Your wheelchair can be pretty rough on some types of flooring, particularly in areas where you repeat a movement, such as a turn. Wooden floors can be protected by a thick polyurethane finish; on vinyl floors, nonslip waxes are a good idea.

The flooring material used where you enter the house, especially if you clean your wheelchair there, needs to be heavy duty and easily maintained.

Reaching

Having what you need within reach is an important aspect of accessibility in the home. Given that most homes have been designed for "able-bodied" people, many standard installations may cause problems for the wheelchair user.

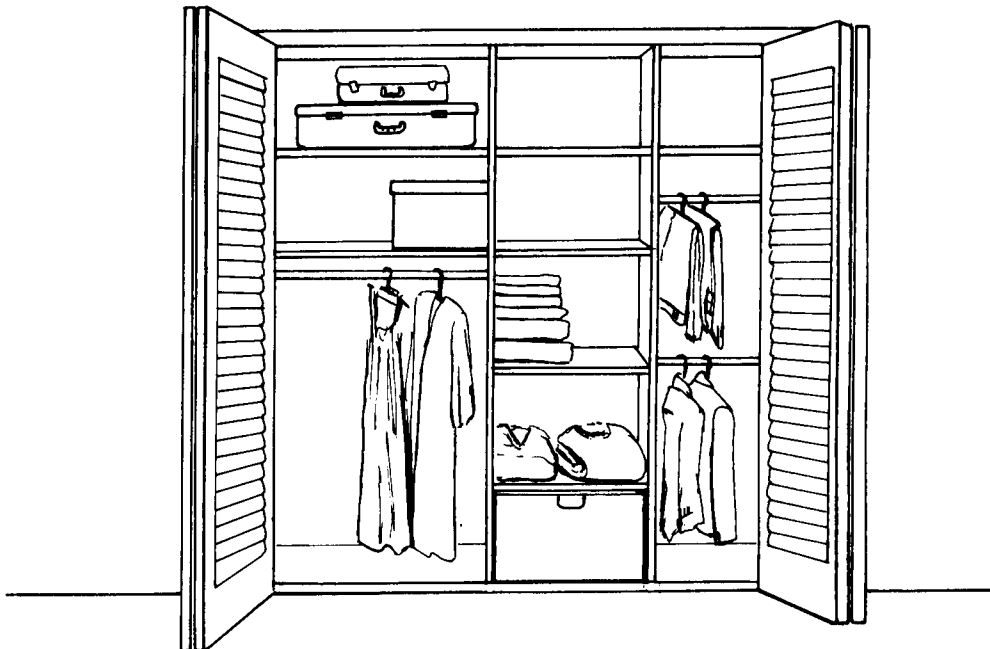
Storage. Finding sufficient storage is a common problem for wheelchair users, because you cannot take advantage of all the space (top, bottom and back) in closets, shelves, etc. This means that because your reaching range is likely to extend no further than from 300 mm to 1 500 mm (1 to 5 ft.) above the floor, you will probably need extra linear space to store your belongings. Depending on your disability, you may also have additional equipment to store.

It makes sense to store those items used least frequently at the greatest height, leaving room at a more convenient level for things you use regularly.

Wide cupboards with shelves and sliding, bi-fold or accordion doors are easy to access and use. Sometimes you can eliminate the door altogether, or use drapery material instead.

Old-fashioned clothes closets featuring small doors with most of the space for storage recessed behind the wall are

virtually unusable. Opening up this space and adding additional shelving, or baskets, and lower clothing rods will substantially improve accessibility. For hanging clothes, the bar should be lower than usual so you can reach hangers more easily (maximum 1 500 mm or 5 ft.). If you share a clothes closet with an able-bodied person, double hanging the bars can dramatically increase the storage space.



Useful closet adaptations

Some ideas about improving storage in the kitchen are proposed on page 67 and the following.

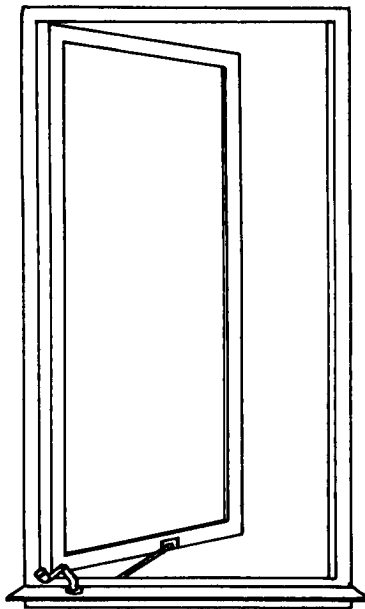
Windows. Windows can often be a problem for wheelchair users, not only because of their height or operation, but because access to them is often blocked by furniture or plant placement. You have to decide what you want; perhaps only a few accessible windows are enough for you.

New windows can be very expensive; still, replacing old, single-pane models with ones which are both easier to operate and more energy efficient could well be worth the cost.

The lower the windows are, the better; about 900 mm (3 ft.) is the maximum sill height. Otherwise you can't see much outside from a sitting position, and you probably won't be able to operate them very easily.

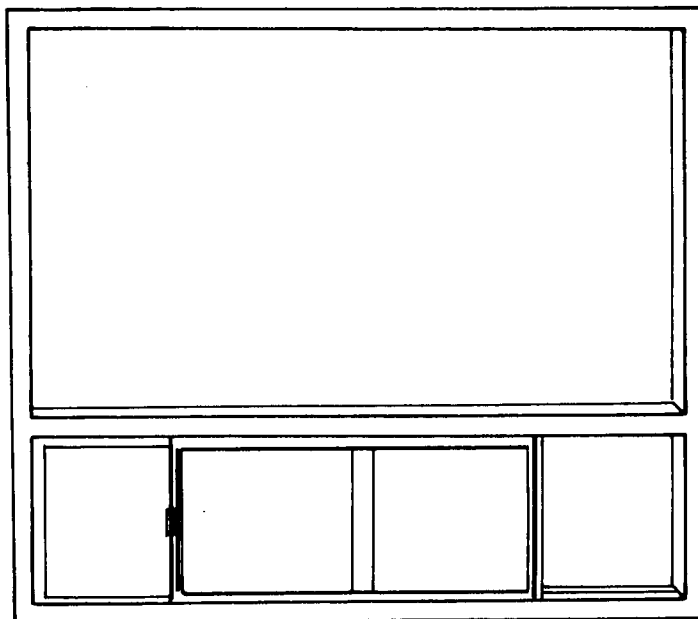
The style of the window makes a difference, too. Vertical single or double-hung windows can be very difficult to raise or lower. You may want to replace a few strategic ones with models which are easier to operate.

Side-hinged casement windows with crank handles are the easiest to work from a sitting position, but they are also the most expensive. Less costly casement windows with a simple latch handle (requiring the window to be pushed open) will do the job, but require some means of pulling the window shut. A cord can be attached to accomplish this.



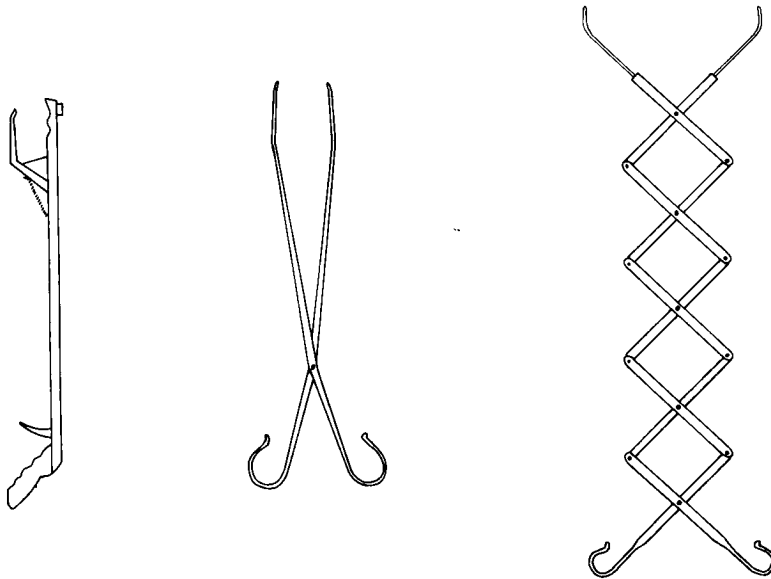
Casement window

Horizontal sliding windows, such as the one illustrated below, are also a good choice, but it's important to make sure that they slide easily and that the lock mechanism is not located too high for you to reach.



Horizontal side-sliding window

Control Devices. Light switches and the thermostats may be too high for you, and electric outlets too low. Since changing their location means considerable damage to walls, it may be easier to find an alternate solution. Try a baton or reaching stick (P1) for pulling or pushing switches, an electric extension cord permanently plugged into an outlet, an automatic timing device to control lights and the thermostat, or a secondary control switch wired into the control box positioned at a more convenient level. If you have a problem operating (rather than reaching) the switch, larger ones (such as the butterfly type) can be easily installed and are readily available in most hardware stores. A remote-control for the television is an added convenience.



Reaching aids

Relocating thermostats is a complicated job which requires a professional. Placing the thermostat lower than the usual 1 500 mm (5 ft.) above the floor will affect the temperature readings, so you will have to do your own series of experiments to find the right settings.

If your disability is such that you cannot operate normal equipment controls (lights, radio, telephone, doors, locks, etc.), you might consider purchasing an environmental control system (P10). Although these tend to be very expensive, the advantage of increased independence might well be worth it. A typical unit allows you to operate a variety of systems from one location, with a minimum of manipulation.

Safety

Safety is an essential concern for everyone, and particularly for those with limited mobility. The first line of defense should be protection against fire. Smoke detectors should be installed at ceiling height on each floor of the house, preferably close to the stairwell. Placing them at a lower height is not recommended, since this would considerably reduce their efficiency. Fire extinguishers should be kept close at hand, too.

In case of an emergency, you may need help and need it fast. An intercom system is one way of quickly summoning assistance within the home. Also, there are the newly available one-piece cordless telephones, which you can carry about with you. In addition, the telephone company provides a great range of telephone adaptations and services (P10), so that even if you are unable to dial, hear or speak, you can still use the phone even without an environmental control system. There are also automatic telephone dialers (P2) which can be operated by remote control to reach designated people.

BATHROOMS

Of all the rooms in your house, the bathroom will probably present the most serious obstacles. It often has a narrow door and tends to be the smallest room, which makes access to the fixtures difficult, if not impossible.

In the best of all possible worlds, every bathroom would have a clear floor space of 1.5 m square (5 ft. square), but, since large bathrooms are a rarity, here are some ways of coping in smaller ones.

Getting In

- Since the direction of your approach to the fixtures is important, before making any changes to the built space, try backing into the room to approach an otherwise inaccessible fixture. Since most wheelchairs are rear-wheel operated, it's often easier to get into the right position using this technique -- just like reversing to parallel-park a car.
- Next, check the door in terms of its width and the way it swings. Sometimes an in-swinging door is impossible to close from the inside, or it may block access to the fixtures. Rehanging the door so that it swings out could solve this problem. If the doorway is too narrow, try using one of the other suggestions on page 44).

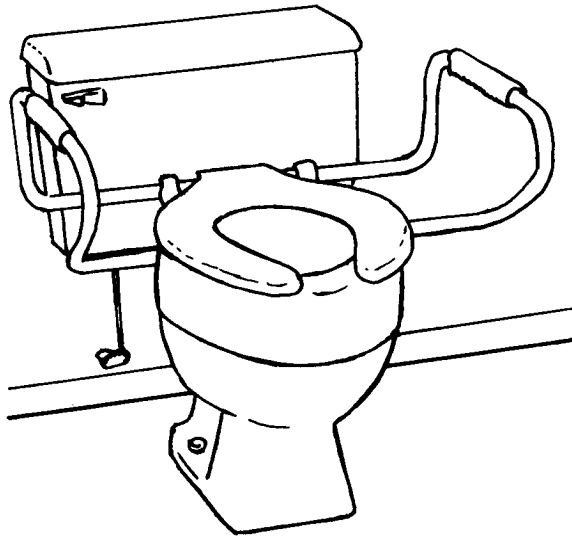
Fixtures

If you can modify your bathroom just a little and avoid buying a lot of expensive equipment, go ahead; sometimes a bathroom aid can save you money in the long run by making large-scale renovations unnecessary.

Toilets. Access to the toilet may or may not be critical for you, depending on your personal habits. Does the present layout of your bathroom help or hinder transferring?

For side transfers, you need space at one side of the toilet for your wheelchair, and a grab bar on the opposite side (see Grab Bars, page 60). Being right- or left-handed may be a factor here. If you transfer from the front, you need to be able to approach the toilet straight on, using a grab bar attached to the toilet itself or to the wall beside or behind it.

Toilet seats higher than the standard 350 mm (14 ins.) can make transferring easier. There are a variety of portable or fixed, raised toilet seats (P4) available on the market, which can add from 100 mm to 150 mm (4 to 6 ins.) to the height of the seat. Some feature options such as padded seats and built-in support rails. When selecting the correct height, remember that your feet should remain on the floor to ensure stability.

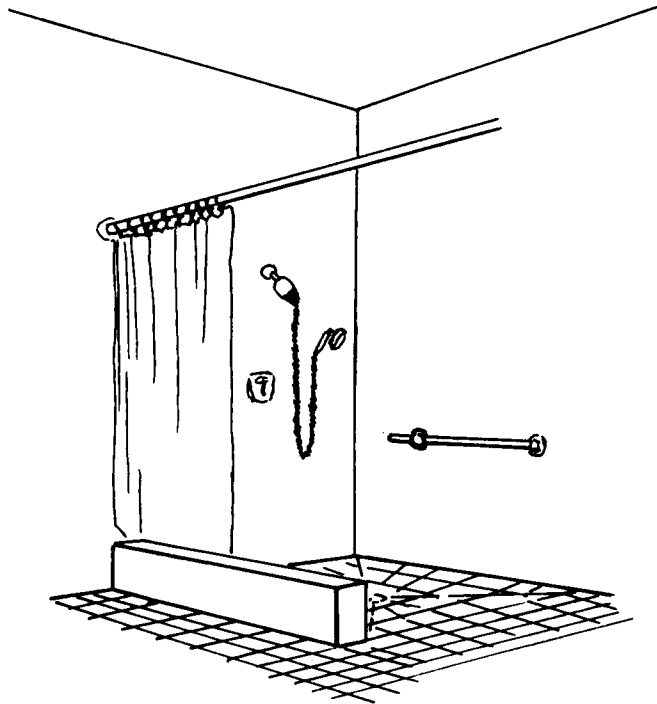


Raised toilet seat with arm supports

Plumbers' supply outlets also carry toilets which are 450 mm (18 ins.) high, featuring an elongated bowl and a variety of optional attachments. But installing a larger toilet will reduce the amount of clear floor space in your bathroom. Also, the higher seat might cause inconvenience to other users.

If floor space is at a premium in your bathroom, it may be possible, depending on the style of your toilet, to mount the water tank higher on the wall, allowing you to move the toilet bowl back about 100 mm to 150 mm (4 to 6 ins.). If you decide on a new fixture, you might select a wall-hung toilet installed at a height which is convenient for you and which clears the floor entirely, thereby increasing the manoeuvring space.

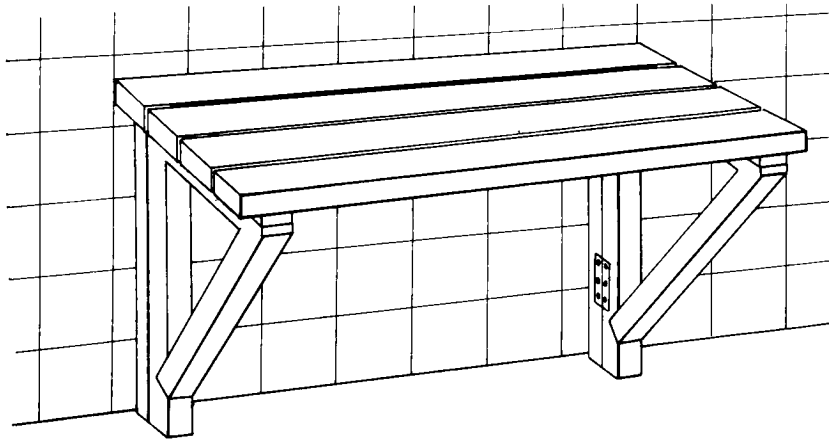
Showers. Many wheelchair users prefer using a shower rather than a bathtub. Is there room to build an accessible shower stall? Could you transform a closet close to the water supply and drain? To install a shower, you need at least 900 mm square (3 ft. square). The floor needs to slope towards the drain and, if you plan to shower in a wheelchair, you will need a short ramp to get over the threshold.



Wheel-in shower

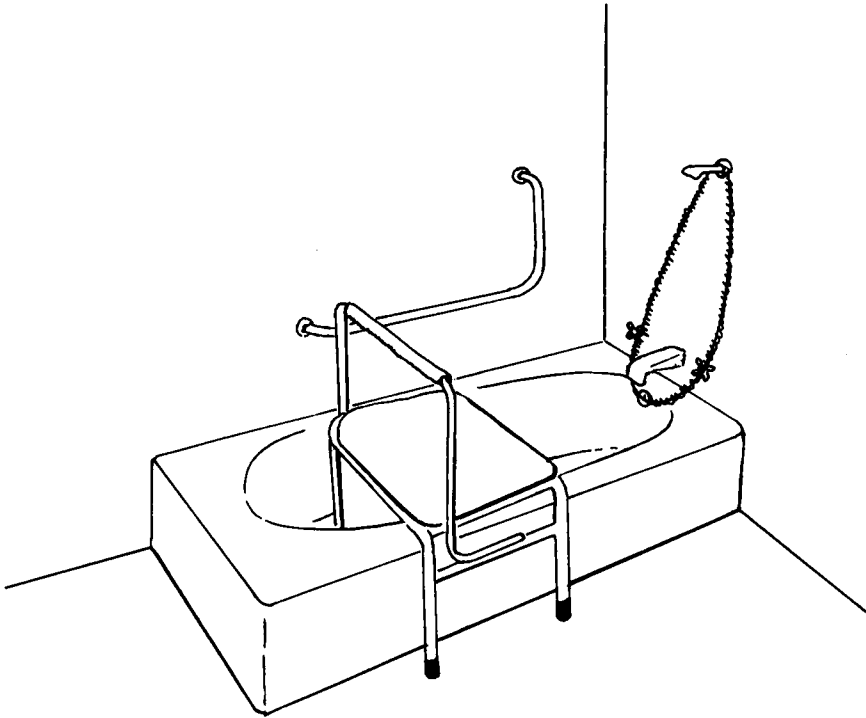
It is possible to purchase a prefabricated terazzo shower floor (P4) with a ramped threshold: the entire unit measures 1.5 m square (5 ft. square). Another option is to turn your whole bathroom into a shower stall, tiling the walls and the floor, which needs to be recessed to slope towards a drain. Installing a ceiling fan with a heater will help dissipate moisture from you, your wheelchair, and the floor and walls. If you decide on this option, make sure that all electrical outlets are out of the water's range.

If you prefer not to shower in your wheelchair, you might consider purchasing a wheeled shower chair, which can also double as a commode chair, or you could install a fold-up seat (P4) that attaches to the back wall of the shower stall, adding a grab bar to help you transfer.



Fold-down shower seat

Bathtubs. Finding a safe way to transfer in and out of a bathtub is often difficult for wheelchair users. Many people have trouble using a tub because they lack the strength to hoist themselves out. You might try using a bath board or a bath seat (P4); these are adjustable in height, and come with optional features such as slatted or perforated seats, vinyl padding, backed or backless, support arms and an extended transfer seat.



Bath seat

You might also try a tub insert (P4), which makes a small, sit-up tub near the tap end that is easier to get in and out of.

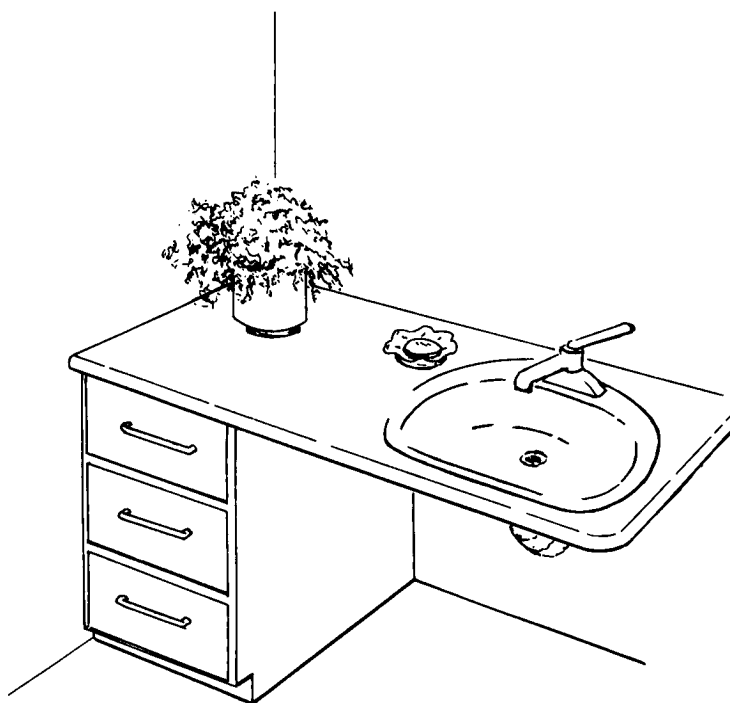
Hydraulic and mechanical bathlifts (P4) are also available for bathtub users. The seat swings out for transfer, then over to the tub, and is lowered to any depth by a lever.

Designed for self-operation, these lifts don't require a lot of strength or coordination, and they allow you to bathe in privacy.

Hoists or patient lifters (P7) usually need to be operated by an attendant. If desired, the sling can have a commode-type bottom, and the patient lifter can be bolted to the floor, clamped to the tub or fitted with casters so it can be moved wherever needed. Collapsible models can be folded up and packed into the trunk of the car for trips.

Both patient lifters and bathlifts are expensive items, ranging from \$500 to \$1 500.

Basins. Removing the front of a vanity that has a built-in sink will give you knee room so you can glide underneath the sink for closer access. It might also increase the total amount of manoeuvring space in the bathroom. If you do decide to remove the vanity, the supply and drain pipes should be insulated to prevent burns.



An accessible vanity

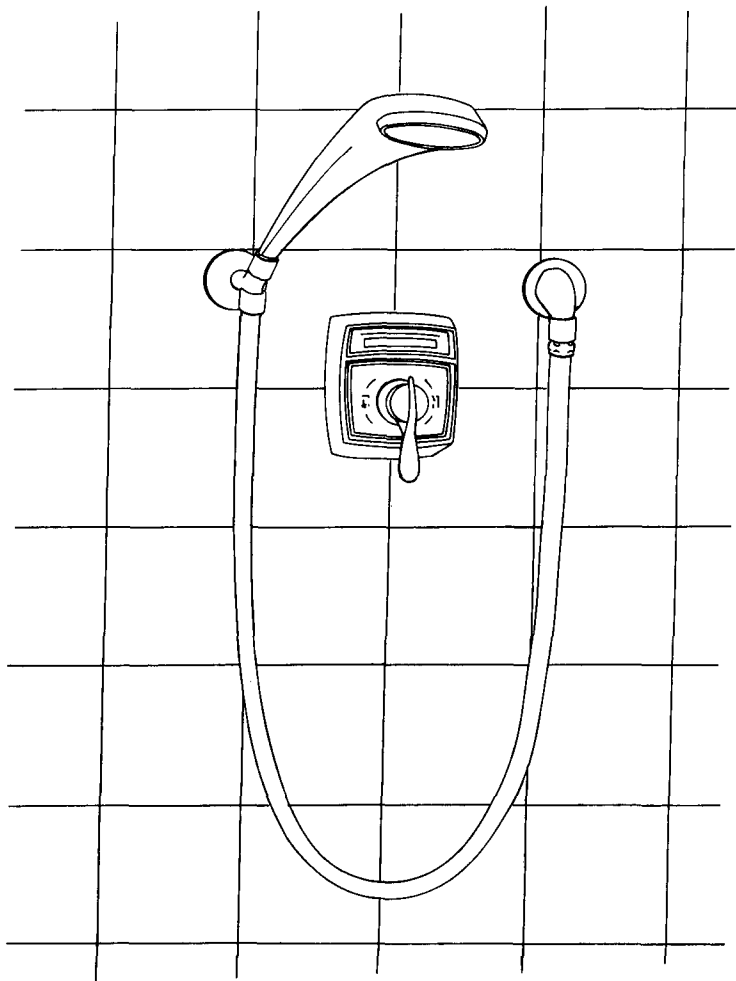
An existing pedestal basin might suit your needs if you can approach and use it from the side, or from the front, if you don't use footrests on your wheelchair.

If you decide you have to install a new basin, there are accessible models available that feature shallower depths, offset waste assemblies, and reinforced wall-hanging supports. These can be fitted with standard faucets including lever- and blade-handled taps.

Taps and Faucets. Round taps in the shower, tub or basin are difficult to grasp, especially with wet and soapy hands. Lever-handled taps or single-arm controls (P8) are much

easier to use. To prevent burning parts of the body you can't feel, install a nonscald valve (P8) or a unit with an integral thermometer (P8).

Hand-held shower heads (sometimes called telephone showers) are widely available and feature flexible and extralong hoses, and a variety of settings to adjust the water flow.



Telephone shower head and nonscald valve

Bathroom Storage

Finding enough accessible storage in the bathroom could be a problem; the medicine cabinet may be too high, and, if you

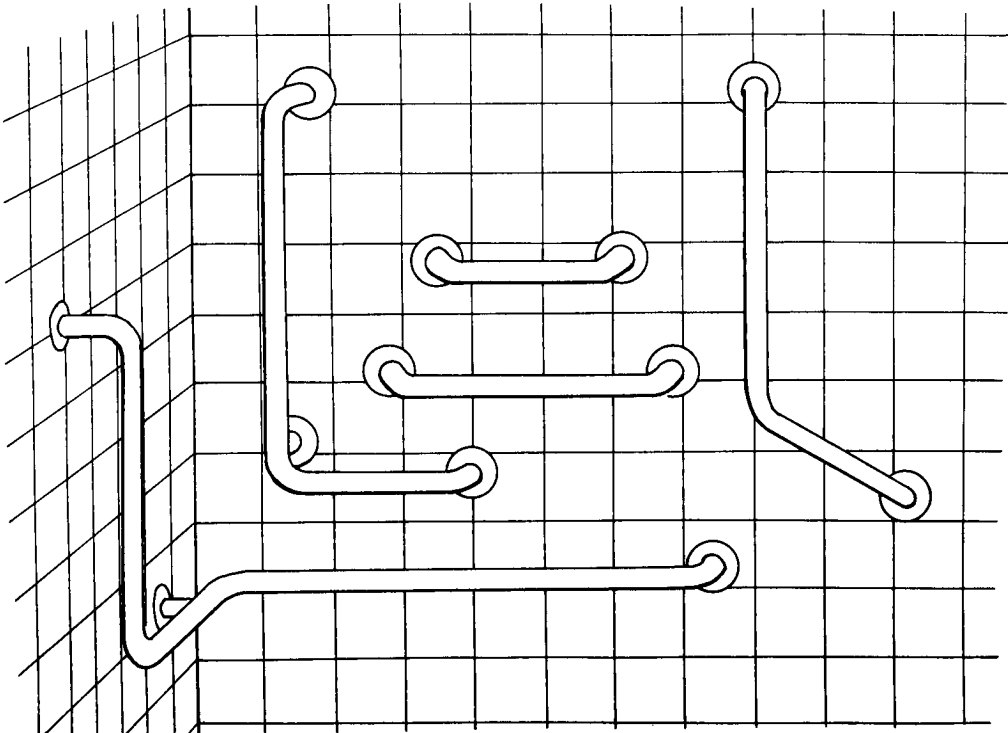
do decide to remove the vanity, you will lose that storage space as well.

If your basin is surrounded by a countertop, you can keep often-used articles there. You might need to add a lower shelving unit, one you can reach. Towel racks, soap dishes and other fixtures may need to be moved for easier access.

You may not be able to see your reflection in the mirror from a sitting position. You can lower the mirror, install another one at a lower height for your own use, or use a tilting mirror which can be adjusted to suit the individual.

Grab Bars (P6)

The way you transfer will determine the type of grab bars you need and where they should be positioned. In general, horizontal bars are for pushing up; vertical bars are for pulling up. Bars at varied angles, and combination bars (right-angled ones, for example) can also be helpful. The surface of the grab bar is important because wet or soapy hands can slip on smooth metal; some grab bars have knurled or peened surfaces to prevent this. Vinyl-covered bars are another possibility, offering a warmer touch and more grip than smooth metal. Grab bars needn't necessarily look institutional; some even come in decorator colours.



Grab bars

All grab bars must be firmly anchored to the wall, floor, tub or toilet, since they need to be able to take the force of twice the weight of the user. When affixing them to walls, install them directly into the wall studs for structural strength, or add reinforcing plywood (15 mm or 5/8 in.) to the wall around the grab bar.

Special-design grab bars include tub rails, toilet support and safety rails, wall- or floor-mounted foldaway bars, and rails made-to-order to meet special needs.

KITCHENS

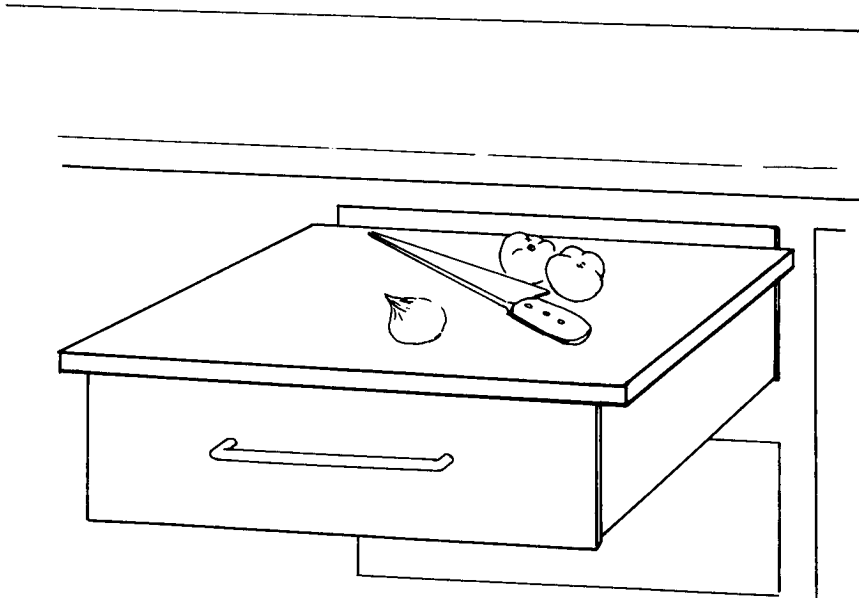
The need for a completely accessible kitchen very much depends on how much meal preparation and clean-up you want or need to do. But even if cooking is not your responsibility most of the time, being able to reach and use the stove, refrigerator and sink is likely to be important to you.

When making your plans, bear in mind that some of the alterations suggested to make things better for you may create inconvenience for other users.

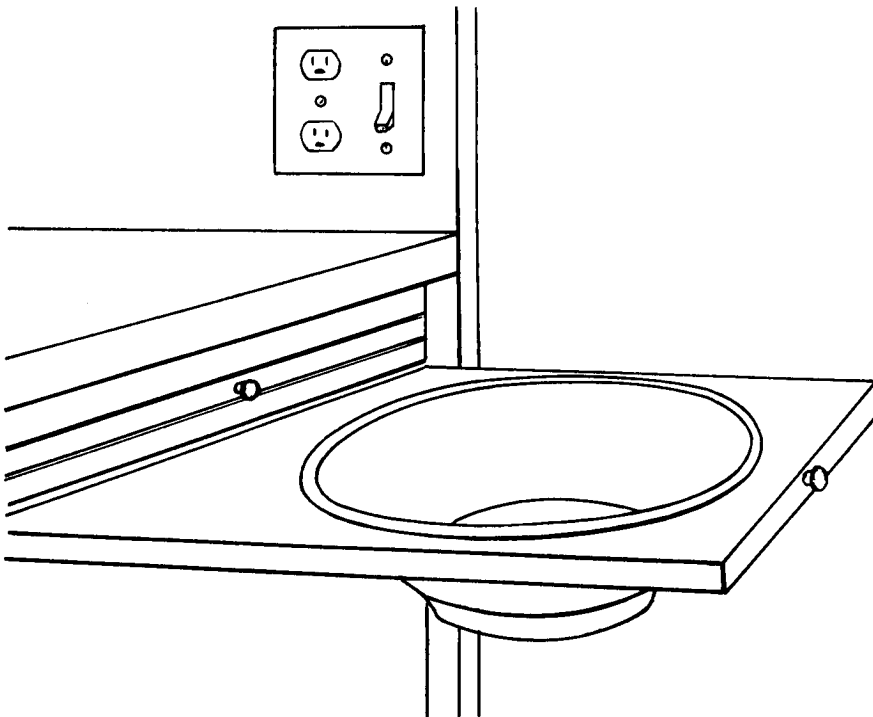
Work Space

Finding enough usable work space in a standard-design kitchen may be a problem. There are many things you can do to improve an existing kitchen before getting involved in extensive renovations. Here are some suggestions:

- Improvising a lower work station by placing a board over an open drawer is a quick and inexpensive solution.
- Installing pull-out boards just under the countertop provides a lower working surface which can be approached from the front or side. A circular cut in one of these boards can help to stabilize a mixing bowl.

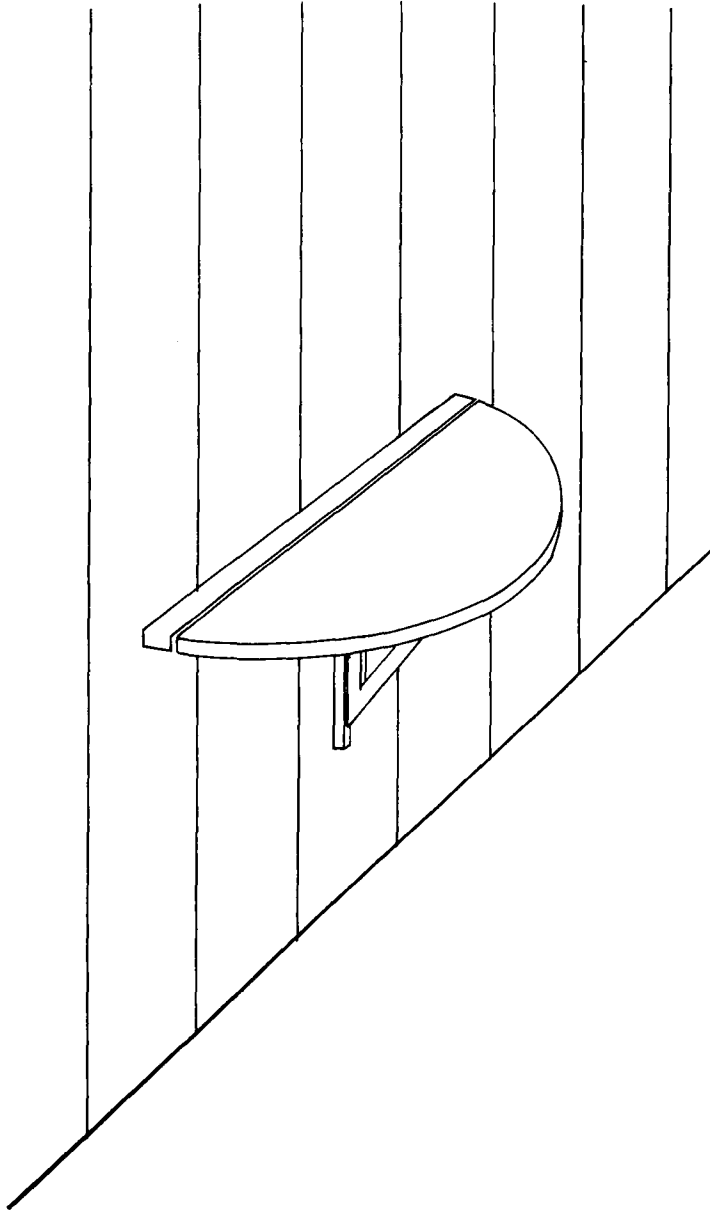


Board on drawer



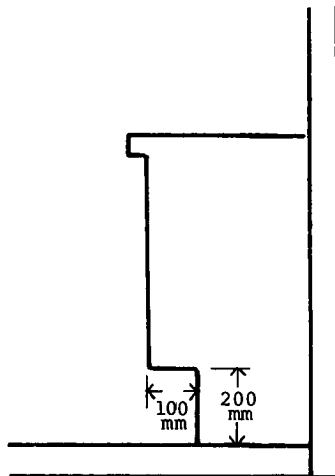
Pull-out board

- Hanging a drop-leaf table along an empty wall is another possibility.



Drop-leaf table

- Removing some of the lower shelving and cabinet doors will give you knee space under the counter. Remember, though, that this will reduce the accessible storage space available (see Kitchen Storage, page 67).
- Lowering the counters by 75 mm-100 mm (3-4 ins.) might make it easier for you to use them. For the sake of other users, it may be best to lower only a portion of the countertop, in which case the best location is probably between the sink and the stove.
- Creating additional room for your footrests at the base of lower cabinets might help you to approach the work space more closely. The accepted minimum clearance is 200 mm high by 100 mm deep (8 ins. high by 4 ins. deep).



Footrest space

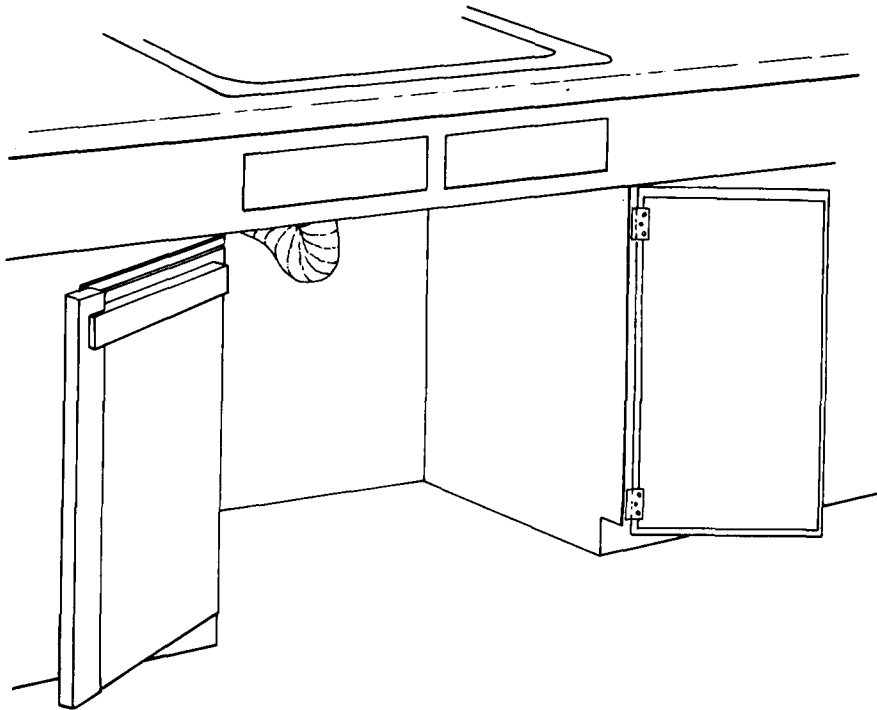
Electrical Controls

You may find it difficult to reach electrical outlets. Using extension cords may do the job, or you might want to bring switches and outlets from the back of the counters to the front.

Access to the Sink

An existing sink installed in a standard-height counter may be inaccessible. Here are some suggestions:

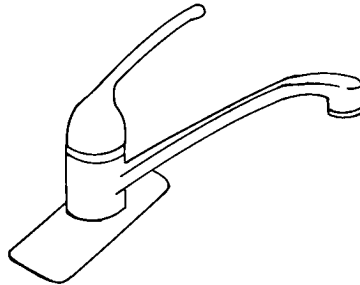
- If reaching the bottom of the sink is a problem, try using a plastic dishtub and improvise a method of raising it to the required height.
- Create knee space under the sink so you can approach it more closely. Depending on the style of your lower cabinetry, you may be able to clear enough space under the sink, retaining the cabinet doors and keeping them open only when needed. Even if this isn't possible, you can always camouflage the open space with a curtain. In any case, if you do decide to create knee space under the sink, it is very important to insulate the underside of the sink, the drain pipe and the hot water supply to protect you from burns.



Knee space under the sink

- Shallower sinks (P9) are available on the market. Some models have corner drains and can be fitted with an offset waste assembly. If you have decided to lower the sink portion of the countertop, you may need a shallower sink in order to create enough knee room.

- Lever faucets or single-arm controls (P8) may be easier for you to manipulate.
- Sinks with side faucets (P8) are available on the market. It is also possible to mount a square sink so that the faucets are at one side rather than at the back.



Single-arm control faucet

Cooking

Can you use your existing range? Front and side controls are easier and safer to use from a sitting position, but the more usual rear controls can sometimes be managed if you use a reaching aid (P1).

Many people find cooktops a more convenient solution because they usually have front or side controls and can be installed in an accessible counter (P3). Smooth-surface cooktops make it easier to slide heavy pots and pans safely into position. Some models feature staggered elements which allow you to reach a pot at the back with less danger of burns.

Using the oven in conventional ranges is difficult and may even be dangerous for wheelchair users. Countertop ovens (convection, microwave and toaster ovens, for example) may prove easier to use. A wall-mounted oven located at counter height is another potential solution, but you will need a surface on which to transfer hot dishes. If the oven door opens downwards, this space should be provided at the side; if it opens sideways, a pull-out board is needed in front of the oven. Whatever your choice, a continuous self-cleaning oven is far more convenient.

Using waterless cookware or lighter utensils, such as bamboo steamers, can make meal preparation easier. Appliances such as blenders, food processors, electric frying pans and slow cookers can also be very useful.

Refrigerators

The refrigerator should be located as close as possible to the accessible work area. The direction of the door swing is important for easy access. A side-by-side refrigerator/freezer may be better than the conventional top and bottom style, but only if you can approach the unit straight on. Otherwise, one door will always be difficult to swing open. Smaller bar-size refrigerators are another possibility. In selecting a new appliance, a frost-free unit is more convenient.

The following items can be used to improve the accessibility of food in the refrigerator:

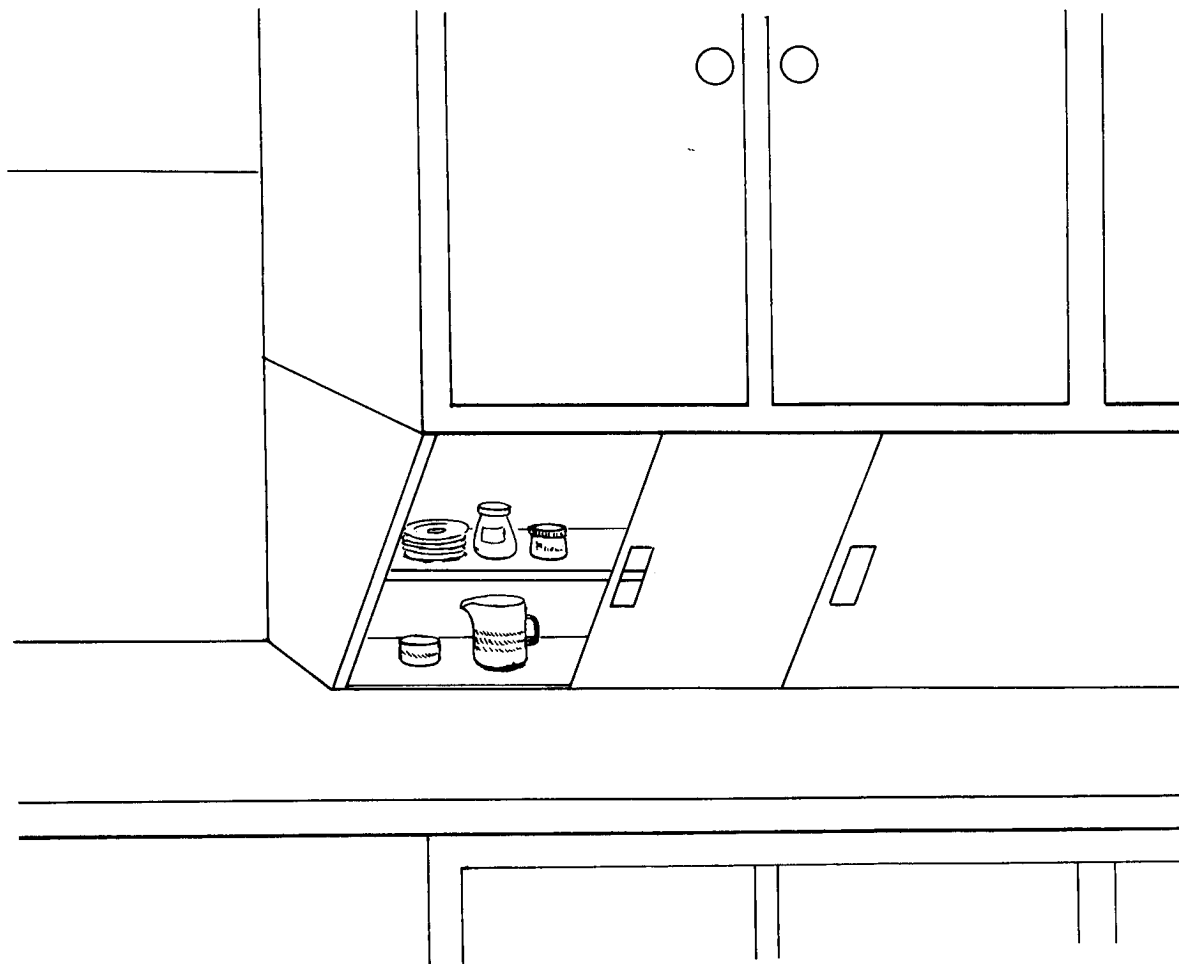
- slide-out shelving;
- lazy Susans;
- plastic clip-on attachments for storing bottles horizontally; and
- straight-edge storage containers to improve the capacity of the refrigerator.

Kitchen Storage

Sufficient storage for food, dishes and appliances should be easy to reach and close by. Since most shelves in the upper cabinets will be inaccessible to you, you will have to find alternatives. Also, if you have removed lower cabinetry to create knee space under counters, you will have lost valuable accessible storage space as well.

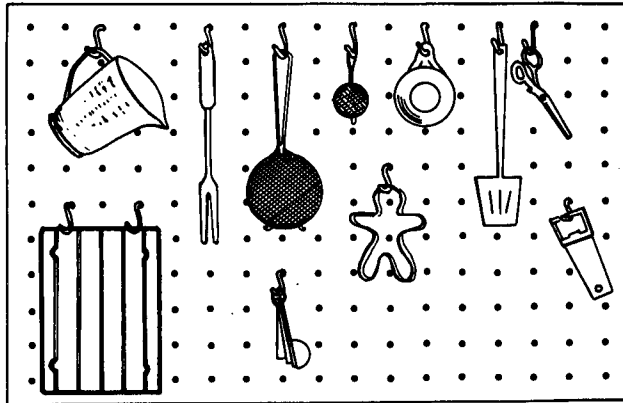
Here are some suggestions to improve available storage space:

- Install a shelf on the wall between the countertop and the base of the upper cabinets. If you wish, sliding doors can be added to enclose this storage area. Remember, though, this solution will reduce the depth of the countertop space.



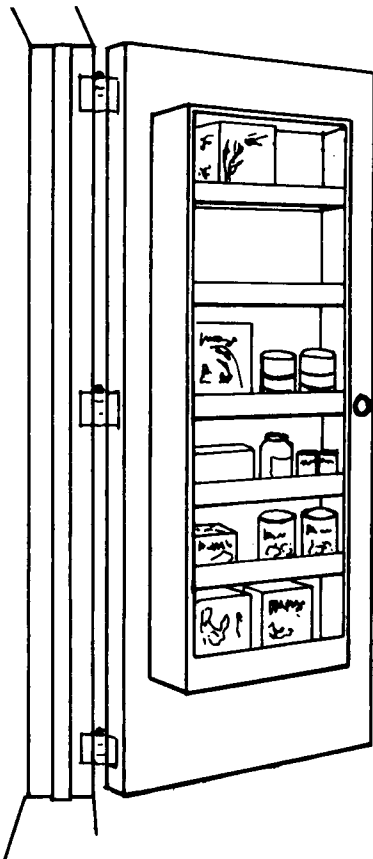
Counter shelf

- If room permits, install a separate shelving unit at a convenient height for you.
- Try hanging wall racks or pegboards as a simple way of increasing accessible storage.



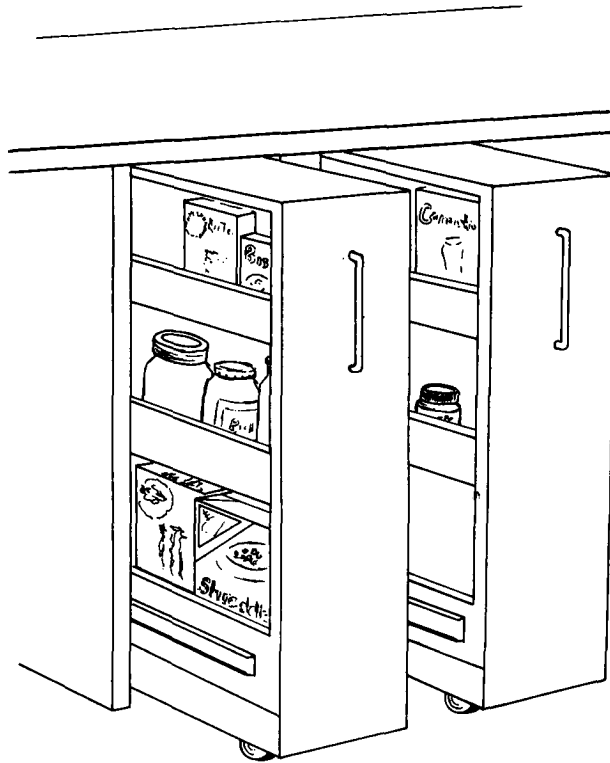
Pegboard

- You may be able to transform an existing closet in your kitchen to create an accessible pantry. If the closet is deep, roll-out shelving could be added; if shallow, stationary shelves would be more suitable.
- Try mounting shelving on the inside of the closet door.

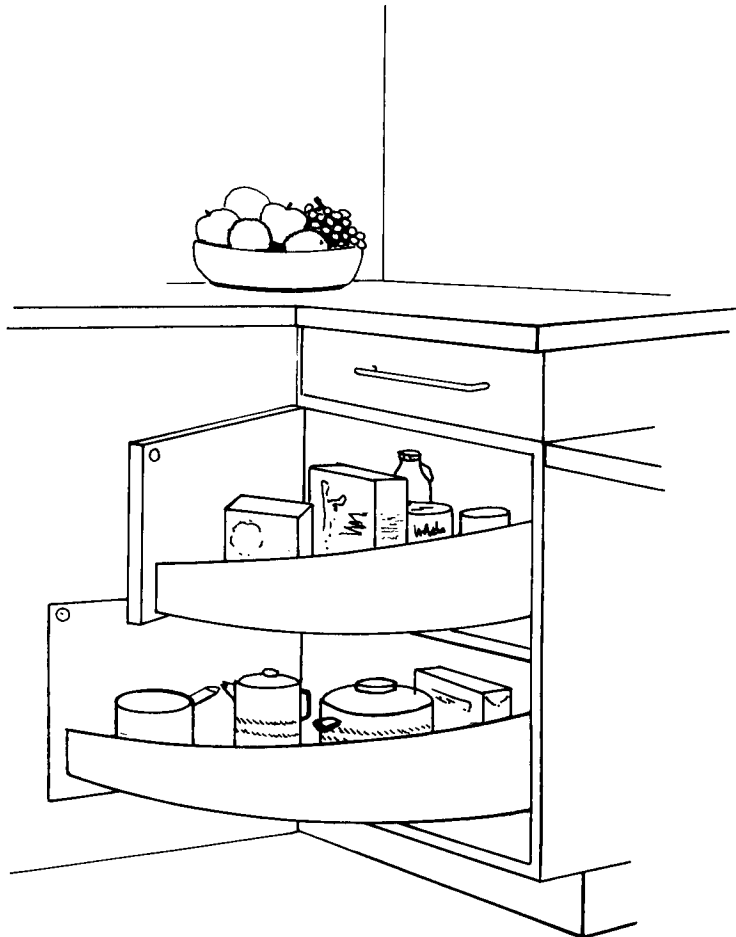


Closet door pantry

- Access to the existing storage under countertops can be improved by installing hanging racks, deep drawers, pull-out shelving, lazy Susans and corner inserts.



Pull-out shelving



Corner inserts

- If you have created plenty of knee space under the counter, try mounting a knife rack there, so the blade handles are right at your fingertips, just under the front edge of the countertop.

Layout

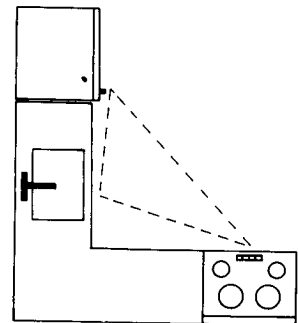
Unless you are planning to redo your kitchen completely, this information about kitchen layout is not likely to be

relevant. Still, if you decide to take the opportunity to design an accessible kitchen, there are some rules of thumb to follow.

- Making sure that there is a continuous work surface between the fridge, sink and cooking area is highly recommended. This allows you to slide heavy items along the counter and decreases the risk of spills and burns.
- Since straight-line travel is faster and requires less space than turning, select a layout which favours forward and backward wheelchair movement.
- Planning the placement of the sink, refrigerator and range so they form a triangular arrangement increases efficiency.

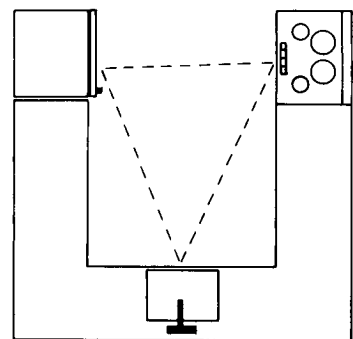
The L-shaped Kitchen

- provides a continuous work surface
- may require fewer turns



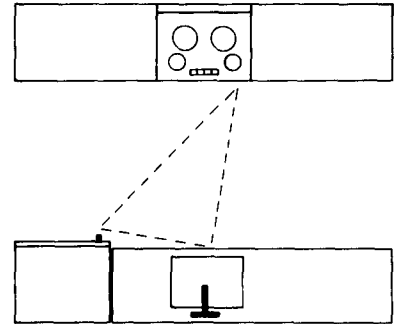
The U-shaped Kitchen

- provides a continuous work surface
- requires more turning and manoeuvring



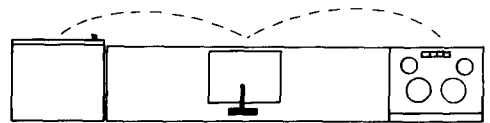
The Parallel Kitchen

- does not provide a continuous work surface
- requires complete turns unless the two counters are very close together



The One-Wall Kitchen

- provides a continuous work surface
- forward and backward movement may be sufficient



The need for space to do complete turns may or may not be necessary depending on the layout option you select. Choose one that requires the least manoeuvring, the fewest turns and the least amount of travel.

LAUNDRY

Depending on your abilities, top-loading washers and dryers may be easier to operate than front-loading models. Often it is difficult to maintain your balance when bending over, so front-loading appliances may not be suitable.

On the other hand, you may have difficulty reaching down into top-loading machines as well. Smaller apartment-size washers and dryers may prove easier to use because they may be shallower. When washing small items, try putting them into a pillowcase for easier retrieval.

You will probably need some sort of shelving unit to store detergents, bleach and so forth, and an accessible surface on which to fold clothes.

Chapter IV

PRODUCT INVENTORY

KEYWORD LISTING

This product inventory has been developed to help you locate products useful in home modifications for accessibility. To make it easier for you to use this listing, we have divided the various products under main headings, or keywords, numbered from one to ten. Products mentioned in the text have been cross-referenced to these numbers, for example, grab bars (P6).

1. Aids reaching and helping; eating;
 dressing;
 adaptors: doorknob, lightswitch, etc.
2. Alarms light/vibration for hearing impaired;
 automatic telephone dialers for medical
 alert.
3. Appliances specially designed or modified washers,
 dryers;
 stoves, ovens, cooktops;
 refrigerators, freezers, combinations;
 dishwashers.
4. Bathroom Aids seats: toilet, tub, shower, transfer;
 handshowers; bathlifts.
5. Door door openers and closers;
 Hardware knobs, levers, pulls;
 hinges (especially Swing Clear);
 locks (keyless, lever).
6. Grab Bars wall-mounted; floor-mounted;
 toilet, tub, shower, transfer bars;
 rails for walls, stairways, ramps.
7. Lifts indoor, outdoor;
 vertical, inclined (stairway);
 open, enclosed;
 one/two person, wheelchair;
 patient lifters.¹

1. Patient lifters are coded in the Dealers Index below as 7P to distinguish them from other types of lifts.

8. Plumbing toilets, lavatories, sinks, drains; taps and faucets, handshowers; thermostats and temperature gauges.
9. Ramps fixed, portable, folding.
10. Telephone Teletype (TTY), blind, light signal; automatic dialers, special designs; Touch Operated Switch Control (TOSC), Environmental Control System (ECS), computers.

DEALERS INDEX

Dealers are listed below by region and with number codes to indicate what kinds of products they carry. These number codes correspond with the Keyword Listing (see above). To find a dealer in Saskatoon that carries grab bars, for example, simply find the Prairie Region list and check through the dealers in Saskatoon for the number code for Grab Bars (6). If there are no dealers in your area who carry the products you need, refer to the Manufacturers Index (page 86), under the appropriate heading.

British Columbia and Territories

A & B Services
3595 Main Street
Vancouver, BC
V5V 3N4
4, 6

BC Medequip
2106 Main Street
Vancouver, BC
V5T 3C5
1, 4, 6, 7, 8

Kerrisdale Equipment
2045 W. 41st Avenue
Vancouver, BC
V6M 1Y7
1, 4, 6, 7, 8, 9

Mid-Canada Medical
1141 William Street
Vancouver, BC
V6A 2J1
1, 4, 6, 7, 9

Ammundsen Medical Supplies
1062 Homer Street
Vancouver, BC
V6B 2W9
1, 4, 7P, 9

Keir & Son Ltd.
715 W. 16th Avenue
Vancouver, BC
V5Z 1S8
4, 6, 7P

Kipp-Mallery Pharmacy
273 Victoria Street
Kamloops, BC
V2C 2A1
1, 4, 6, 7

Montgomery Elevator Ltd.
524 William Street
Victoria, BC
V9A 3Y8
7

Okanagan Medical Supplies Ltd.
3413 - 15th Avenue
Vernon, BC
V1T 1A1
1, 4, 5, 6, 7, 9

Seymour Pharmasave
984 Shoppers' Row
Campbell River, BC
V9W 2C5
1, 4, 6

Valley Pharmacy Ltd.
20577 Douglas Crescent
Langley, BC
V3A 4B6
4, 6

Rokirk Industries Ltd.
3-3009 Murray Street
Port Moody, BC
V3H 1X3
7

Surgical Supplies (BC) Ltd.
1012 Broad Street
Victoria, BC
V8W 1Z9
1, 4, 6, 7P

Vancouver Elevator
Maintenance Ltd.
5542 Mavis Street
Burnaby, BC V5J 1K5
7

Prairie Region

Brandon Elevator and Electric
Service Ltd.
Box 784
Brandon, MB
1, 4, 6, 7P

Cardon Rehabilitation Products
11021 - 127th Street
Edmonton, AB
T5M 0T3
1, 4, 6, 7, 9

Congdon's Aids to Daily Living
15819 Stoneyplain Road
Edmonton, AB
T5P 3Z7
1, 4, 6, 7, 9

Edmonton Surgical & Ostomy
Supply
10203 - 97th Street
Edmonton, AB T5J 0L5
1, 4, 6

Exel Elevators (Sask) Ltd.
419 Avenue M South
Saskatoon, SK
S7K 3S9
7

Calgary Wheelchair
3016 - 10th Avenue N.E.
Calgary, AB
T2A 6A3
7

Carex Medical -- Edmonton
Wheelchair
10041 - 81st Avenue
Edmonton, AB T6E 1W7
1, 4, 6, 7P

E.C.O. Environment Products
Ltd.
18131 - 107th Avenue
Edmonton, AB
T5S 1K4
1, 4, 6, 7, 9

Exel Elevators (Sask) Ltd.
3239 Rae Street
Regina, SK
S4P 3G7
7

Exel Elevators Ltd.
670 Pacific Avenue
Winnipeg, MB
R3E 1G2
7

Gainor Medical Supplies Ltd.
2495 - 19th Street S.E.
Calgary, AB
T2E 7A2
1, 4, 6, 7P

Holroyd Surgical Ltd.
9923 Richmond Avenue
Grande Prairie, AB
T8V OV1
1, 4, 6

Blain MacLean Pharmacy
3407 - 26th Avenue S.W.
Calgary, AB
T3E 0N3
1, 4, 6, 8

Medi-Mart Home Health Care
Equipment Ltd.
12216 Jasper Avenue
Edmonton, AB
T5N 3K3
1, 4, 6, 7P

Mid-Canada Medical
12031 - 76th Street
Edmonton, AB
T5B 2C9
1, 4, 6, 7, 9

Schaan Health Care Products Inc.
2342 Hanselman Avenue
P.O. Box 6050
Saskatoon, SK
S7K 4E4
1, 4, 6, 7

Ontario

Airway Surgical Appliances Ltd.
424 Catherine Street
Ottawa, ON
K1R 5T8
1, 4, 6

Armor Elevator SW Ltd.
90 Towerline Place
London, ON
N6E 2T1
7

Gainor Medical Supplies Ltd.
12520 Yellowhead Trail
Edmonton, AB
T5L 3B9
1, 4, 6, 7P

Imperial Surgical Co.
166 Osborne Street South
Winnipeg, MB
R3L 1Y9
1, 4, 6, 7, 9

Mar-Ber Medical
871 Wall Street
Winnipeg, MB
R3G 2T9
1, 4, 6, 7P

Mid-Canada Medical
1915 - 27th Avenue N.E.
Unit 105
Calgary, AB
T2E 7E4
1, 4, 6, 7, 8, 9

Montgomery Elevator Co. Ltd.
121-12520 Albert Trail
Edmonton, AB
T5L 4H4
7

Amherst Dispensary
145 Main Street
Toronto, ON
M4E 3T9
4, 6

Balmer-General Elevator Co.
140 Milner Avenue, Unit 24
Scarborough, ON
M1S 4L3
7

Bamford-Regis 1982 Ltd.
505 Kent Street
Ottawa, ON
K2P 2B8
1, 4, 6, 7P, 9, 10

Capital Elevator
P.O. Box 4766, Station E
Ottawa, ON
K1S 5H9
7, 9

Carter Rehabilitation Equipment
Orthopedic Equipment of
Canada Ltd.
1011 Haultain Court
Mississauga, ON
L3V 5W9
4, 6, 7P

Complete Rentals
718 George Street North
Peterborough, ON
K9H 3T7
4, 7P

Conval-Aid Inc.
270 Carling Avenue
Ottawa, ON
K1S 2E2
1, 2, 4, 6, 7, 9

Crooks Pharmacy
2 South Court Road
Box 2298
Thunder Bay, ON
P2B 5E8
1, 4, 6, 7

Doane Hall Convalescent
Aid Centre
21 Yonge Street North
Aurora, ON
L4G 1N6
1, 4, 6, 7P

Brant Wheelchair
18 Russell Street
Brantford, ON
M3R 1V7
1, 4, 6, 7P, 9

Cardon Rehabilitation
Products
3206 Wharton Way
Mississauga, ON
L4X 2C1
1, 4, 6, 7

Complete Rent-Alls
(Orillia) Inc.
77 Memorial Avenue
Orillia, ON
L4W 1W1
1, 4, 7P

Concord Elevator Co. Ltd.
6803 Steeles Avenue West
Rexdale, ON
M9V 4R9
7

Crecco's Mobility Systems
R.R. #2
Welland, ON
L3B 5N5
1, 4, 6, 7

Direct Access Design
53 Eastwood Road
Toronto, ON
M4L 2C6
1, 3, 4, 5, 6, 7, 8, 9

Doncaster Medical
83 Kennedy Road South
Brampton, ON
L6W 3G1
1, 2, 4, 5, 6, 7, 9, 10

Doncaster Medical
115 Plains Road East
Burlington, ON
L7T 2C2
1, 2, 4, 5, 6, 7, 9, 10

Doncaster Medical
407 Counter Street, Unit 40
Kingston, ON
K7K 6A9
1, 2, 4, 5, 6, 7, 9, 10

Doncaster Medical--Head Office
248 Steelcase Road East
Markam, ON
L3R 1G2
1, 2, 4, 5, 6, 7, 9, 10

Doncaster Medical
659 The Parkway, Unit 4
Peterborough, ON
K9J 7K2
1, 2, 4, 5, 6, 7, 9, 10

Doncaster Medical
3255 Lawrence Avenue East
Scarborough, ON
M1H 3A3
1, 2, 4, 5, 6, 7, 9, 10

Doncaster Medical
140 Doncaster Avenue
Thornhill, ON
L3T 1L3
1, 2, 4, 5, 6, 7, 9, 10

Doncaster Medical
3162 Yonge Street
Toronto, ON
M4N 2K9
1, 2, 4, 5, 6, 7, 9, 10

Durham Medical
92 Simcoe Street North
Oshawa, ON
L1G 4S2
1, 4, 6, 7, 9

Doncaster Medical
2879 Bloor Street West
Etobicoke, ON
M8X 1B3
1, 2, 4, 5, 6, 7, 9, 10

Doncaster Medical
310 Wellington Road
London, ON
N6C 4P4
1, 2, 4, 5, 6, 7, 9, 10

Doncaster Medical
150 Lakeshore Road West
Mississauga, ON
L5H 3R3
1, 2, 4, 5, 6, 7, 9, 10

Doncaster Medical
6083 Steeles Avenue West
Rexdale, ON
M9V 4R9
1, 2, 4, 5, 6, 7, 9, 10

Doncaster Medical
1120 Kingsway
Sudbury, ON
P3B 2E5
1, 2, 4, 5, 6, 7, 9, 10

Doncaster Medical
294 Main Street
Toronto, ON
M4C 4X5
1, 2, 4, 5, 6, 7, 9, 10

Doncaster Medical
2020 Tecumseh Road West
Windsor, ON
N9B 1V6
1, 2, 4, 5, 6, 7, 9, 10

G.G.M. Medical Supplies
637 Colby Drive, Unit 9
Waterloo, ON
N2V 1B4
4, 6, 7

Handi House
943 Carling Avenue
Ottawa, ON
K1Y 4E4
1, 2, 4, 6, 7P, 9, 10

Health-Care Pharmacy
1276 Lasalle Blvd.
Sudbury, ON
P3A 1Y8
1, 4, 6, 7

Henry's Pharmacy
153 Third Avenue
Timmins, ON
P4N 1C6
4, 6

Home Safety & Comfort Aids
11 Merredin Place
Don Mills, ON
M3B 1S7
1, 4, 6, 7P, 9

G.A. Ingram Co. of Canada Ltd.
1374 Ouellette Avenue
P.O. Box 308, Station A
Windsor, ON
N9A 6K7
1, 2, 4, 5, 6, 7, 9

Kingston Oxygen Home Service
107 Wellington Street
P.O. Box 1445
Kingston, ON
K7L 5C7
1, 4, 6, 7P, 9

Major Medical Supplies
598 Belmont Avenue
Kitchener, ON
N2M 1N5
1, 4, 6, 7, 9

Medical Arts Pharmacy
800 Princess Street
Kingston, ON
K7L 5E4
1, 4, 6, 7P

Harpers Pharmacy Ltd.
128 Penetang Street
Barrie, ON
L4M 1V6
4, 6

The Hearing Aid Centre
551 Main Street East,
Box 1258
North Bay, ON
P1B 8K5
4, 7P

Hogan Pharmacy
457 London Road
Sarnia, ON
N7T 4W9
1, 4, 6

Hunts Convalescent Equip-
ment Co.
1780 Albion Road
Rexdale, ON
M5V 1C2
1, 4, 6, 7P, 9

Kingston Convalescent Aids
Ltd.
505 Frontenac Street
Kingston, ON
K7K 4L9
1, 4, 6, 7, 9, 10

Major Medical Supplies Ltd.
685 Main Street East
Hamilton, ON
L8M 1K4
1, 2, 4, 6, 7, 9

McCall Drug Co. Ltd.
239 King Street West
Chatham, ON
N7M 1E6
1, 4, 6, 7

Medical Mart Supplies Ltd.
1224 Dundas St. East, Unit
28
Mississauga, ON
L4Y 2A4
1, 4, 6, 7P, 9

Medical Supplies
420 King Street West
Oshawa, ON
L1J 2K8
1, 4, 6, 7

Medigas Noront
677 MacDonalld Ave., Unit 5
Sault Ste. Marie, ON
P6B 1J4
1, 4, 6, 7, 9

Montgomery Elevator Co.
21 Grenfell Crescent
Nepean, ON
K2G 0G3
7

W.L. Mulvihill Pharmacy
164 Pembroke Street West
Pembroke, ON
K8A 5M8
4, 6

O'Hanian & Bourke
517 Upper Sherman
Hamilton, ON
L8V 3L7
1, 4, 6, 7

Orthopedic Services
970 Leathorne Avenue
London, ON
N5Z 3M5
4, 6, 7P

Ottawa Mobile Wheelchair
9 Gillespie Crescent, Unit 12
Ottawa, ON
K1V 9T5
4, 6, 9, 8 Roll-in Shower

Pharmashield Dispensary
5400 Portage Road
Niagara Falls, ON
L2G 5X7
1, 4, 6, 7P

Medical Supplies
65 Larch Street
Sudbury, ON
P3B 1E8
1, 4, 6, 7

Mid-Canada Medical
1230 Crestlawn Drive
Mississauga, ON
L4W 1A6
1, 4, 6, 7, 9

Montgomery Elevator Co.
20 Lockport Avenue
Toronto, ON
M8Z 2R7
7

A.G. Neale Ltd.
1104 Danforth Avenue
Toronto, ON
M4J 1M3
1, 4, 6, 7P

Ontario Medical Supply Ltd.
118 Clarence Street
Ottawa, ON
K1N 5P6
1, 4, 6, 7

Orthotic Aids & Services
P.O. Box 743
Haileybury, ON
POH 1K0
1, 4, 6, 7, 10

Parke & Parke Big "V"
Pharmacy
773 Main Street East
Hamilton, ON
L8M 1L3
4, 6

Portamatic Ltd.
66 Colonnade Road
Ottawa, ON
K2E 7K7
5

Regional Elevator Co. Ltd.
18H Enterprise Avenue
Ottawa, ON
K2G 0A6
7

Dean Russell Ltd.
187 Hyman Street
London, ON
N6A 1N4
1, 4, 6, 7P

Shoppers Drug Mart Health
Care Centre
6855 Meadowvale Town Centre
Circle
Mississauga, ON
L5N 2Y1
1, 4, 6, 7P

Starkman Surgical Supply
Ltd.
1243 Bathurst Street
Toronto, ON
M5R 3H3
1, 4, 6, 7, 9

Steele Medical Supply
20 Moira Street West
Ottawa, ON
K2P 1S2
1, 4, 6, 7

Summerhill Hardware
17 Alcorn Avenue
Toronto, ON
M4V 1E5
4, 5, 6

Summit Pharmacy
1383 Yonge Street
Toronto, ON
M4P 2E7
4, 6, 7P

Therapy Supplies and Rental
Ltd.
128 Sunrise Avenue
Toronto, ON
M4A 1B5
1, 4, 6, 7, 9

Vanguard Pharmacy
66 Delhi Street
Guelph, ON
N1E 4J7
1, 4, 6, 7P

Victoria Cycle and
Wheelchair
7-1222 Victoria Street
North
Kitchener, ON
N2B 3E2
1, 4, 5, 6, 7, 9

Whiteco Sales Inc.
929 Delzotta Avenue
Ottawa, ON
K1G 3N3
1, 4, 6, 7P

White Cross Supplies Ltd.
241 Richmond Street West
Toronto, ON
M5V 2W3
1, 4, 6, 7P

White Cross Surgical
Medical
1008 Wellington Street
Ottawa, ON
K1Y 2X9
1, 4, 6, 7P

Wilder Medical Supply Ltd.
407 Gage Avenue, Unit 5
Kitchener, ON
N2M 5E1
1, 4, 6, 7P

Quebec

Ascenseurs Alpin-Otis
Cie Ltée
656, rue de la Salle
C.P. 2477
Québec, PQ
G1K 7R3
7

Atlas Escalateurs et
Élévateurs (1979) Inc.
C.P. 214
St-Hyacinthe, PQ
J2S 7B4
7

Conval Aide Ltée
5410, rue Ferrier
Montréal, PQ
H4P 1M2
4, 6, 7P

Les Entreprises Norman
Michel Inc.
7383, boul. St. Laurent
Montréal, PQ
H2R 1W7
4, 6, 7P

Formedica Ltd.
7111, route transcanadienne
St-Laurent, PQ
H4T 1A2
4, 6

Illico Inc.
4204, boul. Décarie
Montréal, PQ
H4A 3K2
1, 4, 6, 7P, 8

Medicus Ltée
5050, boul. St-Laurent
Montréal, PQ
H2T 1R7
1, 4, 6, 7, 9

Les Ascenseurs Labadie Inc.
1815, av. Delorimier
Montréal, PQ
H2K 3W6
7

Centre Orthopédique de
Granby Inc.
388, rue Principale
Granby, PQ
J2G 2W6
1, 4, 6, 7

Elevabec Inc.
C.P. 484
St-Hyacinthe, PQ
J2S 7B8
7

Equipements Hospitaliers
EHQ Inc.
2264, rue Robitaille
Québec, PQ
G1P 1P7
4, 6, 7

J.E. Hanger
4259 ouest,
rue St-Catherine
Montréal, PQ
H3Z 1P7
4, 6, 7, 8

Labo J.J. Inc.
3980 est, rue Ontario
Montréal, PQ
H1W 1S9
1, 4, 6, 7P

Medi Plus
34-5757 Decelles
Montréal, PQ
H3S 2C3
1, 4, 6, 7P, 8, 9

Meditron Corp.
225, boul. Montpellier
St-Laurent, PQ
H4N 2G3
4, 6

Montgomery Elevator Co. Ltd.
2545, boul. Cavendish,
Suite 145
Montréal, PQ
H4B 2Y7
7

Regent St-Pierre Inc.
4338, rue St-Denis
Montréal, PQ
H2J 2K8
4, 6, 7, 8, 9

SOS Orthopedic Services
604 est, rue King
Sherbrooke, PQ
J1G 1B9
1, 4, 6, 7, 8

Unlimited Skills Inc.
2455, av. Lionel-Groulx
Montréal, PQ
H3J 1J6
4, 6, 7P, 9

Maritime Region

Capital Elevator Co.
293 Allen Street
P.O. Box 1508
Charlottetown, PE
C1A 7N3
7

Mrs. A. Blake Connors
90 Frederick Avenue
Fairview, NS
B3N 2K8
4, 6, 7

Mid-Canada Medical
6140, rue Vanden Abeele
St-Laurent, PQ
H4S 1R9
1, 4, 6, 7, 9

Physio E.R.P. Ltée.
1905, rue Gutenberg
Chomedey, Laval, PQ
H7S 1A1
1, 4, 6, 7P

J. Slawner Ltd.
5713, chemin de la Côte-des
neiges
Montréal, PQ
H3S 1Y7
1, 4, 5, 6, 7, 9

Universal X-Ray Co.
208, promenade Ronald
Montréal, PQ
H4X 1M8
1, 4, 6, 7P

T.B. Clift Ltd.
34 O'Leary Avenue
P.O. Box 8870
St. John's, NF
A1B 3T2
1, 2, 4, 6, 7, 9

Doncaster Medical
3600 Kempt Road
Halifax, NS
B3K 5M9
1, 2, 4, 5, 6, 7, 9, 10

Konval-Kare Rehabilitation &
Hospital Supply
242 High Street
P.O. Box 2700, Station A
Moncton, NB
E1C 8T8
1, 2, 3, 4, 5, 6, 7, 8, 9, 10

A.R. Menzies & Sons Ltd.
33 Rookwood Avenue
Fredericton, NB
E3B 2L8
1, 4, 6, 7P

Stead's Pharmacy
128 Kent Street
Charlottetown, PE
C1A 7L3
1, 2, 4, 6, 7

White Cross Surgical
945 South Bland Street
Halifax, NS
B3H 2S6
1, 4, 6, 7

Maritime Orthopedic Co.
Ltd.
21 Bevin Street
P.O. Box 2453, Station A
Moncton, NB
E1C 8J3
1, 2, 4, 5, 6, 7, 9

Montgomery Elevator Ltd.
120 Adelaide Street
Saint John, NB
E2K 1W8
7

Wassons Co. (1982) Ltd.
110 Crown Street,
P.O. Box 5020
Saint John, NB
E2I 4V3
1, 4, 6, 7P, 9

White Cross Surgical
Appliances Ltd.
114 Woodlawn Road
Dartmouth, NS
B2W 2S7
1, 4, 6, 7P, 9

MANUFACTURERS INDEX

Under the product keywords below, you will find the name, address and product(s) of each manufacturer. If you can't find a dealer that carries the item you need, you can write to the manufacturer for the name of the dealer closest to you.

1. Aids

Most aids to independent living are specialty items that are manufactured in the United States and imported for sale in Canada. Ask your dealer for a catalogue to see what is available. An ingenious aid can make a big difference in your daily routine by solving a particular problem; in fact, many of these aids were developed by disabled people or their therapists. Here are a few Canadian manufacturers and their products.

Doulton Canada Ltd.
Hotel Ware Division
850 Progress Avenue
Scarborough, ON
M1H 3C4

tableware: plates, extra-heavy
with rim, two-handled mugs;
available in patterns to match
regular ware

Mecanaids
6315 Shawson Drive, Unit 4
Mississauga, ON
L5T 1J2

reaching aids

P.W.L. Manufacturing
63 Courtland Avenue East
Kitchener, ON
N2G 2T5

personal care items: comb handles, dressing sticks, reaching aids, nail file and clippers; cardholder, bookrest

2. Alarms

If you are in the market for an emergency automatic telephone dialing system, your telephone Special Needs office can refer you to a local business providing this service, such as those listed below. Fire and burglar alarms and smoke detectors are widely available and are not listed here.

Base Communications Ltd.
124A 2nd Avenue North
Saskatoon, SK
S7K 2B2

remote-controlled automatic telephone dialer for medical alert

The Canadian Hearing Society
60 Bedford Road
Toronto, ON
M5R 2K2

device changes alarm signal to light flash or vibration for hearing-impaired

Medic-Alarm Canada Ltd.
205-719 Yonge Street
Toronto, ON
M4Y 2B5

remote-controlled automatic telephone dialer for medical alert

Protect-Alert
704-55 Queen Street East
Toronto, ON
M5C 9Z9

remote-controlled automatic telephone dialer for medical alert

3. Appliances

Be sure to check the section on Kitchens (see page 61) if you are buying major appliances. Here are a few Canadian manufacturers that have addressed the needs of the disabled consumer.

The Enterprise Foundry
Sackville, NB
E0A 3C0

gas ranges with front controls

Hoover Canada Inc.
4151 North Service Road
Burlington, ON
L7R 4A8

apartment-size washer and dryer

White-Westinghouse
503 Imperial Road
P.O. Box 1060
Guelph, ON
N1H 6N1

side-by-side refrigerator/freezer units; cooktop with side controls, optional smooth top, optional grill on one side; Spacemates front-loading washer

4. Bathroom Aids

The best way to choose a bathroom aid is to see it and use it. Most dealers display these products or can show you catalogues; many offer a rental or lease-to-purchase plan to help ensure that you get exactly the right piece of equipment.

Beneke Industries
280 Carlingview Drive
Rexdale, ON
M9W 5G1

toilet seats: raised, plastic, optional foam padding, safety rails

Everest & Jennings (Canada) Ltd.
111 Snidercroft Road
Concord, ON
L4K 1B6

toilet seats: raised, adjustable, optional safety rails; seat: tub, shower, commode, transfer; optional arms, back, adjustable legs

Invacare Canada
P.O. Box 655, Station A
Brampton, ON
L6V 2L6

toilet seats: adjustable, optional safety rails; seats: tub, transfer, combination; optional arms, back, adjustable legs

Lumex Inc.
J.W. Westman Inc.
6535 Millcreek Drive, Unit 8
Mississauga, ON
L5N 2M2

seats: tub, shower, transfer, combination, commode; optional arms, back, adjustable legs

Moldex
316 Bayview Drive
Barrie, ON
L4N 4Y8

toilet seat: raised, hollow-core plastic; optional safety rails

P.W.L. Manufacturing
63 Courtland Avenue East
Kitchener, ON
N2G 2T5

bathboard, transfer seat:
wood, with rubber stoppers;
made to order

5. Door Hardware

These products are available at most hardware and builders' supply outlets, or can be ordered by your dealer.

Besam of Canada
155 Deerhide Crescent
Weston, ON
M9M 2Z2

door openers/closers

Direct Access Design
53 Eastwood Road
Toronto, ON
M4L 2C6

door opener/closer: indoor/
outdoor, remote-controlled,
wall-mounted switch with key
lock, electronic lock option

Dor-Control Craftsmen Ltd.
190 Hwy. No. 7 West, Unit 17
Brampton, ON
L6V 1A1

door opener/closer: indoor/
outdoor, time delay, elec-
tric, controlled by wall
switch, mat or remote signal

Ideal Security Inc.
860-90^{eme} Avenue
Lasalle, PQ
H8R 3A2

door closers; lever door-
knobs; locks

Keyless Security Systems
504 - One Yorkdale Road
Toronto, ON
M6A 3A1

pushbutton combination lock
with automatic bolt retraction

LCN Closers
Division Ingersoll-Rand
J.M.T. Phillips & Associates
Box 428, Clarkson Postal Stn.
Mississauga, ON
L5J 3Y2

door closers with pressure
equalizers;
institutional hardware

Mallory Hardware Products
Ltd.
P.O. Box 190
Blenheim, ON
N0P 1A0

door closers; lever doorknobs
and drawer pulls

Piramid Manufacturing Ltd. 28 Grenfell Crescent Nepean, ON K2G 0G2	folding and sliding closet doors; shelving systems
Sargent, div. Kidde Canada Ltd. P.O. Box 328 Peterborough, ON K9J 6Z3	door closers; lever doorknobs, hospital latches
Spar-Mont 135 Riverside Drive North Vancouver, BC V7H 1T6	door, window, cabinet hard- ware; lever doorknobs (Wes- lock); door closers
Stanley Automatic Door Openers Ltd. P.O. Box 879 Windsor, ON M9A 6P2	automatic garage door opener/ closer
Stanley Hardware 5230 South Service Road Burlington, ON L7Z 5K2	SWING-CLEAR hinge
Unican Security Systems Ltd. 5795, av. De Gaspé Montréal, PQ H2S 2X3	pushbutton combination lock
Weiser Inc. 6700 Beresford Street Burnaby, BC V5E 1Y2	lever doorknobs; interior/ exterior; door closers

6. Grab Bars

The distributors listed in the Dealer Index will carry most standard shapes and sizes of grab bars, and can usually order special designs for you as needed.

Allied Technical Services
1262 Don Mills Road
Don Mills, ON
M3B 2W7

Beneke Industries
280 Carlingview Drive
Rexdale, ON
M9W 5G1

W.R. Breen Ltd.
23 Taber Road
Rexdale, ON
M9W 3A7

Frost Metal Products
170 Chatham Street
Hamilton, ON
L8P 2B6

Invacare Canada
P.O. Box 655, Station A
Brampton, ON
L6V 2L6

JRD Enterprises Ltd.
202 West 5th St.
Litchfield, MN 55355

Lumex Inc.
J.W. Westman Inc.
6535 Millcreek Drive, Unit 8
Mississauga, ON
L5N 2M2

Moldex
316 Bayview Drive
Barrie, ON
L4N 4Y8

Watrous Sales Inc.
121 Nugget Avenue
Agincourt, ON
M1S 3B1

7. Lifts

Most lifts designed for use by the disabled are manufactured in the United States and imported, installed and maintained by Canadian companies (listed under Dealers). The Canadian manufacturers tend to be local or regional. Your best bet is to consult with a few dealers in your area and check other installations they have made. Talk to disabled people who have the kind of lift you need. This is a major purchase, involving installation and a service contract, so you should be sure before you buy.

American StairGlide Corp.
4001 E. 138th Street
Grandview, MO 64030

StairGlide: interior,
exterior; porch lift

The Cheney Company
3015 South 163rd Street
New Berlin, WI 53151

Handi-Lift: indoor/outdoor
porch lift;
Wheelchair Stair Lift:
side-mounted, fold-up;
Wecolator Stairglide: can fit
any stairway

Concord Elevator Co.
6803 Steeles Avenue West
Rexdale, ON
M9V 4R9

Econolift: enclosed vertical
shaft lift, indoor

Econol Stairway Lift Corp.
2513 Center Street
Cedar Falls, IA 50613

wheelchair stairlift;
porch lift;
enclosed vertical shaft lift;
stairglide

Enviroman Ltd
962 Alliance Road
Pickering, ON
L1V 2P8

enclosed vertical scissor lift

Everest & Jennings (Canada)
Ltd.
111 Snidercroft Road
Concord, ON
L4K 1B6

patient lifter: portable or
fixed; hydraulic or mechani-
cal; breaks down for trans-
port

The Flinchbaugh Co. Inc.
390 Eberts Lane
York, PA 17403

Butler Wheelchair Lift: stair-
lift;
Butler Stairclimber: stair-
glide

Inclinor Co. of
America
P.O. Box 1557
2200 Paxton Street
Harrisburg, PA 17105

Inclinette: single seat
stairglide;
Stairlift: stairglide;
Elevette: vertical enclosed
shaft lift; outdoor inclined
lift

Invacare Canada
P.O. Box 655, Station A
Brampton, ON
L6V 2L6

portable hydraulic patient
lifter: offset legs and low
front casters for clearance,
can be broken down, floor
bases available;
bath chair lift

Mecan aids
6315 Shawson Drive, Unit 4
Mississauga, ON
L5T 1J2

Mecalift lightweight patient
lifter with mobile or fixed
base;
Autolift: bath chair lift

Mitro Industries
750 Little Hill Street
London, ON
N5Z 1M5

SkipLift: outdoor porch lift

RJ Mobility Systems Inc.
715 South 5th Avenue
Maywood, IL 60153

porch lift;
wheelchair stairlift;
indoor shaft lift

Robertson Custom Aids Ltd.
777 Warden Avenue, Unit 11A
Scarborough, ON
M1L 4C3

porch lift;
enclosed or open vertical
shaft lift;
patient lifter: fixed,
hydraulic

Toce Bros. Manufacturing
P.O. Box 498
Brossard, LA 70518

Wheelovator: indoor/outdoor
porch lift;
Stairolator: stairglide

8. Plumbing

Plumbing supply outlets and some hardware and building centres will handle this kind of equipment.

American Standard
Allied Technical Services
1262 Don Mills Road
Don Mills, ON
M3B 2W7

toilets: higher, elongated;
options include bedpan cleaning slots and spray attachment, raised seat, support arms;
tubs: slip-resistant finish, integral grab bars;
basins: shallow, elongated, offset drain;
sinks: kitchen stainless steel, offset drain;
fixtures: blade-handled faucets, single-arm control, non-scald valve, integral thermometer, hand-held shower;
shower stall floor sloped for access

Bobrick Washroom Equipment (Canada) Ltd. 85 Progress Avenue Scarborough, ON M1P 2Y8	institutional equipment
Bradley Corporation Aristocrat Manufacturing Co. Ltd. 4500 Dixie Road Mississauga, ON L4W 1V7	institutional equipment
Crane Canada Ltd. 5800, chemin Côte de Liesse Montréal, PQ H4T 1B4	toilets: higher, elongated; options include bedpan cleaning slots and spray attachment, support arms; basin: shallow, elongated, offset drain; fixtures: blade-handled faucets, thermostat, hand-held shower
Delta Faucet of Canada Ltd. 250 Base Line Road East Bowmanville, ON L1C 1A4	fixtures: single-arm control for basin, shower or kitchen, lever-handled faucets, hand- held shower
Jameco P.O. Box 640 Prescott, ON K0E 1T0	fixtures: lever-handled fau- cets
Lumex Inc. J.W. Westman Inc. 6535 Millcreek Drive, Unit 8 Mississauga, ON L5N 2M2	hand-held shower
Universal Rundle Corp. 303 North Street P.O. Box 29 New Castle, PA 16103	toilet: higher, elongated; basin: elongated, shallow, offset drain; tubs, showers with integral grab bars; hand- held shower; accessible shower stall unit (complete)
Waltec Industries Wallaceburg, ON N8A 4L9	fixtures: lever-handled con- trols for tub, shower, basin or sink; hand-held shower

9. Ramps

A major ramp installation will be built to order; portable ramps usually can be ordered from your dealer.

Handi-Ramp Inc.
P.O. Box 745
1414 Armour Blvd.
Mundelein, IL 60060

portable ramps: solid or
two-channel;
platforms, handrails for fixed
installations

P.W.L. Manufacturing
63 Courtland Avenue East
Kitchener, ON
N2G 2T5

ramps made to order (local/
regional)

Thor-Weld Industries
137 Millwick Drive
Weston, ON
M9L 1Y7

portable two-channel ramp,
optional folding, variety of
lengths, curbs, light-weight
aluminum

10. Telephone

Most telephone companies carry a line of equipment for special needs and have an office to help you choose the appropriate devices. Environmental control systems are usually designed to meet your particular needs.

The Canadian Hearing Society
60 Bedford Road
Toronto, ON
M5R 2K2

telephone attachments for
hearing-impaired

TASH -- Technical Aids
and Systems for the
Handicapped, Inc.
Sunnybrook Medical Centre
2075 Bayview Avenue
Toronto, ON
M4N 3M5

autodialer;
communication aids;
Environmental Control System
(ECS); Touch Operated Switch
Control (TOSC); RotoTable:
revolving table-top

LKC
HV 1569.2 .C2 K8 1983
Kushner, Carol
Making your home accessible a disabled
consumer's guide

DATE DUE
DATE DE RETOUR

CARR McLEAN 38-298



Canada 