

Multi-Use Toilet, Bathroom & Bedroom Facilities

in schools, hospitals, residential care homes, hospices, holiday centres & hotels

This information is written as a useful resource for those who are planning to either refit existing facilities or design a new building

To be used in conjunction with:

Chapter 8a	<i>Equipment for Adaptations;</i>
Chapter 8b	<i>Electric Beds;</i>
Chapter 9	<i>Hoisting;</i>
Chapter 14	<i>Scales & Templates;</i>
Chapter 15	<i>Adaptation Specifications;</i>
Chapter 18	<i>Addresses: Manufacturers/Suppliers/Sources of Advice.</i>

The following are the issues to be considered:

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Design criteria

In all the situations listed on the previous page, a number of important criteria, when designing the layout of the fittings and choosing the equipment, may be influenced by funding or space limitations. The fittings and equipment must be:

- ⇒ suitable for people with a wide range of physical disability and needs;
- ⇒ suitable for the needs of the carers;
- ⇒ able to withstand regular and heavy use;
- ⇒ attractive;
- ⇒ good value for money.

Suitable for people with a wide range of physical disability and needs

The aim is to provide as much independence as possible. It is important, depending upon the space available, that alternatives are provided and that they are as flexible as possible with regard to the positioning and height of the fittings. It will be essential to plan for three disability groups:

- people who are disabled, but able to walk;
- wheelchair users who can transfer out of their chairs independently or with minimal help;
- wheelchair users with arm weakness and who cannot transfer out of their chairs and need to be hoisted.

Building categories and users' ability levels

The type of building and the client group using it will have a great influence on the criteria for design. It is worth considering whether the bathrooms will be used independently, dependently or both in the same room. The following table offers some typical scenarios:

	Independent	Dependent	Both
Schools			✓
Care Homes	en suite	✓	
Hospitals	en suite	✓	✓
Hospices	en suite	✓	
Holiday Centres	en suite		✓
Hotels	en suite		

Suitable for the needs of the carers

The importance of protecting the carers' backs has been fully recognised since the introduction of EC rules, and this is discussed in Chapter 9 *Hoisting*.

Able to withstand regular and heavy use

This means that the facilities must be robust and suitable for the heaviest and most disabled people. Unfortunately, members of the general public do not always respect the property of others and the quality of the fittings must reflect the ability to withstand some abuse.

Attractive

All the equipment recommended must be both attractive and easy to clean.

Good value for money

The cheapest equipment is not always the best buy; the items included in this chapter have been assessed over a number of years and have proved more economical in the long term.

Choice of products

The questions asked are:

- ⇒ How can the facilities be flexible enough to suit a wide range of disabled people?
- ⇒ What type of toilet will be the most appropriate?
- ⇒ Is the choice of toilet seat important?
- ⇒ Will support rails be useful?
- ⇒ How can the toilet paper be left within reach?
- ⇒ What space is needed around the fittings?
- ⇒ Which model of washbasin and taps will be the most satisfactory?
- ⇒ Would a changing bench be helpful?
- ⇒ What type and model of hoist should be used?
- ⇒ Will a bath (with over-bath shower) or a level-access shower (or both) be needed?
- ⇒ What type of bath will be needed?
- ⇒ What type of level-access shower will be needed?
- ⇒ What type of shower screen will confine the water?
- ⇒ What type of shower valve?
- ⇒ What type of shower seating should be used?
- ⇒ What type of flooring will be the most satisfactory?
- ⇒ Will colour contrast help?

How can the facilities be flexible enough to suit a wide range of disabled people?

Pressalit Multi System

This is the recommended solution. It consists of an aluminium horizontal wall track (the Multi track), which is fixed around the room with the top of the track **850mm** from the floor. Individual height-adjustable bracket fittings are then hung on the track.

The advantage is that both the position of the fittings and their height are instantly adjustable. This is invaluable to ensure maximum independence for each individual in relation both to the space needed for transfers and to provision of leverage to stand up. The only permanent fixture in a school toilet is the toilet pan; therefore, when making decisions regarding the positioning of the fittings, this should be the first item to be considered. In residential situations, if a bath is included in the design, this will also be a fixture.

What type of toilet will be the most appropriate?

The choice is between the following:

- ⇒ close-coupled toilet;
- ⇒ low-level cistern with long flush pipe;
- ⇒ back-to-the-wall/wall-mounted pan with a concealed cistern;
- ⇒ shower toilet.

Close-coupled toilet

This type may not be satisfactory when used with a superimposed shower/toilet or bath chair. This is because the front-to-back measurement between the front of the cistern and the front of the pan may not be sufficient to allow the seat aperture of the chair to line up accurately with the pan below.

Low-level cistern with long flush pipe

For these reasons, unless a shower toilet is installed, a low-level cistern and a pan with an inlet that can be lengthened is recommended to allow **600mm** between the front of the cistern and the front of the pan.

Back-to-the-wall/wall-mounted pan with a concealed cistern

This option is expensive unless a new building is planned. The advantage of this type of installation is that the toilet is practical to keep clean, which in hospital and residential use is particularly important. With this installation it will be essential to install a backrest.

The following recommendations should be considered:

- any toilet pan chosen should project at least **700mm** forwards from the wall;
- there should be **600mm** from the front of the cistern to the front of the pan;
- the optimum pan height is difficult to determine because this will depend on whether the user needs to superimpose a chair over the pan, needs to transfer sideways with or without help, or needs a certain height in order to stand up. As the height of the pan can be raised with a toilet raiser, but cannot be reduced, the height chosen for multi-use must be the minimum height, which is **400mm**;
- the cistern should be relatively narrow so that it does not obstruct side support arms;
- a spatulate cistern flush lever promotes independence;
- a back support hung on the Multi track should be provided when using a concealed cistern because, when the pan is set forwards, the cistern and lid cannot be used for support.

N & C Building Products Ltd/Phlexicare Division

Shower toilet

This toilet was previously termed a combined WC/bidet. It is the recommended solution because it allows the user the privacy of cleansing independently if unable to reach to use lavatory paper. In multi-use, if the bidet action is not needed, the pan can be used as a standard pan. Further details are included in Chapter 8a *Equipment for Adaptations*, with a comparative chart of the alternative models.

Clos-o-Mat: *Total Hygiene Ltd*
Geberit: *ESL Healthcare Ltd*

Is the choice of toilet seat important?

Yes, as seats need to be *comfortable* because a disabled person may take a long time on the toilet, *supportive* if there is a problem in balancing, and *flat and wider* if the person is able to transfer independently.

The following need to be considered:

- ⇒ padded seats;
- ⇒ *Pressalit* seats;
- ⇒ use with shower toilet;
- ⇒ raised toilet seat;
- ⇒ hinges.

Padded seats

Although comfortable, padded seats are not recommended for multiple use because they can be torn and are more difficult to keep clean.

Pressalit seats

The following are all suitable for any of the recommended toilets.

Colani

The surface is curved and, because the user sits in a hollow, it is supportive and helps balancing, which will be important for anyone lacking trunk control. The size of the hole is smaller than average, which makes this seat particularly suitable for children from approximately the age of 6. However, it is not suitable for anyone who is able to transfer, but is unable to push down on their arms to lever themselves out of the hollow.

Ergosit

This seat is recommended for anyone able to transfer, but who needs a wider surface with a good grip for hand support.

Dania

If changing the seats is not practical, this model is a compromise solution that will suit most people. The lid is shaped and, when raised, acts as a back support. It can also be supplied with an open front, which is small enough to prevent the person's thighs from becoming wedged.

Use with shower toilet

All these non-raised seats are modified by *Total Hygiene* and supplied with their Clos-o-Mat – one of the shower toilets available.

Raised toilet seat

All the above seats are available raised **50mm**, and the Dania has the additional options of a height of **100mm** and an open front. These should be available to help anyone who can stand up only from a higher position. The pan would not then be suitable for use with a superimposed chair; in a multi-use situation, the raised seat would be removed when not needed.

Hinges

Public-use hinges B84, which have a through rod, are recommended. The fact that these are also available in an anti-theft version B85 is a recommendation for the quality of the seat! The durability of these seats is the product of the strength of the hinges and the provision of stability buffers, which are mounted at the front and protect the hinges from becoming loose. This is important for anyone who cannot lower themselves gently on to the pan and the seat has to be capable of withstanding a 'snatch' weight.

Pressalit Care Ltd

Will support rails be useful?

The usefulness of rails will depend upon the individual person, and also on being at the optimum height and in the correct position for each user, as follows:

- ⇒ fixed height;
- ⇒ variable height only;
- ⇒ vertically and laterally adjustable;
- ⇒ frontal crossbar.

Fixed height

Fixed-height support arms are used where the needs of individuals are static/stable and easily identified, or where help is not always at hand to adjust the equipment. In a multi-use situation this type of rail does not provide the flexibility that is needed. (A continuous handrail may help anyone who is unsteady on their feet to walk around the room.)

Variable height only

These are adequate when it is known that height requirements will vary, but the position of the rails will not need to be changed. If at any time the rails are not required, they can be removed temporarily and relocated or stored.

Vertically and laterally adjustable

When the needs are unknown or variable, both the height and position of the support arms can be altered to suit each individual as closely as possible. The room can be used equally well by an independent person or someone who needs help, and also in a way that suits the carer.

These products are recommended for multiple-use situations. With the Multi track, the rails can be adjusted to be as near to the user as necessary, and to project **100mm** in front of the toilet pan to provide support when standing up. The height of the rail can be adjusted within a range of **250mm**. An additional advantage of these rails is that they are particularly easy to raise and lower, which will be important for someone with limited muscle power.

Frontal crossbar

Many children need a support in front of them, and the crossbar from *Pressalit* is quick and easy to fix between two support arms – and to remove. An alternative option, when the toilet is in a corner, is to use an additional support arm on the Multi track on the adjacent wall, so that it lowers in front of the person in the most comfortable position, which can be altered as necessary.

How can the toilet paper be left within reach?

The arm should include a toilet-roll holder to enable the paper to be within the reach of most users. This should be supplied even with a shower toilet, as the latter may not be used on every occasion as a bidet and drier.

What space is needed around the fittings?

This is discussed in detail in Chapter 14 *Scales and Templates* and the overlay sheet can be used to check the measurements.

Transfer space at the side of the toilet

Ideally, this should be **1500mm** with a minimum of **900mm** and, where there is sufficient space, this should be the same on each side of the pan. However, if this is not possible, the distance from the centre of the pan to the nearest obstruction on the adjacent wall on one side should be a minimum of **500-600mm**.

The option to move a basin sideways can create space on both sides of the toilet to achieve left- or right-handed transfers and for people with good arm function, independent washing before transfer away from the toilet.

Space in front of the basin

This should be a minimum of **1000mm** (or, ideally, **1500mm**) in order that the basin can be approached squarely in a wheelchair.

Which model of washbasin and taps will be the most satisfactory?

The following should be considered:

- ⇒ height;
- ⇒ method of height adjustment;
- ⇒ Multi System lateral basin movement;
- ⇒ size;
- ⇒ recommended model;
- ⇒ taps;
- ⇒ Multi System accessories;
- ⇒ position of a mirror.

Height

All wheelchairs have varying heights of armrests and, in the case of powered wheelchairs, the height of the joystick control will vary. Therefore, the basin must be height adjustable to allow wheelchair access to every model of chair. A fixed height, set at the maximum level likely to be needed is not a solution because if it is too high, people with a neuromuscular condition would be unable to lift their arms on to the top of the basin.

Method of height adjustment

A choice of three mechanisms is available:

- ⇒ electric;
- ⇒ counterbalanced;
- ⇒ manual.

Electric

If independence is a priority, this instant adjustability is essential for anyone unable to lift their arms or with limited upper body strength.

450mm adjustment: *Astor-Bannerman (Medical) Ltd*

300mm adjustment: *Pressalit Ltd*

400mm adjustment: *Southern Care Systems Ltd*

Counterbalanced

This has a built-in gas cylinder, which counterbalances the weight of the basin and allows the height to be adjusted with ease by most disabled people unless their arms are particularly weak. This may be difficult for anyone with a neuromuscular condition, but in the settings being discussed there will be a helper available to alter the basin height prior to use. The basin mounting has **300mm** of adjustment, e.g. from **667** to **967mm**.

Pressalit Ltd

Manual

This system may be adequate for people who need infrequent adjustment of the basin; however, if the height needs to be adjusted regularly for more than one person, a counterbalanced or electric system would be more appropriate.

Pressalit Ltd

Multi System lateral basin movement

The above three mechanisms can also be supplied with sideways movement (with a limit of **680mm** for the electrical and counterbalanced systems and up to **1800** for the manual system).

Pressalit Ltd

Size

Ideally, the basin should be approximately **1200mm** in width to allow sufficient space to leave toiletries within reach, and **670mm** front-to-back to enable the user to get right up to the front of the basin without the wheelchair footrests touching the wall behind the basin. A bolt-mounted shallow basin would be suitable for the above adjustable-height systems.

Recommended model

There are two alternatives, the ABW4 or Beaumonde, both of which can be fixed to the Multi track using special connecting brackets to link the basin mounting to the vanity unit or basin. (The basin should be fitted with flexible hosing so that the position can be adjusted as necessary.)

ABW4: *Astor-Bannerman (Medical) Ltd*

Beaumonde: *N & C Building Products Ltd/Phlexicare Division*

Taps

The taps should be low and have **150mm** levers to make them easier to reach. The ABW4 can be supplied with very satisfactory lever taps. The alternatives for use with the Beaumonde basin are Novalever basin pillar taps, which are available from the same supplier as the basin. Mixer taps centrally placed are not advisable as the user may find them to be an obstruction when leaning forwards over the basin.

Astor-Bannerman (Medical) Ltd

N & C Building Products Ltd/Phlexicare Division

Multi System accessories

A wide range of useful items are available to add to the convenience of the Multi System. In addition to the toilet-roll holders already discussed, these include soap dishes, towel rails, shelves and baskets.

Pressalit Care Ltd

Position of a mirror

A large mirror should be fixed to the wall straddling the area where the washbasin will be positioned. This should extend from **50mm** above the Multi track (i.e. **900mm** from the floor) to a height of **2000mm**.

Would a changing bench be helpful?

Yes, if there is sufficient space. Ideally, this should be powered, as height adjustment will ensure that it is at the optimum height for the carer and will assist with transfers to and from a wheelchair. It will be helpful if it has an elevating backrest to enable the disabled person to be supported sitting up, or in such situations as being dressed and while the hoist sling is put on.

For a fixed-height model for multi-use, the *Pressalit* shower bench is recommended because it can be used on the Multi track. Unfortunately, it does not have a backrest, but the firm are considering this modification. Alternative powered models with a backrest are available from:

Astor-Bannerman (Medical) Ltd

Otto Bock UK Ltd

Scanflex Ltd

Southern Care Systems Ltd

What type and model of hoist should be used?

The choice is between a ceiling or mobile hoist and the points to be considered, together with suggested recommended models, are discussed in Chapter 9 *Hoisting*. In a school, a hoist may be needed in a number of rooms, in which case a mobile hoist is the best solution. However, if a hoist is needed in the toilet only, a ceiling hoist is likely to be the best option; this is because it does not require physical effort to manoeuvre and does not take up any space in the room. A room-covering system is likely to be the most satisfactory choice.

See comparative chart in Chapter 9 *Hoisting*.

Will a bath (with over-bath shower) or a level-access shower (or both) be needed?

Where the emphasis is on multi-use, ideally there should be provision for both a separate bath and a shower. The bath should have an integral shower or a wall-mounted shower; the need and positioning are discussed in Chapter 15 *Adaptation Specifications*.

What type of bath will be needed?

The height of the bath must be adjustable to allow the carers to work at the correct height for their backs. Many institutional baths of this type are available; however, in the context of this manual, where the emphasis is on independence, the *Arjo* Sovereign Hi-Lo should be considered.

Arjo Ltd

Arjo Sovereign bath with shower

As there will be a hoist in the bathroom, this range of baths is ideal as they are particularly practical for carers and yet do not look institutional. Because of the need to protect the carers' backs, the model recommended is the Hi-Lo, which is height adjustable. This bath is described in detail in Chapter 8a *Equipment for Adaptations*.

Arjo Ltd

What type of level-access shower will be needed?

The items to be considered are:

- ⇒ size;
- ⇒ flooring or tray.

Size

The size and shape of a level-access shower will be influenced by the size and shape of the room and will be either square or oblong. The recommended sizes are approximately **1000 x 1000mm** or **1500 x 900mm**. If an oblong tray is chosen, the **900mm** depth is recommended because, if the tray is used with a screen, a smaller tray would not allow sufficient space in the shower.

Flooring or tray

The shower must be a level-access installation and the choice is between a floor laid with a gentle gradient (ideally to a corner drain), a conventional shower tray, Impey Level Dec or a Neatdek - which has the advantage of being the only truly level shower base. For communal use, a wet-floor area is usually the most practical, where possible restricting the gradient to a minimum to help anyone with severe arm weakness who has difficulty propelling up a slope. It is important that the floor is laid by experienced builders, as confining the water without residual puddles will depend upon the correct gradient.

Impey Level-Dec: *Creative Healthcare Ltd*

Other trays: *Autumn Mobility Ltd*

Neatdek: *Go Independent*

Underfloor heating eliminates the need for a radiator and ensures that the floor surface dries quickly.

What type of shower screen will confine the water?

The choice is between:

- ⇒ portable or wall-fixed screens;
- ⇒ shower curtains – full or half height.

Portable or wall-fixed screens

These are recommended for use when the disabled person is independent and has no difficulty in positioning or closing the screens, as they confine the water very satisfactorily. Air-assisted models will be easier to open and close. However, where the disabled person depends on help, screens may make it difficult for a carer to lean over the top.

Autumn Mobility Ltd

Go Independent

Shower curtains – full and/or half height

If help is needed, half-height curtains fixed below support arms are likely to be the best choice as the carers can position their feet under the curtain, making it easier for them to lean forward. Obviously, the arms are load bearing, with the bonus that they can be leant on by the carers. However, they may also be easier than a shower screen for some disabled people to position independently. It is recommended that the curtains are weighted.

Pressalit Care Ltd

In addition, half-height curtains can be used with full curtains, which cover an area of approximately **1500 x 900mm**. The support arm (with half-height curtain) is lowered between the user's wheelchair and the full-length curtain, in order to keep the chair dry and yet to allow the disabled person to transfer and dress in privacy.

Pressalit Care Ltd

What type of shower valve?

The shower valve should be lever operated and with thermostatic control. The valve may be fixed in position or the *Pressalit* Multi shower valve bracket can make movement of the valve possible. Movement allows the valve to be used, for example, for hair washing at the basin, as well as in the shower. The handing of an independent shower can be changed from left to right by moving the valve. The recommended valve is the *Damixa* Thermostatic Shower Mixer.

N&C Building Products Ltd/Phlexicare Division

An alternative shower is the *Triton* Millenium with a push-button control. Any shower used must meet EU standards and this must be checked.

Shower-head holder

This can be mounted on to a *Pressalit* vertical grab rail and a **1000mm** length is recommended for use when either in a chair or standing. The advantage is that the grab rail is stronger than the standard rail installed and can be used as a means of support. If a greater range of positions and heights is needed, two rails can be used.

What type of shower seating should be used?

- ⇒ wall-mounted shower seat;
- ⇒ self-propelled shower chair;
- ⇒ shower bench.

Wall-mounted shower seat

The following must be considered:

- ⇒ optional backrest and folding armrests;
- ⇒ height-adjustable support arm;
- ⇒ type of seat;
- ⇒ location of seat;
- ⇒ height adjustability of shower seat.

Optional backrest and folding arms

A backrest will be essential, but should be supplied without the optional standard folding armrests, which will not be long enough for anyone who needs the support to extend in front of their thighs to help them to balance when standing up.

Height-adjustable support arm

As an alternative, the extra projection of the **850mm** support arm would be beneficial; one of these could be slid along the Multi track from the side of the toilet to the optimum position in the shower.

Pressalit Care Ltd

Type of seat

The choice is between a padded slip-resistant seat with a ribbed surface for drainage, or a seat with an aperture. The advantage of an aperture is that it provides access for washing and the shape may help stability. The seat depth (front to back) is important to ensure that it is not so narrow that balancing is difficult. An open gap front is not usually recommended for multi-use because, if the users legs are 'windswept', the support will be inadequate and the legs will fall into the gap.

Location of seat

The Multi track allows the seat to be slid towards the wall, so that the disabled person can reach the water controls to be able to use them independently, or away from the wall, so that there is space for a carer on either side to help with washing, repositioning a sling, etc. Alternatively, the seat can be easily relocated to the adjacent wall to provide the option of left- or right-handed use, which may be important for some independent transfers where the user is stronger on one side of the body than the other. This may also be important in a rehabilitation unit where a particular side of the body needs strengthening.

Pressalit Care Ltd

Height-adjustability of shower seat

- **Manual adjustment**

If the bather is able to stand up from a seat, but the seat must be at the correct height, the *Pressalit* seat should be used with the Multi track and support arms. The height can be adjusted before the bather enters the shower; this height flexibility makes the shower suitable for the majority of users.

Pressalit Care Ltd

- **Electrical adjustment**

Many adults find it difficult to stand safely in a shower; however, if they sit on a shower seat or chair they are unable to stand up independently. The answer is to use an electric height-adjustable seat which rises sufficiently for the user to stand up and yet can be lowered near enough to the floor to allow the bather to sit with feet firmly supported on the floor and with the ability to get down to wash their feet. The seat should have a supportive backrest, and arms that project beyond the front of the seat to provide support when standing.

Astor-Bannerman (Medical) Ltd

Pressalit Care Ltd

Self-propelled shower chair

To limit the equipment that needs to be stored when not in use, it may be satisfactory to offer this type of mobile shower chair only. This may be adequate because it can be used both independently by a person able to propel, and also with the help of a carer by others who have restricted arm strength. The priority will be to ensure that the model chosen is supportive and flexible enough in its design to be suitable for people with a wide range of needs. Many shower chairs are available, but the models recommended are modular – with interchangeable seats, armrests and footrest – and, therefore, can be altered to suit the user.

Aquability range: *ASM Accessories Ltd*
Freeway: *Westholme*

Alternatively, anyone able to propel a wheelchair and transfer independently may find it easier to transfer to and from the more stable wall-mounted shower seat.

Shower bench

In some cases it is easier to shower a disabled person (particularly a child) who is lying on a shower bench. This will be particularly valuable if the bathroom is not adjacent to the bedroom or ward, as it provides the opportunity to dry and dress the person without transferring to their bed. The bench can be installed at a fixed height (usually **850mm** from the floor) or, ideally, supplied electrically height adjustable, to protect the carers' backs and allow them to work at the optimum height. The alternative is to dry the person on the bed, using waterproof sheeting or a towel to keep the bedding dry; this might be the preferred option in en-suite facilities.

It is likely to be easier to dress someone and to position the ceiling hoist sling when they are sitting up with their back supported; in future, *Pressalit* will be considering the incorporation of a backrest into the bench. The advantage of the *Pressalit* fixed-height bench is that it can be used with the Multi track. Several firms supply benches of this type.

Astor-Bannerman (Medical) Ltd
Otto Bock Healthcare Plc
Pressalit Care Ltd
Scanflex Ltd
Southern Care Systems Ltd

What type of flooring will be the most satisfactory?

Shower/bathroom

Disabled people who are able to walk, but are unsteady, may depend on a suitable floor surface. Although this must be non-slip, the surface must not be too abrasive as the texture grips the sole of the shoe and makes it very difficult to lift the foot. Non-slip ceramic tiles, *Nairn* Surestep tiles, *Altro* Safety flooring, *Marley* Safetred Aqua/Dimension are surfaces to consider. The alternatives must be practical to clean; surfaces with excessive grit (which are resistant to cleaning) and with bobbles (which harbour dirt around the projections) should be avoided. Laying the floor is a skilled job and employment of a specialist-flooring contractor is advisable.

Bedroom

As in the bathroom, the surface must be suitable for people who are able to walk, but have difficulty lifting their feet, and/or for those in wheelchairs. If carpet is chosen it will be important that the pile is not so thick that it will be resistant to the wheelchair. Flotex is a very hard-wearing carpet and has been used with success for many years; this has to be balanced against its utilitarian appearance.

Bonar Floors Ltd

Will colour contrast help?

Partially-sighted people will benefit greatly from strong colour contrast. As most flooring, wall materials and sanitaryware are light coloured, a dark blue or red can give excellent colour contrast for the vinyl seating and padded armrests. Supportive products made of matt or non-gloss materials will be less reflective and therefore easier to see. Colours can also have a psychological benefit in making the bathroom more fun to be in and less institutional.

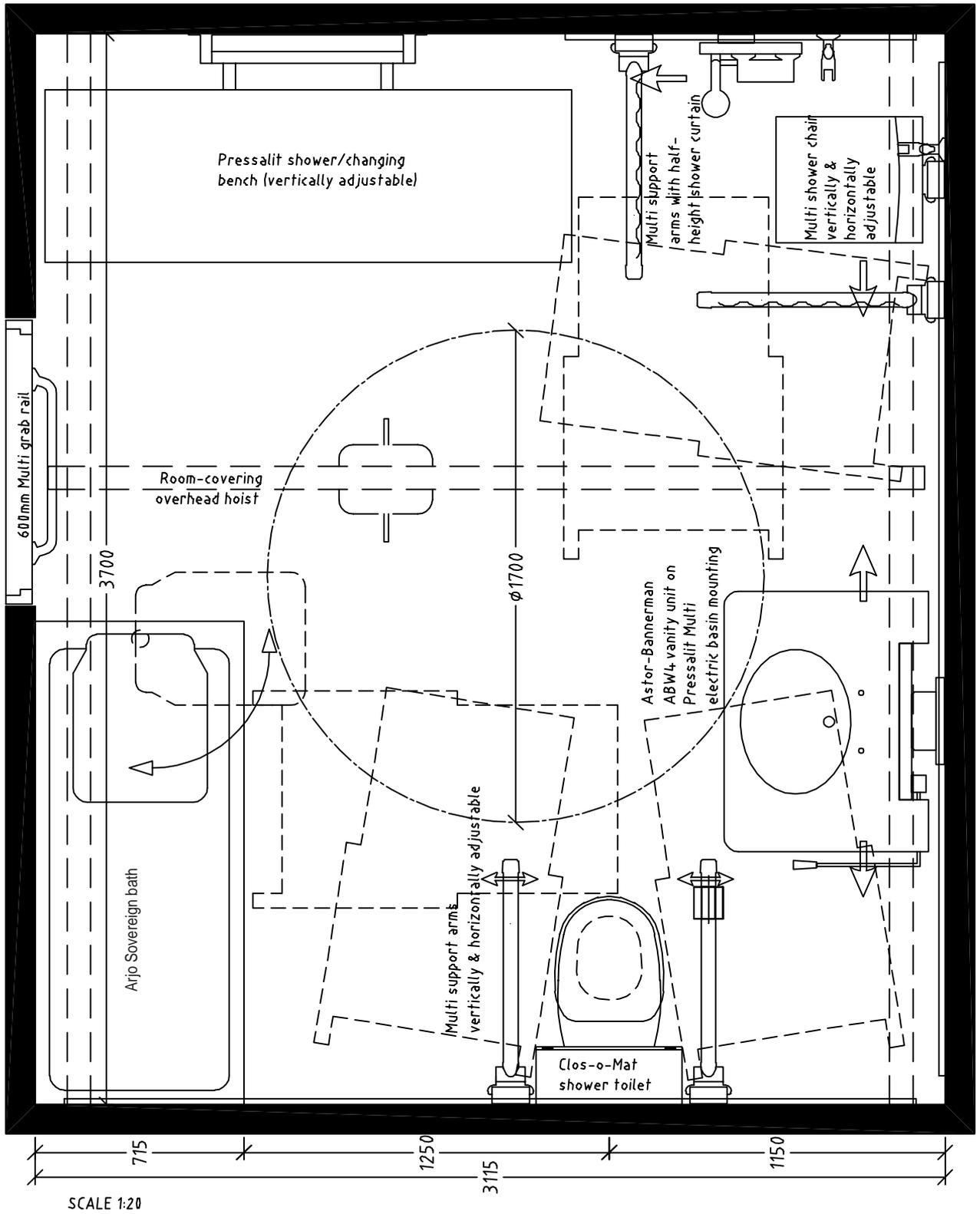
School bathroom/toilet facilities

The Muscular Dystrophy Campaign is frequently asked to make recommendations when disabled bathroom, toilet and medical facilities in mainstream and 'special needs' schools are planned. Invariably, the facilities are needed for a specific child, but the advice would be, where possible, to design a room that is suitable for all disabled people, irrespective of the disability. This will be cost effective to ensure that it will be appropriate for anyone attending or visiting the school in the future, and essential as more schools are designated as community schools.

School bathroom facilities

The layout on the next page is an example of appropriate facilities for a school. The following features have been incorporated;

- space on both sides of the toilet for wheelchair and carer access;
- sideways basin movement to within reach of the toilet;
- movement of supportive products to adapt to individual needs;
- turning circle of **1700mm** within the room to allow complete turning of a large mobile hoist or wheelchair;
- shower chair has space away from the corner for assisted showering and can be used in the corner independently left or right handed;
- height-adjustable bath (*Arjo Sovereign Hi-Lo*);
- *Pressalit Care* shower/changing bench.



Multi shower valve holder, horizontally adjustable

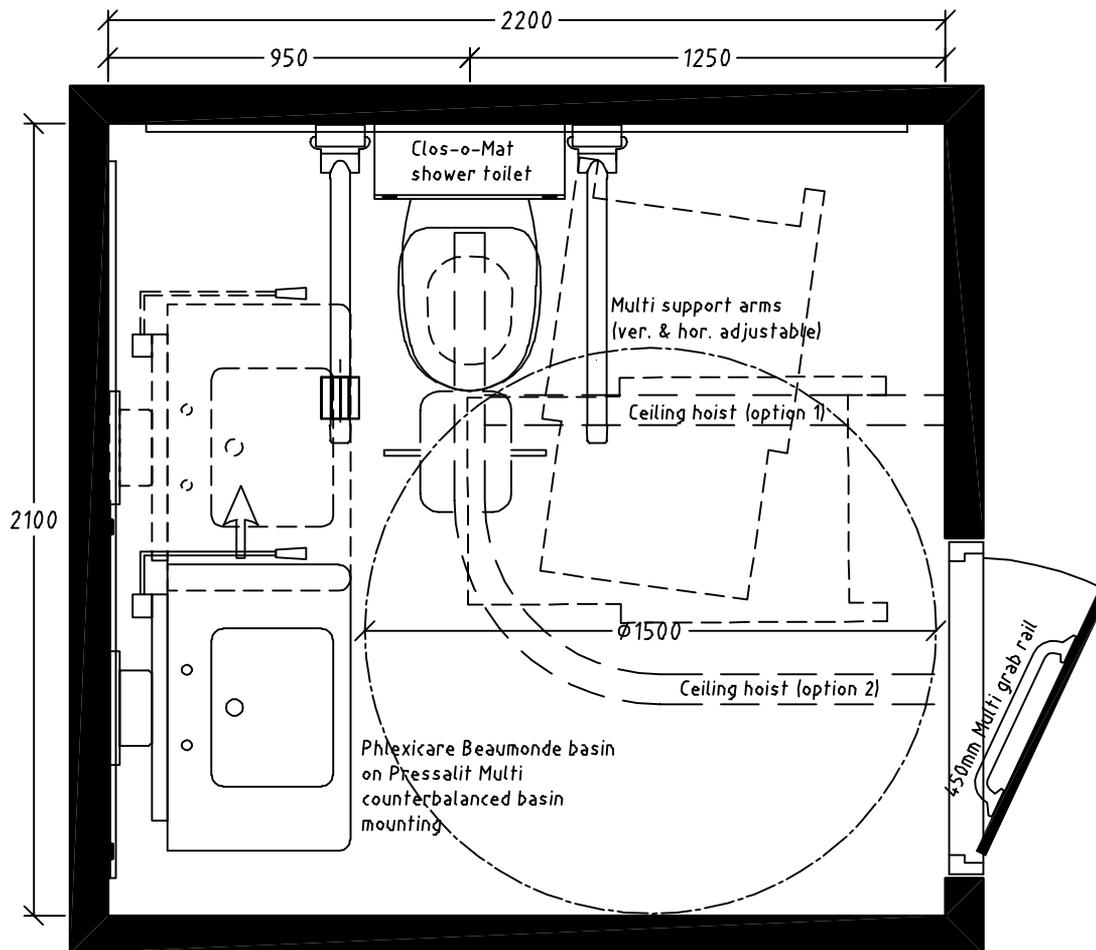
1000mm vertical Multi grab rail with shower head holder

Shower chair and valve can be reversed to suit left- or right-handed bather

School bathroom facilities with room size 3700 x 3115mm

School toilet facilities

The toilet and basin features discussed on page 14 also apply to the toilet facilities, but a room of over **6m²** is not always available. The layout below shows a toilet and basin combination in just over **4m²**.



School toilet and basin in a small room

Hospital and holiday centres' bathroom/toilet facilities

These are two more building types in which assisted and independent bathing and toileting are likely to be required in the same room. The bathroom and toilet planning discussed in the school facilities are, therefore, equally relevant in these buildings.

It is important that hospital wards and bathrooms in neurological units are appropriately designed and include specialist fittings and equipment. Generally, the facilities offered to disabled people when they are in hospital are inappropriate and, as a result, an admission to hospital can be a very traumatic experience for a severely disabled person. Lack of the correct equipment coupled with an enforced period of immobility, can cause a deterioration in muscle power and mobility and this situation must be avoided.

Residential homes and hospices have a better track record of imaginative planning, and the number of holiday centres anxious to include first-rate facilities for wheelchair users is increasing. An additional bonus would be upgrading selected bedrooms in hotels, which frequently offer disabled facilities that demonstrate a lack of understanding of what is needed.

Care home, hospice and hospital assisted bathroom/toilet facilities

In care homes, hospices and hospitals, there is likely to be provision for dependent/assisted bathing with en-suite facilities provided for independent use. The layout described on page 14 and illustrated on page 15 provides space for wheelchairs and carers:

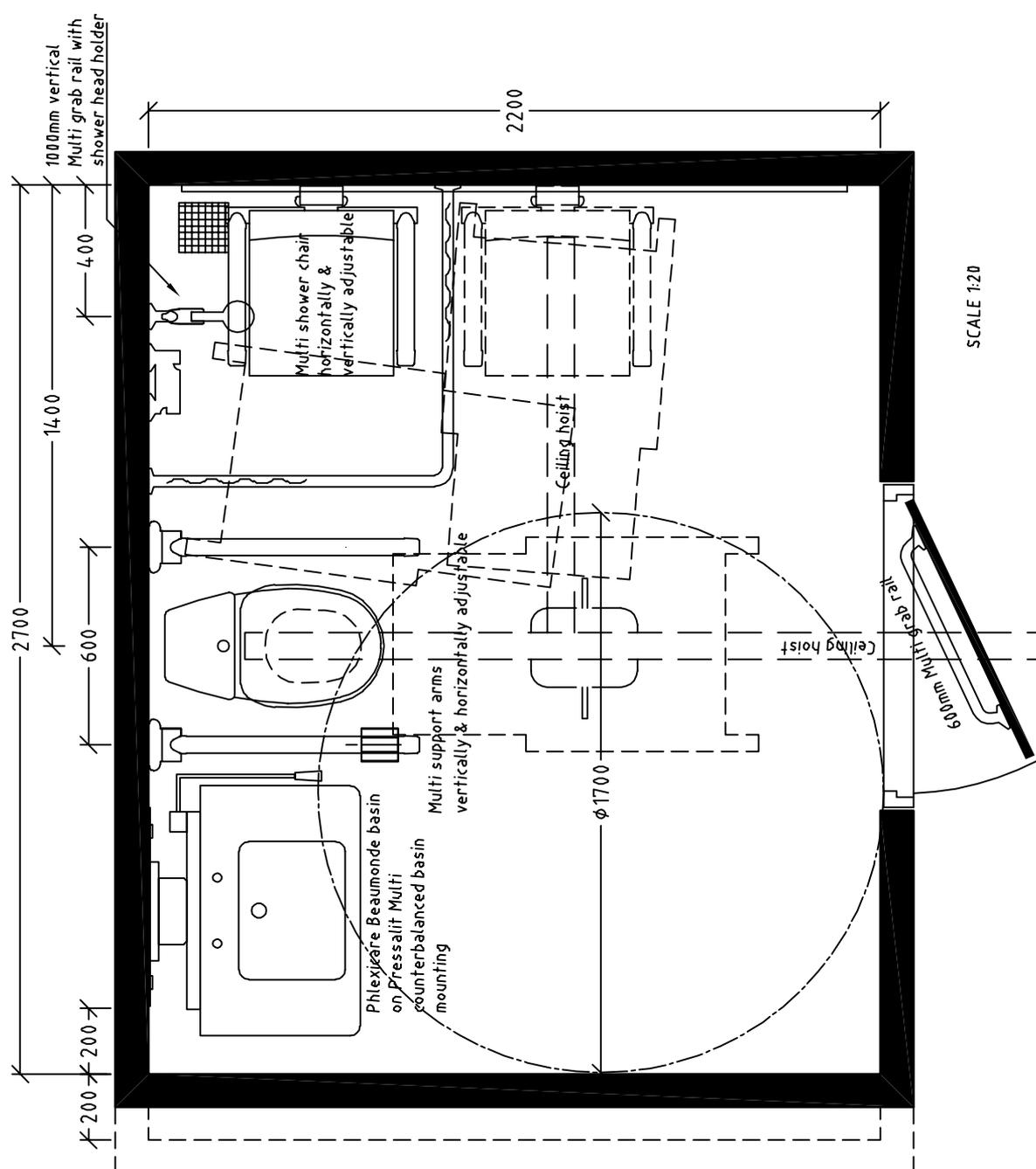
- on both sides of the toilet;
- on both sides of the basin;
- on both sides of the shower seat, and one side and the end of the shower/changing bench.

Each supportive product is height adjustable to meet individual needs and to help the carers' moving and handling procedures.

En-suite facilities in care homes, hospices, hospitals and hotels

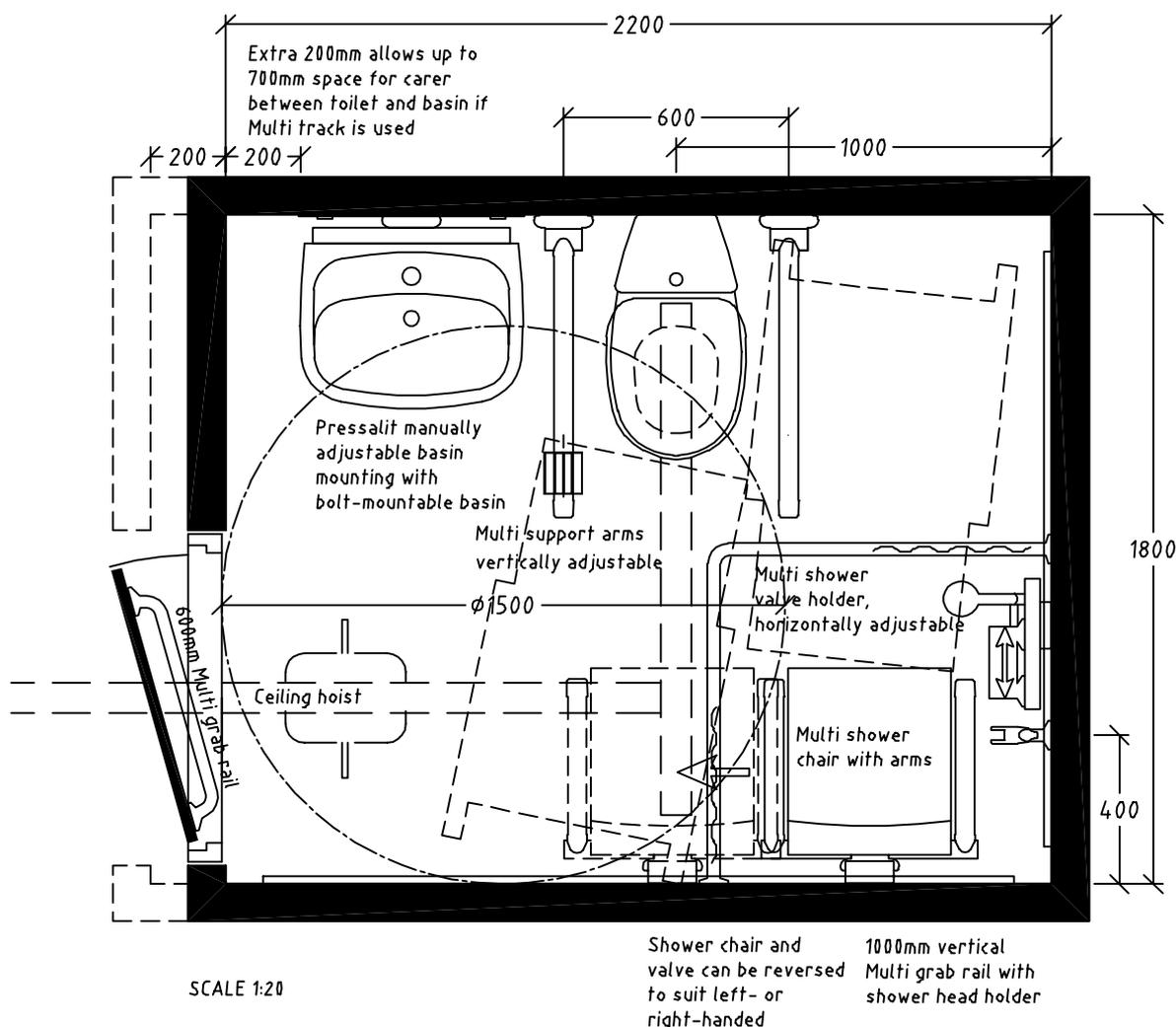
If nearly **6m²** of space is available, the layout below would be ideal. It provides:

- space on one side of the toilet and shower for wheelchair transfer (it may be necessary to provide a mix of left- and right-handed layouts);
- height adjustment of supportive products to suit changing needs;
- turning circle of **1700mm** and space for a three-point turn for a large powered chair.



*En-suite facilities with the dotted line above showing the room enlarged by **200mm**. This will allow up to **700mm** space for a carer between the toilet and basin, if the multi-track is used.*

Another room layout is provided on this page. This demonstrates how a facility can be designed in a space of less than 4m² for independent use. However, the space limitations would make it difficult for a carer to be of any real help.



Alternative layout for a small existing en-suite bathroom

En-suite/bedroom transfer

The bathroom and bedroom must be en suite so that a person can move within the warmth and privacy of the two rooms and can be dressed on the bed following bathing.

Factors to be considered regarding the two rooms are, for example, where and how to transfer from one position to another – bed to shower, hoist to wheelchair, wheelchair to shower chair. Attention should be paid to the placement and type of door, the size of the doorway and floor level differences (if any). For a ceiling hoist, differences in the ceiling height are equally important. See Chapters 8a *Equipment for Adaptations*, 9 *Hoisting*, and 15 *Adaptation Specifications*.

The method of transfer between the bedroom and bathroom

- ⇒ walking;
- ⇒ using a wheelchair, self-propelled or powered;
- ⇒ propelling or pushed on a shower chair;
- ⇒ using an extended track of a ceiling hoist;
- ⇒ use of room-to-room systems.

Walking

The floor surface must be non-slip, but must not provide any resistance to the soles of shoes, as this makes it difficult to lift the feet. The surface should be easy to keep clean.

Using a wheelchair, self-propelled or powered

The significance of the chair lies in its size and the turning space that it needs. Most self-propelled wheelchairs use a **1500mm** turning circle, but a powered chair needs **1700mm**, and this should be the measurement that is used when calculating the required circulation space. As has already been discussed, in many bathrooms it is unrealistic to have a room that is large enough to include a turning circle; the transfer space at the side of the toilet pan can be used for a three-point turn in which to reverse the chair to go out of the room.

Where a wheelchair is used in the bathroom and the person can transfer independently, it is important that the floor is level at the side of the pan to ensure that the wheels are stable.

Propelling or pushed on a shower chair

Using an extended track of a ceiling hoist

A ceiling hoist will be a better choice than a mobile hoist because the former is unobtrusive and easier to use; the type of ceiling hoist will depend on whether the rooms are:

- ⇒ en suite;
- ⇒ multiple occupancy of bedroom and shared use of bathroom.

En suite

This can have a single track passing over the bed and extended into the bathroom usually with a switched track or ceiling turntable (preferably electric) in the bathroom and depending on the layout, also in the bedroom. With practice, users become very adept at using electric switched track or engaging electric ceiling turntables prior to rotation.

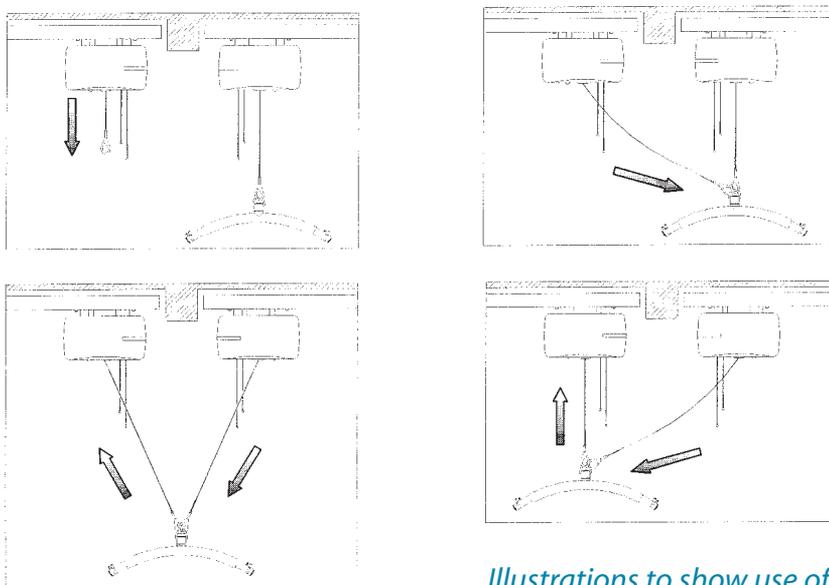
Multiple occupancy of bedroom and shared use of bathroom

Two room-covering systems (sometimes called X-Y, or H-systems), installed in both the bedroom and bathroom, are recommended because these allow the pick-up point to be anywhere within the rooms. This will be invaluable when a number of people are using the rooms. Where the rooms are adjacent, the track should be extended between both rooms. If experience shows that the hoist is needed in both rooms at the same time, an additional hoist can be provided at a later date.

A comparative chart of recommended models is included in Chapter 9 *Hoisting*.

Use of room-to-room systems

There will be occasions where the wall above the door is a supporting lintel; to avoid the expense and structural difficulties of inserting a supporting beam to enable a track to be installed between the two rooms, the solution is to use a 'swing kit' to allow the hoist to be used in both rooms without having to lower the user down into a wheelchair between the rooms. The hoists in both rooms are taken on their tracks to each side of the wall over the door opening and by sharing a spreader bar the person is transferred smoothly between two hoists. See diagrams below.



Illustrations to show use of 'Swing Kit'

Drawings reproduced with kind permission of Guldmann

Bedroom

Factors to be considered are:

- ⇒ the recommended size of rooms and circulation needed;
- ⇒ the optimum type of flooring;
- ⇒ the recommended bed.

The recommended size of rooms and circulation needed

Questions are frequently asked in relation to the optimum size of the rooms. These are difficult to answer without knowing the details of the access to the rooms, the shape of the rooms, the number and size of windows and (if an extension is proposed) how this will dovetail on to the existing building. Instead, it is more constructive for the architectural designer to be given an accurate brief early in the planning process; when the essential features and space dimensions have been considered, these will determine the size of the rooms.

An increasing number of the wheelchairs being used are becoming more sophisticated and, as the design features improve, so the size increases. As a result, the turning circle used in planning should be **1700mm**. However, as previously discussed, this may be unrealistic in the bathroom; the transfer space at the side of the toilet can, therefore, be used to reverse the wheelchair, to carry out a three-point turn.

The optimum type of flooring

As in the bathroom, the surface must be suitable for people who are able to walk, but who have difficulty in lifting their feet and for those in wheelchairs. The choice will depend upon the ease of cleaning and whether this takes priority over the creation of an attractive environment. A compromise between linoleum and carpets might be hardwood floors, but these must not be polished and, for safety reasons must not be covered by rugs.

The recommended bed

Electric bed

An electric bed is invaluable and this should be both the correct width and height.

Width

There is a choice between a single (with either a child or adult platform), a wide single or a double bed. If more than one electric bed is to be provided, it is recommended that there should be an equal number of single and wide single models, with the use of double beds where appropriate. Many disabled people prefer a large bed, even when sleeping on their own; however, if they depend on carers, a double bed may make it difficult to reach them when they are lying in the centre.

Height

It is important that the height is electrically adjustable to help the user to get in and out of bed at the optimum height and to alter the height to suit the nurses/carers working at the bedside (this is an important feature to protect carers' backs). The minimum height may be critical to anyone who needs to transfer sideways to get in and out of bed and who finds it easier to transfer 'downhill'.

Further details of the features and range of recommended beds are included in Chapter 8c *Electric Beds*.

Drawing of plans

Involvement of an occupational therapist

This will be essential in order to consider the alternatives discussed in this chapter. However, if the facilities are to be truly multi-use, the assessment of the needs of any individual child or adult will not be relevant, other than as a means of checking that the provision has been designed to embrace all types and severity of disability.

Free design service from *Pressalit Care Ltd*

This service will be invaluable to anyone making recommendations and to architectural designers who will be responsible for drawing up the plans. The firm supplies an excellent video, which illustrates the products and the features that are discussed in this chapter. For anyone needing advice, contacting the firm may be the best way to start.

Pressalit Care Ltd, Riverside Business Park, Leeds Road, Ilkley, West Yorkshire LS29 8JZ
tel: 01943 607 651 fax: 01943 607 214 e-mail: uk@pressalitcare.com web: www.pressalitcare.com

Appointment of an architectural designer

See Chapter 13 for details of the innovative service, *Muscular Dystrophy Adaptations & Building Design Network*.

Check-list

This check-list has been included to:

- identify the options;
- provide a time-saving method of recording the decisions made;
- provide an architectural brief for the drawing up of the plans;
- consider the funding options;
- ensure that all the details have been included.

The user should tick the boxes of the items to be included

Facilities

- En suite with ceiling hoist
- Separate rooms/transfer with chair

Doors and accessories

- Clear opening: **900mm/1000mm**
- Inward/outward/swing/sliding
- Position of door handle

Turning circle allowed

- Manual wheelchair: **1500mm**
- Electric wheelchair: **1700mm**

Measurement around toilet

- Exposed side: **900 – 1500mm**
- Both sides: **900 – 1500mm**
- Exposed side: **900mm** (minimum required if space is limited)
- Centre of toilet to wall/obstruction: min. **500mm**

Type of toilet

- Low-level cistern with long flush pipe
Twyford Ltd
 - From the back wall: **700mm** min.
 - Front of cistern to front of pan: **600mm**
 - Narrow cistern
 - Spatulate flush lever
N & C Building Products Ltd/Phlexicare Division
 - Backrest
Pressalit Care Ltd
- Back to the wall with a concealed system
- Shower toilet
 - Clos-o-Mat
Total Hygiene Ltd
 - Geberit
ESL Healthcare Ltd

Toilet seat

- Colani
 - Ergosit
 - Dania
 - Raised toilet seat **50mm** or **100mm**
 - B84 hinges
 - B85 hinges
- Pressalit Care Ltd*

✓ Raised toilet plinths

- 50mm**
 - 75mm**
 - 100mm**
- Autumn Mobility Ltd*

Support arms

- Fixed height
 - Variable height
 - Vertically and laterally adjustable
 - Frontal crossbar
- Pressalit Care Ltd*

Accessories

- Toilet-roll holder
 - Soap dish
 - Towel rail
 - Shelf
 - Baskets
- Pressalit Care Ltd*

Bathing

- Sovereign bath + shower
Arjo Ltd
- Other alternatives
- Level-access shower
- Bath and level-access shower

Level-access shower

- Sloping floor
- Shower trays
Autumn Mobility Ltd
Go Independent
- Impey Level-Dec
Creative Healthcare Ltd
- Neatdek
Go Independent

Shower seat

- Wall mounted
- Backrest without folding arms
- Height-adjustable support arms
- Ribbed seat
- Seat with aperture
Otto Bock Healthcare plc
Pressalit Care Ltd
- Manual height adjustment
Pressalit Care Ltd
- Electrical height adjustment
Astor-Bannerman (Medical) Ltd
Pressalit Care Ltd

Shower chair

- Self-propelled
- Attendant shower chair
- Aquability
ASM Accessories Ltd
- Freeway
Westholme Ltd

Shower/changing bench

- Astor-Bannerman* powered (optional backrest)
- Otto Bock* fixed height with brackets (with backrest)
- Pressalit* powered or fixed height on Multi track
- Scanflex* powered or fixed height (with backrest)
- Southern Care Systems* powered or fixed height (with backrest)
- Other

Confining the water

- Portable screen
- Wall-mounted screen
Autumn Mobility Ltd
Go Independent
- Full-length curtain
- Half-height curtain
Autumn Mobility Ltd
- Full-length and half-height curtain
Pressalit Care Ltd

Thermostatic shower valve

- Fixed position
Triton
- On Multi shower valve bracket
N & C Building Products Ltd/Phlexicare Division

Shower-head holder mounted on

- Multi grab rail
Pressalit Care Ltd
- Standard shower head holder on lightweight rail
- Two shower rails at different heights/positions
Pressalit Care Ltd

Space in front of basin

- 1000mm
- 1700mm (to provide turning circle for large wheelchairs)

Height-adjustable washbasin mounting

- Electric
Astor-Bannerman (Medical) Ltd
Pressalit Care Ltd
Southern Care Systems Ltd
- Manual
- Counterbalanced
Pressalit Care Ltd

Model of washbasin (for use with *Pressalit Care* Multi track)

- ABW4
Astor-Bannerman (Medical) Ltd
- Beaumonde
N & C Building Products Ltd/Phlexicare Division

Taps

- Lever
Astor-Bannerman (Medical) Ltd
- Novalever basin pillar
N & C Building Products Ltd/Phlexicare Division

Accessories for basins

- Modular shelves
- Multi baskets
- Towel rails
Pressalit Care Ltd

Position of mirror

- On wall 50mm above Multi track – up to 2000mm from floor

Heating

- Radiators
- Under-floor heating

Colour contrast/matching

- White
- Blue
- Red

Bathroom flooring

- Non-slip ceramic tiles
- Altro Safety
- Marley Safetred Aqua/Dimension
- Nairn Surestep
- Other

Hoisting

- Single track wall-to-wall in bedroom
- Extended track into bathroom
- Single track with turntable in bathroom
See Chapter 9 *Hoisting*
- Room-covering hoist in bedroom
- Room-covering system in bathroom
Arjo Ltd
Chiltern Invadex Ltd
Liko (UK) Ltd
Moderna Contracts Ltd
Southern Care Systems Ltd
Westholme Ltd
- Mobile hoist

Electric bed

- Child's single
Ashworth Trading
Bakare Beds Ltd
Scan Mobility Ltd
- Single
Bakare Beds Ltd
Huntleigh Healthcare Ltd
Scan Mobility Ltd
Moderna Contracts Ltd
- Wide single
Ashworth Trading
Bakare Beds Ltd
Scan Mobility Ltd
- Double
Ashworth Trading
Scan Mobility Ltd
Theraposture Ltd