

3.0 Human Engineering

3.1 General

The subject of Human Engineering covers aspects of the design that permits effective, appropriate, safe and dignified use by people including those with disabilities.

The disability Standards and Codes cover certain aspects of design for Access and Mobility for people with disabilities. These are often referred to in these Guidelines and should be followed in relevant areas. Human Engineering for able-bodied persons also requires careful consideration.

Some of the common issues are covered in this section.

There is increased public awareness of barriers that make reasonable utilization of facilities difficult or impossible for the physically impaired. A hospital facility will have a high proportion of occupants, patients and visitors, who are unable to function without some form of assistance. Some staff may also be impaired. To ensure minimum patient dependence on staff, consideration should be given to design provision for optimum patient independence. Consideration must be given to the wide range of disabilities including:

- Mobility impairment
- Visual impairment
- Hearing impairment.

3.1.1 *Planning*

To minimize overall costs and to avoid the need for expensive modification of finished work, initial designs shall include specific consideration of the needs of the physically impaired. The majority of requirements can be easily accommodated during the planning stage at little or no additional cost; modifications required at a later time may be prohibitively expensive or impractical.

3.1.2 *Fixtures and Fittings*

Grab-rails, hand-rails, vertical adjustable shower supports, towel-rails, soap holders, footrests and any other fixture that may be used for support shall have sufficient anchorage and strength to resist the sustained concentrated load of a falling heavy human of up to 150kg.

Note: This effectively means that towel-rails should be designed in a similar manner and strength to grab-rails.

3.1.3 *Hand Washing – Staff*

Location and arrangement of fittings for hand washing shall permit their proper use and operation. Particular care should be given to the clearances required for elbow action type handles. Non-thermal transmitting standard handles are preferred, with effective finger grips. Heights are to suit the particular function, such as pediatric, disabled and standard.

Hand washing facilities shall be securely anchored to withstand an applied vertical load of not less than 115kg on the front of the fixture.

3.1.4 *Staircases and Ramps*

Where ramps are required for patient access, minimum gradients are to comply with the requirements of the Building Codes.

Ramps in other areas such as service roadways shall comply with good design practice and be suitable for the task. If a ramp is unavoidable, the floor covering must be carefully chosen to reduce forces required to move wheeled equipment.