Industry Factsheet

Cost-benefit factors when choosing between ramps and lifts

PEER REVIEWED

Purpose

A number of considerations are required, by both trades persons and service providers, in the provision of ramps and lifts, not least being the cost effectiveness and benefits of both. This factsheet will provide the reader with differentiated information between ramps and lifts and associated costs and benefits. It is hoped, through additional information regarding costing of both ramps and lifts, which the home modification industry will assist with an informed financial decision, allowing for improved accessibility at a client's residence.

This factsheet supplements the HMinfo clearinghouse document: **Industry Checklist: Financial considerations when choosing ramps or lifts.** It is intended for people prescribing and installing ramps and lifts for old persons and persons with mobility impairment residing in private homes. They include ramp and lift installers, occupational therapists, architects, and builders.

This paper presents research outcomes from an evidence based project, **Cost-benefit analysis of ramps versus lifts**, conducted by the Home Modification Information Clearinghouse (HMinfo) in 2010. Further details of the research and a complete list of the literature reviewed are available on the Evidence Based Practice Reviews page in the Resource Library at www.homemods.info.

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Definitions of ramps and lifts

Construction and installation of ramps and lifts have been the most commonly reported home modifications to improve the accessibility at the entrance of a person's residence. Despite the same functions of assisting access and egress into a home, they are completely different in the mechanisms utilised, and additionally significant differences in costs and benefits exist between them. Standards Australia 1428.1 (2009) defines a ramp as 'an inclined surface on a continuous accessible path of travel between two landings with a gradient steeper than 1 in 20 but not steeper than 1 in 14.' A lift is defined by the Standard Australia 1735.1 (2003) as 'an apparatus or contrivance within or attached to a building or structure, comprising a platform or car running between approximately vertical guides.'

Life cycle costing

Whilst initial costs comprises of the purchase and installation of the item, it is important to factor in additional costs over the lifespan of the item. Australian Standards 4536 (1999) presents the details of the process of life cycle costing. Typical cost-generating activities in product's life cycle phases are concept and definition, design and development, manufacturing and installation, operation and maintenance, and disposal.

What should be considered in estimating costs of ramps and lifts?

Materials & types

Material and type of device are key determinants of costs when installing ramps and lifts. Ramps are built using diverse materials, and there are various lift models and functions used as well as which mechanical function is used, e.g. electrical or hydraulic.

According to the unit prices of ramp materials presented by the costing guides, timber ramps cost the least, followed by steel and then concrete fabrications. Among lifts, stairlifts are the cheapest option, followed by platform lifts and then elevators. Variations and customisation in design features do not allow a standardised comparison of costs between ramps and lifts. However, lifts in general involve more initial capital costs than ramps.

Maintenance & operation

Both ramps and lifts require routine maintenance and repair in the event of a break-down. Overall, ramps require less maintenance and operation costs than lifts, as ramps generally require less frequent check-ups and no mechanical operation. However, it should be noted that ramps that are poorly designed and maintained, or fail to satisfy safety requirements such as incorporating grabrails and standard inclines in their design, can lead to serious accidents and consequently health care costs. Timber ramps, although more economical to install, require ongoing maintenance similar to that of timber decking. Furthermore, the ramp surface remains

slip resistant only when free of debris or build-up such as moss or dirt. Safety concerns exist when this build-up accumulates and is not removed.

Natural environments

Durability and the performance of outdoor ramps particularly made of timber is prone to the influence of climatic conditions such as temperature, the amount of precipitation, and the level of humidity, which all impact on design and durability. Special design considerations to adjust to the natural environments including adding canopies and integrating heating coils into the surface increase the costs of ramps. It should be also noted that areas prone to damp will allow the accumulation of moss as well as limiting the durability and life-span of the ramp. Bush-fire regulations also may limit the installation of timber ramps.

Flexibility & abandonment

It is not uncommon that the need for ramps or lifts is temporary, for example families may plan to move. The disuse of ramps or lifts involves a high disposal cost, which includes the cost of demolition and scrapping. Therefore, options with higher flexibility and adjustability are economical from a long term perspective.

The level of adaptability is different depending on the type of ramps and lifts. Most ramps, excluding concrete, can be relatively easily removed when no longer required, and modular ramps offer the best flexibility as they allow easy dismantlement and installation at another home. Among lifts, stairlifts are regarded as adaptable devices, as they are made up of component parts including a seat and a modular rail, whereas elevators are difficult to replace or resite.

What should be considered in estimating benefits?

Care & assistance

Savings from decreased needs to purchase private care are key economic benefits that are expected from installation of both ramps and lifts. Although both options facilitate independent movement at the entrance, more benefits are expected from lifts in this regard as they generally do not need transfer assistance. Particularly, elevators are the best long term solutions for those whose physical conditions are deteriorating and require increasing care assistance.

Aesthetics & property value

Aesthetics is not only a matter of the appearance of a home but also impact on the re-sale value of the home. Unattractive looking ramps and lifts that detract from a home's appearance have the potential to reduce the market appeal of the property. As a whole, aesthetic concern is an issue of ramps rather than lifts as ramps occupy more space and are thus more visible.

Spatial utility

Reduced space due to installation of ramps and lifts leads to increased opportunity cost. This is to say that diversion of land for ramps or lifts may decrease the chances for residents to use the space for other alternative purposes such as a yard or garden. This is of more concern in the installation and design of ramps as opposed to lifts as lifts have a relatively small footprint. More often than not, lifts are more viable options, when a home fails to provide enough space for a ramp. For example, installation of a ramp is difficult if a home is, built close to a sidewalk or property boundary such as in a city.

Is there anything else of importance when choosing between ramps or lifts?

Economic aspects are one of the most important considerations in choosing a ramp or a lift. However, it is difficult to estimate the economic costs and benefits of home adaptations because there are many intangible elements even though they have economic implications. For instance, psychological comfort and aesthetics cannot be fully converted into money values.

More importantly, the least expensive option does not necessarily mean the best practice. In reality, the decision making behind choosing an option is a complex process incorporating many relevant factors such as the mobility status of a resident, housing conditions, the availability of a carer, and the carer's needs. Therefore, it is suggested that economic factors should be regarded as just one of many major considerations.

***This information was correct at time of printing.*