

Designing access for all

Interest in products and services designed to be accessible to all people, including those with sensory, cognitive and physical impairment, is growing fast. **Duncan Abbott** describes recent progress in the field.

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Inclusive design, universal design and universal access are all terms that have become increasingly familiar over the years and their goal is to make technology useful to all, including those with sensory, cognitive and physical impairment. However, their teaching and industrial adoption has remained very limited, with many products still unnecessarily excluding people from using them.

POTENTIAL IMPACT

However, over the past 50 years, the issues of age and disability have converged as the focus on them has shifted from healthcare provision to human rights. Powerful legislation has been introduced in the form of the Disability Discrimination Act 1995 (to be fully implemented in 2004) under which disabled people will have a legally enforceable right to access buildings and services.

Disability campaigners and the design community have each developed parallel concepts of inclusive design, which focus on encouraging and supporting businesses in a rapidly changing market to respond to the needs highlighted by social and demographic change. Growing awareness of the ageing population and its potential impact on healthcare and welfare services, and on state pensions, has spurred initiatives aimed at increasing independence in later life and as a consequence, major companies are now looking on older consumers as key customers.

The Royal College of Art's Helen Hamlyn Research Centre (HHRC) and the Ricability research organisation are two groups that are putting forward the case for inclusive design.

For many years, national and international standards bodies have addressed the needs of people with disabilities in the development of specific standards for assistive technology and accessible building design. However, their needs have not been adequately addressed when other relevant standards for everyday products and services are written or revised.

ID ENDORSEMENT

A key aspect of the inclusive approach is to expand the target group of a product or service to include as many users as possible. If a product was sought for a cognitively impaired user, the fact that it is easy to operate is not relevant if the user cannot understand the

instructions. Ideally these should be simple and pictorial.

Already though there is a whole range of products that can be classified as being inclusively designed. A simple example would be BT's Freestyle 60 cordless big-button telephone. It can be used by those with visual, cognitive and physical impairments, as well as by those without such impairments.

When considering new products, facilities managers should ask if they have been user-tested with target groups. If unsure about a product's claim, it would be wise to undertake a trial yourself: gather a representative group of people that wish to use the product and ascertain whether it matches the vendor's claims. Some products may not be able to achieve inclusive design without becoming some kind of Frankenstein's monster. Therefore a change in the way a task is performed may be the only solution.

PROFITING FROM ID

Many organisations are addressing the issue of inclusive design as a result of seeing the benefits that simple design changes can have on the productivity of those who are normally excluded by narrow designs. Others are profiting from the adoption of ID by retaining staff, expanding their customer base and increasing their corporate social responsibility profile. The Royal Mail has embraced the notion of inclusive design simply because its customer base is the entire UK population.

Although interest in sourcing ID products has grown, many of the required products don't yet exist. This will change as decision makers realise the business advantages of using products designed for all.

While it is useful to know who or how many people can use a service or product, it does not indicate how to include more people. However, knowing who and how many people *cannot* use a product or service will immediately reveal which aspects of its design need to be improved. In many ways inclusive design can be seen as an extension of good design, encompassing all the associated requirements of functionality, ergonomics and aesthetic appeal. **FM**

INFORMATION

Inclusive Design, Coleman, Lebbon, Clarksson and Keates, ISBN1-85233-700-1 – recently published book on inclusive design issues from a global perspective.

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Uninterruptible power supplies

Questions and answers on a key facilities topic

In the latest A-Z guide to facilities topics, **Frank Booty** looks at uninterruptible power supplies and their role in removing business risk.

Why the need for uninterruptible power?

On 15 August 2003, 55 million people in the USA were plunged into darkness following a massive power failure. The UK's National Grid confidently stated it wouldn't happen here, but only two weeks later the South East of England suffered a major cut and left the power network across the country looking vulnerable. However, National Grid Transco and energy regulator Ofgem have both played down (but not ruled out) power shortages plunging UK plc into darkness this winter.

Power outages are indiscriminate and frequently caused by factors outside the control of power generators and distributors.

Even if the power interruption lasts just milliseconds, the cost in terms of lost business from unplanned downtime can be substantial. Therefore all disaster management strategies should include power protection.

What is a UPS?

The primary function of an uninterruptible power supply is to offer an alternative source of power in situations where the mains supply fails. The UPS is an item of electrical hardware positioned between the incoming mains power supply and selected items of electronic equipment.

Most UPS systems will incorporate additional facilities that, depending on location and application, can be essential. A 'line interactive UPS' features a built-in filter circuit to smooth out mains supplies, protecting mission-critical systems from potential damage. Integral power factor correction circuits can act to prevent any generated interference from polluting the mains supply. Many systems also offer 'break-free' supplies, which means sensitive applications are assured of constant power whatever happens to the mains supply.

What types of UPS systems are there?

There are three types of traditional UPS: static (which is supported by batteries); rotary (which incorporates a generator); and flywheel (which replaces batteries and works in conjunction with the generator). Transformerless UPS technology is also on offer (hitherto the transformer, common to

all UPS systems, was the limiting factor on size). These systems claim to contribute to a 66% reduction in overall size of the protection system and a 30% reduction in implementation costs. Total UPS running costs a year for 60kVA rating systems are in the region of £2,500 to £5,500.

Some UPS systems have been developed to meet the demands of high-efficiency integration into building management systems and two-way communication to ensure a high level of maintenance and security of power. Software also controls shutdown and management of end-user systems.

Who's using UPS technology?

As a finance, insurance and investment player, Allianz Cornhill Insurance has a back-up policy that extends not just to its main computer room, but also to support essential services such as telecommunications and security.

Allianz Cornhill recently commissioned project designer Powerplan and Chloride to produce a system that would eliminate any single point of failure. As such the company has now replaced its existing UPS by integrating its Chloride Power Protection UPS facility with its Trend BMS. The existing UPS was replaced because the company needed to increase the capacity of UPS power and the level of redundancy, plus it was coming to the end of its effective life.

What's the next step?

The future need and demand for UPS is likely to increase. The June 2003 Ofgem Electricity Distribution Quality of Supply Report for 2001/2 reveals that the average number of customer interruptions per 100 customers was 87.4 and the average number of customer minutes lost was 83.7. This compares with figures of 81 and 71 respectively in 1999/2000. These statistics are compiled from regional electricity companies who have to report power failures lasting more than one minute in duration. These figures do not include shorter interruptions of under one minute.

To check out their operations or size up their installations to see what UPS support they might need, facilities managers should consult a qualified electrical contractor or the technical support provided by a UPS manufacturer. UPS manufacturers include Advance Electronics (www.aelgroup.co.uk), American Power Conversion Corp (www.apcc.com), Chloride Power Protection (www.chloridepower.com), MGE UPS Systems (www.mgeups.com) and Minuteman (www.minuteman-ups.com).

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