

GOING GREEN WITH FIT-OUT, PLAYING IT SAFE WITH FURNITURE

NOT ONLY CAN A NEW COMMERCIAL FIT-OUT TRANSFORM A WORKPLACE FROM A TIRED ENVIRONMENT TO A STATE-OF-THE-ART, SUSTAINABLE AND ENERGY-SAVING FACILITY, IT ALSO HAS THE POTENTIAL TO BOOST WORKER MORALE AND PRODUCTIVITY. AT THE SAME TIME, OF COURSE, FACILITY MANAGERS NEED FURNITURE SYSTEMS THEY CAN EASILY 'CHURN' AND ONES DESIGNED WITH USER HEALTH AND SAFETY TOP-OF-MIND. **MARK PHILLIPS** FILES THIS SPECIAL REPORT.

Thousands of buildings in the central business districts of major Australian cities have reached 'a certain age' when decisions must be made about their futures.

According to Queensland University of Technology associate professor Jay Yang, from the School of Urban Development, these ageing buildings are products of the 1970s building boom.

"They no longer meet tenants' changing requirements or reach energy efficiency standards and the question is: demolish and build new or 're-life' through refurbishment," he says.

Yang has addressed the dilemma by developing a tool to help building owners decide on an option, after extensive research with a national team of building industry experts from three universities at the Cooperative Research Centre for Construction Innovation, headquartered at QUT.

"We have developed a set of guidelines to test the commercial, technical and environmental viability of re-living projects," Yang explains. "As buildings age they become more costly to run, no longer allow functionality for today's work styles, and they can potentially make people sick."

"With the growing commitment to sustainability, improving existing building stock is an attractive option and it is estimated up to 50 percent of annual capital budgets will go to re-living by the year 2020."

Yang's research team studied the re-living of three 30 to 40 year-old government buildings in Brisbane, Melbourne and Sydney to bring them up to the standards of modern office operation and environmental performance.

"High construction costs, labour shortages and scarce resources, as well as the increasing emphasis on sustainability, have all been directing attention to re-living," Yang says, adding that different parts of buildings have different life spans.

"Whereas the building structure might last 80 to 100 years, facades date aesthetically and physically with a shorter life of 30 to 40 years, while mechanical systems such as lifts, ventilation and air conditioning last only 20 to 30 years. Meanwhile, communications and computer systems need to be changed every three years or so, while the partitioning and power cabling have a life of five to 10 years."

"Because of changes to office work routines, organisational flexibility, occupational health standards, and environmental rating of buildings, each of the ageing building's elements presents challenges to building owners. Re-living gives the opportunity to coordinate all these aspects and to rebuild a healthier and better performing building with non-toxic material, innovate systems and maximise use of natural ventilation and daylight. Such an upgrade to office space will help reduce vacancy rates and improve rental returns."

According to Yang, the key considerations for re-living projects are:

- integrated analysis of market demands by building type, location and tenancy;
- optimisation of internal space to cater for changes in work practices, such as the addition of meeting rooms, common space, and hot-desking;
- residual service life and condition reports of the building to allow redistribution of office space and services and cater for future maintenance requirements;

- recycling of materials from refitting and waste management; and
- overall project management in terms of work scheduling around existing tenants, contractual arrangement, building procurement, on-site work organisation and improved workplace health and safety.

As reported on page 68 of this issue, according to a new survey conducted by Johnson Controls in the United States, three quarters of facility executives with companies that are building or planning to build new facilities, or are launching retrofits in the next year, say that energy efficiency will be a priority in the design of those projects.

A similar trend has emerged in the UK, with a new sustainability report released by property advisor GVA Grimley confirming that sustainable office buildings will give investors a greater return on their investment than buildings built to standard regulations.

The report examines how the increasing prevalence of the climate change agenda is widening the disparity of investment performance between 'green' and 'non-green' assets. Indeed, an examination of a BREEAM 'Excellent' rated building and an office built to traditional standards clearly demonstrates that the former should achieve a higher rent, have the potential for stronger rental growth, and a lower risk premium. Capital values, therefore, should be higher (see Figure 1).

There is also a range of other factors which further strengthen the appeal of green buildings as an investment proposition. For example, the demand from occupiers for sustainable buildings is set to grow, making tenant acquisition and retention easier for the developer and landlord. In addition, benefits to occupiers such as lowering operating costs and greater staff productivity should translate into a higher rent for more sustainable buildings.

The report also notes that greener buildings provide a better potential long-term investment due to reduced depreciation, and that sustainable offices are far less likely to require renovation and refurbishment to meet new legislation and energy performance indicators. Importantly, the sustainability of an office building could also influence the willingness of banks and financial institutions to provide a loan.

"Many investors are discouraged by the upfront costs of developing green buildings and are not opening their eyes to the considerable long-term return on investment. The property industry is slowly coming to understand that the climate change issue is here to stay and will dominate the development agenda over the next few years," says GVA Grimley partner, Mark Rawstron.

"Further, government interest in the carbon impact of non-domestic buildings is growing and there are some signs that occupiers could be willing to pay a small premium for greener offices. Developers and investors should be thinking now about the opportunities linked to improving the environmental performance of new and existing business property."

Convinced? If not, perhaps this quote from the definitive Lawrence Berkeley Laboratory and Capital E Group cost

benefit analysis of green building for 40 Californian government agencies will sway you:

"Total financial benefits of green buildings are over 10 times the average initial investment required. Energy savings alone exceed the average increased cost of building green. The relatively large impact of productivity and health gains reflects the fact that the direct and indirect cost of employees is far larger than the cost of construction or energy. Even small changes in productivity and health translate into large financial benefits."

For a detailed step-by-step guide to 'going green' in a workplace fit-out, see the 'before, during and after' checklist on page 53.

Figure 1
CONTRASTING INVESTMENT PERFORMANCE
OF TWO HYPOTHETICAL OFFICE BUILDINGS

	BREEAM Excellent building	Built to minimum regulations
Total occupation costs (£ psf)	45	45
Energy costs	2.00	3.00
Repairs/service charge	5.00	5.00
Business rates	10.00*	10.00
Rent	28.00	27.00
Rent	28.00	27.00
Yield (%)	4.75	5.00
Capital value (less acquisition costs)	555.50	508.90

* Reduced business rates could be used to incentivise 'greener' offices, resulting in higher rental and capital value differentials.
Source: GVA Grimley

THE FURNITURE FACTOR

As almost all facility managers would know, buying ergonomic office furniture and equipment can be an expensive exercise. It can also be frustrating, given that some companies find it difficult to see the financial benefit of supplying staff with ergonomic keyboards, quality chairs or appropriate footrests. Many of the benefits of such purchases are frequently intangible and unquantifiable – something generally demanded by contemporary businesses to justify expenditure.

A recent study of a small call centre office in the UK set out to investigate a wide range of the costs and benefits associated with these purchases. The centre had invested considerable financial resources into improving its working environment, including not only changes to the immediate physical environment such as desks and lighting, but also to working practices such as diversifying the type of work each operator was required to perform.

The study found a direct correlation between the introduction of ergonomic principles within the office and a significant drop in the number of staff reporting upper limb

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aches and pains, and associated with this were numerous avoided costs. Most notably, these included reduced absence due to illness, less time lost for doctor and physiotherapist appointments, improved morale and fewer legal claims. In all, the research concluded that the avoided costs resulting from fewer aches and pains would mean that the money invested in ergonomic chairs alone would be paid back in just two years.

Unfortunately, however, even the most well-intentioned organisation can, inadvertently, actually increase the likelihood of injury to staff by buying the wrong types of chair. In an ideal world, perhaps, all manufacturers would design the same controls to perform the same adjustments, but this is simply not the case. With every new chair model, users need to learn new chair features and adjustments. Many just don't bother.

Of course, it would be easy to argue that some office employees simply do not know how to make the adjustments. However, according to one study, while half of one large office's employees actually did know how to adjust their chairs, only 40 percent of these actually made the adjustments. Clearly, companies cannot rely solely on training and instruction manuals to encourage users to appropriately adjust their seating and in so doing avoid common complaints such as lower back pain, loss of circulation to the feet and aching legs.

To help facilitate the use of proper chair control, when making the purchasing decision try to ensure that most users will be able to reach and operate all the controls when seated. Check that the activation of a control is intuitive – for example, lifting a paddle control will activate the mechanism, allowing the user to move the seat, and releasing the paddle will stop the mechanism, keeping the chair in the desired position. Finally, make sure that the controls work as they are intended – if they don't, most users will soon simply give up trying to adjust their seating.

Clearly, ergonomics is a major driver in improving staff productivity and reducing staff turnover, but there are also other key factors to consider. When planning an office layout, experts stress the importance of actually asking people about their needs and actively involving them in the planning process.

A valuable consequence of this approach is that people become much more committed to any reorganisation, since they have been involved in it. They understand the issues better and are more likely to be patient at the implementation phase, since they have 'ownership' of the plan. The premise is that, if the people are happy with the workplace, then it will work (or be made to work) well. On the other hand, if they are unhappy with it, no amount of expensive equipment or design will make it a success.

Furniture choice, workplace communications, lighting, noise control and layout all play a part in determining the overall health and productivity of staff. A swish modern office will still be a source of stress if the designer chairs are uncomfortable, or the brand new lighting system makes it impossible for staff to see their computer screens. Similarly, expensive furniture is of no use to someone whose primary

requirement is having two telephone lines or a bigger storage area. The ideal plan is a combination of fully understanding individual needs, and including basic ergonomic knowledge to ensure that people can work in comfort and safety.

Time invested in planning will save on false purchases, retrofits, low productivity and wasted time when things go wrong. Critically, it will also allow users to become involved and express their preferences, so they do not feel that the new office is imposed on them.

In the current 'war for talent', employee satisfaction has arguably never been more important. Indeed, the December/January 2007 issue of *FM* carried a report headlined 'The office in 2020', in which CGU Safety and Risk Services product manager, Angela Micic, was quoted as saying gym memberships, programs to help smokers quit and annual flu vaccinations are just a few of the job perks Australian employers might need to offer as workers get older. Certainly they will need to adapt the workplace to keep greying employees as productive as possible due to growing skills shortages.

Micic said employers need to ensure that work organisation and job design are suitable for all workers, particularly older workers.

"This will lead to improvements in occupational health and safety, reduction in injuries and claims and ultimately an increase in productivity and retention," she said.

According to Micic, issues that need to be addressed include different risk ratings for different age groups, better rehabilitation management and health and wellbeing programs.

"Better design will take the older worker's posture, vision, hearing and strength into account so that the work environment is tailored to suit," she said.

An interesting example of what may be coming soon to some workplaces is a new desk designed at the Mayo Clinic in the US.

It has built what it calls a "vertical workstation" – a desk fitted over a standard treadmill. The clinic persuaded 15 overweight people to work at the treadmill-desk and measured how many calories they burned.

If an overweight office worker used the vertical workstation all day, every day for a year, he or she could lose up to 30kg, the researchers have reported in the *British Journal of Sports Medicine*.

They measured how many calories their 15 volunteers burned using exhaled breath, but did not determine if the volunteers lost weight. On average, the overweight volunteers burned 100 calories more every hour while walking slowly – 1.6 kilometres per hour – than while sitting in a chair.

"If obese individuals were to replace time spent sitting at the computer with walking computer time by two to three hours a day, and if other components of energy balance were constant, a weight loss of 20 to 30 kg a year could occur," the researchers wrote.

The desk costs approximately US\$1600.

"With population body weight, workplace sedentariness and healthcare costs projected to increase, interventions that allow people to work and yet be active could help reverse obesity," they concluded. **FM**