LANDWRI

Gauging Aftereffects of Workplace Design

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In theory, postoccupancy evaluation improves workplace design and operation—but in practice, how does it work?

Is the workplace boosting business?

TO PROVIDE "CUSTOMER SATISFACTION" is the goal of almost the whole business world. It has finally touched the real estate industry, but only a relatively small percentage of enlightened practitioners have adopted it.

The occupier of a business workplace expresses "satisfaction" if the workplace meets its needs and enhances its business performance.

Postoccupancy evaluation (POE) has been around for a relatively long time but, until recently, has only been used to determine whether or not a particular design has met the occupier's fit-out brief rather than whether the business of the occupier as a whole has improved.

As with many other business performance measures, POE has its origins in the United States (the term is attributed to Wolfgang Preiser) but has been around in the U.K. and Europe in one form or another for many years. However, the implications for professional negligence claims were significant enough for the Royal Institute of British Architects (RIBA) to remove in 1967 *Stage M—Feedback* from its *Plan of Work* (which describes the stages of a construction project).

The POE mantle was then taken up by environmental psychologists who developed the methodology to provide scientific rigour,

but were not able to persuade the design and business world to commit to using it. Later, the relatively new field of facilities management adopted POE as a means of measuring the satisfaction of their customers—that is, the occupants.

In the 1990s, Sir John Egan brought to the construction industry his expertise in business process reengineering from the car industry and his role with BAA. As chairman of the U.K.'s Construction Task Force, he examined the scope for improving quality and efficiency in the country's construction industry, and his findings have filtered through to today's postoccupancy evaluation.

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Construction industry spokesmen such as Stuart Lipton have even suggested that buildings should be graded on quality in the same way that hotels are given star ratings. This might be done in terms of building elements such as basic services, location, architectural form, and the creation of "place." But most buildings are constructed to shell-and-core finish, or at most to a landlord's fit-out. Therefore, it is the occupiers that specify the

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fit-out, which addresses comfort factors and tailors the layout and facilities to the business's needs.

In a 2003 survey by *Management Today* magazine, virtually all (94 percent) of those responding said that they regarded their workspace as a symbol of their value to their employer. Yet, only 39 percent thought that their offices had been designed with people in mind; and in another study no less than a third said that they were too ashamed of their offices to ask colleagues or clients to visit them.

Furthermore, a recent review of productivity research, conducted by the British Council for Offices (BCO) and the Commission for Architecture and the Built Environment (CABE), highlighted a range of evidence showing the links between poor workplace design and lower business performance as well as higher levels of stress experienced by employees. The report noted that a comfortable staff was 25 percent more productive than an uncomfortable staff. The level of comfort was based on office basics, such as air quality, temperature, overall comfort, noise, and lighting. Both good lighting design and adequate daylight were linked to a 15 percent reduction in absenteeism and increases of between 2.8 percent and 20 percent in productivity.

The BCO recently held a series of workshops to discuss the relevance of occupant feedback in design and intends to publish its own guide to POE. Developers have expressed interest in how POE may be used to measure the success of their schemes.

Benefits of and Barriers to POE

Postoccupancy evaluation typically takes place some six months after a building is occupied. The purpose of a POE is to:
▷ Measure project success—particularly the success of the less tangible benefits. For example, does the project solution meet the brief and were the project objectives achieved? Is the quality of the project satisfactory?
▷ Give feedback to the project team to provide lessons learned for future projects.
▷ Engender good client relations. For the designer, offering another POE some six months after practical completion provides an opportunity to reestablish relationships with old clients.

One issue with conducting a POE after project completion is that it is not always clear whether the feedback indicates improvement or not, as the starting point is unknown. A solution is to benchmark the result with that found in other similar organisations. An even better solution is to conduct a preproject occupancy evaluation to achieve the following:
▷ Set the baseline. The level of satisfaction is determined before the project begins and is measured again after completion; the step-by-

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Comfortable staff are 25 percent more effective—air temperature and quality, noise, and lighting are all factors.

Example Survey

Many occupant surveys are in use. All claim various advantages, but most address the impact of the workplace on occupant satisfaction and comfort, and sometimes on occupant performance.

One survey is provided by the Office Productivity Network (OPN), which was set up to study the impact of offices on business performance. It comprises about 20 members drawn from senior business organisations and consultancies including Barclays Bank, British Land, BT Property, GlaxoSmithKline, Swanke Hayden Connell, Johnson Controls, PricewaterhouseCoop-

step change as the project progresses may also be measured, particularly if highly subjective factors such as self-assessed productivity are being compared.

▷ Inform the design process to determine occupant requirements and to ensure that the majority view is captured; such feedback also helps determine priorities and focus expenditure when the budget is limited.

Initiate the "hand-holding" part of the process by using the survey to communicate the progress of the project to staff members and involve all of them.

In addition to pre- and postproject evaluations, ongoing surveys may be used between projects to monitor building performance regularly. By proactively seeking feedback, the

facilities manager becomes aware of any minor issues and has the opportunity to resolve them before they become a significant source of complaint.

There *are* barriers to conducting a POE, which vary according to who is objecting—a client, designer, or facilities manager. The barriers surround issues such as ownership, costs, those who will benefit, potential litigation and professional indemnity cover, practical issues, and expectations. These barriers can be avoided by a clear understanding of the purpose of the POE and the use of low-cost implementation such as Web-based surveys.

ers, and KPMG. The OPN survey is a POE questionnaire that was published originally in 1998 by Oseland and Bartlett and developed with government funding and commercial sponsorship. Swanke Hayden Connell Architects now holds a survey database of 70 buildings, some preproject and some postproject data, with over 7,000 individual responses to the OPN survey.

A sample of the type of analysis that may be conducted is shown in Figures 1 and 2. For the purposes of this article, the database has been divided into pre- and postproject surveys and the mean percentage of satisfaction plotted for all the buildings in each group. Figure 1
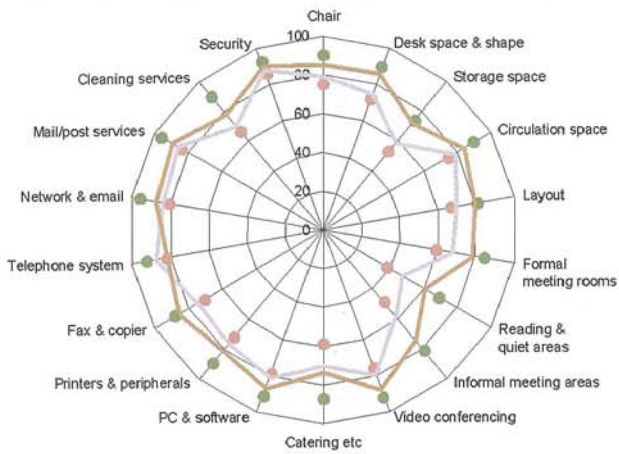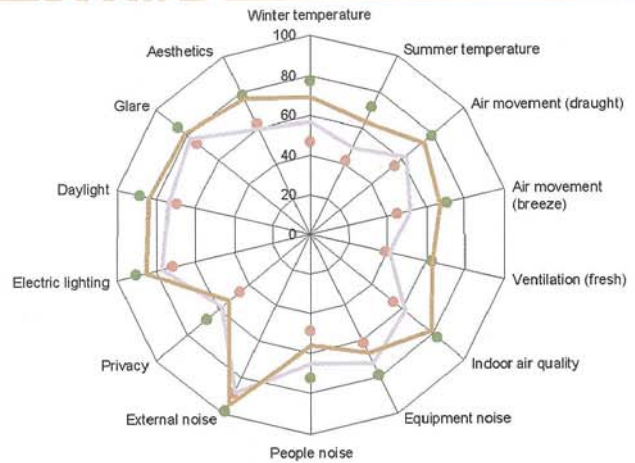
FIGURE 1

Figure 1

FIGURE 2

Figure 2

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shows the mean satisfaction rate for the design and facilities. Fewer respondents in the preproject buildings are satisfied with storage, reading and quiet areas, and informal meeting space as indicated by the dip in the preproject satisfaction rate and the lower quartile scores. The postproject satisfaction rate shows an increase in all of these areas, but the areas all reveal a slight dip compared with the other design and facilities items. Unexpectedly, the chart shows a postproject decrease in satisfaction with the telephone system. This could be

related to the fact that postproject buildings tend to have a more open-plan environment, which will affect telephone conversation.

Figure 2 shows that the percentage of respondents satisfied with the environmental conditions is generally lower than that satisfied with the design and facilities. Fewer respondents are satisfied with ventilation, temperature, air movement, air quality, employee noise, and privacy. The mean satisfaction rate in the postproject buildings increases considerably in terms of temperature and ventilation but decreases in terms of privacy and noise. Again, this result may be due to the excessive levels of open space in the postproject buildings.

The respondents were also asked to identify the factors that are most important in supporting their work. Technology (PC and network) and ergonomics (desk space and chairs) were identified as two key factors; but also, in addition to being the key causes of dissatisfaction, temperature, fresh air ventilation, privacy, and lack of noise from people are identified as important. Some of these latter factors are difficult to design for as they are highly subjective, but motivational theory suggests that not satisfying such basic needs will have a detrimental effect on productivity.

The OPN recently developed an index to quantify the impact of the office environment on business performance. Fundamentally, it is a scorecard approach that incorporates a

100-item checklist interview with the facilities manager and a walk-through survey. The OPN has surveyed about 40 buildings to date, which allows it to benchmark data, with the intent of launching an OPN index in the near future.

The OPN argues that the effects of a property change on business productivity are rarely quantified or analysed and, at worst, are entirely ignored. If management attention is focused on how the office environment affects business performance, shareholder value can be increased for the occupying businesses, and consequently for their property and facilities suppliers.

The lessons learned from a POE survey benefit the client, the designer, and the facilities manager. Designers and facilities managers owe it to their professions to share their POE results with their peers to help improve workplace design and operation. **ULE**

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