

Postoccupancy Evaluation

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Clients seeking to use their space more cost-effectively, increase the productivity of collaborative work groups, or gain a competitive edge in attracting creative employees are fueling a growing market for postoccupancy evaluations.

Summary

POSTOCCUPANCY EVALUATION SERVICES

Why a Client May Need These Services

- ▶ To reduce costs and enhance building quality in future projects
- ▶ To discover and correct functional concerns early
- ▶ To evaluate the effectiveness of design or delivery decisions
- ▶ To respond to complaints of building users
- ▶ To identify efficient, cost-effective solutions to space use issues

Knowledge and Skills Required

- ▶ Background in behavioral, environmental, or organizational psychology
- ▶ Experience with interior space planning
- ▶ Understanding of the building program, design, and technology
- ▶ Excellent communication and interview skills
- ▶ Expertise in data-gathering techniques and tools
- ▶ Specialized knowledge for particular facility type

Representative Process Tasks

- ▶ Determine the goals of the evaluation
- ▶ Identify members of the postoccupancy evaluation team
- ▶ Research effect of physical environment on organizational goals and objectives
- ▶ Collect and analyze current performance data
- ▶ Prepare final report, including recommendations for change

Postoccupancy evaluation services address how well a facility contributes to the productivity, satisfaction, and well-being of the occupants and the goals of the organization. Emphasis is on evaluating the functional quality and efficient use of living and working environments. In the case of new construction or renovation projects, actual functions are compared to the program objectives of the project. Sometimes occupancy studies are conducted as a prelude to the proposal of new construction or renovation and are very much like predesign programming. When they compare previous occupancy conditions to new ones, the studies are called pre- and postoccupancy evaluations.

The growing interest in occupancy studies stems from an overall concern for optimizing building performance that has developed in conjunction with the maturation of the facility management profession. Within the area of building performance, there are two distinct focuses: the performance of building materials and systems and the performance of the building in functional, behavioral, economic, and social or cultural context. The latter view is the focus of the postoccupancy evaluation services discussed here.

A growing body of knowledge developing in the environmental design field addresses how the physical environment affects behavior, learning, performance, satisfaction, human productivity, and well-being. As awareness of the effects of environmental factors expands, the market for environmental design services is likely to continue to grow.

CLIENT NEEDS

From the client's perspective, postoccupancy evaluation can serve many purposes. Especially for repeat builders, postoccupancy evaluation can provide "lessons learned" that can be applied to future projects to reduce cost and enhance building quality.

Regardless of whether a client intends to build again, a postoccupancy evaluation study can provide input for facility management and renovation.

New facilities. By including postoccupancy evaluation services as part of the owner-architect agreement for building design and documentation, the designer is able to discover and correct any functional concerns before complaints emerge. Classically, this type of postoccupancy evaluation focuses on comparison of the initial project program with the facility in actual use. The postconstruction study also may evaluate the effectiveness of specific ideas and innovations used in the design or delivery of the project. Results can be used to fine-tune the building to respond to actual conditions.

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In new facilities postoccupancy evaluation studies often are requested when there are complaints. Quite often these complaints stem from inadequate communication between those who designed the building and those who are occupying it. Many of the problems encountered by occupants in new facilities could be avoided by thoroughly researching occupant needs during the programming of new facilities. The research should then be followed by adequate occupant information as part of a commissioning program. If a new facility is dramatically different from the old one, occupants may need a formal support program to enable them to adjust to the new facility. For example, if employees formerly had private offices but now must work in open and collaborative team space, it is normal for them initially to have negative feelings about the new work environment. Some firms that offer postoccupancy evaluations also offer move-in assistance or a change management service to work with occupants before and after a move to orient them to the new space.

Existing facilities. Owners of existing buildings may seek postoccupancy evaluations because of a perceived problem with the space. Managers of organizations who want their buildings to work for them and owners interested in ensuring a continued market for the space will seek postoccupancy evaluation services to identify potential solutions. In condominiums, apartment buildings, dormitories, and office buildings, for example, occupants may complain about noise, lighting, adjacencies, or other factors. Commercial, institutional, and government clients may recognize problems with work space in existing facilities and be interested in ways to improve the existing space or to determine whether new facilities are required.

Impact of technology. With rapidly changing technology in the workplace, many facility owners feel the need to transform space and make it more flexible to meet changing user demands. Computers, fax machines, and e-mail have altered the way people do business and the way space is configured to accommodate people and machines.

Change in work processes. The social structure of work also is changing rapidly, affecting how work is organized and managed and how decisions are made. Change in work processes requires change in workspace organization. In today's knowledge-based economy, the success of many organizations depends on the productivity of creative professionals who work collaboratively. Progressive corporate and academic research and development organizations, for example, are keenly interested in applying environmental design principles to their facilities. They understand that well-designed facilities can make their workers healthier and more productive, support both individual and collaborative work, and help attract the best talent. For such clients, the postoccupancy evaluation will include assessment of the occupants' work processes (by someone trained in behavioral psychology or a related discipline) to determine how the space can best accommodate the size and style of the work team and its type of output (e.g., theories, books, marketing concepts).

Bottom-line concerns. Clients are more interested than ever in realizing the full potential of their facilities. They want to enhance the operations that take place within them and to use the space more cost-effectively. Colleges and universities, for example, are very interested in expanding the hours of effective facility utilization in order to increase revenues, and thus they frequently requisition space utilization studies to address that issue. College dormitories, residential health care facilities, and the lodging industry want to maximize the number of units available while maintaining consumer comfort. In the late 1990s there was a perceptible increase in the number of organizations requesting evaluation of current occupancy patterns in existing space, and this trend is likely to continue.

Unfortunately, when clients seek postoccupancy evaluation services for purely economic reasons, they often turn to professional management consulting firms, major accounting firms, or developers. Architects facing these competitors can point out to clients that their comprehensive knowledge of building design makes them better qualified to evaluate all factors that go into effective space use, but they must counter the perception that they are not sufficiently attuned to the client's need for bottom-line return.

The architect's perspective. Architecture firms may face many competitors in the market for postoccupancy evaluation services, including management consulting firms, accounting firms, developers, space planning firms, and behavioral or environmental psychologists. Depending on the project, an architecture firm may choose to team with these potential competitors.

There is some controversy regarding whether it is a conflict of interest for the



Concerns about the impact of the physical environment on human behavior, productivity, well-being, and other factors that affect employees may provide opportunities for architects to participate in research in these areas.

design architect to perform postoccupancy evaluations. Some are concerned the designer will lack the detachment necessary to perform an unbiased assessment, while others maintain that the original designer is best qualified to perform the service because of unmatched knowledge of the facility and its programming goals. Postoccupancy evaluation expresses a long-term commitment to quality control and customer satisfaction when conducted responsibly on projects the architect has designed. Because organizations are dynamic, many changes may occur between programming and occupancy that will require fine-tuning of the building design. Postoccupancy evaluation identifies problems that may be easily corrected. If not corrected, problems could lead to conditions that would be attributed to poor design. Architects can learn much from postoccupancy evaluations that they can apply to future projects.

Postoccupancy evaluation services are closely related to a number of other services that can be marketed as a package. Related services include programming, space planning, systems performance assurance, commissioning, move management, the move-in assistance or change management services noted above, warranty review, energy monitoring, indoor air quality monitoring, the making of record documents, preparation of operations manuals, and operations and maintenance training. The best marketing strategy is to position the designer as a partner with the client over a longer term in order to optimize the client's investment over time and optimize the designer's knowledge.

SKILLS

The postoccupancy evaluation team should include people with a variety of skills. Someone with a good background in behavioral, environmental, or organizational psychology and interior space planning will be a key team member. Depending on the focus or goal of the organization, an architect may be a good choice for project manager, offering a solid understanding of the building program, building design, and building technology. The project manager should have excellent communication and personal interaction skills, including the ability to facilitate discussions and conduct interviews. Depending on the project, an engineer with additional expertise in building systems operation may be required. The team's collective knowledge should include expertise in data-gathering techniques and tools. Generally, senior staff is required for postoccupancy evaluation work, particularly the portions of the work involving client contact or data analysis. Junior professionals or administrative staff may do administrative and data entry work.

Those listed above are the core team members for most projects. Depending on the project, others may be added as consultants or team members. Sociologists, anthropologists, management consultants, environmental psychologists, or other professionals concerned with human needs, attitudes, and behaviors may be needed to supplement the services of the core team members. Many postoccupancy efforts may require mechanical, electrical, and civil engineers as well as interior designers.

Other specialists may include acoustical engineers, networking and telecommunications consultants, energy specialists, environmental and air quality specialists, industrial hygienists, and landscape architects. Depending on the nature of the project, consultants who specialize in particular types of buildings or spaces (e.g., kitchen, justice, entertainment) also may be required.

Equipment and resources required include computers, Web pages where project users can provide information and respond to questionnaires, a camera, a tape recorder, bias-free survey instruments, and software for space syntax analysis.

PROCESS

The scope of service depends on the type of information the client needs, the size and complexity of the facility involved, the number of functions it houses, and the number of occupant interviews the client requests.

Goal identification. The first step is to identify the people in the client's organization who need information and to clarify how the information is to be used—where it will be applied and by whom. Obtaining buy-in from top-level management (e.g., a chief executive officer or a

▶ **Postoccupancy acoustical investigation is part of architectural acoustical services.**

▶ **Energy analysis and energy monitoring may be included in postoccupancy considerations.**

senior vice president for finance and administration) for the study is advisable to ensure that the recommendations will be implemented. The anticipated benefits (or desired outcomes) from the postoccupancy evaluation study should be explicitly identified at the outset.

Team formation. At this point, with the goals of the postoccupancy evaluation established, the team members for the evaluation effort can be identified. In assembling a postoccupancy evaluation team, prime consideration is given to the client's information needs, each team member's ability to understand the program requirements for the particular facility, and their competency in their respective disciplines. The team should include representatives of the client's organization who will oversee the team's work. The team must take the time to establish rapport with the people who occupy the setting to be evaluated. It is important that the team not be perceived as threatening to the occupants, who may fear the consultants will report negative findings about their work performance to management.

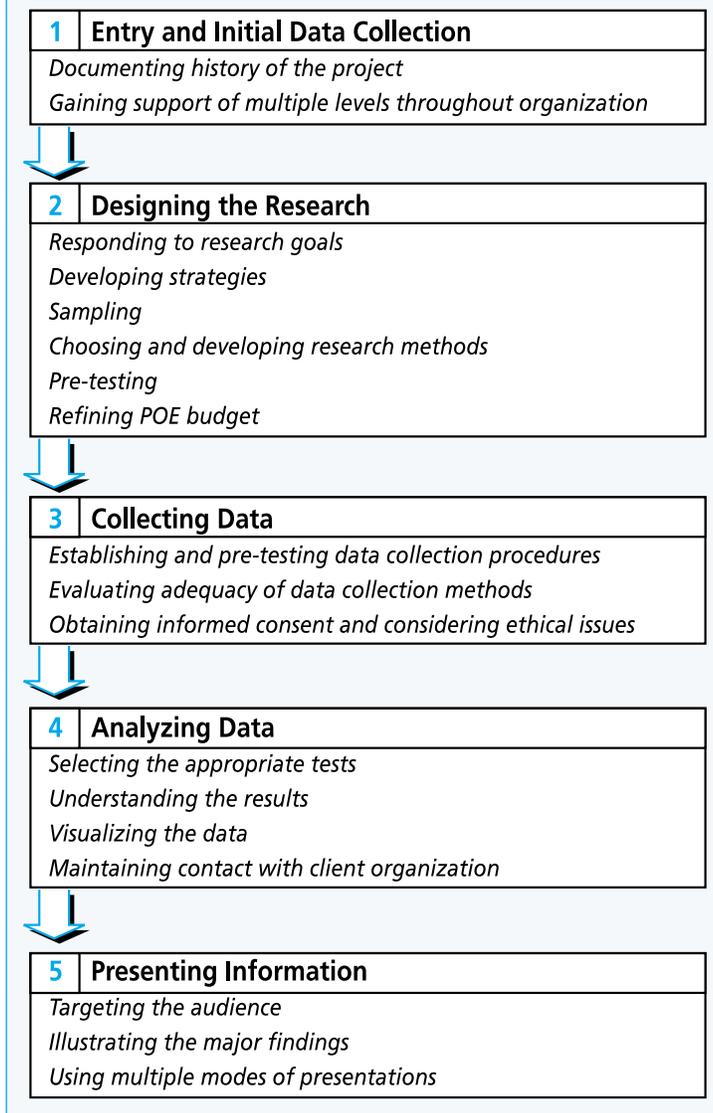
Preliminary research. Working with those identified by in-house team members, the consulting team reviews building programming documentation and conducts interviews with the goal of gaining a preliminary understanding of the following:

- The goals and objectives of the organization and the role the physical environment is asked to play in helping achieve those goals
- The behaviors and tasks needed to achieve those organizational goals
- How the building must perform to support those behaviors and tasks

Data collection. The team will then need to gather data to better understand the factors listed above and to collect evidence regarding how well or poorly the building supports the desired behaviors and tasks. Data collection methods that are appropriate to the setting and to the information needs are then selected. Methods fall into three general levels. The most common and least complex level of data collection is the postoccupancy evaluation questionnaire or interview, which documents what the occupants have to say about the space. The second is sampling and observation, which provide verification of the survey data as well as additional texture and detail. Many clients feel that sampling and observation are not necessary, but they should be conducted to ensure data quality. The third and most complex level of data collection is a longer-term postoccupancy evaluation, which might include diagnostic studies that probe more deeply into problem areas. The team also must decide whether it is appropriate to gather data from just a few respondents or many and over what time period (e.g., a day, month, or year).

Findings and recommendations. After the data are collected and analyzed, findings and recommendations are presented in a draft postoccupancy evaluation report. The report may recommend strategies for improving the building's ability to support desired behaviors and tasks, or it may recommend modification of behaviors and tasks in order to realize the building's potential to contribute to the mission of the organization. The draft report is shared with the appropriate representatives of the client's organization. Report findings and recommendations sometimes have personnel implications. For example, a work group's performance problems may be more

The POE Process: Major Steps to Be Taken



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related to the manager's style than to space configuration. For this reason, it is best that no promises be made in advance regarding widespread circulation of the report.

Based on the client's comments, the postoccupancy evaluation report is revised and clarified for final delivery. A good report has clear recommendations or statements.

Follow-up. The final step is to follow up to learn the outcome of the recommendations.

“Postoccupancy Evaluation” was originally published in *The Architect’s Handbook of Professional Practice*, 13th edition, ©2000 by the American Institute of Architects, published by John Wiley & Sons, Inc.

The AIA provides a contract document designed especially for alternative architectural services.

B102–2007, Standard Form of Agreement Between Owner and Architect without a Predefined Scope of Architect’s Services.

AIA Document B102–2007 is a standard form of agreement between owner and architect that contains terms and conditions and compensation details. B102–2007 does not include a scope of architect’s services, which must be inserted in Article 1 or attached as an exhibit. Special terms and conditions that modify the agreement may be included in Article 8.

The separation of the scope of services from the owner/architect agreement allows users the freedom to append alternative scopes of services.

AIA Document B102–2007 replaces and serves the same purpose as AIA Document B141–1997 Part 1.

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May 2011 The American Institute of Architects