POST-OCCUPANCY EVALUATION

AND ITS IMPLICATIONS FOR ARCHITECTURAL EDUCATION

Rev Dr Charles Doidge
The Leicester School of Architecture,
Faculty of Art and Design,
De Montfort University,
The gateway, Leicester
LE1 9BH

The development of post-occupancy evaluation of higher education buildings is having unexpected and far-reaching implications for architectural education.

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Introduction

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Background

The construction industry, like many industries and professions during the 1990s, became acutely aware of its strained relationships with clients and of its poor public image. ‘Client forums’ were set up at the highest level to bring clients and users face to face with professionals to tackle the issues. These groups undertook to ‘promote quality’ and became ‘Design Quality Forums’. About eight were established in key areas, one of which was the Higher Education Design Quality Forum (HEDQF).

The HEDQF worked with the national organisations of vice chancellors and principals (CVCP and SCOP) and with directors of estates (AUDE). Amongst several initiatives, it advocated post-completion evaluations to stem the constant haemorrhaging of expertise. It commissioned pilot studies by a joint team from The Leicester School of Architecture at De Montfort University and the Institute of Advanced Architectural Studies at the University of York.

Strategic and Positive

Post-completion studies have been conducted for at least half a century but the results are not encouraging. Most take the form of ‘internal enquiries’ either to ‘whitewash’ or to ‘apportion blame’ and are rarely published. The HEDQF wanted to be ‘strategic and non-recriminatory’ and to identify parameters affecting quality. It was an ambitious aim within a traditionally secretive commercial environment, within a culture that attributed blame rather than recognise risk, and where ‘what did you do right?’ was never asked.

Previous methodologies were based on a ‘walkabout’, analyses of drawings or documentation, measurement of fabric or energy consumption, surveys of user satisfaction or public opinion, or limited feedback from professionals and industry. They tended to be either subjective and superficial or meticulous and time-consuming.

Initially, it was anticipated that studies would be ‘evaluative’ and ‘quantitative’ and that credible cost analyses, energy audits, user satisfaction surveys and the like would lead to benchmarks and grading systems, comparable with other quality assurance systems.
Post-Occupancy Evaluation and its Implications for Architectural Education

(QA) in the university sector. It soon became apparent that, in the complex world of construction and in the largely subjective world of design quality, establishing rigorous measures would require administrative procedures far beyond even those established for other higher education QA systems.

Measurement is possible and has been conducted notably by the University of Strathclyde and by Building Use Studies but their studies concentrated on a limited range of measurable parameters. The uniqueness and complexity of each project, the speed of change in education, and the commitment to quality issues, meant that a different approach was needed. The challenge from HEDQF was to develop a methodology that would be more strategic and positive. A hint might lie in changing attitudes mirrored in a parallel study.

**Attitudes**

An educational project entitled CUDE, ‘Clients and Users in Design Education’, also grew out of the construction industry’s concern about its relationship with clients and users. The industry was its own catalyst of discontent by structuring itself around dozens of professions each of which overlapped at least 80% of their activities with other professions. Battle-lines were drawn and clients and users found themselves in the crossfire. The University of Sheffield and De Montfort University with funding from HEFCE joined forces to examine relationships both amongst the constituent professions and with clients and users.

A turning point came from an unexpected direction. An educational consultant (Wilkin M., 1999) attempted to pinpoint where students were introduced to client and user issues. Architectural staff claimed that these issues were highlighted during design reviews. Coming as an ‘outsider’ to these reviews, the consultant experienced the culture shock to which new students are subjected. Students had insufficient guidance about drawings, verbal presentation, time-management, audience participation, and so on and too much time was spent on correcting bad rather than on encouraging good design, students could not see the drawings or hear the discussion, studios were distracting and so on.

However, the most significant questions were about the underlying attitudes. The ‘crit’ was set up in the spirit of ‘defending a thesis’ and it was implied that students were being trained for the ‘confrontations’ they would face in ‘the outside world’. Perhaps it was this process, at the heart of architectural education since the 1890s, that was creating ingrained expectations and, in turn, perpetuating an industry built on confrontation amongst its members and at war with the outside world.
Professionalism
The results of the CUDE study have been far-reaching. A range of ‘alternative reviews’ has been developed in the form of seminars, lectures, brochure presentations, model presentations, electronic on-screen presentations, in exhibition format and so on. Each review format is explained in advance and students are prepared for them through workshops.

However, the most significant change is concerned not with format but with attitude. The reviews are now treated as significant learning events in which every student learns to take part and to give and receive constructive criticism. Projects have been developed which require students to act as ‘clients’ to each other. Students learn not to present the client with a fait accompli, nor to do exactly what the client wants, but rather to involve the client totally in the design process from the outset. This means that all drawings, models, CAD work, and even language must be mutually understood and the outcome must be the result of a creative partnership. This is referred to as a ‘new professionalism’, less arrogant and built on participation and partnership (Nicol D., and Pilling S. 2000).

Methodology
It was this same attitude that drove Post-Completion Evaluation towards Post-Occupancy Evaluation. It would be developed by all parties working collaboratively, designed to benefit all parties, and not for one to inspect another. And it would be ‘Post-Occupancy Evaluation’ rather than ‘post-completion’ taking significant account of the users’ experiences and views.

A number of methodologies were considered including building visits, measurement and analyses of drawings, analyses of project records and costs, data from energy consumption and running costs, user satisfaction and public opinion surveys, postal or telephone questionnaires, and still, video or time-lapse photography.

Four fundamental constraints narrowed the choice:

• anything involving more than a day or two would be difficult to resource initially;

• institutions are bombarded with requests for data;

• widespread co-operation and commitment was essential;

• existing methodologies did not identify or evaluate quality factors.

The HEDQF, with its broad membership across design, construction, and user organisations, was committed to a broad approach. It debated issues itself within a ‘forum’ in which potentially conflicting interests were largely resolved within the common objective of ‘quality’. With the HEDQF and a Steering Group, a ‘forum’
Post-Occupancy Evaluation and its Implications for Architectural Education

approach to the studies was proposed in which the various teams involved would contribute.

A single forum would be too large and so a system of four forums was devised covering:

• briefing and design;
• construction and cost;
• space and management;
• environment and sustainability.

The most valuable resource in university education is student time. While ‘productivity’ and the reduction of ‘downtime’ in a factory are critical, the effective use of student time has become the equivalent. Buildings which undervalue student time and hinder learning waste an irreplaceable resource. It was therefore considered essential that the studies should be ‘post-occupancy’ and learn from the management and use of the building rather than ‘post-completion’ with the emphasis on the building. A consensus view was that one year after completion was judged optimal because:

• teething problems are largely resolved;
• a year’s operation can be reviewed;
• students and other users would have settled in;
• the honeymoon is over;
• most of the people involved are still available.

A notional timetable was proposed with the four forums in a single day:

0900 Arrive, establish base room, tour building
1000 Forum 1
1130 Forum 2
1300 Lunch
1400 Forum 3
1530 Forum 4

Preliminary feedback to participants.

An agenda for each was designed to be used as a ‘semi-structured interview’ allowing for ‘supplementary questions’ and provoking further discussion. Typical questions to the briefing and design team included:
• How did the university become aware of the need and establish a ‘business case’?
• How was the initial brief formulated, communicated, and developed?
• How was the University / Department prepared, organised and assisted in playing its role?
• How were requirements determined and conflicting excessive demands resolved?
• What statements or actions concerned ‘quality’? How important was cost?
• Were the ‘quality’ statements appropriate, were they modified, and were they effective?
• Does the building feature in publicity to potential applicants, in seeking research funding, or in university, city or regional publicity generally?
• Is there any evidence that the design quality of the building has provided any benefits?

Questions to the other forum teams included:

• What were the criteria for selecting the main contractor (e.g. price, price guarantees, speed, flexibility, quality, risk, experience)?
• What evidence did you have of excellence in these appointments (e.g. design awards, competition success, published buildings)?
• Is space provided for social purposes and ‘informal learning’ and, if so, does it work?
• Are users proud to be associated with the building?
• How was energy considered in design stages? Are there any incentives now to save?
• In what ways have the surroundings been enhanced?

Significantly, despite widespread protestations of support, it proved extremely difficult to find institutions actually willing to undertake such studies. Difficulties with particular projects, changes in personnel, the pressures of workload, and fear of disclosures, were the usual deterrents.
Indemnity

There was genuine concern that disclosures at a forum could lead to damaged reputations, to legal actions by clients, and even to insurance companies rejecting claims because liability had been admitted:

- ‘Reputation’ was covered by giving institutions and their teams editorial rights;
- ‘Action by clients’ cannot be eliminated and the move from ‘a blame culture’ towards ‘a risk culture’ may take time; if clients want the best long-term service, they must move from ‘who is to blame?’ to ‘was the risk reasonable?’
- ‘Insurance’ was a potential minefield which a group of major companies considered and noted first, that they welcomed the approach being taken, and second, that they knew of no case in law arising from such studies.

Pilot Studies

As the work developed, the Higher Education Funding Council for England (HEFCE) approached the HEDQF with a request to develop the process in a way that could be applied to two-hundred or more projects a year. They were required to demonstrate ‘good stewardship’ of public money and felt that the approach of HEDQF provided a way forward without superimposing the levels of bureaucracy adopted for Quality Assurance of taught courses or for Research Assessment. They welcomed an approach based on the identification and dissemination of good practice.

Five forums have been piloted with support from HEFCE, HEDQF and institutions. They cover buildings ranging from £4m to £60m. Four were one-day studies and one required two days. The include general teaching, IT, laboratory, sports and residential facilities.

The forums have been surprisingly ‘celebratory’ influenced by the fact that these were particularly successful projects. Some people had never seen the finished building, another group had never seen the whole team together, and another commented that it made a fitting conclusion to the project. Teams generally have been forthcoming in their discussions although obviously not everything ‘comes out in the wash’. Two principles have helped. Firstly, where problems or criticisms are made, the teams must review these in order to make positive recommendations. Second, the institution has final editorial rights over the report.

There are disadvantages in this ‘forum’ approach that may be irresolvable. Views are not necessarily representative, participants may be concerned only with the opportunity to promote their reputation, and there is usually at least one contributor who cannot attend because of other commitments or because the organisation no longer exists.
It has been difficult to obtain adequate student representation but those who have attended have made significant comments. Asked about a new science building, the students said that they were proud to work in a building everybody recognised and that this made it easier to attract good students and research funding. Students come with a significantly different agenda. The project and its costs do not concern them and they take the basic teaching and laboratory spaces for granted but they are concerned about informal learning spaces, a cup of coffee between lectures, and where to put the bags they have to carry all day. In a splendid new sports facility, they wanted the bar to overlook the all-weather pitch, not the grass pitch that was empty most of the time. They were also pleased that, in this new building, they could book and know that the facilities would not be locked up or need cleaning before they could start; evidence of the higher premium students now place on their time.

The pilot studies also showed how vital the early stages were. One major project grew out of amalgamating four together, joining two departments in one building, and filling the whole site to provide a huge atrium and inward views. When asked about the brief, the university commended the challenging questions which came from the architects. On questioning, everybody was surprised to learn that they had received the questions from the university estates director.

The absolute time-constraints of higher education projects is another vital factor. Penalties for delays to motorway repairs or completing a supermarket are accepted but when academic buildings fall behind, the students arrive regardless. One complex science project was handed over at 9pm on Sunday and student classes began 12 hours later. A student village started on site within four days of planning consent to ensure that the rooms could be occupied in September. Another project specified in the tender documents dates when sitework would be curtailed by student examinations. In another, doctoral students were concerned that their grants and deadlines were unchanged, despite having to move.

Such examples emphasise the variety of issues the design and construction teams must face, some of which are peculiar to higher education. The major issues of delivery on time within budget are important to institutions but it is other issues that concern students. Ways do need to be found to involve students at all levels fully in the design and equipping of new buildings and in organising ‘a smooth move’.

For architectural students, it highlights the importance of the briefing process and the involvement of both client bodies and everyday users.
A National System

A National System of Post-Occupancy Evaluation has now been proposed and published for consultation on the HEFCE Website (Henderson G., and Doidge C. 2000). Its recommendations include:

- The evaluation system should be based on strategic non-recriminatory group discussions constituting a ‘Post-Occupancy Forum’.
- HEFCE should require all HE institutions receiving substantial HEFCE funding to organise, conduct, and document a one or two-day Post-Occupancy Forum about 12 months after building occupation.
- HEDQF should consult with local student unions and the National Union of Students about representation at HEDQF and explore ways to encourage students to engage more effectively in Forums and in building briefing.
- HEDQF should train Facilitators and Reporters, maintain a register of recommended people, and monitor their performance.
- HE institutions should retain editorial rights, responsibility, and copyright of their reports. Reports may, exceptionally, exclude detail identifying institutions or buildings. When satisfied, they should send Forum Reports to HEDQF for publication.

Implications for Architectural Education

These recommendations embody a number of significant implications for the education of architects and other construction industry professionals. They affect both the content of courses and the spirit in which students learn.

If, as is expected, post-completion or post-occupancy studies become the norm, then students will need to be introduced to the methodologies, to the analysis of results, and to appropriate response. However, underlying this work is a more fundamental change. This work implies a closer link with clients and users and even a responsibility on the part of users to co-operate in the passing on of expertise acquired.

Conclusions

- Post-Occupancy Evaluation has evolved as far more than the development of a methodology and presents the following challenges to architectural education and practice:
  - a series of methodologies will need to be developed;
• professional and client attitudes to blame and risk will have to change to engender a greater openness in order to learn and progress;

• the issues of insurance indemnity will have to be worked out in practice and not in the courtroom;

• client participation must be developed and encouraged. The profession must be neither charity nor king, neither handing out its wisdom nor imposing its power.

Acknowledgements

Initial funding from HEDQF and subsequent funding from HEFCE is acknowledged.

The CUDE Study at De Montfort University was initiated by Professor George Henderson and the late Judy Ashley and most of the staff of the Leicester School of Architecture were involved.

The Post-Occupancy team comprised Professor George Henderson, Rev Dr Charles Doidge, Dr Sahap Cakin, Brian Moyles and Dr Doug Cawthorne, all of The Leicester School of Architecture.

References


