

Post-Occupancy Evaluation of UK Library Building Projects: Some Examples of Current Activity

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1. INTRODUCTION

Post-occupancy evaluations of buildings ask questions and provide answers on how buildings actually work in technical, social and management terms for the end-users¹. They can have a significant impact on creating change in terms of improving use of any building in two ways: Firstly, by providing lessons and feedback for the architect and the construction industry. They can lead to improved building design and improved procurement and can influence and change the roles of professionals involved in a building project so that flaws in design or construction-related mistakes are not repeated. Secondly, by empowering end-users as post-occupancy evaluation provides benchmarks and a pool of research on architecture and buildings to show how the end product (the building design and its management) meets the needs of its clients.

Post-occupancy evaluations can show what works, and what does not – yet they are not common and apparently have been seldom done in a systematic way. Where they are done within the architecture or construction industries, it seems to be by a small number of firms or organisations and even then post-occupancy evaluation can be on an irregular basis and most likely in relation to private client buildings, not public service ones such as universities and libraries. Too often people involved in completed building projects lose the opportunity to share what they have learnt as they head off to new projects or employment – a wasted opportunity given the amount they have learnt and that could contribute to the process of improving design quality. Identified barriers to post-occupancy evaluation include

- clients (who think the building should be right on day one of occupation, that it will cost too much and that the benefits of post-occupancy evaluation will be for others, not them, maybe even resulting in standardisation rather than individual solutions to their perceived unique problems);

- the design and building team (who think they will be blamed for any problems unearthed and who are put off by the scientific mystique of some post-occupancy evaluation methodologies)
- the occupiers (who think that more disruption can only be a bad thing especially if it identifies issues which are already the subject of staff complaint)².

Fortunately that picture is changing as post-occupancy evaluation becomes more action-orientated and more clearly based on addressing clients' and architects' needs. In the UK there are two formal schemes underway which have been applied to the Higher Education (HE) sector and to academic libraries – an external one led by the construction industry (PROBE or Post-occupancy Review of Buildings and their Engineering – which has undertaken over 100 studies to date) and the other, internal to the HE sector itself (led by the Higher Education Design Quality Forum). These are complimented by two 'softer', qualitative forms of evaluation demonstrated by the efforts of (a) the library profession itself, led by SCONUL³ for academic libraries and by the Library Association for public libraries, and (b) the architecture and building related professions.

2. POST-OCCUPANCY EVALUATION IN THE UK: PROBE OR POST-OCCUPANCY REVIEW OF BUILDINGS AND THEIR ENGINEERING

PROBE is a formal methodology begun in 1995 arising from a joint venture between the UK Government (Department of Environment, Transport and the Regions), a professional body, and respected publisher, (the Chartered Institution of Building Service Engineers and its magazine *Building Services Journal*) and a research team. It was a world first in placing detailed performance analysis of named buildings in the public domain. PROBE came together at a time change for the construction industry – with increased pressure for speed of completion, for improved quality and a need for changing use/flexibility of space against a background of reductions imposed on project costs, increased use of I&CT, the rise of facilities management and concern for environmental performance and energy efficiency. Occupant satisfaction and the concept of 'sick buildings' were also prominent issues at this time. This methodology was a milestone in using government funding as a way of underpinning innovation in real-world research and dissemination⁴. A special issue of *Building Research & Information*⁵ looks in depth at PROBE and its detailed findings will not be repeated here.

In terms of its methodology the PROBE team visited well-regarded, new commercial and public buildings of interest to design professionals, typically 2-3 years after completion, to survey and assess technical and energy performance and social aspects (such as comfort, satisfaction, productivity, perceived environment control, lighting, noise and light) in a comprehensive, systematic and affordable way. The team studied 14 main items, with some ten formal stages within the process and including two site visits, before seeking comments from both the building design team and building occupier on the team's final report. The 14 main items studied within the survey and reporting process are

- Procurement route;
- Design and construction;
- Initial occupancy;
- Occupant satisfaction;
- Management perceptions;
- Energy and water consumption;
- Operation and management;
- Maintenance and reliability;
- Controls and controllability;
- Design intentions;
- Alterations made;
- Benchmark comparisons;
- Strengths and weaknesses
- Key messages⁶.

In PROBE 1, from 1995-1999, the team reviewed and published with scientific integrity on some 16 buildings in order to provide feedback on generic and specific information on factors for success in the design, construction, operation and use of the buildings, together with areas of difficulty and disappointment. A series of outcomes designed to improve industry practice and building performance have helped embed this schema: for each building the final report was distilled into an article published in *Building Services Journal*; the reference data compiled on achieved performance was put towards future benchmarking; agenda items were compiled for clients, occupiers, professionals, government and research bodies to address (for example how to avoid

disappointments in future, coping strategies or low cost solutions on how to handle problems). The PROBE project has demonstrated that a formal process of feedback from both the original design team and the building occupier on key indicators can radically help improve building design and can be directly relevant to the day to day operation and decision making of all sectors in the supply of buildings.

PROBE also relies on, and emphasises the results of, its occupant surveys overall, as a means of clearly demonstrating to managers the impact of widespread chronic, low-level problems in relation to comfort and satisfaction. The surveys investigate issues such as noise, thermal comfort, usability, perceived lack of personal control or delays to speed of response to local building problems (such as lighting) - on the health, comfort and productivity of occupants and users⁷. More importantly the surveys are combined with the technical and energy surveys given PROBE has broader studies and datasets in relation to the building context.

PROBE has also embarked on three other projects

- PROBE 3 (revisiting previous buildings by way of an 'intervention study' to develop an action plan with the occupier, help with implementing PROBE lessons and analysing any subsequent improvements to building operation as a way of developing a total building evaluation. By importing PROBE lessons this is intended to be a way of helping in design briefing, design, handover and long-term management);
- PROBE Strategy (dealing with the implications of the findings for design professionals, the construction industry, clients, building occupiers and building managers)
- PROBE Alliances (which sets up co-operative initiatives with interested organisations).

The impact of PROBE on academic libraries is discussed below.

More information about PROBE, the process, the studies and the conclusions, including data and downloadable reports may be found on the PROBE website⁸.

3. POST-OCCUPANCY EVALUATION IN HIGHER EDUCATION IN GENERAL (HE)

The HE sector is involved in numerous and often significant construction projects, their project management and, by implication, in post-occupancy evalu-

ation. The sector undertakes some 200 building projects per year, many funded by the Higher Education Funding Councils which are responsible for promoting value for money (including the Higher Education Funding Council for England or HEFCE). For the HE sector the key issues in relation to post-occupancy evaluation are design quality, getting the most from the investment of scarce resources and monitoring public spending.

3.1 PROBE in HE

PROBE (see above) has been called 'a bold experiment' for the building industry as a whole⁹ but the project is also of interest to higher education and to academic librarians. There were five education sector buildings surveyed in the original PROBE survey:

- Anglia Polytechnic University, Queens Building (its flagship new Learning Resources Centre building, planned to include library stock and services along with c750 IT workstations, with a café/bar);
- De Montford University, Queens Building (its Engineering department, a building of high visibility with engineering laboratories and workshops, office space for academic staff, seminar rooms and large lecture theatres);
- University of East Anglia, Elizabeth Fry Building (a teaching/office building with office space for academic staff, seminar rooms and large lecture theatres);
- University of Portsmouth, The Portland Building (its flagship new building for mixed-mode teaching with office space for academic staff, seminar rooms and large lecture theatres);
- John Cabot City Technology College (a secondary school with an emphasis on technology and sponsorship by industry with higher than usual provision for IT and workshop facilities).

In addition during 2000 PROBE looked at the Orchard Learning Resources Centre (University of Birmingham) and the University of Derby School of Art and Design.

3.2 Higher Education Design Quality Forum

In 1994 the multi-disciplinary Higher Education Design Quality Forum (HEDQF) was set up to promote design quality and value for money in Higher

Education, bringing together professionals involved in the conception, design, briefing, construction, occupation and management of buildings. Indeed, it was originally set up as a RIBA Client Forum to develop the Royal Institute of British Architects' (RIBA) understanding of the higher education sector as well as providing a way of influencing national policy in regard to buildings and the environment. HEDQF is supported by the Association of University Directors of Estates, Universities UK, RIBA and the Standing Conference of Principals.

Together HEFCE and HEDQF have collaborated to develop post-occupancy evaluations in the HE sector in order to identify and record good practice, to establish a database and disseminate expertise and to evolve self-assessment methods. In 1998 HEFCE supported HEDQF in a one-year research project on developing and piloting a formal post-occupancy evaluation system to provide information and feedback on building design and procurement in HE. As part of the sector-wide consultation on post-occupancy evaluation, the project included four forums, one workshop with a testing framework, and a HEDQF symposium on post occupancy forums attended by 140 participants held in November 1999. The proposed methodology sought to promote an open and creative process based on post-occupancy evaluation forums. In this it is seen as more akin to the boards that visit schools of architecture than to the current academic inspections of schools, university activities or research activities¹⁰. It was considered that a purely quantitative review and evaluation could be counter-productive so the recommendation was for a system which would extract and disseminate good practice guidelines based on a strategic review covering design, building process, finished building and its operation. Moreover, it was recommended that the post-occupancy evaluations should be a formal requirement where funding was provided by HEFCE towards a substantial building project and that the post-occupancy evaluation review should be published.

The HEDQF-led post-occupancy evaluation of higher education buildings is designed to allow HE institutions to learn from their own experience, share those lessons with others and to demonstrate the sector's commitment to quality and improvement and to the effective management of a learning culture based on shared experience. It is concentrating on new builds in Stage 1 and expects to move onto refurbishment in a second stage.

The HEDQF schema post-occupancy evaluation requirements include publication of a project outline on the web within three months of completion and that the institution should hold a post-occupancy evaluation forum about 12 months after completion. These post-occupancy evaluation forums are required to be strategic and non-recriminatory following the HEDQF guide-

lines¹¹ so the process is devised around a discussion with opportunity for debate and submission of evidence and in which the key question asked is 'what did you do right?' The forum covers four broad areas for investigation, and the guidelines give a series of questions to be explored which acts as a framework or list of prompts rather than definite lists or agendas (in this it is very different from the highly defined PROBE methodology). The four areas are:

- Context and design;
- Construction and cost;
- Space and management
- Environment and sustainability

The post-occupancy evaluation forum is designed around data collection and a couple of days of intensive interviews with teams involved in briefing, design, construction, occupation and management. The post-occupancy evaluation methodology uses a Facilitator from within, or external to, the institution but who is conversant with the building industry, familiar with HE and sympathetic to the concern for quality. It also uses a Reporter, again from within or external to the institution, to collect data, record the forum and prepare the report in consultation with the facilitators. After approval by the host institution the forum reports are sent to HEDQF and published on the web (with appropriate safeguards in respect of confidentiality).

The post-occupancy evaluation includes a wide range of other groups within its processes - the Royal Institute of Chartered Surveyors publish cost analyses of the projects; project consultants and contractors are required to submit appropriate data and to contribute a half-day to participation in the post-occupancy evaluation forum; formal consultation with local student unions and the National Union of Students is designed to encourage students to engage more effectively in forums and in building briefs.

HEDQF arranges training and registration of forum facilitators and reporters as well as monitoring their performance; it manages the post-occupancy evaluation website; it analyses the reports, publishes project analyses and good practice guides; it also monitors the system continuously and aims to review its impact formally with HEFCE every three years.

More information about HEDQF, the recommended post-occupancy evaluation process in higher education, the forum guidelines, including data and downloadable reports may be found on the HEDQF website¹².

4. POST-OCCUPANCY EVALUATION IN HIGHER EDUCATION LIBRARIES

The past 10 or so years has been a period of intense activity in academic library building projects resulting from the expansion of student numbers since 1988/89 and supported by Government funds arising from the Follett report¹⁵ of 1993. As a rough guide, it is estimated that during this past decade there have been over 100 academic library building projects in the UK at a cost of £350 million.

4.1 *Academic Libraries – General Assessment*

As mentioned above PROBE included two Higher Education sector Learning Resources Centres - one at Anglia Polytechnic University (originally planned to include library stock and service along with c750 IT workstations, with café/bar and which opened in 1994 was reported under PROBE 8¹⁴) and the other is the Orchard Learning Resources Centre, originally procured by Selly Oak Colleges but now managed by the University of Birmingham (reported under PROBE 21¹⁵).

Moreover, the first task of the HEDQF was to investigate the common building types in the sector, including Learning Resource Centres, and to seek to influence their design. A joint conference on 'The Development of Learning Resource Centres of the Future', sponsored by SCONUL and the HEDQF was held at RIBA in October 1995¹⁶. While not explicit about post-occupancy evaluation issues, it was an important attempt to draw together strands of library building design, using case studies to highlight the architectural and design achievements.

It is to be expected that the HEDQF post-occupancy methodology outlined above will include library buildings and UK academic librarians will look forward to seeing the reports issued on substantial HEFCE-funded library building projects.

More recently the Higher Education Funding Council for England (HEFCE) has invited a SCONUL nominee to join its Space Management Advisory Group, reflecting the importance to both bodies of library related issues such as space norms, ICT provision, disabled access and the level of future and recurrent funding needs. The outcomes of this alliance are widely anticipated.

The PROBE methodology (see above) is also of interest to academic librarians in that the surveys highlight whether each building met the original design brief or performance specification – which is also a key aim of the SCONUL

Library Design Award brief (see below). In contrast, a specific part of the PROBE methodology is to formally survey building occupants, which is not an overt part of the HEDQF methodology (nor is it mirrored in the work currently undertaken by both the SCONUL Library Design Award and the Public Libraries Building Award teams). Indeed for profession-led post-occupancy evaluation in both library sectors the occupant has usually carried out any such survey internally and the results are not usually part of either of the two library profession-led building review and award processes.

4.2 Academic Libraries – Profession-led Assessment

As has LIBER, SCONUL has identified issues in relation to library buildings as one of its key areas of interest. To support this work it has set up a number of mechanisms, including:

4.2.1 Advisory Committee on Buildings (ACOB)¹⁷

ACOB disseminates information on building matters to the SCONUL membership in a number of ways, including a range of publications including Briefing Papers and Guidelines on a wide range of topics including choosing library furniture, space requirements for academic libraries and LRCs, ICT in academic library buildings, key qualities of academic library space (in draft); building briefs (in draft); environmental control of buildings (in draft). It also organises a programme of seminars, visits and conferences and holds its own meetings in buildings of interest with a parallel tour/presentation on the building (e.g. Peckham Public Library, British Library)

4.2.2 SCONUL Library Building Projects Database¹⁸

Originally implemented in order to provide information to SCONUL members and others and to promote recent library buildings, this database is searchable, with optional keywords, by institution name, date of completion, architect, services (e.g. library, computing, media, classrooms etc), number of reader seats, area and is of use whether looking for information on a new building, extension or refurbishment. The database is regularly updated – SCONUL members can amend existing records or add new entries online – and it is heavily used, generating enquires from around the globe, not just from within the UK.

4.2.3 *SCONUL Library Building Visits*

These regular visits which have run for many years, generally consist of a consideration of the building (a fairly in-depth tour) combined with a focused theme. SCONUL has been successful recently in attracting commercial sponsorship for the building visits programme. The most recent visit was to the University of Hertfordshire Learning Resources Centre in December 2000 with a theme of ICT and 24x7 support. The programme consisted of examining 4 key elements:

- Implementing the brief – an architect's view of the bidding, planning, aesthetic and environmental control process
- Project management from the librarian's viewpoint
- Practical experience of using the building from the library staff and user viewpoints
- Case studies on delivery of integrated services in two very different 24-hour buildings at the University of Hertfordshire and the University of Bath.

In addition, attendees could reflect on the success, or otherwise, of both the building project process and of delivering 24x7 services with perfect hindsight as University of Hertfordshire is embarking on building a new campus which will include another new LRC.

The next planned visit is to the University of Abertay Dundee (architect The Parr Partnership) in June 2002 with a theme of meeting the needs of users with disabilities (the full programme is still at the planning stage). SCONUL is also planning for the visit in 2003/4 with discussions underway to hold a joint visit to the London School of Economics (architect Sir Norman Foster and Partners) and to the Chancery Lane Library and Information Services Centre of Kings College, London (architect Gaunt Francis Associates), both of which are large-scale refurbishment projects for research-led institutions.

4.2.4 *SCONUL Design Award*

This award is distinctive in the UK higher education sector in that it is made by that sector's own Library body (as opposed to other sector-wide professional bodies, such as the Library Association). In assessing its members' libraries, SCONUL fully recognises the diverse range of libraries serving institutions with very different missions and cultures within the sector. The

SCONUL Library Design Award is made by the SCONUL Executive Board on the recommendation of ACOB (which usually delegates the assessment process to a Panel) in recognition of newly-designed or extended, refurbished or converted Library and Learning Resources Centre buildings which demonstrate excellence in terms of functional design both for users and library staff, and which also meet the demanding requirements of a modern learning and research environment.

The Design Award is not an architectural or building services award, and it does not set out to judge aesthetics or construction features, except in as much that they contribute to the achievement of a high standard of design. Rather it identifies and celebrates examples of best practice for a given five-year period, those academic libraries which have moved the thinking forward in relation to library planning and design. Significantly, any library receiving an Award should have no (or relatively few) significant deficiencies. The functionality of the buildings (typically reviewed 18-36 months after occupancy) is assessed in the context of meeting the requirements as set out in the brief or equivalent statements, and in terms of enabling the library to fulfil its mission and role and to develop services as circumstances change.

The 1999 SCONUL Library Design Award reviewed those academic libraries which opened between January 1990 and December 1995. The criteria for the Award are:

- that the library must have a minimum size of 2000 square metres (although this is currently under review given the membership of SCONUL has grown over the last 2 years and there are more, smaller institutions within the membership)
- that it opened within the defined 5-year period and which have been operational for over a year or so.

Typically the assessment process begins with a call for proposals or nominations from eligible libraries within SCONUL (this is a voluntary methodology – not compulsory upon institutions). Initial consideration of nominations is undertaken by ACOB and a methodology determined for assessment, usually undertaken by a Panel drawn from ACOB membership¹⁹. The Executive Board formally approves the methodology and the Panel then undertakes assessment visits. Six libraries put themselves forward in 1999 and so no further short-listing was undertaken. The Panel visited each of the nominated libraries during January 1999, typically spending about half a day looking at each.

The Award Panel seeks to establish the broad mission of the institution and its library and the main points of the brief so as to fully understand what the library manager was aiming to achieve. After a comprehensive tour of each new building with library managers, the Panel discusses the main points of the design with them, focusing in particular on the most successful features and any problems which had emerged.

The Panel reviews and considers each design in relation to a set of agreed indicative assessment factors, always bearing in mind these must be relative to the role of the individual library. These qualities are of interest in that they form, inter alia, a set of criteria for formal post-occupancy evaluation in many respects. Unlike the PROBE or HEDQF methodologies they do not look deeply into technical issues or formal user surveys, nor do they involve the design and building teams.

These qualities or criteria are that the academic library space should be:

- Functional (fit for purpose and facilitate delivery of the library's mission and services);
- Adaptable (flexible and easy to change);
- Accessible (inviting, easy to use and promoting independence);
- Varied (with a choice of learning environment and of different media);
- Interactive (well-organised to promote contact between users and services);
- Environmentally suitable (with appropriate conditions for users, books and computers);
- Safe and secure (for people, collections, equipment, data and the building);
- Efficient (economic in space, staffing and running costs);
- Suitable for ICT (with flexible provision for users and staff)
- And...with a further indefinable quality which balances all these to provide inspiration and satisfaction, capturing the minds of those who use the library.

Moreover, the Award Panel not only considers whether the library has achieved a high standard, or excellence in functional design, but whether, and how, this was delivered in the resources available.

Both ACOB and the SCONUL Executive Board consider the formal recommendations of the Award Panel and the results are then announced formally. In 1999 the Assessment Panel's recommendations to Executive Board were that there were three particularly meritorious designs and it was agreed that the Executive Board should establish a new category of „highly commended”, which the other two libraries should receive. Consequently in 1999 the winner of the SCONUL Library Design Award was Manchester Metropolitan University, Aytoun Library. The two other two libraries, University of Sheffield St George's Library, and the University of Leeds Brotherton West Building, were „highly commended”²⁰.

The methodology for the 2002 SCONUL Library Design Award covering January 1996 - December 2000 is under discussion at the time of writing and it is expected to announce the winner at the SCONUL Autumn Conference to be held in November 2002 at the British Library.

5. POST-OCCUPANCY EVALUATION IN PUBLIC LIBRARIES — PROFESSION-LED ASSESSMENT

As in Higher Education, the Public Library sector is subject to professional review (e.g. within the PROBE framework and methodology) and it is to be expected that formal post-occupancy evaluation be carried out by the local funding authority. One example of need for public, formal post-occupancy evaluation is the British Library – to my knowledge, it has not yet been formally evaluated by the library profession nor evaluated under PROBE (or other construction industry-led methodology).

Public Library post-occupancy evaluation is more usually profession-led with the Library Association reviewing this sector's new building designs under the aegis of its Public Libraries Group. The Public Library Buildings Award is judged within a holistic view of the library building and its services within its own community. As in previous years, a specially convened Panel comprising members of the Public Libraries Group of the Library Association²¹ judged the most recent award for 2001, which was again commercially sponsored.

The general assessment criteria for the award in the past have included function, services, innovation and creative design, planning for future development, aesthetics and practical aspects such as access, disabled facilities and the building's contribution to the local environment. The 2001 Award Panel also looked for flair and imagination with unusual or creative thinking about what public libraries of the future should look like. It also found evidence of

the demonstration of partnership funding, of social inclusion and of how libraries can work as a catalyst for regeneration of an area. The award for 2001 specifically reflected recent trends in library building including innovation and integrity of adventurous design as well as improved disabled access, (usually the result of extensive user consultation)²².

For the Public Library Award of 2001 libraries were again short-listed in two set categories (New library buildings and Conversion/refurbishment buildings) which were then further sub-divided by size – larger or smaller than 500 m². The Assessment Panel's recommendations for the two winners for the New library category were Stratford Library (London) - large library - and Brixworth Library and Community Centre (Northamptonshire) - small library. The two winners for the Conversion/Refurbished library category were Leamington Spa Library (Warwickshire) - large library - and Buncrana Community Library (Donegal) – small library²³.

6. POST-OCCUPANCY EVALUATION OF LIBRARY BUILDINGS LED BY OTHER (NON-LIBRARY) SECTORS

For many years library buildings have been submitted for, short-listed for, and in many cases won awards in a variety of areas related to the UK architecture profession and building services organisations. These include a host of national, regional, civic and local awards from bodies such as RIBA (their Regional Architecture Awards as well as the RIBA Stirling Prize (notably won in 2001 by the Peckham Public Library in London, architect Alsop and Stormer), Heritage Groups or Civic Trusts. They have included awards for building conservation; environmental engineering/green issues; lighting design and structural engineering.

Naturally the impact of library building design, and so potential for high visibility of post-occupancy evaluation, has been further influenced by the willingness and interest of internationally renown architectural practices to engage with the library design process. This includes, for example, Sir Norman Foster and Partners (Cranfield University, Cambridge University Squire Law Library, Robert Gordon University Garthdee Library and the London School of Economics), Lord Richard Rogers (TVU), RMJM (University of Westminster, Harrow Campus Learning Resources Centre) and John McAslan (Imperial College and Science Museum Libraries extension). The impact of libraries actually winning national architecture prizes such as the RIBA Stirling Prize should not be underestimated either – the attendant publicity helps to raise the library profession profile, increases local user interest and reminds

us that libraries can be architecturally transforming in their design and can reflect both older and newer ways of accessing information resources and services.

In the architecture and building/construction industries publications of professional bodies review and report on a wide range of buildings post-occupancy as a matter of course. Interest in library buildings has also been evinced by the interest of the non-library sector publications which have occasionally reviewed and reported on library buildings post-completion and post-occupancy. These have typically either evaluated the building architecturally or looked at how the building works for the user. Some good examples are:

- *Architects' Journal* (ISSN 0003 8466) – Issues an occasional 'Building Study' which aims to present a full and serious architectural study of a particular building. This comprises a detailed review of the plan of the building, costs and usability and is of interest in that the article is designed to help other designers involved with similar projects. For example, in 1980 it reviewed the Central Library in Sutton, London which had been opened five years previously²⁴. This library was an early example of deliberately putting library stock and services together with 'a department store for leisure'.
- *Building* (ISSN 0007-3318) – In the mid 1990's this journal undertook a series investigating how buildings perform in use. For example, the first looked at the Western Morning news building in Portsmouth²⁵ and assessed 4 categories – fitness for purpose (it is an open plan space), comfort (specifically in terms of solar gain and glare and whether it is a 'healthy building', staff amenities), delight (in that this is an icon building with a striking ship-shaped image) and ease of operation (energy efficiency, glazing, cleaning and manageable maintenance). It has also investigated some University buildings over the years.
- *Building Services Journal* (ISSN 1365-5671) – published information on post-occupancy evaluations based the PROBE investigations of the late 1990's in relation to technical and energy performance, occupant and management satisfaction and which included two LRC buildings as well as other HE buildings.
- *National press* – interest is always high in significant library buildings such as the British Library or in significant prize-winners.

Interest in library buildings post-occupancy has also been evinced by the interest of publications of library professional bodies which have occasionally reviewed and reported on library buildings post-completion and post-occu-

pancy. These have typically either evaluated the building architecturally or looked at how the building works for the user. Some good examples are:

- *Library Association Record* (ISSN 0024 2195) - includes news items on new libraries and occasionally commissions articles by practitioners on the topic
- *Public Library Journal* (ISSN 0268 893X) – runs articles by librarians on new library builds to coincide with the Public Library Building Awards (see above).
- *SCONUL Newsletter* (ISSN 1353-0429) - includes news items on new libraries and occasionally commissions articles by practitioners on the topic; runs articles by librarians on new library builds to coincide with the SCONUL Library Design Awards (see above).

7. CONCLUSION

Post-occupancy evaluations can clearly be used to

- Introduce a culture of feedback, service to community and continuous improvement based on good practice, dissemination of expertise and a degree of self-assessment, so avoiding confrontation and blame cultures
- Identify and quantify value for money projects and cost-effectiveness, demonstrating money has been well spent
- Introduce appropriate record management, technical information, support and training of technical staff
- Identify and quantify the need to improve building services and controls and evaluate performance issues such as space efficiency, functional performance and environmental/energy performance to allow fine-tuning and learning lessons for the future
- Help address occupant dissatisfaction/complaints about basic comfort, health or safety issues such as noise (staff and users) resulting in occupants understanding more about the operation and management of the building
- Assess the current occupancy situation rapidly and in advance of alteration, refurbishment or new construction.

Within the UK academic library sector formal mechanisms for evaluating the range of new, converted, extended and refurbished libraries are both well

established and well regarded. This is due in part to PROBE methodologies applied within the sector to both University buildings as a genre and to LRCs as a particular sub-set of HE buildings. In addition, a whole new methodology for evaluation of Higher Education buildings as articulated by HEDQF will usher in changes to library design based on recorded good practice, shared expertise and evolving self-assessment.

Yet, at the heart of UK library building post-completion evaluation, it is the library professional organisations which have actively sought to evaluate their own buildings, both in higher education and public libraries. SCONUL and the Library Association Public Libraries Group take their duty of care in relation to library buildings very seriously. For each sector, the related issues of building design and functionality, as well as that of some form of post-occupancy evaluation, is of paramount importance as seen in their long-standing and formal efforts to set up mechanisms to disseminate information by a range of means and to act as advisers to library occupants.

The process of articulating feedback is also well established for both HE and public library sectors – with the SCONUL Building Visits as a prime example. Yet I would argue that the feedback data gained by this and other means (such as the SCONUL database and cross-sector library building design award team visits) does not get disseminated as quickly or as widely as it could or should – potentially delaying continuous improvement of library building design and post-occupancy performance. In this the sector could learn from both PROBE and HEDQF. Nor are the results of post-occupancy evaluation consistent in application or in content. There is room for improvement by the sector here.

This paper has looked at some formal post-occupancy evaluation activity in the construction industry using the PROBE methodology and in the higher education sector using the newer HEDQF methodology. That they have advantages as a design aid, management aid and benchmarking aid are clear to their proponents. But while the industry has a resurgence of interest in post-occupancy evaluation, as evinced by the recently published studies in *Building Research and Information*, it is not yet clear that the original PROBE project will blossom into a widely adopted methodology to be applied in throughout the built environment profession. This is because it seems from the recent review study that neither clients, designers, nor builders want it badly enough yet and there are still systemic barriers to wide-scale implementation. The introduction of PROBE 3 to review implementation issues via 'intervention studies' will mean a new emphasis on helping in the briefing, design, handover and long-term management of buildings by demonstrating the value of importing PROBE lessons²⁶. It is to be hoped this will help break

down the barriers so that post-occupancy evaluation can take a more central role in improving building design generally.

Despite the experiences of Anglia Polytechnic University LRC and the University of Birmingham Orchard LRC in undergoing a PROBE survey, neither the Higher Education nor Public library sector carries out routine benchmarking using formal occupant surveys such as that employed under PROBE. I believe this could be adapted by the UK Library sector generally as a way of introducing a quality assurance measurement (or benchmark) for library building design, as well as a giving library managers a new management tool to relate business performance to occupant satisfaction, productivity and even health (whether the occupant is considered to be either library staff or library users or both). It may be that the HEDQF methodology could facilitate this at some point in the future.

In return, post-occupancy evaluation of library buildings can be a way to ensure that good building and space design are reflected in terms of the impact they have on human well-being and productivity. It can also ensure that the post-occupancy evaluation loop, which must include the occupants whether library staff or users, and which involves input to design brief, actual occupancy and formal client feedback is always formally closed in a way which best empowers the current client/user and future clients/users. The interaction between reflection and evaluation is key to this process as each building design is different and solutions must be fit to meet that individuality. But perhaps this can be incorporated within a wider library post-occupancy evaluation framework, sometime in the future.

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Post Occupancy Evaluation of UK Library Building Projects

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- 14 PROBE 8 - Anglia Polytechnic University, Queens Building LRC. In: *Building Services Journal*, December 1996.
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- 16 Proceedings available at <<http://www.heestates.ac.uk/partners/HEDQF/LRCs.htm>>.
- 17 Current membership:
Andrew McDonald (Chair), University of Sunderland
Graham Bulpitt (Secretary), Sheffield Hallam University
Philippa Dyson, University of Lincoln
Suzanne Enright, University of Westminster
Colin Harris, Manchester Metropolitan University
Di Martin, University of Hertfordshire
Ian Mowat, University of Edinburgh

Howard Nicholson, University of Bath
<<http://www.sconul.ac.uk/buildings/index.htm#>>.

- 18 <<http://www.lgu.ac.uk/deliberations/sconul>>.
- 19 For the 1999 award the Assessment Panel appointed by ACOB consisted of Graham Bulpitt (Sheffield Hallam University), Suzanne Enright (University of Westminster) and Andrew McDonald (University of Sunderland).
- 20 The Assessment Panel produced a press release in which it reflected briefly on the planning and design trends observed in the new buildings, and offered citations for the 1999 Award winning and highly commended libraries (see <<http://www.sconul.ac.uk/award.htm>>).
- 21 For the 2001 award the Assessment panel comprised Carl Earle (retired), Michael Dewe (University of Wales, Aberystwyth), Philippa Harper (Newbury Central Library), Norma McDermott (Library Council of Ireland) and Keith Weyman (Public Library Group Executive).
- 22 Previous winners of the Public Libraries Building Award have been:
1999: New libraries - Kidderminster Library (Worcestershire) - large library - and Holywood Arches Library (Belfast) - small library; Converted, refurbished and extended libraries - Putney Library (London) – extension, large library and Bridport Library (Dorset) – conversion, small library;
1997: New libraries - Lochthorn Library (Dumfries and Galloway); Converted, refurbished and extended libraries - Sunderland Central Library;
1995: New libraries - Wavelengths Library (Deptford, London); Converted, refurbished and extended libraries Burnley Central Library (Lancashire).
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