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How can architects learn from their own experiences?

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Abstract
Environmental feedback is needed in current architectural practices in order to achieve sustainable and well-qualified buildings that seriously fulfil the needs of their inhabitants. Post-occupancy evaluations can be seen as useful tools for obtaining feedback on how buildings perform and how they are experienced by their inhabitants after they have been occupied. These studies evaluate designed spaces in a scientific way and can be accepted as important resources supplying valuable information to architects for their future design proposals. In this way, they also constitute an important link between architectural research and practice. The aim of this paper is to focus on the post-occupancy evaluations of two student centres which have been designed in the scope of renovations at Istanbul Technical University. In the last fifteen years ITU has worked hard to improve and develop physical and social structures on its campuses, and new projects have been designed. Some faculty spaces that have completed their functional life span have been renovated and new spaces have been created to serve the changing needs of their users. In this study, first the concept of "re-functioning of existing buildings" is introduced and then two projects designed during these renovation attempts are tested comparatively by their architects. Occupants' needs, perceptions and expectations are taken into account and in-depth interviewing with the administration, teaching staff and the students, behavioural observation and photographic documentation have been employed in the post-occupancy analysis. Technical (acoustic, lighting, ventilation, heat), spatial (function of space, arrangement of space, order of space/spatial relations, size of space), behavioural (personal expressions, social interaction, comfort and aesthetic) and management issues (service quality, control of space) are tested in the POEs. By measuring both successes and failures inherent in the buildings' performance, feedback for further developments in other ITU academic buildings is provided.

Key Words: *Post-occupancy evaluation (POE), quality of space, re-functioning*

Introduction

In architecture, design is the type of activity that is learned by doing and experiencing, and architects discover much about design problems by evaluating their solutions. At this point, these critical questions can be underlined: How does an architect test the spaces that s/he has created?

What kind of architectural knowledge leads to this process? Does this knowledge include intuition, feelings and experiences or does it consist of theory, science and research? The answer is simple: Both. During the design process, the architect has to bring intuitive and rational ways of thinking together, in other words mystery and certainty, intuition and science, practice and research (Dursun, 2007).

According to Zeisel (1984), design interconnects three constituent activities: imaging, presenting and testing. Appraisals, refutations, criticisms, judgments, comparisons, reflections, reviews and confrontations are all types of tests. After presenting a design idea in whatever form, the designer steps back with a critical eye and examines the product (Hillier and Leaman, 1974).

Here, a critical point appears as to how this examination or evaluation will be done in the design process. In evaluations which accept designed space as a static entity, either quantitative aspects of space (cost, energy consumption, level of light, heat, etc.) are appraised under certain performance criteria or qualitative aspects of space (sense of space, perception of space, life patterns, etc.) are judged mainly under the architect's experience. In these approaches a limitless freedom is given to the designer. Although these are product-based evaluations, here, space is evaluated without taking into account designed space and its user's relationship.

Zeisel (1984) argues that designing includes two types of information: a heuristic catalyst for imaging and a body of knowledge for testing. This means that designers rely on information to tell them how things might be, but also that they use information to tell them how well things might work (Lawson, 2003).

The core of the information which Lawson pointed out is entirely formed by the space / use relationship. Evaluations which accept designed space as a living organism, a dynamic entity and focus on "designed space- user- life" interaction are much more valuable than the evaluations which believe space is merely a static and physical entity. However these kinds of evaluations are very few. They are mostly done by different research groups other than architects, and research data are never returned to their designers as feedback for future designs. Literature surveys have shown that architects are also reluctant to evaluate their designs after they have been constructed.

Architects rarely get involved in their projects after completion, the point when buildings start their operational lives. Their prior knowledge of the original intentions is an invaluable source when it comes to judging how successful a building has been. However the use of new materials, building techniques and 'innovative' design strategies requires some measures of their performance in practice. Otherwise, they constitute theoretical myths, unsupported by results in use (Andreu and Oreszczyn, 2004).

Based on a similar idea, this paper shows an attempt to assess the performance of the architects' own designs in use after the building's occupation through the criticism of the real users. The aim is to learn from

experience and create a link between research and architectural practice by carrying research findings into the design process. In this study the designer's decisions are tested through the post-occupancy evaluations of two student social centres on Istanbul Technical University (ITU) campuses. Lessons from the study are interpreted by the architects to provide feedback for ongoing developments in other ITU academic buildings.

About Post-Occupancy Evaluations

Evaluation studies are usually undertaken to assess the adequacy of existing environments and to provide guidance for the creation of new environments (Zube, 1984). Evaluation differs from architectural criticism by being data-based, by being more than the simple reflection of one person, and by addressing more than aesthetic issues (Wener, 1989).

Preiser and his colleagues describe the post-occupancy evaluation as a process of appraising buildings in a systematic way after they have been built and occupied for some time. According to them, post-occupancy evaluations focus on the buildings' occupants and their needs, thus providing insight into the consequences of past design decisions and the resulting building performance. This knowledge forms a sound basis for creating better buildings in the future (Preiser et al., 1988). While these evaluations focus primarily on the performance of buildings, the latest step in the evolution of POE towards building performance evaluation (BPE) and universal design evaluation (UDE) is one that emphasises a holistic, process-oriented approach to evaluation (FFC, 2002).

In 1997, the POE process model was developed into an Integrative Framework for Building Performance Evaluation (BPE), based on feedback and evaluation at every phase of building delivery, ranging from strategic planning to occupancy, through the building's life cycle. It covers the useful life of a building from move-in to adaptive reuse or recycling. BPE came into being as a result of knowledge accumulating from years of post-occupancy studies of buildings, the results of which contained important information for architects, builders and others involved in the process of creating buildings (Preiser and Vischer, 2005). The concept, framework and assessment of universal design evaluation (UDE) are based on consumer feedback driven, pre-existing and evolutionary evaluation process models, i.e., POE, BPE. The intent of UDE is to evaluate the impact on the user of universally designed environments which can be accepted as a new paradigm for designs of the future, and as an approach to creating environments and products that are usable by all people to the greatest extent possible (Preiser, 2001).

In addition to ensuring that the occupants' needs are incorporated into the design process, the POE process is also intended to make the built environment design process more scientific and research orientated. According to Zeisel (1984) the design process should be cyclical in nature and incorporate feedback. POE was seen as a logical final step of a cyclical design process, whereby lessons learned from the occupants about the space in use could be used to both improve the fit of the existing space and be feedback into design research and programming of the next building. Without a feedback loop, every building is, to some extent, a prototype – spaces and systems put together in new ways, with potentially unpredictable outcomes (Zimmerman and Martin, 2001).

POEs that have been conducted since the mid-1970s can be accepted as useful tools to account for building quality. By understanding how existing buildings affect occupants, designers can minimise problems and capitalise on successful design features. As design is a socio-political process rather than an absolute science, POEs are managed as communication forums in support of design to negotiate the relationship between people and buildings. With changing and increasingly complex building requirements, good communication is essential to align facilities with learning needs. POE provides a systematic way of learning from the successes and mistakes of previous buildings (Watson, 2003).

In this study a different approach was adopted for this learning process. Differentiated from other studies on POEs in which assessments are made by different groups apart from their own architects, this study shows an attempt by architects to revisit their own designs and to learn about their successes and mistakes based on the evaluations of the users. The designs that are subjects of this study also show a different characteristic by introducing the concept of "re-functioning of existing buildings".

The Concept of Re-functioning

In recent years, excellent opportunities to discuss the concepts of reuse, re-functioning, rehabilitation, revalorisation, re-adaptation and recycling in architecture in a broad sense, both in academia and in practice, have come about. These concepts, which aim to improve living quality and describe a participatory functional model and thus create sustainable spatial transformations, are differentiated from the concepts of restoration, reconstruction and renovation with regard to these characteristics (Uckan, 2000). Using recent technological tools, architects and urban planners have been working to improve urban areas and historic buildings that had been abandoned under economic, social and technological developments and trying to integrate them into city life having new functions.

Changing needs, technological and economical necessities make "re-evaluation of existing contemporary buildings" a current issue. Nowadays, architects face both the design issues of new buildings and the problem of re-functioning of existing buildings. In the second case, main effort is given to improve living quality and use of spaces more effectively based on the changing needs and requirements of the new century. J. Nouvel (1993) states: "Today the city has to be developed in small touches: by iteration, alteration or revelation". Similarly, in the future it might become inevitable to reflect changes in living patterns to spatial formation and to develop buildings both with and within their skins with new discoveries based on social, cultural, economic, scientific and technological developments.

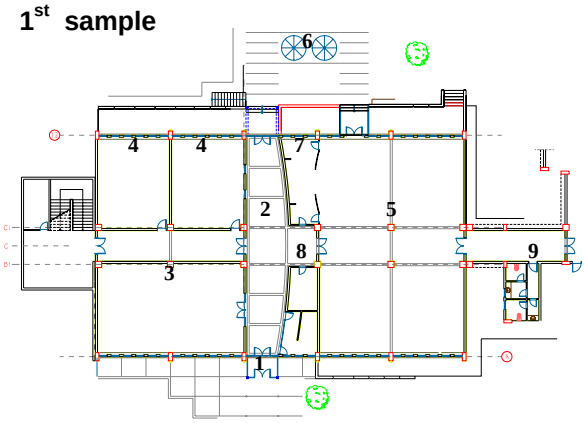
The concept of the re-functioning of existing buildings differentiates totally from the new building proposals with their specific problem areas in the design process. The problem of integration of a proposal to the existing layout without disturbing its identity and living pattern accompanies the problem of structural constraints. At the same time, the concept of flexibility also becomes an issue for further developments. While scale, function and technological characteristics require different expressions for the proposal, the "problem of sustainability of life in existing buildings with new touches" remains constant in all cases.

In recent years, the campuses of Istanbul Technical University (ITU) show exceptional architectural re-formation in which the “re-functioning of an existing building” becomes a current issue. Keeping abreast of modern developments and with the attempts of renovating the physical, educational and social infrastructure, old buildings started to be developed for new uses and new buildings constructed. This paper focuses on the post-occupancy evaluations in the student social centres of two faculty buildings which were designed during renovations at Istanbul Technical University. Similar projects in two different cases are tested comparatively and the findings provide feedback for further developments in other ITU academic buildings. This study also gives an opportunity to the architects (the authors of this paper) to evaluate their own designs based on the criticism of the real users.

Case Studies: The Tale of Two Projects

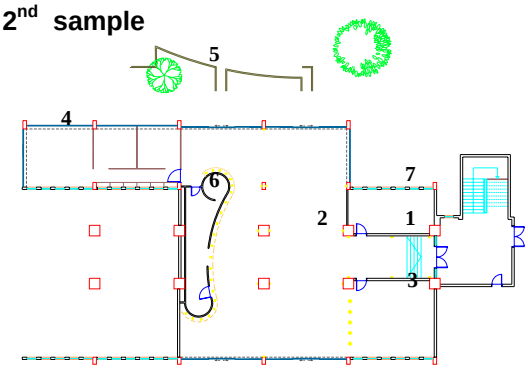
The aims of two design projects are to transform old useless canteen spaces into social centres providing various activities, and to integrate these spaces into faculty and campus life (Figure 1).

1st sample

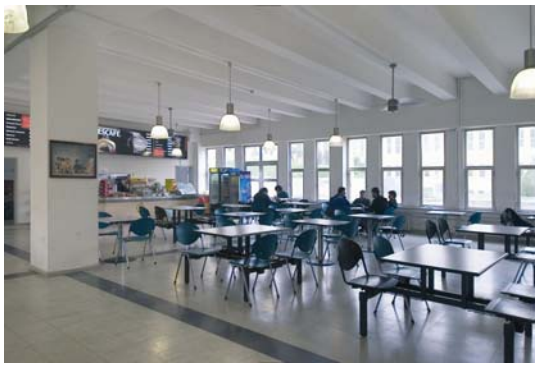


1. entrance, 2. exhibition hall, 3. internet cafe, 4. classrooms, 5. cafe, 6. courtyard, 7. service, 8. storage, 9. toilets

2nd sample



1. entrance, 2. cafe, 3. billiards room, 4. club rooms, 5. courtyard, 6. service, 7. storage



Social Centre in the Faculty of Naval Architecture and Ocean Engineering, renovated in 1999

Social Centre in the Faculty of Electrical and Electronic Engineering, renovated in 2001

Figure 1: Two Social Centres in ITU

In the first case, the project, located on a 1500 square metre site, consists of a cafe, an internet cafe, an exhibition hall, an open courtyard and service spaces such as an information unit, a kitchen and a storage area. In the design process a new entrance was created for non-faculty users to meet the privacy needs of the faculty. This space was directly connected to the exhibition hall and the open courtyard. The main exhibition hall gives entrance to an internet cafe on the one side and a cafe and some service spaces on the other. Service spaces were located between the hall and the cafe and designed as a separation zone. The internet cafe was basically designed for dormitory students living very close to this facility. In the project, the existing open courtyard was renovated and a new amphitheatre was added. In the design process it was taken into account not to disturb the working model of the existing building and to create technologically well-equipped spaces.

In the second case, the project, located on a 504 square metre site, consists of a cafe for 114 persons, a billiards room, student clubs and service spaces such as a kitchen and a storage area. In the design process one of the façades of the existing space was expanded towards the open courtyard and was redefined by the border of the first storey standing on the columns. As the intent was to create a visual continuity between the cafe-student clubs and the open courtyard, this façade was transformed into a transparent wall. Club rooms were located on this façade and, based on the administrative requirements, they were separated from the main cafe by a glass wall. The main service bar was designed at the centre of the cafe with a curving wall and kitchen was left at its back. One of the main rooms adjacent to the main cafe was designed as a billiards room and was separated from the central space by a secondary bar unit. The other and darker smaller room was allocated for storage based on the service requirements. Flexible and technologically well-equipped spaces serving different needs of students defined the focal concepts of this design proposal.

Methodology

Consideration of appropriate methodology in a POE is an important issue. In this study a multi-method approach has been adopted to enhance the credibility of the findings. Qualitative techniques of data collection, such as in-depth interviewing with the administration, teaching staff and students, behavioural observation and photographic documentation have been employed in the post-occupancy analysis (Figure 2).

In the POEs four elements of building performance are tested: technical (acoustic, lighting, ventilation, heat), spatial (function of space, arrangement of space, order of space/spatial relations, size of space), behavioural (personal expressions, social interaction, comfort and aesthetic) and management issues (service quality, rules of space use).

Interviews were conducted with the help of administrative and academic staffs of both faculties. The size of the faculties determines the number of questionnaires that have been answered. The student sample consists of 49 students from the Faculty of Naval Architecture and Ocean Engineering and 76 students from the Faculty of Electrical and Electronic Engineering. The majority of the first sample (65%) consists of the students who entered the faculty in 1998. In the second sample, the majority are composed of

students from the 1999 and 2000 terms with a ratio of 24% and 25%, respectively. In the Faculty of Naval Architecture and Ocean Engineering, students from other ITU faculties constitute 8.2% of the total sample. The sample of the academic staff consists of 27 teachers from the Faculty of Naval Architecture and Ocean Engineering and 8 teachers from the Faculty of Electrical and Electronic Engineering.

Based on the map of Andreau and Oreszczyn (2004), Figure 2 shows the phases of two projects. The process begins by analysing briefs and user needs as well as physical characteristics of the existing building to create scenarios and ends by evaluating building performance. This also includes a feedback process in which evaluations are transferred to the design phase in order to create well performed environments satisfying their users' needs.

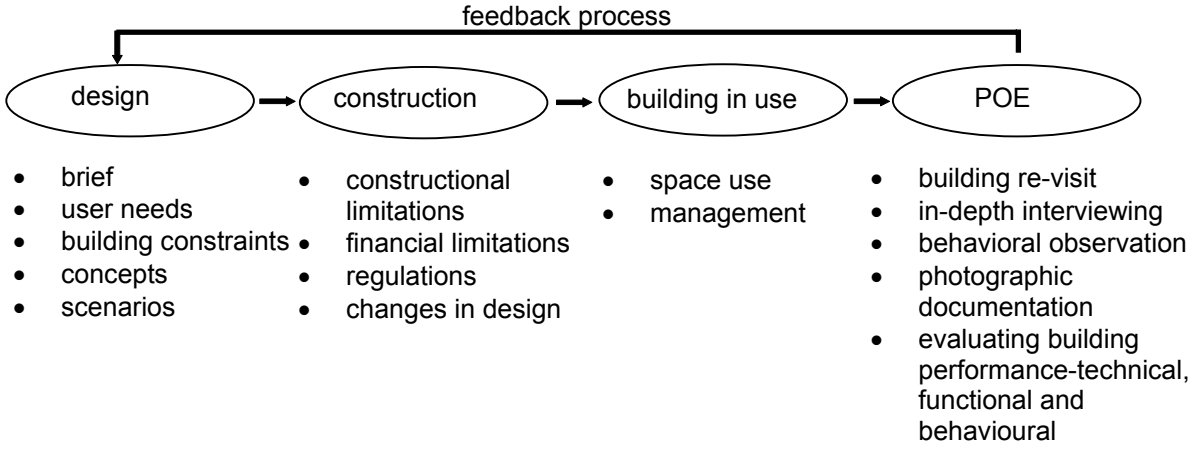


***Figure 2**: Phases of Two Projects*

Post-Occupancy Findings

Findings of the student interviews have shown that the social centre was used more by students (98%) than by teachers (59%) and finally by visitors (53%) in the Faculty of Naval Architecture and Ocean Engineering. This order reoccurs in the Faculty of Electrical and Electronic Engineering with ratios of 93%, 53% and 54%, respectively. In both samples, the majority of students (61%, 49%) use these centres two or three times a day. The time between 12:20 and 14:20 appears to be the busiest period. The ratios of the students in the two samples who use these spaces all day are 26% and 9%, respectively.

In the survey, students were asked about what the most important activities were that they did in these spaces. In the first sample, the order is: first - eating (71%), second – relaxing and meeting (41.3%), third - meeting and studying (29%), fourth - studying (22%), fifth - participating in club activities (29.5%) and sixth - playing billiards (20%). In the second sample, this order is: first - eating (83.2%), second - relaxing (38.3%), third - meeting (33%), fourth - studying (30.5%), and fifth – participating in club activities (22%).
In the first sample 77% of the students, in the second sample 57% of the students, did not prefer any particular location in the social centres. The students who designated preferred locations in the plan layouts usually pointed out areas having a view of courtyards or spaces along the windows. These daylight space preferences are followed by outdoor areas, club and computer rooms.

***Table 1**: Evaluations on Different Properties of the Centres*

	very good		good		moderate		bad		very bad		no response	
arrangement of space	6	2	**18**	**41**	**18**	19		8	2	3	2	3
order of space/spatial relations	3	1	**17**	**30**	16	18	8	18	2	3	3	6
colours in space	4	3	**16**	**32**	15	25	11	9	1	4	2	3
materials in space	3	7	14	25	**19**	**30**	9	7	3	3	1	4
furniture in space	1	4	9	**26**	**14**	24	**14**	13	7	7	4	2
dimensions	8	3	**28**	15	9	**31**	-	15	2	11	2	1
lighting in space	6	7	**27**	**36**	10	18	4	10	1	4	1	1
acoustics in space	2	2	13	13	12	**25**	**14**	23	5	9	3	4
heat in space	3	6	**18**	**31**	18	19	5	10	4	6	1	4
ventilation in space	3	4	18	**25**	**19**	22	6	15	2	8	1	2
adequacy of using time	5	5	**23**	17	9	**24**	9	12	2	16	1	2
diversity and quality of food	-	-	13	13	**17**	17	11	22	7	**23**	1	1
music broadcast	1	3	5	3	13	10	7	14	**17**	**38**	6	8
space cleanliness	7	2	**24**	**20**	11	19	4	17	2	17	1	1
approach of manager	8	5	**18**	**24**	14	19	5	9	2	18	2	1

Evaluations of the students concerning different properties of the centres are tabulated in Table 1. The table is organised by showing the data related to the first sample in the first columns and the data related to the second sample in the second columns. The data in this table express the number of students who participated in the site surveys. As can been seen from this table, the choices of the students mostly took place in the “moderate” and “good” intervals. The negative evaluations were made about the variety of food and the music broadcasts. Most of the students argued about the quality and variety of food and areas without any music being broadcast. When the students were asked about the frequency of use of courtyards or exterior spaces, most of them (55%, 60%) pointed out that the spaces were unusable because they were always kept locked (Figure 3).

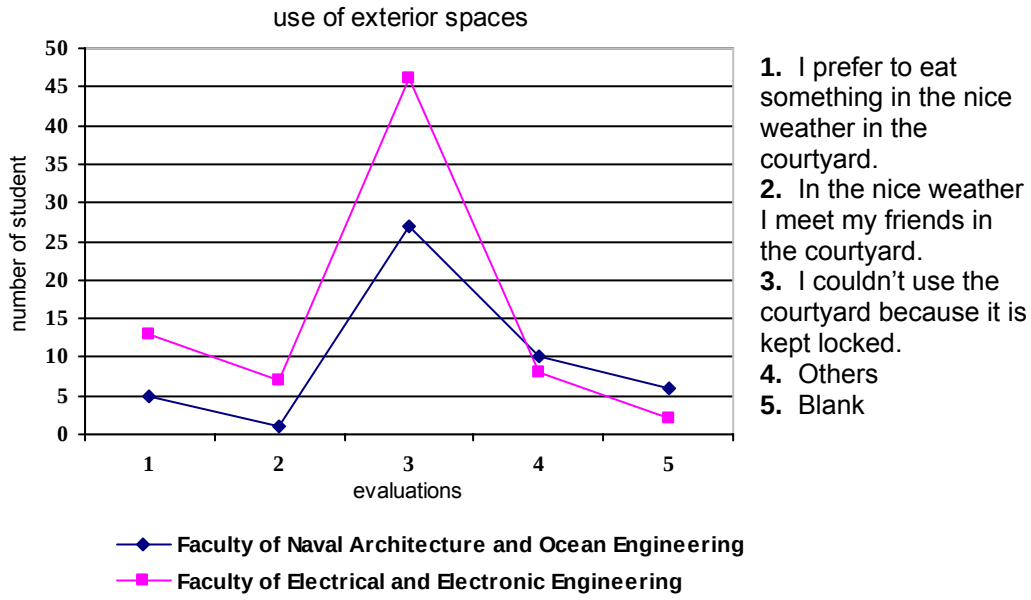


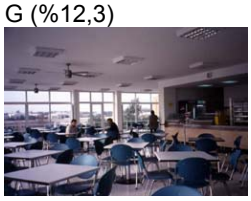
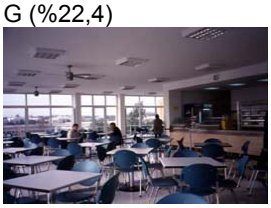
***Figure 3**: Use of Exterior Spaces*

***Table 2**: Describing Designs*

A + 1st sample	2nd sample	A - 1st sample	2nd sample
contemporary	contemporary	boring	boring
clean	clean	ordinary	ordinary
plain	plain	insufficient	insufficient
useful	useful	dull	dull
beautiful	beautiful	noisy	noisy
friendly	friendly	uncomfortable	uncomfortable
relaxing/restful		colourless	colourless
large enough		cold	cold
			small
			unproductive

In the study, the students were asked to evaluate the social centres using some adjectives, and the findings were tabulated in Table 2. The students found these spaces plain, beautiful, contemporary, useful and clean. On the other hand they described them as colourless, dull, boring, ordinary, uncomfortable and noisy. The students also were asked to choose the areas they wanted to be in from among the several images given and to explain the reasons (Table 3).

***Table 3**: The Most Preferred Spaces*

	First choice	Second choice	
1st sample	H (%18,4)  inviting, useful, beautiful	E (%12,3)  calm, airy, relaxing	G (%12,3)  contemporary, joyful, colourful, inviting
2nd sample	D (%23,7)  comfortable, clean, relaxing	G (%22,4)  large enough, inviting, clean, modern, comfortable	

Teachers from the Faculty of Naval Architecture and Ocean Engineering pointed out that the social centre was used more by the students (100%), than by the teachers (67%) and finally by the visitors and other groups (59%). The same order also occurred in the Faculty of Electrical and Electronic Engineering with the ratios of 100%, 87.5% and 50%, respectively. In the first sample, the majority of the teachers (30%) use this centre once a day and once a month. In the second sample, the ratio of teachers who use the centre once every two or three days was higher, (50%). The time between 12:30 and 14:30 appeared to be the busiest period. In the site survey teachers were asked about what were the most important activities they did in these spaces. In the first sample, the order was first - eating (93%), second - having visitors (41%). In the second sample, this order was repeated with the ratios of 87.5% and 25%. In the first sample, 89% of the teachers did not prefer any specific location in the social centres. In the second sample, the ratio of teachers who definitely preferred locations in the plan layouts was 50%. These teachers mainly indicated areas with a view of the courtyard or secondly, spaces near the windows. Evaluations of the teachers about different properties of the centres mostly were in the moderate and good intervals. Among these, the worst ones were about the quality of acoustics and ventilation. When the teachers were asked about the frequency of the use of the courtyards or exterior spaces, the majority of the first sample (67%) pointed out that these spaces could not be used because they were always kept locked. In the second sample, most of the teachers (59%) preferred to eat something at the courtyard in nice weather.

In the study, the teachers were asked to compare these centres with the former canteen spaces. In both samples, the majority (30%, 40%) indicated that although the centres were quite good, they were not used as much as the former ones. In the first sample, 22% of teachers explained that they missed the former canteen. 18.5% of teachers in the first sample and 25% in

the second sample found themselves very lucky that these spaces were designed for their faculties. In the study, the social centres were also evaluated by the teachers choosing adjectives from a list. They found these spaces to be simple, beautiful, contemporary, relaxing / pleasant and clean. On the other hand, they described these areas as colourless, dull, boring, ordinary, uncomfortable, unproductive, insufficient and noisy.

Conclusion

Design can be described as a making or discovery process which proceeds by creating and testing ideas (Dursun, 2007). In this process architects use a great variety of science based knowledge as well as individual experiences. An architect is a person who knows how to bring this variety of knowledge together and manages to become successful in transferring this knowledge into the design process by converting it. In the design process, knowledge is formed and enriched by evaluating design ideas and design solutions; also new ideas are generated and configured with this knowledge.

Cooper (2001) underlines the importance of this knowledge in design by focusing on an early statement of Davies in his paper: "Deeper Knowledge: Better Design". According to Davies, knowledge is the raw material for design. It is not a substitute of architectural imagination but is necessary for the effective exercise of imagination and skill in design. Inadequate knowledge handicaps and frustrates the architect, limits the achievements of even the most creative and depresses the general level of design (Davies, 1957).

One of the important sources of this knowledge is constituted by developing an understanding of people's interactions with their environment. By accepting designed space as a living organism and focusing on the relationship between man and the environment, valuable data for design process can be obtained. In this manner, POEs can be seen as useful tools for architects both to decode man-environment relationship and to learn from their own experiences. By linking research into design, POEs also create important knowledge for future design projects.

In this study, post-occupancy evaluations of two student centres have provided useful information about how design decisions affect people's way of life and space use in these particular areas and show how these spaces were used to satisfy their users. They gave an opportunity to see how our imaginary scenarios work in reality by indicating the success and failures of design decisions. In the scope of this work, the data related with post occupancy evaluations which are investigated under technical, functional, behavioural and management aspects are summarised in Table 4.

***Table 4**. POE Evaluations and Findings*

POE Evaluations and Findings

analysing aspects…		comments…
technical	. acoustic . lighting . ventilation . heat	Two social centres have been developed around a main courtyard. This characteristic has created positive results in terms of level of light, natural ventilation in inner space. Student evaluations for related parameters such as for light, ventilation, heating are between good and moderate intervals. However, architects are not successful in creating good acoustic quality in spaces. This always appears as a problematic issue both in students' and teachers' evaluations.
spatial	. function of space . arrangement of space . order of space/spatial relations . size of space	The data show that social centres provide not only spaces for eating but also activity spaces for students. The students come together in these centres to participate in different club facilities and also to study. This characteristic underlines the fact that designs are successful in terms of creating lively environments. However these spaces are not attractive enough for teachers. Architects' intentions to create a strong relation between inner spaces and outer courtyards appears as an important design criteria and has succeeded in generating visually and syntactically connected outer and inner spaces with sufficient natural light. In both cases the spaces by the courtyards are coded as the most desirable places to use. Student evaluations for arrangement of space and spatial relations are between good and moderate intervals. Limited numbers of students expressed that the size of the space is insufficient in the second case.
behavioural	. behavioural expressions . social interaction . comfort . aesthetic	Individual expressions and evaluations related to comfort and aesthetic issues are articulated with selected adjectives describing spaces. Although these evaluations are considerably subjective and show individual tendencies, some common points can be underlined. An architect's priorities for designing pure or simple spatial environments have resulted in students' evaluations by spatial descriptions such as modern, plain, useful and beautiful. However, many users describe these spaces as boring, ordinary, dull, colourless and cold, and emphasise that spaces are uncomfortable and insufficient.
management	. service quality . rules of space use	The most important findings of this study is that although the quality of design and construction are of primary importance for user satisfaction in the space, the management issues are also very important parameters in building performance. Students and teachers frequently complain that courtyards are being kept closed and have rarely been used. As the problem of opening courtyards is addressed in the two projects, functions which architects create in the buildings could be changed through administrative implementations. The data show that the quality of services reduced user satisfaction and affected space use. Students are not satisfied with the diversity and quality of food and other facilities such as music.

According to Watson (1996), growing diversities in our life and on-going changes in technology, law and management demand good communications between people using buildings and those providing them. POEs provide the opportunity for inhabitants to respond with comments about strengths and weaknesses of their building. This study has also shown that this kind of communication is an important issue not only after the design is built but also in the whole design process. In our case the brief had been given by the administrative side but no interviews were conducted with the students in the design process. Based on the criticism of the students, it is understood that some decisions such as spatial characteristics, colours, types of materials and furniture in social centres do not satisfy the students enough. Participation which includes all types of user groups is necessary in the design process to cope with these problematic conditions.

This study has emphasised the attempt to re-function existing buildings, in other words, an attempt to create sustainable designed environments. Our new era in which resources are being dramatically exhausted and user needs are rapidly changing inevitably forces designed spaces to change and transform themselves. This situation once again emphasises the importance of some spatial concepts such as flexibility, adaptability and sustainability.

On the other hand, our experience has outlined that the re-functioning of an existing building requires a different approach when compared with new projects in the design process. As can be seen in our cases, the designs were based on data related to the programme requirements and user preferences and were limited by the budgets and potentials of the building envelope/spaces. However POEs showed that students are mostly not aware of these limitations, and they evaluate the designs mainly based on their past experiences and their personal expectations.

Findings of this study reveals that a qualified design is not equivalent a good environmental performance, therefore occupant evaluations are important. Although it is very difficult for designers to evaluate their own designs objectively, formulating the effects of designed space on their users appears as great interest for architects. By differentiating approaches in which an architect shows egocentric expressions and wants to expose his/her will or dream without accepting any inquiry, approaches for building design decisions on knowledge and facts make these types of works more valuable.

In this study, architects' attempts to evaluate their own designs show a unique effort and create an awareness related to understanding the relationship between man and environment. In this way it also generates an opportunity for architects to learn from their designs and establish a strong link between research and design. It seems extremely imperative that architects and environmental designers revisit the building/s they designed to obtain the necessary feedback, and they need to be informed about the positive and negative characteristics that create satisfaction and/or dissatisfaction. They have to investigate their building's performance in a detective and scientific way.

References

Andreu, C.,I., Oreszczyn, T. (2004), "Architects Need Environmental Feedback", **Building Research & Information**, July-August 2004, 32(4), pp. 313-328.

Baird, G., Gray, J., Isaacs, N., Kernohan, D., & McIndoe, G. (1996), **Building Evaluation Techniques**, New York: McGraw-Hill.

Cooper, I. (2001), "Post-Occupancy Evaluation- Where Are You?", **Building Research & Information** 29(2), pp. 158–163.

Davies, R.L. (1957), "Deeper Knowledge: Better Design", **Architectural Record**, April, 1957, pp.185-191

Dursun, P. (2007), "Space Syntax in Architectural Design", **Proceedings of Space Syntax 6th International Symposium**, ITU Faculty of Architecture, 12-15 June 2007, Vol. I.

Federal Facilities Council (FFC) (2002), **Learning from Our Buildings: A State-of-the-Practice Summary of Post-Occupancy Evaluation**. Board on Infrastructure and the Constructed Environment, National Research Council.

Hillier, B., Leaman, A. (1974), "How Is Design Possible?", **Journal of Architectural Research and Teaching***,* 3 (1), pp. 4-11.

Lawson, B. (2003), **How Designers Think**, Architectural Press.

Nouvel, J. (1993), "Ancient Nouvel", **Architectural Review**, 1160, pp. 44-49.

Preiser, W. F. E. (1996), "POE Training Workshop and Prototype Testing at the Kaiser Permanente Medical Office Building in Mission Viejo, California, In G. Baird, J. Gray, N. Isaacs, D. Kernohan, & G. McIndoe, **Building Evaluation Techniques***,* (pp. 92-98). New York: McGraw-Hill.

Preiser, W. F. E., Rabinowitz, H. Z., & White, E. T. (1988), **Post-Occupancy Evaluation**. New York: Van Nostrand Reinhold.

Preiser, W. F. E. (2001), "The Evaluation of Post-Occupancy Evaluation: Toward Building Performance and Universal Design Evaluation", In **Learning from Our Buildings: A State-of-the-Practice Summary of Post-Occupancy Evaluation** *(Federal Facilities Council)*, National Academic Press, Washington, DC.

Preiser, W. F. E., Vischer, J.C. (2005), **Assessing Building Performance**. Elsevier Butterworth-Heinemann, Oxford, UK.

Uckan, Ö. (2000), "Koruma'dan Yeniden İşlevlendirme'ye Sürdürülebilir Kent (Sustainable City from Preservation to Re-functioning)", **Domus**, *8*, pp. 36- 37.

Watson, C. (2003), "Review of Building Quality Using Post Occupancy Evaluation", **Journal of Programme on Educational Building**, OECD, Paris, February, 2003.

Watson, C. G. (1996), "Evolving Design for Changing Values and Ways of Life", In Gray, Madi (Ed.), **Evolving Environmental Ideals - Changing Way of Life, Values and Design Practices**. IAPS 14 Conference Proceedings, July 30-August 3, pp. 228-235. Stockholm.

Wener, R. (1989), "Advances in Evaluation of the Built Environment", In E. H. Zube and G. T. Moore (Eds.), **Advances in Environment, Behaviour, and Design**, Vol. 2, pp. 287-313. New York: Plenum Press.

Whyte, J., Gann, D. M. (2001), "Closing the Loop between Design and Use: Post Occupancy Evaluation", **Building Research & Information**, 29(6), pp. 460-462.

Zeisel, J. (1984), **Inquiry by Design: Tools for Environment-Behaviour Research**, Brooks/Cole, Monterey, CA.

Zimmerman, A., Martin, M. (2001), "Post-occupancy Evaluation: Benefits and Barriers", **Building Research & Information***,* 29(2), pp. 168–174.

Zube, E. H. (1984), **Environmental Evaluation: Perception and Public Policy**. Cambridge: Cambridge University Press.

Mimarlar kendi deneyimlerinden nasıl faydalanabilirler?

Günümüzde kullanıcılarının ihtiyaçlarına yanıt veren nitelikli, sürdürülebilir yapılar elde edebilmek için mimarlık uygulamalarında tasarlanan çevrelerin yaşam süreci içinde kritik bir bakış açısıyla gözden geçirilmesi gereklidir. Kullanım sonrası değerlendirmeler tasarlanan yapıların nasıl çalıştıkları, kullanıcıları tarafından nasıl yaşanılıp ve kullanıldıklarına ilişkin bilgi edinmek için yararlı araçlar olarak görülebilir. Bu çalışmalar bir yanda tasarımları kullanıcı değerlendirmelerini temel alarak bilimsel bir bakış açısıyla değerlendirirken, aynı zamanda mimarlara gelecekteki olası projeleri için değerli bilgiler sağlayan önemli kaynaklar olarak kabul edilebilir. Kullanım sonrası değerlendirmeler bu anlamda mimarlıkta araştırma ve uygulama arasında önemli bir bağ oluştururlar. Bu çalışmanın amacı İstanbul Teknik Üniversitesi'ndeki yenileme çalışmaları kapsamında tasarlanan iki öğrenci sosyal merkezinin kullanım sonrası değerlendirmelerine odaklanmaktır. Son on beş yıl içinde İstanbul Teknik Üniversitesi kampüslerinde fiziksel ve sosyal yapıyı iyileştirmek ve geliştirmek için büyük bir çaba içine girmiş ve çok sayıda proje üretilmiştir. Fonksiyonel açıdan iyi işlemeyen fakülte mekanları yenilenmiş, kullanıcıların değişen ihtiyaçlarını karşılamak üzere yeni mekanlar projelendirilmiştir. Bu çalışmada öncelikle "mevcut yapıların yeniden işlendirilmesi" kavramı üzerinde durulmakta, ardından sözü edilen yenileme girişimleri kapsamında tasarlanan iki öğrenci merkezi tasarımcıları tarafından karşılaştırılmalı olarak değerlendirilmektedir. Kullanım sonrası değerlendirmelerde yaşayanların gereksinmeleri, sezgileri ve beklentileri dikkate alınmakta, yönetim, akademisyenler ve öğrencilerle yapılan anket çalışmaları, gözlemler ve fotografik dokumantasyon tekniklerinden yararlanılmaktadır. Analizlerde teknik (akustik, aydınlık seviyesi, havalandırma, sıcaklık), mekansal (mekanın düzenlenişi, mekanın kurgusu/mekansal ilişkiler, mekan büyüklükleri), davranışsal (kişisel ifadeler, sosyal etkileşim, konfor ve estetik) ve yönetimsel konular (servis kalitesi, mekanın kontrolü/güvenliği) araştırılmaktadır. Çalışma ile yapılardaki başarı ve başarısızlıkları ölçerek İTÜ'nün gelecek projeleri için önemli bir bilgi birikiminin oluşturulması hedeflenmektedir.