Ashraf M. Salama and Leanne Courtney

THE IMPACT OF THE SPATIAL QUALITIES OF THE WORKPLACE ON ARCHITECTS' JOB SATISFACTION[1]

Ashraf M. Salama
Qatar University, Doha, Qatar
asalama@qu.edu.qa

Leanne Courtney
RIBA-Part II, Aughey O'Flaherty Architects, Dublin, Ireland.
lcourtney02@qub.ac.uk

Abstract

Undoubtedly Job satisfaction among architects is necessary to create a healthy work environment and in turn supports the creation of meaningful built environments. This paper examines the phenomenon of job satisfaction amongst architects and the factors that significantly influence it in the context of Belfast, Northern Ireland, UK. A descriptive survey in the form of a questionnaire and structured interviews was utilized to form a comprehensive methodology for investigation, which was conducted in 2009. In total, three hundred questionnaires were administered, addressing architects working in both private and public sectors, while twelve interviews were conducted, with six for each sector. Preliminary findings indicate that job satisfaction has been rated to be relatively high amongst Belfast architects. Factors identified as particularly significant include control over thermal conditions, acoustics, views, lighting, and ergonomics.

Keywords: Job satisfaction; architects; professional practice; spatial qualities; workplace.

INTRODUCTION

It is widely acknowledged that architects work long and unsociable hours. They adapt their lives to routines mandated by the nature of their work. Such overtime accounts for the very high competition that is present amongst architects and firms. According to the Trade Union Congress-TUC (2006), architects and planners completed 39.8% of unpaid overtime in 2005. Although UK architects work the most overtime across Europe, they remain less productive than those of other countries (Anon, 2005). This leads to the question of whether such unpaid overtime is in fact necessary. Ideally, a work environment is organized in a way such that employees would be the most productive in the least possible timeframe. Excessive overtime holds many disadvantages including threatening employees' health.

Typically, architects spend up to 50 hours per week in their work environment, inevitably impacting their lifestyles. While a workplace may have positive effects on the architect, it may also have negative impacts resulting from poor design, which may lead to stress, job dissatisfaction, absenteeism and high turnover. Based on a survey conducted by Saratoga Institute (Leigh, 2005), reasons why people leave their jobs included limited career opportunities (16%), work hours (6%), and poor working conditions (9%). The study revealed that the nature of the organization and the environment in which the employee works are crucial for achieving job satisfaction.

Because of the vast demographic and cultural changes, Northern Ireland now hosts a culturally diverse workforce. People's attitudes towards their workplace vary according to their

---

[1] An earlier version of this paper appeared in GBER, Vol.8 Issue.2 pp. 88 - 102

unique personal experiences and backgrounds (Haynes, 2008). Moreover, advanced information technology is constantly developing and thus poses a challenge for architects and planners (Worthington, 2005). As such, emphasis is placed on the importance of change and the need for companies and organizations to develop responsive environments amenable to productivity and satisfaction as they relate to the spatial quality of the workplace.

This paper examines the job satisfaction phenomenon amongst architects and the factors that significantly influence it. It provides insights into potential approaches that could be used to raise the level of job satisfaction. It explores the impact of the spatial qualities of the workplace on architects' job satisfaction in the context of Belfast, Northern Ireland, UK. Using a descriptive survey in the form of a questionnaire and structured interviews a comprehensive methodology is adopted and implemented. Three hundred questionnaires in total were administered: two hundred to the public sector and one hundred to the private sector, while twelve interviews were conducted, with six for each sector. Initial findings indicate that job satisfaction has been rated to be relatively high amongst Belfast architects. Variables and factors identified as particularly significant include control over thermal conditions, acoustics, views, lighting and ergonomics. These factors foster the argument that job satisfaction is strongly impacted by a number of indoor environmental qualities, and in turn, organizations should do more to invigorate job satisfaction in order to maintain architects satisfied and thus remain a more productive workforce.

UNDERSTANDING JOB SATISFACTION

Job satisfaction has been heavily discussed in contemporary literature. Locke (1976:105) defines it as "… a pleasurable or positive emotional state resulting from the appraisal of one's job or job experiences." As such, the emotional experience, which varies from an individual to another, is highly influential towards job satisfaction. Along the same line of thought, Nobile (2003:3) links job satisfaction to positive feelings that an employee has towards his or her workplace. Another view, (Miner, 1992:10) argues that "… it seems desirable… to treat job satisfaction as generally equivalent to job qualities." Furnham (1997:305) states that job dissatisfaction is directly linked to having negative feelings about the work environment. In essence, the environment is the most important factor to consider. Therefore, job dissatisfaction would be absent in stress free environments.

Among the theories developed to explain job satisfaction, Herzberg (1959) proposes a "two factor theory" which emphasizes the independence of job satisfaction from job dissatisfaction. This is because the causes of job satisfaction are completely different from the causes of job dissatisfaction. Through his studies, Herzberg concluded that "hygiene" and "motivators" were important variables involved in determining job satisfaction. Job satisfaction is directly related and positively correlated to job performance. While some believe that job satisfaction leads to high job performance, others controversially believe that high job performance leads to job satisfaction. The latter perspective is understood to have a very simplistic view on the relationship between job satisfaction and job performance, and must therefore be reconsidered (Judge et al, 2001).

Previous studies have established that work is the major cause of stress in people's lives, which inevitably has a negative impact on employees' productivity. Furthermore, absenteeism can significantly hinder an organization from productively carrying out its functions. Based on 811 received survey questionnaires out of 7660 sent to UK based organizations, the Chartered Institute of Personnel Department-CIPD' Absence Management Survey Report (2008) found that the average of the public sector absence was higher than that of the private sector 9.8 days per year per employee and 7.2 days per year per employee respectively. Stress was found to be the main cause of absenteeism, whether short term or long term.

Furthermore, the Confederation of British Industry and AXA (2007) have found that the UK economy has lost £13.4 billion as a result of staff absenteeism. Absences of 20 days or longer account for approximately 40 % of total time lost. In 2006, the average days of employee absenteeism were seven days for sick leave. In that year alone, businesses in the UK lost a total

of 175 million working days. Both public and private sectors continue to witness appalling rates of absenteeism.

PREDICTORS OF JOB SATISFACTION IN RELATION TO SPATIAL QUALITIES

Different professions exhibit different predictors of employee job satisfaction. This is because different professions deal with different challenges and stressors, all of which impact job satisfaction. Employees of the construction industry are seemingly challenged by numerous stressors, often leading to poor health conditions. Long working hours (Sang et al, 2007), heavy workload (Haynes and Love, 2004), job security (Loosemore et al, 2003; Sang et al, 2007), and poor professional merit (Lingard, 2003) are among the stressors faced by employees of the construction industry. Architects, in particular, face additional stressors including stressful education (Anthony, 1978; Salama, 1995), lacking opportunity to use and showcase talent, and being responsible for work tasks out of their capability. Evidence has shown that architects take on more roles than they ought to, roles that would otherwise be carried out by a multidisciplinary team. Three types of predictors can be classified to understand the impact of the spatial qualities of the workplace on job satisfaction.

A) Office Types and Typology

As part of their workplace, the employees' choice of office type significantly affects their satisfaction and productivity (Aronoff et al, 1995; Becker, 1995). There are five office types, including cell, combi, flexi, open plan, and shared room offices. Recently, open plan offices have become more popular. In an extensive study carried out by Pascoe et al (2002:1245), a mere 45% of employees indicated that they would be productive in an open plan office although open plan offices are specifically designed to encourage communication (Figure 1). While open plan offices are widespread in the UK, they are not the most preferred. The work of Brennan et al (2002) revealed that contrary to popular understanding, the open plan office do not in fact encourage communication among coworkers because it actually hinders confidential conversations.
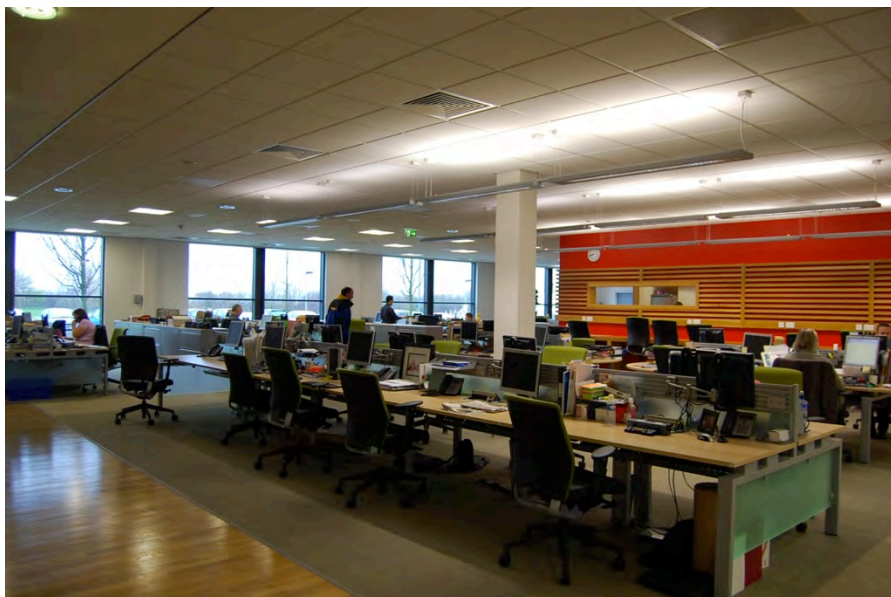

Figure 1: An example of an open plan office (Source: Authors).

Clearly, the office type affects the spatial qualities of a workplace. Business and work tasks must be considered when examining the relationship between the office type and the professional using it. Notably, architects' jobs are not merely limited to the workplace. Research shows that

the nature of work tasks often contradict the character of the workplace. BOSTI Associates (Brill et al, 2001) observed 10,000 employees in 80 business units and found that employees spend 75% of their work time within their own workspace, while the remaining 25% of their time is spent outside of their workspace. Such a study established that workplace qualities are most influential on employee performance and include support for individual work, support for teamwork, as well as support for the individual within the team. It has been suggested to give employees the option to choose their most convenient workplaces.

B) The Office Environment
The spatial qualities of the office environment involves several factors that includes acoustics, day-lighting, views, thermal comfort, air quality, and space ergonomics.

- Sound and Acoustics: There are several factors that can determine if a distraction free workplace is present (Haynes, 2008). Among these factors are those influencing surrounding sounds, which include geographical location, acoustic insulation, and the fabric of the building. Distraction can also be internal and come from within the office.
- Daylighting and Views: Daylight and views are advantageous in the workplace (Figure 2). Sims (2002) found a direct positive correlation between satisfaction about a view and productivity. An unsatisfactory view contributes to the lack of a sense of orientation, and the lack of a lively spirit. Being exposed to direct sunlight and having access to viewing outdoor activities are necessary to avoid such negative consequences.
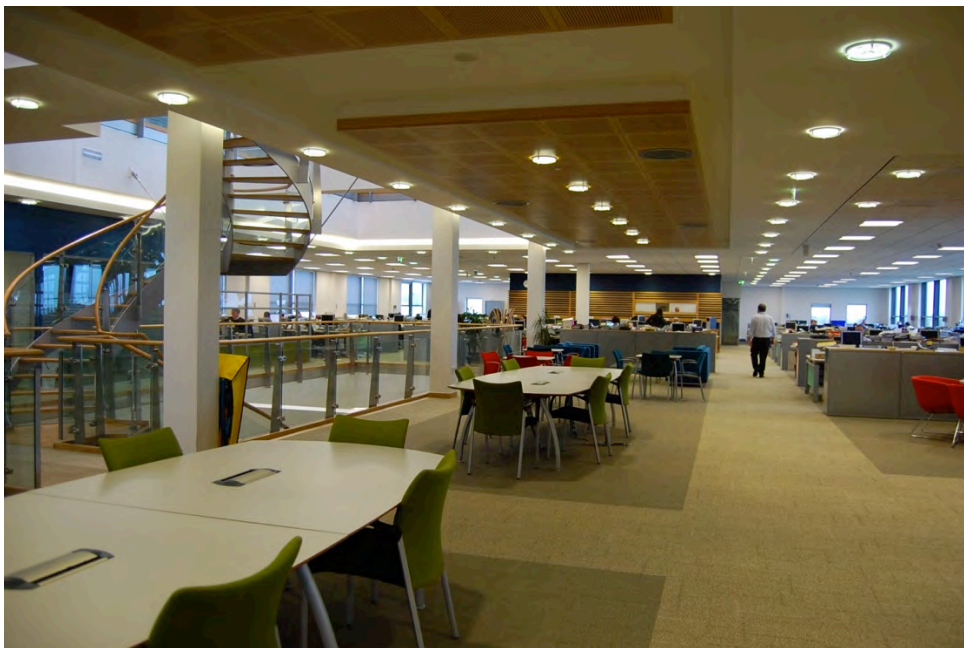

Figure 2: Daylighting and views as important factors determining the quality
of the office environment (Source: Authors).

- Thermal Comfort: HVAC systems that are controlled individually are beneficial since they allow employees to adjust the temperature in order to feel most comfortable. Yet, organizations avoid investing in such systems since the initial costs of HVAC systems increase in separate enclosed workspaces (Haines, 1988). Several studies have investigated office workers' differences in the perception of naturally ventilated and air conditioned workspaces. Results always indicate that natural ventilation, as opposed to air conditioning, results in increased satisfaction of the occupants' thermal environment.

Thermal comfort is influenced by lighting, draughts, temperature variations, acoustics, glare, olfactory quality, perceived control of thermal environment, as well as the quality of the air (stale or dry).

- Air Quality: Air quality has been found to have a direct effect on the productivity and performance of an employee and thus job satisfaction. According to Wargocki et al (2000), staff morale and productivity could be enhanced with the increase of ventilation rates twice the minimum allowance of a typical ventilation rate.
- Space Ergonomics: Workstations must be accompanied with sufficient space surrounding them. A major mistake done by some organizations is increasingly minimizing additional space in an attempt to maximize the use of space. Space ergonomics have a great influence on employee absenteeism. According to the Chartered Institute of Personnel and Development (CIPD) (2008), back pain is the fourth reason for short absence of non-manual workers.

C) Social Spaces in the Workplace

Social spaces in an office environment, also known as break out spaces, are necessary for satisfying the psychological and functional needs of employees (Duffy, 2003; Zelinsky, 1996). Office environments generally have various spaces, each supporting a different set of work tasks (Laing, 1998). Therefore, the function of each space varies. For instance, social space may be allotted for lunchtime, or informal meetings with co-workers or clients (Figure 3). To be able to accommodate the most people and widest variety of functions, workspaces require appropriate space programming (Salama and Adams, 2003). For instance, if there is no space for lunchtime, employees are most likely to find this space outside the office, perhaps even outside the building. This may cause employees to return to their job tasks late, thus decreasing their productivity.

Figure 3: Breakout spaces for informal meeting with co-workers and clients
(Source: Authors).

Because interaction and communication amongst co-workers is important for a healthy work environment, interactive spaces must be available. These spaces would promote team bonding, sharing of experiences, and the hierarchical transfer of organizational knowledge. They would

also allow for flexible work environments where employees would be able to determine the type of workspace most suitable from them. Providing the necessary spaces is a challenge for organizations as space is always limited. This has been observed to be most common within the public sector (Hardy et al, 2008). To compensate for the limited space availability, public sector organizations have focused on how to efficiently use the limited space available. While management and property costs remain a constraint, organizations are putting effort into efficiently and effectively using the available space and improving the overall quality of the work environment.

One of the important goals of organizations is to effectively manage and plan workspaces (Marmot, et al, 2000; Adams and Salama, 2003; Salama 2004).. In so doing, organizational needs must be considered in order to identify the most convenient space design types. One method to determine the needs of an organization is to conduct a space analysis that assesses employees' behaviors within the space and the way in which they carry out their routine tasks. Moreover, participatory design and planning techniques utilized in organizational re-structuring is an important mechanism that reveals users needs as they relate to actual workspace and the associated social, gathering, and interactional spaces.

METHODOLOGY

Both quantitative and qualitative methods were used to assess architects' job satisfaction in the workplace. Sampling was used to identify the organizations or offices to be studied. In both the private and public sectors, self administered questionnaires and interviews were used to examine job satisfaction and the factors and variables that directly affect this phenomenon.

Survey Questionnaires

In addition to the typical questions related to background information and employment history, by utilizing Likert Scale architects were asked to react to aspects that pertain to the office environment, space ergonomics, the availability of support facilities, gallery areas and social spaces. Through open-ended questions that followed most of the Likert Scale questions, architects were given the opportunity to comment, offer feedback, or give reasons for their choices. Stratified sampling was used to collect data and architects from both public and private sectors were surveyed. In total, 300 questionnaires were administered to architects working in Belfast. 100 questionnaires were sent to architects working in the private sector and 200 were sent to architects working in the public sector.

Selection strategies for conducting the survey questionnaire: The size of the organization or office was used to determine the office where questionnaires will be administered. The sample size was determined by the size of the office. For the purpose of sampling, private sector offices were divided into three categories, including small sized offices (10-15 employees), medium sized offices (15-30 employees), and large sized offices (more than 30 employees). All organizations of the private sector received an equal number of 100 questionnaires. Random selection was used in the public sector since most government organizations are large sized.

Testing the questionnaire: Both closed and open ended questions were used in the questionnaire, which was piloted in order to examine its clarity. Initially, the questionnaire was administered to a small group of professionals that exhibit qualities similar to those of the intended respondents. This group provided comments and suggestions. The format of the questionnaire was also reviewed by an independent observer. Furthermore, a test re-test was administered where the questionnaire was administered on two different occasions and the results were compared.

Interviews

Stratified sampling strategies were also used as a selection strategy for interviews. The goal was to conduct equal numbers of structured interviews in both public and private sectors. The size of the organization was used to select the sample. In the private sector, an equal number of

interviews were conducted in the three categories of offices. Twelve interviews were conducted, with six interviews for each sector. In the case of the public sector, interviewees were directors or managers representing the employers, while private sector interviewees were office principals, or their representatives. Issues addressed in the interviews were centered on whether managers or principals think that the office environment supports architects. Office ethics issues including staff satisfaction and quality of services were also explored. Among the factors discussed were the availability of social and support spaces, work style including working from home, hotelling, and hot desking.

SELECTED RESULTS

Applying a simple frequency of responses procedure, the results outlined here are selected to foster the establishment of the relationship between the overall level of architect's job satisfaction and the principal spatial variables affecting it. A response rate of 83% (n=165) was achieved from the public sector, while a 72% (n=72) response rate was achieved from the private sector.

Participants of the study from both the public and private sector were mainly architects where 73% of those respondents sampled from the public sector were architects and 71% from the private sector respondents were architects. However, some of the participants, especially from the public sector, held other job titles such architect technician, architectural assistant, assistant director, director or associate. Notably, in both sectors there appears to be a broad range of age groups. Yet, the length of time architects have worked in their current office setting vary dramatically across the two sectors, where 50% of respondents from the public sector have worked in their current workplace for twenty years or more. In the private sector, however, the maximum length of time respondents have worked in the particular office setting does not exceed 15 years.

Levels of Job Satisfaction

Using Likert Scale satisfaction indicators were composed to measure the level of architects' job satisfaction. Table (1) displays responses to selected satisfaction indicators. A comparison of the findings demonstrates that architects are generally satisfied in their jobs in both public and private sectors. However, there is a slight differentiation in the level of job satisfaction between the sectors. 4% of participants from the public sector strongly disagreed with the statement '*I consider my job rather pleasant*' whereas no participants from the private sector strongly disagreed with this statement. 4% of participants from the public sector strongly agreed with the statement '*I definitely dislike my job.*' In contrast, no participants from the private sector strongly agreed with the same statement.

Office Environment

The variables that had the strongest links with job satisfaction included acoustics, thermal comfort, views and light, ergonomics and level of privacy.

Sound and Acoustics: It is evident that sound levels impact architects negatively. Specifically, in the private sector, 10% and 34% of participants strongly disagreed or disagreed that 'sound levels affected work quality in a positive way.' This corresponds with their reactions to 'the impact of sound levels on work quality in a negative way,' as shown in Table (2). For public sector architects, sound levels do not seem to be of a major concern since approximately 70% of respondents either strongly agreed or agreed that 'sounds levels in the office are acceptable.'

Thermal Comfort: Across all the respondents, 63% agreed that 'the office environment is adequately ventilated,' and 76% disagreed with the statement that 'the office is too cold.' However, only 35% of the respondents disagreed with the statement that 'the ventilation and heating is easily adjusted on an individual basis.' In contrast, from the public sector only 36% of the respondents were of the opinion that 'the office environment in which they worked was adequately ventilated.' Similarly, private sector architects were also in disagreement that the

ability to adjust the thermal properties of the environment on an individual level was available, and 39% of respondents held the opinion that 'the ventilation and heating of the office environment was not easily adjusted.'

Table 1. Architects' responses to indicators of job satisfaction levels in the private and public sectors (Source: Authors).

Satisfaction Indicators	Sector	Frequency of Responses (%)				
		Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree
I find real enjoyment in my job	Private	18%	62%	12%	6%	2%
	Public	23%	51%	20%	3%	3%
I consider my job rather pleasant	Private	17%	70%	10%	3%	0%
	Public	12%	66%	18%	0%	4%
I am fairly well satisfied with my job	Private	15%	71%	8%	6%	0%
	Public	18%	70%	4%	4%	4%
I definitely dislike my job	Private	0%	6%	1%	67%	26%
	Public	4%	0%	4%	41%	51%
Each working day seems like it will never end	Private	0%	3%	11%	38%	48%
	Public	0%	7%	7%	38%	48%
Most days I am enthusiastic about my job	Private	18%	63%	12%	7%	0%
	Public	18%	66%	12%	0%	4%

Table 2. Architects' responses to sound and acoustics aspects in the private and public sectors (Source: Authors).

Sound and Acoustics Aspects.	Sector	Frequency of Responses (%)				
		Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree
Sound levels in the office are acceptable	Private	9%	52%	30%	8%	1%
	Public	24%	45%	18%	13%	0%
Sound levels affect your work quality in a negative way	Private	4%	40%	40%	15%	1%
	Public	0%	27%	45%	22%	6%
Sound levels affect your work quality in a positive way	Private	0%	15%	41%	34%	10%
	Public	0%	30%	40%	30%	0%

Lighting, and Views: Lighting appears to be satisfying for architects in both private and public sectors. In the private sector 67% agreed that 'the office environment provided sufficient natural lighting.' In addition, 20% strongly agreed with the same statement. 18% of public sector architects disagreed with the statement that 'the natural lighting was sufficient' and a further 4% strongly disagreed. On the other hand, in the public sector 79% of the architects stated that 'the office environment in which they work offers views.' In comparison findings indicate that 83% of private sector architects suggested that 'the office offers views to the outside.' On closer observation and with the use of open ended questions public sector architects emphasized that the office did not necessarily have desirable views.

Space Ergonomics: As shown in Table (3), the adequacy of space does not seem to be a critical issue for private sector architects where 61% of the respondents disagreed with the statement that 'the office feels overcrowded,' while 65% agreed that 'the office environment is very spacious,' and 20% strongly agreed. On the other hand, public sector architects do not seem

to be satisfied with the space ergonomics where 70% strongly agreed or agreed with the statement that 'the office often feels overcrowded,' while only 11% of respondents strongly disagreed with the statement that 'the work environment felt very spacious.'

Table 3. Architects' responses to sound and acoustics aspects in the private and public sectors (Source: Authors).

Space Ergonomics	Sector	Frequency of Responses (%)				
		Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree
The office often feels overcrowded	Private	0%	3%	22%	61%	14%
	Public	29%	41%	15%	8%	7%
	Private	20%	65%	13%	2%	0%
The office feels very spacious	Public	8%	11%	29%	41%	11%
Space surrounding my workstation is adequate	Private	14%	77%	7%	2%	0%
	Public	12%	30%	12%	43%	3%

DISCUSSION OF KEY FINDINGS

Notably, interview findings generally corresponded with findings from the questionnaires. Contradictions between questionnaire and interview comments were present but very minor. It is important to note that directors and managers of architecture offices and organizations are relatively aware of issues concerning their architects' job satisfaction. Issues of concern for public sector managers were space efficiency, reduction of capital costs, and an increasing use of information technology and emerging trends like hot desking, hotelling, and home working. Private sector employers had different concerns. These include creating dynamic and creative work environments for architects and designers, staff efficiency, corporate image, and architectural agendas of design of the workplace which reflect the quality of the office work. Control over the office environment is a major rising theme that is important in achieving job satisfaction. Categories of control were control of acoustics, views, light ergonomics, and thermal control. The following are selected thematic discussions supported by the results and respondents' comments.

Control over Environmental Conditions

Undoubtedly, it is valuable for an architect to be able to control his/her work environment, just as architecture puts great emphasis on the built environment. For one architect, job satisfaction is concerned with "working from an environment in which one enjoys the process of creating another environment which brings joy to its users." Four main categories or themes of job control were identified: acoustics, thermal comfort, views, light, and ergonomics.

- Acoustics: Private sector architects did not report being influenced by noise. One private sector principal stated "Communication is the way forward. When I walk into my office and hear the employees making noise, talking, negotiating and liaison with others, I know my business is growing." This indicates that to some private sector principals noise is comforting.
- Thermal Comfort: Findings from interviews indicate that controlling thermal comfort generally left employees satisfied. Public sector managers revealed that because newly design government offices did not feature thermal control, employees were dissatisfied. Similarly, when private sector employees did not have control over their thermal comfort, they were also dissatisfied. In such environments, open plan offices were utilized for discussions and debates about the thermal environment; a majority vote was usually the method of decision-making. In larger scale offices, this issue would be of greater concern.

- Views: Having pleasant views have proven to be important for architects in both public and private sectors. A participating architect emphasized the psychological benefit of views in stating, "starting with the company was a scary experience but being able to look out the window and see my house in the distance meant that if things got really pressured in the office, I could always go home for lunch."
- Lighting: Almost all private sector participants were satisfied with the artificial lighting present in the office, while only a little over half of public sector participants claimed they experienced sufficient lighting. One public sector employee stated, "Lighting is important as I need to see my plans and drawings."
- Ergonomics: While approximately 75% of private sector architects were satisfied with the space surrounding their workstation, only one third of public sector participants had this feeling. One public sector employee stated, "Sometimes I walk into this establishment and wonder whose desk I'm actually working on, because my neighbor feels like he has moved in."

Work Environments

Private sector architects indicated that they felt very positively about the relationship between their workspace and their work tasks. Supportive work environments were characterized by appropriate acoustics and space variations and flexibility. One private sector employer believed that "the interaction present in open plan offices helped employees complete their work tasks." Another employer argued that the overall design and environment of the office was important for employees to enthusiastically complete their work tasks. Employees felt a "sense of pride" about their work environment when the design of the office and the architecture agenda was well thought of. Employees were then more likely to be more efficient and productive.

On the other hand, public sector architects are not entirely concerned with the architectural agenda. One public sector organization stated that despite the fact that its office was not very different from other public sector buildings in Belfast, the organization had set goals to achieve with regards to serviceability to employees. The same organization emphasized the importance of information technology in helping employees complete their work tasks. By and large, public sector architects felt that change and improvement was necessary for their workplace to fully support work tasks. Public sector organizations claimed that such improvements are underway. Improvements generally involved restructuring the office to achieve a more open layout.

Office Design and Work Culture

Employees in Belfast were asked to describe how they see their workplace as different from others. One public sector manager stated that "we set standards for our accommodation and we do involve staff in setting those standards so that should lead to an environment that staff wants to work in and would like to work in." Some organizations thought that they were unique for their information technology. Some employees' comments were directly linked to architecture. One private sector architect stated, "Architecturally [the office] is quite unusual. Everyone works in the open plan regardless of status. Even the relative privacy of the boardroom is only relative. We very rarely ever close the screens. So it's fairly democratic."

Virtual working has proven to be on the rise, particularly in the public sector although one public sector manager indicated that only 1.8% of employees permanently worked from home. Some organizations had employees that worked from home on certain occasions, and therefore they still had their own workspaces within the office. In some organizations, widely dispersed centralized switchboards have been introduced. As such, some employees work from home therefore dealing with the concern for space efficiency.

Although virtual working is generally promoted in the public sector, a fully virtual office is seemingly not favorable. One employer stated that "there needs to be a balance between the

efficiency of the organization through using concepts like mobile working but… bringing staff together from time to time to keep the culture of the organization together."

Unlike public sector organizations, private sector organizations were more likely to discourage virtual working. All private sector participants expressed disdain towards the concept. One principal indicated that because recent graduates are often hired, office interaction and guidance are necessary to achieve a promising and productive learning and professional environment. Another employer criticized virtual working particularly for architects as it poses a threat to the architect's "studio type atmosphere."

CONCLUSION

Among architects working in the Belfast area, spatial qualities of the work environment are factors that determine satisfaction of their jobs. Public sector offices examined in this study are already witnessing investment. These organizations shared their comments on what could be learned from implementing change within the work environment. One public sector employee stated that change must be done gradually in order to allow for necessary adjustment time.

Job satisfaction is very specific to the individual as it is relatively psychologically based. On the contrary, job dissatisfaction occurs when individual's expectations about the job are not met. In order to recruit and retain quality staff, employers must strive to meet their employee's expectations, which are becoming increasingly demanding. Contemporary literature emphasized that the quality of the work environment is the primary determinant of the relationship between employers and their employees. Findings from this study have indicated that public sector organizations are failing to meet their employees' expectations. It is important to note that not only is it important for employers to provide the necessary alterations within the work environment, but wisely investing in a supportive environment is also a necessity. Particular attention must be paid for appropriate investments.

An important aspect of the workplace that this research has deemed important is the control that employees have on their work environment. Personal storage was among the issues raised. Such issues have proven to be a threat to communications between employees and their employers. In order to instill and maintain a sense of pride, ownership among employees, and loyalty to the organization or office, interaction and consultation between stuff is crucial. Employee involvement should nonetheless be relatively controlled, as employees may not have realistic expectations. Yet, employers must continuously consider the needs of employees in order to overcome economics and organizational challenges. The fact that architects design environments for people mandates that that the environment they work form should also be responsive.

REFERENCES

Adams, W. G., & Salama, A. M. (2003). Comprehensive pre-design studies of workplaces: The case of the twin cities, Minnesota. *AUEJ-AI Azhar University Engineering Journal*, *7*, 4-18.

Anon, R. (2007, 2-3). 50/50, why this change matters. *Building Design*, 1655.
Anthony, K. (1987). Private reactions to public criticism: Students, faculty, and practicing architects state their views on design juries in architectural education. *Journal of Architectural Education*, *40*, 2-11.

Aronoff, S., & Kaplan, A. (1995). *Total workplace performance: Rethinking the office environment*. Ottawa, Canada: WDL Publications.

Becker, F. (1996). *Workplace by design: Mapping the high performance workscape*. San Francisco, CA: Jossey-Bass Publishers.

Brennan, A., Chugh, J. S., & Kline, T. (2002). Traditional versus open office design: A longitudinal field study. *Environment and Behavior*, *34*, 279-299.

Brill, M., Weidemann, S., & BOSTI Associates. (2001). *Disproving widespread myths about workplace design*. Gasper, IN: Kimball International.

Chartered Institute of Personnel and Development, (2008). *Annual Survey Report 2007-2008.* [Online] Available at: http://www.cipd.co.uk [Accessed 2 January 2009]

Confederation of British Industry and AXA, (2007). United Kingdom: Employee Absenteeism - Making Up For Lost Time. [Online] (Updated 3 Oct 2007). Available at: http://www.mondaq.com/article.asp?articleid=52770 [Accessed 21 February 2009].

Duffy, F. (2003). *The changing workplace*. (2 ed.). London, England: Phaidon.

Furnham, A. (1997). *The psychology of behaviour at work –the individual in the organisation.* London, England: Psychology Press.

Haines, R. (1988). Comfort: Forgotten factor in economic analyses. *Heating/Piping/Air Conditioning*, *September*, 38-39.

Hardy, B. (2008). *The government workplace as an agent for change*. London, England: Beacon Press.

Haynes, B. P. (2008). An evaluation of the impact of the office environment on productivity. *Facilities*, *26*, 178-195.

Herzberg, B. P. (1959). *The motivation to work*. (2 ed.). New York, NY: Wiley.

Judge, A. T., Bono, J. E., Thoreseen, C. J., & Patton, G. K. (2001). The job satisfaction- job performance relationship: A qualitative and quantitative review. *Psychological Bulletin* , *127*(3), 376-407.

Laing, A. (1998). *New environments for working: the re-design of offices and environmental systems for new ways of working*. London, England: Construction Research Communications.

Leigh, B. (2005). *The 7 hidden reasons employees leave: how to recognize the subtle signs and act before it's too late*. New York, NY: American Management Association.

Lingard, H. (2003). The impact of individual and job characteristics on burnout among civil engineers in Australia and the implications for employee turnover. *Construction Management & Economics*, *21*, 69-80.

Locke, E. (1976). *Handbook of industrial and organisational psychology: The nature and causes of job satisfaction*. Chicago, IL: Rand McNally.

Loosemore, M., Dainty, A. R. J., & Lingard, H. (2003). *HRM in construction projects: Strategic and operational approaches*. London, England: Spon Press.

Marmot, A., & Eley, J. (2000). *Office space planning: Designing for tomorrow's workplace*. (2 ed.). New York, NY: McGraw Hill.

Miner, J. B. (1992). *Industrial organisation psychology*. New York, NY: McGraw Hill.

Nobile, J. (2003). *Organisational communication, job satisfaction and occupational stress in catholic primary schools*. (Doctoral dissertation, University of New South Wales, Australia).

Pascoe, C., Ali, I. M., & Warne, L. (2002). Yet another role for job satisfaction and work motivation-Enabler of knowledge creation and knowledge sharing. *Proceedings of the Informing Science + IT Education Conference*, 1239-1248. Available at: http://www.thenetworkinstitute.eu/bibadmin/bibtex/pdf/CR%202006%20Explaining%20Knowledge%20Sharing.pdf [Accessed 3 January 2009].

Salama, A. M. (1995). *New trends in architectural: Designing the design studio*. Raleigh, NC: Tailored Text & Unlimited Potential Publishing Co.

Salama, A. M. (2004). The changing patterns of work environments: Towards an employee centered approach for designing/ re-designing the workplace. In *2nd International Conference of Administrative Sciences: Meeting the challenges of the globalization age* (pp. 309-320). Dhahran, KSA: KFUPM College of Industrial Management.

Sang, K. J., Dainty, A. R. J., & ISON, S. G. (2007). Gender: A risk factor for occupational stress in the architectural profession?. *Construction Management and Economics*, *25*, 1305 – 1317.

Sims, L. (2002). Enhance user satisfaction and performance with daylighting. *Research and Development*, *10*, 109-110.

Trade Union Congress (TUC), (2006). The 2005 Work Your Proper Hours Day Unpaid Overtime League Table. [Online]. Available at: http://www.tuc.org.uk/extras/wyphd-unpaid-overtime-league-table.pdf [Accessed 21 February 2009].

Wargocki , P., Wyon, D., Sundell, J., Clausen, G., & Fanger, P. (2000). The effects of outdoor air supply rate in an office on perceived air quality, sick building syndrome (SBS) symptoms and productivity. *Indoor Air*, *10*, 222-236.

Worthington, J. (2005). *Reinventing the workplace*. (2 ed.), Oxford, England: Architectural Press.

_____

Authors:

Ashraf M. Salama, Ph.D.
Professor of Architecture,
Department of Architecture and Urban Planning, Qatar University,
Doha, Qatar.
asalama@qu.edu.qa

Leanne Courtney
RIBA-Part II,
Aughey O'Flaherty Architects,
Dublin, Ireland.
lcourtney02@qub.ac.uk