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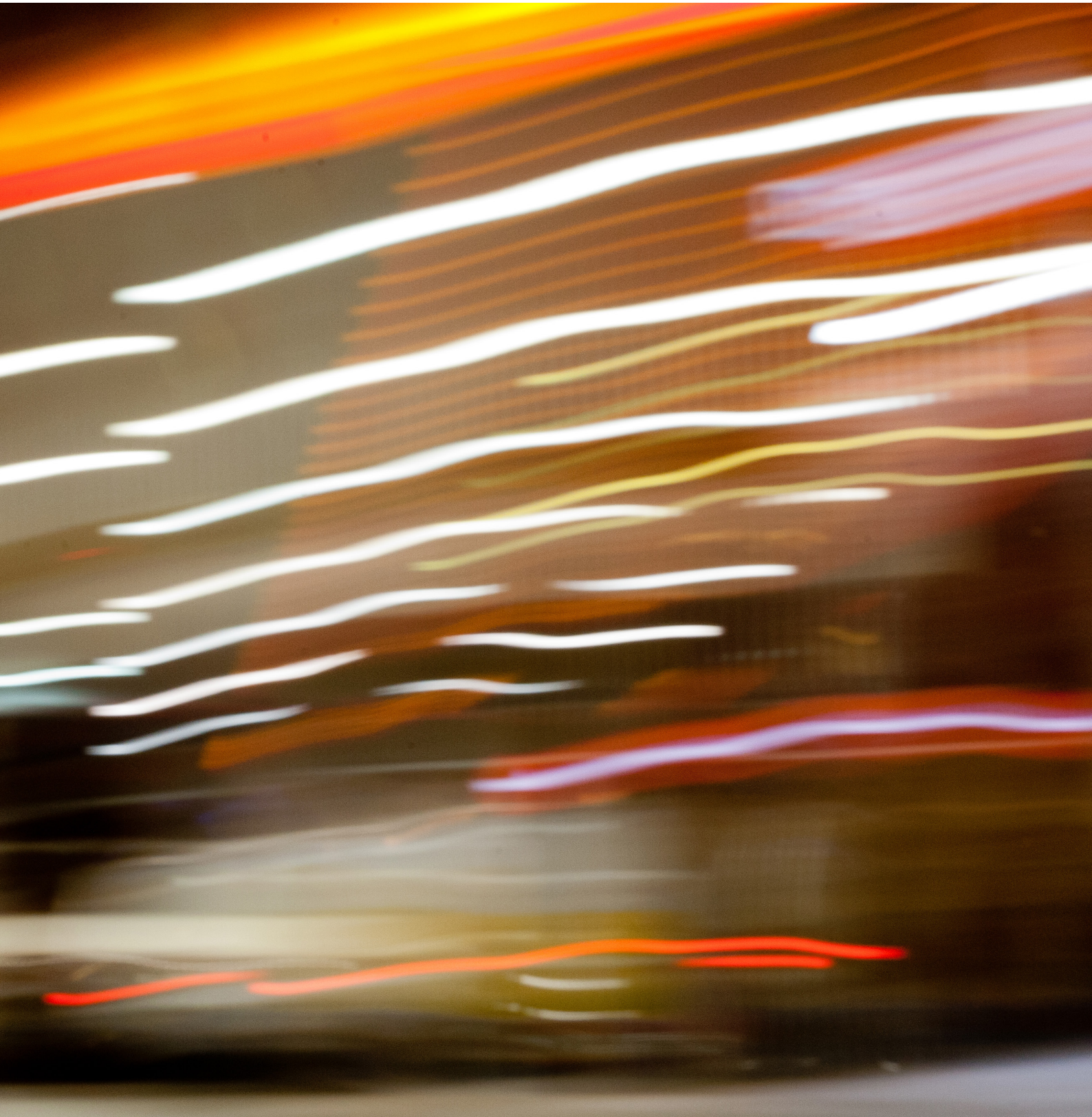

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Picture on the front cover: Anni Vartola

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AESTHETICS VERSUS FUNCTION IN OFFICE ARCHITECTURE: EMPLOYEES' PERCEPTION OF THE WORKPLACE

CHRISTINA BODIN DANIELSSON

Abstract

This study investigates the influence of the aesthetic and functional dimensions of architecture on office employees' perceptions of their own workplace and organization. It is motivated by the lack of architectural research on employees' identification with, and emotions related to, workplaces and organizations. Hereby potentially important insights have the chance to emerge that otherwise would not do so.

An explorative approach is taken to investigate the ways that: 1) type of office, 2) different dimensions of architecture, and 3) architectural quality play in influencing employees' perceptions of their workplaces and organizations. The sample consists of nineteen in-depth interviews with employees working in different types of offices and employed by varying organizations of different sizes.

Results show that employee's office category has several impacts, e.g. if the employee's workplace focus is on work itself, the social life among employees, or the physical environment at work. When workplace focus is on the physical environment, the employees emphasize the aesthetic more than functional dimensions of the space, which are only in focus when the proximate work environment is discussed. Most importantly, the aesthetic dimensions appear to influence both the employee's perception of their workplace and the organization as a whole.

Keywords:
office design, employees, architecture, aesthetic dimension, functional dimension

1. Introduction

Architecture is strongly related to sense making, a fundamental influence on our perception and evaluation of the surrounding environment and its artefacts (Frost and Morgan, 1983). Great benefits can be attained with informed office design, as architecture has the capacity to reinforce experiences and behaviours (e.g., Canter, 1976; Davis, 1984; Lawson, 2001).

Despite this effect, our knowledge of the office architecture's impact on employees' perception of their own workplace and organization is limited with regard to its two fundamental components – the aesthetic and functional dimensions (see section 1.1 on existing office research). The paucity of research on office architecture's role is paradoxical given the current interest in architecture's possible impact on organizational success factors such as creativity, employee interaction and transfer of information within organizations (e.g. Appel-Meulenbroek, Havermans and Janssen, 2010; Becker and Steele, 1995; Dul and Ceylon, 2010). It is also surprising given that the seven identified office types in contemporary office design are so clearly based on these two fundamental dimensions of architecture (Bodin Danielsson, 2007). The office types are: 1) cell-office, 2) shared-room office, 3) small open plan office, 4) medium-sized open plan office, 5) large open plan office, 6) flex-office, and 7) combi-office (see table 1).

The aesthetic and functional dimensions of architecture have occupied architectural theorists for a long time. Those that regard architecture foremost as an art emphasize aesthetics, while those who emphasize the professional and practical aspects of architecture emphasize functionality (e.g., Collins, 1971; Holm, 2006). The debate concerning the two components' internal relationship and their importance has been an ongoing battle between different philosophical views on architecture without many practical implications for the architectural practise. Thus, the more practical oriented research in the field of architecture[1] has not been very concerned with the two dimensions of office architecture, and the research that exist deals mainly with dwellings, e.g. Werner's research (2000) on what aspects of architecture buyers of condominiums value and lead to higher prices, or Nylander's research (1998) on residents' perception of architectural quality in their own dwellings. The architectural research about work environments tends instead to apply a very technical and instrumental perspective to the issue. For example Building Performance, the research area which evaluates built environments, ignores the aesthetic dimension of architecture (e.g., Marans and Spreckelmeyer, 1981; 1982).

Recognizing that the physical setting is not a "naked container for organizational action" but a context that selectively solicits the users of the space, architecture has aroused interest among organizational theorists (e.g., Gagliardi, 1999). Strati (1990) even claims that the architecture

1 There is a field called Building Performance within architecture that deals with the evaluation of built environments. It applies a technical/functional perspective and to a great extent leaves out the aesthetic dimension.

has the ability to *cultivate* employees. The interest from this field arises because of architecture's possible influence on individuals' emotions and identification with an organization. This, in turn, is based on the aesthetic and functional dimensions of architecture, as well as its symbolic dimension (e.g., Rafaeli and Vilnai-Yavetz, 2004; Vilnai-Yavetz, Rafaeli and Schneider Yaacov, 2005). In these organizational theory studies, the functional dimension is often referred to as instrumentality instead of functionality; both concepts are however synonymous. Although not in focus in this study, the symbolic dimension of architecture is recognized as important in an organizational context such as an office (Strati, 1992).

1.1 Existing office research

Despite a lack of knowledge of the importance of the aesthetic and functional dimensions of architecture for employees' perception of their own workplace and organization, there is no lack of office research in general. Prior research focuses mainly on different environment factors' impact on employees in individual rooms versus open plan offices, generally regarding factors such as environmental satisfaction (Duval, Charles and Veitch, 2002), social relations (Zalesny and Farace, 1987), and indoor climate (Newsham, Veitch and Charles, 2008).

The research on environmental satisfaction has, for example, shown that employees working in cell-office are significantly happier with their proximate work environment than those in office types with more open plan layouts (Bodin Danielsson and Bodin, 2009). This might be due to their greater ability to decorate and control the workstation area in a cell-office, and also to the development of place attachment, the emotional bond formed with a physical site (Inalhan and Finch, 2004). A cell-office allows, for example, the personalization of the workstation (i.e. the behaviour of marking the territory), to reflect the space-owner's own identity and to regulate social interaction with personal belongings (Altman, 1975; Brown, 1987; Heidmets, 1994). In comparison to other office types, it also provides more privacy (Sundstrom, 1986), a concept of interest in office research due to its relation to personal control, a key factor influencing stress and well-being (Choi, et al., 2008; Linden, et al., 2005), as well as work attitudes (Lee and Brand, 2010).

In addition, privacy appears to correlate with environmental satisfaction and job satisfaction (Sundstrom, Burt and Kamp, 1980), two factors that in turn correlate positively with personalization and organizational well-being (Wells, 2000). Noise, defined as unwanted sound, is considered the major environmental stressor in offices and has as such been extensively studied by office researchers (Evans and Johnson, 2000). Most problems with both noise and privacy are reported in office types with open plan layouts (e.g. Bodin Danielsson, 2008). Noise also correlates negatively with performance, especially for cognitive demanding assignments (Kristiansen. et al., 2009; Sundstrom, et al., 1994; Venetjokia, et al., 2006).

Most of the described research investigates the consequences of working in open plan offices versus individual offices, which has some serious consequences. For example, there is a lack of awareness that different office types with open plan layouts offer their employees different environmental conditions. These in turn may affect employees differently. The problem has been addressed by Bodin Danielsson (2007) in an investigation into different office types, including various open plan layouts. Bodin Danielsson and colleagues have in their research found differences between employees in different types of open plan offices in terms of environmental satisfaction (Bodin Danielsson and Bodin, 2009), health and job satisfaction (Bodin Danielsson and Bodin, 2008), sick leave rates (Bodin Danielsson, et al., 2014), and employees' perception of leadership (Bodin Danielsson, Wulff and Westerlund, 2013). This research suggests that the differences identified may be due to differences in environmental conditions such as noise exposure, ability for personal control, etc. found in various office types. These factors, in turn, depend on the defining features of the office types.

Another consequence of the comparison between individual offices and open plan offices is that various characteristics of office environments related to the aesthetic and functional dimensions of architecture are neglected, which may influence employees differently. Despite the sparse office research in this area, some related studies have been completed. Oldham and Rotchford (1983) have, for example, investigated the relationship between office characteristics like openness, office density, workspace density, accessibility and office darkness and employee reactions such as satisfaction, behaviour, and use of spatial markers. They found that the investigated office characteristics relate significantly to many of the reactions of interest. Moreover, they affected these reactions through their impact on intervening variables such as conflict, friendship opportunities, agent feedback, which statistically were controlled for.

Also more recent research has investigated the importance of other characteristics on employees welfare. For example, one study found that design features of the workstation such as proximity to a window along with lighting to be a positive predictor of employee satisfaction (Charles and Veitch, 2002). Minimum partition height was found to have a negative impact on the employees' overall environmental perception of their offices. Another review study by the same research group that examined the importance of furniture design and layouts on employees, found, not surprisingly, that by meeting individual needs – which vary by job type, individual characteristics, and from one task to another – satisfaction is improved. The result showed also that there is no universal way of increasing satisfaction.

1.2 Motivation for the study

The described studies about design features of the office tell us that the aesthetic and functional features of the office architecture affect office employees in different ways. However, it does not tell us how important the office architecture is in affecting employees' view of their own workplace and organization, despite its assumed impact on factors important for organizational success (e.g., Davis, 1984). This assumption is based on office design's role in shaping psychological and behavioural outcomes (Appel-Meulenbroek, Havermans and Janssen, 2010), including employee motivation (Oldham and Brass, 1979), engagement with organization (Millward, Haslam and Postmes, 2007), job satisfaction (Bodin Danielsson and Bodin, 2008; Veitch, Farley and Newsham, 2007), and possibly also employee's performance (e.g., Haynes, 2008; Vischer, 2007).

The described studies of office design features also leave us ignorant with regard to the role of the individual employee's office category for the perception of the two dimensions of architecture and for the employee's view of the workplace and organization. Considering the increasing interest in internal branding, i.e. efforts directed toward influencing people's opinions of their own organization (Bodin Danielsson, Wulff and Westlund, 2013), due to architecture's potential impact on described organizational success factors, the lack of architectural research in this area is surprising.

For information on employees' emotions and identification with organizations, we must instead go to the field of organizational theory (e.g., Ashforth, Harrison and Corley, 2008; Davis, 1984; Rafaeli and Vilnai-Yavetz, 2004). Although some of these studies show interest in the role of architecture and artefacts as influences on employees' emotional ties to organizations, they provide no indications of what role the aesthetic and functional dimension in the architecture play in this. This is due to the researchers' ignorance regarding architecture.

Based on the scarce research in this area, the aim of this study was to examine the role of architecture on employees' view of their own workplace and organization. This was done by investigating the following research questions:

1. What role does the office type play in the individual employee's opinion of their workplace, with a focus on the two dimensions of architecture?
2. How do the aesthetic and functional dimensions influence the employee's perception of their own workplace and organization?
3. What role does the architectural quality of the office have with regard to the former questions?

Table 1
Office types – prototypes defined by architectural and functional features[1]

Architectural features	Functional features
1. Cell-office (Individual office room)	
– The plan layout is characterized by corridors, either a single or double corridor system – Individual room has access to a window	– Most equipment is in the own room – Work is concentrated and independent
2. Shared room office: (2–3 people share room) An office type sometimes a consequence of lack of workspace.	
– Workstations freely arranged in the room – For privacy reasons sometimes screens or other divisional elements between workstations – No individual window, shares with roommate(s)	– Team-based work or people with similar work assignment work share room – Most equipment outside of room, team based shared room tend to have own equipment
Traditional open-plan offices: Groups of employees sharing a common workspace in different configurations Found in the following three sub-categories: 3. Small open plan office: (4–9 people share workspace) 4. Medium-sized open plan office (10–24 people share workspace) 5. Large open plan office (>24 people share workspace)	
– Shared workspaces within the office – Plan layout is open, based on an open flow of workspaces instead of corridor systems – Workstations freely arranged in the room or in rows in a larger workspace	– Flexible for organizational changes – Routine based work – Low level of interaction between employees – Often no amenities at workstation
Activity based and flexible office types: 6. Flex-office (no personal workstation, different work environments within office)	
– Plan layout is open, based on an open flow of workspaces instead of corridor systems – Rooms/environments for individual work and telephone calls – Different types of environments for meetings	– Flexible for organizational changes – Good information communication technology (ICT) is a necessity as the common computer system is accessible from all workstations within the office – Dimensioned for <70% of the workforce – The choice of workstation is free, has the option to work outside of office as well – Mainly independent work, sometimes project based
7. Combi-office (team work and sharing of workspace and common facilities)	
– No strict spatial definition of office type, personal workstations which either are in individual rooms or open plan layout – Back up spaces for work activities not suitable to carry out at the personal workstation – Extra focus on rooms for group activities such as: project rooms (to be booked for longer periods), team rooms and meeting rooms	– >20% of the work in the office not at the personal work-station – Sharing of common amenities in common spaces – Work is both independent as well as interactive team work with colleagues in – The team move around in the office on an "as-needed basis" to take advantage of the wide range of common facilities

[1] These definitions based on the work by Ahlin and Westlander (1991), and Duffy (1999) offer useful descriptive and comprehensive definitions of existing office types.
Ahlin, J., & Westlander, G. (1991). *Kontorslokaler och kontorsarbete – två perspektiv på kontoret som arbetsplats (Eng. Office spaces and office work – two perspectives on the office as a workplace).* Solna, Sweden: Arbetsmiljöinstitutet (The Swedish National Institute for Working Life).
Duffy, F. (1999). *The new office.* 2nd ed. London: Conran Octopus Limited.

The research questions and other related questions probed are explorative by nature, aiming to detect insights on the subject that are not able to be foreseen. The aim of the study is thus not to draw any general conclusions, but to take a first step in reaching a deeper understanding of employees' perception and evaluation of office architecture.

2 Method

2.1 Sample

This paper is an empirical investigation based on in-depth interviews with nineteen office employees from a larger study of 491 office employees in 26 companies/divisions in the area of Stockholm, Sweden. Participation was voluntary.

2.2 Office definitions

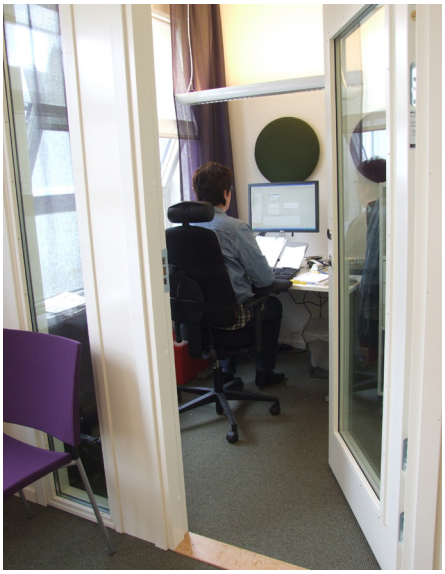
The nineteen respondents interviewed come from eighteen of the twenty-six companies/divisions in the larger study. They work in one of the seven office types that exist in the office design today and were selected for the study because of their office type. The office types are: 1) cell-office, 2) shared-room office, 3) small open plan office 4) medium-sized open plan office, 5) large open plan office, 6) flex-office and 7) combi-office (see table 1). For the exact number of respondents in each office type, as well as the age and gender within the sample, see Table A1 in Appendix.

The seven office types identified in contemporary office design are defined by their *architectural features* – physical features of which the spatial layout is the most dominant aspect – and their *functional features*, i.e. the work performed in them and its organization (for details see Bodin Danielsson, 2007; Danielsson, 2005b). Both features are equally important in the definition of the office types; they go hand in hand with each other and stand in a symbiotic relationship to one another. By only including one category of the features, e.g. the architectural features, the full understanding of the office type's impact on its users cannot be achieved.

Due to the small sample size, the office types in this study are categorized into three groups:

1 *Individual and smaller shared workspace*: office types with smaller workspace for one or a few individuals (includes cell-office and shared-room office)
2 *Traditional open plan office*: open plan offices for employee groups of different sizes (includes small open plan office, medium-sized open plan office and large open plan office)
3 *Activity-based and more flexible open plan offices*: open plan offices with flexible work methods, a plan layout and an IT system that supports this (includes flex- and combi-office)

Image 1
Small open plan office at IDEAS in Malmö, Sweden.



Images 2 a and 2 b
An example of a flex-office at the Social Service Office in Kävlinge Municipality, Scania, Sweden. Image 2 a shows regular workstations in open plan layout, and image 2 b displays a back-up room for concentrated individual work in the same office.

Image 3
A traditional version of a cell-office. The example is from ElTelNetworks, Stockholm, Sweden.

2.3 Methodological approach and key concepts

The project was executed in four phases: collection of data, coding, categorization and, finally, interpretation of the data. Before data collection, an interview guide was designed to capture the employee's experience of their own workplace, with a focus on the physical environment.

The initial questions concerned respondent's health status, and organizational and working conditions;[2] the main part concerned respondent's personal experiences of their own office, e.g. satisfaction with it, its influence on interaction and cohesion at the workplace. These questions (*n*=37) were based on the work by Lynch (1960), Nylander (1998) and Söderberg (2003), which in different ways deals with the users' experience of the physical environment. When necessary, the questions were adjusted to suit the office environment. The interviews were open-ended so as to let the office experiences emerge naturally.

As the employees described their offices in their own words, a greater comprehension was reached concerning architectural design's impor-

2 The influence of background factors is hard to estimate in a qualitative study. Despite this, an attempt was made using questions based on the questionnaire employed in the larger quantitative study of office employees based on the QSPNoric/AH-questionnaire (see Danielsson, 2005b).

tance for employees. The interviews were tape-recorded and lasted one to two hours. They took place at the respondents' offices, with the exception of one that took place at the author's office.

In the second phase of this project, the collected data were coded in two steps by the author. In the first step, the content of the interviews was analysed by: a) *how* the office environment was described; and b) *what* aspects of it were described, in order to detect if specific aspects of the physical work environment were described in certain ways. It appeared that the office was often described in either an emotional or a rational way. The second step revealed that two aspects of architecture were emphasized in respondents' descriptions:

1) the *aesthetic dimensions* of the work environment, i.e. design features
2) the *functional dimensions* of the work environment, i.e. how the work is performed and organized

In the third phase, a categorization of the data on these two dimensions was done using Werner's work (2000) on users' assessments of architectural quality based on character and functionality. Character was translated into aesthetic dimension, since functionality is also a characteristic feature of an environment. The two dimensions are also often described as form and function in architecture. Architecture being based on these two dimensions and the debate concerning their individual importance as well as their interrelationship has been lively all through history (Holm, 2006).[3]

3 The functionality of architecture analysed in the field of architectural research is called Building Performance Research, whereas the aesthetics values are in focus in a field that emphasizes the relation between architecture and the fine arts (Collins, 1971).

Though this paper focuses on these two dimensions, the physical environment of an organization cannot, however, be assessed using only these two criteria. Symbolism, sometimes referred to as the third dimension of architecture, must also be incorporated; the risk is otherwise high for inaccurate and misleading interpretations (Strati, 1992). Although the importance of architectural symbolism in an organizational context like an office is fully recognized, since it was not the focus of this research it was only studied indirectly because: a) it was not described in as much detail and as directly by most respondents as the other two dimensions, and b) it can be argued whether it is or is not a fundamental component of architecture, like the two other dimensions are, or just a consequence of them.

In the fourth and final phases of analysis, an interpretation of employees' experiences was performed by the author based on former categorization of the two dimensions of architecture. This analysis focused on the office environment's importance for employee's perception of workplace and organization. Both positive and negative experiences were linked to the aesthetic and functional dimensions of architecture. The analysis also incorporated the perception of architectural quality (Rönn, 2007), determined by how well the needs regarding to the aesthetic and

functional dimensions are met in the architectural design of the office, according to respondents.

3 Results

The different sections of this report emphasize factors that seemed important for the office employee's perception of both workplace and organization. The results have been summarized in table 2 and table 3.

3.1 Thoughts about work

As the respondent thought about their work, the *physical environment* was seldom considered (see table 2). Instead most thoughts concerned *work itself,* something expressed as a matter of course, without any elaborate discussion why this was the case. This focus was especially clear in the office category of individual rooms and smaller shared work spaces.

Table 2
Employees' workplace focus, experiences and dimensions of architecture described in different office categories

Office category	**1. Individual or small shared workspace**		**2. Traditional open plan office**			**3. Activity based & more flexible open plan offices**		**Total sum (n)**
Office type	1. Cell-office	2. Shared-room	3. Small open plan office	4. Med. open plan office	5. Large open plan office	6. Flex-office	7. Combi-office	
1. Workplace focus								
Work itself	▪ ▪	▪ ▪		▪		▪ ▪[a]	▪ ▪[b]	9
Soc. environment		▪			▪ ▪ ▪[c]	▪	▪	6
Phys. environment					▪	▪	▪	3
Nothing			▪					1
2. Office experiences								
Positive		▪ ▪			▪ ▪ ▪	▪ ▪ ▪	▪ ▪	10
Neutral[d]	▪			▪	▪		▪	4
Negative	▪	▪	▪			▪	▪	5
3. Dim. of architecture								
Aesthetical	▪ ▪	▪ ▪	▪		▪ ▪ ▪	▪ ▪ ▪ ▪	▪ ▪ ▪	15
Neutral[d]		▪					▪	2
Functional				▪	▪			2

Notes:
a= two of the respondents come from the same division at an international company. The man works as a senior consultant in the IT sector and the woman works with management and outsourcing for larger public clients,
b= two of the respondents come from the same IT-department at a large international bank. Both are men. One of the respondents is middle manager and the other a regular white-collar worker,
c= two of the respondents come from the same division in the same large bank, where both of them work with approval of bank loans,
d= neutral in the sense that the issue was equally often described by the respondents in one or the other way

The employees thought about the *social environment* at work second most frequently. Discussions of the social environment were especially likely by people working in large open plan offices, followed by those in the office category of activity-based and more flexible open plan offices. These respondents described the social atmosphere and cohesion among the employees as significant characteristics of their workplace.

3.2 The office: An experience of entirety

When the physical environment was described, the focus was more on the office than the individual workstation[4] and its proximate area. The office experiences proved to be a holistic and mainly positive, with most positive employee assessments in the largest, traditional open plan offices and the activity-based and more flexible open plan offices. The aesthetic dimensions were both more emphasized and positively described than the functional dimensions, which instead were discussed in equally positive and negative terms and with no difference between the office categories (see table 3).

4 Workstation is here defined as the place where the individual carries out work and holds equipment that supports the work activities.

Independent of office category, the same vocabulary was used in the descriptions, with a consensus regarding which aspects were positive or negative in an office. Words associated with positive feelings were *freshness* and *new,* as well as *openness*, *light* and *interaction*. Although some of these characteristics partly are related to lack of privacy, which in itself is considered important factor for environmental satisfaction (e.g., Haans, Kaiser and de Kort, 2007), had these positive associations to many open plan offices. Mary – a 35-year-old sales manager working in medium-sized open plan office – experiences this:

> *The positive thing is that you get more pleasant surroundings [in an open plan office than a cell-office], since it is a more open environment. If one compares our division with other divisions [that have cell-offices], ours is more pleasant.*

Materials used in office design were used as metaphors, both negatively and positively. Wood was described as beautiful and vivid; always with positive associations, regardless of use in the interiors. While linoleum and plastic flooring, and also textile flooring, had negative associations and when they were described positively, it was because of functional properties, e.g. cleaning or acoustical aspects.

Table 3
The office and workstation – dimensions described and how they were described in different office categories

Office category	**1. Individual or small shared workspace**		**2. Traditional open plan office**			**3. Activity based & more flexible open plan offices**		**Ind.**	**Total sum**
Office type	1. Cell-office	2. Shared-room	3. Small open plan office	4. Med. open plan office	5. Large open plan office	6. Flex-office	7. Combi-office	(*n*)	(*n*)
Office – dimensions									
1. Dominance in descript.									
Aesthetical dimensions	▪ ▪	▪ ▪ ▪	▪		▪ ▪ ▪	▪ ▪ ▪	▪ ▪ ▪	15	
Neutral[a]						▪	▪	2	
Functional dimensions				▪	▪			2	19
2. Aesthetical dimensions									
Positive		▪ ▪		▪	▪ ▪ ▪ ▪	▪ ▪ ▪	▪ ▪ ▪	13	
Neutral[a]	▪							1	
Negative	▪	▪	▪			▪	▪	5	19
3. Functional dimensions									
Positive		▪		▪	▪ ▪	▪ ▪	▪ ▪	8	
Neutral[a]	▪							1	
Negative	▪		▪		▪ ▪	▪ ▪	▪ ▪	10	19
Workstation – dimensions									
1. Dominance in descript.									
Aesthetical dimensions	▪ ▪	▪						3	
Neutral[a]						▪		1	
Functional dimensions		▪ ▪	▪	▪	▪ ▪ ▪ ▪	▪ ▪ ▪	▪ ▪ ▪ ▪	15	19
2. Aesthetical dimensions									
Positive	▪	▪ ▪ ▪			▪ ▪ ▪	▪ ▪		9	
Neutral[a]							▪	1	
Not described[b]					▪	▪	▪	3	
Negative									
Functional dimensions									
Positive	▪ ▪	▪ ▪			▪ ▪ ▪	▪ ▪	▪ ▪	11	
Neutral[a]						▪	▪ ▪	3	
Negative		▪	▪	▪	▪	▪		5	19

Notes:
a= neutral in the sense that the issue was equally often described by the respondents in one or the other way,
b= the dimension was not described in the interviews by respondents

3.2.1 The aesthetic and functional dimensions of the office

Most respondents described their offices positively, with assessments highly coloured by perceptions of the aesthetic dimensions (see table 3). Functional dimensions perceived positively concerned aspects such as comfortable furniture or a great variety of furniture in the common areas. Certain negative experiences related to functionality were expected in specific office categories, e.g. noise disturbance in open plan offices, and problems with smell from kitchen areas in neighbouring open workspaces.

While positive experiences were more often recounted, the negative ones were more precise and thoroughly described. They also dealt mainly with functional dimensions and were linked to a specific office experience like non-functional lunch or coffee areas that were either too enclosed, dark or too messy. These elements were important, according to one respondent, who considered these areas essential for the functionality of an office. Negative experiences also concerned impractical or non-supportive design features, e.g. lack of storage space and back-up rooms for telephone calls and meetings, or non-working elevators. In offices with poor indoor climate, indoor air quality was a major source of frustration.

Noise is a well-documented problem in shared workspaces; in this study it was mainly mentioned by people working in the shared-room office (2–3 pers./room) and the traditional open plan offices. Respondents working in large open plan offices had widely varying opinions about whether noise was a problem or not – with no problems described in one large open plan office, and significant problems in the two others. Despite the fact that employees in the activity-based and more flexible open plan offices share workspaces, less noise disturbance was described here. This is Ann's – a 41-year-old copywriter working in combi-office – experience:

> *There are more advantages sitting together in the same workspace [than in an individual office]. You know what people are doing, which ones are going away for a meeting and so on, without having gotten direct information concerning the matter. You have more control.*

3.2.2 The benefits of design features

When offices had unique design features, these were highly appreciated and emphasized as important for employee's environmental satisfaction. The design features most frequently described concerned the entrance or the circulation system of the office, e.g. corridors and staircases. Both the entrance and the circulation system of an office are architectural elements highly associated with the sense-making and understanding of a physical building.

A quality highly appreciated was, for example, a staffed reception at the office; it was felt to contribute a welcoming and personal touch to the workplace. The receptionist was described as "a spider in the net", knowing everything that goes on in the office. Those who previously have had a staffed reception, but did not anymore, missed it. Yet another quality considered important by all respondents, regardless of office category, was a circulation system that allows for extensive circulation and movement around the office. Absence of this was considered a shortcoming in the office design by respondents because of their need for variation and stimulation; office work by nature is sedentary. For John, a 58-year-old auditor working in a cell-office, this was important:

> *I consciously choose to walk along different corridors to see which people are in the office, and to ask how they are doing, and so on. […] I never walk to the only corridor in the office where you cannot circulate [John talks about the only corridor that leads to a dead end in the office]. I think it is important to be able to have a short walk around the office once in a while.*

Sometimes design features of a non-architectural nature, for example, artefacts, art work and plants, were considered important. Art work reinforced employees' feelings of comfort and pleasantness, and also their pride in the workplace. When respondents composed a wish list for their own office, art work was often brought up. Paintings at the office were highly appreciated, and the existing ones considered being too few in numbers, too dull and colourless. With regard to live plants in the office the situation was somewhat different – those who had plants considered them important, while others did not mention plants. Regarding unique design features, the situation was similar. Only employees who had rooftop terraces, meeting rooms with special design features etc. in their offices considered these important for the perception of the workplace.

Non-appreciated features were described as boring, colourless, or cheap. Non-appreciated items were mainly colours and materials used in the architectural design. Besides being disliked, they had negative symbolic value for the workplace and the organization. Michael, a 29-year-old IT systems developer working in a shared-room office, exemplifies this opinion:

> *I am a person who has played music and danced in my spare time. The environment here is a bit uptight; it does not encourage creativity. It does not look like this in my home exactly. If I could choose, there would be more colours on the walls. […] Now it is only white, white and white again everywhere. It will never go out of fashion; we will not have to repaint. It is typical for an engineering firm to think like this.*

Michael's sentiments were shared by other respondents. Despite this, many did not consider it possible to add more colours to the office, since they evoke strong opinions and thus cause conflicts.

Some architectural elements per se had negative associations. For example, corridors were perceived negatively by all respondents, even by those who preferred cell-offices, which inevitably lead to a plan layout with a communication system of corridors. This is how Daniel, a 37-year-old art director working in a small traditional open plan office, describes this situation:

> *Those kinds of offices [refers to cell-offices] lead unavoidably to those boring corridor solutions – I don't want to work in that kind of environment.*

Not only were corridors boring, they were also associated with non-creative environments, which Michael's (an IT system developer working in a shared-room office) comments exemplify:

> *It [refers to his office] is a typical engineering office. They sit here and decide over different matters. The fact that we have that corridor-feeling is a typical engineering thing, to put people into different boxes so to say.*

The quote above demonstrates how the office architecture for the employee has become a symbol of an organizational culture that views personnel as production units that function best when methodically placed in small rooms – here referred to as boxes – along a corridor.

3.3 The workstation: An experience of individual factors

Overall, the respondents were positive about their individual workstations, although these were mentioned less often than the offices. Discussing workstations, employee focus was on functional dimensions (see table 3). When aesthetic dimensions were mentioned it was generally in less positive terms; when perceived positively workstations were described as pleasant and light in their design.

Functional dimensions with positive associations for workstations were: the ability to work undisturbed; a work supportive workstation design; a good overview of the office from the workstation, good access to storage space, and having a height adjustable desk. The latter, however, was considered only as important by those who had one. One respondent considered the height adjustable desks at her office to be a status symbol, proving her office had a higher status than other offices within the same organization.

It was noticeable that what defined good workstation design was different in individual and smaller shared rooms than in other office categories. In the former, factors such as ability to concentrate and having small meetings in the room were appreciated. While it in offices where working space and facilities were shared positive experiences were instead related to social factors, such as being part of a larger context and knowing what is happening in the office.

Also, unique design features of workstations were regarded differently in the various offices categories. An opening window next to the workstation was, for example, greatly appreciated by respondents in open plan offices, but not mentioned by employees in individual or smaller, shared workspaces where the likelihood of having an opening windows is higher. Christopher, a 49-year old bank employee working in a large open plan office, considered this important:

> *Some days the air is very stuffy, and then I can open the window next to me. I chose the location of my workstation because of the window. There is a little garden outside where sometimes birds come. I can regulate the fresh air depending on what I need. […] I love birds; when a bird pays a visit it is extra enjoyable.*

Daylight-related problems, either lack of daylight or too much causing glare, were described at workstations in all office categories, while problems with both acoustics (noise) and visual privacy were only described by employees sharing workspace and facilities. In these work areas, problems with lack of good amenities or unpractical workstation equipment were also described, whereas storage problems at workstations were only described in the traditional open plan offices. This is how George, a 48-year-old IT systems developer working in a large open plan office, describes his workstation:

> *The feelings I have towards my workstation is that it is cramped – there is a small desk, no extra desk space or bookshelves, and so on.*

The respondents happy with their storage space in open offices all worked in the activity-based and more flexible open plan offices. In this office category, some respondents even claimed that they would not mind having less storage than they do today. Characteristics of this group were their positive attitude towards open offices and new IT solutions, and that they often described themselves as "non-collectors" who preferred to store material digitally. Some of these positive respondents had participated in the process of designing their office.

All respondents considered the ability to personalize the workstation important, although their possibilities for doing so varied. This importance was due to the long office hours and the individual's need to

express their own personality in their workplace. Despite regarded personalization as important at a general, humanistic level, very few respondents considered it important at a personal level – only employees in cell-offices considered it important for them personally. Their detailed descriptions of the various artefacts in their rooms, for example small fruit baskets, special plants or choice of pictures on the walls, revealed this. George, a 48-year-old IT systems developer, who previously worked in a cell-office, exemplifies this:

> *There are very few personal initiatives at the office – there are no children's drawings, no pictures at the workstation. When I used to work in a cell-office I had much more of those things – how large the private zone is sort of connected with which office type you work in.*

3.4 Different perceptions in different office categories

Different design elements were emphasized during the interviews by employees working in the various office categories. Those in individual rooms emphasized the workstation and the room; characteristics identified as positive were ability to have small meetings in their own office and to concentrate on work without disturbance. The latter factor was emphasized by Susan, a 30-year-old ventilation engineer working in a cell-office:

> *I enjoy it. It is free; you can close your door when you don't want to be disturbed. I also work very well when I have control over myself and at the same time can keep control over what others are doing. We are sitting in a corridor after all.*

Respondents working in cell-offices stated early in the interviews that they were happy with their offices. Criticism came instead later on and was expressed indirectly; it often dealt with issues related to the choice of office type and not architectural quality or design, despite the initial positive attitudes towards cell-offices. Criticism related to issues such as lack of overview of the office from the own workstation, and inability to see if the supervisor or certain colleagues were in the office or not.

Respondents working in offices where workspace and facilities were shared talked more than those in individual and small, shared workspaces about the office as an entirety; people in the individual and small, shared workspaces focused their comments on the individual workstation. Among people working in offices where workspace and facilities were shared, the whole office was incorporated in both the negative and positive descriptions, which were both vivid and rich in nuances. Criticism of the office was also expressed first, while positive experiences were discussed later in the interviews. Feelings about sharing workspace and facilities were often ambivalent. Problems concerned, for example, disturbance by people who came by, spontaneous meetings in the open

workspace and difficulties having private conversations. Recognized benefits concerned, for example, the ability to quickly get information and easily see who was in the office. Pat, a 41-year-old insurance administrator in a shared-room office, had mainly positive experiences:

> *I like it here. There is a great advantage that one naturally gets to know about others work; I like my colleagues. The problem with disturbances is less important than these advantages.*

Respondents' own office, independent of office category, clearly evoked a lot of feelings and thoughts. Most respondents were, despite criticisms of their own office, overall positive towards their office category. The negative descriptions stood out due to their dramatic and colourful descriptions, as George's (a 48-year-old IT system developer) description of his large open plan office exemplifies:

> *It [the open plan office] is crap! It was already crap in the seventies and it still is. It is disturbing – I get disturbed by others. It is hard to keep up the necessary focus and concentration.*

Among the most negative respondents, criticism of their own office was in fact often related to management or organizational culture; mistakes in the office design were viewed by these respondents as sign of lack of competence and commitment.

The office. Employees in the larger traditional open offices had a more holistic experience of their workplace, but were also more positive about aesthetic dimensions than the functional ones, regardless of their opinions about the architectural quality of the own office. Most critical employees worked in individual and small, shared workspaces, or small open plan offices. Criticism concerned mainly functional dimension of the office.

In the flex-office, where employees have no personal workstations, some of the most positive but also most negative respondents were found. Negative ones criticized the functionality of their offices, but also that no one cared about the office environments. When respondents worked in the consultancy business, the lack of care was attributed to the business, whose total focus on the client lead to a neglect of employees' work situation. Respondents that were positive about the flex-office considered it supportive since it offers employees a variety of work environment. The reasons for choosing this office type – its flexibility, the rapid exchange of information, and lower cost for office space – was clear to all employees and not criticized.

The individual workstation. Experiences of workstations were overall positive and related comments concerned mainly functional dimen-

sions. The negative experiences were found in the traditional open plan offices, with the exception of one of the large open offices which was consistently evaluated positively by respondents. Experiences were both more varied and colourful in the activity-based and more flexible open plan offices. Here some of the fiercest criticisms were voiced, but also the most positive comments made about the functionality of the workstations. The aesthetics dimensions were only discussed by employees in cell-offices and by one person in shared-room office. In shared-room offices respondents' opinions of the own office varied greatly.

3.5 Positive and negative approaches

Despite complaints, a majority of the respondents had mainly positive office experiences. The most positive experiences of their own office were described by people working in the activity-based and more flexible open plan offices, and in the one specific large open plan office, which stood out by its entirely positive evaluation. The analysis showed that respondents who had participated in the process of designing their offices had a more positive view of their workplaces. They had also a greater tolerance for design decisions they did not support as well as a greater understanding of deficiencies in the architectural design of their office. Respondents' past experiences also affected their perception of the current office. This is how Ann, a 41-year-old copywriter working in a combi-office, experienced moving into a new type of office:

> *In the beginning I thought it was hard to work in an open plan office. I was easily disturbed and felt like my colleagues were observing if I did my work or not, and listened to my telephone conversations. […] Now this is no problem at all. There are different rooms you can use when you don't want to be disturbed or when you need to call your doctor. You can also go out on the roof terrace if you like.*

The majority of respondents who had previously worked in an individual room, but no longer did so, expressed no desire to change back. For example, the activity-based and more flexible open office respondents saw benefits of their new offices, such as increased collaboration and rapid exchange of information between colleagues. Comments related to the flex-office, one office type within this office category, mainly were associated with positive experiences; however, there were also certain negative ones such as statements related to messy workstations or difficulties finding office supplies in the office.

Most negative employees worked in shared-room offices with 2–3 people and in traditional open plan offices, with the exception of the one large open plan office formerly described. Despite this, only two respondents in the traditional open plan offices said they would rather work in an individual room. One group of negative respondents stood out due to their very negative feelings, but also their symbolic interpretations of

their offices. Daniel, a 37-year-old art director working in a small open plan office, exemplifies this view:

> *There is not any identity at our office. […] There is nothing in the interior design that supports us – NOTHING AT ALL. I believe that you do yourself a disservice by not putting any effort into your office environment. It affects the whole working situation, the cohesion among colleagues and identity of the company.*

Among the critical respondents, some had never applied for job at their present employer, but were working there due to company purchase or merger. For this group, their offices were often symbols of the new employer. One respondent considered, for example, the office's rigorous security system that forced her to use the PIN four times before reaching the workstation, to be something typical for the organizational culture of the new employer.

3.6 Major findings

In a summary of the study, some distinct findings stand out:

1) *The physical environment:* When thinking about work, the respondents thought rarely of the physical environment. It appeared to be taken for granted.
2) *Workplace focus:* In both the individual or smaller workspaces and the activity-based and more flexible open plan office, the primary focus was on work itself, while in the large open plan office the focus was on the social environment.
3) *Positive experiences and negative comments:* A majority were positive towards their own offices. Positive experiences dealt mainly with aesthetic dimensions of architecture, while the negatives dealt with the functional dimensions, described as concerning specific situations.
4) *Depth in information:* Respondents who shared workspace and facilities were more detailed in their descriptions; their feelings towards the office were also more nuanced than those of people working in the individual rooms.
5) *Mediating effects of high architectural quality and participation:* High architectural quality and participation in decision-making appeared to have a positive influence on environmental satisfaction and tolerance of shortcomings in the office environment.
6) *Benefits of uniqueness:* Design features perceived as unique in an office category were highly appreciated and sometimes perceived as status symbols. They were not mentioned when they were taken for granted.
7) *Personalization:* Workstation personalization was considered important for environmental satisfaction at a general but not individual level; its value might thus be symbolic.

8) *Office and workstation:* Employees paid more attention to the design of the office than that of the individual workstations; this was especially clear comments regarding large open plan offices and activity-based and more flexible open plan offices.
9) *Aesthetics versus function:* The office was described mainly in aesthetic dimensions, the workstation in functional dimensions. When aesthetic dimensions were appreciated, so often were the functional dimensions, but not vice versa.
10) *Symbolism in architecture:* Critical respondents often perceived the architecture of their offices as a negative symbol of management and organizational culture.

4 Discussion

The architecture was an *invisible* background for the daily activities at the office and as such taken for granted and not much thought about. It could be that in a work context it is subordinated, or that architectural issues are subconsciously translated into more familiar or work related issues. Both hypotheses are in line with the *Two-Factor Theories* of Herzberg, Mausner and Bloch Snyderman (2003) on the importance of physical environment for work motivation, which claims that the physical environment has a mediating effect on employees' motivation, ascribed to its symbolic value. Consequently, complaints that go unheard, for example, about the physical environment, are interpreted by employees as management's indifferent to their situation.

The focus on work itself in the individual or less shared workspaces may depend on less stimuli from colleagues and surrounding environment, while the greater focus on social environment for the same reason is higher in the large traditional open plan offices. This hypothesis finds support in sociologist Asplund's (1988) theory of social responsiveness and the natural reaction for humans to be social when the setting enables it.

Results showed that of the aesthetic and functional dimensions of architecture, the former was emphasized more by employees, something especially clear in larger share workspaces. It could be that in large spaces, aesthetic dimensions of architecture, such as the volume and shape of space, but also the lighting, are more prominent. This combined with the sharing of workspace with colleagues may also explain the more holistic workplace experience found in these offices.

Why employees who appreciated the aesthetic dimensions also appreciated the functional dimensions more and had fewer problems with the *negative* features of their office types, for example, noise disturbances in open plan layout, is not clear. It is possible that architectural quality mediates the effects of office types, a hypothesis supported by research

that has found architectural detailed environments and visual décor to have positive effects on handling psychological stress (Heerwagen and Orians, 1986) and crowding (Wochel and Teddlie, 1976). In the present study, the architectural quality differed between office types in the same office category in terms of detailing, choice of material and plan layout. These results find support in research that has found architectural quality not to be related to office type (2005a).

The greater focus on the workstation as well as functional dimension of architecture in individual and small shared workspaces could be due to a clear focus in their design on individual work. Why functional dimensions, in comparison to aesthetic ones, were described both less positively and frequently could have several explanations. Maybe it is easier to express negative opinions about functionality because it is less subjective and more *direct* in terms of characteristics.

Office category per se possibly influences employees' perception of workplace, according to this study's results, although reasons why perceptions were more positive in the larger traditional open plan office and the activity-based and more flexible open plan offices are not obvious. Larger shared workspaces could enhance workers' sense of belonging and social cohesion, while the more flexible work methods in the latter office category instead support independent work and interaction, something especially associated with the flex-office, an office type in this office category that enables personal control through the free choice of work location. Personal control has been found to have positive effects on employees' satisfaction and well-being (e.g., Lee and Brand, 2005; Veitch and Gifford, 1996), but also commitment to management (e.g., Nyhan, 1999).

Having office qualities unique to their own office category had positive implications such as appreciation and increased sense of status. This may be because artefacts perceived as status symbols increase job satisfaction among employees (Konar, et al., 1982; Sundstrom, 1986), possibly due to feelings of importance and recognition from management. Status is recognized as important in an organizational setting due to its influence on employees' view of their organization, absenteeism and turnover (e.g., Becker, 1981; Becker and Steele, 1995; Davis, 1984; Sundstrom, Burt and Kamp, 1980). Although not in focus in this study, the symbolic dimension is briefly discussed here since some of the strongest and most negative opinions about the office were expressed in symbolic terms. Respondents with a symbolic perspective on the office had their interest in architecture in common, and interpreted the architectural qualities expressed through material, colour and shape, as symbols of the organizational culture.

Employees' participation in the process of designing their office appeared to have a positive effect on employees' perception of the workplace and organization. Participating in decision-making may contribute to a sense of personal control over the workspace (Sundstrom, 1986, p. 228), and a commitment to the management (e.g., Nyhan, 1999). Combined, these factors may explain the better office experiences and greater tolerance for shortcomings in the office design found among the employees that had participated in the process of designing their offices. The greater tolerance may also reflect a better understanding of the fact that the design process requires compromises, which leads to less frustration with shortcomings.

4.1 Limitations

Some limitations and methodological considerations related to the study need to be mentioned. To begin with, due to the qualitative approach and the sample size, no generalized conclusions can be drawn. This limitation is however minor, as the aim of the study was not to draw any general conclusions.

More serious is the somewhat uneven distribution of background factors – such as age, gender and job rank among the respondents – in the different office types because some respondents dropped out at late stage due to lack of time. In most office types, however, several respondents were interviewed and in some offices more than one respondent, which enabled an analysis of different respondents' experience of the same office.

Due to the small sample size, in some office types the offices were divided into three office categories instead of by individual office types, and analysed in accordance with this categorization. Thus, these explorative results should foremost be viewed as a basis for further detailed and larger studies in this greatly unexplored area where architecture meets organizational theory.

5 Conclusions

The study shows that the aesthetic dimensions of architecture evoke more positive feelings than the functional dimensions and colour the employee's workplace experience, which indicates a dominant role of the aesthetic dimensions in the perception of the workplace as a whole. If this holds true, the general opinion that an aesthetic work environment is unnecessary and a luxury, needs to be reconsidered. In this regard, the importance of the aesthetic dimension of architecture also aligns with the view of architecture as a tool to strengthen the internal branding among organizational members.

Additionally, the study suggests that positive office experiences could have a mediating effect on negative office experiences. To conclude, this study combined with other studies of the positive psychological effects of aesthetic experiences, indicates not only that it is time to upgrade the aesthetic dimension of architecture, but also to investigate it from other perspectives than the traditional artistic perspective.

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Appendix

Table A1 in appendix: Sociodemographic data – distribution of background factors within sample

Office type	Category of office	Number of offices (*n*)	People in office type (*n*)	Gender		Age (yrs)	
				Female	Male	Female	Male
Cell-office (1 pers./room)	1. Individual or smaller shared workspace	2	2	1	1	30	58
Shared-room office (2–3 pers./room)		3	3	1	2	41 –	31 29
Small open plan office (4–9 pers./room)	2. Traditional open plan office	1	1	–	1	–	37
Med. open plan office (10–24 pers./room)		1	1	1	–	34	–
Large open plan office (>24 pers./room)		3	4[a]	2[a]	2[a]	35 48	53 49
Flex-office	3. Activity based & more flexible open plan offices	3	4[b]	2[b]	2[b]	42 45	50 49
Combi-office		3	4[c]	2	2[c]	41 36	34 43
Total within sample (*n*)		16	19	9	10		

Notes:

a= two of the respondents come from the same division in the same large bank where both of them work with approval of bank loans,

b= two of the respondents come from the same division at an international company. The man works as a senior consultant in the IT sector and the woman works with management and outsourcing for larger public clients,

c= two of the respondents come from the same IT-department at a large international bank. Both are men. One of the respondents is middle manager and the other a regular white-collar worker.