SPACE ODDITY: SPATIAL DESIGN STRATEGIES AND WORK PLACE DESIGN

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Spatial considerations are critical to the area of workplace design. However, what are the different spatial strategies at play in the negotiation and design of space in new workplaces? This question is explored via an examination of one company's workplace design project. As it moved to a new workplace this company chose to employ Activity Based Working (ABW) in the design. Through semi-structured interviews with the managers and designers, the design and planning practices for this project are outlined. The focus is on the early stage design strategies that set the spatial configuration of the workplace. This is in contrast to research orientations that measure workplace design outcomes in quantitative terms. For example, measuring health or productivity outcomes after the workplace is completed. In the design process a number of spatial organising principles are identified and named as: centering, mobilising, targeting and theming. It will be found that the spatial strategies employed in this workplace design are governed by concepts of corporate strategy, leadership and power. The study concludes by suggesting that workplace research must have both a spatial and an ethnographic dimension to be effective. Moreover, the production of space in this project exemplifies the transformation of work into a spatial system that facilitates industrialised knowledge work.

Keywords: work places, activity-based working, design, design strategies, space

INTRODUCTION

Workplace design is critical to the successful delivery of workplaces. The design of workplaces as it is currently practised by architects, interior designers, project managers, as well as organisational experts, is linked to a number of complex factors. As large organisations have moved to new digital platforms, they have sought to become more efficient whilst simultaneously meeting both staff and customer needs. The digital transformation of work in large organisations and has seen a shift to Activity Based Working (ABW). ABW is based on the idea that in workplaces, employees do not need to be positioned in the same place over time. Instead, employees are given optimal spaces that better suit the employees' immediate activity or task. ABW is seen as a response to a greater focus on technology, knowledge management and new organisational forms in workplaces.

However, as this transformation to ABW has taken place, numerous methods have emerged about the best ways to measure productivity and happiness in workspaces, such as the Leesman index (Leesman, 2018). As Engelen *et al.,* (2018) found ABW literature clusters around post-occupancy studies and health outcomes (Engelen *et al.,*

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2018). They note in their survey of ABW research, the emphasis is often on the potential health benefits of ABW. Indeed, much of the work in the area is focused on notions of well-being and issues concerning the production of space are not factored into this.

In this study, an evaluative critique is developed regarding the production of space in one large workplace design. This project was a new 4,500 square metre workplace design for an infrastructure provider whose staff workforce had outgrown its existing premises. Specifically, the study examines the interactions between the workplace client, particularly its leader, and the workplace design architects. This focus elucidates the spatial design strategies determined early on in the design process. Three interlinked research questions were posed: Firstly, what are the design practices evident in the design and negotiation of new workspaces? Secondly, how are these design practices shaped by organisational factors? Thirdly how do these practices and factors configure the spaces in which people work? To answer these questions, it is important to focus on the early client-architect activities related to the strategic briefing and conceptual design, prior to the project's construction and delivery. An improved focus on these strategic design processes is critical in understanding how workplace design shapes the spaces within a firm.

Definitions of Space as a Concept

Henri Lefebvre's rejection of Cartesian notions of absolute and ideal space has been the foundation and starting point of various organisational studies into space. Lefebvre argued that simply producing the objects that occupy space is different from the production of space (Lefebvre, 1991). In his book, the *Production of Space* Lefebvre gives an example of the production of space with reference to the "the current transformation of the perimeter of the Mediterranean into a leisure-oriented space for industrialised Europe" (Lefebvre, 1991, 58). For Lefebvre space was a material and social practice, and he argued that the political economy and production of space should be critiqued (Fuchs, 2018, para 3.2). For Lefebvre, a particular space is produced as a "combined and reciprocal interplay of material and social interaction" (Bosch-Sijtsema and Tjell, 2017, 1313).

While Lefebvre's approach to space underpins much research across different areas of knowledge, space is still seen as being an imprecise and vague concept (Weinfurtner and Seidl, 2019). For example, Chan, Räisänen and Lauche (2019) succinctly note space is a "contingent and contested" concept and that the "definition of space is never always stable." As a concept, space has a specific narrative and history in architecture in comparison to organisation studies or Construction Management. Certainly, in architecture—the discipline most closely related to workplace design—many of the narratives accounting for the production of space are shaped by aesthetic norms. In architectural theory, space is seen as a concept linked to notions of the sublime and aesthetic experience (Nesbitt, 2010). For modernist architects, space was stripped of decoration and seen as an instrument of social progress. For postmodern architects, space was centred on concepts of cultural meaning engendered by the use of historical elements (Rowe and Koetter, 1978).

In Construction Management studies, space appears to oscillate between two different schools of research. Firstly, there are those in Construction Management who see space as a "social phenomena" related to "collaboration and knowledge sharing" (Bosch-Sijtsema and Tjell, 2017). Then there are those researchers who see space as

being related to ideas of increased production and efficiency (Eastman and Sacks, 2008).

Workplaces Spaces in Organisational Studies

Marrewijk and Yanow (2010) have highlighted what they identify as a spatial turn in organisation studies and the focus on different kinds of spatial settings. More recently, as a result of this emphasis on space Weinfurtner and Seidl (2019) found that the literature on space in organisation studies clustered around several primary concepts. These concepts were identified as being spatial distribution, the positioning of space, spatial isolation, spatial differentiation, and the intersection of different spaces. This focus on space exists alongside those organisational researchers who argue that work and workers, rather than space, need to be the central focus in organisation studies (Delbridge and Sallaz, 2015). Delbridge and Sallaz, (2015) proclaim that workplaces are "work-worlds" and that these can be seen "as physical worlds, as worlds of hierarchy, as spaces of innovation, and as fields of actors" (1449). Other researchers have also questioned the emphasis on space in organisational studies. For example, Costas (2013) decries the emphasis on space in organisation studies and argues for the need to consider "movement and mobilities" (1467). Consequently, she identifies a kinetic elite of workers constantly on the move.

In organisational studies, different types of workplaces and the elements within them have also been examined. Betts (2006) studied corporate boardrooms, arguing that both aesthetic knowledge and power are a central consideration in the spatial studies of workplaces. Interestingly, Hirst and Humphreys (2013) conceptualises space in work settings in terms of edgelands. In this approach, she examines the "peripheral sites" and functional services, in this case the paper storage units that service office buildings. She concludes that "modernisation" of existing workplaces often involves promoting a pure image of an organisation that expels or hides seemingly outdated or unsightly functions. The above studies also highlight the aesthetic elements within workplaces. For example, Dale and Burrell (2010) identify an evident spatial rhetorics in a study of a financial services building They write: "This 'aestheticisation' of the workplace, they write, 'is combined, almost ironically, with the disappearance of the workplace itself as a workplace... displaced by quasi-constructions of town- or village-scapes ... and break-out rooms ... using colours, lighting and furnishings which do not evoke a place of labour and employment" (Dale and Burrell, 2010. Cited in van Marrewijk and Yanow, 2010, 5) Van Marrewijk (2010) argues aesthetics has to be "understood in the context of power, as managers and architects try to influence the aesthetic experience of organisational employees" (Van Marrewijk, 2010).

Workplace Spaces in Design and Construction Studies

In Construction Management researchers have focused on the workplaces that are an integral part of the design and construction process. In these cases, the focus is on normative notions of productivity (Eastman and Sacks, 2008). There have also been ethnographic studies that have looked at particular construction workplaces, including construction sites, off-site construction sites and project offices as well as architects' offices (Pink *et al.,* 2013). Other Construction Management researchers have used ethnographic methods to examine power in workplaces, but spaces or spatial elements are not often highlighted in these studies. Sage and Dainty (2011) study power in an architect's office point out the importance of considering practices that are non-verbal (Sage and Dainty 2011). Other CM researchers have used space as a concept to open

up new perspectives on organisational forms. Bosch-Sijtsema and Tjell (2017) in a study of three construction design teams, argue that considering space as a "social phenomena" is necessary if temporary project organisations are to be understood. Space Syntax theory has also been extensively applied across research fields. Space Syntax theory emerged in the work of Hillier who set out what he claims to be "a new theory of space as an aspect of social life" (Hillier, 1984). Space Syntax, despite the connotation of its name, is overtly planimetric and does not account for three-dimensional space. This bias is evident in a survey of space syntax research in health care. In this survey, Saif and Luo (2012) argue that space syntax is a theory that "allows the quantification of layouts, and unit spaces within a layout, so that the environment itself can produce independent variables in quantitative research" (98).

In the field of architecture DEGW founded in 1971 was a pioneer in the area of modern workplace design. DEGW was a research-based design company that developed expertise in strategic briefing and workplace planning. Central to the DEGW approach was the idea that "office buildings, are essentially based on layers of differing longevity" and that buildings were not fixed or static objects. DEGW theory and practice encompassed "the way organisations use space and the nature of the office and workspace they might need" (Smith 2017). This involved rejecting the idea of fixed and specialised typologies as a way to understand workplaces. DEGW proposed that workplaces, as well as buildings, could be seen as "nested systems of different durability" and not "fixed spaces and fabric of solid and void" (Smith 2017). Central to the DEGW ethic was the idea of architecture acting as a "a spatial order containing and expressing the systemic order of the institution it houses." Hence the DEGW approach was to privilege a "systemic rather than spatial conception" of buildings. (Duffy 1997, 2008). It is important to note that the architectural firm at the centre of this study included a number of the architects who had previously worked for DEGW before it was absorbed into AECOM.

Research Context Approach and Methods

Project Selection: In the overall research project four workplace design projects were initially documented through interviews and data gathering. These were the infrastructure provider, a public insurance company, a co-workspace provider and a digital services platform. All of these companies were undergoing different levels of organisational change and digital transformation. After collecting data through interviews in each of these projects it was decided to focus on the infrastructure provider. This was for several reasons. Firstly, the infrastructure provider had a legacy of working in an industry (road construction) with a seemingly low technology base. However, the company was seeking to migrate to new customer-centric systems as its toll road infrastructure projects were being completed. Secondly, the company had appointed a new leader who was resetting the company's strategy. Thirdly, the company needed to move to the new office premises as it had outgrown its existing staff premises entirely. Of the four firms, it was the firm that appeared to have undergone the most organisational change.

Empirical Context: The interactions between the lead architect, from the project sponsor, and the client-side project leader were, targeted as the empirical context. This was in order to ascertain the design practices being employed early in the project.

This is because at an early stage of design—before the formal documentation and delivery of a workplace—organisational strategies, goals and directions are more easily apprehended. At the early stage of a workplace projects design practices often focus on spatial issues: briefing, strategic configuration, spatial sense-making, master planning and zoning and placement and positioning of functional spaces. At this stage, there will often be design strategies related to setting the aesthetic tone of the workplace.

Methodology: The project sponsors, the architects, had a preconceived idea regarding concepts of design value. The infrastructure provider desired to develop a positive corporate narrative around the design outcomes of the project. In order to contest these preconceptions, grounded theory enabled an approach that did not prefigure a hypothesis or particular models. Given the focus on spatial design strategies, it was thought that ''the potential strength of grounded theory lies in its analytic power to theorise how meanings, actions, and social structures are constructed" (Chama, 2006: 151). In part, Charmaz (2006) was followed and thus far grounded theory methodology adopted here has two components. Firstly, to gather rich data, through a range of different methods were employed at this stage including, interviews, and the gathering of material information about the project. Secondly, to code the data with theoretical meaning, in this case, this was done as discussed below in order to highlight the spatial attributes evident in the data.

Research Methods: Project semi-structured interviews were conducted with project managers and architects with line management and design responsibilities. This dyad was not an effort to set up an adversarial outlook between clients and workplace design architects. Instead it was an effort to understand the early stages of the workplace design.

THE WORKPLACE DESIGN PROCESS

Completed in 2014 for an infrastructure company with revenues of $3.2 Billion the project was 4500 square metres in area which occupied two floors of a new office building. The office building was part of one of the biggest commercial office developments in Australia covering an entire block and being 200,000 square metres in size. For the offices of the infrastructure company, twenty per cent of the new area was to be allocated to ABW. Despite being a hybrid office, the project was nonetheless described as an "agile" working environment, and this also involved a number of interventions in the fabric of the new office building. The infrastructure company's move to the new office premises was managed through a change management process, and an internal change manager was a part of the overall team from the beginning of the project. The need for change management was not simply about moving to a larger office. It was also because at the time the organisation had shifted from being a developer of new infrastructure to be a developer and an operator of toll roads. However, some of these service functions were increasingly being outsourced. In the words of the client-side interview participant, the organisation was "driven by circumstance, and we did not think we were going to be successful with bids" which are then won resulting in "unprecedented growth" growth for the company.

Pre-Design Activities

The architects worked directly with the company's leader in order to prepare a strategic design brief. Central to the architect's approach was the idea of

understanding the organisation's core business from first principles. They stated there were not going to impose an ABW "off-the-shelf" plan. After the project the client-side participant perceived the architect as:

"very much was them understanding our business and understanding where [the leader] wanted to take the organisation and with that coming up with those high-level principles about what we were about how we wanted to work. And then from there, that was articulated, and then they did the design effectively to try and meet the high-level brief of what those objectives were."

The architects initially studied how the firm was utilising space in its existing accommodation. This study included conducting occupancy studies measuring and monitoring the company's existing ways of working.

To then begin the process of working through the brief the architects researched several different topics. They classified these topics into three categories. The first category was the "Company" itself which the architects saw as having a high profile, but, compared to other listed companies, was relatively small in terms of staff numbers with only 450 staff. The second category related to the "Existing workplace" and the existing workplace was described as "graphic," "bold," "internalised" and a "literal representation" of the company. The third category was called "Agile working" and the words used to describe this were "connected," "collaborative," "innovative" and "diverse." This research appeared to reflect back to the company, what the company may already have obviously known. In any case, as a result of this research the strategic brief that was formulated had three objectives. Firstly, need to reflect the brand of the organisation. Secondly, make a clear shift away from the aesthetics of the existing office. Thirdly, develop a new way of working and shifting towards a "partially agile working environment."

From the beginning of the above process the new leader drove the process with strategic leadership that posited that the workplace design was integral to the company's strategic management. However, this leadership also extended to direct involvement in the design. As was noted in the interviews the leader was the key decision maker, and a key goal in the words of the architect participant was to "build trust both ways." For the leader, one of the key strategic purposes of the project was to develop a new workplace that would help to attract and retain staff. Moreover, the leader wanted to engender a high degree of collaboration in the organisation's project bid teams. In the words of the lead architect.

"We tried to understand exactly how they work and the kind of work environment. They would prefer to work in there. And we designed it accordingly. So, there were high tables, collaboration tables, that they would stand around. Our client [the leader] was 6 foot 6, so he wanted to stand, and his table had to be really tall."

Spatial Configuration

Through the direct relationship between the architect and the leader, the design process proceeded over a very short period. At this stage there was minimal stakeholder consultation other than to make reference and clarify issues regarding the functional brief. Working closely with the leader the architects developed the spatial configuration of the new workplace. This was done by developing design studies that explored the different options for how front-of-house, reception, the staff hub, workspaces, and services spaces would be distributed over two floors. Often for workplace designers, the limited nature of large office floor plates makes it difficult to

design a workplace with spaces of different height. The architects were able to do this through three dimensional and spatial diagrams which they described as investigating "a range of site studies looking at: zoning, blocking, stacking, circulation, views and daylight." In this fashion, working back and forth between the design team (who generated the options) and the leader, different options were explored for the layout of the two floors. All the options were positioned around the pre-existing central atrium space. In addition, a wide circular stair was introduced to allow a connection between the two floors.

In the final iteration of the design, the staff hub space was grouped around the atrium. More importantly, the architects working with the leader negotiated with the building's owner (from whom the company was negotiating a long-term lease) in order to create a double height overlooking the surrounding urban context. This urban context was notable because it provided a clear view of the infrastructure the company had built and was then operating. The double height space provided staff with a place to meet, work or have a break. The internal fit-out of the building was based around the notion of curves (with extensive interior planting) which in the words of the designers "created a sense of continuous movement that mimics transport circulation."

CONCLUSIONS AND DISCUSSION

ABW cannot be configured through a spatial distribution of derived organisations functional zoning (e.g. office and boardroom) business units (e.g. sales and finance) or managerial hierarchies (e.g. executives and team leader). For this reason, ABW requires a new range of design practices in order to configure and structure workplace design space. In the design of this workplace, a number of spatial design practices were evident, and the results of these are also evident in the final physical office. These spatial design processes are described below and categorised as centering, mobilising, targeting and theming.

Centering

Design processes of centering were evident at several scales in the design process. Firstly, the atrium of the building was seen as a centre around which both floors would revolve. Secondly, the circular stair was seen as a central point and focus of the workplace design, and this was located near one corner of the front of house area, and the service functions. However, the process of centering also involved grouping different types of workplaces, around the building's atrium and also through the creation of different centres or focal points throughout the space. This centering was further emphasised through the use of circular geometries—it being axiomatic that geometry circles have a centre. Throughout the workplace, there is extensive use of circular meeting pods, circular furniture and low height partitions, as well as other circular lighting features. Interestingly, and perhaps treated as what Hirst and Humphreys (2013) denote as "edgelands." other services, including the workers' lockers, were decentred and located behind and adjacent to the building's service core.

Mobilising

 In the publicity material, the architects posited that the design was intended to "reflects the rhythms of urban transport." In the words of the architect the purpose of the circular geometries in many of the elements of the workplace was to employ "curves and spirals to connect spaces, creating a sense of continuous movement that mimics transport circulation" Mobility was thus a key theme in the project, and this was achieved through a number of specific devices. These included an "undulating

line of the green carpet" Other circulation paths were articulated though floor coverings to link open work stations to collaboration spaces and the spiral balustrade at the centre of the connecting stair. Through these devices, the architects were able to emphasise the infrastructure companies' credentials and branding as a provider of toll roads. This was an approach that saw the workers of office as kinetic entities constantly mobilising themselves within the space as they move from project team to project team and from activity to activity.

Targeting

This sense of continuous movement that was engendered throughout the space meant that a person's line of sight walking through the office would shift from one centred circular element to the next. For example, a person entering the building from the buildings' street frontage would have a direct line of sight to the circular stair. However, as a person traverses this stair and walks through the next floor, they would then be presented with a series of different sight lines. Thus, a person walking around the space is led by their eye, their line of sight, from one centred target or element to the next. As one circulates through the workplace design, this culminates in sight lines that extend out of the workplace, directing the eye, to the surrounding urban context. Indeed, the two-story high veranda space is the ultimate focus or target of any person who chooses to work around the workplace. In this case, on the double height veranda, the sight lines lead to a new central focus or target, and that is a view to the monumental toll road constructed by the company.

Theming

The front of house area was coloured in grey, in order to evoke the dark grey concrete of the company's toll road infrastructure. However, in the workspaces the colour palette was very much green and white. In the words of the architects, the green landscaping across the two floors was a "nod to the urban landscaping that surrounds the company's roads." These efforts of theming points to a workplace design process that has sought to create a world within a world. Through these devices, spatial and aesthetic rhetoric creates a new experience for the worker who is working in and AW environment. This environment is not structured by expanses of open or closed cubicles, organisational functions or hierarchies. This environment is structured shaped through spaces with aesthetic themes that have created a cocooned and separate work-world. This workplace design is a work-world, a totally enclosed space of activities, dedicated to the corporation it serves. What is ironic is that the attributes of the old workplace described in the early site study of the architects as "graphic," "bold," "internalised" and a "literal representation" of the company. These attributes might also describe the themes of the new workplace. Theming was not only limited to the physical artefacts of the spaces. In the space between the reception area and the largest aggregation of meeting rooms was a wall of screens which displayed images in real time streamed from the company's road projects.

Implications and Further Research

As described, above the design practices evident in this workplace are related to spatial practices of centering, mobilising, targeting and theming. These spatial gestures appear to mimic processes of road construction or road travel itself. These gestures constitute a spatial system that resulted in the new workplace for the infrastructure company. In accord with the principles of DEGW this was not a design based on fixed typologies of architectural archetypes of solid-void. Whilst the themes of the office fit-out reflected the company's brand, the result was not an architectural

monument to this brand. The office and the seemingly kinetic workers in it were part of the company's broader system. In many respects, workplaces, and the deployment of Activity Based Working appears to suggest that workplaces, such as this one, are spatial-technical systems that do not need to represent themselves through traditional symbolic monuments. As it appears, the architects closely matched and followed the instructions and strategic wishes of the infrastructure company's leader.

Further research would examine, by using ethnographic methods, how the workers of this building perceive its spaces. Do these workers perceive the gestures identified here? The contribution of this short study is to show that issues of space in workplaces are multi-layered. This suggests quantitative studies of workplace productivity must extend to examine broader conceptions of spatiality in workplace design. These types of workplaces are spatial systems, work-worlds embedded in larger spatial systems. In this case, the workplace is a system connected to and embedded in the more extensive spatial system of the company's network of toll roads. What is described here is a production of space that reflects corporate power. As well the as way corporations employ Activity Based Working to respond to contingent realities and new forms of knowledge work. To return to Lefebvre, this is not "a leisure orientated space for Industrialised Europe." But this project indicates the transformation of work into a spatial system to facilitate new forms of industrialised knowledge work. Through the spatial practices of centering, targeting, mobilising and theming, this workplace is a representation of the corporation's strategy and brand. The spatial practices described here are akin to those used to produce the monumental toll roads of the company. In this workplace the kinetic workers gaze towards the company's monuments as they take a break from their green and white work-world.

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