

## **ADDRESSING CHANGES IN TENANT OFFICE SPACE REQUIREMENTS: A LANDLORD PERSPECTIVE**

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### **ABSTRACT**

Office tenants' requirements for corporate real estate have changed in the recent years in response to their changing work practices. Challenged by the effects of flexible workplace strategies, tenants are increasingly seeking flexibility and functional efficiency in their physical office space and its layouts. For landlords, having the right type of space which can accommodate changing tenant layout requirements is paramount to the success of their office portfolio. Little attention has been given to understanding how landlords address tenants' changing demand for office space and its layouts in their new and already established properties in New Zealand. Employing a series of interviews with all listed property trusts who have actively invested in office properties, this study examined how large scale landlords address and accommodate tenant demand for more flexible office spaces in their portfolios.

The study identifies that landlords are clearly focused on providing flexible and efficient building space solutions in their current and proposed investments, with financial and non- financial benefits in mind. Their properties are built or refurbished to enhance operational functionality by incorporating flexible space design and specifications. These include large uninterrupted floor plates, adaptable building structures, flexible building services, well planned space grids and simplified building specifications. Building structures and layouts are designed to be able to flex quickly and cost effectively to address tenants' changing space requirements. Tailor-made campus style offices, serviced offices, and multi-functional office spaces are becoming more commonplace. The research highlights the importance of meeting tenants' changing demand for physical space, which in turn has the potential to deliver greater, stable market driven returns to the investors.

Keywords: Office investment, Work place, Tenants' space requirements, Space planning

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## INTRODUCTION

In order to improve business success, landlords are now looking to place more emphasis in meeting tenants' space requirements and preferences. This has become particularly evident in a negative economic climate where tenants have increased negotiating power (French and Jones, 2010; Rasila, 2010). There is now a greater responsibility on landlords to interact more closely with their tenants in order to maximize occupier satisfaction and retention and thereby maximize landlord's return on investment (Sayce et al., 2007). Office tenants' requirements for corporate real estate have changed in the recent years in response to the changes in their business practices. Tenants are downsizing their space requirements, particularly larger firms, as they adopt policies for sharing unassigned workstations and implement technology to support their employees' flexible work practices. Particularly in the current negative economic climate, office spaces occupied by companies have shrunk significantly as they introduce flexible work practices such as activity based working, hotdesking, hotelling and teleworking. Challenged by the effects of organizational flexibility, tenants are increasingly seeking flexibility and operational efficiency in their physical office space and its layouts. Through 'space-use intensification', they aim to reduce their space requirements and create more collaborative, team and project-based work practices.

For landlords, having the right type of space which can accommodate changing tenant layout requirements is paramount to the success of their office portfolio. No competitive property investor or landlord can afford to be hampered by ill-fitting or less desirable properties in their portfolios. Buildings will be functionally obsolete if they are unable to meet the functional, economic and social requirements being placed on them by tenants (Chilton and Baldry, 1997). Johansson et al. (2002) suggest that the process of designing contemporary workplaces in office buildings requires a new approach in order to adequately address the recent changes in tenants' space and layout requirements. Therefore, property owners and developers are responsible for developing innovative office spaces that are able to ensure that the most suitable work environments are provided to meet tenants' current and future needs, thereby offering the best value to stakeholders.

Despite the growing demand for flexible office spaces, there is currently limited empirical research on understanding how landlords address tenants' changing demand for office space layouts in their new and already established properties in New Zealand. The term "flexibility" in this research reflects the concept of the physical layout and functional opportunities of the workspace, rather than the concept of organizational flexibility (Hassanain, 2006). Employing a series of in-depth interviews with all listed property trusts who have invested in the office sector this study examines strategies followed by large scale landlords when addressing the changes in tenant demand for office space and layouts. Using key informant interviews, the paper examines the experiences of a set of landlords that manage a total of approximately 300,000 sqm of office space located in New Zealand worth in excess of NZ\$2.75 billion. In particular, the following research questions are addressed:

- How do landlords perceive the changes in office tenants' space and layout requirements?
- How are those changes addressed in the properties in their portfolios?

The remainder of the paper is in four parts. The following section provides a brief review of the relevant extant literature. The methodology is then presented followed by a summary of the results. The concluding section highlights the key findings of the study.

## **LITERATURE REVIEW**

The changes to the way in which tenant organizations carry out their business activities have altered their property requirements and the preference for office space configurations and specifications (Harris, 2001; Lizieri, 2003; O’Roarty, 2001). Studies have identified a number of key drivers which have had impacts on tenants’ business practices which subsequently affected their demand for flexible office workplaces in built-facilities. These include cyclical changes in the market, innovation technologies, advanced information and communication technologies, globalization of businesses, increase in exposure to competitive pressures, increase in team and project-based working practices, emergence of flatter organisational structures, reorganisation of work activities, increased number of mobile and distributed workers, emerging trend of knowledge based activities and changes in consumer behaviours (Saurin and Ratcliff, 2010; French and Jones, 2010; French and Wiseman, 2003; Irons and Armitage, 2003; Lizieri, 2003; Joroff et al., 2003; Fawcett and Rigby, 2009; French, 2001; Markland, 1998; Lizieri et al., 1997; Chilton and Baldry, 1997).

These factors have implications for the manner in which work is organised, the nature of the tasks performed and the size of the organisations – all of which ultimately influence the nature of the demand for physical property resource itself (Irons and Armitage, 2003). Accordingly, tenants are increasingly demanding office premises that can accommodate the rapid organisational changes and support a range of functions (Gibson, 2003). This has led to the development of new office layout arrangements that are different from traditional office models. Tenants seek out more flexible workplaces in built-facilities (Lizieri et al., 1997) where flexibility relates to the concept of the physical layout and functional opportunities of the workspace rather than the concept of the organizational flexibility (Hassanain, 2006). Confirming this, Gibson (2003) identifies that tenants adopt more flexible working practices in terms of contractual arrangements with the staff, place of work and the ability of the workforce to be dispersed; such flexibilities have led to alternative workplace strategies.

Modern organisational structures have resulted in more interaction and collaboration, which in turn increased the demand for group spaces, more shared spaces, and increased intermittency in space use (Duffy, 1993 as cited in Irons and Armitage, 2003). Therefore, many tenant organizations prefer to have large uninterrupted floor plates with larger vertical risers to accommodate open plan, non-territorial office accommodation (Hassanain, 2006; Steiner, 2006; Schriefer, 2005; van der Voordt, 2004; Irons and Armitage, 2003; Haynes, 2008; van Meel and Vos, 2001; Latshaw, 2000; Markland, 1998; Vischer, 1996). Dent and White (1998) also suggest that as the office market improves with the increase in confidence for speculative development, buildings with larger floor plates are being sought for new business ventures which capitalise on modern technology and productivity. Companies are expected to reduce their space requirements up to 20% by increasing the use of open spaces to support collaborative work (Barber et al., 2005). Such developments in the property market have caused a decline in firms’ demand for traditional office floor plates with narrow depths and cellular layouts. The new corporate culture in organizations actively encourages casual interactions

between employees and thus new office designs which utilize modern space utilization techniques tend to have flexible, efficient and multi-functional spaces (Irons and Armitage, 2003). Social spaces such as cafeterias, larger atria/lobbies and lounges where employees can socialize and/or have meals without disturbing others are commonly requested by tenants (Markland, 1998; Vischer, 1996; van Meel and Vos, 2001).

To date the literature relating to flexible workplaces has largely focused on flexibility requirements from tenant's perspective, various space utilization models used by tenant organizations, and advantages and disadvantages of space-use intensification for tenants and their employees. However, there is limited empirical research on how building designers, developers and investors address flexible workplace facilities in building configurations and specifications (Hassanain, 2006). Furthermore, the existing studies have been conducted in other developed economies where flexible workplace strategies have been used for several years, particularly in the US, the Europe and Australia. However, there is lack of research in the New Zealand context to understand the level of flexibility required by tenants and how they are addressed by property investors and landlords in their existing and proposed property portfolios. Given the fact that office tenants in the New Zealand market are increasingly moving towards flexible work strategies after the GFC (Colliers International, 2012), it is important to understand how these requirements are addressed and accommodated in the current and future building stock.

## **METHODOLOGY**

The focus of this study is to explore and gain an in-depth understanding of how large scale landlords in New Zealand address the changes in office tenants' space and layout requirements in their office properties. Qualitative methodology using in-depth key informant interviews with 8 senior property portfolio managers of all listed property trusts (LPTs) that have actively invested in office properties were utilised as the most effective data collection method. Assets under the management of LPTs are significant; as at 2013, the LPT sector had an asset base of NZ\$ 8.6 billion and a market capitalization of NZ\$5.056 billion, approximately 9.7% of the New Zealand share market capitalization (published annual reports of LPTs, 2013). The sector owns approximately 30% of the commercial stock available in the Auckland market and 28% of the commercial stock in the Wellington market. Due to their significance in the market and active management philosophies, LPTs have the ability to change the operation of the market, its structures and practices to a great extent and thus assume a level of dominance in the market (Murphy, 2008).

A qualitative approach was well suited for the objectives of this study since it provided a deeper understanding of participants' live experiences of the phenomenon being studied (Marshall and Rossman, 1999). The interviewed portfolio managers between them were responsible for the management of approximately 300,000 m<sup>2</sup> of commercial space worth in excess of NZ\$ 2.75 billion. These property trusts have large exposure to office sector and own a significant portion of high quality office stock available in the Auckland and Wellington markets. Most of their office buildings are located in prominent sites in CBDs and the majority of their tenants are large scale corporate tenants. All interviewees held the ultimate responsibility for key property related investment and management decisions for their property entity. A number of topics were covered in the interview protocol including; recent changes in office tenants' demand for office space and its layouts, its impact on office design and space planning, how tenant demand for

alternative workplace layouts are addressed in interviewees' office portfolios, most commonly requested office configurations by tenants, issues faced by landlords when addressing these changes in their current and proposed investments and what they do to overcome these issues. The interview transcripts were analysed using a thematic analysis which enabled to develop categories, themes or patterns about the phenomenon (Miles and Huberman, 1994).

## **KEY FINDINGS**

### **Changes in tenant demand for office space and layouts**

Firstly, the research attempted to examine landlords' experience and perceptions on the recent changes in tenants' office layout requirements and the significance of physical and functional flexibility of space in tenants' property leasing decisions. All listed property trusts confirmed that flexible workplaces that can be easily transformed to support tenants' changing space needs has risen to the top priority of tenants' leasing decision making. Several interviewees suggested that the flexibility of space was the most sought after factor by tenants after seismic ratings and it could have been a more sought after requirement than the environmental sustainability of the premises. Even though flexible workplace strategies is not a new concept, tenants' preference for modern workplaces that can support flexible work styles has increased significantly after the 2007 Global Financial Crisis and the subsequent property market crash. Changes to the way in which tenant organizations carry out their business activities and cost savings by consolidating space requirements were perceived by landlords as the main reasons for tenants' strong preference for flexible workplaces. All landlords interviewed emphasized that many tenant originations in their portfolios, particularly larger firms, have downsized their space requirements and are increasingly implementing space-use intensification strategies. The median density per workstation in their office properties across submarkets in New Zealand has increased since the GFC and continued to remain tightened, particularly in A Grade office properties. The interviewees stated that their A Grade buildings had the greatest office density with 14m<sup>2</sup> – 17m<sup>2</sup> per workstation.

However, it was indicated that smaller tenants in their lower Grade buildings (B Grade and C Grade) are less likely to be implementing flexible workplace strategies such as activity based working and hot desking than those larger tenants located in Premium and A Grade buildings. As a result, the majority of the smaller tenants in their portfolios, those that have leased less than 1,000 square metres, mainly use traditional assigned, cellular spaces than unassigned, open plan offices. As stated by one respondent, "*small tenants by nature tend to be less focused on specific work practices whereas large companies focus on their working culture, productivity and creativity and as a result they often change their space requirements to accommodate new working practices*". Furthermore, preference for flexible spaces is more prevalent among large corporate office users with locations in multiple buildings and cities. The interviewees also stated that international corporate tenants who are more familiar with non-territorial office space designs with desk sharing tend to have a stronger demand for flexible workplaces than national private sector tenants. It was also suggested that large government tenants in Wellington with long lease terms are increasingly demanding flexible office spaces and tend to have a higher workstation density than private tenants in their Wellington portfolios.

From an industry perspective, interviewees indicated that tenants in the Information and Communication Technology industry, Banking and finance industry, and Construction, property and engineering industry strongly demand open plan, non-tectorial office spaces than tenants in other industries. Government tenants and tenants from Banking and Finance sector had the highest workstation density in their portfolios. On the other hand, Legal Services, Human Resource businesses and other professional services who often deal with confidential information and need privacy are the industries that have the least demand for open plan, flexible workplaces. These industries still use perimeter cellular office spaces with some open plan desking and tend to have the lowest workstation density in interviewees' portfolios.

### **Demand for flexibility from large and small tenants**

The interviews with landlords identified a significant discrepancy between office space flexibilities demanded by large corporate tenants and small, less sophisticated tenants. It was emphasized that flexibility of physical space is imperative to large corporate tenants' space choice. Interestingly, all landlords shared a common view that the changes in building specifications and configurations are taking place at a much slower pace than the changes in large scale tenant organizations' work practices and organization culture. As a result, a number of large scale tenants in the Auckland and Wellington markets have sought to initiate new office developments with flexible and adaptive spaces as the buildings in current market stock do not meet their specific space requirements. Several property trusts indicated that when dealing with large corporate tenants they are now going beyond "one-size-fit-all" traditional office tower models and are more interested in developing "tailor-made, more specialized properties" addressing one particular tenant's space demand. Such tenants are prepared to pre-sign leases and be part of the development and thus are more able to influence the building design and layouts. As stated by one interviewee *"rather than force them into spaces that do not quite suit them, our strategy is to be flexible and comply with what they expect from the building"*. They emphasized that such tailor-made developments are *"win-win situation for both parties"* as such developments *"would rise above the general market and enhance the owner and tenant's market image and reputation"*. Campus style, low rise office buildings which are characterised by flexible and efficient spaces that would facilitate space-use intensification and effective work practices are preferred by such large tenants.

On the other hand, the majority of smaller tenants seeking flexible spaces in their portfolios tend to locate in lower Grade buildings with efficient floor plates and work within the constraints of the building. While some small tenants designed their own fit outs and layout arrangements, some small tenants would request landlords to design building specifications and fit-outs. It was also revealed that several small tenants, particularly single site located tenants in their portfolios requested serviced office spaces where *"fully fitted, ready to use"* spaces are provided to tenants.

All landlords emphasized that older buildings with smaller floor plates are no longer demanded by tenants and such buildings would *'destroy the portfolio value'*. As a result, the interviewees indicated that several older, less desirable buildings with inefficient floor plates in their portfolios were refurbished recently. The existing uncertain market conditions created opportunities to deliver value-adding solutions for those properties. These buildings were refurbished for adaptability for probable future alternations ensuring that the floor plates can be configured and re-configured to suit different tenants and their changing needs.

## Changes in building configurations and specifications

### *Efficient floor plates*

All participants confirmed that their Prime and A Grade buildings are designed with great space efficiency and flexibility to effectively accommodate future changes demanded by tenants and to meet the emergence of new technologies. Floor plate efficiency was achieved by employing a number of design factors. These include larger uninterrupted floor plates, simple geometrically shaped floor plates, efficiently designed service core areas, simplified building specifications and good natural light penetration throughout the floor plate. All their prime and A Grade buildings comprised of large uninterrupted floor plates with large vertical risers to accommodate open plan, non-territorial office accommodation. All their newly built properties provided a '*blank canvas*' where tenants are able to do their preferred fit-outs without difficulty. Large floor plates were designed efficiently in order to provide the opportunity for tenants for space dividing, assigning and rearranging their premises according to their own requirements and preferences. These buildings are built with long spans allowing the space to be arranged to suit open plan offices throughout the height of the building. They also emphasized that the shape of floor plate is significant in their space designs and simple geometric shapes such as squares or rectangles are used to improve spatial efficiency.

The interviewees also indicated that floor plate depths of their modern buildings were designed for maximum space efficiency. Medium depth buildings with atria are commonplace in their portfolios. Floor plate depths in modern buildings in their portfolios ranged between 15m to 20m to accommodate open plan office space arrangements. Floor plans deeper than 20m were considered as inefficient as it may cause lighting and ventilation issues and discomfort to building occupiers. Furthermore, their modern buildings comprised of generous ceiling heights to accommodate space and occupant intensification. It was suggested that higher floor-to-floor heights enhanced lighting, ventilation and the feeling of space. Also, their modern office properties are well designed on a grid basis based on the planning grid in order to support more readily adaptable partitioning in internal layouts. Structural grids are based on a multiple of a planning grid in order to provide highly efficient space for tenants. Interviewees indicated that 1.5m planning grids and 7.5m to 9m structural spans have been commonly used in their recently built office properties to support more flexibility for open space office layouts.

The landlords also indicated that service core areas of their prime quality buildings were well planned and appropriately sized to enhance the space efficiently. The location of service core in buildings varied with the building plan, but the majority of their recently built buildings had their service cores along one edge of building perimeter in order to provide more flexibility in maximum depth and office layout arrangements. Given the difficulty in altering the building structure and the core service areas later on, their buildings and core service areas are designed for adaptability for possible future alterations. This has provided tenants with capability of ensuring that the workspace can be configured and re-configured to suit their changing needs.

### ***Flexible building services***

Space intensification in office buildings puts additional structural stress on building services if they were not designed for the new demands of occupant density. Development of a flexible workplace entails the design of flexible building services. Brittain et al. (2004) defined flexible building services as building services that are able to sustain the operational requirements of a building in a cost and time effective manner, while responding to the short-term changing requirements of the organization. The landlords interviewed emphasized that the building services such as HVAC systems, electrical systems, lighting, and water supply systems in their modern buildings are designed flexibly in order to be able to sustain the additional operational requirements caused by space-use intensification. They indicated a number of methods used in their modern office buildings to produce flexible building service designs. These include servicing the building on a part-floor basis in large floor plates, providing contingencies to allow addition of services when required, avoiding over-specification and over-complication in building services design, and developing strategies to allow for easy reconfiguration of services. Furthermore, increased flexibility in building services were achieved by structured cabling, plug-in-services, flexible service ducts and wireless systems for various building services. Respondents suggested that flexible building services in their modern buildings have facilitated a speedy and cost-effective implementation of tenants' demand for high intensity spaces. It would also lower the building's future capital and operating expenses over its economic life time. As suggested by one respondent *"AC system in our new buildings is serviced on a part-floor basis, so in after-hours AC is on only in one zone instead of the whole floor, so tenants' OPEX can be reduced significantly"*. Their modern buildings are designed with good daylight access, natural ventilation and better temperature controls in order to meet additional demand on building services. Overall, the interviewees emphasized that their new office developments are designed with *"appropriate level of extendibility and adaptability of building services"* to accommodate new demands of density that occupiers are seeking. Several landlords interviewed indicated that space-use intensification encourages the use of more sustainable building services as more natural light and ventilation are used in modern buildings to enhance efficiency in building services.

### ***Information technology networking***

The significance of providing cutting edge technology in office buildings to support flexible work settings was frequently discussed by participants. Cabling solutions for electrical and telecommunications in their modern buildings are addressed by easily accessible flooring systems to facilitate future reconfigurations. As indicated by one respondent *"We provide as much capacity and flexibility as we can to facilitate the vertical and horizontal reticulation of data. We provide large risers up through the buildings so tenants can take data from the demarcation point in the basement up through the risers and round the building through the perimeter duct system"*. In addition, IT networks in their good quality buildings are regularly updated to meet improvement in technology. IT networks in their buildings have been divided into sub zones so that each zone can perform independently; as a result renovations and updates can be performed with a minimum damage to the main building structure.

### ***High quality building amenities***

All interviewees emphasized that high quality building amenities which complement high density occupation have become a significant part in their modern office buildings. Well-designed social spaces such as cafeterias, larger atria/lobbies and lounges where occupiers can socialize, and cybercafés where employees can have coffee while they work are commonplace in their modern office buildings. In addition, their modern Prime and A Grade properties include several service-related amenities such as gyms, childcare facilities, banks/ATM, convenience stores, small supermarkets, access to green spaces within the premises, and on-site secure car parking to enhance user satisfaction. Furthermore, on-site bike racks, changing rooms and shower facilities are provided in several of their modern buildings. Interviewees stated that high quality building amenities and breakout areas would “*create more home environment for occupiers*” and enhance “*visual connectivity and physical connectivity of the building*”. Landlords further emphasized that such high quality amenities would help not only to attract the new generation of staff but also to satisfy basic psychological needs of employees who work in high density work environments. Colourful artwork and colour coding of the walls are also considered as an important part of the space planning since colour decisions will influence staff motivation and image of the company. Collectively, landlords emphasized that their investment strategy is to develop or purchase properties that have “*unique characteristics with designs of the highest aesthetic quality*” that would successfully enhance company image or “*branding*”. At the same time, over-specification and over-complication in building design and specifications are avoided in their modern buildings to allow tenants to tailor the space to their requirements and to avoid functional obsolescence of the premises. However, all interviewees stated that accommodating car parking in high density office properties is becoming increasingly difficult. Lack of onsite car parks had resulted in them leasing car park facilities in neighbouring properties.

### ***Changes in building materials used***

Interviewees also emphasized that their modern buildings have used advanced building and fit-out materials that facilitate flexible, open floor workplace environments. Special attention has been paid to address noise level control in open plan offices as such offices require good speech clarity over shorter distances while preventing sound from spreading over longer distances. Acoustical ceilings with high NRC (Noise Reduction Coefficient) and high AC (Articulation Class) values are used in their modern buildings in order to minimise the sound propagation. As stated by one respondent, “*Ceiling tiles we use in our buildings have very high NRC rating, the tiles we have used in this building is NRC 0.8 and soak up the noise rather than the old tiles that reflect the noise. So when you go to an open plan office environment they are much quieter now*”. It was also emphasized that sound proof walls and floor materials are extensively used in newly built buildings in order to lower the sound levels in the room. In addition, interviewees confirmed that interior partitions that can be easily dismantled and removed such as glass and aluminium have been used in their serviced offices. Complex partitions and complex building specifications are avoided unless it is particularly required by tenants.

### *Changes in lease terms*

As well as physical and functional flexibility in office spaces, tenant organisations are increasingly seeking flexibility in their lease contracts. All landlords emphasized that lease covenants in their commercial lease structures have undergone significant changes in the current negative market climate with more flexible and shorter leases being introduced. Many tenants are cautious about making long-term leasing decisions and thus want the flexibility to cancel, expand or contract their space requirements. The average lease term for office portfolios of the property trusts interviewed has decreased from 9 – 12 years to 6 years since the GFC. One interviewee suggested that *“in addition to downsizing their space requirements, tenants are increasingly downsizing their leases”*. More flexible lease covenants providing easy access strategies, ability to vacate with no long term liabilities, expansion and contraction capabilities, assignment and subleasing options, rent incentives and easiness of adjusting terms on existing leases are frequently negotiated with tenants in the current market conditions.

However, the interviews highlight a significant difference between contractual flexibilities demanded by large corporate tenants and small less sophisticated tenants. Larger tenants who have invested substantially on implementing flexible workplace strategies in their leased premises are keen to secure long term lease contracts with more flexible covenants that would provide them the options to expand, contract or adjust covenants in their existing leases. As stated by one respondent *“they spend millions of dollars in fit outs, so they are not going to move out in 2-3 years. They do not demand short leases, but demand more flexibility for expanding and contracting”*. On the other hand, small tenants, mainly single site locally operating companies which are more prone to change, tend to request flexibility in terms of the length of the lease. As stated by one respondent *“small tenants are reluctant to make long term commitments, so they request short term demands. They are not into flexible work practices; they tend not to think much about flexibility in spaces”*. The interviewees also identified that there is a difference between the level of contractual flexibility required in leases for tenants’ core and non-core spaces. Tenants’ require greater contractual flexibility for their non-core spaces, allowing them to acquire and dispose of space as they respond to changes in their work practices. On the other hand, long term leases with less flexibility are demanded for their core spaces in order to improve certainty. As suggested by one respondent, *“tenants want to hold core premises for good solid period of time and have greater flexibility in their leases for non-core properties”*. However, all landlords interviewed emphasized that flexible lease terms in their office leases are compensated with higher rental rates or penalties and thus such leases did not materially affect their income returns.

### **CONCLUSIONS**

The overall findings of this research suggest that major landlords in the New Zealand office market are clearly focused on creating high-performance, flexible workplaces to facilitate changes in tenants’ demand for flexible workplace strategies with financial and non-financial benefits in mind. The interviews highlight that tenant demand for flexible and adaptive office spaces has increased significantly and it was particularly evident after the global financial crash in 2007. The analysis reveals that all their current and new developments are essentially moving towards more adaptive and flexible building structures and layouts to ensure that the buildings can be configured and reconfigured to suit changing

tenants' space requirements and preferences. Building structures and layouts are designed to be able to flex quickly and cost effectively to fit different uses and users.

When designing adaptive and flexible office buildings, property investors and developers incorporated a number of design strategies in their modern buildings. These strategies can be categorised under five main categories including adaptive building structures, efficient floor plates, flexible building services, information technology networking and modern building materials. Their properties are built or refurbished to enhance operational functionality by incorporating flexible space design and specifications. Tailor-made campus style offices, serviced offices, and multi-functional office spaces are becoming more commonplace to address various tenants' space requirements. The findings also suggest that tenant demand for physical and functional flexibility in space has increased their demand for contractual flexibility. The research highlights the importance of meeting tenants' changing demand for physical space, which in turn has the potential to deliver greater, stable market driven returns to the investors. Although this research focuses on the perceptions and experiences of large scale landlords who have mainly invested in prime quality office properties, anecdotal evidence from discussions with the interview participants suggests that the behaviours and experiences of small scale landlords may be significantly different. All respondents stated that there was a significant cost premium for incorporating flexible building structures and building services into developments and therefore small, financially constrained landlords may have difficulties addressing them in their properties. A study examining how small scale, less sophisticated landlords address the changes in tenants' demand for office spaces and layouts would add another dimension to the findings of this research.

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