

CONVERSION OF OFFICE SPACE TO RESIDENTIAL HOMES IN THE UK

Property of Acadex (A Division of Mayfield Ncel Pvt. Ltd.)

Executive Summary

This research paper has engaged in an exhaustive study, examination and analysis of the increasingly popular UK practice of converting old, vacant and underutilised office space to residential homes. The paper has been prepared with the help of a detailed literature review, the examination of various associated topics and the analysis of a hypothetical case of a building housing offices and residences in Victoria, London where 16,555 sq. ft. of office space shall be converted into 21 residential units.

It is expected that the research paper shall add to the available literature on the subject and be useful to people with interest in London real estate.

Property of Acadex (A Division of Shagore Neel Pvt. Ltd.)

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1. Introduction

This research project aims to examine the existing trend in the UK for conversion of old and often vacant office property in the country to residential use. This increasing conversion of unutilised or underutilised older office space into residential units is being driven and encouraged by a number of supply and demand factors including increasing availability of older office space, continuously growing demand for new residential accommodation and specific government policies (Stein, 2021). The quantity of unutilised older office space is growing on account of several developments, including innovations in office design, flexible use of workspaces and online working, which has increased exponentially on account of the Covid-19 pandemic (Day, 2020). These factors are resulting in reduction for office demand and the obsolescence of older office buildings.

The UK is also experiencing a housing crisis on account of continuously increasing demand for new houses, which is not being satisfied by additional construction (Mulheirn, 2019). Research reveals that the UK has experienced a deficit of 100,000 units between demand and supply of new homes, year on year for the last 30 years (House of Commons Library, 2021). This has resulted in a continuous increase in prices and the erosion of the capability of young people, especially those under 40 to buy their own homes. The housing crisis is especially evident in urban areas that have witnessed considerable influx on account of employment opportunities (Mulheirn, 2019). The UK government has also adopted specific policies for encouragement in conversion of office to home, there have, in fact, been more conversions of office space in Croydon in the South of London than in any other geographical location in the UK (RICS, 2018). Whilst approximately half of the office space in the area was empty in 2010, recent years have seen extensive office conversion activity (Mulheirn, 2019). The boom in conversion has also been driven to a considerable extent by the recently introduced permitted development rights, which enable developers to proceed with conversion activity without obtaining conventional planning permission (Stein, 2021). Critics have, however, pointed out that this has led to several units not being able to satisfy minimum space standards (Mulheirn, 2019).

This research project engages in a detailed review of available literature on the subject, followed by the examination of the drivers behind office to residential conversion, the evaluation of the type of buildings that should be converted and an examination of permitted development rights and its impact on the private rented sector. This is followed by the specific examination of a hypothetical office to residential conversion of a building in Rochester Row, the appraisal has been carried out from the developers perspective of the value that could be achieved by converting it to residential under permitted development rights.

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Chapter 2: Literature Review

2.1. Background

The adaptive reuse of a run-down or derelict commercial property provides an opportunity for that property to be brought back to life. Campbell (1996) argued that the two main reasons for investors and developers to participate in the adaptive reuse of property were due to the cost benefits associated with the rehabilitation of the building. Firstly, estimates suggested that there were a 16% reduction in construction costs and an 18% reduction in construction time than a full ground-up development. Secondly, there are tax breaks linked to adaptive reuse. Real estate owners support the idea surrounding the adaptive reuse process. Adaptive reuse delivers a strong perception on the key concepts of sustainability. Real estate owners deem adaptive reuse to be a more feasible option than demolishing and redeveloping existing properties (Bullen, 2007).

Urban environments have witnessed a rise in dilapidated and vacant office buildings. These buildings have succumbed to economical, technological and functional obsolescence, ascending from the building's physical characteristics (Zivkovic et al. 2016). The vacancy can have financial implications for both the building's owners and the greater good of the community in which the building is situated. While owners face economic turmoil, society may encompass insecurity and social uncertainty, resulting in negative externalities, such as obsolescence, vandalism and illegal occupancy (Remoy and van der Voordt, 2007). Obsolescence has been intensified by the inability of architectural heritage to keep up with advances in technology and socio-economic demands. Further, the rising global population has created a universal problem; the need for residential housing in urban cities (Zivkovic et al. 2016).

The US government and city authorities in Los Angeles were attracted to the implementation of converting office buildings into residential units as part of an adaptive reuse regeneration programme. Such a strategy was seen as a means of increasing sustainability while attracting young and transient individuals back into the city of LA. Bullen and Love (2009) noted that the success of this strategy stemmed from incentives in the form

of legislation that reduced zoning requirements and tax concessions for investors and developers. In addition, this adaptive reuse strategy decreased vacancy and encouraged integration of the residential community with the working community. Thus, the adoption of the reuse strategy, rather than a full demolition and rebuild strategy, favoured sustainability. The strategy made way for cleaner air, travel time reductions and prompted future developments and investment into the area.

During the mid-1980s, both London and Toronto experienced an influx of office supply, significantly outweighing demand. Come to the end of the decade, this office boom was described by some as the largest in history (Barlow and Gann, 1996). In the wake of the 1980s, a combination of misdirected planning actions and an economic recession struck in the early 1990s. This led to dramatic changes to London's property market, one, in particular, being 3.6 million sqm of vacant prime commercial space (Barras and Clark, 1997). The oversupply in office stock created a value gap between office and residential values and rent. This gap was a key driver for office to residential conversions (Barlow and Gann, 1996). As a result, in 1994 housing returns were up 90% compared to commercial properties. Toronto faced similar housing issues, however, local planning authorities took a proactive rather than reactive approach to commercial to residential conversions. By actively encouraging and promoting conversions, Toronto's vacancy rate decreased, paving the way for similar conversions in London (Heath, 2001).

In 2006, The Netherlands experienced low levels of occupancy in commercial properties. During this period The Netherlands held 40 million sqm of office stock with 5.6 million sqm left vacant, of that 1.5 million sqm was regarded as structural (long-term). In 2004, the Dutch Minister noticed the attraction of converting office space into residential. Thus, the minister felt fit to provide 25,000 dwellings through the conversion of over-supplied office space into highly demanded residential units. Due to the stressed housing market in The Netherlands, in excess of 800,000 residential units are needed to subdue the stress. In a study conducted by Remoy and Van Der Voordt (2007) they highlight the importance that conversions have, oppose to a full demolition and re-build. Conversions strengthen sustainability and financial viability as construction materials are recycled and

the urban area's heritage and aesthetics are retained. Further, location has been identified as a driving force and can contribute to the success of the conversion. Vacant offices, in prime locations, can generate the necessary returns and aid in the gentrification of urban environments. Conversely, the study identifies that risks can arise in the form of hidden costs and market uncertainty (Remoy and Van der Voordt, 2007).

In Hong Kong, only 2% of new construction contributes to building stock per year. Hong Kong is restricted as land is scarce and offers a dense structure. The Hong Kong government has set carbon emission targets in the hopes of reducing energy consumption. It is estimated that it would take up to 100 years to achieve this reduction in energy consumption and gas emission, thus adaptive reuse is the government's strategy to achieve these goals (Langston *et al.* 2008).

2.2. Development Appraisal

The residual method and discounted cash flows (DCF) complement one another and follow the same principles in that development costs are compared with development value to achieve a site value. However, DCF's provide analysts with the ability to take into consideration the time value of money and infer real-time progression of the schemes inflows and outflows on a period by period basis (Isaac *et al.* 2010).

2.3. Residual Method

The residual method of valuation is defined in the RICS Redbook (2019) as "the residual amount after deducting all known or anticipated costs required to complete the development from the anticipated value of the project when completed after consideration of the risks associated with the completion of the project". The residual value is then discounted back to the present value at the borrowing rate, to determine the acquisition price of the site at the start of the development period (Coleman *et al.* 2013). In the UK, the residual method is the preferred valuation technique when assessing the value of land or profit. The residual valuation is used for an estimation of land value (or profit), where there is redevelopment opportunities or available developers profit, where land value is known. Therefore, the residual figure depicts either the maximum bid price the developer is willing

to pay for the site, or if the land value is included in the cost, the developers profit (Loizou, P. and French, N. 2012).

In 2000, Brown and Matysiak suggested that there are four prominent drawbacks of the residual approach despite "including some rudimentary cash flow analysis, it breaks a number of rules". Firstly, the gross development value (GDV) is stated in current values and is received at the end of the development. Secondly, both land and construction costs are debt-financed, with full repayment at the end of the development phase. Thirdly, inflation is not taken into consideration as costs are spread evenly over the development period. Lastly, profit is deducted as a percentage of total development costs or value at the end of the development period.

2.4. Sensitivity and Scenario Testing

Determining the feasibility of development or investment involves highlighting key assumptions that underpin the analysis. Such analysis is critical in understanding the risks and uncertainty involved in a specific project (Opera, 2010). Historically, a residual valuation model was reliant on single point inputs, based on the land value today. However, future changes in market conditions and uncertainty can result in these fixed input assumptions becoming obsolete, blurring the line between risk and return, creating a cascade of aftereffects. For developers to increase the chance of success, sources of risk and uncertainty must be identified by assessing their probabilities (Loizou, P. and French, N. 2012). Therefore, risk management strategies and dissecting different scenarios can help the reduction and transferal of risk throughout the development process.

Within real estate development, uncertainty can impact the development process in two forms; firstly development cash flows and secondly the resulting profit figure. The outputs generated are highly sensitive to even the smallest changes in inputs, which can cause disproportionate impacts on the final output figure, regardless of the appraisal technique (Atherton *et al.* 2008). Sensitivity analysis or "what-if" analysis can be found under the header data tables in Microsoft Excel. Sensitivity analysis allows analysts to stress test desired results of a model under differing circumstances. For example, two input

assumptions from the model such as market rental growth and yield can be tested to understand how the desired output, such as NPV, would be affected based on the range of new assumptions. Therefore, sensitivity analysis helps the user to make sense of input variables which may be a significant factor in decreasing the viability of a project. Isaac *et al* (2010) identified that rental income, investor's yield, building costs and interest rate changes are typical variables considered for sensitivity analysis.

Scenario testing includes altering a combination of expected inputs providing a means to calculate the output. Scenario testing in a development appraisal involves an understanding of the base, pessimistic and optimistic case. Scenario testing involves the identification of input assumptions for each scenario, ranging from yields to rents. Once the input assumptions have been determined and applied to either the residual appraisal or cash flow model, expected outcomes on profit or land value can be achieved. Development appraisals incorporate several uncertain inputs, thus a more rigorous form of sensitivity analysis, incorporating probabilities is required (Isaac *et al*, 2010). The probabilities are issued to each of the three scenarios, depending on the likelihood of its occurrence, whereby the scenarios are subjectively applied by the analyst. For example, the analyst could believe there is a 75% chance of the base case occurring, 15% for the pessimistic and 10% for the optimistic case. Therefore, it is necessary that the analysts has a detailed understanding of market conditions and comprehends the risks associated with each scenario. Atherton *et al.* (2008) criticised conventional scenario testing by explaining how it does not take into consideration all the issues of uncertainty surrounding all the variables, correlation of variables and the range of outputs that may occur.

Chapter 3: Motivations/Drivers behind the Office to Residential Conversion

The conversion of office space to residential units is being driven by several factors. It is important to note that the introduction of innovations in technology and the growing preference for greater flexibility and collaboration in use of office space have resulted in considerable reduction in demand for older office complexes, which in turn, has created several office vacancies (The Economist, 2021). The following diagram provides details about the increase in office vacancy rates, especially from 2015 onward.



The Economist

FIGURE 1: INCREASE IN OFFICE VACANCY RATES, ESPECIALLY FROM 2015 ONWARD (Source: The Economist, 2021)

The past decade has also been characterised by considerable enhancement in the demand for urban accommodation and living. Research has revealed that areas with greater employment potential and job availability have experienced double digit population growth year after year with consequent increase in demand for homes (Day, 2020). The UK has also been characterised by a sharp deficit of more than 100,000 units between demand and supply of additional homes for the last 30 years (House of Commons Library, 2021). Such deficits have accumulated year by year and resulted in the creation of a housing crisis in the UK, especially in urban areas with good employment potential.

The remodelling of older office buildings into condominiums provides a workable solution to satisfy demand for new homes. The conversion of office space to residential homes assists in the provisioning of additional homes, especially to urban residents in the UK but also the creation of environmentally sustainable living spaces; vacancies in office space are simultaneously reduced (Stein, 2021).

Woollard (2020) informed that average office rents have improved steadily and practically recovered to pre-recession levels. The drivers for office to residential conversion are, however, associated with relative values, rather than excessive supply of office floor space or low values for office returns (Stein, 2021). Residential investments, on the other hand, have been able to achieve higher returns for several years, spanning practically two economic cycles (Day, 2020). Ministry of Housing, Communities & Local Government (2020) informed that existing governmental policies also appear to work against increases in delivery of considerable office floor space. The adoption of the mixed used policy calls for the coupling of commercial and residential floor space, which implies that gains in offices compared to residential take place on account of the flexible applicability of the mixed use policy.

Mulheirn (2019) informed that the boom in conversion of office to residential was also being driven by the introduction of permitted developmental rights, which allowed developers to move ahead without conventional planning permission.

3.1. London Office Market

In Central London, both The City and West End experienced a rise in vacancy throughout all of its key markets in Q1 2021 (JLL, 2021). May 2021 recorded the highest level of availability since 2004, totalling 26.4m sq ft (CBRE, 2021). Figure 1 illustrates this upsurge in availability which can be reflected in the rise of Central London's vacancy rate, which has increased from 5.85% in Q2 2016 to 7.38% in Q2 2021 (CoStar, 2021). The substantial rise in vacancy from Q1 2020 to Q2 2021 is heavily linked to the effects of COVID-19, whereby 57.2% of London residence in April 2020 reported to be working from home (ONS, 2020). Over the course of 2021, vacancy is set to rise further as the new vacancy rate is currently above the 10-year average of 1.1% and secondary offices has risen to 6.4%, fuelling an increase in supply (JLL, 2021).

The UK's recent 'levelling up' agenda is focused on relocating key departments to regional offices around the UK. The benefits of this migration is not only linked to lifestyle and accessibility to talent but office space cost reductions. Manchester prime offices are ahead of the curve as they meet ESG standards, which is now at the top of corporate agendas. In 2020, the City and the West End's prime office rents were £81.25 per sq ft and £114.83, respectively. Whereas, prime rents in regional cities are more than half that, for example, Leeds and Manchester's prime office rents in 2020 sat at £32 and £38.50, respectively (Savills, 2021). The relocation of firms such as the BBC and Channel 4 are adding to the supply of prime office rents in London in addition to the 6.1m sq ft of new marketed supply and newly competed supply in 2021. Nevertheless, regional office supply is constrained, primarily due to a lack of development activity and office to residential conversions under permitted development rights (Savills, 2021).

Since 2018, the annual take-up of offices in the West End, the City and the Docklands has been on a steady decline (Figure 2). Both Brexit negotiations and COVID-19 have played a significant role in the reduction of demand for London offices over the past three years. It can be argued that secondary offices across London has increased structural obsolescence as Grade B offices are not meeting the requirements of their tenants. This may be due to location desirability and that the office has not be refurbished for several years. If the

building is not managed or properly looked after, it may become dilapidated and run-down, resulting in a significant reduction in price. Therefore, it is within the building owners best interest to repurpose the asset and obtain income generation.

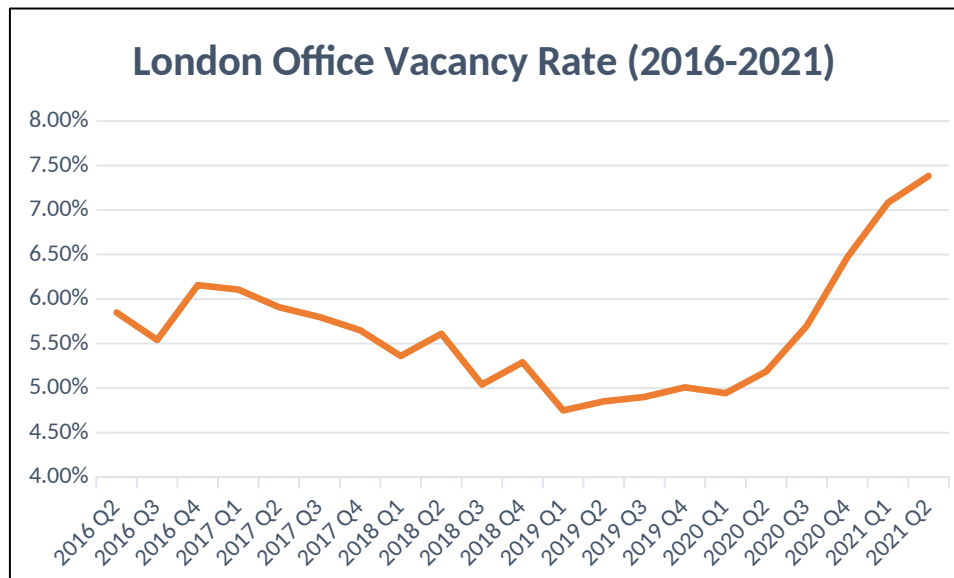


FIGURE 2: LONDON OFFICE VACANCY RATE (Source: CoStar)

Firms in London are becoming more and more conscious about their employee's mental health. A recent study found that working from home (telecommuting) has positive consequences for both employees and employers. Telecommuting increases the flexibility of their workforce and requires less space rentable space, reducing overheads. As a result, many firms are moving away from traditional working environments to online working. In the UK, two-thirds of employees state that productivity increases when remote working or in a home office (Finder.com, 2021). Therefore, the demand for expensive central London offices is falling.

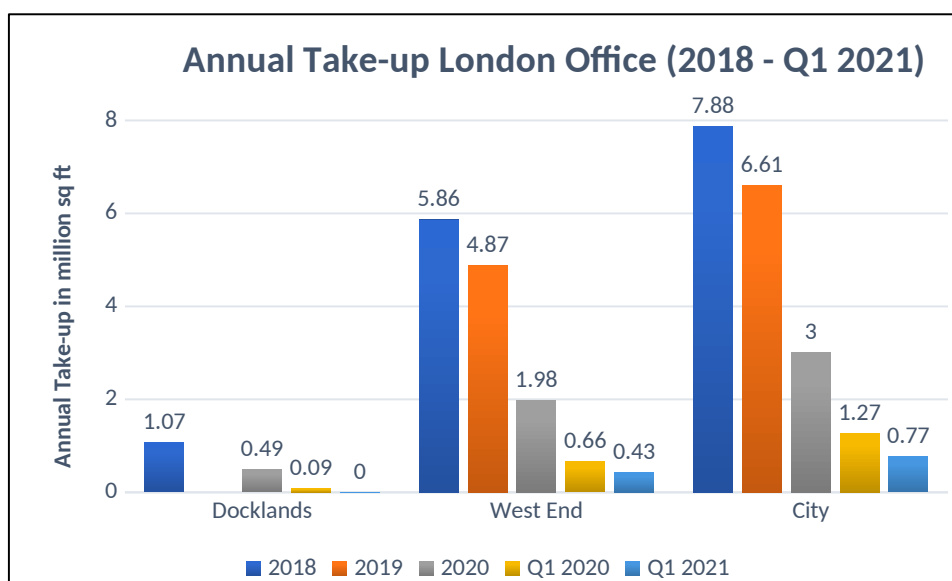


FIGURE 3: ANNUAL TAKE-UP LONDON OFFICE (Source: Statista, 2021)

3.2. London Residential Market

Over the past decade, the UK, especially London has experienced a lack of supply for residential accommodation in its capital, while simultaneously matched with demand growth. A recent RICS survey suggests that prices are on the rise as strong demand and a fall in new developments is increasing prices. Nevertheless, the sales market has held firm, while rental properties are lacking in supply. London has been witnessing an unmatched level of demand for residential housing, given its geographical location to jobs, healthcare and quality of life. Therefore, respondents to the survey are confident that within the next three months, values and sales volumes are expected to increase further. Given that mortgage costs are historically low and consumer confidence is on the rise, the long term sentiment of the London residential market has turned positive, something that has not been experienced since early 2020 (RICS, 2021).

Since the roll-out of the COVID-19 vaccine and the reduction of confirmed cases, the UK and London is now focused on the recovery of its economy. Figure 3 illustrates that from the start of the pandemic to today, employment levels in the UK have fallen from 76.9 in Q1 2020 to 75.2 in Q1 2021. However, projections suggest that in 2022 the UK employment rate will sit around 76.2%, increasing by a further 300bps to 76.5% in 2023. On the other

hand, London's employment rate fell from 75.8% in Q1 2020 to 74.7% in Q1 2021. However, London's employment rate and GDP is set to rise over the next two years, with figures reaching that of the UK's employment rates.

Figure 5 depicts a comparison between the capital value growth of both residential and office properties within London. The MSCI data analysed, ranges from March 2011 to March 2021. It is clear that over the past ten years, residential capital values has performed better during peaks and troughs in the market. For example, in March 2014 the Year-on-Year capital value growth for the inner London office sat at 9.6%, whereas the respective growth for inner London residential was 12%. Fast-forward six years to March 2020, both residential and office properties have seen rapid declines in capital value growth as a consequence of COVID-19. Despite residential properties' capital value growth in London turning negative, this decline did not last long, as recovery is well on its way. Figure 4 illustrates that in March 2021, office capital value growth is declining further, while residential has since turned positive and is projected to rise further. As a result, this reinforces the opportunity for potential gains in which developers and investors may obtain from the change of asset use from office into residential under Permitted Development rights.

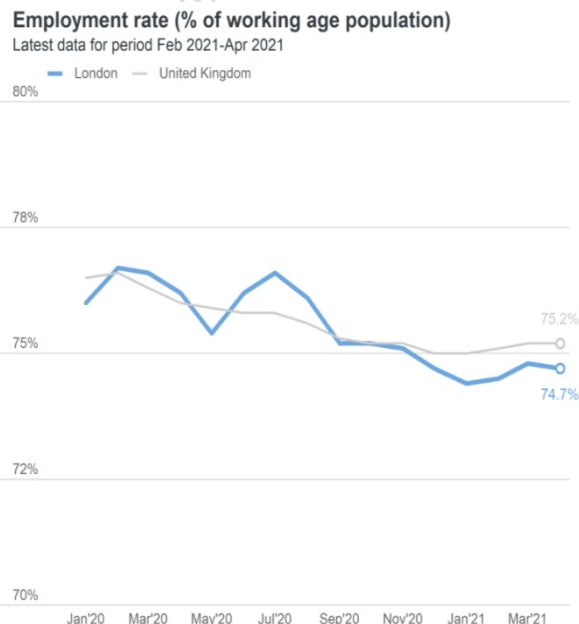


FIGURE 4: EMPLOYMENT RATE (Source: ONS Labour Force Survey, 2021)

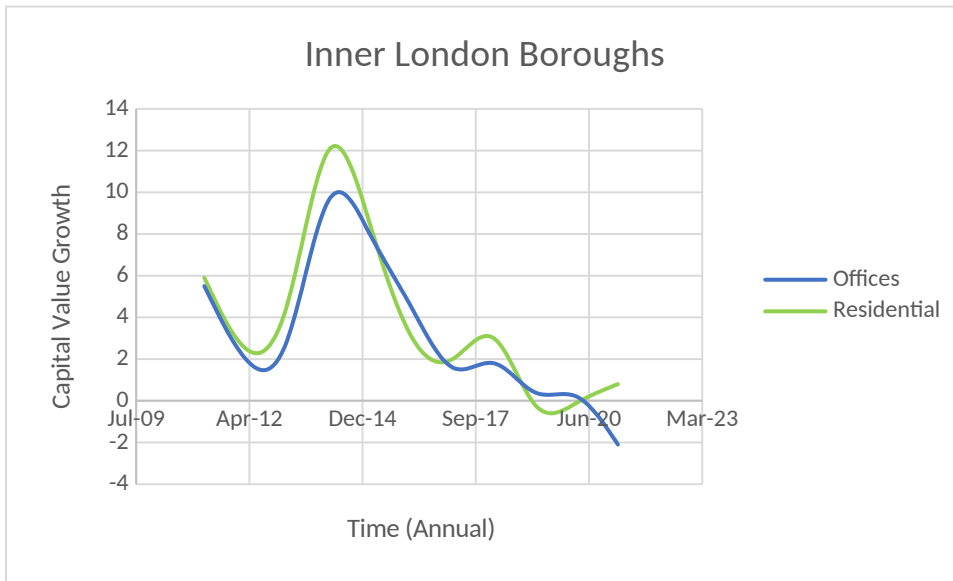


FIGURE 5: INNER LONDON BOROUGHS (Source: MSCI Global Intel Digest UK, 2021)

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Chapter 4: Past Office to Residential Conversions



1. Witham Wharf (Lincoln) a seven-story concrete office block has had balconies added along with two additional floors, making way for 114 flats (Office to Resi, 2013).



2. Centre Point (London) is the 37th tallest building in London, where the 55-year-old building was converted into 82 flats and duplexes (Office to Resi, 2013).



3. St George's House (Croydon) was formerly occupied by Nestle until 2012. Since then it has been converted into 288 flats with additional storeys giving it a stepped skyline (Office to Resi, 2013).



4. Beacon House (London) was converted into seven one bedroom and one two-bedroom flats (Clifford *et al*, 2019)



5. Atria House (Slough) was converted into 124 residential units across the ground, first and second floors. The complex was developed by galliard Homes in 2017 (Clifford *et al*, 2019)



6. Newbury House (Ilford) was granted permission to repurpose and provide 60 studio flats (Clifford *et al*, 2019)



7. Wembley Point (London) conversion granted to 316 one-bedroom and 123 studio flats (Clifford *et al*, 2019)



8. Delta Point (Croydon) was a consented scheme set to provide 404 one and two-bedroom flats (Inside Croydon, 2014)

Chapter 5: What Type of Buildings Should be Converted?

5.1. Overview

Real estate owners typically have four strategies when dealing with vacant office buildings: consolidation, renovation, re-development or repurposing (Remoy & Van Der Voordt, 2014). Owners, when selecting the fourth option; repurposing, must comprehend the opportunity and risks associated with this strategy. An adaptive reuse conversion may be successful if the owner ensures beneficial and long-lasting use of the location and building structure. If this criterion is met, owners can expect a lower proportion of their income lost than on a full redevelopment, with additional benefits achieved both financially and socially. Nevertheless, conversions require complex and thorough technical adaptations to the physical structure of the building.

5.2. Location

A study by Remoy and Van Der Voordt (2014) concluded that noise and air quality were the two locational characteristics that prohibited residential conversions. Local communities cherish tranquillity and serenity; several vacant offices are, however, located in industrial areas, which are not suitable for the habitation of families. Established conversions have surfaced in existing housing or mixed-use locations. However, business parks located close to CBD's can be optimal conversion locations, depending on specific target groups. As such, this could spark further redevelopment and gentrification for the surrounding areas, cultivating business and personal growth.

Housing quality is determined by the position of the building relative to its proximal public amenities. Research by Zivkovic *et al.* (2016) illustrates that proximity to public transport is of less importance on the selection of living environment than the availability of roads and accessibility of the building. In terms of location, it is a less complex procedure for owners and developers than at a structural level. Thus, they should fully understand the

opportunities that the surrounding facilities can bring to the conversion, such as parking availability, distance to public transport and greenness of the area.

Relative to prime offices, vacant secondary offices are deemed more suitable for office to residential conversions. Prime offices are more likely to be more competitive and in demand, given their higher occupancy rates and locational advantages. Table 1, represents a summary of the six key aspects that make it suitable for an office to be converted into residential units in relation to location (Geraedt and Van Der Voordt, 2002).

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Aspect	Criterion
1. Ground Property	Ground rent
2. Vacancy	Vacancy office > 1, 2 or 3 years
3. The character of Urban Situation	Location on or near city limits No other buildings in the immediate area Lifeless area No greenery in the surrounding area Bad reputation or social environment, vandalism Danger, stink or noise problems
4. Distance/Quality of Facilities	Shop for daily errand > 1 km Neighbourhood meeting place > 500 m Catering > 500 m Bank/post office > 2 km Basic medical facilities > 5 km Sport facility > 2 km Educational facility > 2 km
5. Accessibility using Public Transport	Distance to station > 2 km Distance to bus/metro/tram > 1 km
6. The Frequency Determines the Quality	
7. Accessibility using a Car and Parking	Several obstacles/ limitations: poor through flow Distance to parking space > 250 m

TABLE**1:****ASSESSMENT OF THE AVAILABLE OFFICES FOR TRANSFORMATION INTO HOMES - LOCATION****(Geraedt and Van Der Voordt, 2002)**

5.3. Building

Architectural designs and the structures of buildings are closely correlated to the success and failures of office to residential conversions. Residential tenants look at three key basic housing requirements in their decision-making process; housing type, functional facilities and size. Therefore, the building should only be transformed if it meets the demands set out by its potential tenants (Zivkovic *et al*, 2016). The conversion potential of a building can be defined by typological characteristics, given that this is how the success of the conversion is assessed in practice. The characteristics include structure, floor, floor layout, building length/depth, stairs, lifts and façade (Remoy and Van Der Voordt, 2014).

Gann and Barlow (1995) produced a table that summarises the technical constraints for office to residential conversions. The findings explicitly point out the importance of how building design impacts the feasibility and the availability of offices that can be converted (Table 2). In addition, a further list of criteria was established by Geraedt and Van Der Voordt (2002), assessing the availability of offices that could potentially be transformed into residential accommodation (Table 3). Both Tables 2 & 3 display areas of similarity, firstly they both highlight the importance of floor to ceiling heights. Secondly, emergency stairwells and means of escape in case of unforeseen circumstances and thirdly, external noise sources at the façade level.

Limit area	Limiting Factor	Degree of limit
Site	Orientation	XXXX
	External noise	XXX
	Parking spaces	XXX
	Amenities	XXX
	Exterior access	XXX
Size	Total floor sq ft	XXXX
	Height	XXXX
	Building depth	XXXX
	Floor plates	XXXX
	Grids	XXXX
	Floor to ceiling height	X
Structure	Penetration of services	xx(x)
Envelope	Cladding	xx(x)
Services	Services to separate units	xx(x)
Acoustic Separation	Partitions	X
	Flanking transmission	x
Fire Protection	Means of escape	xx(x)
	Fireman access	xx(x)
	Fire alarm systems	x
	Spread of fire prevention	x

Legend: Degree of limits – change impossible, xxxx; change difficult, xxx; change possible, xx; change relatively easy, x.

Table 2: TECHNICAL LIMITS TO CONVERSION (Gann and Barlow, 1995)

Aspect	Criterion
VETO CRITERIA BUILDING	
Year of Construction	Office built recently (< 3 years)
Vacancy	Office is partially vacant Office is vacant < 1 year
Main Dimensions	Office height < 2.7 m Office depth < 10 m
GRADUAL CRITERIA BUILDING	
Character of Building	Can't be recognised in relation to surrounding buildings Poor maintenance and impoverished
Extensibility	Not extensible vertically/horizontally
Support Construction	Dangerous support construction Height of storey < 2.8 m
Façade	Daylight entry < 10% of floor area Windows can't be opened
Entrance	Unsafe access to building No lift No emergency staircase
Installations	No or insufficient conduits
Environment	Noise > 50 dB Poor heat insulation Exhibits large amounts of hazardous materials Limited sunlight

TABLE 3: ASSESSMENT OF THE AVAILABLE OFFICES FOR TRANSFORMATION INTO HOMES - BUILDING (Geraedt and Van Der Voordt, 2002)

Chapter 6: Permitted Development Rights and the Impact it has had on the Private Rented Sector

6.1. Permitted Development & Prior Approval

In 2013, David Cameron's Conservative Government created an incentive plan which encouraged the regeneration of brownfield sites to boost the supply of housing and to create more efficient use of their current purpose. The new scheme brought forward permitted development rights (set out in the Town and Country Planning Order 2015) allowing for the conversion of offices (B1) to residential (C3), which relaxed the need for difficult planning permission or large cash contribution (Homer, 2018). The ability to adapt and re-use older, vacant buildings has become a priority for planners and politicians. Governments are eager to find viable solutions to reduce the consumption of land, existing urban resources while preserving energy. Policymakers advocate a rise in the number of homes located in urban areas as an integration tool of regeneration and sustainability policies (Heath, 2001).

Introducing this in the House of Commons on 24 January 2013, Secretary of State Eric Pickles announced that 'the changes would encourage developers to bring underused offices back into effective use as houses for local residents ... They will provide badly needed homes ... they will also help create jobs in the construction and service industries, and help regenerate our town centres' (UK Parliament, 2013). Since 2013, the UK government has implemented a three-tier system, which includes developments in need of full planning permission, developments that are permitted developments requiring prior approval and permitted developments that do not require prior approval (Clifford *et al*, 2018). Typically, prior approval is needed when there is a change of use and should be considered by the local planning authority (LPA), seen in Parts of Schedule 2 to the General Permitted Development Order (GPDO). For residential conversions, prior approval will be filled in

relation to several impacts such as transport, noise levels and flooding (Department for Communities & Local Government, 2014)

In England, from 2011-2016 the net additional housing units made by change of use of buildings was 89,140 dwellings, of which 30,600 dwellings were created in 2015-2016 with 42% of this figure derived from office to residential conversion (RICS, 2018). There has been a noticeable increase year on year in the level of dwelling delivered under permitted development rights, with the assumption that this has been the result of facilitated office to residential conversions through the use of permitted developments.

In 2015, the UK government introduced GPDO, which further enhanced the accessibility and popularity of office to residential conversions. Permitted development laws suggest that planning permission does not need to be granted, however, some local authorities aim to preserve their office space, suggesting the importance of research into the property and its surrounding local area (Progressive Property, 2018). In an attempt to preserve vacant offices, the GPDO introduced Article 4, preventing the use of PD rights over a specific site (RICS,2018). Article 4 directions were initially implemented for the protection of heritage sites and conservation problems (Larkham and Chapman, 1996), however today, article 4 directions are widely used in restricting office to residential PD's.

On the other hand, converting a commercial property into residential use is implemented as there are several perceived benefits associated with the conversion. The primary reason for conversions are due to residential buildings encompassing higher rental values than of commercial. Homer and Delve (2018) state that when the two prices are differentiated significantly, there is an opportunity to convert the building into residential units, with the aim of creating enough value to generate profit.

6.2. Section 106 & Affordable Housing

Assigning permitted development rights, given through prior approval provides LPA's the inability to enter into Section 106 (s106) agreements. As such, planning authorities are unable to impose and deliver affordable housing obligations or payment of an agreed sum of monies to the local authority. Typically, s106 obligations would go towards transport,

infrastructure and flood risk mitigation (RICS,2018). However, a community infrastructure levy (CIL) may be required under permitted development, this is dependent on whether the LPA has implemented a charging schedule. An example of an office to residential conversion that required affordable housing is 30 Gloucester place (Figure 1), London. As previously mentioned, the inclusion of affordable housing is a key requirement of s106. The scheme involved new openings in the façade at ground level, providing residents with street access. The greater scheme proposed a total of 51 new residential dwellings, of that 10 (17%) are to be considered immediately affordable housing units, located on the first floor of 30 Gloucester place. Further, the application includes an s106 contribution of £5m to the City Council's Affordable Housing Fund. Additional s106 contributions include costs relating to the development provision of residential parking, financial contribution to the Carbon Offsetting fund of £145,800, Crossrail payment of £2,696,155 and a payment towards the planting of off-street trees (Westminister.gov, 2017). These financial obligations set under s106, not only create sustainable solutions but provides a greater benefit to the wider society. The next section seeks to analyse the impacts of this relaxation around planning regulation.



Impacts

London in particular has been heavily affected by the implementation of permitted development rights. The price differential between office and residential units, combined with high levels of demand and scarcity of land, is encouraging landlords to gain the right to convert offices into the residential building without planning permission.

On the one hand, the use of Permitted development rights can be highly beneficial for the developer as it saves both time and money when looking to gain planning consent. Moreover, the shortage of housing in London can be offset at a higher rate through permitted developments as the turnaround on conversions is much quicker than a full rebuild. Thus, easing the housing constraint.

On the other hand, permitted development rights has had a multi-faced impact of London's real estate market. Figures collected in 2015 by London boroughs indicate that 7,000 new residential dwellings have been granted prior approval. Typically, under the traditional planning system, it would be expected that 1,000 would be delivered as affordable housing. Therefore, the supply of new affordable housing has been restricted. Moreover, it can be argued that the new supplied housing is of poor quality as they no longer are required to be 'plan compliant. This has led to basic living standards not being met, these include minimum space, light and air quality (London Councils, 2015). Lastly, developers seek to generate profit, therefore it is unlikely that permitted developments would take place in lower-income areas or unsustainable locations, as these areas are deemed unattractive for housing developers (DCLG, 2013).

6.3. The London Case

Inner London:

Camden: Received a total of 195 prior approval applications by the start of 2015. There was several concerns over the loss of 57,000 sq m of usable office space. Six months

prior, it was estimated that this loss of office space would lead to a loss of 2,570 jobs in The London Borough of Camden. Furthermore, Camden is regarded as a major employment centre, set to experience a rise in office demand of circa 615,000 sq m from 2006 to 2026 (London Councils, 2021).

Croydon: Over 99,000 sq m of office space has been granted through prior approval, providing 1,705 residential units. The local council estimate that had these new units been provided through the traditional planning system 256 and 853 affordable units would have been delivered. The prior approval schemes delivered are said to not meet the requirements laid out in the London Plan as there is limited communal space (London Councils, 2021).

Islington: Within a year and a half of the permitted development rights inception, the London Borough of Islington witnessed 75 successful prior approval applications, for a combined total of over 700 residential units. The schemes are expected to create a loss of 53,000 sq m of office space, equating to 4,500 job redundancies. The two major schemes approved under prior approval are Archway Tower and Whittington House, with a combined total of 157 new residential units. The council argue that the homes gone through the planning system, 78 of the 147 new units could have been marketed as affordable housing (London Councils, 2021).

Lambeth: Permitted development rights are restricted within Central Activities Zone (CAZ). Waterloo and Vauxhall are within CAZ, therefore exempt from permitted development rights. However, non-CAZ areas in Lambeth are responsible for 186 prior approval applications, resulting in the loss of over 40,000 sq m of office space, being replaced by 610 new residential units. If CAZ were granted permitted development rights, Lambeth could face additional loss of office space as it occupies 28% of existing office accommodation. Considering Nine Elms is situated in the heart of Vauxhall, it would be at risk as the redevelopment hub is set to deliver 22,000 new jobs, with the majority being office-based work (London Councils, 2021).

Outer London:

Richmond Upon Thames: 20% of office space has been lost due to the introduction of permitted development rights, with 57,000 sq m of office space being converted into residential. Richmond has seen the largest number of prior approval applications throughout the whole of London (London Councils, 2021).

Barnet: 100 businesses were given the notice to quit after Premier House, a vibrant office hub, was granted prior approval for the conversion of 7,000 sq m of office stock into 112 units. Barnet Council received the highest level of prior approval applications (109) in London, including 40 occupied offices (London Councils, 2021).

Figure 6, illustrates the wide dispersion of prior approval across London and the impact it has had on the net loss of B1 offices. The figure depicts that West London, South London and areas clustered around exemption zones have been hit the hardest in terms of potential loss of office floorspace.

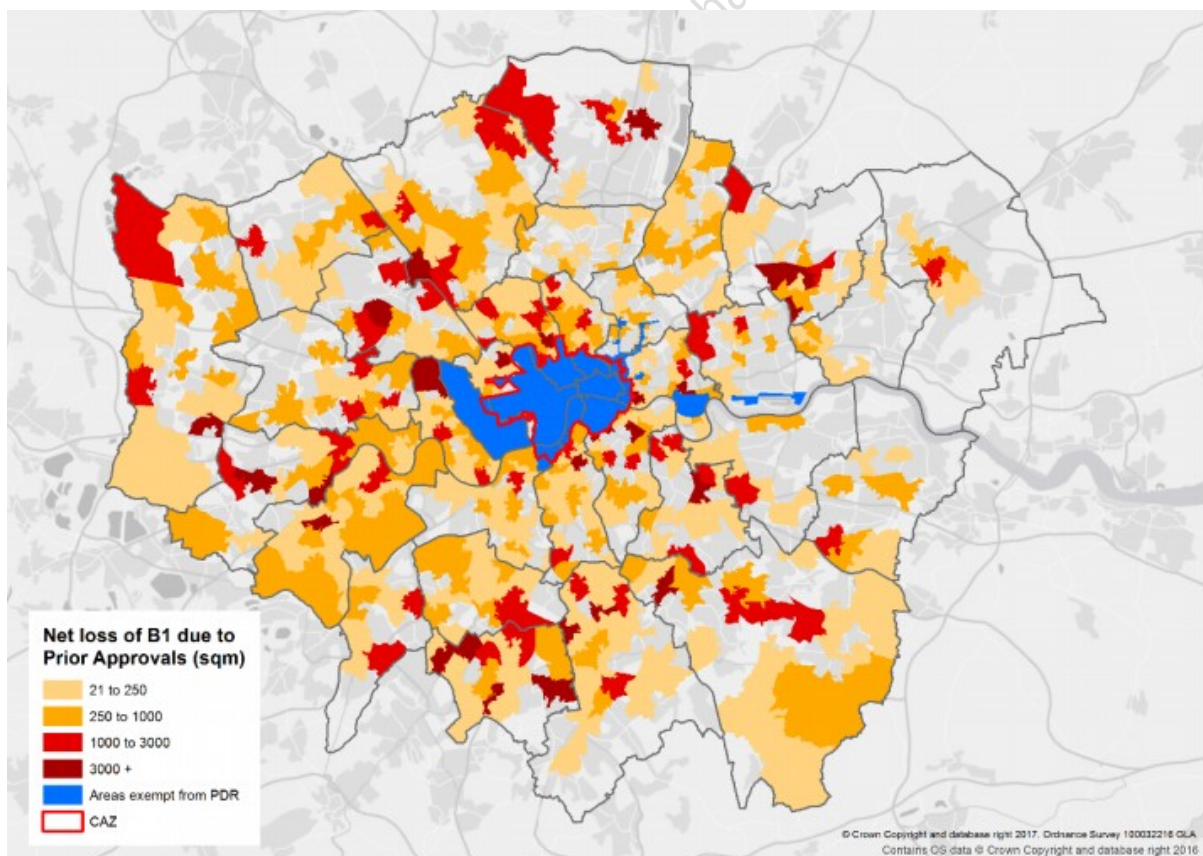


FIGURE 6: PRIOR APPROVALS UNDER PDR 2013-2016 (GLA, 2017)

6.4. Office to Residential Conversion by Boroughs

Inner London

Figure 7, displays the 11 London boroughs broken down into the proportion of office to residential conversions within each borough. From Q1 2019 to Q1 2020, Wandsworth experienced the highest rate of conversion of which were delivered under permitted development rights. 87 out of the 291 conversions took place in Wandsworth (30%), while Tower Hamlets witnessed only 5 permitted development conversions during the observed period. In addition, the net change of use in inner London was 1,741 and of this figure 291 were office to residential conversions. Therefore, only 16% of changes in use class were for office to residential.

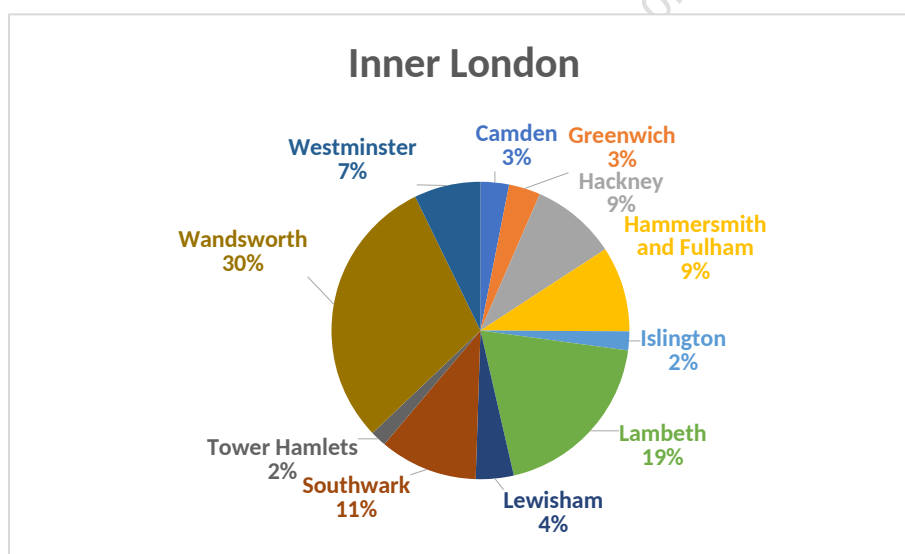


FIGURE 7: PERCENTAGE OF OFFICE TO RESIDENTIAL CONVERSION INNER LONDON BOROUGHS Q1 2019 - Q1 2020 (DCLG, 2020)

Outer London

Figure 8, depicts the 10 outer London boroughs split into the rate of conversions per borough. Both Hounslow and Hillingdon saw the greatest level of office to residential

conversions over the observed period. Of the 1,652 conversions in outer London, Hounslow and Hillingdon both saw 370+ conversions between Q1 2019 to Q1 2020. Ealing witnessed the lowest rate of office to residential conversions of the outer London boroughs, whereby only 43 conversions were recorded between Q1 2019 to Q2 2020. Moreover, the net change of use in outer London was 2,169 and of this figure, 1,625 were office to residential conversions. Therefore, 75% of changes in use class in outer London were for office to residential conversions. This figure is 5x greater than the level of office to residential conversions in inner London.

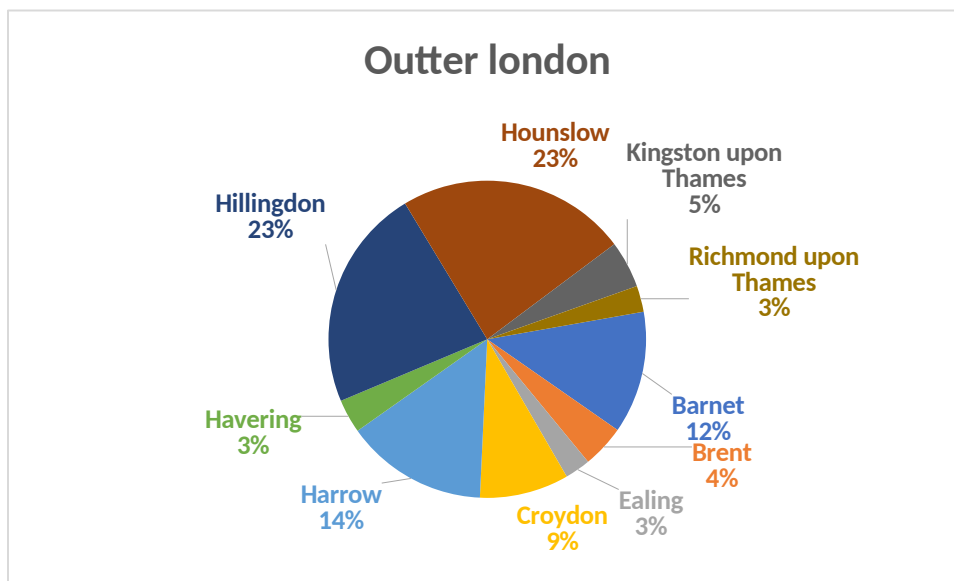


FIGURE 8: % OF OFFICE TO RESIDENTIAL CONVERSION OUTER LONDON BOROUGHS Q1 2019 - Q1 2020 (DCLG, 2020)

Inner Vs Outer London

Figure 9, expresses that 85% of office to residential conversions in London come from outer London boroughs. There are approximately 5.6x more conversions in outer London than inner London. The main reasons for this disparity in results is due to the lack of protected zones and the level of suitable stock in outer London boroughs.

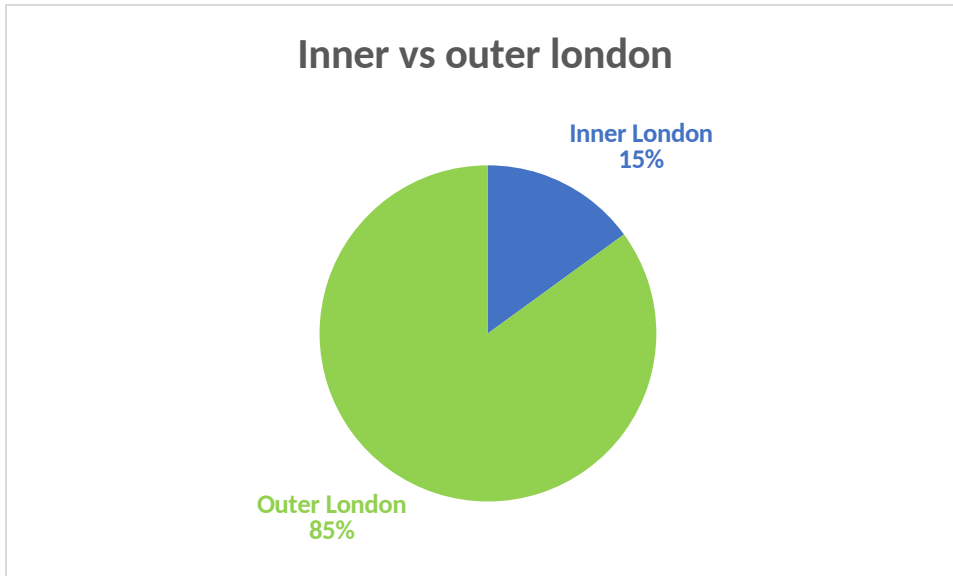


FIGURE 9: % OF OFFICE TO RESIDENTIAL CONVERSION OUTER VS INNER LONDON BOROUGHS Q1 2019 - Q1 2020 (DCLG, 2020)

Property of Acadex (A Division of Shagore Real Estate Ltd.)

Chapter 7: Hypothetical Office to Residential Conversion: 78-110 Rochester Row

Rochester Row is situated in the heart of Victoria, a location that has undergone structural improvements and large scale developments over the past five years. Victoria is now regarded as one of London's most vibrant, cultural and well-connected areas. Victoria is home to young professionals, students and families making it an optimal area to live in London. Rochester Row is a stone's throw away from novel amenities and the well-established offerings within Belgravia and Pimlico (Figure 1). Residents of Victoria have access to a range of retail and leisure facilities such as pubs, street food markets and restaurants. Lastly, Rochester Row is a nine-minute walk from Victoria Station providing easy access to the Victoria, District and Circle line. Other transport links such as St James Park Station and Pimlico station provide further direct access into and out of Victoria (Figure 2).



FIGURE 10: LOCATION OF ROCHESTER ROW RELATIVE TO NEARBY AREAS (Levy Real Estate, 2019)

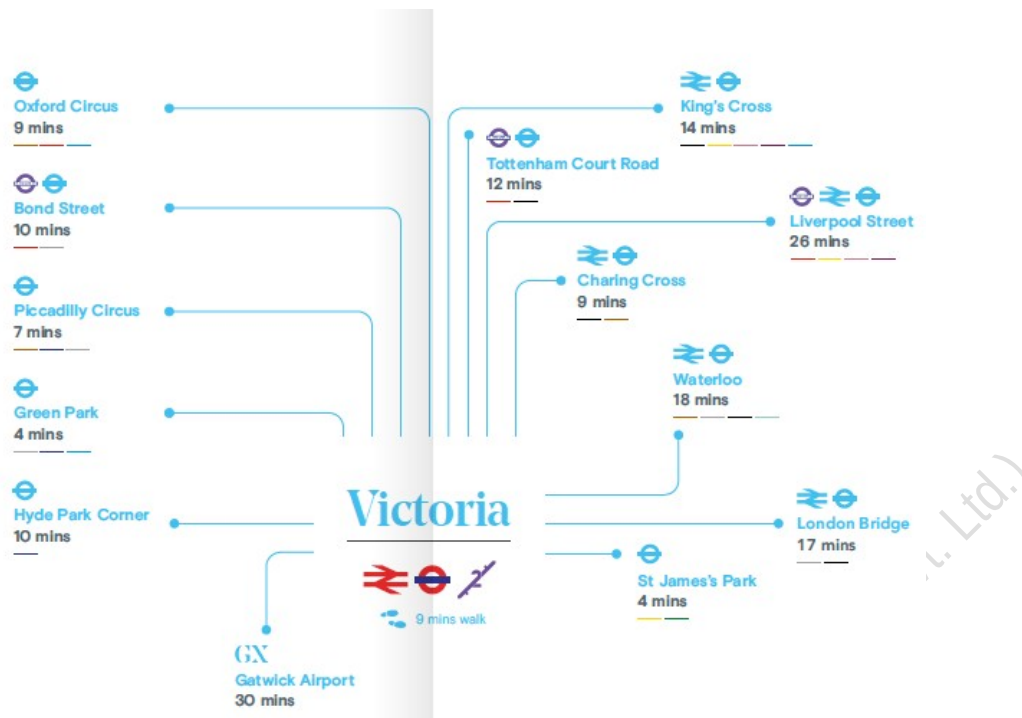


FIGURE 11: TRANSPORT LINKS NEAR ROCHESTER ROW (Levy Real Estate, 2019)

78-110 Rochester Row is a freehold property is currently on the market for purchase at £17,500,000. The site comprises of 16,555 sq ft of B1 office space (78-100 Rochester Row) from Basement Level, Ground Level and 1st to 3rd floors, with the remaining 21,778 sq ft is made up of C3 Residential Accommodation (102-110 Rochester Row) (Figure 3). The existing 19 residential units are sold off on long leaseholds, with the opportunity to re-gear the leases of properties located in 102 Rochester Row. The total net rentable area of the building is approximately 38,133 sq ft.

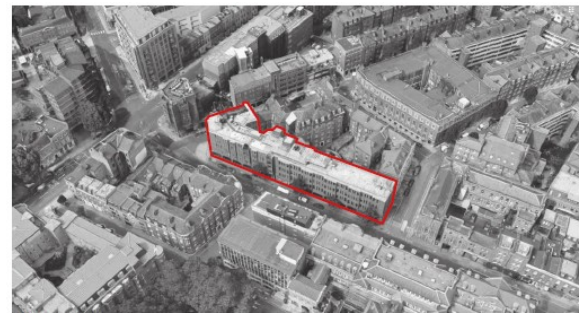
The building has been granted prior approval for the conversion of the 16,555 sq ft of B1 office space into a combination of 21 one, two and three-bed C3 residential apartments (Appendix A). Residents will be provided with 21 car parking spaces, with each residential unit allocated one parking space.



FIGURE 12: ILLUSTRATES THE CURRENT RESIDENTIAL SECTION (LIGHT BLUE) AND THE PROPOSED CONVERSION SECTION (Levy Real Estate, 2019)



01 Aerial view looking North



02 Aerial view looking West

FIGURE 13: ARIEL VIEW NORTH AND WEST (Amrek Wojciechowski Architects, 2019)

The following chapter will display both a Residual Appraisal and a Discounted Cash Flow (DCF) based on figures provided by Levy Estate Agents and a variety of up to date and logical assumptions. Both valuation techniques will provide a clear and comprehensive understanding of the potential this scheme can bring to a developer. On completion of the DCF, a sensitivity analysis and scenario test will be produced to assess the impact of uncertainty relating to the assumptions selected.

Chapter 8: Development Appraisal

8.1. Proposed Addition of Residential Premises

It is proposed to convert existing accommodation comprising 16,555 square feet of office space at 78-100 Rochester Row over lower ground and first to third floors to 21 residential flats. The existing floor area schedule of this space is provided in the following table.

Floor	Existing NIA (sq ft)
Ground	2,799
First	4,155
Second	4,284
Third	5,317
Basement	21 car park spaces
Total	16,555

The building has been provided approval for the conversion of 16,555 sq. ft. of office space into a combination of 21, one, two and three bedroom C3 residential apartments. All the flats will be provided with one parking space in the basement.

8.2. Time Requirement

It is estimated that the proposed addition will be completed within three years from the date of commencement.

8.3. Value of Proposed Residential Property

Information on comparable commercial real estate in the area revealed that the price of a new building is 1100 GBP per square feet (Zoopla Limited, 2021).

The value of the new residential units will thus be $16,555 \times 1100 = 18,210,500$ GBP.

It is estimated that these residential spaces shall be sold in the fourth year, with completion taking place in the third year.

It is estimated that sales costs shall be 2% of the sales value. The net sales value shall thus be $18,210,500 \times 0.98 = 17,846,290$ GBP.

8.4. Conversion Costs

The construction cost of new residential property in London is 185 GBP per square feet (Architecture for London, 2018). Apart from cost of construction, the conversion of the existing office premises will entail specific costs. The following table provides details about the complete conversion cost including specific assumptions about various elements of the total conversion cost.

Details	Year 1 (GBP)	Year 2 (GBP)	Year 3 (GBP)	Year 4 (GBP)	Total (GBP)
Site clearance and preparation costs (10% of construction cost)	306,268				306,268
Professional construction fees (5% of construction cost)	153,154				153,134
Professional planning fees (5% of construction cost)	153,134				153,134
Costs of construction	1,020,891	1,020,891	1,020,893		3,062,675
Contingency costs (5% of construction cost)	51,044	51,044	51,046		153,134
Total	1,684,471	1,071,935	1,071,939		3,828,345

8.5. Financing Options

Calculations have been made for three financing options, i.e. (1) nil finance, (2) 50% finance and (3) 75% finance of total conversion costs. The interest rate on finance is expected to be 3.5% per annum (Howard, 2021). It has been decided that the loan shall be paid in one instalment in the fourth year.

The following table provides details of the financing charges for the three options.

Details	Year 1 (GBP)	Year 2 (GBP)	Year 3 (GBP)	Year 4 (GBP)
First option (Nil finance)				
Second option (50% Finance, i.e. 1,914,172 GBP)	67,000	67,000	67,000	
Third Option (75% Finance, i.e. 2,871,260 GBP)	100,500	100,500	100,500	

8.6. Discounting Factor

The discounting factor has been considered to be 6% on the basis of an average of the interest rate and the builders cost of funds.

8.7. Working Capital Requirement

The requirements of working capital for the three options are detailed below.

Details	Working Capital Requirement (Amount in GBP)
Nil Finance	3,828,345
Second option (50% Finance)	1,914,172
Third Option (75% Finance)	957,085

8.8. Estimation of Promoter's Profit

The promoter's profit is estimated at 25% of sales value, i.e. $17,846,290 \times 0.25 = 4,461,500$ GBP.

8.9. Calculation of NPV

The NPV of the conversion has been carried out for three finance options and two sensitivity scenarios.

8.9.1. Nil Finance Option

Details	Year 1 GBP	Year 2 GBP	Year 3 GBP	Year 4 GBP
Bank Loan	Nil			
Working Capital	3,828,345			
Total	3,828,345			
Repayment of Bank Loan	Nil			
Repayment of Working Capital				3,828,345
Total				
Sales				17,846,290
Site preparation Costs	306,268			
Professional Construction Fees	153,154			
Professional Planning Fees	153,154			
Costs of construction	1,020,891	1,020,891	1,020,893	
Contingency costs (5% of construction cost)	51,044	51,044	51,046	
Financing Cost				
Promoters Profit				4,461,500
Total Inflows	3,828,345			17,846,290

Total Outflows	1,684,511	1,071,935	1,071,939	8,289,845
Net Cash Flows	2,143,834	(1,071,935)	(1,071,939)	9,556,445
Discounting Factor	1	0.942	0.888	0.837
Discounted Cash Flows	2,143,834	(1,009,763)	(951,882)	7,998,745
Net Present Value	8,180,934			

NPV = 8,180,934 GBP

8.9.2. Fifty Percent Finance Option

Details	Year 1 GBP	Year 2 GBP	Year 3 GBP	Year 4 GBP
Bank Loan	1,914,172			
Working Capital	1,914,173			
Total	3,828,345			
Repayment of Bank Loan				1,914,173
Repayment of Working Capital				1,914,173
Total				3,828,345
Sales				17,846,290
Site preparation Costs	306,268			
Professional Construction Fees	153,134			
Professional Planning Fees	153,134			
Costs of construction	1,020,891	1,020,891	1,020,893	
Contingency costs (5% of construction cost)	51,044	51,044	51,046	
Financing Cost	67,000	67,000	67,000	
Promoters Profit				4,461,500
Total Inflows	3,828,345			17,846,290

Total Outflows	1,751,471	1,138,935	1,138,939	8,289,845
Net Cash Flows	2,076,874	(1,138,935)	(1,138,939)	9,556,445
Discounting Factor	1	0.942	0.888	0.837
Discounted Cash Flows	2,076,874	(1,072,877)	(1,011,378)	7,998,744
Net Present Value	7,991,363			

NPV = 7,991,363 GBP

8.9.3. Seventy Five Percent Finance Option

Details	Year 1 GBP	Year 2 GBP	Year 3 GBP	Year 4 GBP
Bank Loan	2,871,260			
Working Capital	957,085			
Total	3,828,345			
Repayment of Bank Loan				2,871,260
Repayment of Working Capital				957,085
Total				3,828,345
Sales				17,846,290
Site preparation Costs	306,268			
Professional Construction Fees	153,134			
Professional Planning Fees	153,134			
Costs of construction	1,020,891	1,020,891	1,020,893	
Contingency costs (5% of construction cost)	51,044	51,044	51,046	
Financing Cost	100,500	100,500	100,500	
Promoters Profit				4,461,500
Total Inflows	3,828,345			17,846,290
Total Outflows	1,784,971	1,172,435	1,172,439	8,289,845

Net Cash Flows	2,043,374	(1,172,435)	(1,172,439)	9,556,445
Discounting Factor	1	0.942	0.888	0.837
Discounted Cash Flows	2,043,374	(1,104,434)	(1,041,126)	7,998,744
Net Present Value	7,896,558			

NPV = 7,896,558 GBP

8.9.4. Sensitivity Analysis Good Scenario

It is considered that bank loan is at 50%, sales increases by 5% and construction costs reduce by 5%.

Details	Year 1 GBP	Year 2 GBP	Year 3 GBP	Year 4 GBP
Bank Loan	1,914,172			
Working Capital	1,914,173			
Total	3,828,345			
Repayment of Bank Loan				1,914,173
Repayment of Working Capital				1,914,173
Total				3,828,345
Sales				18,738,605
Site preparation Costs	306,268			
Professional Construction Fees	153,134			
Professional Planning Fees	153,134			
Costs of construction	969,846	969,846	969,847	
Contingency costs (5% of construction cost)	51,044	51,044	51,046	
Financing Cost	67,000	67,000	67,000	
Promoters Profit				4,461,500

Total Inflows	3,828,345			18,738,605
Total Outflows	1,700,426	1,087,890	1,087,893	8,289,845
Net Cash Flows	2,127,919	(1,087,890)	(1,087,893)	10,448,760
Discounting Factor	1	0.942	0.888	0.837
Discounted Cash Flows	2,127,919	(1,024,792)	(966,049)	8,745,612
Net Present Value	8,882,690			

NPV= 8,882,690 GBP

8.9.5. Sensitivity Analysis Bad Scenario

It is considered that sales reduces by 5% and construction costs increase by 5%

Details	Year 1 GBP	Year 2 GBP	Year 3 GBP	Year 4 GBP
Bank Loan	1,914,172			
Working Capital	1,914,173			
Total	3,828,345			
Repayment of Bank Loan				1,914,173
Repayment of Working Capital				1,914,173
Total				3,828,345
Sales				16,953,976
Site preparation Costs	306,268			
Professional Construction Fees	153,134			
Professional Planning Fees	153,134			
Costs of construction	1,071,936	1,071,936	1,071,937	
Contingency costs (5% of construction cost)	51,044	51,044	51,046	
Financing Cost	67,000	67,000	67,000	

Promoters Profit				4,461,500
Total Inflows	3,828,345			16,953,976
Total Outflows	1,802,516	1,189,980	1,189,983	8,289,845
Net Cash Flows	2,025,829	(1,189,980)	(1,189,983)	8,664,131
Discounting Factor	1	0.942	0.888	0.837
Discounted Cash Flows	2,025,829	(1,120,961)	(1,056,704)	6,975,668
Net Present Value	6,823,832			

NPV = 6,823,832 GBP

8.9.6. Summary of NPV

The summary of NPV under 5 alternatives on the basis of discounted cash flow is provided below.

Details	NPV (GBP)
Zero finance alternative	8,180,934
Fifty Percent Finance Option	7,991,363
Seventy Five Percent Finance Option	7,896,558
Sensitivity Analysis Good Scenario	8,882,690
Sensitivity Analysis Bad Scenario	6,823,832

It can be concluded from the above table that the residual value of the property taken up for conversion is approximately 7 million GBP.

9. Conclusions

This research project aimed to examine the current practice of converting old and vacant office property for to residential use in the UK.

With the UK's housing crisis having intensified over the years on account of continuous underproduction of residential housing, compared to demand for the same, the conversion of old, underutilised and vacant housing space can certainly help in reducing this gap and providing more homes to people especially in urban areas with greater employment potential. This research project has been carried out with the help of a detailed review of literature and the examination of various allied issues like (1) the primary drivers behind office to residential conversion, (2) such conversions that have taken place in the past, (3) the type of office space that should be converted, (4) permanent development rights and (5) its impact on the rental market. The project thereafter takes up the analysis of a hypothetical case for conversion, namely an office cum residential building, i.e. 78-110 Rochester Row, which is situated in Victoria and the development appraisal of the conversion of 16,550 of office space to 21 residential flats. The appraisal reveals that the residual value of the targeted office space is approximately 7 million GBP. The research project aims to add to the body of literature on this subject and has hopefully succeeded in this attempt.

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