
Changing office location patterns and their importance in the peripheral expansion of the Dublin region 1960-2008.

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Introduction

During the past four decades, commercial activity in cities in the developed world has tended to decentralise from traditional central business districts (CBD) to suburban and peri-urban locations. This trend has tended to accelerate during recent decades, often associated with the development of purpose-built suburban office parks. Such trends, frequently being accompanied by the dispersal of population to the hinterland of metropolitan regions, have major implications for cities' development and transportation infrastructure. Peripheral expansion of urban areas, such as that which has occurred in Dublin, can be linked to the evolving spatial patterns of local commercial and residential development and has resulted in the rapid residential development of towns and villages at increasingly greater distances from the city (MacLaran, 2003; Williams, 2007). The continued decentralisation of employment and population to suburban locations along transport lines and the impacts of emerging sub-centres on the urban spatial structure are a major feature of the analysis of the development of major metropolitan areas.

This study explores the role that the shift in service-sector employment has played in reshaping a formerly more compact urban form in the Dublin region towards that of an increasingly dispersed pattern of development. In particular, the paper examines the movement of the office sector towards a number of suburban locations over the period from 1960 to 2008. It outlines the recent transformation of the geography of office development in Dublin from one which focused primarily on a single dominant core during the 1960s until the 1980s, towards one in which numerous and widely-dispersed suburban sites tended to account for a growing proportion of new developments during the 1990s and early 2000s. This has resulted in the rapid development of towns and villages at increasingly more distant locations from major cities and created widening patterns of commuting (Williams & Shiels, 2000, 2002)

Such continued decentralisation of employment and population to suburban locations and the impacts of emerging sub-centres on the urban spatial structure continue to be an important feature of the development of major metropolitan areas. In turn, the common failure to provide adequate public transport infrastructure to serve such emerging suburban and 'edge-city' employment nodes, together with the consequent reliance on commuting by car, possess further major ramifications and generates growing demands for costly road improvements (MacLaran and Killen, 2002). A sprawling metropolitan region emerges, characterised by rapid peripheral expansion marked by inadequate and congested commuting infrastructures, requiring rising levels of energy use, resulting in increased levels of pollution and occasioning a reduction in environmental quality.

The Changing Geography of Office Development, 1960-2007

In the period since 1960, the geography of office development in Dublin has been transformed from one that focused on a single dominant core towards one in which numerous and widely-spread suburban sites have tended to account for a growing proportion of new development, particularly during the 1990s and early 2000s. Facilitated by the growing availability of the motor car, the city has grown more rapidly over the last fifty years than during its previous history. It has been transformed from a relatively compact city to a sprawling metropolis. The residential population was the first to suburbanise, the city's upper and middle classes opting to distance themselves from the overcrowded and unhealthy tenements of the inner city. They were followed by the poorer classes themselves under programmes of slum clearance and rehousing (see MacLaran, 1993). This was followed from the 1960s by the movement of industrial functions to purpose-built suburban industrial estates and the suburbanisation of retailing (MacLaran & Beamish, 1985; MacLaran, 1993). Only in more recent decades did the suburbanisation of office functions in Dublin take place on a large scale, reflecting a wider international trend towards a restructuring of office sector activities and development in metropolitan areas (Sokol et al, 2008).

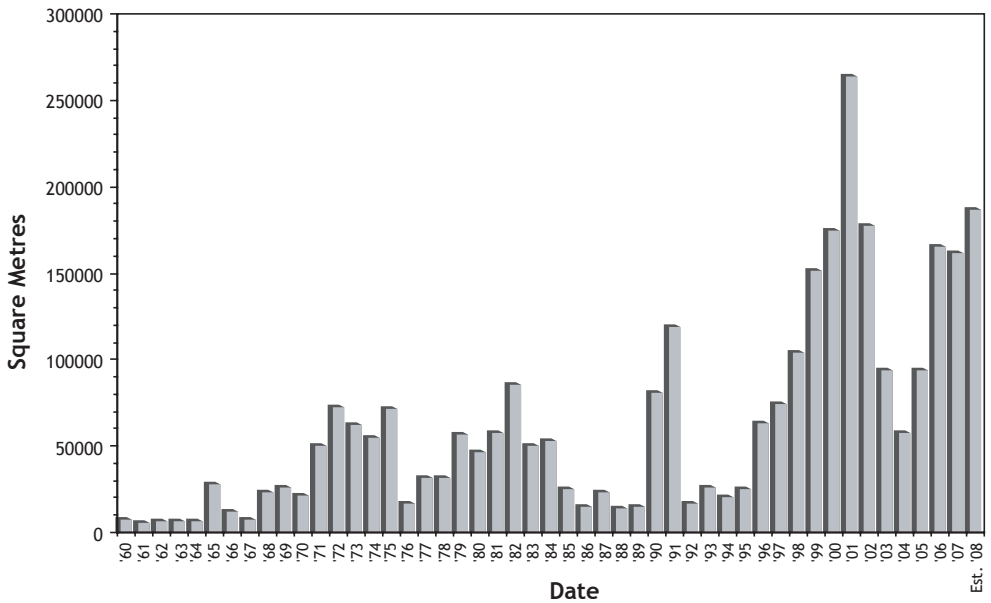
Historically, city centres had played the primary role as office locations because of their high degree of accessibility for both workforce and clients, combined with the advantages afforded by the proximate clustering of companies and public-sector operations for personal and business interaction. This was especially true at a time when commuting was more dependent on public transport services, commonly organized on a radial basis to bring workers from residential suburbs to the central business area. Dublin was unexceptional in this regard. Until the 1960s, most of the city's office functions were overwhelmingly concentrated in the city centre, mainly located in buildings that had originally been developed for residential occupation but that had subsequently been converted to office use. However, with the unfolding of Ireland's economic expansion of the 1960s, the demand for office space was increasingly met by new purpose-built developments, commencing the first of several development cycles that were to characterise Dublin's office sector over the next fifty years. This paper examines the shifting geography of modern (post-1960) office development and its impacts in terms of the location of office employment.

Development in the 1960s

Figure 1 depicts the annual completion of office space in Dublin from 1960. During the 1960s, the focus for office development was located in the central-city postal district of Dublin 2 and the high-status inner suburb of Dublin 4 (see Figure 2). These comprised the most prestigious and best preserved parts of Dublin's townscape. Developed from the early eighteenth to late nineteenth centuries, these areas were already undergoing functional transformation as residential accommodation was increasingly converted to office use. The development of new office buildings accelerated this existing trend towards functional upgrading and by the late 1960s, Dublin 2 and Dublin 4 had become established as the city's prime office core. Some 45 office developments, comprising 123,048 sq.m. of net floorspace, were completed during the 1960s, 27 being located in Dublin 2, with a further 12 in Dublin 4.

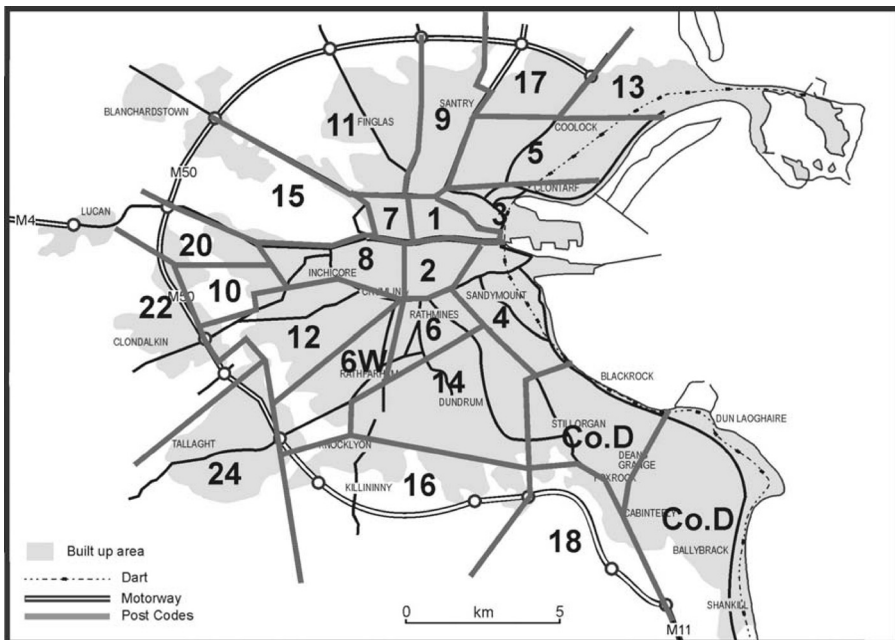
Development in Dublin 2 accounted for 72,471 sq.m. of floorspace, comprising 59 per cent of completed space. Office space built in Dublin 4 represented 37,040 sq.m., some 30 per cent of the total. Thus, during this initial period of modern office development, the construction of office space in suburbia was very limited. It was marked by the construction of Esso House (3,038 sq.m.) in Stillorgan in 1960 and the further development in 1969 of suburban office

Figure 1. The Development of Office Space in Dublin from 1960



Source: CURS TCD/Savills HOK database

Figure 2. Current Dublin Postal Districts



Source: CURS TCD/Savills HOK database

space in Booterstown, though again this was on a very small scale with less than 600 sq.m. being developed. As a result, by the end of the 1960s, the stock of office space in suburbia amounted to just 3,595 sq.m. out of a city-wide total of 123,047 sq.m., representing less than 3 per cent of the total.

Development in the 1970s

During the 1970s, 142 office developments reached completion in Dublin. While their geographical spread did widen somewhat, only 20 per cent of these were situated outside Dublin 2 and Dublin 4. These included the completion of geographically dispersed buildings in the inner-city postal districts of Dublin 1, 7 and 8 fringing the prime office core to the north and west. There were also developments further away in the inner-suburb of Dublin 6. However, by the end of the 1970s, little dispersal had taken place to outer areas, only eight buildings completed during the 1970s being located in the outer suburbs. Although the city's outer southern suburbs of Stillorgan, Dundrum, Cabinteely, Dún Laoghaire, Leopardstown, Booterstown and Clonskeagh recorded some office development activity, no suburban 'proto-nodes' had yet begun to emerge. In the northern outer suburbs, the only office development to reach completion was Raven House (2,098 sq.m.) in Finglas. Despite this increase in suburban development activity, by the end of the 1970s, there was still only 31,600 sq.m. of modern office space located in the outer suburbs, amounting to just 5 per cent of the total stock (591,749 sq.m.).

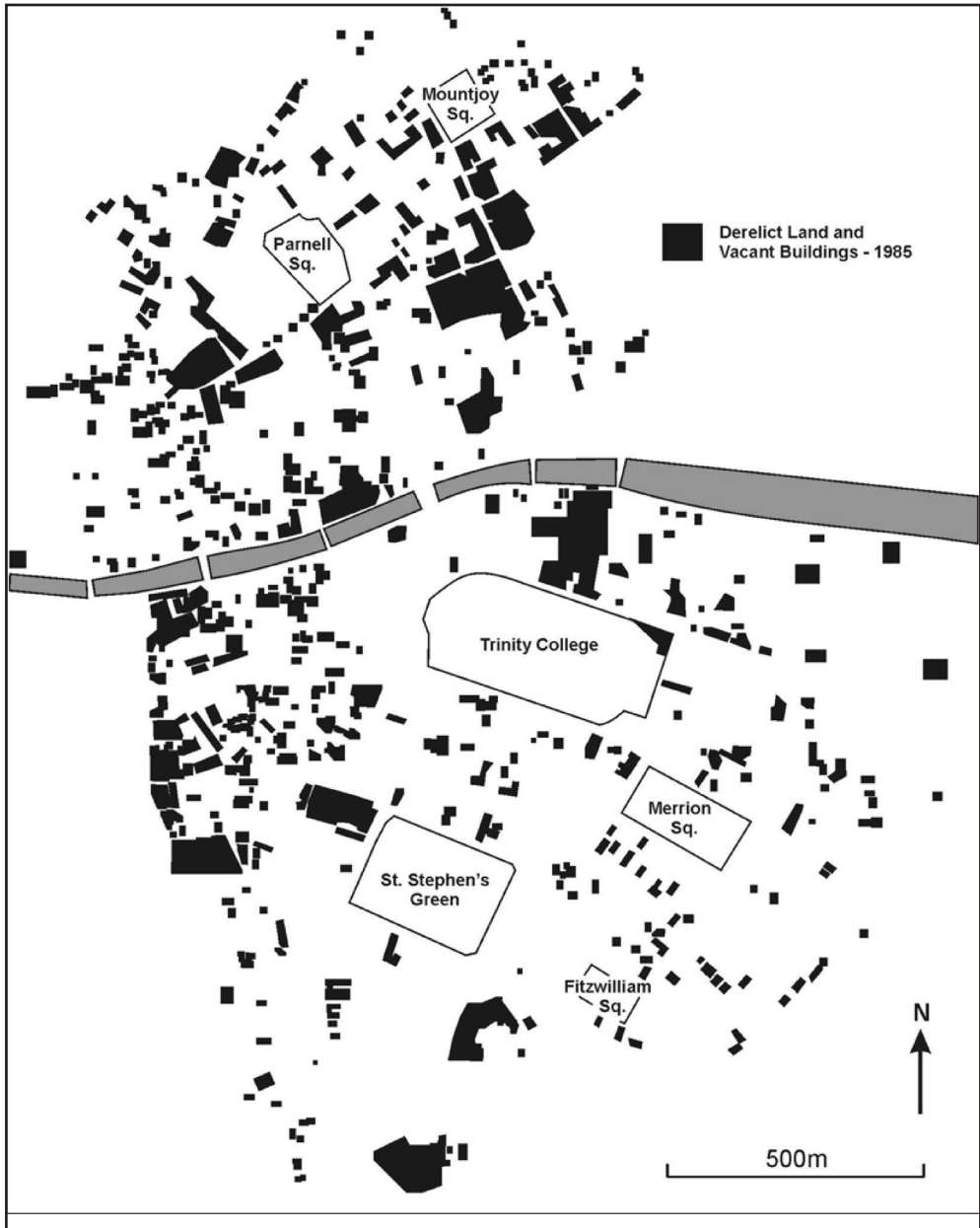
Development in the 1980s

During the 1980s, development locations began slowly to exhibit an outwards evolution with a growing interest being shown by developers in more peripheral areas. During that decade, a further 382,096 sq.m. of office space was built, with some 46,389 sq.m., amounting to 15.2 per cent of the total, being located in the outer suburbs.

In the early part of the decade, Blackrock and Dún Laoghaire emerged as focal points for new office development. Eleven buildings totalling 15,258 sq.m. were completed in Blackrock, four of which exceeded 2,000 sq.m. (Temple House Blocks 1 and 2, measuring 2,861 sq.m. and 2,508 sq.m. respectively, with Frascati Hall at 2,196 sq.m. and Enterprise House at 2,787 sq.m.). The quantity of space reaching completion in Dún Laoghaire also increased markedly, with 5 developments totalling 8,241 sq.m. being developed, comprising almost twice the amount of space built there during the preceding decade. There was also significant development of isolated buildings across a wide range of outer-suburban locations, for example at Ballybrack, Glenageary and Kill O' the Grange to the south and at Santry and Swords in the north. Some of the development schemes built during the decade represented the first modern office elements to be developed at locations, which subsequently evolved into important suburban office nodes, such as at Clonskeagh and Sandyford-Leopardstown. Nevertheless, in spite of this increasing geographical breadth of development activity, the city centre remained the dominant office location throughout the 1980s. This trend occurred against a background of increasing dereliction in many parts of the inner city as the local economy declined, reflecting a complex range of economic and social problems in the urban area. (see Figures 3, 4 & 5).

By the end of 1989, the city-wide stock of modern offices totalled 973,845 sq.m. in 365 developments. Figure 6 shows that some 76 per cent of this space was located in the postal

Figure 3. Derelict Sites and Vacant Buildings in Dublin



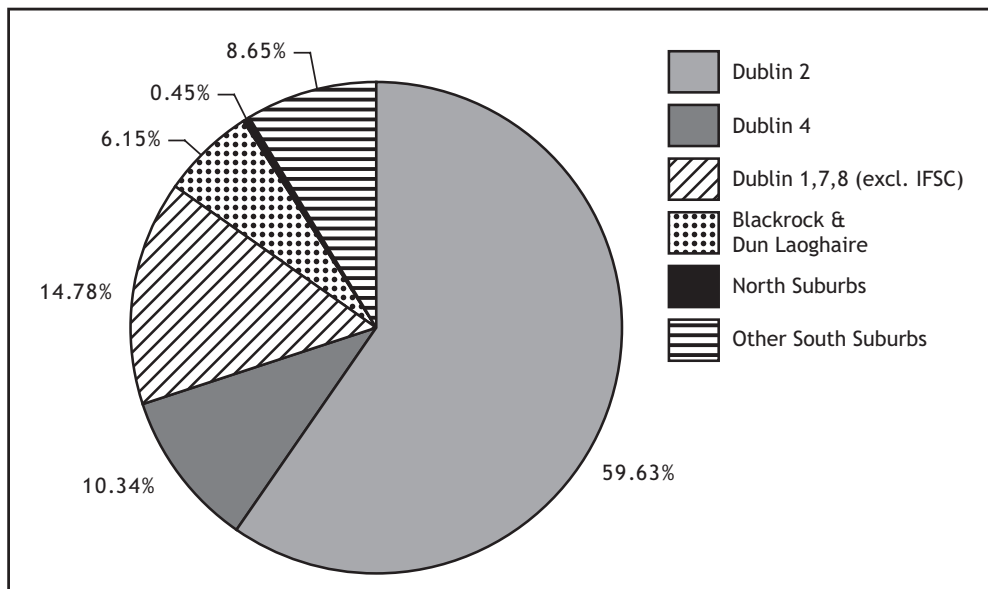
Source: MacLaran (1993)

Figure 4. Location of Modern (Post-1960) Office Developments in Dublin, 1983



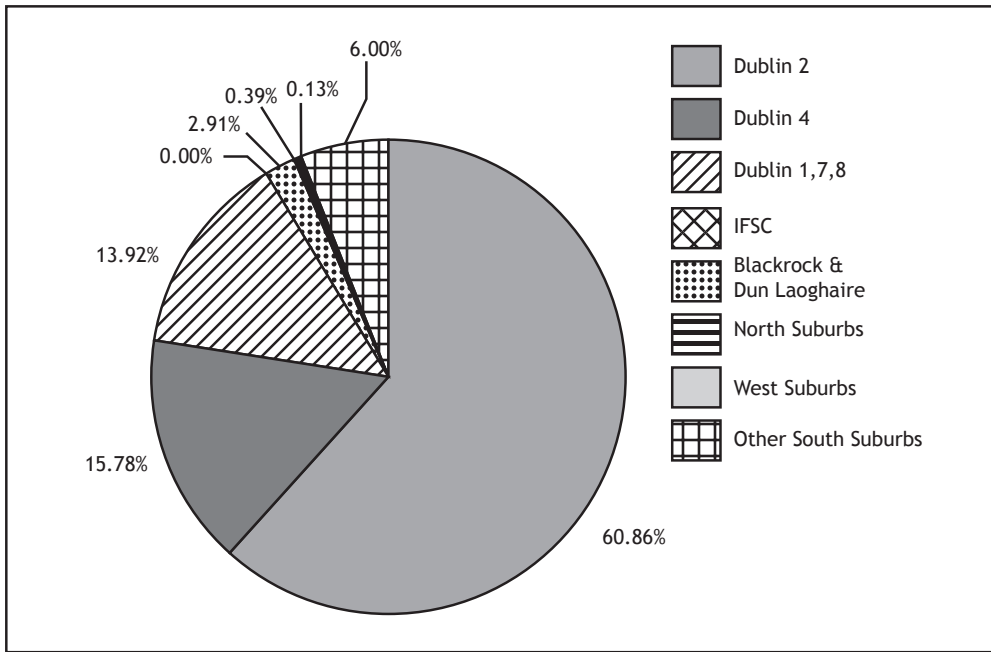
Source: After Malone (1983)

Figure 5: Location of Space Completed, 1980-1989



Source: CURS TCD/Savills HOK database

Figure 6. Distribution of the Modern (Post-1960) Office Stock in 1989

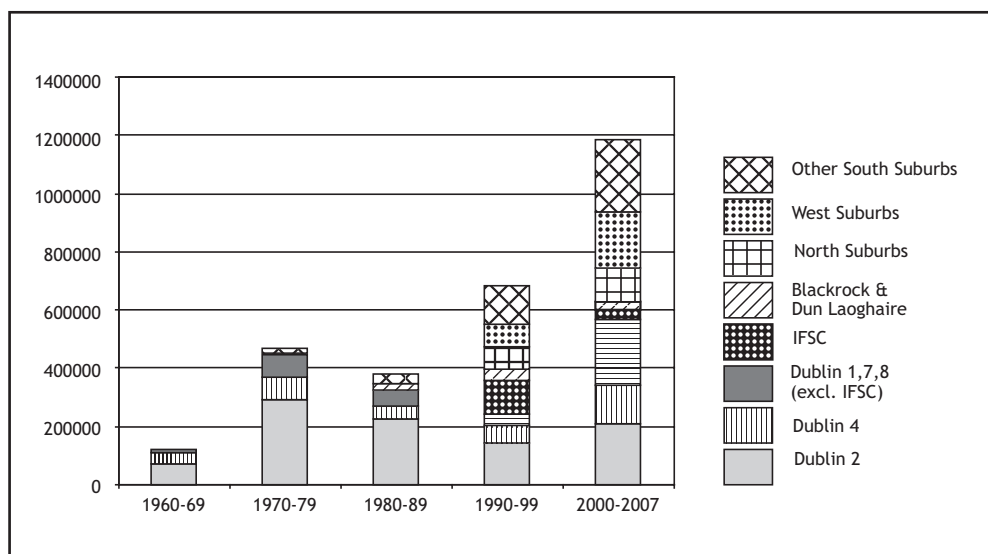


Source: CURS TCD/Savills HOKz database

districts of Dublin 2 and Dublin 4. In spite of thirty years of suburban office development, by the end of the 1980s the stock of suburban space amounted to only 91,905 sq.m., just nine per cent of the total. No suburban district possessed a stock of modern office space which exceeded 20,000 sq.m.. Although the south Dublin suburbs of Dublin 16 and Dublin 18 together had a fairly substantial office stock amounting to 18,967 sq.m., this was geographically widely dispersed over several locations. Very little development had taken place in either the western or northern outer suburbs. Thus, only two areas of significant clustering had emerged, at Blackrock, with a stock of 15,258 sq.m., and Dún Laoghaire with 13,119 sq.m. A further 16 per cent of the stock was located at the inner-city periphery of the prime office core in Dublin 1, 7 and 8 (Figure 6), which comprised a few developments which had been undertaken partly in response to the designated-areas regeneration tax incentives of 1986. However, the bulk of these did not reach completion until the early 1990s.

Development in the 1990s

The 1990s were marked by a dramatic increase in the scale of office-development activity. Rapid economic expansion, especially towards the end of that decade, generated a growing demand for office space to accommodate the expanding services-sector workforce. With 681,579 sq.m. of space being developed in 238 buildings during the decade, the stock of modern office space in the city grew by 70 per cent from 973,845 sq.m. in December 1989 to 1,655,424 sq.m. by the end of 1999. Figure 8 indicates that the geography of office supply also widened considerably during the decade, to an extent which was quite unlike the patterns observed in previous decades as indicated in Figure 7, which indicates the spatial distribution of development over the past five decades.

Figure 7. Geographical Diversification of Office Development Over Five Decades

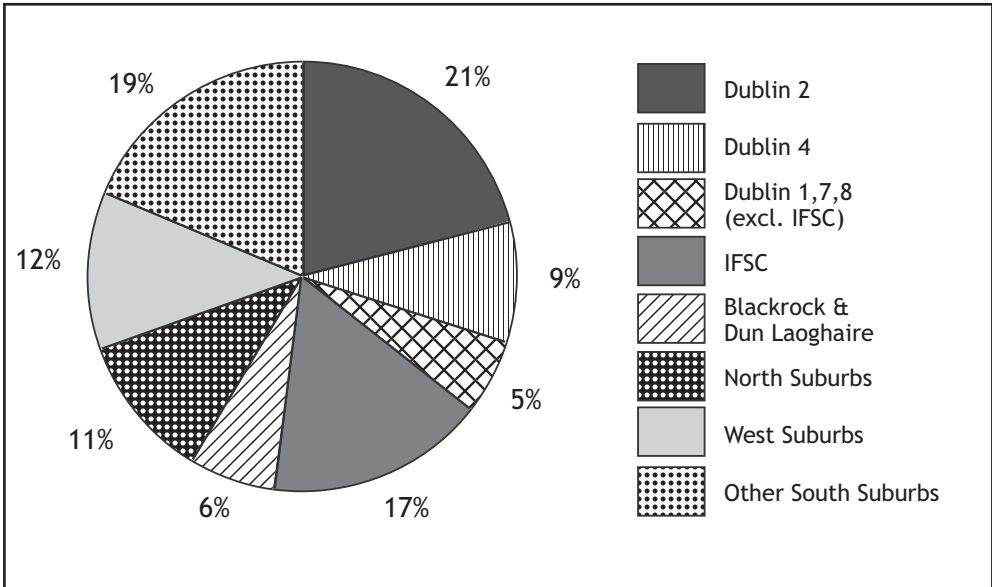
Source: CURS TCD/Savills HOK database

The distribution of office space depicted in Figure 8 contrasts markedly with that shown in Figure 6. It reveals that during the period 1990-1999, only 21 per cent of the office space that was developed was situated in Dublin 2, with a further nine per cent being located in Dublin 4. In contrast, the suburbs accounted for 48 per cent of the space completed, the remainder being located in the International Financial Services Centre (IFSC) at the Custom House Docks or in the inner-city periphery of the prime office core in Dublin 1, 7 and 8.

Overall, the expansion of development activity was dramatic in suburbia during the 1990s. Although the first part of the decade had been marked by a rising scale of office completions at the urban periphery, the suburbanisation of office development accelerated significantly during the second part of the decade (Figure 9). Between 1995 and 1999, the scale of completions rose to 226,192 sq.m. in the suburbs (not including the more established suburbs of Dún Laoghaire and Blackrock), which represented 54 per cent of the city-wide activity. This resulted in the expansion of the suburban stock to 346,294 sq.m., comprising a near tripling during the 5-year period.

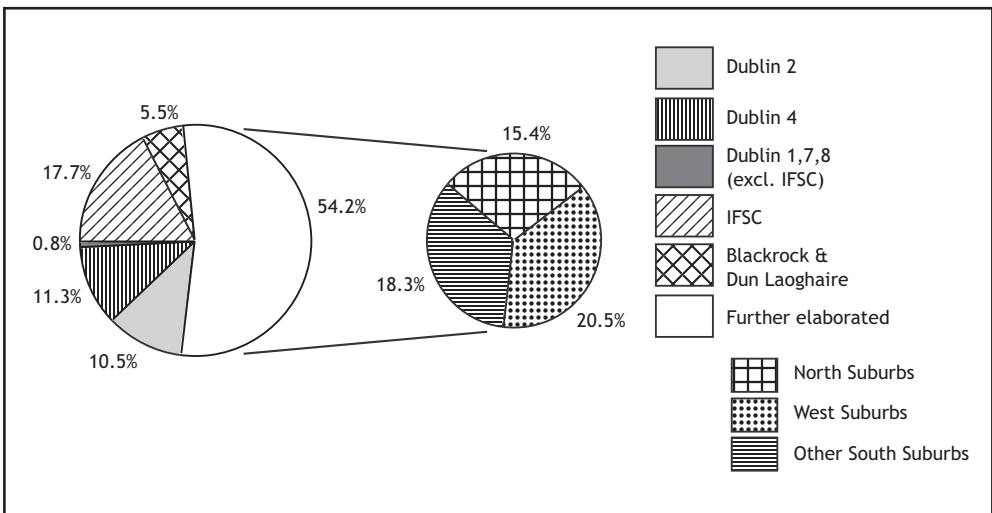
While only six per cent of the total was built in the longer-established suburban nodes at Blackrock and Dún Laoghaire, the proportion of the city's stock of modern office space located in these suburbs rose from 2.9 per cent in December 1989 to 4.3 per cent in December 1999. During these years, 23 developments comprising 42,833 sq.m. were completed in these locations, more than doubling the amount of office space there from less than 29,000 sq.m. at the beginning of the decade to over 71,000 sq.m. in December 1999. A total of 13 buildings (17,280 sq.m.) were built in Blackrock, including five in Temple Road amounting to 4,900 sq.m.. A larger amount of space reached completion in Dún Laoghaire (25,553 sq.m.) with six buildings in the Adelphi Centre comprising 14,125 sq.m.

Figure 8. Location of Space Completed, 1990-1999



Source: CURS TCD/Savills HOK database

Figure 9. Location of Space Completed, 1995-1999



Source: CURS TCD/Savills HOK database

During the 1990s, development also continued apace in places that had shown only embryonic development during the 1980s, most notably with Clonskeagh and Sandyford-Leopardstown rapidly emerging as significant suburban office nodes in their own right. Indeed, as shown by Figure 7, although there had been some development in the southern suburbs during the previous decades, it was not until the 1990s that the full force of development activity became focused strongly on the city's southern suburbs.

From having an office stock of just 5,968 sq.m. at the end of 1989, Sandyford-Leopardstown experienced a seven-fold expansion of its modern office space, rising to 42,135 sq.m by the end of 1999. Growth at Clonskeagh was even more dramatic. From a stock of only 4,037 sq.m. at the end of 1989, office space located here increased fifteen-fold to 62,995 sq.m by the end of 1999. As a consequence, by the end of the 1990s, both areas had become office nodes of some significance, the office stock in both Sandyford-Leopardstown and Clonskeagh exceeding the quantity of space located in either Blackrock (32,538 sq.m.) or Dún Laoghaire (38,671 sq.m.).

Scattered developments also continued to reach completion in the outer southern suburbs at locations such as Stillorgan, Cabinteely, Dundrum and Kilmacud, bringing the total area of space completed in the southern suburbs during that decade to over 127,000 sq.m., representing 19 per cent of the city-wide space completed during the 1990s.

Another striking feature of office development activity during the 1990s was the completion of new schemes of significant size in the city's western and northern suburbs, both of which had remained relatively undeveloped locations for office development at the start of the decade. For example, Dublin's north suburbs, with a stock of only 3,820 sq.m., had accounted for just 0.4 per cent of the city-wide total in December 1989. However, by late 1999, the northern suburbs accommodated a stock of 79,640 sq.m., a twenty-fold expansion of its modern office space, accounting for 4.8 per cent of the city-wide stock. Activity in the northern suburbs was particularly intense in the second part of the decade with the appearance of an entirely new node in the inner-suburb of Dublin 3. The development of the East Point Business Park, where 63,000 sq.m. were completed, was strongly influenced by the existence of its Enterprise Area status with special taxation incentives and represented the largest increase registered at any suburban node. Elsewhere in the northern suburbs, scattered completions also occurred in Swords and Santry.

Office development also took place at new suburban locations on the western edge of the city, the city's western suburbs representing the most recently developing office location. At the end of 1989, only 1,300 sq.m. of modern office space had been located in these areas. During the 1990s, offices were completed at a wide range of sites. Proto-nodes appeared at the outer western suburbs of Tallaght, at Baldonnell and along the Nangor Road. In Tallaght and at Park West on the Nangor Road, development was boosted by the availability of fiscal incentives. In Tallaght, between 1993 and 1998, 12 schemes totalling over 27,350 sq.m. reached completion. In 1999 alone, 27,205 sq.m. of office space was completed at Park West Business Park. During the late 1990s, around 16,180 sq.m. of offices were also built at Citywest (Baldonnell, Dublin 24). Smaller schemes also reached completion at a range of locations across the western suburbs including Blanchardstown and Clondalkin. Thus, within a single decade, the stock of office space in the western suburbs increased from just 1,300 sq.m. to 81,398 sq.m., to account for 5 per cent of the city-wide total by the end of 1999.

Development in the 2000s

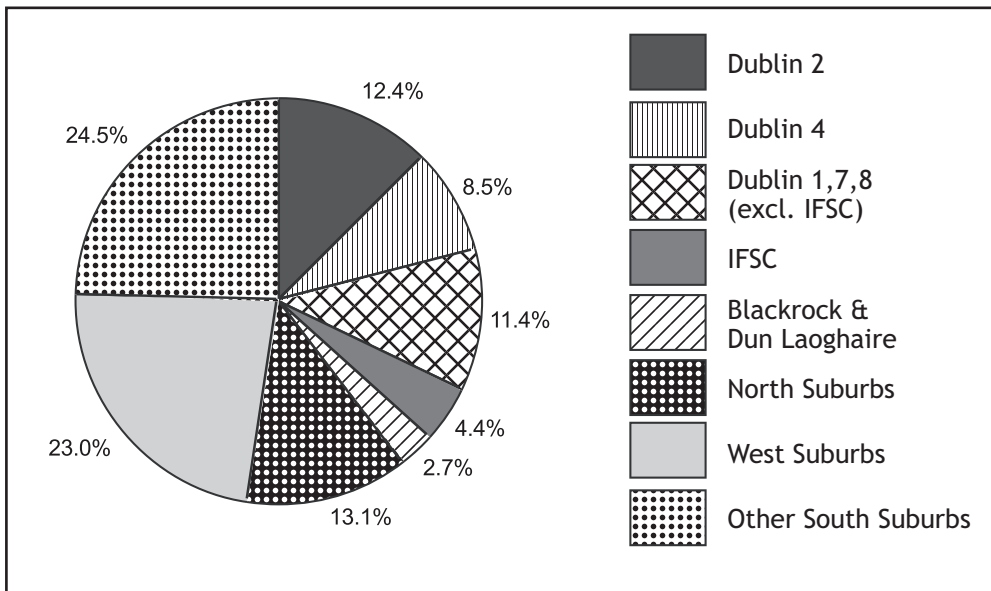
The early years of the new millennium marked a peak in the scale of office development with 765,292 sq.m. being completed between 2000 and 2004, a quantity which exceeded by 10 per cent the scale of output recorded during the previous 10 years.

The geography of development continued to exhibit a marked trend towards suburbanisation during that five-year period. Figure 10 shows that 63 per cent of the office space completed between 2000 and 2004 was located outside the central city with development focusing on the outer areas of Dublin, especially on the western (23 per cent) and southern outer suburbs (24.5 per cent). In contrast, the longer-established nodes of Blackrock and Dún Laoghaire were marked by a relative slowdown in the scale of development activity, with some 5,000 sq.m. and some 15,000 sq.m. being built in these areas respectively, amounting to only 2.7 per cent of city-wide completions.

For the other suburbs, the period was marked by a major increase in office development, which is unlikely to be matched in the near future. In many locations, the quantity of space reaching completion during 2000-2004 exceeded the total existing stock which had been developed there since 1960. This included Sandyford-Leopardstown, Nutgrove, Santry, Swords, Nangor Road, Citywest and Blanchardstown.

Very few suburban locations that had previously attracted office developments failed to register any increase in their modern office stock during the period (Stillorgan, Booterstown, Ballybrack, and Sutton Cross) and only one new location, City Junction/Malahide Road in the north-east suburbs, emerged as an entirely new development location, with 3,159 sq.m. reaching completion there. The suburban office node that recorded the most intense develop-

Figure 10. Location of Space Completed, 2000-2004



Source: CURS TCD/Savills HOK database

ment of space was at Sandyford-Leopardstown where 134,437 sq.m. was built in 27 schemes. This marked an impressive increase in the scale of development activity compared to the previous 10 years, when just over 35,000 sq.m. had been developed. It also represented over 70 per cent of the total amount of office space completed in the outer southern suburbs during this five-year period. Many of these new blocks were of substantial size and were among the largest office buildings in Dublin; the Atrium I and II buildings each exceeding 13,260 sq.m., while Block E at Central Park was over 20,000 sq.m. in size.

Figure 11. Current Administrative Boundaries of Dublin



The rapid surge in office development was facilitated by the introduction of new zoning categories by the planners of Dún Laoghaire-Rathdown county council, who sought to improve its yield from commercial rates. A fragmented policy approach can be seen as a result of the break up of Dublin county into separate administrative districts, which occurred in the 1990s (see Figure 11). Land that had been zoned for industrial functions and buildings that had accommodated industrial operations were opened to upgrading by being rezoned from industry to office-based industry (Bertz, 2002a). Sandyford's location near the C-ring M50 motorway and the prospective completion of a light-rail link to the city centre also encouraged office development. By the end of 2004, the area had become one of the most important office locations outside the central area of Dublin, with a stock totalling 175,147 sq.m., surpassing the combined stock of modern office space located in Blackrock and Dún Laoghaire (92,003 sq.m.). However, by the end of 2004, it had become evident that the scale of development had outpaced user-demand, as the area registered a 20 per cent vacancy rate.

Significant additions were also made at a number of locations in the western suburbs. Blanchardstown saw the addition of some 43,143 sq.m to its stock, which had amounted to little over 5,000 sq.m in December 1999. Citywest, located in Baldonnell on the Naas Road leading south-westwards out of Dublin, registered an increase of 31,695 sq.m., almost tripling its office stock in just five years. Considerable activity also took place in Dublin 22, on the Nangor Road, where 51,645 sq.m. was built, more than doubling the amount of development of the previous decade but resulting in a persistently high level of vacancy over the ensuing years. At the end of 2004, 53 per cent of that stock was lying vacant.

As a result of the sharp increase in office completions in the western suburbs, some 11 per cent of the city's stock was located there at the end of 2004. However, a high proportion (42 per cent) of this space was vacant, the western suburbs accounting for 28 per cent of all the city's vacant space.

The northern suburbs also registered a much higher level of development activity than previously. Significant expansion took place in Swords, where the completion of 14 buildings totalling 34,597 sq.m. resulted in a five fold increase in the district's modern office stock. A smaller quantity of space was developed in Santry (7,655 sq.m). By December 2004, the share of the northern suburbs in the city stock amounted to 6.8 per cent.

However, these dramatic changes in the geography of office development in favour of suburban locations were curtailed in the period after 2004 because of rising rates of vacancy. Indeed, in 2004, over a quarter (27.6 per cent) of all suburban modern office space lay vacant and these vacant suburban buildings accounted for almost 64 per cent of all vacancy in Dublin. Peripheral vacancy rates ranged from 18 per cent in the southern suburbs and 33 per cent in the north, to 42 per cent in the western suburbs. In comparison, the vacancy rate for the modern office stock in Dublin 2 was less than eight per cent. With growing international economic instability and rising levels of city-wide vacancy rates, particularly in suburbia, developers reacted by cutting their scale of activity, while financiers and investors swiftly withdrew their involvement in a number of suburban locations. The period after 2004 therefore marked a general scaling down of suburban development.

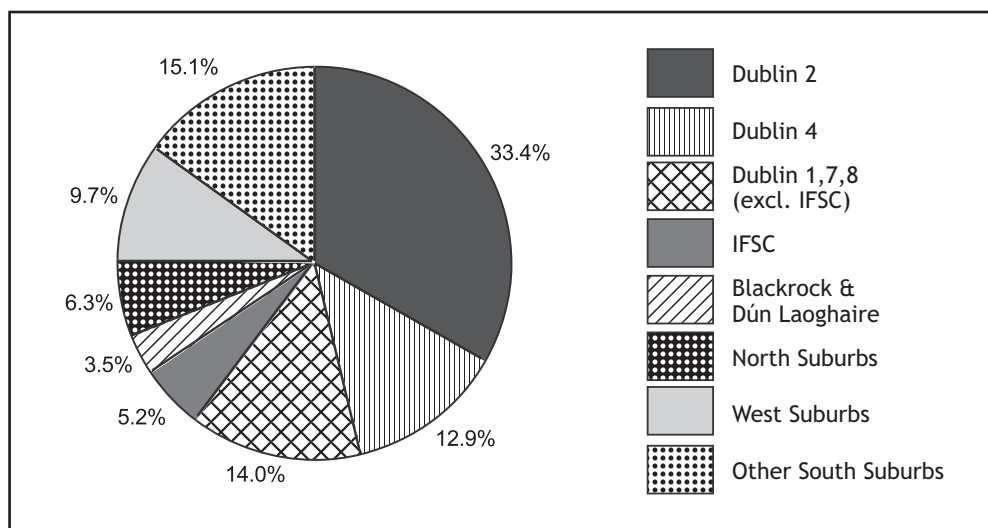
The total quantity of space which reached completion in Dublin between 2005 and 2007 amounted to 421,403 sq.m., of which only 23.4 per cent was suburban (98,591 sq.m.). Office development activity in the suburbs mainly focused during that time on the southern suburbs

outside Dún Laoghaire and Blacrock. In these southern suburbs, the location experiencing the largest increase in its stock was Loughlinstown, with 29,238 sq.m. reaching completion. Three buildings, each comprising nearly 10,000 sq.m., accounted for this development at Cherrywood Business Park in Loughlinstown, located approximately 13 km. south of the city centre. There was only one development in an entirely new location, comprising the completion of 7,419 sq.m. of office space in Carrickmines. By the end of 2007, substantial quantities of space (18,172 sq.m.) had also been added at Sandyford-Leopardstown.

Meanwhile, in the northern and western suburbs, the only substantial completion of space had taken place at Citywest (11,243 sq.m.), while smaller amounts had been added to the stock in Swords (5,146 sq.m.), Santry (3,198 sq.m.) and Blanchardstown (5,880 sq.m.).

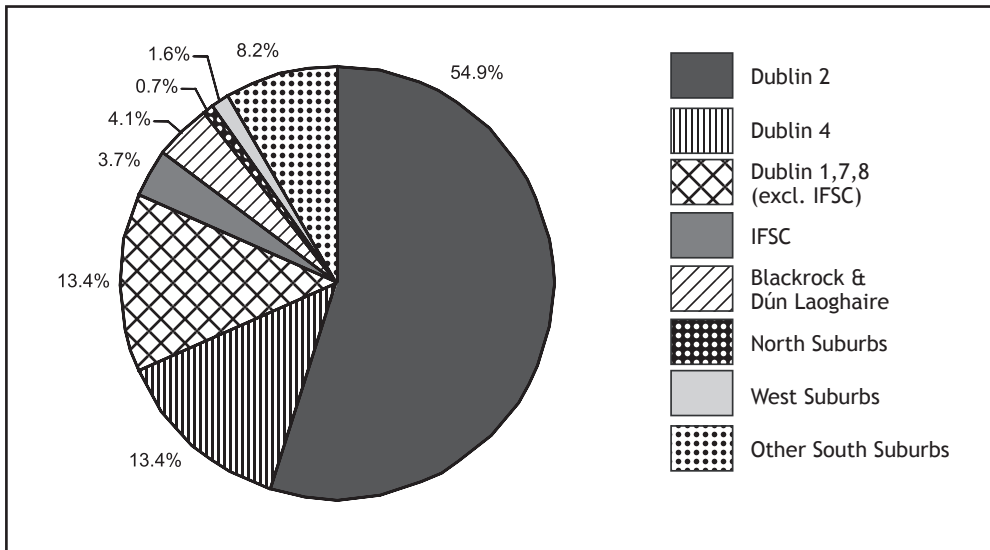
By the end of 2007, the city-wide stock of modern office space in Dublin had risen to around 2,841,421 sq.m., of which the suburban component comprised some 980,935 sq.m., amounting to almost 35 per cent of the total (Figure 12) and exceeding the quantity of floorspace located in Dublin 2. Thus, by the end of 2007, the geographical distribution of the city's modern stock had changed considerably. Figure 13 indicates that as late as 1995, over 85 per cent of the office stock had still been located in the city of Dublin. The traditional core of Dublin 2 had accounted for nearly 55 per cent of the total, while the suburbs represented just 15 per cent of the stock.

Figure 12. Location of the Modern (post-1960) Office Stock in 2007



Source: CURS TCD/Savills HOK database

Figure 13. of the Modern (Post-1960) Office Stock in 1995



Source: CURS TCD/Savills HOK database

Office Take Up and Vacancy

Take-up

The mid- to late-1990s were years of rapid economic growth in Ireland, with rapid expansion of the services sector fuelling the demand for office space in Dublin. As shown in Figure 14, there was a marked increase in the quantity of office space taken up during these years. This period was also characterised by a growing strength of demand for space in suburban locations. Between 1996 and 2000, space taken up in the suburbs grew considerably, both absolutely (Figure 15) and also relatively (Figure 16).

In 1995, the central area (Dublin 1, 2, 4, 7, 8) had accounted for almost 73 per cent of demand. However, this figure had fallen to 64.5 per cent in 1996 and amounted to just 30.9 per cent by 2000. From 1996 to 2000, it was mainly developments in new outer suburban locations (i.e. excluding Blackrock and Dún Laoghaire) that recorded a sharp rise in space taken up. With only 25 per cent of the modern office stock, non-traditional suburban locations accounted for over 65 per cent of the space taken up during 2000. While significant increases in take-up in the northern and southern outer suburbs were recorded from 1996, the increase in space taken up in the western suburbs dated largely from 1998.

However, from 2001 to 2007, there was a marked reduction in the proportion of take-up accounted for by the non-traditional suburban areas. Figure 16 shows that these suburbs still accounted for about 50 per cent of take-up in 2001 but that this figure had fallen to 43 per cent in 2004, with the years 2005 and 2007 marking low points at 33 and 34 per cent. This reduction in the proportion of take-up accounted for by suburbia was also associated with a growing geographical shift in take-up towards the fringe of the office core in 2005 and 2007.

Take up in the inner-suburb of Dublin 4 was particularly strong in 2005 (Figure 15), while the inner-office fringe of Dublin 1, 7 and 8 (excluding the IFSC) accounted for an unprecedented take-up of 76,111 sq.m. in 2007, accounting for 25.6 per cent of all the space taken up during the year.

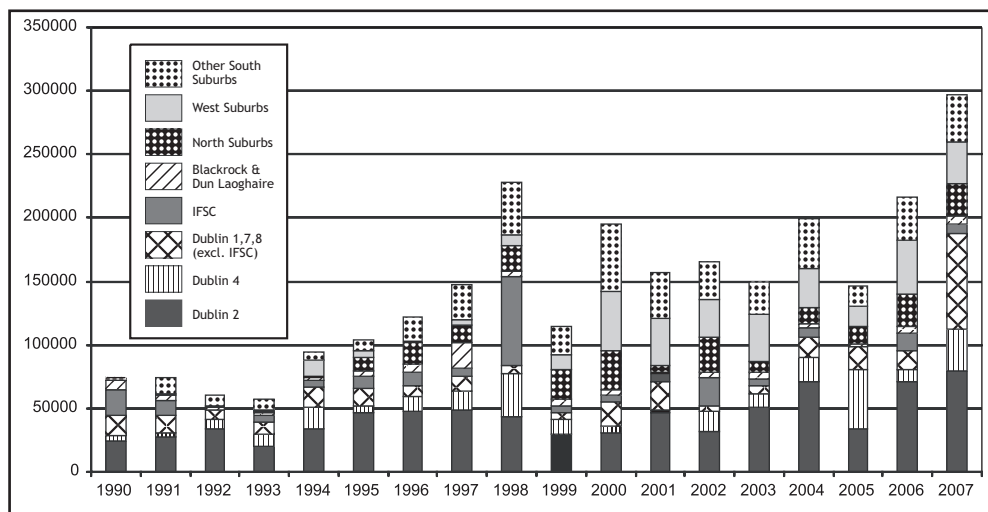
Vacancy

Attention now turns to an examination of office vacancy rates since the 1990s. As shown in Figure 17, from 1993, the quantity of vacant space declined uninterruptedly for a period of six years to reach an historically low level by the end of 1999 when only 31,236 sq.m. of office space lay vacant. This represented less than 2 per cent of the total stock. However, during the early years of the new millennium, the quantity of vacant space increased rapidly as the scale of office development rapidly increased and the levels of take-up failed to match the growing supply. By the end of December 2000, vacancy had almost doubled to 60,000 sq.m. and between 2000 and 2001, the amount of vacant space grew four-fold, increasing further between December 2002 and the end of 2003 to reach almost 430,000 sq.m.. Thereafter, slow reductions in vacancy can be noted for 2006 and 2007.

Figure 17 also highlights the fact that, in absolute terms, a majority of the vacant space since 1999 has been located in the suburbs, marking a sharp contrast to the 1990s when most vacancy (and most of the stock) was located in the central city. Thus, in 1990, 65 per cent of the city's vacant office space had been located in Dublin 2. This declined regularly over the following years and, by the end of 1999, the traditional office core of Dublin 2 accounted for only 19.5 per cent of all vacant floorspace, considerably below its proportionate share of the modern office stock at the time (44.4 per cent).

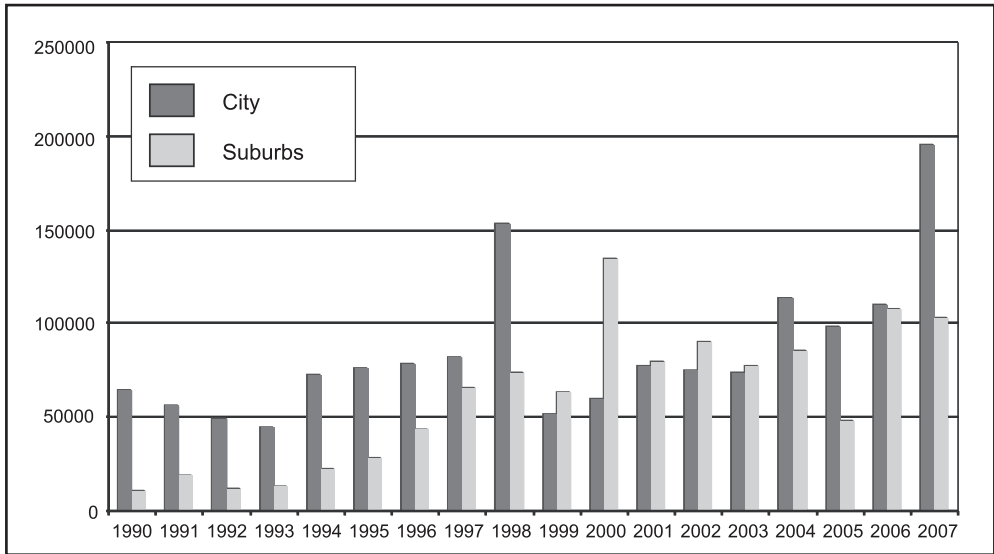
Despite accounting for between 30 and 35 per cent of the modern office stock, the outer suburbs have accounted for over 50 per cent of the city's vacant office space since 1999. The

Figure 14. Location of Space Taken Up, 1990-2007



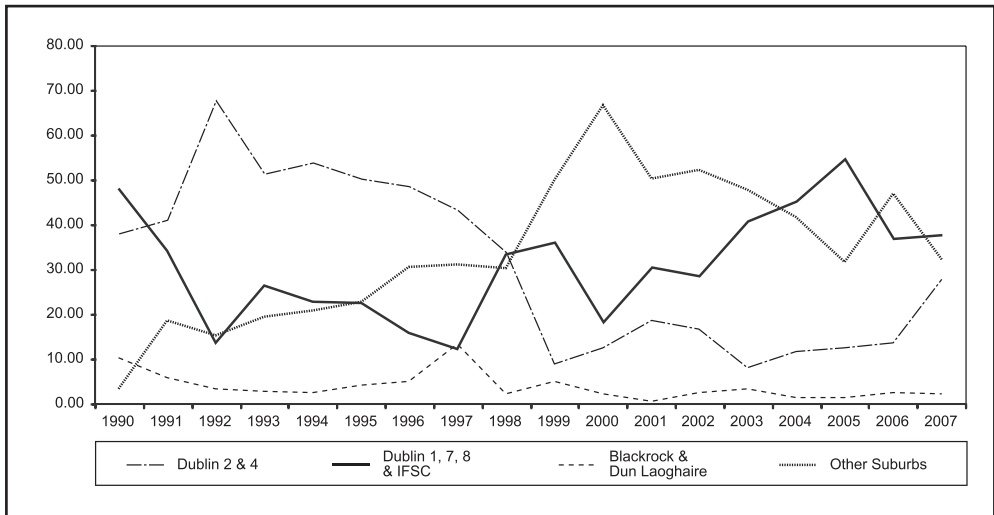
Source: CURS TCD/Savills HOK database

Figure 15. Space Taken Up in Dublin City and Suburbs, 1990-2007

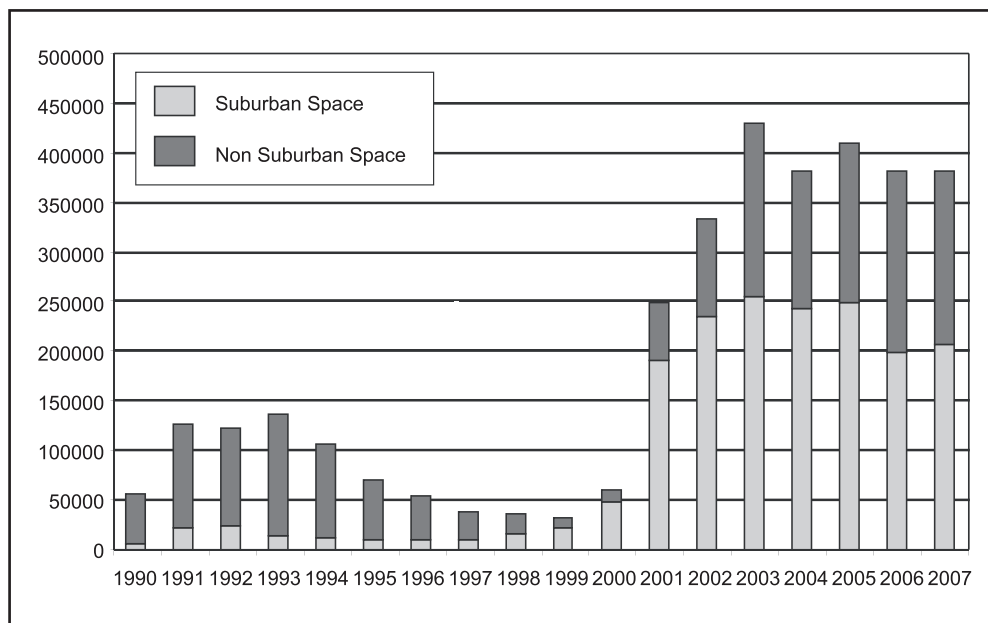


Source: CURS TCD/Savills HOK database

Figure 16. Proportion of Space Taken Up in Major Office Locations



Source: CURS TCD/Savills HOK database

Figure 17. Vacant Suburban and Non-Suburban Space, 1990-2007

Source: CURS TCD/Savills HOK database

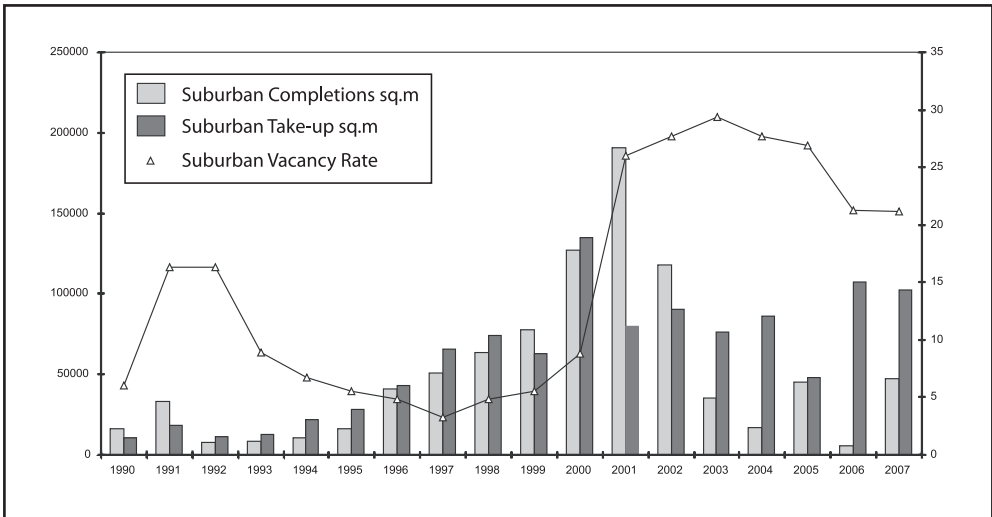
proportion of all space lying vacant that was located in suburbia peaked at 80 per cent in 2000, fell to 71 per cent in 2002 and decreased further after 2003. By December 2007, the vacant suburban stock accounted for 54.5 per cent of the vacant city-wide space.

By 2001, the scale of development in the suburbs, which reached a peak in that year, had far outpaced the scale of demand by occupiers, which declined significantly after 2000 (see Figure 18). This resulted in rapidly rising vacancy rates in the outer suburbs, the vacancy rate increasing to over 25 per cent in 2001 from just 8.8 per cent one year earlier. Again, during 2002, despite the reducing scale of completions, the scale of development still far outstripped user demand. In 2003, in spite of a considerable fall in the scale of development, the overall vacancy rate in suburbia rose as a consequence of older space returning to the market, peaking at 29.3 per cent.

However, significant geographical variations can be noted, with the more newly-established locations being characterized by the highest rates of vacancy. Suburban vacancy rates were relatively low in the well-established node of Blackrock-Dún Laoghaire (19.3 per cent), while vacancy exceeded 24 per cent in the southern suburbs, 30 per cent in the northern suburbs and were at their highest at 38.5 per cent in the western suburbs (Figure 19).

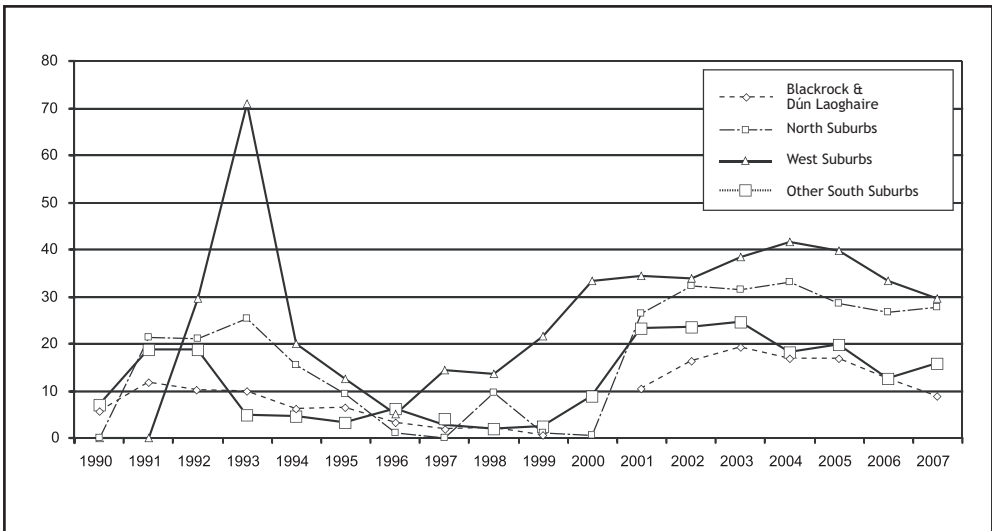
Finally, sustained demand and a substantial slowdown in construction led to a drop in the overall vacancy rate in the outer suburbs, the vacancy rate stabilising at about 21 per cent in 2006 and 2007, with still important variations remaining between the suburbs.

Figure 18. Completions, Take-Up and Vacancy Rate in the Suburbs



Source: CURS TCD/Savills HOK database

Figure 19. Vacancy Rates in the Suburbs, 1990-2007



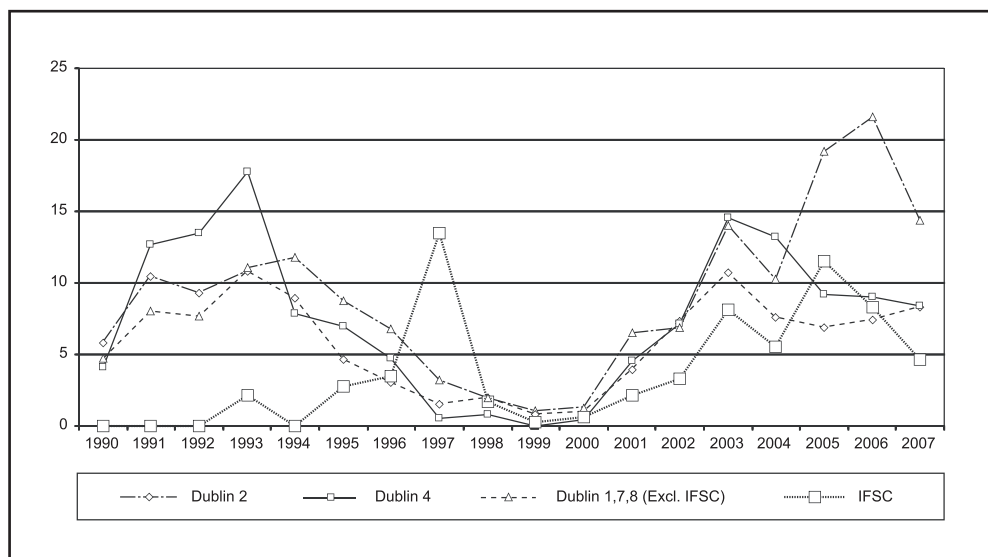
Source: CURS TCD/Savills HOK database

For the period 1990 to 2007, wide geographical variations in vacancy rates are apparent between the outer suburbs (Figure 19) and the central city (Figure 20). As depicted in Figure 20, the prime office districts of Dublin 2, Dublin 4 and the IFSC have been constantly characterised by low rates of vacancy. After 1995, when there was a marked suburbanisation of office development and of office take-up, vacancy rates in Dublin 2 were at their lowest. This suggests that the peripheralisation of office development was not a sign of decline of the central city but, rather, is evidence of its strength in that development in suburbia had complemented rather than competed with the traditional core. There was clear evidence of shortages of space in Dublin 2 during the mid- to late-1990s, with local vacancy rates dropping as low as 0.8 per cent in 1999. The vacancy rate rose sharply from 3.9 in 2001 to 7.3 per cent in 2002 but remained stable in the following years at approximately 7 per cent, remaining well below the vacancy rate in other parts of the city.

The outer suburbs present a marked contrast to the low rates of vacancy typifying the central-city office districts. In the suburbs, vacancy rates rose sharply after 2000, followed by a period of levelling off and eventually by a slow reduction (Figure 19). The initial phase of increase in vacancy rates was particularly sharp in the northern suburbs, where the rate rose from just 0.5 per cent in 2000 to over 26 per cent by the end of 2001, when 37,913 sq.m. was available, a majority (67.2 per cent) being located at new developments in Swords. In the following years, clusters of vacant space were found in Swords and in the inner suburb of Dublin 3 at the East Point Business Park.

The western suburbs have regularly displayed Dublin's highest rates of office vacancy, with rates typically exceeding 30 per cent since 2000. A major cluster of vacant space appeared in the Nangor Road area. From 2002, significant clusters of vacancy also emerged in the

Figure 20. Vacancy Rates in the City, 1990-2007



Source: CURS TCD/Savills HOK database

Blanchardstown area, with Tallaght and Citywest also characterised by abundant vacant space.

The lowest rates of vacancy in suburbia have tended to be recorded at the established nodes of Blackrock and Dún Laoghaire. Elsewhere in the southern suburbs, vacancy rates sharply increased between 2000 and 2001 as completions forged rapidly ahead of demand. The vacancy rate fell below 20 per cent only in the last two years, a majority of remaining vacancy being located in the Sandymount-Leopardstown area.

By late December 2007, suburban vacancy rates remained variable, ranging from 8.8 per cent of the stock in Blackrock and Dún Laoghaire to 15.8 per cent elsewhere in the southern suburbs, while vacancy in the northern suburbs stood at 27.8 per cent of the stock and at a third of the stock in the western suburbs.

Office Employment

Table 1 presents details on the stock of suburban office space in December 2006, together with prevailing local vacancy. At an occupancy rate of 20 sq.m. per staff member¹, it is possible to estimate the number of office workers accommodated at that time in each of the locations. This suggests that by late 2006, over 34,000 office jobs were located at suburban sites.

More recently available data (Savills & The Centre for Urban and Regional Studies, TCD, 2010) allows for an updating of the overall employment figures in the light of suburban office developments that have reached completion since 2006, subsequent levels of take up and of vacancy. These data show that between January 2007 and December 2009, over 206,350 sq.m. of office space reached completion in suburban Dublin. Table 2 shows that a number of these developments exceeded 10,000 sq.m. in size.

By December 2009, the total stock of modern office space located in suburbia amounted to 1,129,841 sq.m.. However, 340,209 sq.m. lay vacant. At a rate of 20 sq.m. per staff member, the occupied suburban stock of 799,632 sq.m. provided accommodation for almost 40,000 office workers, with the vacant stock permitting an increase of a further 17,000 staff in suburbia in the absence of any further office development there.

Conclusion

A major feature of the office development sector in Dublin has been the massive increase in scale of activity since 1990, which represents the most intensive office development boom in the city's history. The 1990s also witnessed a dramatic surge in office development activity at non-traditional locations, particularly at new suburban sites. With the peripheral growth of office employment, Dublin displays a similar trend to other European and American cities that have seen considerable decentralisation of office activities during recent decades.

Recent years have been characterised by a pause in large-scale suburban development due to the overprovision of space in certain districts, which has resulted in high vacancy

¹ The approximate floor-space per employee found in CURS TCD/ SavillsHOK surveys.

rates. However, these new suburban nodes now account for a significant share of Dublin's office space and office employment and a large number of workers commute to these new employment nodes daily, which causes serious congestion problems as they tend to be poorly served by public transport systems (MacLaran and Killen, 2002).

The factors underlying this recent large-scale suburbanisation of office development in Dublin are complex and relate to the rapid pace of economic and employment expansion experienced in the region and the scale of development in Dublin. During the 1990s, the

Table 1. Suburban Office Stock, Vacancy and Estimated Staff Numbers

Locations	Stock Dec. 2006 (sq.m.)	Vacant Dec 2006 (sq.m.)	Occupied Dec. 2006 (sq.m.)	Staff Numbers
Ashtown Gate, D15	9,807	447	9,360	468
Ballybrack	255		255	13
Ballycoolin Rd., D11	1,531		1,531	77
Ballyfermot, D10	1,708		1,708	85
Ballymun	10,265		10,265	513
Blackrock	37,903	2,982	34,921	1,746
Blanchardstown, D15	54,089	11,776	42,313	2,116
Boosterstown	6,085	1,243	4,842	242
Cabinteely, D18	8,153		8,153	408
City Gate Malahide Rd.	3,159		3,159	158
Citywest, D24	55,938	6,800	49,138	2,457
Clondalkin, D22	7,526	1,519	6,007	300
Clonskeagh	68,199	6,547	61,652	3,083
E. Point, Clontarf, E.Wall	55,186	32,141	23,045	1,152
Deansgrange	5,496	307	5,189	259
Dún Laoghaire	55,186	8,576	46,610	2,331
Dundrum	14,655	1,729	12,926	646
Finglas, D11	2,098		2,098	105
Glenageary	2,104	261	1,843	92
Kill O'Grange	3,929		3,929	196
Kilmacud	2,136		2,136	107
Liffey Valley Office Park	8,686	3,680	5,006	250
Loughlinstown	36,348	9,616	26,732	1,337
Naas Rd., Crumlin	23,087	2,299	20,788	1,039
Nangor Rd., D22	79,288	50,271	29,017	1,451
Nutgrove/Rathfarnham	17,312	3,170	14,142	707
Sandyford/Leopardstown	184,146	26,317	157,829	7,891
Santry, D9	11,714	5,126	6,588	329
Stillorgan	10,317		10,317	516
Sutton Cross	929		929	46
Swords	48,002	8,439	39,563	1,978
Tallaght, D24	53,974	7,017	46,957	2,348
Total	879,211	190,263	688,948	34,447

Republic of Ireland experienced a period of sustained and exceptional economic growth, with annual growth rates well above those of other O.E.C.D. countries. Ireland's G.D.P. grew strongly through the 1990s, at an average annual rate of over 5 per cent and at nearly 10 per cent in the closing years of the 1990s (Burnham, 2003). This increase in G.D.P. resulted in a sharp decline in the unemployment rate, which fell from 15 per cent in the early 1990s to 4.3 per cent in 2000. The growth in employment was mainly due to a significant rise in services-sector employment, which grew by 40 per cent between 1988 and 1998 (Travers, 1999). This unprecedented economic growth created a considerable demand for office buildings to accommodate the expanding services-sector workforce.

Moreover, on the user-demand side, a new type of demand for office space emerged, mainly from international clients. Expansion in the services sector led to strong growth in tele-services, with firms providing a range of services from IT-related after-sales support to car-hire reservation operations. Many had little need for central-city locations. However, they required a large amount of floorspace, good telecommunication infrastructure and low rents, which suburbia could offer (Bertz, 2002a). Moreover, suburban municipalities offered good provision of car parking space for employees, which was an attractive feature as the city centre became increasingly congested. At a booming time when companies needed to ensure adequate staffing, issues of access for a workforce that was overwhelmingly suburban in its residential location were given growing consideration. Employers therefore tended to evaluate suburban locations in a favourable light.

The changing planning context in the mid-1990s was also a significant factor. Planning policies proved successful in drawing office development to locations that had not previously experienced office development. The reorganisation of the administration of the metropolis created a fragmented administrative structure and was followed by important planning changes, notably in the locations zoned for office development and in the tightening of certain development controls in the central city. Suburban local authorities, deprived of income following the abolition of residential rates in the late 1970s and a central-exchequer subvention which failed to keep pace with inflation, were eager to attract office and retail developments to generate commercial rates. New zoning categories such as 'office-based industry' were introduced which facilitated the rezoning of former industrial areas at the periphery (Bertz, 2002b).

Furthermore, in the zentral area of Dublin, conservation became more strictly enforced, reducing the number of suitable sites available for office development activity. This situation

Table 2. Large Suburban Office Development Completed 2007-9

Completed	Location	Development	District	Size (sq.m.)
2007	Leopardstown	South Co. Bus. Park, Red Oak Ho.	Dublin 18	10,840
2007	Loughlinstown	Cherrywood, Bl. G	Co. Dublin	10,265
2008	Tallaght Cross		Dublin 24	10,379
2009	East Wall Rd.	The Beckett	Dublin 3	17,849
2009	Sandyford	1, Central Park (extension)	Dublin 18	18,116
2009	Sandyford Business Park	The Chase	Dublin 18	16,441

was worsened by the growing competition for available inner-city sites from alternative functions such as hotels and the development of apartments (see Kelly and MacLaran, 2004).

Investment factors also played a significant role. From the 1990s, the strong investment demand for large easily-managed high-quality office buildings was met with a declining degree of availability within the prime office core as a result of site-assembly difficulties presented by highly-fragmented land ownership, increasing levels of protection of the existing buildings and by planning restrictions on the development of large headquarters office developments. These restrictions encouraged the increasing suburbanisation of office development during the boom years of the Celtic Tiger.

The cumulative effect of these factors was a profound change in the geography of office development in the Dublin area and, consequently, of office employment. Proposals for public transportation infrastructure investment relating to this new spatial pattern have been made but, as yet, are not occurring. The process contributed to a major shift in the development and transport/commuting patterns in the Dublin region. As employment patterns became more dispersed and housing costs within their immediate vicinity of became less affordable (see Downey, 2003; Drudy and Punch, 2005), a push occurred in residential demand towards dispersed locations within car commuting distance of Dublin (see Williams and Shiels, 2000, 2002). Effectively, the suburbanisation of employment to new peripheral office nodes had rendered the accessibility of Dublin-based office work far more accessible to long-distance commuters. Indeed, access by car to 'edge city' developments such as Citywest or Leopardstown was frequently quicker from places such as Carlow or Arklow than from congestion-clogged inner Dublin or from inner-suburban areas such as Drumcondra, Harold's Cross or Ranelagh. The resultant shifts in the spatial pattern of employment and residential development will have a significant influence on the long-term development of the region.

Acknowledgement

The authors acknowledge the support of the Environmental Project Agency under contract 2005-CD-U1-M1.

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