Changing Cities: the cases of Sheffield and Manchester, United Kingdom

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Introduction

On 16th November 2000, the United Kingdom Government unveiled its long-awaited Urban White Paper *Our towns and cities: the future*, with a "new vision for urban living":-

> **Our vision is of towns, cities and suburbs which offer a high quality of life and opportunity for all, not just the few.**
>
> (Department of Environment, Transport and the Regions (DETR) 2000a, p7)

According to Haughton and Hunter (1994, p39) "Cities attract people and businesses to them for many reasons, but perhaps foremost amongst these dynamic impulses is the search for jobs and wealth-creation opportunities". They then went on to say that "Cities can decline, but they do so relatively slowly, and in recent centuries very few have disappeared altogether, except perhaps some on the resource frontier, one industry towns dependent on the extraction of a finite resource, often in hostile environments".

Whilst it is not suggested that any cities in the United Kingdom are in danger of disappearing, it is probable that some are in danger of losing their strength and vitality in the face of a hostile environment. In this context the hostile environment may be seen as being one brought about by changes in technology.

> "Technology has always affected the development of cities, both physically and socially. Today, however, the new technologies of computing and telecommunications are bringing about truly extraordinary changes, which will unquestionably play a major part in shaping the urban future."
>
> (LeGates and Stout, 2000 p568)

The second half of the twentieth Century wrought many changes to the fabric of Britain's cities and larger industrial towns. The 'out-migration' of populations continued as people moved from the urban core to the suburbs and beyond into country areas. Living patterns changed for many of the people remaining in urban areas, as Victorian terraces were cleared to make way for tower blocks and deck-access flats, now in turn being replaced with low and medium rise developments. Traditional industries closed and transferred to less developed and newly industrialised countries with low employment costs, leaving behind vast areas of

dereliction. Inner city areas were shunned by the new industries, which preferred to locate in pleasant rural locations with good access to motorways and airports (see Syms, 1986 pp129-156).

In some cities information businesses, high-technology manufacturing, leisure activities and other service related activities have brought about significant changes in labour markets and socio-economic structures. The growth of investment markets, fuelled by the pensions industry, has led to a boom in financial services. In the opinion of Graham and Marvin (2000, p 569) this "has fuelled the growth of larger cities which are placed at the hubs of the global electronic and financial services networks". All of this focuses production and employment of 'non-physical' products – data handling – in place of the physical products produced by the traditional industries. Cities that have not succeeded in capturing a share of the information market may be forced into decline as a result of failing to replace traditional manufacturing with new activities.

Sassen (1995) expresses the view that "rather than becoming obsolete due to the dispersal made possible by information technologies, cities:

- concentrate command functions;
- are post-industrial production sites for the leading industries of this period, finance and specialised services; and
- are transnational marketplaces where firms and governments can buy financial instruments and specialised services."

It can, however, be argued that outside national or regional capitals there is only a very limited potential for second and third tier cities to exploit the potential of the financial instruments and specialised services markets. Except where such cities house the headquarters of a major financial services organisation, as the result of historical accident, then the future potential to grow these industries will be based on local, or at best sub-regional, markets.

This paper examines how two major cities have responded to the changes that have followed the decline of their traditional industries. The implications of new technology are considered and the paper suggests ways in which the cities may achieve the vision set out in the Urban White Paper.

The case study cities – Manchester and Sheffield

The case study cities, Manchester and Sheffield, were both major industrial centres but have, in terms of their traditional industries, suffered serious decline in the latter part of the twentieth century. Besides suffering from a reduction in their industrial base both cities have seen a decline in population and have experienced significant obsolescence in terms of their built environment – buildings and infrastructure.

Geographically, the centres of the two cities are approximately 32 miles apart, separated by a major geological feature – the Pennine chain of hills which form the 'backbone of England', see map 1. There are two main road connections, both well below motorway standard and a rail link. Manchester and Sheffield serve two different regions of England, the North West and Yorkshire & Humber respectively.

Manchester is the regional capital of the North West, whilst Sheffield is the sub-regional centre of South Yorkshire.

The industrial origin of the two cities is very different. Manchester was founded on the cotton and textile industries and in consequence brick-built multi-storey spinning and weaving mills and warehouses dominated the city's built environment. Although typically identified with its traditional cotton past, Manchester diversified during the second half of the nineteenth century and first half of the twentieth century into many other industries, including iron and steel industries, textile machinery, motor vehicles and cycles, chemicals, leather and rubber trades, food, drink and tobacco (Manchester Chamber of Commerce and Industry, 1937). Sheffield on the other hand was the home of the cutlery industry and associated metal trades. From small cutlery workshops major employers developed and the city became an important steel producer. Its built environment relates to the development of the industry from small workshops to major steel mills.

Manchester lies at the heart of the Greater Manchester conurbation which occupies a land area of 128,584 hectares[1], with a population in 1991 of 2.455 million, giving a density of 19.4 persons per hectare. The conurbation comprises 10 cities and metropolitan boroughs, Bolton, Bury, Manchester, Oldham, Rochdale, Salford, Stockport, Tameside, Trafford and Wigan.

Sheffield is one of four cities or metropolitan boroughs that make up the South Yorkshire conurbation, the others being Barnsley, Doncaster and Rotherham. The land area of South Yorkshire is 21% larger than Greater Manchester, at 155,941 hectares but it accommodates only slightly more than half the population, 1.263 million persons, giving a density of only 8.1 persons per hectare.

The population of both conurbations peaked in 1971 then suffered decline over the next 20 years[2], see Table 1.

Table 1 Population change Greater Manchester and South Yorkshire 1971-1991

Year	Greater Manchester	%age change	South Yorkshire	%age change
1971	2,728,948		1,322,500	
1981	2,594,700	- 4.9%	1,301,800	- 1.6%
1991	2,455,093	- 5.4%	1,262,630	- 3.0%

(Source: 1991 Census; Office of Population and Census, 1992)

Whilst both conurbations suffered fairly slight declines in population, the situation in the two cities was much more marked, with Manchester losing 9.8% of its population between 1981 and 1991 and Sheffield losing 7.8% over the same period.

The social grouping of 'out-migrators' from the two conurbations is also of importance when it comes to looking at city change. In Greater Manchester the dominant group of people leaving the conurbation in 1990/91 was the 'Professional'

1 Note: one hectare equals 2.471 acres.

2 Note: national census data in the United Kingdom is compiled every ten years.

group, followed by 'Managerial'. In South Yorkshire the highest rate of out-migration was of 'Technical' people followed by 'Professional' (Champion, 1999).

The 1991 Census figures are now rather dated and a more recent study (Robson *et al*, 2000) has shown that population change in both of the conurbations remained static between 1991 and 1997. Indeed, as will be shown later, there may now be some movement back into the cities.

What is clear is that both the case study cities have experienced significant losses in terms of both their industrial bases and their population. The ways in which they have attempted to stem, and reverse, their decline has been very different but there are also many similarities. Robson *et al* (2000, pp9-10) found that, in terms of 'successful' places "London is, by a degree of magnitude, better placed than any of the other conurbations", Greater Manchester is one of three relatively successful conurbations and South Yorkshire is one of four classed as "least successful".

The paper will examine the physical regeneration of Manchester and Sheffield through different forms of real estate development and the provision of infrastructure. It will seek to draw conclusions as to the success or failure of urban renewal policies in the context of these two manufacturing cities. The lessons may then be applicable to other cities elsewhere in the world.

Transport

Both city centres are major centres of employment, with around 110,000 people working in Manchester city centre in 1998 (Office for National Statistics, 2000) and in excess of 40,000 in central Sheffield[3]. The problems associated with transporting these numbers of people to and from their places of employment are therefore important issues for both cities. The major infrastructure expenditure, in both cities, in the last decade of the Twentieth Century was the construction of Light Rapid Transit (LRT) systems – Supertram in Sheffield and Metrolink in Manchester.

Sheffield City Council conducts annual 'cordon surveys' to monitor the volume of road traffic entering the city centre. Monitoring 25 points where arterial roads cross the inner ring road, the Council's Strategic Planning and Transport Service counts two-way vehicle movements on equivalent days in September and October, from 7-00 am to 7-00 pm. Table 2 compares the total number of car movements for the 25 monitoring points, for key years and compares them with employment in the Sheffield 1 postcode area. The first year, 1991, coincides with the commencement of work for Supertram and 1993 is during the tram infrastructure construction period. September 1995 saw the completion of Supertram as it now exists.

[3] The Sheffield 1 postcode area, which comprises most of the addresses within the city's inner ring road, has been taken as the Central Business District.

Table 2 Sheffield Central Area Cordon Surveys

12 HOUR (0700-1900) 2-WAY FLOW MONITORED AT 25 POINTS
CARS ONLY

	Cars passing cordon	Jobs in Sheffield 1 postcode area	Number of car movements per job
1991	257,157	42,300	6.079
1993	229,156	39,800	5.758
1995	241,753	41,600	5.811
1996	245,473	37,100	6.617
1997	238,726	40,100	5.953
1998	238,983	41,600	5.745

As can be seen from Table 2, in the year immediately following completion of Supertram, car use appears to have increased, even though employment in the city centre fell by almost 11 per cent. In 1997 and 98, the number of cars entering and leaving the city centre fell quite markedly and employment returned to its earlier level. The comparable data for car movements in 1999 shows a continuing slight fall to 237,000 vehicles per day.

Taking the monitoring point with the highest traffic count, Sheffield Parkway, it can be seen from Table 3 that cars represent by far the greatest number of all vehicles entering and leaving the city centre and that those with a sole occupant are between 70 and 80 per cent of all cars, with no identifiable pattern of change in the period since Supertram became operational.

Table 3 SHEFFIELD PARKWAY (No. 15) MONITORING POINT

Comparison of single occupant cars and total cars to total vehicles

	TOTAL VEHICLES	TOTAL CARS	CARS AS PERCENTAGE OF TOTAL	SINGLE OCCUPANT CARS	SINGLE OCCUPANT AS PERCENTAGE OF TOTAL CARS
1991	41,332	33,226	80.39%	23,904	71.94%
1993	36,176	28,756	79.49%	20,847	72.50%
1995	42,924	35,073	81.71%	25,979	74.07%
1996	44,467	36,198	81.40%	26,638	73.59%
1997	43,899	35,606	81.11%	27,464	77.13%
1998	44,504	36,290	81.54%	28,368	78.17%
1999	44,796	37,058	82.73%	27,417	73.98%

Traffic flows into Manchester city centre are monitored by the Greater Manchester Transportation Unit (GMTU) on behalf of the Association of Greater Manchester Authorities. As with Sheffield, counts are taken of vehicles passing a cordon around the city centre but only inward flows are monitored between the hours of 7-00am and 2-00pm, unlike Sheffield's 'two-way' flows over a twelve-hour period. In 1998 the daily total of all vehicles entering the cordon was 142,850, of which cars comprised 114,850 (80.4%). The Manchester count is not as detailed as the Sheffield one, in

terms of number of occupants, but if it is assumed that the single occupant rate is similar to Sheffield, it means that around 85,000 of the cars entering the city centre each day between 7-00am and 2-00pm contain only the driver. If it is assumed that all of these cars also leave the city centre each day, the single occupant car movements into and out of the city amount to not less than 170,000, or at least 1.55 movements for every person working in the Central Business District.

These estimates of car movements relative to employment have to be treated with a degree of caution because, as explained above, the monitoring methods adopted in the two cities differ. For example, the Manchester traffic data ignores cars entering the cordon after 2-00pm and leaving before 7-00pm. There are also undoubtedly some variations in how the central area employment figures have been arrived at. Nevertheless, there is a very considerable difference between the figure of 1.55 single occupant car movements per employee for Manchester and 5.7 movements per employee for Sheffield.

Monitoring by the GMTU includes train and tram, 19,738 persons (equivalent to 18% of the central area workforce) entered Manchester by train (13,419) or tram (6,319) daily between 7-30 and 9-30am in 1999. These figures show an increase of 38.4% and 7.56% respectively for these two modes of transport in the two years since 1997. Whilst therefore it does appear that Supertram may be influencing the way in which people travel into the centre of Sheffield, there still appears to be a far greater reliance on personal transport in Sheffield than in Manchester.

Living in the City

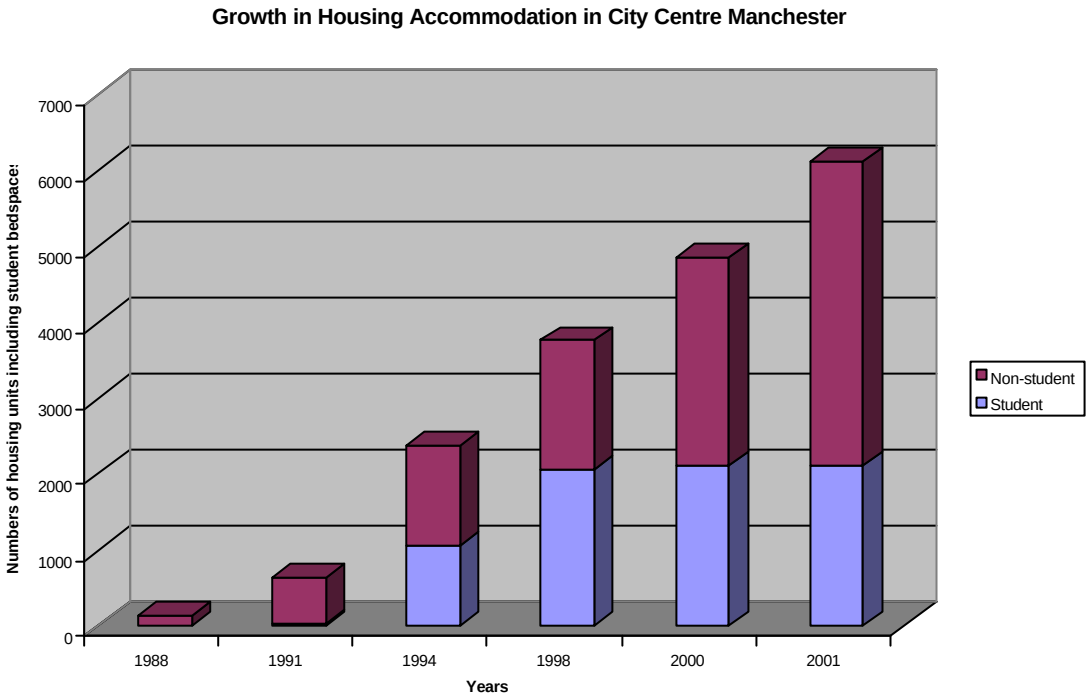
Re-using land and buildings for residential development is at the forefront of the British Government's policies for the urban environment. The re-use of land for housing (in England) is enshrined in planning policy, with a national target of 60 per cent for new housing to be built on 'previously-developed' land and the introduction, in Planning Policy Guidance note 3 – ***Housing*** (DETR, 2000b), of 'sequential testing' for the allocation of housing development land. Under this policy, local authorities have to first consider the development potential of previously-developed land when allocating land for residential development.

This implies that urban land is to be re-used first, with 'greenfield' rural land only being allocated when there is no suitable 'brownfield' land available. Yet to what extent do people wish to live in urban areas, cheek by jowl with old industries and new commercial developments? The latest Land Use Change statistics from the Department of the Environment, Transport and the Regions suggest that plenty of people are prepared to make that choice, with 52 per cent of all new housing constructed in 1997 being on 'previously-developed' land. In London the percentage was well in excess of 80 per cent, in the North West the 60 per cent target was close to being achieved and in Yorkshire & Humber the figure was approaching 50 per cent (DETR, 1999a).

When the Central Manchester Development Corporation was established in 1988, fewer than 200 people lived in the city centre (Syms, 1993 p 218) – mostly employed as caretakers in office buildings. By 1998 this figure had risen to 4,550 (Manchester

City Council, 2000a) and, based on the latest projections for housing development in the city centre (Manchester City Council, 2000b), it is estimated that the figure will have reached around 7,840 by the end of 2001, of which slightly less than 2,000 will be students (see Figure 1). Leaving aside the students, who may be seen as a transient population, the residents of City Centre Manchester account for slightly more than 5.3 per cent of the 110,000 people who were employed in the city centre in 1998 (Office for National Statistics, 2000).

Figure 1



Source: Manchester City Council, 2000b

An important issue concerning both policy makers and residential developers alike, is that whilst the population of Britain is increasing fairly slowly, the rate of new household creation is much greater. This is due to a number of factors including, people leaving the parental home at a younger age, marrying or co-habiting at a later age, higher incidence of divorce and living longer. Only a small proportion of the demand is in the form of inward migration, usually from elsewhere in Europe. Taking South Yorkshire as an example, the projected change in population in the sub-region 1996-2021 is –1.2% but the anticipated growth in the number of households is 8.7%. For England as a whole the projected growth in population is 6.9% and new household formation is expected to increase by 18.9% (Robson *et al*, 2000, pp17).

As may be seen from Table 4, the dominant gender of residents in Manchester's city centre housing is male. Of 1,084 households in the city centre that were occupied by a lone adult, 41.7 per cent were occupied by lone males aged between 16 and 34, compared to 23.3 per cent for the city as a whole. In contrast, the percentage of lone females in the city centre, in the same age range, was only 18.7 per cent, little different to the figure of 17.8 per cent for the whole city. The 34-59 age band is very

under-represented in the city centre, for both males and females at 29.9 and 9.7 per cent respectively, compared to 35.3 and 23.7 per cent for the entire city. This leads to the possible conclusion that once the city workers gain seniority, or start families, they eschew the city centre and move to the suburbs, or beyond, becoming 'in-commuters'. Another explanation might be that, although there has been slightly more than a decade of residential development in central Manchester, it is still a relatively young market and comparatively few of the residents have had to face decisions about whether to remain in the centre or migrate outwards.

Table 4 **CITY CENTRE MANCHESTER - HOUSING POPULATION BY GENDER**

	Population by type of residence - percentage by sex in:					
	Households			Communal establishments		
Area	Males	Females	All	Males	Females	All
City Centre	62.80	37.20	2,629	56.90	43.10	1,921
Rest Central	47.90	52.10	6,478	32.30	67.70	62
Manchester	48.00	52.00	397,118	53.50	46.50	15,847

Source: Manchester City Council, 2000a

The residential redevelopment of Manchester's city centre started in the late 1980's. In 1987, the Manchester Phoenix Initiative funded a land use study of a largely derelict area located to the north of Piccadilly Station. The ideas that evolved from that study were partially realised by the development of the mixed use development Piccadilly Village. This innovative urban village was intended to provide "an environment in which people would wish to 'live, work and play'" (Syms, 1993 p310) and was the first 'new build' housing to be constructed in the central area for more than 20 years. The development also comprised a wide variety of accommodation, ranging from single person studios to three bedroom townhouses.

In what had been something of a 'no go' area a mix of uses was to be introduced, residential apartments and town houses, shops, craft studios and offices. It was a high-density development, with more than 77 residential units per hectare, plus the commercial uses, very much in keeping with the later recommendations of Lord Rogers Task Force (see Urban Task Force, 1999 pp 59-64). A canal, part of the Cheshire Ring of leisure waterways, bisected the site and this was restored, with two reopened and one new basin, as part of the development project.

This was the first 'new-build' residential development in the regeneration of central Manchester and the developments that have followed have been designed with much higher security, although with a possible lack of any contact with their local environment. Today it seems that almost every obsolete building within 15-20 minutes walk of the city centre is being converted to residential use.

Whatever the explanation for unbalanced age structure of city centre residency, it does raise questions about the sustainability of city centre living. What happens when the young males gain promotion, or find a partner and decide to start a family, will they wish to remain living in the city centre, or will they move to the suburbs or the

country and become in-commuters? If they do decide to remain in the city centre will the support infrastructure be adequate for their changing lifestyles?

GVA Grimley, in a recent report, has suggested that Manchester "is heading for a serious oversupply of residential flats" (Estates Gazette, 5th August 2000a) basing its conclusion on the spate of development with very little research to back it up – describing it as "a recipe for disaster". Even more recently, 30th September, the Estates Gazette reported that the developer of one Manchester office to residential conversion has been forced into bankruptcy – although this may be for reasons unconnected with the state of the market.

In contrast to the decade of growth in residential development in Manchester, Sheffield's residential renaissance has only just begun. Local developer Gleeson has refurbished and converted the former cutlery works Cornish Place, a group of listed buildings in Kelham Island the heart of the city's old industrial quarter, into modern apartments. The same developer is currently converting St. Peter's Chambers, opposite the Town Hall in the very centre of the city, into 12 luxury apartments. New build developments to date have comprised student accommodation and housing association developments. Whilst therefore there is some residential activity in Sheffield city centre it still falls a long way behind Manchester.

Outside the central area but still within the inner city, considerable efforts have been made in both cities to improve or replace the public housing stock, for example Hulme in Manchester and the Manor Estate in Sheffield. In both of these areas the regeneration vehicle has been a form of public/private sector partnership, assisted by gap funding from central government. This funding has enabled low-cost housing to be provided, whereas in the more central locations the pricing structures have been more appropriate to executive buyers.

Commercial and Industrial development

Both cities have benefited from a central government policy initiative aimed primarily at stimulating real estate development activity. The policy initiative in question, Urban Development Corporations (UDCs), was imposed as a 'top-down' attempt at reversing economic decline. Bodies appointed by government, comprising largely of business people with some local politicians, were made responsible for some functions of city governments (including town planning) within specified Urban Development Areas (UDAs). Thirteen UDCs were created in England and Wales in three 'generations'. The Manchester and Sheffield corporations were both 'third generation' UDCs, created in 1988/89.

The Manchester UDA (Central Manchester Development Corporation) covered an area of 187 hectares lying immediately to the east and south of the city centre. In Sheffield the UDA (Sheffield Development Corporation) extended to 900 hectares, primarily comprising the Lower Don Valley, the former steel making area to the east of the city centre. The powers of the corporations included the ability to award grants to stimulate private sector investment. Usually referred to as 'gap-funding' these grants were intended to make up the difference between the cost of new development (including site preparation) and the eventual investment or sale value, where cost

exceeds value. The government guideline for this type of funding was that one part of public money should be met by four parts of private investment in the project. In Manchester £82.2million of public money attracted £73million of private investment (1:4.5) and in Sheffield £101million of public expenditure brought in £686million of private money (Imrie and Thomas, 1999 p27).

These 'successes' have to be treated with some caution as, in both cities, some major projects were at fairly advanced planning stages before the UDCs were established and would probably have proceeded without the policy initiative. This was especially the case in Sheffield, where the UDA included the site of the new regional shopping centre –Meadowhall – directly accessible from the M1 motorway and also served by the 'Supertram' LRT system. This project was financially viable without public money but the project expenditure of £250million is included as part of the UDC's success in attracting investment. Now the 'flagship' of the regeneration area and by far the largest employer, both directly and indirectly, Meadowhall also had an adverse effect by creating an economic downturn in Sheffield's traditional city centre shopping area.

Manchester has also seen the development of a major regional shopping centre – the Trafford Centre. This too was developed in an Urban Development Area, although not within the Central Manchester Development Corporation's area. The Trafford Centre is situated approximately three miles west of Manchester City Centre, in the Metropolitan Borough of Trafford, within the UDA of the former Trafford Park Development Corporation. Road access is from two junctions of the M60 motorway, the Manchester Outer Ring Road, the eastern section of which was only completed in 2000, after years of delay. Unlike Meadowhall, the Trafford Centre is not served by Manchester's LRT, although the extension of Metrolink to the Centre is currently planned.

The effect of the regional shopping centre on Manchester's city centre retailing was less than the Meadowhall effect on Sheffield's city centre, due to the considerable difference in size between the two conurbations and probably also to the lack of an LRT link to the Trafford Centre. According to a leading national firm of surveyors and commercial real estate agents, with an office in Manchester, "the shift in Government Policy towards out of town retail and leisure schemes will have a major effect on the development market in Greater Manchester" (King Sturge, 1999). This is due to an amendment to the DETR's Planning Policy Guidance note on out-of-town retailing (PPG6) (DETR, 1999b) which, as part of the town planning process, places an onus on developers to demonstrate a need for the scheme they are proposing.

According to King Sturge this is difficult to define and almost impossible to measure given that, at the time of their report, there was almost 240,000 square metres (2.58 million square feet) of retail development committed or under construction in the conurbation, with a further 133,000 square metres (1.43 million square feet) under application. A significant proportion of the development committed or under construction was in fact retail/leisure schemes in the city centre rather than out-of-town – Richardsons Print Works and Morrison Merlin's Great Northern Experience, both anchored by large multiplex cinemas and also including restaurants, health and fitness operations, clubs and hotels (King Sturge, 1999).

With the decline of manufacturing industry in the United Kingdom over the last two decades, the term 'industrial property' is more of a euphemism for warehousing and distribution. That is not to say that buildings are not constructed for manufacturing occupation but these are more likely to be for 'owner/occupier' companies than for the investment market.

According to Lambert Smith Hampton the distribution sector is expected to undergo significant changes over the next few years. Rapid growth in technology and telecommunications sectors as well as growth in e-commerce is expected to have a direct impact on the demand for distribution space, determining location, size, design and specification. Occupiers are seeking larger buildings, at the beginning of the 1990's a 250,000 square foot [23,226 square metres] distribution unit was considered large. Now, centres of this size are standard, with requirements as large as 500,000 square feet [46,452 square metres] becoming more common (Lambert Smith Hampton, 2000b).

Industrial developments built to 'institutional standards', have dominated the UK industrial property markets over the last 25 to 30 years, during which time specifications have changed, e.g. eaves heights have increased (with 8-11 metres height now not uncommon, compared to 5.5 metres a few years ago), as too have yard areas and parking for commercial vehicles. Lighting, once seen as being the tenant's responsibility to install, is likely to be provided as part of the standard specification, even space heating may be included and developers will provide the office accommodation the tenant requires, departing from the old standard of 10 per cent office accommodation.

But are these specification changes sufficient to cater for the present market? According to Simon Jack, writing in the Estates Gazette, "warehouses are not renowned for being attractive inside, yet as much thought needs to go into their design and layout as for any office or shopping centre if they are to fulfil their function properly" (Jack, 2000). He quotes Don Pritchard of Tompkins Associates, speaking at the Distribution Centre 2000 conference, as saying "We live in a constant state of change and companies must be able to adapt to new conditions quickly".

It may be argued that developers undertaking speculative projects cannot possibly cater for the myriad demands of potential tenants and that it is best to leave the fitting out to the end user, ensuring that the most likely basic demands in terms of access and servicing can be achieved. Certainly it is a fact that, for manufacturing users at least, there is little alternative but to take a warehouse type 'shed' and convert it to suit, or have a building constructed to the desired requirements.

Sheffield dominates the industrial property market in South Yorkshire (Lambert Smith Hampton, 2000b), whereas, in Greater Manchester, the most sought after industrial locations are more dispersed. Rental levels for good quality properties are around £48-40 per square metre (£4-50 per square foot) per annum for units of around 1,070 square metres (11,500 square feet), decreasing to around £39-00 per square metre (£3-63 per square foot) per annum for larger units of 31,600 square metres (340,000 square feet). Yields (capitalisation rates) are around 9 to 11 per cent, depending upon location, age and specification of the building and covenant strength of the tenant.

In Greater Manchester, the prime industrial locations over the last 20 years have tended to be to the west of the city, in Trafford, Salford and Bolton, with the airport location (south of the city centre) being the only 'high demand' location within the city boundaries. This was due to the fact that the outer ring road was incomplete to the east of the city and connections to the east-west motorway, the M62 were extremely difficult. Following completion of the motorway ring in 2000, this situation is changing and industrial property developers are starting to turn their attentions to east Manchester and Tameside.

The specification and accommodation required for call centres is very different to the ubiquitous industrial/warehouse units, although these may be regarded as the 'factories of the future', in that they are labour intensive and bring large numbers of people together in fairly regulated conditions. Large, open-plan offices, sometimes even constructed with an industrial type wide-span steel frame, these do not need to be in traditional central area office locations.

A study of 227 call centres[4], one of the fastest growing employment areas, found that they employed around 35,000 call centre agents, of which approximately 30,000 were in the UK (Collinson Grant Consultants, 1999). The researchers estimated that their sample represented around 13 per cent of the UK call centres[5], giving a current employment potential in excess of 230,000 in the United Kingdom. Towards the end of 2000, Dixons the electrical retailer expanded its call centre in Sheffield, creating 1,000 new jobs and the same report (Daily Telegraph, 20th September 2000) stated, "more than 10,000 people are now employed in call centres in the region".

Office accommodation still dominates English city centres, in spite of some relocation to business parks in the suburbs or city fringes. In the view of another leading surveying and real estate agency firm Sheffield's economy continues to undergo positive restructuring with a corresponding shift towards finance, customer care/telephony centres and e-commerce (Lambert Smith Hampton, 2000). Towards the end of 2000, around 9,300 square metres (100,000 square feet) of high quality office accommodation was available in Sheffield, of which 93% was large scale new or refurbished space. Prime headline rents are around £148-00 per square metre per annum (£13-75 per square foot), exclusive of repairs, insurance, service charges and Business Rates (property taxes) and further growth is expected as occupiers compete for space in a tight market (Lambert Smith Hampton, 2000). Yields are between 7.6% and 9.8% (Lambert Smith Hampton, 2000a, Chesterton, 2000).

In Greater Manchester, the 'core' city centre area, known colloquially as the 'square half mile' reached capacity some years ago. This resulted in new office developments occurring outside the city boundaries, especially in Salford Quays (within the Salford Enterprise Zone area to the west of Manchester city centre) and in the Cheshire area south of Manchester (Alderley Edge and Wilmslow – the 'South Manchester market). For several years the Salford Quays area was slow to find occupiers but as with Manchester city centre the choice is now limited. The South Manchester sector still

[4] 193 in the UK and 34 elsewhere in Europe.

[5] The Call Centre Association is the professional association for the call and contact centre industry in the UK, with "over 430 members with 57 based in England and Wales and the remainder based in Scotland, Ireland and overseas" (www.cca.org.uk).

remains the most active sector around Manchester and developer and fund appetite to secure sites and speculatively build remains as high as ever. Rental growth continues to be realised with a letting at Cheadle Royal achieving £188.30 per square metre (£17-50 per square foot) [per annum, exclusive of repairs, insurance, service charges and Business Rates] (King Sturge, 2000). By comparison city centre office rents are around £215-237 per square metre (£20-22 per square foot).

Although much of the recent development has been in South Manchester and, in the 1980's, in Salford Quays, the traditional boundaries, which constrained Manchester's prime city centre core, have been breached. Most notably this occurred with the Barbarolli Square development, south of the core, developed as a major urban renewal project, where two substantial office building helped to fund a new concert hall. This development relied on major 'pre-lets' of floorspace to large legal and accountancy firms, but the development has had a catalytic effect, encouraging other office developments in the vicinity.

In both cities, and elsewhere in the UK, the specification of office accommodation is very important, with older offices, often above shops and without air conditioning or computer cabling, being more difficult to let than purpose-built modern offices, in spite of the rent differential. Daniels (1995, p227) noted that in 1989 75% of all employment in the City of London was office based and that offices accounted for over 71% of the total floor space in the City. He then stated, "75% of the office stock was constructed before 1980 and is often ill-suited to the requirements of the modern office user". He saw these requirements as being for "a clean and reliable power supply" possibly with 'back-up' power sources, "networked links to other items of hardware in the same building or at other locations", necessitating "large quantities of cabling ….. Thus, in the IT-friendly office the raised floor is seen as an essential element" (Daniels, 1995 p228). Air-conditioning was also necessary to control and/or remove the "wild heat" generated by IT equipment.

All of these requirements for the modern office have direct impacts on the construction specification for new office buildings – increased heights between structural floors and soffits, so as to accommodate suspended ceilings and raised floors, plant rooms for air conditioning equipment, and increased floor loadings to meet so called 'institutional standards'. Specifications such as these add to construction costs but may be regarded as 'necessities' in the pursuit of the ultimate in flexibility.

In the few short years since Daniels examined the issues surrounding office development and information technology, significant strides have been made towards rendering redundant some of those attributes that might have been regarded as necessities in the offices of the mid-1990's. If computers on a network can communicate with each other and with the outside world through wireless technology, without the need for cables, the need for raised floors is removed. In the field of telecommunications, do telephones need to be located on desks? A more efficient way may be to network with fellow workers through a simple earpiece, or wristwatch communicator, with voice activated dialling.

The waste heat generated by modern computers, including desk-top PC's, is now considerably less than the earlier generations of equipment, especially if you take

account of the increases in computing power. Nick Hayes, the chairman of Churchfield, observed "developers and landlords need to keep track of the specification requirements their clients require. But .... they often fail to do so. Once upon a time, full VAV air-conditioning was ubiquitous until developers discovered that a significant number of potential tenants didn't want it." (Hayes, 2000).

In the introduction to this paper, reference was made to the potentially hostile environment of technology. Whether hostile or not, the advent of e.commerce is changing the ways in which business is conducted and is affecting retail shopping patterns, but to what extent? Electronic communications, from facsimile to e.mail and video-conferencing have brought a new 'immediacy' to the work environment but the 'paperless office' has failed to appear. Paper consumption in the United Kingdom has increased with every technological advancement of the last 150 years and, according to the Paper Federation of Great Britain, is currently around 217 kilograms per person each year.

The Government exhorts people to leave the car at home but is public transport of an acceptable standard, in terms of comfort or efficiency to persuade more than a minority of car users to make the change? Examination of the travel to work modes in Manchester and Sheffield indicates that there is still a high dependence on the motor car, so perhaps public transport is unacceptable to many of these commuters. Even the high cost of petrol (gasoline) in the United Kingdom (around 84 pence per litre) has not persuaded people to make the switch from private to public transport, although it resulted in a blockade of refineries and oil terminals in September 2000. This protest resulted in queues at petrol stations and demonstrated that public transport is almost as vulnerable to fuel crises as the private car, when bus and rail companies were unable to operate full services. Is home working or 'telecommuting' the answer?

The technology is available to enable people in many walks of life to undertake their daily work without ever leaving home. Telecommunications enable workers to log-in to the workplace computer from their homes, to send and receive emails, to search databases and perform many other tasks. They can also manage to do this from elsewhere in the world and, with 'web-cams' built into the screens of laptop computers, engage in videoconferencing from remote locations.

This ability to work from home or other detached locations applies to many people who work in an office environment. Even sales representatives can visit customers and display new products without even leaving home, thus reducing the physical strain, and environmental impact, of travelling many miles in a car. So why are not more people spending their time tele-working or tele-commuting?

According to Gordon and Richardson (1995, p357) "The barriers to more telecommuting remain more social and managerial than technical; many workers are reluctant to abandon the pleasures of socialising at work while some managers remain leery of the lack of direct supervision of working-at-home employees". There is also a need for people to meet in order to resolve issues and to make decisions. Bringing them together may be costly in terms of time and travel expenditure but, in the long run, it can prove to be more effective than the rather impersonal alternatives of email and faces on computer screens. For the salesman, some face-to-face contact with the

customer is surely still important, even if follow-up orders and customer care are handled via computer.

Whilst therefore the functions of cities are unlikely to be replaced by remote 'computer workers', the electronic age will inevitably have an impact on the ways in which cities function and this needs to be recognised as part of the planning and development process.

In summary, it would seem that for most people the electronic revolution has yet to produce its expected benefits in terms of changing working patterns, shopping preferences, paper consumption or mode of transport. But what of the future, how might changes come to affect cities and lifestyles, given government policies to discourage car use and increase urban living densities. One answer may be to seek to encourage new industries to locate in the older industrial areas that they previously shunned because they did not wish to be associated with the smoking chimneys of a bygone era. Not all previously-developed land is suitable for housing use and there seems to be little point in encouraging people to return to urban living unless there is a full range of employment opportunities available to them.

Conclusions

What are the modern drivers in terms of industrial location? Traditionally they were proximity to raw materials, especially where these were bulky or of low-value, proximity to markets and, especially in terms of the decline of United Kingdom manufacturing industries, influenced by the 'pull' of low-cost labour. The availability of cheap labour, often in close proximity to sources of raw materials, and alternative sources of raw materials were contributory factors in the decline of Britain's traditional manufacturing industries. Today, with very few exceptions, the proximity of raw materials is not so relevant in terms of industrial location. Similarly, most firms are no longer serving just their local markets, whether they are involved in manufacturing or the provision of services. Even some very small firms are trading on a global scale, assisted by the electronic environment of the internet. For manufacturing firms, the cost of labour is of declining importance, with advances in technology having reduced employment in even the most labour intensive industries.

Many of the traditional industrial concerns of the two case study cities are no longer trading; they have either ceased to exist or they have transferred their manufacturing operations elsewhere. The legacy they have left behind is very visible in terms of vacant 'brownfield' sites and redundant buildings. The emphasis has changed to warehousing and distribution, together with some new 'high technology' businesses. Both cities are well located, although not in the south of England where the majority of the new industries are located, and they have the ability to compete.

Reference was made earlier to the Urban Development Corporations which were active in both cities. These have now run their course but new policy initiatives have appeared in their place. Urban Regeneration Companies (URCs) have been established in both cities as public/private sector partnerships. The areas covered by these companies are very different to their predecessor UDCs. In Manchester the UDC was responsible for a segment of the city centre but the URC's remit is East Manchester, formerly a heavily industrialised area from which almost all industry has

departed. Sheffield's former industrial area of the Lower Don Valley is not the focus of the new regeneration company; instead this is concentrating on the city centre itself.

The two cities will therefore once again be the recipients of public money aimed at regeneration but having different objectives. East Manchester contains large areas of derelict or vacant land, whereas Sheffield city centre is largely developed. That is not to say that derelict and vacant land does not still exist in Sheffield, a survey undertaken in Sheffield in 1999 of 14 square kilometres extending north eastwards from the city centre identified a total area of brownfield sites as 0.6Km^2 or 4.30% of the total area surveyed (Urban Mines, The National Brownfield Sites Project, 1999). This area comprised 142 separate sites, with a mean area of 4,243 square metres, including many small sites, the smallest of which was 291 square metres. This land use database is currently being updated and extended to cover 24 square kilometres, by students from Sheffield Hallam University. The government also announced in the Urban White Paper that the Urban Regeneration Company initiative is to be enlarged from the present three cities (Liverpool is the third) with up to 12 more companies being created (DETR, 2000a).

Over the last two decades a great deal of effort has gone into ensuring the survivability of Manchester and Sheffield, public money has been used to attract private investment and new infrastructure has been provided. The cities will never regain their industrial past but it does appear that the out-migration of population may have been halted and that, to a limited extent, people are returning to live in the cities.

Residential development is thriving in central Manchester and it is starting to happen in the centre of Sheffield. Manchester already has a very active night-life and its importance is being reinforced by the new leisure developments. Although having a smaller catchment area, Sheffield's night-life is fairly active, especially in terms of 'café society'. There are development opportunities with potential for leisure or mixed use developments, for example the former education offices and technical school on Leopold Street, recently offered for sale by the City Council, which attracted a great deal of interest. The future potential for more retail and leisure development on the city fringes has been significantly reduced and the focus is likely to be on the city centres.

Besides providing the home environment to encourage people to remain in the cities, the real estate development industry needs to look at the type of commercial accommodation it needs to provide in the future. In this context avoiding making reference to 'office' or 'industrial' units is quite deliberate, as the distinction between the two is likely to become quite blurred over the next decade. The large distribution warehouses will remain on the city fringes, in good motorway locations, possibly even road/rail linked but these are not industrial buildings. There is a need for functionally flexible accommodation that, depending upon the nature of its fit-out, can serve for either office or industrial use. These buildings do not have to be sophisticated in terms of infrastructure provision, nor do they have to be in the prime core. They can be located on 'brownfield' sites at the edge of the city centres, in close proximity to the homes of city residents. Bringing people and jobs closer together, reducing dependency on the car.

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