

A holistic approach to sustainable development: The UK regeneration experience

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In the 2005 World Summit Outcome, the United Nations explained the three components of sustainable development—economic, social and environmental—as “interdependent and mutually reinforcing pillars” (United Nations, 2005). This holistic approach is fundamental to sustainable cities in order to provide for their current and future generations. The experiences of the United Kingdom following the Second World War clearly demonstrate a need for a holistic approach to sustainability. The economic and social decline experienced in post-war Britain and the subsequent urban renaissance provides valuable insights into the best and worst practices of urban development. Using the UK urban regeneration story, the following article examines how architecture and urban design can influence social and economic sustainability by considering the following elements that influence a city’s success or failure: community, economic diversity, health, crime and employment.

Community

Communities have played an important role in the design influence of towns and cities throughout the UK. Recent research has highlighted the importance of community in addressing social problems of crime and health. The existence of local networks of mutual support and trust is crucial in the health and mental wellbeing of a population. Conversely, the absence of neighbourliness can exacerbate problems of isolation and social exclusion.

A large proportion of housing in Britain was traditionally laid out along high density streets of terraced housing with windows and front doors leading off the main street. The street became the main focus for community interaction and children played on streets not dominated by cars. The building of new homes in the 1960s and early 1970s was very rapid and often families were moved in large numbers to new locations with very little choice regarding housing type or who their neighbours were. The net result was that local communities who had been together for many years were dispersed causing high levels of dissatisfaction and alienation.

The community spirit which had been present for years was lost almost overnight. New housing that replaced terraced houses often had little regard for the community that would inhabit the buildings, with some notable exceptions from this period including the Barbican in London, which provided a varied mix of community and healthcare uses and meeting places for a community to take ownership upon. Towards the 1980s, the importance of street life was being diminished with the spread of low-density identical suburban estates. Modern, planned new town and suburban developments showed little thought towards how communities could evolve. Crucial to recent sustainable development in the UK is the creation of and support of existing communities, a traditional ethos ingrained in the mentality of British people.

Bradley Stoke Housing Estate

The planned town development of Bradley Stoke near Bristol has become synonymous with the characterless, soul-less, identical housing developments built during the 1980s worldwide. The original plan for 25 000 homes was designed predominantly with car use in mind and created a confusing, impermeable network of distributor roads. The lack of housing diversity in terms of size, tenure and appearance has created a homogenous environment with only one prevailing middle class family demographic. The car-dominated roads, large distances and indirect walking routes to local services have resulted in little or no pedestrian activity. Coupled with a lack of public space and no central focus to the town, the result is little opportunity for interaction between residents and the development of community. Recent plans have centred upon attempts to provide a new town centre with central public space upon land currently home to a supermarket.



Hulme, Manchester

In less than half a century, the housing area of Hulme in Manchester has undergone three different iterations and attempts at modern living requirements. During the 1960s, the industrial era terraced housing of the area was considered overcrowded, unsanitary and ultimately unliveable. These slums were cleared to make way for a modernist inspired public social housing project, arranged in a series of tower blocks in crescent formation with deck access—'streets in the sky'. High levels of crime, facilitated by unsupervised public spaces, were often accompanied by a number of issues including safety, build quality, insulation and damp.

So for the second time in a century the area was cleared and rebuilt. The crescents were demolished to make way for a more traditional redevelopment scheme with social sustainability and community at its heart. Different housing types of varying sizes and tenure were built in perimeter block layouts on a network of pedestrian friendly streets. Housing is now of a human scale, providing privatised rear defensible communal spaces and active fronts to public space, which encourage community interaction between blocks. Additionally, new public parks, schools and streets have increased the opportunity to nurture the community.

Lessons learnt

- / Strong communities can help reduce local crime and anti-social behaviour
- / Streets are a traditional location for communities to engage and interact
- / Short walking trips rather than using the car encourage people to meet and converse face-to-face
- / Higher density living places more people in close proximity to each other to interact
- / Provision of public open spaces and parks allow communities to congregate
- / Involvement of communities within the design process can create stewardship and sense of ownership over a locality
- / Windows and doors leading onto the public realm increase the opportunity for local interaction
- / A central focus in towns—the local pub, shopping centre or community hall can all provide gathering places for residents
- / Displacement of communities can often undermine any intended benefits of regeneration



Left: Bradley Stokes Housing Estate

Top/right: Before and after, Hulme, Manchester

Unemployment

Unemployment is one of the key social and economic issues facing countries and cities. Although a wide range of factors can directly affect unemployment rates, the planning and design of the urban environment can directly influence how people access employment.

The collapse of the industrial and manufacturing industries in the UK during the 1960s resulted in high levels of unemployment, especially in Britain's traditional industrial towns and inner city areas. This loss of employment, which often provided income for three generations of families, sent many areas into a spiral of decline that lasted until the late twentieth century and was typified by wide-scale social unrest and rioting in the 1980s. By the mid-1990s Britain had more children growing up in unemployed households than anywhere else in Europe (Batty, 2002). Around this time, British academics began to investigate why some people were restricted access to vital economic and life support services within urban areas, as poor accessibility has contributed towards areas of social exclusion. They identified and coined the term 'permeability' as a measure of the number of routes through an urban environment. The more permeable a location, the increased level of accessibility for all people to vital life support services such as employment.

The London Olympics 2012

Modern regeneration projects throughout Britain have aimed to reduce the physical barriers restricting access into the city by providing alternative transportation methods and increasing the permeability of routes into the city. The success of the London 2012 Olympic bid was based upon a strong legacy regeneration plan that aimed to improve accessibility issues as a direct method of reducing unemployment rates in a disconnected and socially excluded area of the city. The Games are intended to be a catalyst for economic and social regeneration to transform the economically depressed London borough of Newham, which features Stratford and the Lower Lea River Valley. The organisers hope the plans for the Games will help transform the Lower Lea Valley into one of the best connected areas in the capital, bringing economic and social benefits that go far beyond 2012, and far beyond sport (Legacy, n.d.).

A range of transport improvements are proposed or already completed including: an extension to the Docklands Light Railway; increased capacity on the Jubilee Line; upgrade of the Stratford Regional Station; and various other cross-city transport improvements in London. In addition to the new railway and new cycle lanes, walking routes will connect the converted Olympic Park into the wider London networks in an attempt to make London 'a walkable city'. Such improvements to the infrastructure have already greatly improved accessibility for residents previously cut off from the many benefits a global financial city such as London can offer.



Manchester Commonwealth Games 2002

A proven success of how sports events can be used successfully as a tool for regeneration was the 2002 Commonwealth Games hosted by Manchester. Located in northern England, this first industrialised city in the world has undergone a dramatic rise and fall in economic and social conditions. The process of urban regeneration began in the 1990s when the city was forced to rebuild following an IRA bomb that tore apart the retail core of the city centre. The successful process of rebuilding continues to this day, creating a new enthusiasm and an influx of investment and population back to the city centre. The city has been hailed as a European leader in urban regeneration and this success was made apparent by the city being chosen to host the Commonwealth Games.

The Games were based upon a regeneration plan that intended to improve economic and social conditions to the deprived east side of the city. The Games have brought new hope to this previously forgotten area and changed perceptions nationally and locally. The Games have been a catalyst for new investment, including high profile housing developments such as Holt Town Waterside and New Islington. The sporting venues have now been converted and continue in use, such as home to world championship cycling and a premier league football club. Improvements to the infrastructure were made to improve public transport into the city and a new light rail system will connect the

whole area into the city that now provides numerous employment opportunities.

Lessons learnt

- / Access for everyone to the city should be provided by a choice of walking, cycling and public transport
- / Widescale zonal planning often places certain employment opportunities out of reach of some communities, especially without high car ownership
- / Permeability: providing a choice of routes through an area creates direct and active routes through cities and encourages walking
- / Mixed use developments provide a wider range of local employment opportunities for a community with varying education levels and skill sets
- / Sporting, arts or other major events have proved to be a regeneration catalyst as long as they are linked to a long-term strategy to continue benefits after the event finishes
- / Economic stability is key to ensuring job creation is sustainable
- / A reduction in social exclusion by an integrated and balanced mix of housing tenure, sizes and social class will reduce 'ghetto' mentalities



a. Police hold back pickets at the Grunwick photo-processing laboratory employment dispute in Willesden, London
 b. London Olympics legacy
 c. Artist's impression, London Olympics 2012
 d. Improved public transport connections have already been completed for the London Olympics
 e. Manchester Commonwealth Games 2002
 f. Regeneration of a city, Ducie St, Manchester. Designed by Woods Bagot

Economic diversity

During the latter part of the twentieth century, Britain's main economies of manufacturing and industry were moving from Britain typically to countries in Asia. As a result many European cities experienced large levels of economic instability. Many of the traditional industrial towns of northern England were sent into decline due to a lack of economic diversity as their economic and employment base was heavily reliant on one type of industry and in some towns on one particular company. Since the 1990s, Britain has managed to diversify its employment base with the development of other service industries. However, many traditional British cities are now facing problems of an outdated infrastructure and building stock that is unsuitable for modern commercial requirements. This led to large city districts and even whole cities and regions becoming increasingly restricted in the competitive market to attract national and global companies. The subsequent social problems demonstrate how the design and planning of cities needs to take into account economic sustainability whilst balancing the objectives of social and environmental factors.

Liverpool

At the turn of the nineteenth century, forty per cent of the world's trade was passing through the Port of Liverpool in England yet by the 1970s the docks had become almost obsolete due to modern container freight methods. The city's entire economy was based upon the trade through its port and the rapid loss of this income source brought massive upheaval and job losses. The city has only recently begun to recover from the massive economic and social upheaval. Like its neighbours in Manchester, modern regeneration schemes within Liverpool, including innovative re-uses of its ports and warehouse buildings, have sparked new interest and investment and allowed the city to attract a more diverse employment base. However, the city is still home to a number of old warehouse buildings that are protected by heritage listing and unsuitable for modern conversion. This has highlighted how the adaptability of building structures is essential for cities to adapt better to changing employment markets in the future.



Below: Albert Docks, Liverpool



Birmingham Eastside

During the Industrial Revolution the city of Birmingham in the Midlands of England was known as the 'City of a Thousand Trades'. This diversity of employment opportunities allowed the city to weather the storm of industrial decline far better than other cities. Modern regeneration schemes in the city have sought to continue this economic legacy. The Eastside project is one of the largest regeneration schemes in Europe and hopes to attract UK£6 billion in investment to the east of the city. Eastside has a commendable sustainability agenda that ensures a holistic approach to long-term development addressing social, economic and environmental sustainability. Key to the economic sustainability principles of the regeneration scheme, is the encouragement of business and land-use diversification. A fine grain of smaller building units is encouraged within the framework to attract smaller businesses with varied unit size and affordability. The scheme also recognises small businesses as a sustainable economic model in that they create jobs for local people and benefit local competition.

Lessons learnt

- / Over reliance on one form of employment can place cities and residents at risk
- / Mixed use developments are beneficial to the city and also provide a more stable portfolio for developers
- / Provision of smaller and more affordable building units encourages small business to provide local employment and a balance of business types for economic stability
- / Smaller industries reduce an area's dependence on fewer large enterprises which have the capital to be transient in their choice of location
- / A reduction in zoned urban planning creates flexibility in terms of accommodating different land uses
- / Flexible and adaptable buildings can cope better with new employment uses in the future
- / Flexible masterplanning and frameworks adapt to change over the evolution of a regeneration program



Regeneration and diversification of a city
Above: Selfridges, Birmingham
Left: Birmingham Eastside

Health

A major health concern throughout the western world is obesity and its associated health problems. Obesity is predicted to be one of the world's new epidemics and recent research predicts that by 2032 approximately half of British people will be clinically obese (University of Oxford, 2007). Only recently have scientists been able to test and prove the direct correlation between our built environments and levels of obesity. US scientists in 2003 found that "American adults living in sprawling counties walk less, weigh more, are more likely to be obese, and are more likely to suffer from high blood pressure than otherwise comparable adults living in compact counties" (Ewing, 2003). The health of the public can be greatly influenced by the environment in which they live and work, for example, by encouraging informal exercise, particularly walking.

The design of British cities and towns usually predated the invention of the motor vehicle and hence were traditionally designed with walking in mind. However, redevelopment following the Second World War coincided with the increased popularity of car travel and new developments have often put the car ahead of the pedestrian. This has impacted on traffic levels, air quality and noise in local areas, degrading the walking environment and leading to an ongoing decline in walking. Nationally, the distance walked by the average Briton has fallen by twenty per cent since 1974 (Livingstone, 2004). Cities all over Britain are starting to realise the economical and social benefit of walking. Under the direction of Mayor Ken Livingstone, The City of London launched the London Walking Plan in 2004 which aims to encourage more people to walk short journeys and use a combination of walking and public transport to make trips over longer distances (Brosnan, 2004).

Poundbury, Dorchester

The New Urbanist movement has been gaining momentum in recent years and fundamental to the movement is the creation of compact walkable communities where local services are easily accessed without the need for a car. Within the UK, Prince Charles has famously worked with the masterplanner Leon Krier to develop a compact walkable neighbourhood extension to Dorchester in Dorset. The 168 hectare housing scheme has been built to relatively high density with each house having a private garden space and parking provisions. Housing density has been graded around a central public space that also provides retail and community provisions for residents meaning the whole population is within an easy five minute walk of local services. Traffic is calmed and public streets and spaces are activated by people and overlooked by housing or retail frontages making the walking experience more pleasurable and safer.



Birmingham City Centre urban design strategy

The experience of the redevelopment of Birmingham's city centre is an excellent example of how a successful urban design strategy can focus investment to create an attractive walking environment with new and improved city squares and interconnected streets. During the eighteenth century, the city had developed as a significant industrial town, growing rapidly with the streets and squares arranged in an irregular grid pattern. Contrary to some other British cities, Birmingham underwent a high level of redevelopment to reconstruct highly bombed city centre areas during the 1960s. Due to the corresponding increase in car ownership levels, the city centre planned to accommodate high levels of vehicle access. Historical areas were cleared to erect a series of inner and outer ring roads with large elevated sections circling the city centre. Birmingham became known as the 'Motor City' not only because of its car building industry but due to the ring of elevated roads that constricted the city centre's growth by effectively acting as a 'concrete collar'. The ring roads sliced through the traditional urban blocks, leaving a fragmented urban structure and a confused public realm.

In the 1990s a city centre design strategy was proposed amongst other initiatives to reduce the dominance of the constricting concrete collar and provide greater permeability between the city centre core to the proposed redeveloped quarters surrounding the city. Cars were pushed underground and new walkways crossed the inner ring road. To the east of the city the elevated ring road section was demolished and cars were redirected at grade with pedestrian crossings. This has now effectively allowed the city to grow to the east, which was previously disconnected to the existing CBD, with new investment and business opportunities. Birmingham now has a successful connected series of pedestrian routes and urban squares allowing the walker to traverse from the west to the east of the city completely uninterrupted by traffic. These streets and spaces have been made active by an increasing city centre resident population attracted by the improved urban environment and renewed confidence in the city.

Lessons learnt

- / Encourage walking by increasing permeability; provide more direct routes to local services
- / Reducing barriers to movement within the city can improve the interconnection between city quarters and improve city wide investment and regeneration opportunities
- / Reduce extensive use of cul-de-sacs to prevent the restriction of direct walking routes to local services
- / Place services within walking distance through the use of mixed use developments and high density
- / Provide safe, extensive and continuous cycle and jogging routes, preferably segregated from vehicular traffic
- / Street design features to consider:
 - / Seating to provide rest areas for walkers
 - / Cycle racks for cyclists
 - / Safe pedestrian/cyclist segregation from vehicular traffic
- / External architectural design features to consider:
 - / Provide active ground floor frontages
 - / Create main access from streets (as opposed to from car-parks)
 - / Mitigate microclimate conditions such as wind tunnel effects
 - / Provide shade, shelter or warmth at ground floor level for pedestrians
- / Internal architectural design features to consider:
 - / Provide showers and changing facilities for cyclists
 - / Encourage the use of stairs instead of elevators by designing stairwells as attractive and easily accessible spaces



Crime

Crime and anti-social behaviour have the ability to undermine the structure of a residential community and often forces those who can afford it to leave the neighbourhood. This further exacerbates problems of social exclusion and can lead to a ghetto mentality. The rapid removal and redevelopment of war-torn inner city areas in Britain often led to the removal of terraced housing, considered to be slums, to be replaced with radical, new and untested housing forms. By the 1970s and 1980s as unemployment grew and urban jobs were being lost, those people who could afford to were leaving the inner city where they often had grown up to move to the new ideal of suburban areas. Inner city suburbs became areas now defined as 'socially excluded', containing people who suffered from a combination of problems including unemployment, poor housing and high crime (North & Syrett, 2006). The second half of the twentieth century saw a number of new housing and layout forms tested in British cities with varying degrees of success and with some direct correlations to levels of crime and anti-social behaviour.

The Modernist movement in Britain

Following the Second World War, new housing estates of tower blocks using Modernist principles were hurriedly erected as councils were subsidised and encouraged to build tall to house returning soldiers and their families. Bold experiments on social interaction, living and movement heavily influenced by Le Corbusier's Ville Radieuse plan of 1933 were rolled out throughout the UK and Europe as a model of modern living. However, the plans were often watered down or misconceived interpretations of the original futurist visions of Le Corbusier and Lubetkin.

Modernist inspired housing projects have now become synonymous with high levels of social problems and crime in Britain. It was not until the 1960s that theorists began to research and articulate the problems created by such modernist models, most famously with the work of Jane Jacobs who first highlighted the flaws of such buildings. In her research of traditional and modern planned estates in the US she learned that modern design had reduced people's ability to observe public space and had diminished local social control. Housing design that turned its back on public space, had blank ground floor frontages and unsupervised internal corridors allowed unsociable behaviour and crime to occur unnoticed. Jacobs (1961) argued housing with windows and front doors facing public areas created the 'eyes on the street'. The term 'defensible space' (Newman, 1972) was later coined to suggest a set of design principles aimed at reducing crime within built environments. It sought to place greater control within the hands of the community by providing a clear definition between private and public space within urban localities.

Radburn housing estates

Another misconceived interpretation of an urban planning theory based on relatively sound principles is the construction of housing estates inspired by Radburn in New Jersey, US. Designed for the Automobile Age and partly inspired by English Garden City principles the key notion centred on open space and separated car and pedestrian movement. The Radburn model of suburban development soon crossed the Atlantic and influenced the design of many housing estates in the UK, often within existing low income areas.

Housing was intended to be orientated to public open spaces with pedestrian walkways connecting open spaces and providing access to the fronts of houses. However, parking was situated in segregated car-parks to the rear, which led to the intended housing fronts gradually becoming inactive. As both sides of the property were exposed to public space, homeowners often erected more imposing and unattractive fencing to create a private garden space and restrict criminal access to the rear of their homes. This resulted in public streets lined with large boundary fencing and public open space in the centre where people were more afraid to walk due to increased levels of crime and anti-social behaviour that could go unnoticed. Millions of pounds are currently being spent either demolishing or radically altering these estates, some of which are less than half a century old, that have proven to cause and exacerbate many social problems.

Lessons learnt

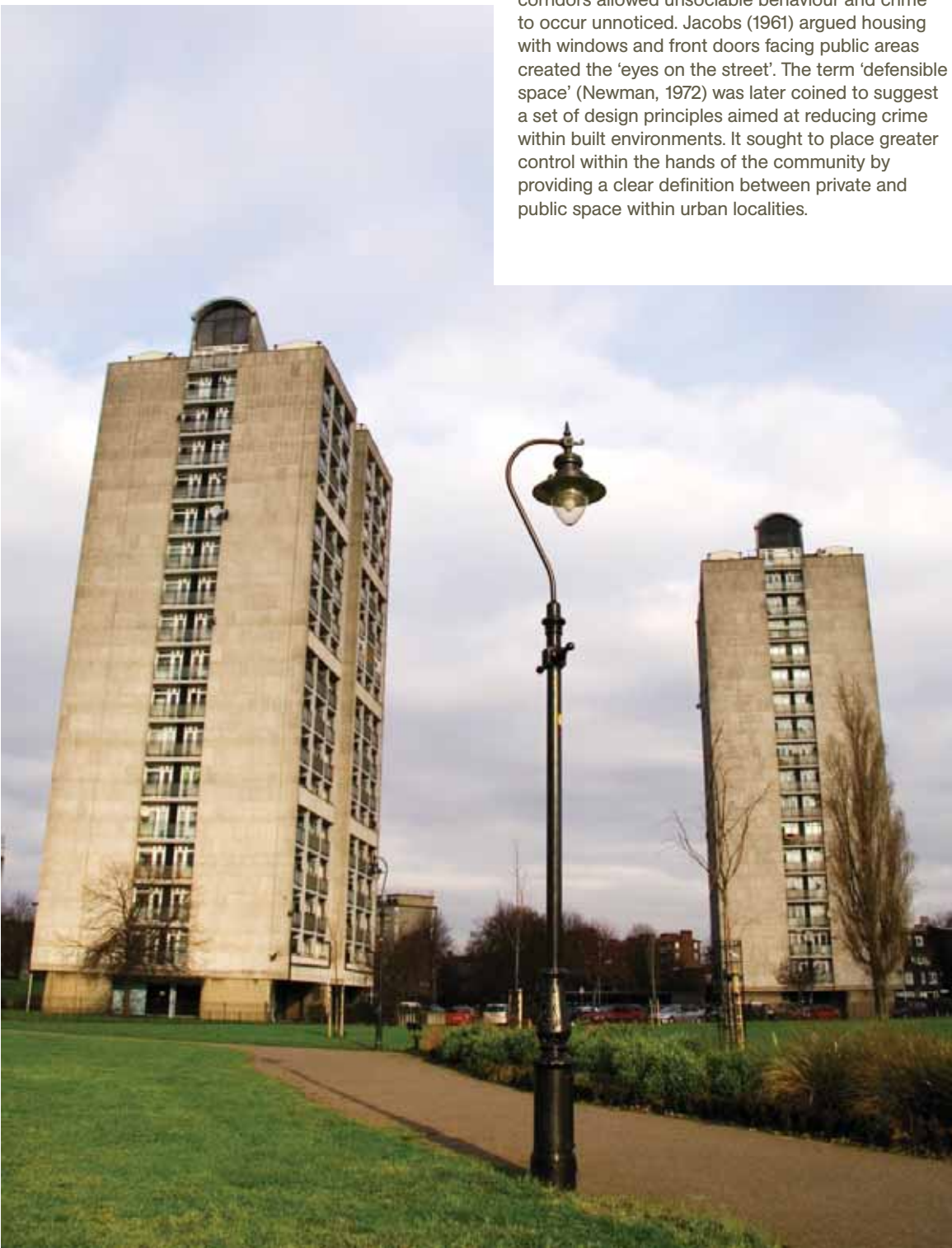
- / The design of the built environment can reduce or exacerbate levels of crime in a locality
- / Lack of surveillance of the public environment can lead to anti-social behaviour
- / 'Defensible space' secures rears of properties/ gardens from potential intruders
- / Clear structure and easy movement through an area encourages street activity and allows for 'eyes on the street'
- / When people and communities feel ownership and stewardship of an area the occurrences of vandalism and anti-social behaviour can be reduced
- / Management and maintenance of space ensures high standards and further instills pride

Conclusion

The story of post-war decline, social unrest and the resulting urban renaissance in British cities undoubtedly has highlighted some of the worst and best practice methods of urban development. The lessons learnt are relevant to cities throughout the world and are especially poignant in a time of global urbanisation and immense pressure for urban growth. Housing estates throughout the UK and Europe are still being demolished due to their social and economic failings, some being less than twenty years old. The experiences of many neighbourhoods in the UK, such as Hulme in Manchester, show how some neighbourhoods have undergone the process of demolition and rebuild more than once in less than half a century to make way for housing forms which often return to traditional principles.

This process of regeneration and renewal comes at great cost financially, environmentally and socially. Huge amounts of public spending is often required, whole communities that have evolved gradually over time can be displaced and the amount of embodied energy lost in demolition can often surpass any further attempts to reduce energy consumption in the construction and lifetime of a new building. The energy input required to quarry, transport and manufacture building materials, plus the energy used in the construction process, can amount to a quarter of the 'lifetime' energy requirement of a very energy-efficient building.

The lessons learnt from the UK regeneration story highlight that in order for cities to be truly sustainable, development must balance the economic, social and environmental factors involved in urban growth. Failure to address the full spectrum of factors involved in the development process can often outweigh any gains made through energy savings.



Left/far left: Tower blocks exacerbated high levels of crime and usually had issues of build quality, insulation and damp. They are progressively being demolished

Below: Radburn-inspired housing West Midlands, UK

Right: Tyneside, Newcastle



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References

Batty, D. (2002, January 15). Social exclusion: The issue explained. *The Guardian*. Retrieved April 3, 2008, from <http://www.guardian.co.uk/society/2002/jan/15/socialexclusion1>

Brosnan, A. (2004, February 23). *You'll never walk alone as London becomes foot friendly*. Retrieved April 28, 2008, from <http://www.tfl.gov.uk/corporate/media/newscentre/archive/4382.aspx>

Ewing, R. (2003). Relationship between urban sprawl and physical activity, obesity and morbidity. *American Journal of Health Promotion*. 18(1): 47-57.

Jacobs, J. (1961). *The death and life of great American cities*. New York: Random House.

Legacy. (n.d.). London 2012. Retrieved April 11, 2008, from <http://www.london2012.com/plans/olympic-park/legacy/>

Livingstone, K. (2004). *Making London a walkable city: The walking plan for London*. Retrieved April 12, 2008, from <http://www.tfl.gov.uk/assets/downloads/walking-plan-2004.pdf>

Newman, O. (1972). *Defensible space, crime prevention through urban design*. New York: Macmillan.

North, D. & Syrett, S. (2006). *The dynamics of local economies and deprived neighbourhoods*. Retrieved April 3, 2008, from <http://www.communities.gov.uk/documents/communities/pdf/150913.pdf>

United Nations. (2005). *2005 World Summit Outcome*. Retrieved February 15, 2008, from <http://unpan1.un.org/intradoc/groups/public/documents/UN/UNPAN021752.pdf>

University of Oxford. (2007). *At least half the UK's population will be overweight by 2032*. Retrieved April 23, 2008, from http://www.ox.ac.uk/media/news_releases_for_journalists/overweight_by_2032.html

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Olympics: London 2012 official site

Poundbury: Marilyn Jane