The Impact of Financial System on Mixed Use Development  
– Unrest in UK and Sense of Safety in Mixed Use Development  

Tamara Kelly  

Abstract—The past decade has witnessed a good opportunities for city development schemes in UK. The government encouraged restoration of city centers to comprise mixed use developments with high density residential apartments. Investments in regeneration areas were doing well according to the analyses of Property Databank (IPD). However, more recent analysis by IPD has shown that since 2007, property in regeneration areas has been more vulnerable to the market downturn than other types of investment property. The early stages of a property market downturn may be felt most in regeneration where funding, investor confidence and occupier demand would dissipate because the sector was considered more marginal or risky when development costs rise. Moreover, the Bank of England survey shows that lenders have sequentially tightened the availability of credit for commercial real estate since mid-2007. A sharp reduction in the willingness of banks to lend on commercial property was recorded. The credit crunch has already affected commercial property but its impact has been particularly severe in certain kinds of properties where residential developments are extremely difficult, in particular city centre apartments and buy-to-let markets. Commercial property – retail, industrial leisure and mixed use were also pressed, in Birmingham; tens of mixed use plots were built to replace old factories in the heart of the city. The purpose of these developments was to enable young professionals to work and live in same place. Thousands of people lost their jobs during the recession, moreover lending was more difficult and the future of many developments is unknown. The recession casts its shadow upon the society due to cuts in public spending by government, Inflation, rising tuition fees and high rise in unemployment generated anger and hatred was spreading among youth causing vandalism and riots in many cities. Recent riots targeted many mixed used development in the UK where banks, shops, restaurants and big stores were robbed and set into fire leaving residents with horror and shock. This paper examines the impact of the recession and riots on mixed use development in UK.

Keywords—Diversity, mixed use development, outdoor comfort, public realm, safe places, safety by design.

I. INTRODUCTION

Mixed use developments concept is adopted from ancient cities. People in the past accustomed to live around the main routes of trading and since walking was the main method of mobility, residential units were clustered in close proximity to primary uses and civic premises .in fact the ancient cities such as Rome developed the early form of mixed used development. Many plots along city’s roads accommodate shops in ground floor and flats normally were inhabited by the shops’ owners and located on top floor. This type of integration between living and working places still exist in many cities nowadays despite the fact segregation between uses is the main feature of European cities after post the industrial revolution. Separation between uses and Traditional zoning was developed during a time when factories and many commercial uses were noisy, smelly, and/or hazardous to public health. To protect both public health and residential property values, early zoning focused on separating of different uses and buffering them from each other to minimize nuisances. Unlike the factories of yesteryears, much commercial development today is environmentally benign. There is no longer a good reason to separate and buffer different uses. In fact, there are often advantages to locating different uses near each other, where strict separation is carried out users will be inconvenienced if they wish to visit activities of different type. Furthermore; separation may leave certain areas dead in appearance, at least at certain hours, and others overcrowded. Consequently Mixed used development nowadays offer better use of any desirable area of land by allowing it to be used for more purposes, staying in use for more hours of each day. Famous authors such as Jane Jacob regarded the notion of mixed-use development as the legitimate method to generate and enhance sense of safety in the city, attributable to the fact that diverse uses allow the development to be in operation 24hours. Office space, retail space, and residential space are frequently combined in projects of this nature, allowing three types of revenue to be produced from a single area of land. This creates more sustainable model for developers and a smarter use of land, which can be a scarce commodity in certain neighborhoods and parts of cities.

The purpose of this paper is to test to what extent mixed use development can generate sense of welfare during the economic downturn, and what is the impact of the recession on mixed use developments. The paper begins with definition, types and advantages of mixed use projects, underline how some advantages advocate negative impact on sense of security. Furthermore the paper addresses many factors caused anger among youth, leading to recent riots and vandalism in many mixed use districts in UK’s cities.
II. DEFINITION AND FORM OF MIXED USE DEVELOPMENT

Mixed use development is a project which comprises a mixture of two or more land uses such as commercial, residential and institutional, either comprised within a single building (horizontally or vertically) or multiple buildings of different uses within a distinct development site. ‘Vertical’ mixed use development is a single building which accommodates multiple uses, generally layered on a floor by floor basis with more active uses (Such as; retail/ commercial) established at ground level with residential, visitor, office or other uses above.

While Horizontal’ mixed use development is a group of adjacent buildings on a single site where each building fulfils a specific purpose.’ Horizontal’ mixing of uses encourages building tenants and the public to walk through communal space to other buildings, stimulating opportunities such as outdoor dining.

Horizontal Mixed use developments are receptive to public constantly and more difficult to be protected, despite the fact that security cameras are located in major roads and nodes. During racial conflicts and riots, security hundreds of primary active uses exist along extensive major and minor roads in city centre, would require presence of enormous number of police men. This mission is impossible and was evident when the riots occurred in many cities in England, horizontal mixed use developments were widely targeted by rioters, shops, restaurants and many banks located along intersected roads in city centers were fired.

Moreover and in parallel with the vandalism in city centers, uses sited down major cities’ roads in Birmingham, London, Leeds, Bristol, Nottingham, Manchester were gruffly assaulted, banks were mugged and shop’s windows were wrecked leaving residents with jolt and awfulness.

Fig. 1

III. ADVANTAGES AND INCONVENIENCES OF MIXED USE DEVELOPMENT

1) Diversity

Since various uses such as retail shops, hotels, cinema, cafes, banks restaurants and residential units are located within the mixed-use development; this requires variety in premises designs and types to facilitate different needs and uses. Hence, mixed-use development plays significant role in creating visual stimulation and delight of different buildings types within close proximity. Moreover it enhances place legibility and identity, by putting different activities in certain location. This ensures viability through activity and creating environment where employees live, work and gets engaged in recreation; all in close proximity. For “mixed-use” urban development, Jacobs advocated the integration of different building types and uses whether residential or commercial, old or new. In her opinion, cities depend on a diversity of buildings, residences, businesses and other non-residential uses, as well as people of different ages using areas at different times of day to create community and vitality. She saw cities as being “organic, spontaneous, and views the mixture of city uses and users as crucial to economic and urban development’’. According to Jacob, city vitality also requires a variety of primary uses, the district must serve more than one primary function; preferably, more than two. She regarded mixed-use districts that provide housing, offices, shops, and other services, attract a far wider range of people, while spreading out their activities over longer periods.

Consequently, the streets and sidewalks of mixed-use districts are more active and safer during both day and night while being less congested at peak periods. The most effective mixture of uses is fine-grained: each block should bring together different uses and not be dominated by a single activity, no matter how thriving.

Hence, mixed-use developments were in the core of the riots. Since these developments provide diverse uses, main banks branches, major retail shops, blue chip companies and other famous shops which sell expensive electrical and electronic devises. This variety attracted rioters to target mixed use developments in order to revenge and cause more damage to the city. Rioters mugged shops, robbed banks located in several city centers in the UK and troubles spread into other major mixed use development sited in other parts of the city.

2) Reduce Auto Dependence

Mixed-use provides a range of residential and commercial amenities that help promote and sustain a more distinct local economy and reduce environmental impacts by decreasing vehicle dependence. Fig.2

Usually, mixed-use developments are located near or along major city roads and close to easy meaning of public transport, this reduce auto dependence and fuel consumption. Furthermore, it makes the development reachable from different parts of the city and encourages non-residents to visit the place.

Recent riots in the UK however, showed how rioters benefited from this attribute of mixed use developments located in UK city centers and well connected with other parts of the city via undergounds, trains and busses. This enabled youth to gather in pockets in a short period and allowed them
promptly to vandalise and escape into other parts of the city using available methods of transportations. Fig.3

3) Sense of Safety

Mixed-use development is regarded as one of the urban components that enhance sense of safety. It can stimulate the evening/weekend economy, and prevent ‘dead’ office zones. Offices insure people being there from early morning to late afternoon whereas shops and retail stores are open till the evening. Moreover cafes, restaurants and bars normally open till late evening attracting people to stay for longer period.

Some mixed use developments are famous of many squares and plazas which makes the place more attractive for public during the holiday, where many events take place in the plaza. Other uses such as theatres and cinemas can be a magnet for people during the weekend and holidays. Thus mixed use development ensure that the places will be in use 24 hours and offers residents more of a sense of community and opportunities to socialize with their neighbors more than an isolated suburban lifestyle.

Consequently the spaces between these uses will profit from the flow of the users, and surveillance over public spaces or premises will occur and sense of safety will be enhanced. This reflect Jane Jacob notion, eyes on the street, most people leave for work all day. Mixed-use neighborhoods contribute to a safer, more vital public realm” because shopkeepers and shoppers have eyes on the street at all hours of the day. Jacobs wrote that peace on the streets of cities is not kept mainly by the police even though police are necessary. It is kept by a system of controls among the people themselves.

She believed the problem of insecurity cannot be solved by spreading people out more thinly. A mixed-use neighborhood helps to reduce crime by increasing round-the-clock activity, which adds “eyes on the street” and discourages crimes of opportunity.

Others such as Zelinka and Brennan, wrote in Safe Space, and argued that the reason ‘eyes on the street’ provide safety in urban, mixed commercial and residential areas is because there is a visible link between residents and the street. While, Newman specifically criticized what he called "the unsupported theory, eyes on the street, perception of Jane Jacobs." Newman promote that mixed-use development led to significantly higher crime, while he couldn't find any evidence that "eyes on the street" would reduce the crime. Natural surveillance' is not automatically created by high-density environments, he believes, Unless the grounds around each dwelling are assigned to specific families. Mixed uses versus separate uses, mixed land-use patterns contribute to a safer, more vital public realm, say Zelinka and Brennan. In contrast, Newman found, mixed uses generate high crime and vandalism rates, and housing units next to commercial areas suffer proportionally higher crime rates (fig.4). Mixing retail with residential areas may increase crime. According to Newman Space is only defensible if residents have the clear right to influence and control what takes place there. In commercial or public areas, everyone has the right or excuse to be present, and offenders are indistinguishable from law-abiding citizens. Mixed use therefore reduces residential control over the neighborhood and provides criminals with anonymity as they merge into the background, typical during riots and vandalism. . Fig.5
Previous racial conflicts and recent riots in UK advocate that mixed use development can cause lack of safety and bring fears to residents. Bunch of angry people can simply fire premises, rob shops and moreover individuals can be subject to aggravated burglary.

![Fig. 5 During the riot Shops were fired located in mixed-use developments in Birmingham city in UK, 2011](image)

Bags, mobile phones and purses were taken from pedestrian passing through mixed-use developments in many parts of UK’s cities during August riots. Weak action of local police throughout the riots events contributed to lack of sense of safety, according to witness, residents of vandalized mixed use developments constantly contacted police reporting mugging actions and requested police presence in streets, yet no reliable and quick action was taken and people left to face their destiny. Moreover residents also reported that police if they were present in street, didn’t stop rioters and their action was immobilized and unproductive. Residents organized themselves in groups to protect their properties and business.

**IV. FACTORS TRIGGERING UK RIOTS**

Many theories have been posited about the underlying causes of the riots in England, from moral decay to hatred of corrupt greed of banks and big companies. Some of the British Press attributed the rioting to lack of prospects for a disenfranchised youth and cuts in social and public services. It is evident that the recession casts its shadow upon the society. Cuts in public spending by government, Inflation, rising tuition fees and high rise in unemployment generated anger and hatred that was spreading among youths. Youths translated their hatred into vandalisms and decided to attack, rob and set on fire banks, restaurants, shops, big stores that sell mobile phones, electrical goods and clothes.

The following comprises the main factors beneath recent riots in England.fig. 6

1) Inflation: People on lower incomes spend appreciable proportion of their money on gas, electricity and food, the cost of which has risen sharply while those on higher incomes have benefited more from lower mortgage rates. Greed of Oil Companies caused a sharp rise in petrol price, oil barrel reached 180 $ making the cost of transport a key factor in the rate of inflation.

2) Social prohibiting: Camilla, the founder of Kids Company charity wrote in the Independent newspaper blaming the society. She believes that the rich are constantly increasing their wealth, taking control of the economy and leaving less to others "established community is perceived to provide nothing... It's not one occasional attack on dignity, it's a repeated humiliation, being continuously dispossessed in a society rich with possession". The gap between wealthy and poor is increasing and this generates anger among youth descending from poor families who thought it’s the right time to revenge especially targeting big companies and banks.

![Fig. 6 Teenagers breaking and robbing shops in Birmingham city centre during the riots, 2011](image)

3) Family breakdown: Breakdown of the family or lack of interest to form one is among the factors that resulted in recent riots and gangs joining. The breakdown has left a generation of teenagers without fathers or adults to guide and advise. Single Parents seldom follow up what their children are doing, and less interested in putting pressure over them to promote the right attitude and behavior. Instead, some teenagers coming from broke up families, feel loyal to the gang and to its codes rather than to the prevailing moral orthodoxies of the majority of the population. Low-level criminality is a standard of living – as, for some, is drugs, robbery and routine armed violence .According to Cristina Odone *1, the riots could be traced back to a lack of male role models: "Like the overwhelming majority of youth offenders behind bars, these gang members have one thing in common: no father at home."
4) Spending cuts: Number of the UK papers have attributed the rioting to several aspects, among them is the lack of prospects for a disenfranchised youth, the government’s tough austerity policy resulted in massive cuts in social and public services and sharp rise in tuition fees. Former London mayor Ken Livingstone, a Labour politician, Speaking on the BBC’s News night, mentioned that austerity measures can be the source of the riots: “If you’re making massive cuts, there’s always the potential for this sort of revolt against that.” Fig.7

“Tottenham has had a 9 per cent cut nearly in its government grant. The youth centres are closing, people are seeing all the sort of things they used to rely on going.” Livingstone said in a statement. Lopez *2 said she doesn’t see reason for politicians to ignore the violence, and added she tries to understand the anger of youth and their negative perception about, a lack of job opportunities and cuts in government funding to youth services. “The government really needs to actually take time and listen to these young people because for a long time they have been crying in silence saying, ‘This is what matters to me.’ They have really been crying for a long time,” she said.

5) Weak Policing: During the riots events, police control over UK’s streets was powerless and below expectation, perhaps after the death of a man in G20 protest in London 2009, officers might have been afraid of taking on the rioters directly for fear of legal action. Several rioters mentioned to the press, they noticeably enjoyed the feeling of being powerful. They felt that the cities in which they were misbehaving are under their control and belonged to them. Witnesses in tense areas said that police men were watching the rioters without taking robust action.

6) Rising Tuition: fees Universities in England will begin charge fees of up to £9,000 per year from 2012, this sharp rise means that graduated students will finish their study with debt may reach 50 thousand pounds.

V. THE ECONOMIC DOWN TURN AND ITS IMPACT ON MIXED USE DEVELOPMENTS

1- Credit Crunch (Bank Crisis) and Unemployment

The end of the twentieth century witnessed the coming of New Labour into power. This was a time when bankers were encouraged to take risks amidst easier facilities for people to get hold of credit. Many decided that it was sensible to credit to invest in buy to let market.

2- Availability of Loans, High Figures of Employment and the Boom in Construction Sector

The property market has booming and bust years. From year 2000 and until the end of 2007 the property market in England was booming. An average house price in the UK increased from £75,000 at the end of December 1999 to just over £182,000 at the end of December 2007(Fig.8).Central to this growth was the wholesale availability of credit, moreover Low interest rates and strong levels of employment as well as the limitation in housing supply were the factors behind the in high levels of houses prices (Fig.9)

3- Easy Lending Criteria and the Thriving in Construction Sector

The constant demand amongst many lending institutions to enhance their share of the residential mortgage market meant that lending criteria was often not as stringent as it should have been. The wide-ranging of mortgage products available during the housing boom, including self certificate mortgages and products with loan to value ratios in excess Of 100% meant that home ownership had been opened up to a wider percentage of the population (Fig.10).

---

1Cristina Odone is a journalist of the Daily Telegraph, novelist and broadcaster specialising in the relationship between society, families and faith.  
* 2 Margarita López Maya historian, socialist and economist professor at the Central University of Venezuela
Loan to income ratios were also increased allowing borrowers’ access to larger volumes of mortgage; this was evident in the period 2005 to 2007, reflecting the rapid expansion in credit availability globally.

4 - The Beginning of Recession Impact on Lending

In 2008 the lack of liquidity within the global financial markets has put a major strain on the resources of lending institutions, which led into a major tightening in mortgage lending (Fig 10). Between 2002 and 2007 annual gross mortgage lending in the UK had grown by around 65%. Gross mortgage lending in 2008 was 29% less than in 2007. Rising unemployment across the UK together with tightened lending criteria has resulted in high levels of difficulties within the residential mortgage market.

5 - Buy-to-let Sector and the Construction Boom

During the growth period and In addition to the mortgaged purchases, large volumes of equity were also being diverted into buy-to-let sector. Further dimension of the house price growth has been the dramatic expansion of the buy-to-let sector and figures recorded by the Council of Mortgage Lenders (CML) show that the number of buy-to-let mortgages increased by 21% in the 12 month period to the end of December 2006 (Figure11). During 2006, banks, building societies and other lenders approved more than 330,000 buy-to-let loans worth a total of £38.4bn. The figures represent a 48% increase in volume and a 57% increase in value of buy-to-let mortgages over 2005 levels. At the end of 2006 the buy-to-let sector accounted for 9% of all outstanding mortgages in the UK by value. The boom in property market made lots of investors in buy to let sector seek short gain through the sell of properties after short period and prospect of long term letting wasn’t in their interest. The net result was that large volumes of newly developed property, particularly apartments throughout the UK were purchased from developers but have remained unoccupied.

6 - The Impact of Recession on Buy-to-let sector

The downturn in the property market has revealed the extent of this problem with large volumes of new build apartments in major cities such as Liverpool, Leeds, Birmingham Sheffield and Manchester currently vacant. NHBC statistics show that apartments/flats and maisonettes made up 44% of new houses begun in the UK in the first quarter of 2007, double the percentage seen in 2000. The changing population demographic of the UK could have supported such excessive growth within the apartment sector, but the demand which lie behind the rapid supply was artificially enhanced by investors with short term investment horizons.

7 - Availability of Loans for Commercial Properties

The extensive availability and employ of debt during the growth period meant that lending to commercial property sector increased considerably (Fig.12). Research done and produced by De Montford University reveals that loans of
£66.1 billion were approved for commercial loans approved reached £81.1bn.

The total value of outstanding debt secured on commercial property at end of year 2006 amounted to £172.1 billion.

Thus the availability of credit has been a vital factor of commercial property growth in the UK over the last decade. Bank debt outstanding to the commercial property sector at the end of June 2008 amounted to £232.1 billion.

8 - The Impact of Recession on Commercial Properties

The Bank of England Credit Condition Survey for the first three quarters of 2008 prove that credit availability to the commercial real estate sector was diminished with loan approval rates down drastically over the first and second quarters of 2008 in a comparison with figures for the same period in 2007. Compounding the problem from the commercial property sector perspective, a number of institutions have withdrawn from the market, this made lending prospects restricted and limited (Fig.-13) during previous years, all places in UK have been affected. Some are better protected than others; no region is protected from the impact of the economic downturn. But effects are greater in some parts of the country than others.

For instance, in the two worst hit sectors, residential and mixed use, partners believe that the Northern and West Midlands regions so far have been more badly hit than Southern and Eastern regions. "Three major private sector mixed use/apartment schemes in the city centre have either been mothballed or abandoned. "(The Credit Crunch and Regeneration Impact and Implications, 2009,p32)

According to the survey done by research team in University of Ulster Real Estate Initiative, Residential developments are tremendously difficult. In particular city centre apartments and buy-to-let markets, Commercial property – retail, industrial leisure and mixed use are less pressured. "Our survey of over 250 partners gives us a robust picture of which projects and places have been affected most so far. (Figure, 14), Over half (57%) reported there had been a reduction of 50% or more in residential-led regeneration activity during the past 12 months. Such reduction levels although still significant, were somewhat lower in other sectors. The figures were 41% for mixed use; 33% for office-led development, 22% for retail; 18% for industrial and 20% for leisure-based regeneration activity. Figure,15 shows that partners believe that the economic downturn will have a big impact across all sectors on projects that are – or were – planned to start over the next two years. " (The Credit Crunch and Regeneration Impact and Implications, 2009,p29).

9 – Government Austerity Measures and Unemployment figures

The government austerity measures and loses in private sector resulted in the fact that, number of people unemployed in the UK rose to reach 2.49 million. Moreover, Today's figures show we are still some way off recovery, economists predict that the world more likely is heading towards double dip recession (second period of recession) .Therefore speculation that 2.49 million of unemployment will rise to reach 3 million . The latest figures showed youth unemployment rose to a fresh record high, with more than one in five 16 to 24-year-olds out of work. The youth unemployment rate reached 20.2% and more than 949,000 young people — the largest number since records began — are dumped on the scrap heap. Experts expect that figure will rise to 1.2 million within five years unless radical action is taken. Moreover companies during the rescission and since layoff is high, prefer to employ experienced candidates rather than investing time to develop the skills of new graduates. This policy caused serious struggle to youth graduates to find job and consequently thousands are unable to get mortgages.
be given as down payment before approving the lending (Fig.16). Average debts of graduate students in England ranks between 20 to 30 thousand pounds, these figures are based on previous tuition fees. Rising tuition fees means students’ debt may reach 40 to 50 thousand pound. Average house in Birmingham, cost 160000 £, while new flat in Birmingham city centre rank between 140000 to 160000 £.

To pay down payment to Purchase property, new graduates need to have saving of at least 30000 £, with their education debts it is so difficult to join the property ladder. Therefore it is obvious how the construction industry has been affected in the economic slump in Britain, with the unemployment reached 2.49 million; the construction industry is going to face serious challenge.

VI. CONCLUSION

The recession in the UK has affected both society and economy, the negative impact on society created when:

1. The government begun its austerity measures and layoff increased in private sector; this resulted in raising the level of unemployment.
2. Government austerity measures led to sharp cuts in spending on public sectors. (furthermore, in some public sectors employees expected around 25% cuts in their salary)
3. High inflation figures (the price of food petrol, gas and electricity were rising sharply)
4. Rising tuition fees (tripled from 3000 thousands to 9000 per year, this meant graduates have to pay back debits of 40-50 thousand pounds).
5. Lack of prospects for youth employment.

While the recession effects on economy resulted in the following:

1. Many banks were burst (this created a knock effect on other businesses and many firms went into administration)
2. Lack of liquidity led to tightening in lending to business.
3. Tightening of commercial and individuals property lending. (for first time property buyers, 25% deposit is required in order to proceed residential mortgage application)
4. High figures of unemployment combined with restrict access to loans mean construction industry is facing serious challenges. Therefore Politicians are urgently requested to review their policies and the government needs to re-invest indirectly in other important sectors specially education and construction.

These factors made the youth feel disconnected from the society and lacked hope in the future. Rich are constantly increasing their wealth, control the economy and leaving less to others, this generated sense of hatred and antagonism among youth. To revenge from wealthiest, youth made an action to cast the spell of anger on major firms, Vandalizing, rubbing, and setting fire in shops, restaurants, big stores and banks (mixed use developments). These were their tool to express their bitterness, and the riots can be repeated in the future unless further support from the government is offered to them. The solution is imbedded in political aspect more than urbanism design; the government is enormously supporting banks and pumping money in the financial market, leaving the youth and middle class behind facing the rising cost of life.

Therefore the following measures are recommended to diminish the impact of the economic downturn on society:

1. Investing money in education system instead of focusing only on supporting banking sector, this will result in decreasing tuition fees for low income family. While increase the fees for wealthy students if needed.
2. The government should distribute its support to other sectors, to revive the construction industry and Invest in mixed use projects that offer commercial and residential properties ownership for middle class and low income family.
3. Employ the energy of youth in early proposed mixed use developments, this will revive apprenticeships and assist to harness new talents. Moreover can reconnect the youth with society, assist them to earn income and enhance their skills.
4. Increase the marriage allowance to support families bonding.
5. Increase the income tax on wealthy sector.
6. Offer help to first time buyers especially low income families.
7. Encourage youth employment (this can be done by reducing the tax for the company which employee new graduates)
8. As an urban design solution, vertical mixed use development can be securitized effectively more than spreading the uses along extended roads.

The availability of loans and mortgages were vital element in recent years resulting in the boom of construction sector, end of 2007 banks burst and many institutions have withdrawn from the market, this made lending restricted and limited. High figures of unemployment combined with restrict access to loans mean construction industry is facing serious challenges. Therefore Politicians are urgently requested to review their policies and the government needs to re-invest indirectly in other important sectors specially education and construction.
REFERENCES

[8] Communities and Local Government, 2001, Mixed use development, practice and potential
[10] Kevin Lynch, 1960, the image of the city
[12] Peter Newman and Jeff Kenworthy, 2000, Achieving sustainable urban form,E&FN Spon
[18] Philip Cave, Urban design, winter 2005 .issue93
[22] Ian Bentley, 1985, Responsive Environments, Architectural Press
[23] www.dailymail.co.uk
[24] www.BBC.co.uk
[25] www.telegraph.co.uk