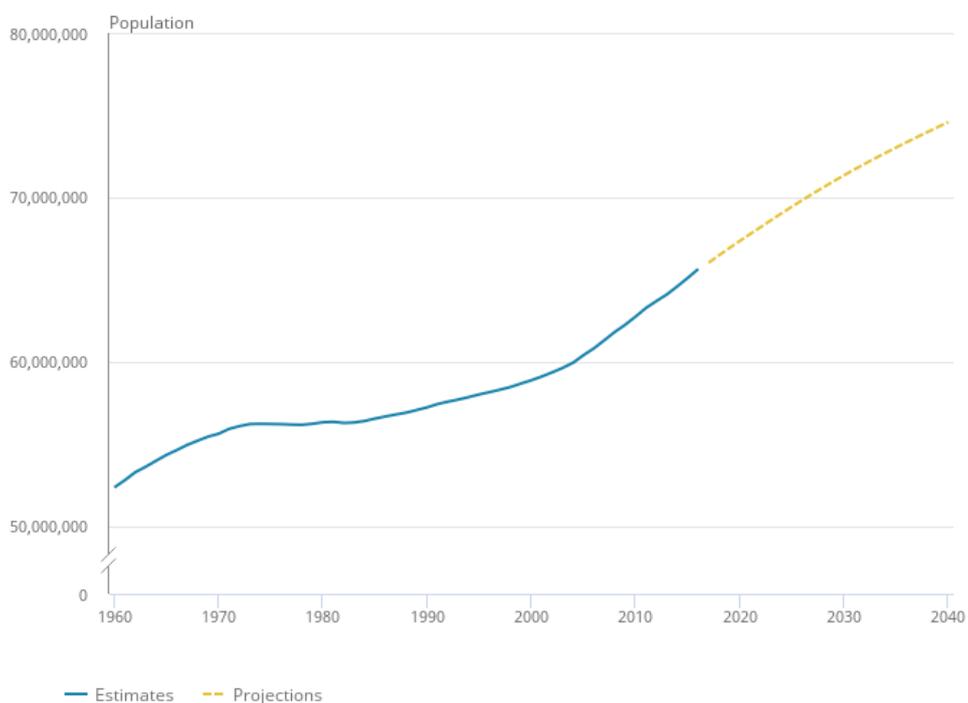# The impact of high density housing in Bristol

During the next few decades population will continue to grow putting pressure on governments and society to act for the future. Such an extensive number of people will need adequate infrastructure, prominent among them being water supply and sanitation facilities, services and housing. The current approach to this would see cities sprawl uncontrollably which would in turn damage most areas of life due to the lack of co-ordination and planning. The UK is one of the most crowded countries in Europe[1], combined with being a small island and a projection of further population growth, we cannot afford in the long term to carry on as normal. However the solution of high density housing could solve this issues entirely if well planned around affordability, inclusivity and sustainability. Cities such Singapore and New York have managed to manage high density housing in an effective way with New York opting for a model of efficiency and maximisation where as Singapore has aimed at inclusivity, affordability and sustainability.

Figure 3: UK population estimates and projections, 1960 to 2030

Source: Office for National Statistics

There a some rough models that the city of Bristol could be based on. Here are some different plans of cities each with advantages and disadvantages.[2]

- Business-as-usual city – simply an extension of current development practices. Compact city – increased population in inner suburbs.
- Edge city – features growth in population, housing density and employment at selected nodes and increased investment in freeways linking these nodes.

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[1] World bank 2000 Population density of Britain 247 per sq km
[2] (http://www.reading.ac.uk/PeBBu/state_of_art/urban_approaches/high_density/high_density.htm#top of page)
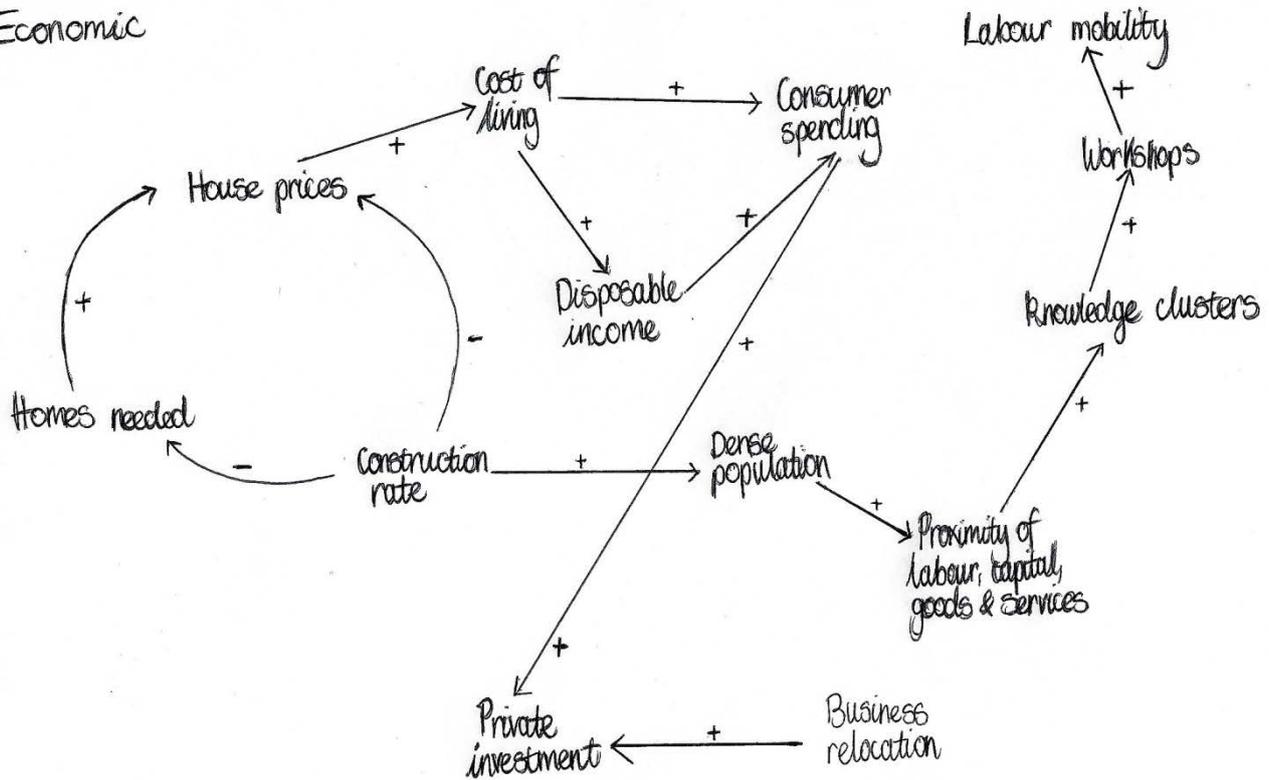
- Corridor city – has growth along arteries arising from the central business district, radial links and upgraded public transport.
- Fringe city – has its growth predominantly on the outskirts.
- Ultra city – features growth in regional centres within a hundred kilometres of the central business district. High-speed trains link the regional centres to the city heart.
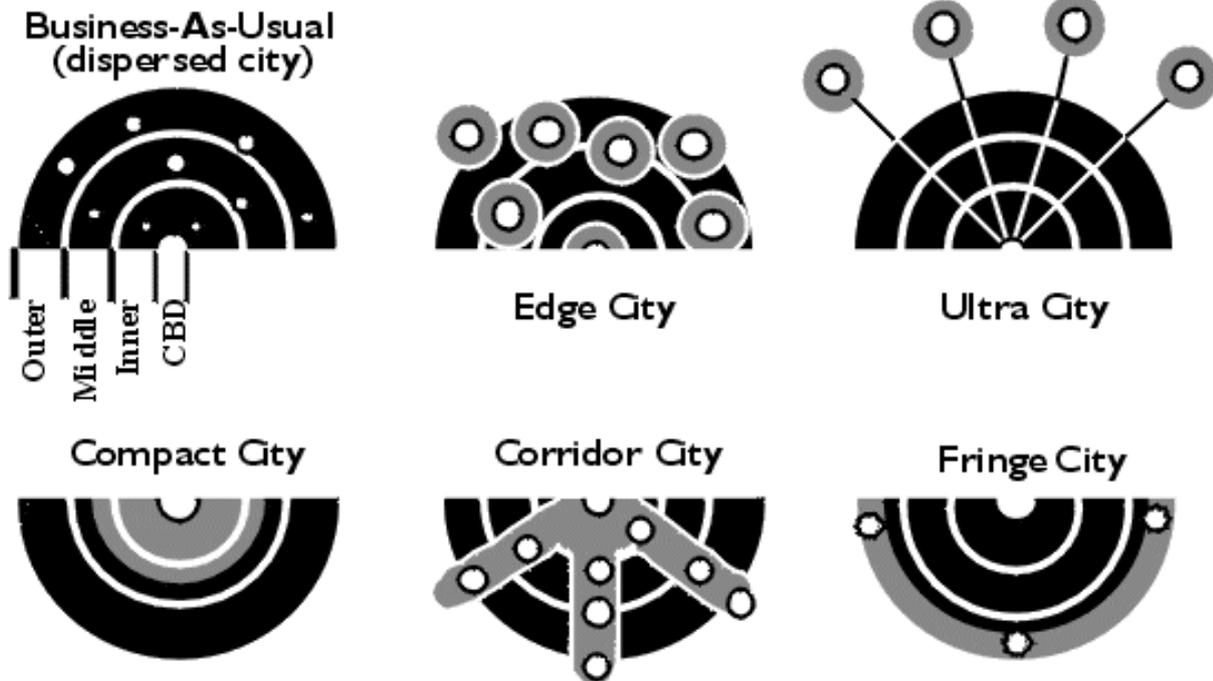
With the current business as usual position that Bristol is in we are mainly looking at the edge city and compact city as models with aspects of the ultra and corridor models for transport with the suburbs and commuter towns. The aim of this report is to give an insight into the questions that need to be answered surrounding the impact of high density housing and how we can adapt this model in order to achieve an inclusive, affordable, and sustainable housing policy in Bristol.

Economic

Economic

Cost of living → (+) → Consumer spending

House prices ← (+) ← Cost of living

Cost of living → (+) → Disposable income

Disposable income → (+) → Consumer spending

House prices (+)

Homes needed (+) → House prices

Construction rate → (+) → Dense population

Construction rate → (−) → Homes needed

Construction rate (−) → House prices

Dense population → (+) → Proximity of labour, capital, goods & services

Dense population → (+) → Consumer spending

Private investment → (+) → Consumer spending

Proximity of labour, capital, goods & services → (+) → Knowledge clusters

Knowledge clusters → (+) → Workshops

Workshops → (+) → Labour mobility

Business relocation → (+) → Private investment

How would higher density housing affect Commerce?

How would it affect business size?

How would it affect the working environment?

How would it affect the transport of goods and services?

The emergence of cities has mainly been down to the benefits of having many goods and services in close proximity with the ability to trade quickly. Extensive high density housing would only extend this trend and would have further impacts of the way that we work and how firms operate.

Firstly we could see the development of knowledge clusters in Bristol as people with a variety of skills are brought together, in turn this could see the development of workshops where individuals trade their skills. This would help to tackle labour immobility as workers would become exposed to new ideas and build on existing skills which in turn could create a much more interconnected economy as workers wouldn't be bound to a single job with their skills.

Moreover with customers being so concentrated firms wouldn't have to incur costs surrounding transporting goods as far. Moreover this can be extended to a more national picture with the

movement of goods and services between customers and suppliers would be greatly reduced and in the long terms the savings that could be made could be re invested into the economy.

What would be the impact on house prices in Bristol with high density housing?

High density housing would allow for a greater number of houses or accommodation to be built in a given area of land and subsequently this would allow for a greater supply of housing. In turn we would most likely see a fall in house prices in Bristol due to the increase in housing that high density housing would bring. The extent of this price fall would depend on housing building throughout the country, which would have to be at a comparable rate else wise Bristol would just attract more house buyers. In order to tackle the

House building since the 1920s
Permanent dwellings completed in England*, 1923-2016
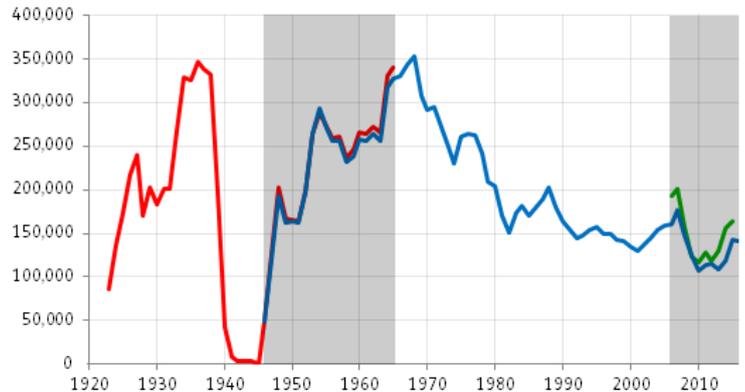
* discontinuity of data 1946-65. Pre-1965 (red) includes Wales. Post-1946 data in blue. Post-2006 data (green) relates to the new builds outlined in the net additional dwellings release, this measure is more comprehensive than previous counts.

Source: DCLG live table on house building 244 (post-46 blue) and 120 (post-2006 green) and data provided by Construction Products Association (pre-65 red)

housing issue there would have to be prolific house building in Bristol and nationally with one report saying that we would have to build 300,000 houses a year in England which is a 50% increase of the current government target. If we look at the history of house building in the UK ever since the late 1960's the level of house building has fallen with few exceptions in the 1980s and early 2000s. The current government figure is 162,880 homes were started in 2016/17, with 147,960 completed which is coming from the Department of Communities and Local Government (DCLG).

How would cheaper housing affect the housing issue in Bristol?

Cheaper housing would solve much of Bristol's housing problems as they would be more affordable and more price inclusive for the population. However this is in terms of the immediate effect as it is mainly those who are economically worse off and younger families that are struggling inclusivity for larger families is largely sacrificed with an increase in high density housing as this would mainly be much smaller and better suited for smaller families. This is a very important issue as housing must be able to house all family types and so is it a question of sacrificing variety in size of housing in order to achieve much cheaper housing and is this a long term issue?

Female
Male

600,000 400,000 200,000 0 200,000 400,000 600,000
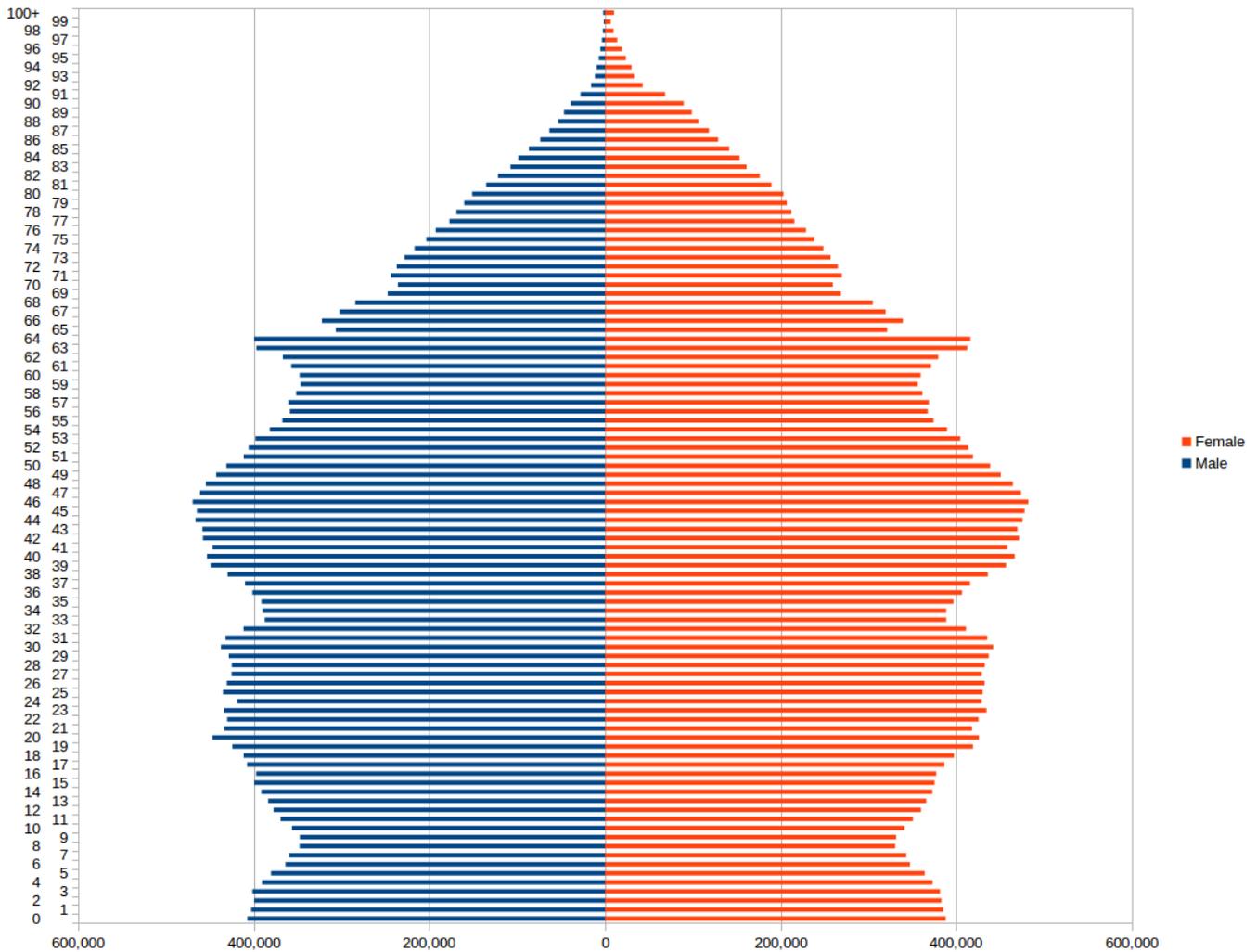
If we look at population structures we want a housing policy that can be sustained for when there is a change in demographics; for when younger people have families in 10/20 years time. We can see from this graphic from the 2011 census that in about 10 years time we will see a drop in younger individuals wanting housing but a rise in older individuals. The impact of this on housing is that if we presume at 30-40 people start having families this has an impact on the type of housing needed, which would need to be more spacious to accommodate them. The issue is whether there is variation the size of high density housing in order that it can accommodate families or whether we streamline high density housing just to target the younger and older age groups.

What would the impact of cheaper housing be on the economy of Bristol?

Would it generate more economic growth?

Would this growth be specific to one sector?

**Would this growth be sustainable or only an immediate impact of cheaper housing?**

More affordable housing, in general, would lower living costs in Bristol which would allow for businesses to pay their workers less whilst still overall not giving them a relative pay cut (workers would be willing to receive less as their living costs aren't as expensive). In turn providing economic conditions remain constant, firms in the area could become more price competitive and compete with firms nationally. The long term impact of this could see Bristol competing nationally and

internationally with businesses which would be beneficial for the city as we would see an increase in private investment both from companies and individuals spending in Bristol.

Assuming that there was prolific house building in Bristol we could see the cost of land decreasing as this would relieve the demand for land for construction. In wider terms this would mean businesses would see Bristol as a low cost city for factories and offices and thus potentially relocate here further increasing investment in the city.

Generally with housing costs decreasing this would allow for individuals to have disposable income and save or spend more of that however this is a more long term effect.

Environmental
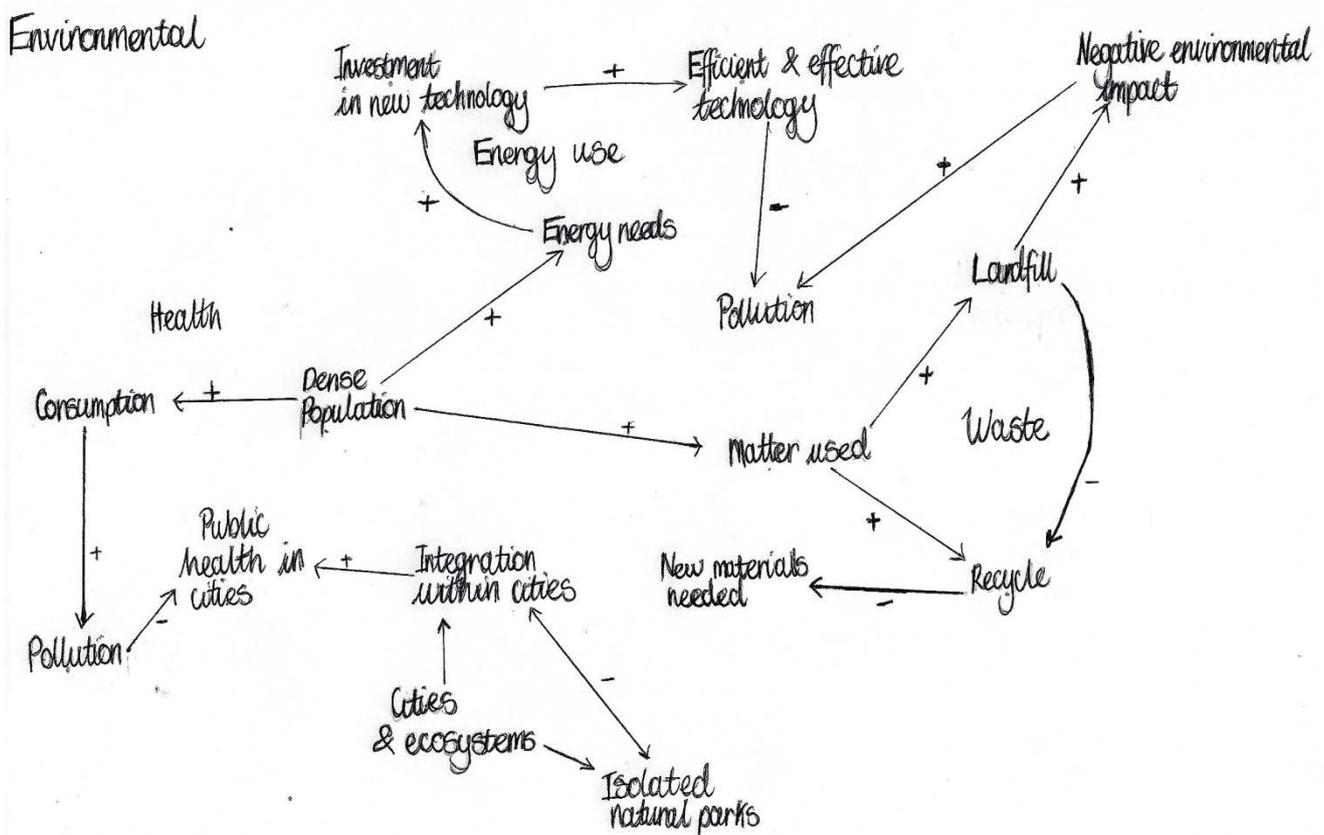
Environmentally we need to look at not only how wildlife would be affected but also how we would adapt to accommodate humanities growing needs for materials. Population growth means more resources needed; energy, water, food and space and the question is how do we balance this in an affordable and sustainable way.

Would High density housing lead to a change in the dynamic between urban and rural areas and would this be beneficial for the environment?

       Could we see Bristol become a garden city?

       Would increased population density allow for greater wild spaces in the UK?

Could we integrate the environment with heavily populated areas?

How would these different plans affect wildlife?

High density housing and wildlife could have two relationships; integrated within cities or completely separate. Wildlife integrated within cities would have many benefits, greenery in cities has health benefits helping to bring down levels on CO_2 and other pollutants in the area and there are also social benefits to having green spaces. However within a city 'wild' areas would be limited in the wildlife they would be able to support, smaller creatures, and so even with wildlife integrated within cities we would still need natural parks in the surrounding areas to sustain bigger animals. There are many examples of gardens and parks in cities such as the Tiergarten in Berlin, central park in new York however these parks have a more social impact rather than an environmental impact.

Garden cities would be more suited to the edge city model where pockets of urban housing are surrounded by parks and small wooded areas which are connected to other pockets of high density housing. The extent of the greenery in the city could vary but as there is more greenery the more spread out the city becomes which could risk losing some of the benefits of having a concentrated population. Garden cities would tackle issues of overcrowding in cities as well as pollution and social issues as it would allow for individuals to congregate. Garden cities are far more suited to social issues and help manage pollution in cities rather than being a long term plan for wildlife in cities. However garden cities and denser cities would allow for more space in the country side for the green belt to be developed or for existing national parks to be expanded or created and these would serve as the main way of balancing an increased population with wildlife.

What are the health impacts within high density housing areas?

This question is very dependent on planning of high density housing areas; if we just allow a sprawl affect like we currently have we would most likely not see any change in the way people move around cities and with such a great concentration of people and cars it could be assumed that an increase in high density housing would increase pollution in the local area. However this is not the case if we plan and adapt the city around high density housing.


- Landscaping to move trees into the city not only help reduce pollution levels but also visually soften the solid edges of buildings. Effective landscaping helps mitigate the direct impact of high density housing and helps create a better quality of living. For example this roof top garden in Singapore is a prime example of this and as an exemplar city is very successful in general at creating both high density housing and high quality living.
- Denser populated areas allow for more effective public transport and increased levels of cycling and walking which decreases the overall pollution levels in a city thus not causing such a directly negative impact on health
- More parks within cities allow for people to exercise more and generally be more active which would help tackle the obesity crisis.

How would high density housing affect energy consumption?

Would it induce more research in green energy?

Chart 1.02: Final Energy Consumption by Sector
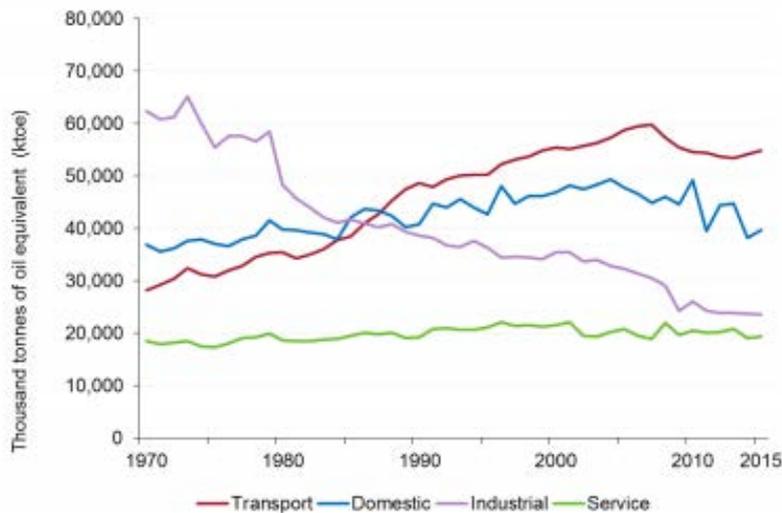
As the population grows so will our overall energy needs if we have the same lifestyle, however in a high density populated areas this is not necessarily the case. Firstly the main source of our energy use is transport (Energy consumption in the UK July 2017 Department for Business, Energy & Industrial Strategy) but, in a denser city with everything in closer proximity the need for energy will not necessarily grow. A developed public transport system would mean that average energy consumption in transport would fall as it would be more economical for individuals to travel together rather than individually. Furthermore if properly developed we could see cycling and walking becoming the main way of travelling in a city further cutting energy usage. Moreover with businesses being closer together transport needs will be less which would further cut energy consumption in the transport sector.

Chart 2.02: Road transport consumption split by passenger and freight
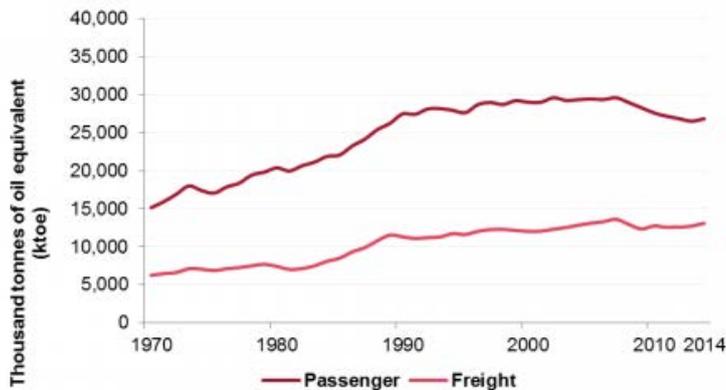
Source; BEIS ECUK Table 2.01

Social

Community

High density housing on a larger scale would lead to a shift in communities in terms of their size and their geographic location. These changes would affect both the existing community and the newly created ones as people would need to assimilate together. We could see detrimental impacts on the community if high density housing developments are parachuted into communities without any consideration of social assimilation and integration.

Would communities become more communal with the decrease in private space?

       How would our communities adapt?

       Is a strong local community advantageous?

High density housing in its nature leads to a decrease in private space and so as a consequence there would be a lot more social interaction outside of private space. Expansion of communal areas could well be a consequence of this which would compensate for the lack of private area. However what impact would this have on the community? Most communities centre around a public space; pub, village hall, a park or a green. With the lack of private space that is associated with high density housing we could see local communities strengthening as individuals are forced to spend more of their time outside of their homes and into public spaces.
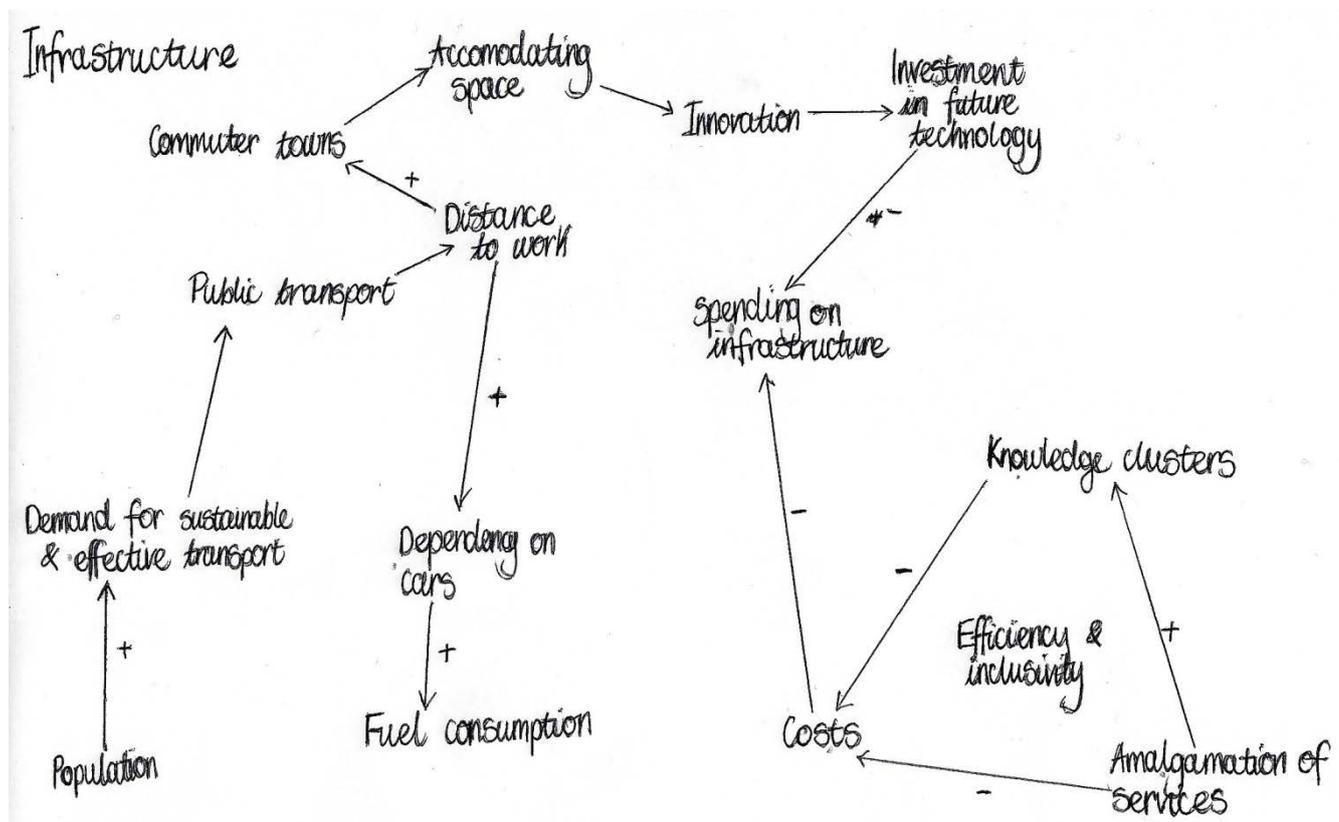
This could be very beneficial for the community of Bristol as it would help tackle many issues that local people struggle with; the lack of community. In many cities and urban areas individuals are often increasingly not feeling a sense of community with the decline of distinct collective areas as in urban planning these are disregarded as they don't produce money. However this could be countered with high density housing as there would be space for such areas and if we specifically planned around them this would no longer be an issue. Conversely many criticisms of communal areas is that people do not feel connected to the community and instead due to the fact they have no stake in it they become more isolated. However again with better planning and making sure that these areas are localised this could well be avoided.

Would high density housing lead to housing estates being more associated with class and wealth?

       Would communities become even more segregated?

With high density housing on the whole being less inclusive for different family types we could start to see accumulations of certain family types in housing blocks. This could lead to segregation within the city which would impact all aspects of life. However this could be overcome in many ways; to have varying size of housing within an area and to vary the price of housing within an area and the more variety the less segregated our communities would be.

Infrastructure

Infrastructure

Commuter towns → Accomodating space → Innovation → Investment in future technology

Distance to work +

Public transport

Spending on infrastructure

Demand for sustainable & effective transport

Dependency on cars +

Knowledge clusters

Efficiency & inclusivity

Population +

Fuel consumption

Costs

Amalgamation of services +

How would public transport develop?

Would public transport be the only viable option?

With increased population density in cities the use of roads for cars would quickly become unsustainable and unaffordable for the city with congestion and pollution and therefore public transport systems would have to be developed extensively. How would this affect commuting to work?. Many workers commute into Bristol from commuter towns such as Yate where many people live and thus the public transport systems would have to connect these workers but also be coordinated between different types of public transport in order that workers aren't as affected and to avoid rebuilding all travel routes in the region. Moreover on a larger scale transport infrastructure would also have to adapt for inter city transport as well as intra city transport if roads become no longer viable.

How would we plan future developments?

How would we sustain good infrastructure?

How would the infrastructure system adapt and prepare for future innovation and invention?

With the mass concentration of infrastructure that would follow a concentrated populous we need to look at whether this is sustainable in the long term. In the future there is a real possibility that Bristol could expand further and therefore we need to consider how this would affect plans for infrastructure. If infrastructure was planned mainly for the immediate impact of prolific high density housing developments then further down the line integrating extra infrastructure could prove

difficult. When planning infrastructure especially transport if a view of pure affordability, inclusivity and efficiency is taken we could see, in the short term, a better infrastructure system however this would be at the expensive of taking into accounts of future developments in technology and expanse of the city. If the city were to expand further or there were plans for expansion and the infrastructure system hasn't been prepared for this then this would curtail any development.

One option is preserving space for any future infrastructure which could then be developed on if future infrastructure was needed. Another is to have infrastructure that could easily benefit from innovation.

Is the concentration of Government services better for Bristol?

       Is it more affordable for infrastructure to be amalgamated?

       How would this affect the quality of government services?

One benefit of having condensed services would be cost as infrastructure that is spread out in the countryside if more costly per head if we include all factors. As a direct result of this we could see more investment into these services if they cost less to run, although this wouldn't be hugely significant. Another benefit of condensed services would be the improvement of these services for instance take health care. Some of the best quality healthcare comes from hospitals which benefit from having a high concentration of medical professions and usually having university hospitals nearby.

Conclusion

Economically the impact of high density housing revolves around the increased proximity of economically active individuals. The impact of previous urbanisation is a model for the economic impacts of high density housing; as a trend we would see increased specialisation. The key benefit of high density housing on the economy and on infrastructure is that it cuts geographical costs with individuals in closer proximity. This allows for certain phenomenon to become more prevalent such as specialisation, and further allows for further investment and spending in infrastructure and the wider economy. The social implications of high density housing are determined by the ability to integrate communities and balancing private space with public space both of which can be achieved through successful architecture and urban planning. For high density housing to be socially successful it has to create enough private space and congregational areas. The impact of high density housing on the environment would also be dependent on urban planning and architecture. Green spaces could easily be incorporated into city centres, even more so with edge city model which could allow for bigger green areas. Overall the impacts of high density housing are dependent on our ability to adapt our lifestyles, architecture, urban planning and the running of government. The key question is how can we adapt to maximise the benefits of high density housing and as a trend how can we move towards a more communal, collective system that suits a denser population.