The Little Book of REZONING

Patrick AB James, Victor Atehortua, Lydia Herbert, AbuBakr S Bahaj, Leonidas Bourikas, Luke S Blunden, Yue Wu and the Liveable Cities Team

Editors of the Little Books series:

Dr Christopher T. Boyko and Dr Claire Coulton,
ImaginationLancaster, Lancaster University

With design by Roger Whitham, Rachael Hill and Michael Stead,
ImaginationLancaster, Lancaster University

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Contents

1. Introduction **4**

2. The concept of zoning in cities **5**

3. A brief history of UK city planning **9**

3.1 Planning History 9

3.2 Modern town and country planning 10

4. Examples of rezoning in cities **13**

4.1 Barcelona Olympics 13

4.2 London Olympics 13

4.3. Albert Dock, Liverpool 14

4.4. Southampton Pirelli Factory 14

4.5 New York HighLine 14

4.6 Medellin's Water Tanks 15

5.Rezoning as a wider city opportunity **21**

5.1 The five city types 22

5.2 Shrinking the City Indicators pool 23

6 Southampton as a case study city **26**

6.1 Southampton an overview 26

6.2 Southampton five city principles - creating a city vision 31

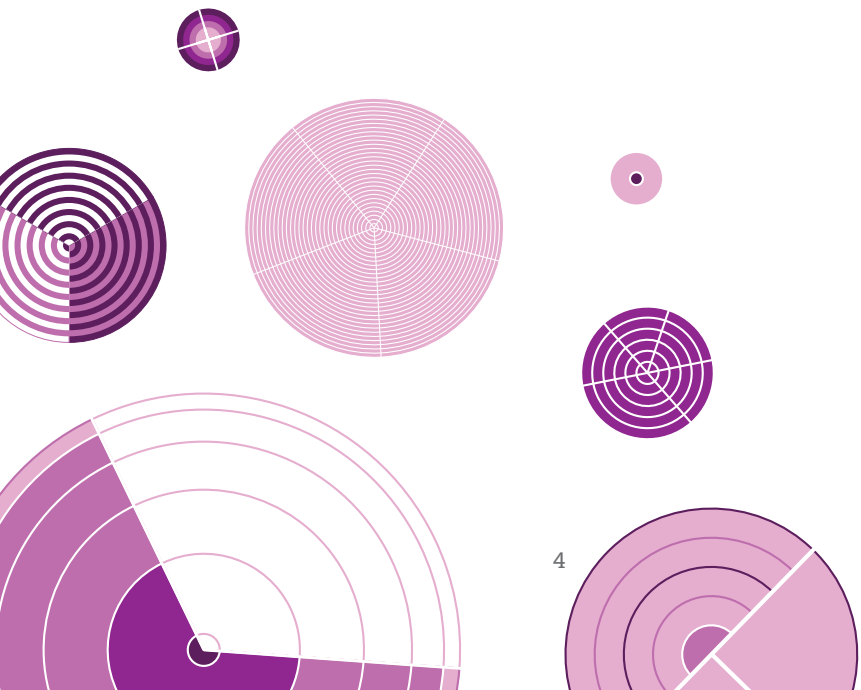
6.3 Victorian Wharf rezoning case study - applying the city vision 31

7 Summary **36**

References 37

1. Introduction

The *Little Book of Rezoning* explores the issue of city regeneration, specifically in relation to a UK post Industrial Revolution context. The book looks at the question of how rezoning of an area can be used to deliver on wider city aspirations. Avoiding isolation and segregation of city residents is shown to be a key issue to address and one which poorly considered rezoning can make worse. Taking examples from Southampton (UK) and Medellin (Colombia), this book highlights the need for informed, people based rezoning and the benefits that such an approach can bring.



2. The concept of zoning in cities

Cities are continually evolving in response to economic, social and environmental drivers. Globalization is accelerating this process and cities which are unable to respond may quickly lose their purpose and vitality. Well known examples of cities which have fallen victim to this change include Detroit, as the home of the US car industry, and Sheffield with UK stainless steel production. In a UK context, many cities have areas that developed during the Industrial Revolution or post World War II to deliver activities that are no longer relevant at such a physical scale. These areas are now opportunities for regeneration or change of use, in essence 'rezoning'.

Whilst globalisation can be considered as the major disruptor to the vitality of a city it is by no means an isolated event. There are an ever increasing number of smaller, often technology-led disruptors that have emerged following the expansion of the Internet. In Paris, Airbnb poses a major challenge to the hotel sector, enabling Parisians to rent out their city apartments whilst by-passing legal and administration requirements that traditional hotel providers must adhere too. Uber is also challenging the traditional taxi model, increasing capacity in a city and reducing costs by using an internet- based platform.

City air quality is an interesting example of the pitfalls and unintended consequences of government policy. During the 1990s the UK government provided company car tax breaks for low CO^2 emission vehicles, which promoted a rapid switch from petrol to diesel. While having a much greater engine life – 300,000 km would not be considered unusual the Volkswagen emissions scandal of 2015 highlighted that NO_x[1] emissions from diesel vehicles are far worse than previously thought and that

[1] NO_x refers to nitrogen oxides such as nitric oxide (NO) and nitrogen dioxide (NO_2)

the company had manipulated tests using a hidden software 'defeat device' (Horn, 2015). Air quality not CO^2 is now the top priority for cities. It is estimated that 40,000 deaths are caused each year through poor city air quality, with children in particular affected by particulate vehicle emissions (RCP, 2016). 16 areas of the UK including London, Birmingham, Leeds, Southampton and Glasgow all have failing air quality as designated by the European Commission and since 2014 have been subject to a number of legal challenges (EU, 2014).

This creates a number of challenges for local authorities and the UK government as the intervention options to address diesel emissions are potentially both expensive and unpopular. These include Low Emission Zones (LEZs) banning all but the most modern vehicles and the removal of city centre parking (loss of revenue to the council) in combination with Park and Rides schemes.

In addition, some approaches such as charging diesel cars to enter city zones are seen as unjust, affecting those who can least afford the charge and are unable to avoid it the most. The short-term solution is to brand diesel drivers as pariahs and encourage a switch to small, turbocharged, petrol engines, but this would essentially mean abandoning CO^2 targets. The medium term will see the introduction of city charges for diesel car use alongside the growth of hybrid and pure electric vehicles. Tesla is ideally placed to take advantage of this perfect storm. Traditionally cities have tended to evolve on a decade to decade timeframe, however, a single city disruptor like air quality is rapidly changing current city planning policies and practice at a timeframe of months to years. City disruptors are outlined in Figure 1.

City disruptors create both the need and the opportunity for rezoning as cities are forced to change. Whilst the *Little Book of Rezoning's* title indicates this text is focussed around change of use in our cities, it is necessary to first understand the underlying principle of zoning in cities.

Zoning itself was introduced to separate activities in a city that are considered to be incompatible: predominantly industrial, residential and commercial. The origins of zoning can be traced back to ancient walled cities where undesirable functions, such as butchery and waste disposal, were located outside of the city walls. The Industrial Revolution led to the reshaping of industrial cities and the development of urban squalor was addressed by the separation of industrial and living spaces. In North America, single use, or Euclidian, zoning has been the dominant system applied in city planning, but this has not been without criticism. Jane Jacobs famously wrote about the destruction and displacement of communities in New York in her 1961

book 'The Death and Life of Great American Cities'. Her work critiqued conventional

Figure 1. UK City Disruptors

zoning because she felt that it lead to urban sprawl, which necessitates the movement of people to and from work and the chronic underfunding of certain neighbourhoods, perpetuating poverty. New Urbanism, a movement focussed around the mixed use of space emerged in the 1990s to address the inherent transport-based weaknesses that Jacobs was talking about; that is, of single use zoning.

Rezoning can therefore be considered as changing the formal use designation of a city area. In essence, it is defined as follows:

> REZONING Verb 'assign (land or property) to a different planning zone'
>
> 'to change the governmental classification and permitted uses of (an area or piece of land)'

Within the *Liveable Cities* project, we are looking to understand:

1. What are the drivers of rezoning?;
2. What are the opportunities for rezoning in a city, specifically in a UK context?;
3. Is rezoning currently applied in a way that maximises citywide benefits?;
4. Does thinking about rezoning beyond the geographical limits of a site, say at the citywide scale, change the way we and city leaders imagine the possibilities of that space?

3. A brief history of UK city planning

In a UK city context, we will first take a 'potted history' of planning and the level of control that a city or local authority has over this process.

3.1 Planning History

The emergence of town and country planning policies in the UK originated from primary acts such as the Housing and Town Planning Act (1909, 1925 and 1932), which tackled issues involving industrialisation, urbanisation and pollution (Cullingworth and Nadin, 2002). However, it was not until the post-war years that planning concerns changed to involve the regulation of development control and wider urban planning. The Town and Country Planning Act of 1947 made the largest changes to planning in the UK, with many of these policies providing the foundations for modern planning (Booth, 2003). The 1947 act forced all buildings to be subject to strict planning control, and it refined the 1400 different planning authorities into 145 LPAs (Local Planning Authorities). The creation of these Acts gave the central government a strong influence on planning, distinct from other European countries at this time (Newman and Thornley, 1996). Since this time, many revisions have been made, in which planning rules were increasingly tightened as the population of cities grew, the latest being evoked in 1990 (Booth, 2003). Additionally, the Use Class Order Act came into force in 1987, which put buildings into distinct categories, due to their use (Home, 1992). This framework was set to control the permitted use of a building in a specific category, and gave the owner an opportunity to change uses between categories. An example of permitted class change of use would be for example, 'general industry, B2' being reclassified as either 'business, B1' of 'storage

and distribution, B8'.

3.2 Modern Town and Country Planning

Until recently, town and country planning followed the guidelines of the National Planning Policy Framework (NPPF), which was a consolidation of all existing policies, created by the Department for Communities and Local Government (DCLG, 2012). Central government was at the core of all these policies, with LPAs simply carrying through on their aims. However, in 2010, a coalition government came into power and introduced the Localism Act in 2011 (Localism Act, 2011). The specific aim of this Act was to promote 'localism' in the UK (Figure 2), by decentralising power from central government and empowering local authorities to make their own planning decisions based on specific local needs (Figure 3; Haughton and Allengdinger, 2013). This Act attempted to promote the idea of "big society" which encourages innovation and diversity within city development led by local actors (Bevan and Hood, 2006).

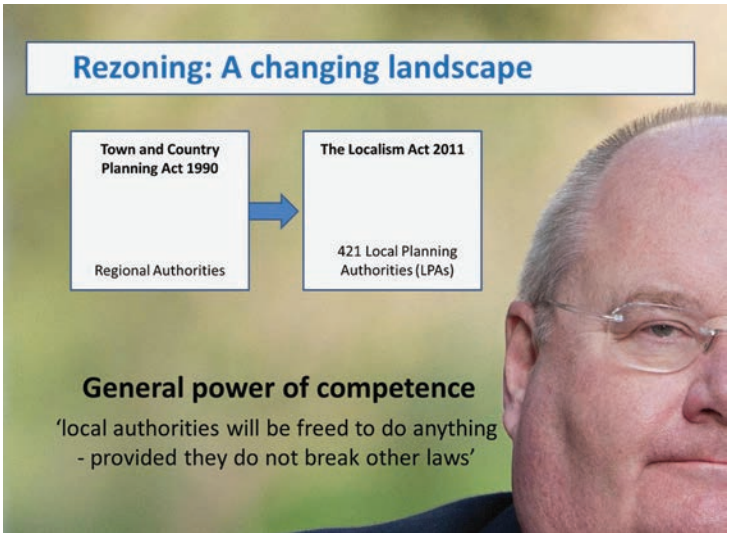


Figure 2. The Localism Act 2011 and the general power of competence

Prior to the Localism Act, local authorities were controlled by the national government; however, this act allowed LPAs to make their own decisions, unless the central government opposes them (Deas, 2013). Additionally, it removed the

need for certain planning permissions, which had been agreed in newly created local neighbourhood plans. Neighbourhood plans were enacted as a method for communities to inform and shape the development and growth in their areas (DCLG, 2011). The aim of these plans were to speed up the development process in areas which have been predesignated as requiring a certain use of land, for example, the development of new homes. The Community Infrastructure Levy was also introduced, by which a planning charge is sanctioned on large local developments, to help fund local infrastructure development, for example transport schemes and flood defences (Lord, 2009), Figure 3.

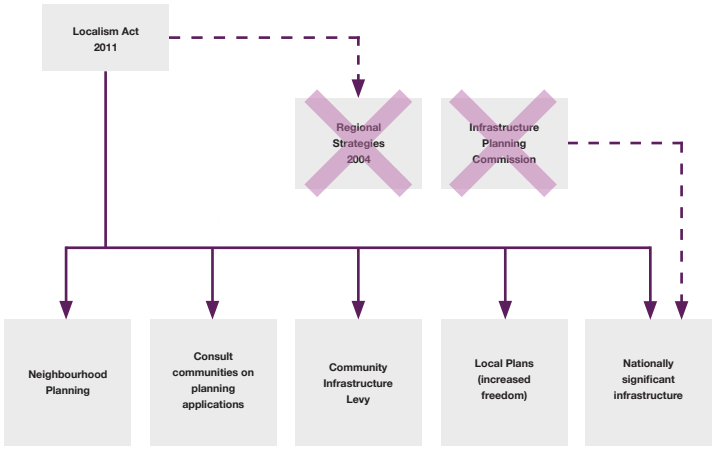


Figure 3. Flowchart representing major policies created and abolished with the Localism Act. Adapted from Herbert, 2016.

Southampton City Council is an LPA which has control over their own development plans, under wider guidance of the NPPF and the sub-regional strategy of Hampshire, which is the Partnership for Urban South Hampshire (PUSH, 2012). The PUSH strategy encourages the increase in economic growth of its two largest cities, Southampton and Portsmouth, by bringing companies to the area to provide good quality jobs and affordable homes for everyone. This vision is reflected in Southampton's Local Plan (CCAP, City Centre Action Plan), action plan and master

plan, which were last updated in 2015 and, which outline their long term strategic development plans to achieve this economic growth, as well as numerous other aims, including areas where redevelopment should be focused upon (Southampton City Council 2013; 2015). The CCAP is a loosely fitting set of guidelines, all of which must be independently examined in line with the NPPF guidelines. However, the NPPF is open to interpretation as some text is ambiguous, such as "a presumption in favour of sustainable development" (DCLG, 2012, p.4). Therefore, the creation of local plans is both time consuming for the LPAs and carries a risk of misinterpretation. Moreover, the council's action and master plan are created to help the council decide on planning applications, by predetermining the type of developments they require in particular areas, to support their city's overall growth. Figure 4 outlines the current hierarchy of town and country planning in Southampton, alongside the policies and plans that they are governed by.

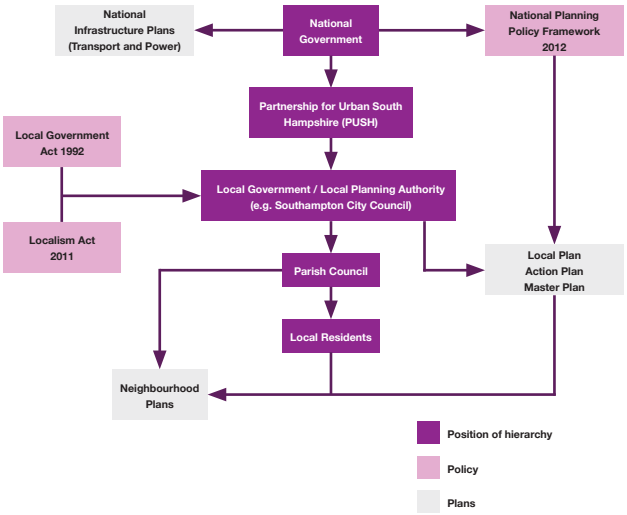


Figure 4. The Policy Framework scales under which UK planning operates. Adapted from Herbert, 2016.

4. Examples of rezoning in cities

There are numerous example of rezoning in cities. Those of the largest scale, budget and ambition are often related to prestigious national events. Perhaps the most well-known of these are the summer Olympics. Cities bidding to host the games often cite regeneration and legacy as core aims and the justification for their city to be chosen.

4.1 Barcelona Olympics

The 1992 summer Olympics was used by Barcelona to undertake major urban renewal along its main waterfront areas. The city's strategy was to invest public sector money to attract private investors to enable the city to use the Olympics to showcase the city as a tourist destination. The spike in international visitors following the Olympics has been sustained and today Barcelona is the 4th most visited city in Europe.

4.2 London Olympics

One of the most recent and large-scale examples of rezoning in the UK was the 2012 London Olympic Games. From 2007-2012, 2.5 km^2 of brownfield land and low-income housing and businesses in East London were demolished and rezoned to create the new Olympic park, including the stadium, aqua-park and velodrome. Ten thousand new homes - 40% of which were affordable - and updates to the transport network were also undertaken. The total cost of this regeneration process was £9.3 billion.

4.3 Albert Dock, Liverpool

Albert Dock opened in 1846 built to accommodate the modern sailing ships of the period. It was the first structure to be built in Britain from cast iron, brick and stone with no structural wood. However, by 1900 only 7% of ships using Liverpool were sailing ships which meant Albert Dock was too small for viable commercial use. By 1920 there was no commercial shipping using the dock, which formally closed in 1972. In 1981 the Merseyside Development Corporation was established to regenerate 3.2 km^2 of the docks. Initially Albert Dock tried (and struggled) to compete with other retail areas of the city. In 2007, the strategy changed to one of bars and restaurants which have now made Albert Dock the number one tourist destination in Liverpool. Today Albert Dock is a key part of Liverpool's UNESCO World Heritage designation and is the largest single collection of Grade I listed buildings in the UK.

4.4 Southampton Pirelli Factory

The Pirelli Cable Works were established on the Western Esplanade on the west side of Southampton in 1914. The site continued in operation until 1990 whereupon the works were demolished for regeneration as the site of the UK's first 'in town out of town' retail. The site is now home to the West Quay mall, whose key anchor tenant is John Lewis. Subsequent regeneration has resulted in a large IKEA store, head offices for cruise ship operator Carnival, car parks and a West Quay 2 extension of restaurants. Whilst the regeneration has undoubtedly brought jobs to the city, it has also created viability challenges for secondary streets in the city as the city core shifts (Turner, 2017).

4.5 New York HighLine

The High Line is a 1.45 mile long elevated linear park formed from a spur of the former New York Central Railroad in Manhattan. The abandoned railway has been reinvigorated as a 'living system' planted with vegetation that would have grown up around the railway line once it fell into disuse (Figure 5.). Since it was opened in 2009, the High Line has become a major tourist attraction in New York and has resulted in wider regeneration along its route. Today the High Line attracts around 5 million visitors per year. Several other cities around the world have plans to regenerate disused rail infrastructure following the High Line example, including Philadelphia, Atlanta and Chicago.

Figure 5. New York High Line. Photo M. Harper 2017

4.6 Medellin's Water Tanks

What happens if you change an infrastructure asset (a city water tank) from a 'keep out / private property' zone to a public shared space that is valued by the surrounding community? What are the implications of such an approach and is this a sensible thing for a utility to do? How does this change the perspective of the wider community to their energy and/or water provider? There are 144 such water tanks in Medellin, Colombia owned and operated by Empresas Publicas de Medellin (EPM), a publically owned utility with a high degree of autonomy in its operation and investment strategy. Whilst EPM is a public company that belongs to the local authority because of its public capital, it also has complete autonomy in its processes and finances, thus it is considered to be a mixed private-public ownership

company. This type of model, in Spanish known as "empresas mixtas" allows companies to operate through a partnership between the government and private sector companies. This has enabled some visionary thinking and change in the way EPM operates its city assets. Here we look at two of EPM's water tanks in Medellin that underwent transformation from guarded unwelcoming tanks to shared spaces in 2015. Interview surveys with users of the two parks were undertaken in 2016 in collaboration with EPM the utility provider and operator of the tank parks (Atehortua, 2016).

Medellin is the capital city of the Antioquia state in Colombia. In 2015, Medellin had a population of 2.5 million, of which 90% live in the urban area (MEDELLIN, 2015). The city had a density of 20,700 inhabitants per square kilometre. According to the most recent survey, Medellin has a proportion of 5 m^2 of green spaces per habitant and only 3.82 m^2 of useful public space per inhabitant (MDEINTELIGENTE, 2015). This is far less than the 9 m^2 of green spaces per capita recommended by the World Health Organization within the cities (UNHABITAT, 2015). In addition, through the National Planning Department, the Colombian government expects to have 10 m^2 of public space per capita by 2019 in the main Colombian cities (COMOVAMOS, 2015). It is for this reason that the Medellin city council have been trying to promote numerous public space projects in order to raise the greenspace per capita within the city. However, a combination of factors including weak planning, corruption, environmental and technical issues has stopped the majority of projects becoming a reality.

EPM developed a pilot project of public space parks called UVA (Articulated Life Units, *Unidades de Vida Articulada*) that are centred around a change of land use, which belongs to the company. In total, there are 144 tanks across the city, serving a diverse mix of neighbourhoods. The idea was to transform these places into open spaces with numerous facilities for the enjoyment of the community surrounding the company land (EPM, 2014), (Figure 6. and 7.).

How were the UVA tanks conceived?

Each park was developed from a consistent brief to deliver the following to the surrounding community:

- Computer room
- Multipurpose classroom

- Children's playground
- Auditorium
- Advisory centre
- Green areas
- Balconies
- Water fountains
- Public lighting
- Benches
- Public toilets

The UVA parks started construction in 2013 and by September 2015, eight of them were finished and in operation. To test the public's perceptions and distance that people would come to visit the parks, a study was done involving 100 people. They were surveyed by questionnaire in both parks across the weekdays and weekends.

Figure 6. UVA La Esperanza, Medellin, Colombia (Atehortua, 2016)

Figure 7. UVA La Libertad, Medellin, Colombia (Atehortua, 2016)

The survey results of two parks are shown in Figure 8 and 9. It is interesting to note that the perception of EPM as a company has improved following the design and development of the parks, and that security and general sense of community improved. Across the set of indicators relating to the environment people live in (LEFT, Figure 8 and 9), the parks can be viewed as being very successful. In relation to the park services (RIGHT, Figure 8 and 9), this again is very positive (with the exception of benches, playgrounds and water fountain conditions, which were rated not as highly). This is perhaps an indication that the parks are somewhat a victim of their own success: EPM may have underestimated the impact (and therefore maintenance requirement) of the park as an intervention. This is highlighted in Figure 10, which shows the geographical reach of the two parks: almost 80% of visitors lived within a kilometer or 10 minutes from the park. The wider community benefits indicated by the surveys (Figure 8 and 9) are reinforced by local authority data, which shows a reduction in violence around the UVA parks (V. Atehortua, 2016). The surveys also indicate that there is a degree of mismatch between what the public think the parks should provide what the UVA designers thought they should provide. This indicates that constant evaluation and transformation of the parks is desirable to keep the parks relevant. In particular, the greenspace was valued

highly by the park users alongside the opportunity to realise outdoor activities such as picnics, outdoor meetings and children playing in a safe environment. This difference in perspective between the park designers and users is probably due to their very different circumstances.

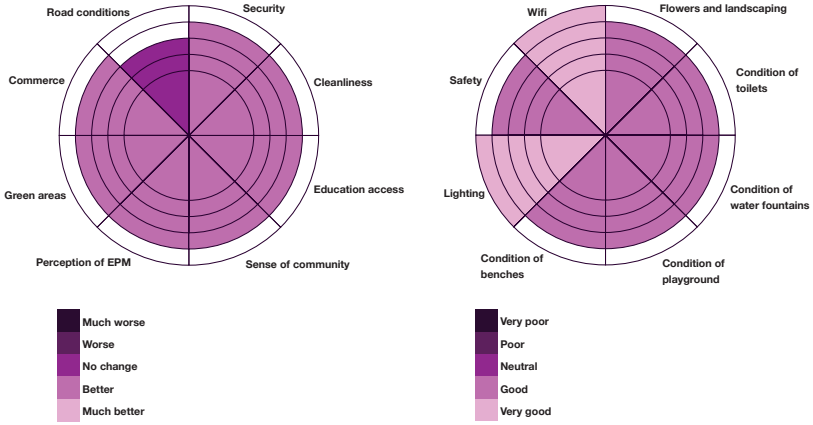


Figure 8. People's perception of changes following the UVA La Esperanza park opening and their evaluation of the park services. (Atehortua, 2016)

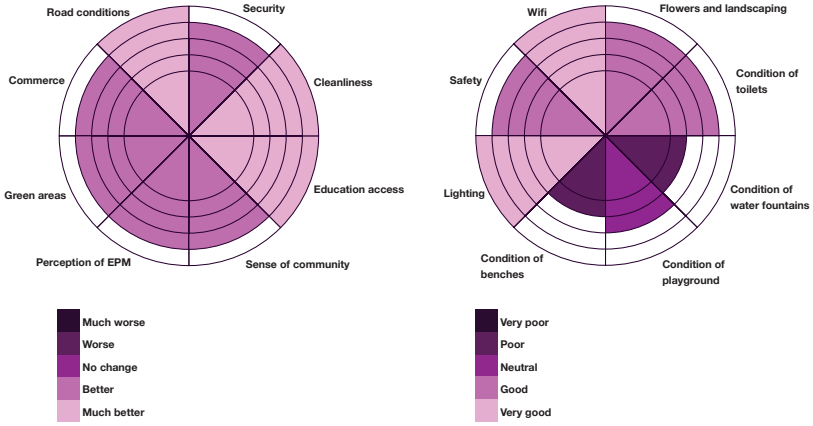


Figure 9. People's perception of changes following the UVA La Libertad park opening and their evaluation of the park services. (Atehortua, 2016)

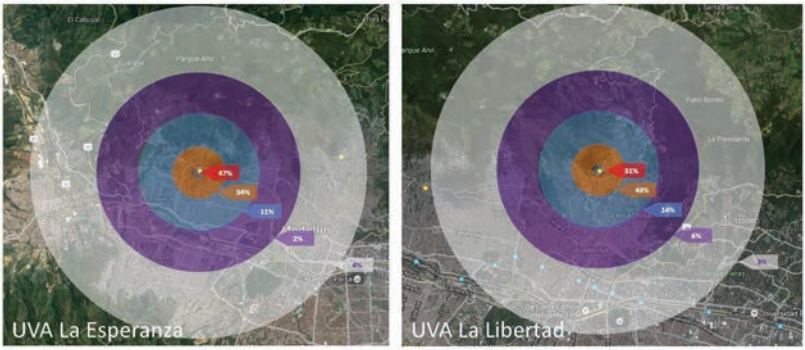


Figure 10. Analysis of where people travel from to visit the UVA La Esperanza (LEFT) and UVA La Libertad (RIGHT) parks. Centre red zone (less than 2.5 mins, average distance 225m), Orange zone (average 10 mins, distance 900m), Blue zone (average 22.5 mins, distance 2025m), Purple zone (average 37.5 mins, distance 3375m), White zone (average 52.5 mins, distance 4725m). (Atehortua, 2016)

5. Rezoning as a wider city opportunity

Rezoning is often applied to regenerate or reinvigorate an area of a city. Whilst it is clear that the impact of the rezoning change should be considered at the city scale, the physical site should be the primary focus. It is helpful to think about what is appropriate for the immediate site, taking into account wider drivers such as housing and the need for economic growth. Within Liveable Cities, we have inverted the problem by looking at the issue of what the rezoned area 'could do' to address wider city issues (Figure 11). Here, we consider the question of how to improve the underlying weaknesses of a city by rezoning an area rather than just the area itself. We started our research with the five city types that our colleagues have written about (Tyler et al, 2017) and used them as aspirations of what a city should be or could become.

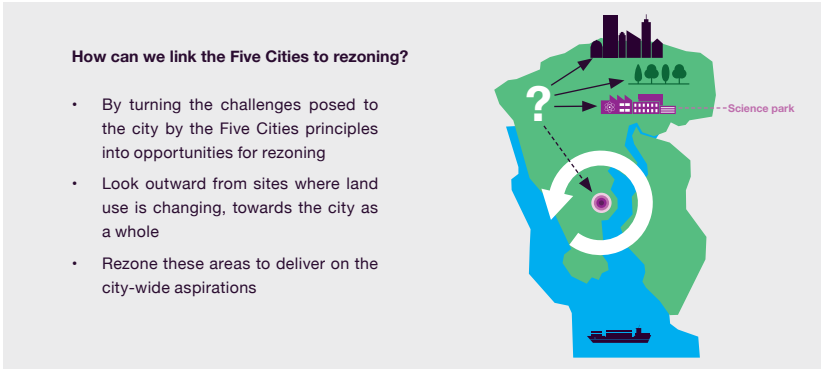


Figure 11. Reaching out from a rezoning opportunity to address the wider challenges of a city.

5.1 The 5 city types

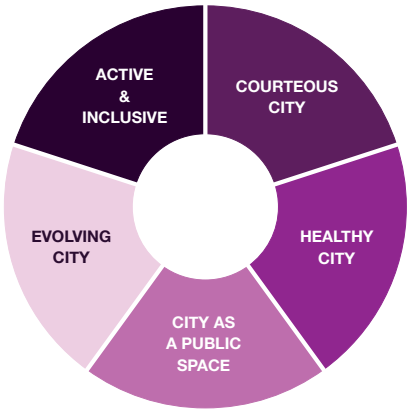


Figure 12. 5 city futures: (1) Courteous city, (2) Active and Inclusive city, (3) City as a Public Space, (4) Healthy city and (5) Evolving city

Liveable Cities has established five city types through a series of visioning workshops: (1) the courteous city, (2) the active and inclusive city, (3) the city as public space, (4) the healthy city and (5) the evolving city. Each of these city types has a number of 'principles', as an example; Figure 13 shows the nine principles associated with the active and inclusive city. A number of these principles can be assessed with widely available datasets (such as the UK Census, Index of Multiple Deprivation (UK GOV, 2015). Principles highlighted in grey can be assessed using standard indicators, whereas others require at least some level of local knowledge to assess them (shown in pink) – in essence the establishment of a 'local expertise panel'.

Linking the five city principles to rezoning represents an opportunity to regenerate and revitalise an area of a city from a different perspective. Large scale rezoning in a city is often the result of a major, inward investment opportunity. In UK cities, the gradual switch from manufacturing to service-led industries means there are often significant legacy brownfield industrial sites that could be rezoned. Southampton city is a prime example in this respect. The city's Pirelli sub-sea cable factory (established 1914) site was demolished and it became the UK's first retail led regeneration (WestQuay) which subsequently expanded to include a large IKEA store (see 3.4).

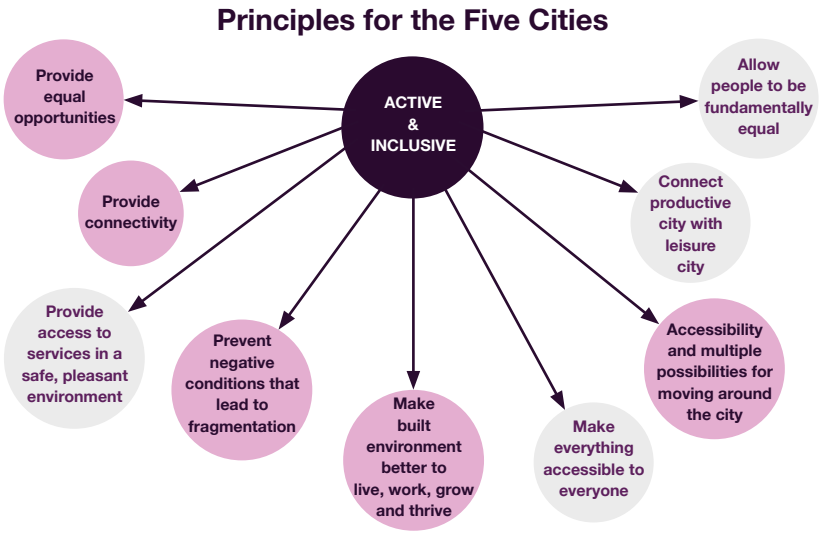


Figure 13. The Active and Inclusive City and its nine principles. Four grey principles may be scored using large well-known datasets, five pink principles require local city-specific knowledge to score

5.2 Shrinking the City Indicators pool

To help us assess the current status of a city in relation to each of the city forms mentioned in the last section, a number of indicators can be used. As with all indicator metrics, there is a tension between the level of information collection and corresponding effort compared to the value that they deliver. If too many indicators are used, there are risks of duplication and the time commitment required by whoever is using it will make the tool unusable. Some indicator-based tools have hundreds of indicators, requiring many days' worth of staff time to complete– this is not appropriate when city policymakers are trying to explore scenarios.

A *Liveable Cities* workshop was undertaken in Birmingham (9/7/2016) to rationalise the number of indicators used. The 63 principles of the five city types were rated by a panel of experts on a five point scale plus a zero score to exclude as follows: 0 = Not relevant, 1 = Not important, 2 = Marginally important, 3 = Important, 4 = Very important, 5 = Critically important. Experts were also asked to rank indicators in order of priority if possible, to account for multiple indicators with the same score (Figure 14).

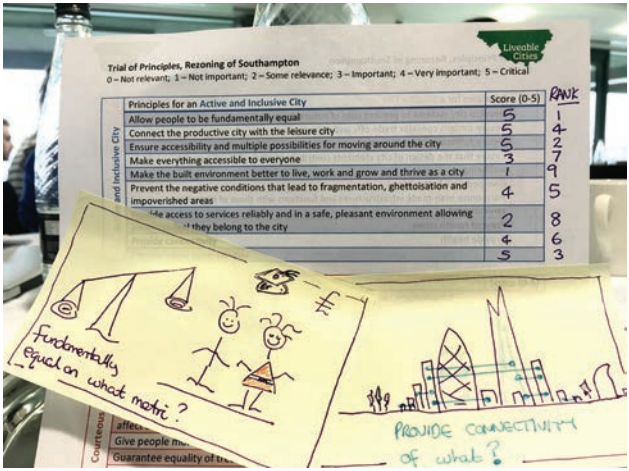


Figure 14. Expert panellist ranking principles for an 'Active and Inclusive City'

Figure 15 (opposite page) shows the overall score of the 63 principles rated by the expert panellists. 35 principles were rated as 'important or higher' and were retained. The highest scoring principle was 'Ensure fulfilment of basic needs'. In relation to the 'Active and Inclusive City' it is interesting to note that 'Prevent the negative conditions that lead to fragmentation, ghettoization and impoverished areas' scored highest (Figure 16). This issue has a strong resonance in a Southampton context as discussed in section 5.

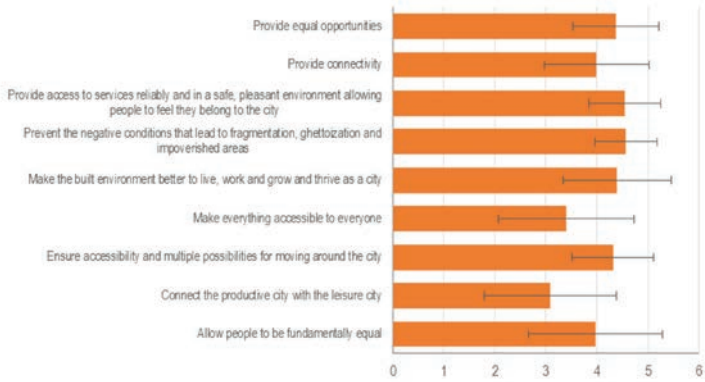


Figure 16. Active and Inclusive city rankings. Average and Standard Deviation shown. The highest scoring principle is 'Prevent the negative conditions that lead to fragmentation, ghettoization and improved areas'

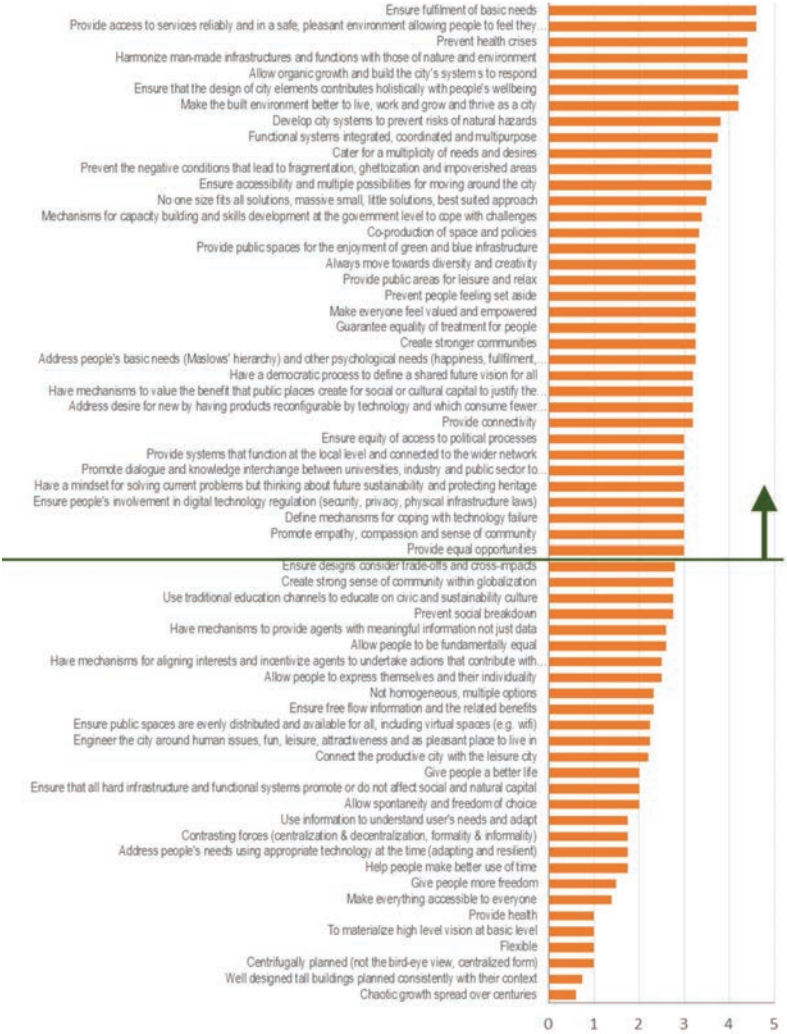


Figure 15. Average score of all 63 city principles assessed by expert panellist group. 0 = Not relevant, 1 = Not important, 2 = Marginally important, 3 = Important, 4 = Very important, 5 = Critically important

6. Southampton as a case study city

6.1 Southampton an overview

Southampton is a major port city on the south coast of the UK, 121 km southwest of London. It is the second largest container port and largest cruise terminal in the UK (Figure 17). Alongside the port, major employers include the University of Southampton, Southampton Solent University, Southampton Airport, BBC South, NHS, Carnival UK (Cruise ships) and Ordinance Survey. The city is also associated with the WWII Spitfire fighter plane and the RMS Titanic which sailed from Southampton on its fatal maiden voyage.

During WWII the city was heavily bombed and much of the city damaged. Large areas of the city's post war regeneration are now being replaced with new developments in the city such as West Quay and the Cultural Quarter (Figure 18 and 19). The city has a population of around 250,000. Following the 2011 Census, Southampton and Portsmouth (40km east) were merged to form the 6th largest built up area in the UK with a population of 855,000.

Figure 20 shows the development of the city from a compact 16th century medieval walled city port to the far larger post industrial revolution city port of today. One of the major challenges the city faces is the disconnect between the city and the

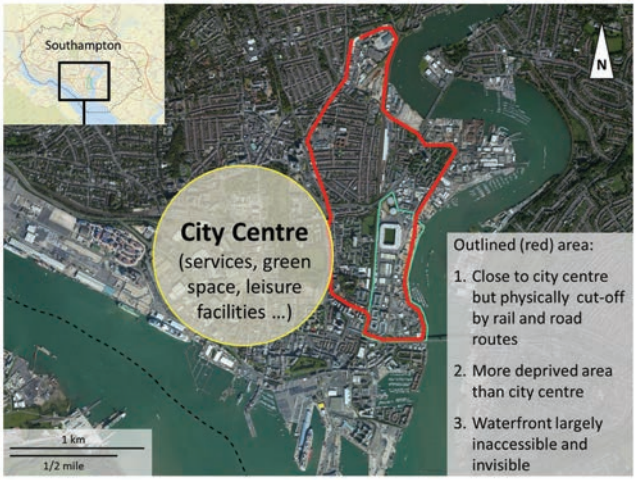


Figure 17. Rezoning study area, Southampton.

Figure 18. Southampton retail led regeneration: LEFT Medieval city walls, CENTRE West Quay 2 extension, RIGHT: West Quay retail. Photo A.S. Bahaj, 2015

Figure 19. Cultural Quarter regeneration, Southampton, 2017. New buildings (colour) frame the new square and provide pedestrian linkage to Victorian gardens (centre). Photo PAB James, 2017

waterfront which is dominated by commercial operations (Figure 17). The city core has gradually migrated away from the waterfront through a combination of land reclamation and the city's forced expansion northwards as it needs to grow but is constrained by the Test and Itchen rivers to the west and east of the city.

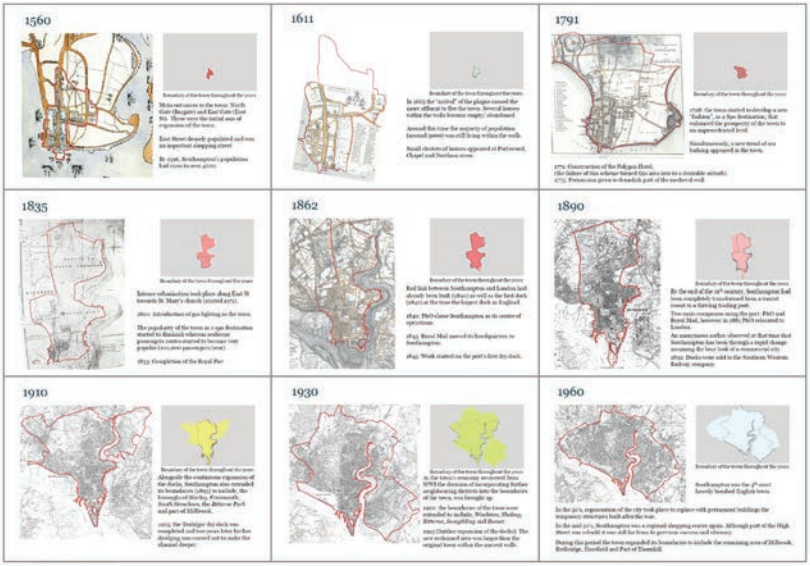


Figure 20. Southampton city development, 1560- 1960. Sanches, 2016

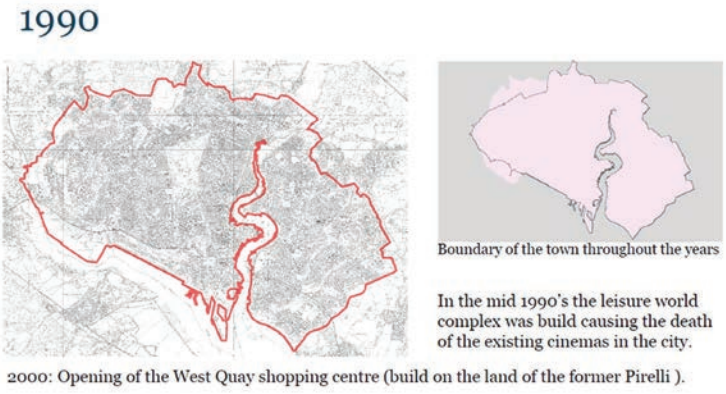


Figure 21. Southampton city development, 1990. Sanches, 2016

It is informative to look at the city across a number of standard metrics such as density, access to transport, facilities and greenspace. This is shown for Southampton by Lydia Herbert (Herbert, 2016) as part of a study to assess the city in terms of compact city principles (Figure 22). Each area is scored on a 5-point scale from very low (white) to very high (dark blue). As would be expected the key facilities such as leisure, bus and rail hubs are concentrated in the city's retail and administrative core. Bus networks are generally excellent North-South in the city connecting the University of Southampton to the city centre but far weaker East-West across the city (Sustainable Travel Methods), top right Figure 22. Certain areas in the city that are co-located have very different scores; for example, areas of very high and very low congestion are co-located. This does suggest that certain areas of the city are perhaps almost traffic-free; either they are deliberately pedestrianised or the result of the road network creating isolated areas.

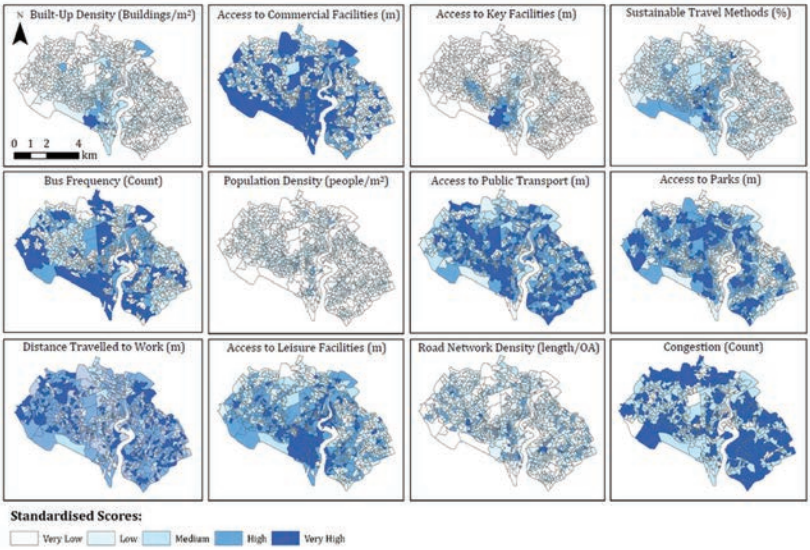


Figure 22. 12 metrics of city compactness for Southampton, 2016. (Herbert, 2016)

An unweighted composite score of the 12 indicators is shown in Figure 23. Unsurprisingly if a compact city is defined in these terms the city core scores highly compared to the city edge with much better services and transport provision. The

rezoning topic in Southampton is focussed around an industrial area on the West bank of the River Itchen ('A' in Figure 23). This site contains a number of wharves for aggregate - delivering construction material direct to the city centre - and is adjacent to Southampton Football Club's new stadium (2001).

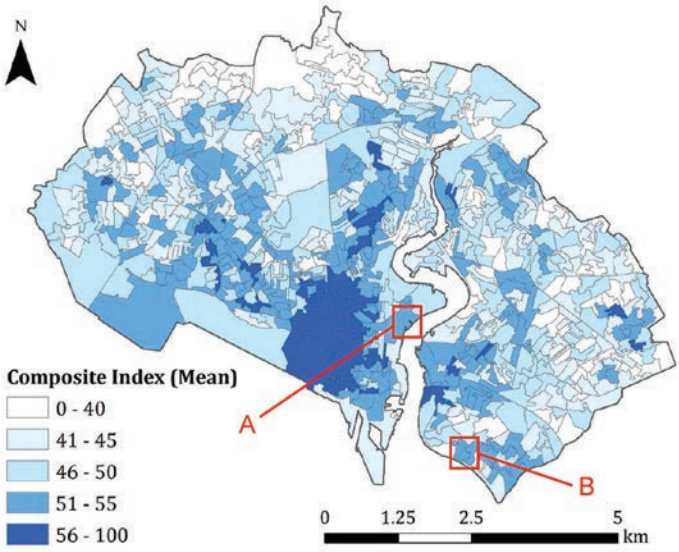


Figure 23. Composite non-weighted assessment of city compactness for Southampton across 12 metrics, 2016. (Herbert, 2016) 'A' rezoning study site, 'B' Weston Shore

WestQuay2 in particular is seen as a significant job creation opportunity for the poorer parts of the city. At present, there is a perceived shortage of people to fill the jobs that WestQuay2 will create aside from potentially 'zero hour style contracts' to the 50,000 students who live in the city. The retail zone area now dominates the west side of the city, its location essentially determined by needs of the car. Access is from the Avenue to the north but predominantly the dual carriageway A35/M271 to the West. The extensive Victorian parks provide a high level of greenspace which runs North-South down the spine of the city, extending from the large Common and Avenue, which separates the areas of Portswood and Shirley.

The east side of the city has some of the most deprived wards in the city, and access to the city centre is only possible via the large Itchen Toll bridge. Weston Shore for example, which is the southernmost area of Woolston, is rated amongst the 10%

most deprived LSOAs (Lower Super Output Areas) in the country ('B' in Figure 23). Ninety percent of properties in this area are owned by the council, and it has the highest rates of council tax and housing benefit claimants in the city.

6.2 Southampton 5 city principles - creating a city vision

In July 2016, the *Liveable Cities* researcher team undertook a walking tour of the city followed by a workshop. This 'local expert panel' reduced the number of key issue for Southampton to 12 principles which have formed the basis of rezoning for the case study site (Figure 24).

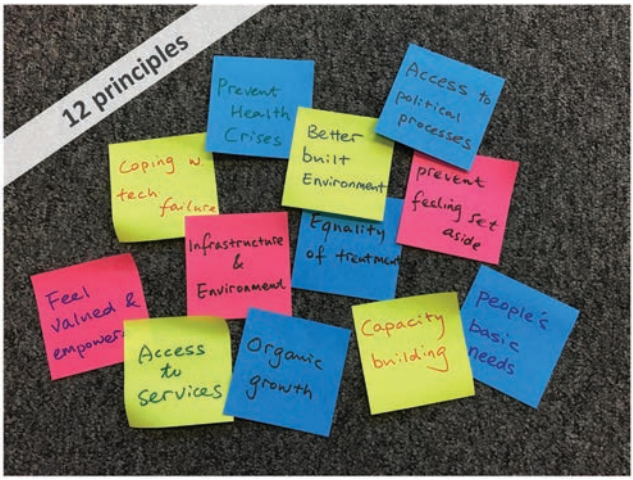


Figure 24. 12 principles that rezoning of an area of Southampton should aim to address for the wider city benefit.

6.3 Victorian Wharf rezoning case study – applying the city vision

A case study site near Southampton Football Ground on the eastern side of the city was chosen for study (Figure 17, 'A' in Figure 23). The major investment is occurring towards the west side of the city (WestQuay phase 2 and 3) in parallel to residential flat redevelopment around Ocean Village to the South.

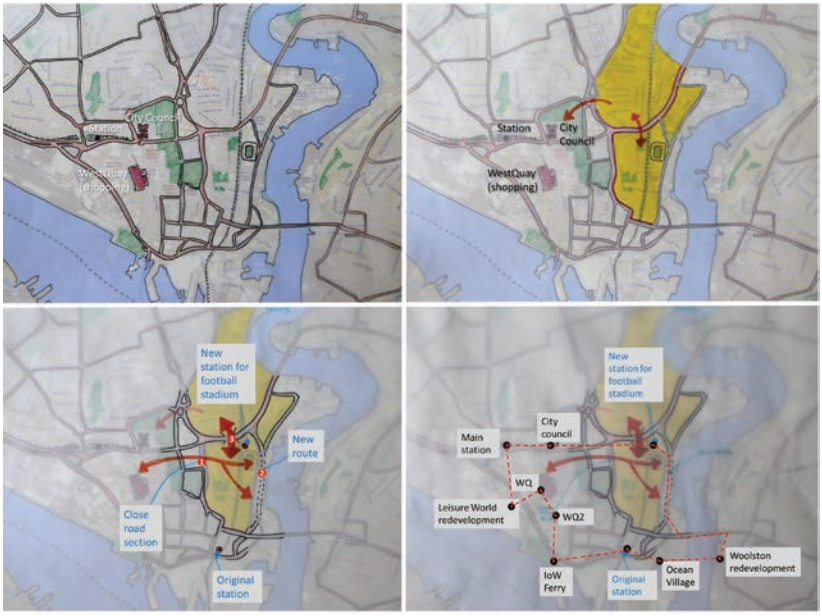


Figure 25. Rezoning concepts for the Itchen Wharf area of Southampton. TOP LEFT: major roads and areas of greenspace in Southampton City Centre, TOP RIGHT: conectivity issues of rezoning area and housing to the north due to major traffic routes, BOTTOM LEFT: Options for movement, supporting east:west pedestrian movement across the city, reinstating rail line for passengers and access to the stadium, BOTTOM RIGHT: light rapid transit to connect Woolston redevelopment, WQ, WQ2 and other key city assets.

The emerging case study area concepts are broadly related to the lack of access to city services for people who live in the yellow areas of Figure 20. The area to the north of the football stadium in particular is cut off from the city core (which has shifted west in recent years) due to historical prioritising of the car. Looking at the BOTTOM LEFT image in Figure 20, there are opportunities in terms of reinstating the train line for passenger transport to connect the stadium and provide connectivity for the yellow region (3). If road section (1) could be closed and re-routed as (2) this would provide critical east-west connectivity across the city.

The Census 2011 data is particularly illuminating in relation to the area north of the rezoning study area (Figure 26).

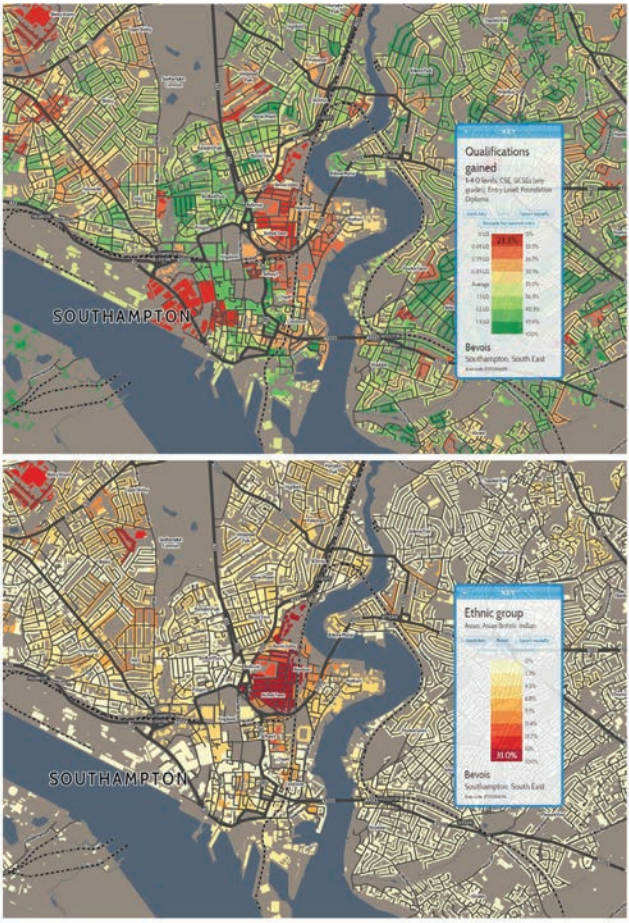


Figure 26. Census 2011 data for Southampton. TOP: Qualifications gained 1-4 O levels, GCSEs. BOTTOM: Ethnic Group by % of population. (datashine, 2017)

The area of Bevois Valley which is bounded by the A3024 to the south and the A33 to the west stands out in the Census data when assessed in terms of level of qualification or ethnic group. This area is disconnected from the city in a way that has been reinforced by the road network layout. A controversial Channel 4 documentary series called 'Immigration Street' focussed on the residents of Derby Road (which is

within this area) in 2015, but this had to be abandoned after protests from residents concerned about the tone of the programme.

In December 2016, the Casey Review reported its findings on opportunity and integration in isolated and deprived areas of UK cities (Casey, 2016). Amongst the key recommendations of the review was for city planners to understand how housing and regeneration policies impacted on communities:

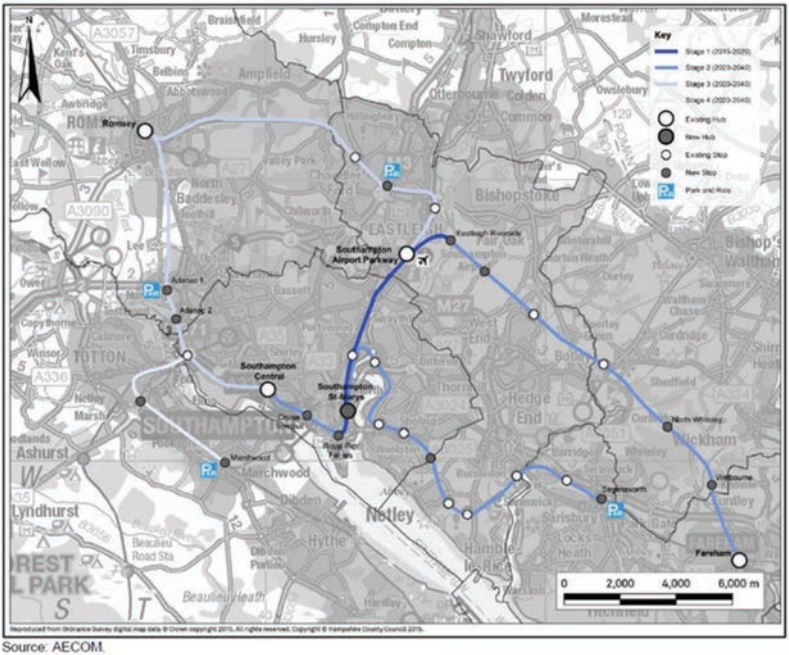
> Recommendation 10, Casey Review: 'Where we live can be both a cause and effect of isolation and segregation. The Government should work with local government to understand how housing and regeneration policies could improve or inhibit integration locally, and promote best practice approaches.' P169

It is interesting to note that the highest rated principle by the *Liveable Cities* experts' panel for the 'Active and Inclusive City' was to 'Prevent the negative conditions that lead to fragmentation, ghettoisation and impoverished areas'. This was also one of 12 principles, alongside 'Access to Services' identified as a key weakness to address for the city of Southampton (Figure 16). This correlates strongly with the findings of the Casey Review: access, fragmentation and ghettoisation are specific challenges for the Bevois Valley area.

The rezoning opportunity of the study area should therefore be used to leverage impact on the Bevois Valley area in addition to addressing the wider east-west connectivity weaknesses. A 'standard' developer led mixed use redevelopment of the site could perhaps risk a further reinforcement of existing barriers. In addition, gentrification of the rezoning area in combination with the existing physical road barriers could create further economic, social and cultural stratification.

Here, our thinking tried to address this, looking at options primarily around ease of movement and connection across the city. There are currently extensive discussions relating to transport in the wider Solent region and a tram system for Southampton is one of a number of measures assessed as part of a wide ranging feasibility study (AECOM, 2016). The assessed route utilises the existing rail link that runs past the original railway station at South Western House for cruise line passengers. The proposed new route incorporates aspects of the original 13 mile Southampton tramway, which opened in 1898 and eventually closing in 1949.

The Solent Transit Network (p39) is a proposal for an integrated network of public transport modes across the Solent region. These include (i) a local rail transit network, (ii) a bus rapid transit network, and (iii) a Southampton Water fast ferry service (Figure 27). This is a comprehensive review of mobility options to address the current and project challenges for the wider Solent region. It is interesting to note that 'Securing buy-in from local public and private sector stakeholders and agreeing the implementing body and governance structures' is stated as the top priority.



Source: AECOM.

Figure 27. Proposed Solent Light Rail Network, AECOM 2016, p42

In addition, a key, new hub for the city is being proposed. There is a clear need for this hub and the east-west connectivity that a city tram system would provide. It is evident that this hub is critical to maximising benefits to the local community. If the new hub is merely to serve the stadium, that would be a missed opportunity. Also, as Southampton is highly constrained in terms of its road network, and increasing the importance / capacity of A3024 is under consideration, this would serve to further reinforce the isolation of the Bevios Valley area.

7. Summary

Whilst cities continually evolve due to changing circumstances and needs, this is under a context of a set of defined planning rules in most countries. Rezoning represents the opportunity to change the use of an area. The Liveable Cities five city types provides a starting point for city policymakers to consider what they would like their city to offer and/or provide for its residents. Rezoning of an area of a city should therefore consider the wider city aims as its starting point. We have explored this issue in relation to a case study area of Southampton by the river on the east of the city. It is apparent that in places, the city's road structures isolate communities and that the general east-west movement across the city is weak.

Current city (and wider economic area) transport plans are already well advanced, which include our studied rezoning area becoming a core transport hub. It is important that these much-needed transport improvements do not simply address the headline issues – notably the movement of football fans to St Mary's Stadium – but the wider city challenges. Whilst economic viability (job creation, housing supply) and air quality are rightly the current focus of the local authority, addressing inclusiveness is perhaps key to long-term city viability. Rezoning can therefore be a key tool to address city weaknesses, which in our Southampton study was identified as 'Prevent[ing] the negative conditions that lead to fragmentation, ghettoization and improved areas'.

Traditional hard city infrastructure can be transformed in terms of its use and public perception with the appropriate vision. The city of Medellin's utility company, EPM, is an example of the delivery of an ambitious vision. Through the rezoning of the city water tanks from fenced, unloved structures to shared, high quality public spaces, local communities have been transformed, reducing crime and enhancing wellbeing. These wider, secondary effects of rezoning, whilst difficult to predict, are where the real added value of such projects lie.

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