Are Garden Cities good for you?

Nicholas Boys Smith & Laetitia Lucy

The International
Garden Cities
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About the Preservatives Series

This is the second in a series of Garden City Perspectives: in-depth research and policy papers being published under the auspices of the International Garden Cities Institute (IGCI). Through this series our intention is to open up opportunities for diverse viewpoints to be expressed about the history, contemporary practice and possible futures for Garden Cities - and planned settlements more generally where relevant. It is a chance to look at Garden Cities in depth with reference to the latest academic and policy perspectives across a range of themes – housing, place design, health, economics, accessibility, social and cultural aspects, governance and more.

Through our authors' arguments we intend that the Perspectives series helps to promote knowledge, increase understanding, generate conversations – and at times perhaps challenge assumptions – about what Garden Cities are or might be. On that basis we ask our authors not just to analyse what is happening now from their different perspectives, but to recommend what they think we might do to make planned settlements better in future. The views of authors in this series are solely their own and do not represent the official policy position of either the IGCI or its partner organisations. We hope you find this and subsequent papers informative, stimulating and thought provoking.

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Contents

Introduction: 'Are Garden Cities good for you?'

Nicholas Boys Smith and Laetitia Lucy set out the findings of Create Street's research into links between urban form and wellbeing and ask if garden cities fit the model of wellbeing optimisation.

Rapid Victorian urbanisation led to cramped and squalid housing for millions of the new urban working class. How to fix this, how to find a way out of 'darkest England' became a key campaign in late nineteenth century Britain. As readers will know Ebenezer Howard's response was to start afresh - to build semi-rural, semi-urban Garden Cities for work, life and play. His three-magnet model envisioned a 'sweet-spot' where people would be able to live in both town and country, benefiting from both urban employment, entertainment and connectivity and rural health, space and beauty.

The Garden City Movement was structured around 12 guiding principles, including plentiful and useful greenspace, attractive economic opportunities for residents, a bold vision of self-governance, mixed ownership and community engagement, a variety in tenure and housing types which should be beautifully designed, and easy transport systems for people to move around. Howard believe those living in such towns would not only enjoy social and economic harmony, but would benefit from a health-promoting environment, ultimately improving their overall wellbeing.

Garden Cities have not always had an easy time of it. Just two 'pure' Garden Cities were built – Letchworth in 1903 and Welwyn in 1920. After the Second World War however, Howard's idea morphed into 'new towns', which while superficially similar to Garden Cities, followed none of the vital underlying principles of land ownership, local governance and community engagement. They became dormitories for those working in the larger, more established metropoles. We also invented the car!

However, the tide seems to be changing. In the wake of so many badly designed homes and poorly conceived developments in the last century, the quality of new homes is being scrutinised ever more. Governments have announced (and re-announced and re-announced) plans for new garden villages and towns But are Garden Cities mark II the right answer? Are Garden Cities better? Are people happier there? Can they be beacons of mixed use living rather than car-based dormitory towns? And even if they can, is that actually, well, better?

The social enterprise Create Streets conducts research into empirical links between urban form and wellbeing, health and happiness. Our 2016 publication Heart in the Right Street summarises the academic and statistically robust correlations between elements of built form and measurable wellbeing.[1] It also set out a multiple regression analysis of the urban form and demographic indicator datasets against wellbeing and health indicators. It would be fair to say that our findings have been much discussed. They have featured in The Economist and The FT among many other papers. And Future Cities Catapult has recently funded us, working alongside Space Syntax, to turn our research into a usable web tool, StreetScore, which will permit users to measure the quality of a street online. Some findings will be very reassuring, indeed familiar, to readers. Others may be rather more surprising and challenging.

So what did we find and how well does the Garden City model 'map on' to our findings? Does that 'sweet spot' between urban and rural landscapes really exist? Below we summarise (briefly) our ten key findings, and make some tentative observations about how Garden Cities already align with them, and how they might use them more in the future.

1. Greenery matters but so does where it is and how much

The ability of greenery to improve mental health will be familiar. Many studies have now shown a link between regularly looking out at an attractive green environment and mood, stress, recovery from mental fatigue and wellbeing. Increasingly writers refer to the concept of 'biophilia', suggesting that humans are "hardwired to find particular scenes of nature calming and restorative."[2] The evidence on street trees is particularly clear and they should be planted everywhere humanly possible.[3] Not only are they attractive and might encourage more walking, but they slow cars, help control air pollution and moderate street-level temperatures. Evidence also suggests that they can reduce the risk of negative mental health outcomes.[4]

Parks and public squares are vital to the wellbeing of a city. Large expanses of monotonous greenery is not good, but small areas of high quality planting and landscaping is beneficial to residents' health. Crime rates were found to be lower when buildings have trees round them[5], however some green spaces can be seen to invite crime when vegetation is too dense and visibility is reduced. Likewise greenspace that is too big and too far away tends to not make a difference to people's everyday life. American research shows how use of parks collapses at a distance of about four blocks.[6] Cost is a large part of the problem too – managing greenspace can be expensive and therefore susceptible to budget changes in the future.

When it comes to private gardens, UK focus group research shows that, given the choice, most people would rather have access to modest private gardens which they can use effortlessly every day and which seem to work better in managing family stress and wellbeing.[7] Parents seem to favour these private gardens most. These gardens should be inside blocks. The optimum form is usually for homes with apparent fronts and backs, with very clear internal private or semi-private gardens. Well managed, safe, communal gardens can be positively associated with high levels of neighbourliness, activity and community awareness.[8] Studies also suggest that the physical act of gardening can bring the most benefit of all.[9]

What is key therefore to capture the wellbeing benefits is to have frequent green spaces inter-weaved into the city either as private gardens, communal gardens or well-overlooked public spaces between blocks and where people really need them and frequent them.

2. Density - somewhere in the middle!

Some urbanists fetishize the excitement and innovation of the high-rise city centre. In reality these work best only for a few. A European-wide survey in 2013 found that 66% of Britons surveyed considered the detached house as their 'dream home'.[10] It would seem that for the average British family, a detached home in a quiet street, with a garden for the children to play in is a dream that just won't die. It is dream that contains many of the instinctive ingredients for wellbeing: space, greenery and freedom from the noise and environmental irritations derived from others.[11]

There is a respectable corpus of controlled studies that associate living in lower density areas with better overall mental health and, finding conversely that, 'a high level of urbanisation is associated with increased risk of psychosis and depression.'[12] Some studies have found that higher density is associated with higher hospital admissions, divorce, death rates, aggressive offences, illicit births and aggressive offences even when you adjust for socio-economic status. Other studies have found that controlling for age and wealth removes any adverse effect from residential density.[13] Very recent city-wide has also found that a high proportion of dethatched houses were associated with longer life expectancy.

However suburbia has its problems too. One of the main criticisms of suburban, low-density living is the over-dependence on cars, caused by the sprawling nature of many suburbs, with relatively long distances to shops, offices and schools. Commuting and driving longer distances can be detrimental to physical health, but it can also effect one's mental wellbeing. A German study found an inverse correlation between the length of the average commute and someone's reported overall life satisfaction.[14] And what's more, the commute can impact upon those around you; the same study found a negative correlation between the length of someone's commute and the reported happiness of their partner. Children's wellbeing can also be affected. It could be suggested that the higher levels of substance abuse among teens living in American suburbs than those living in inner-city neighbourhoods[15] could be a result of commuting, with those teenagers living in the suburbs

having less familial contact as their parents are on the road more.

Social ties are also greatly affected by the low density of suburbia. In his book Bowling Alone, Robert Putnam suggested that suburbia has contributed to a decline in social capital, with declining engagement with community projects, political activities, charitable organisations and social and sporting groups.[16] Charles Montgomery in his excellent study, Happy City, suggests that this is linked to the fact that those who commute simply have less time to spend in their neighbourhood.[17]

3. As many houses as possible but with the advantages of walkability

Developments should be dense enough to be walkable and to provide shops and offices within easy reach of homes. But not too dense as to be overwhelming or to be creating problems of urban form or long term maintenance costs.

Wellbeing is also linked to walkability, indeed some studies have shown that residents of the most walkable neighbourhoods (ones which plug into city-wide connectivity) were nearly two and a half times more likely to get sufficient physical activity than residents of the least walkable.[18] In cities with rising levels of obesity, air pollution, and congestion getting more people walking is vital. One study found that 37% of residents in the most walkable neighbourhoods met the recommended minimum of

at least 30 minutes of physical activity compared to only 18% of those who lived in the least walkable neighbourhoods. Residents of the most walkable neighbourhoods were nearly two and a half times more likely to get sufficient physical activity than residents of the least walkable.[19] A study of suburban sprawl and health found a reliably predictive link to chronic medical conditions: 'an increase in sprawl from one standard deviation less to one standard deviation more than the average implies 96 more chronic medical problems per 1,000 residents, which is approximately similar to an aging of the population of 4 years.'[20]

4. Mixed land use and amenities

In 2012, the Brookings Institute in the US published a study that compared 201 places by their 'walkability'. They found that 'places with higher walkability perform better commercially, have higher housing values, and the underlying value of real estate assets in walkable places is higher, facilitating more private market financing.[21] The happy consequence of this is that, within cities, developing areas of 'big box' retail sites with their associated sprawled parking into dense networks of walkable streets, blocks and shops adds value for the landowner and local government while providing a more healthy urban form. For example, analysis of land values and property tax at the American city of Ashville showed that replacing an acre of box retail and

parking with finely grained, mixed use, walkable city would increase sales and property tax per acre from $6,500 to $634,000 per acre whilst also increase residents per acre from 0 to 90 and jobs per acre from 5.9 to 73.7.[22]

The data suggests that mixing up land uses provably reduces car traffic and increases walking and bike use. This is not surprising. Locating homes, shops and places of work in close proximity to each other permits more shorter journeys and requires fewer longer ones. It is easy to walk a few blocks to work. It is hard to walk across the city. It also helps people to combine trips, such as shopping or commuting when retail and employment uses are close together. A range of (mainly American) studies have linked combined land use with lower levels of pollutants, shorter car journeys and greater use of non-motorised trips. In one study, 'residents of mixed use neighbourhoods took non-motorised modes 12.2 percent of the time compared to 3.9 percent of trips in single use communities.'[23]

5. Good connectivity and streets but not over-connectivity

The evidence that people walk more in traditional street grids seems hard to argue with. Good urban form should have a well-connected, highly walkable, traditional street grid of differing natures and sizes with multiple junctions and route choices.

Some streets should be pedestrian or bicycle only but most would be mixed use with generous pavements wherever possible.

Greater accessibility and movement along streets is significantly correlated with crime levels though the picture is not quite straightforward. Places close to main roads suffer from more crime. Put differently places with high city-wide connectivity suffer from more crime. This would appear to be because they are easy to get to and escape from (though the best way to mediate this is through high ground-use density with many front doors as set out above). However, a network of interconnected streets is, above all, about creating high local connectivity within this city wide framework. Higher local connectivity in the street pattern is correlated with lower crime. The London-based firm, Space Syntax (a spin out firm from UCL) analysed all crimes within a London borough over five years found that higher local movement within 300 metres of a building can reduce crime by up to 15%. This relative difference in local activity is why small, hard to reach cul-de-sacs are vulnerable to more crime but 'simple linear cul-de-sacs with good numbers of dwellings set into a network of through streets tend to be safe.'[24]

6. Proper urban blocks that are not too long nor too small. Clear backs and fronts

The evidence also suggests one other incredibly important finding

about the nature of streets and walkability. Walkability should not be everywhere. Streets should form a traditional block structure with clear fronts and backs. The front needs clear, well observed entrances to the public realm. The back should be a safe entirely private place, very hard or impossible to access from the public realm. Analysis (for example of urban blocks in Perth or London) has shown how such blocks with this shaper distinction between public and private typically suffer from less crime.[25] Other studies have associated design 'features that allow unrestricted pedestrian movement through residential complexes' with higher crime or show how reducing multiple pedestrian permeability reduces crime.[26] The public realm (the street, the square) needs to be fully delineated from the private interiors of urban blocks with their private or communal gardens.

7. No long blank facades

The type of streets that we build is also very important. Whilst the importance of public greenspace, street trees, walkability and connectivity have all been discussed, facades matter too. If larger residential buildings really are felt to be essential, research indicates that for most people inside and outside the building the best thing is to design them as if they were smaller buildings. If their external facades are 'broken up' vertically they will promote more pro-social behaviour among passers-by.

In one study pedestrians in front

of an active façade were nearly five times more likely to offer assistance to a lost tourist than at an inactive façade site. Of those who helped, seven times as many at the active site offered to let the tourist use their phone (7% versus 1%). Four times as many offered to actually lead the tourist to their destination (4% versus 1%).[27] Active facades help makes cities work: a Copenhagen Study calculated that there was around seven times as much activity on front of active facades as the passive.[28] Activity brings all sorts of wellbeing, economic and crime-reducing benefits. Other studies in Madrid, Melbourne and Stockholm had similar findings.[29] Mixed use developments, with residential, commercial and retail use, helps to bring about this crucial activity.

8. Minimal internal semi private space

As well as active facades, blocks should have observed semi-private spaces. As long ago as 1961 the famous American urbanist Jane Jacobs argued that busy street facades with multiple uses, openings, variety and forms would attract more activity and encourage the sort of neighbourly interactions that both strengthen social ties but also provide an increased level of natural surveillance and mutual support (all things we know to be well associated with higher wellbeing).[30] All this activity has another and crucial consequence. This type of 'busy', high-density and active facade is associated with lower crime.

Studies have found that the combination of large building and an overly-porous urban form can be dangerous. It can be simply easier to commit crime in a complicated concrete and glass jungles of post-war multi-storey housing. They can offer a plethora of semi-private, semi-public unpoliceable spaces such as corridors and stairwells which are hard to survey and which offer multiple escape routes. Streets with windows and doors looking out onto them are open to easy public view. If they have bay windows, if houses are near the street (as in old fashioned terraced housing) or if doors are raised above ground level they are also particularly easily policed by residents simply looking out of their front windows or standing by their front doors. Dealing drugs or committing a robbery outside a house on a street is possible. But it does mean exposing yourself and there are likely to be witnesses. An external corridor on the (say) sixth floor of a medium-rise slab-block is a rather easier proposition. Easier still however would be an internal corridor or stairwell in a tower block; there are very unlikely to be any witnesses. This theory also helps explain why more crime is associated with houses or buildings whose door faces away from the street. There is less surveillance. A final specific problem with multi-storey housing is the multiplicity of escape routes. Lifts, multiple staircases and exits have been found in several studies, (most famously by Oscar Newman[31]), to be positively correlated with crime.

9. Beauty really matters

Beauty really matters. Any development that most people don't aesthetically like is missing a key trick and is not maximizing the wellbeing of residents. There is measurable emotional attachment to beautiful places – a 2011 US survey found stronger correlations between a place's physical beauty and people's satisfaction with their communities than any other attributes.[32] A 2008-2010 Gallup survey of 43,000 people in 26 cities agreed. It found that residents' ratings of the aesthetic attraction of their cities and green spaces correlated significantly with residents' attachment to their city. This is turn correlated with GDP growth. In this survey, aesthetic attraction to their city came third in the pecking order, and ranked above education, basic services or safety.[33] A third study has also found that a perception of beauty is significantly associated with community satisfaction and significantly more important than individual demographic characteristics.[34]

All of this contributes to a sense of beauty. In one recent project, researchers at the University of Warwick have taken advantage of the power of crowd-sourcing to gauge 1.5 million ratings of the 'scenicness' of 212,000 pictures. These findings were then compared to self-reported health from the 2011 census. Importantly they found that the 'differences in reports of health can be better explained by the 'scenicness' of the local environment than by measurements of greenspace.'[35]

A strong sense of place, that the development 'couldn't be anywhere' also really matters. A recent report found that a desire to respect historic form, style, and materials had 84% support in participant interviews.[36] This is psychologically credible, even sensible. Environmental psychologists have shown that alongside green space and soft edges we enjoy gentle surprises and pleasant memories.[37] We dislike sharp edges, darkness, sudden loud noises.[38]

The strong preferences that most non-designers show for a more locationally and historically-referenced architecture is in contrast to many professionals who often place a higher focus on design innovation. A range of studies (including our own) have found a predictable difference between what most professional designers and the wider public prefer to see created in the built environment. We call it the design disconnect.[39]

So are Garden Cities good for us?

This is only a snapshot of the evidence in Heart in the Right Street. But we think it is enough to draw out a reasonably confident conclusion. Subsequent research shows that Ebenzer Howard was broadly right. There is a 'gentle density' range from medium rise urban settings (think Pimlico or Notting Hill) though to walkable Garden Cities where humans are able to benefit both from the advantages of urbanity and suburbanity, of space and of connectivity and in which they can, readily, be both together and separate. Garden Cities are probably at one 'end' of this 'gentle density' spectrum and that is the lower density end. But it is a good way to live and a sensible way to build for the future.

The pressures probably will be for higher densities. Sometimes that will be right. Often it won't.

This is an exciting time for urban studies. Improving computing power and availability of data is now permitting us to measure, analyse and prove what some pioneers had already seen, that good streets, human scale and good fences make for good neighbours and great places.

Well done Ebenezer and long live Garden Cities.

Endnotes

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