## **Turning Everywhere into Somewhere: How Can** We Plan for a Happier and Healthier Future?

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## Abstract

This paper provides a brief overview of the improving evidence of the associations between place with prosperity, sustainability and well-being and discusses the implications of this in the fields of: (i) planning policy; (ii) the increased focused in the July 2021 version of the National Planning Policy Framework ("NPPF") on design codes; and (iii) achieving net zero. The paper draws on previous literature reviews conducted by myself and my colleagues at the social enterprise, Create Streets, and on my experience co-chairing the Building Better Building Beautiful Commission alongside the late Sir Roger Scruton.<sup>1</sup> I would like to thank all my colleagues at Create Streets for their support to my work and writing. The paper has four key points:

#### • Good design is not subjective:

there are discoverable and often predictable links between place with health, happiness, prosperity and sustainability. These links matter to the lives we lead.

• Planning better:

planning is not a 1940's creation. It is as old as cities. We should do it following the precepts of "good regulation" and "bring the democracy forwards". The current approach is reducing both quality and quantity by creating an overly-concentrated market with insufficient self-build and community-build.

• Make it visual:

design codes can play an important role in helping the public visualise better places and trade off different pros and cons. They are probably the best way to democratise planning.

• Deep green:

*Re-using older paces and building for the long term is a critical part of the path to net zero. That has policy implication which we all need to consider.* 

#### Good design is not subjective

Good design is not subjective. Where we live, where we spend time, the streets that we pass through and the public and private spaces that we inhabit have measurable and, to a degree, predictable impact on factors as diverse as the air that we breathe, on our sense of control of our own environment and of our purpose in our everyday lives. This matters whether our yardstick is support for new development, biodiversity, sustainable development or the well-being of our fellow citizens. As the RTPI put it in their evidence to the Building Better Building Beautiful Commission:

<sup>&</sup>lt;sup>1</sup> For a fuller review of some of the themes discussed in this paper please see N. Boys Smith, Heart in the Right Street (2016), Alessandro, Boys Smith, Toms, Beyond Location (2018) and Iovene, Seresinhe, Boys Smith, Of Streets and Squares (2019).

"Nor is good design subjective; there are clear, objective criteria against which the quality of design can be assessed—yet there seems to be a reluctance to take such an approach."<sup>2</sup>

This is not to say that we can predict how any one person will respond to a particular building or place but it is to say that in the wider population, clear trends of stated preference, of revealed preference, of behaviour, connectedness and stated and observed well-being are discoverable. This section summarises some of these relationships. No doubt many themes will be familiar to many readers but I hope it is still helpful to set out some of the evidence.

#### The perils of commuting

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".<sup>3</sup> Nevertheless, although richer people in larger houses tend to lead longer and happier lives, one important theme that comes through very clearly from the US and, to a more nuanced degree from the European and Antipodean data, is that long commutes are basically bad for us with malign consequences for families, marriages, personal health, blood pressure and social connectedness. We just did a world-wide experiment on this in the last 18 months. Lots of people who normally commute from big homes guite enjoyed lockdown. Similarly, a German study found an inverse correlation between the length of the average commute and someone's reported overall life satisfaction.<sup>4</sup> Driving is seemingly the worst culprit with longer drives reliably associated in a US study with higher blood pressure, more headaches and higher levels of frustration.<sup>5</sup> Nor is the wider family or community immune from these tensions. A Swedish study found that the 11% of Swedes commuting for over 45 minutes per day were 40% more likely to get divorced.<sup>6</sup> And, in a robust German study, length of a partner's commute is also associated with the other partner's reported happiness. In particularly extended suburbs, children can also take sometimes take the hit. A comparison between affluent teenagers living in suburbs in the US North-east with less prosperous teenagers living in inner cities found, rather surprisingly, that "suburban youth reported significantly higher levels of substance use than inner-city youth". The main driver seemed to be higher levels of depression and anxiety.<sup>7</sup> Perhaps they just needed to see their long-commuting parents more? Certainly by 2004, fewer than 30% of Americans found themselves together every night and fewer than half of Canadian families ate together even once during the week.<sup>8</sup>

Distance can have an even more profound impact than just stressing out commuters and isolating families from themselves. Perhaps the most provocative finding of recent research, is that very low density car-based suburbs are associated with falling levels of neighbourly social interaction and trust particularly as time spent driving continues to increase. Americans certainly are spending more and more time driving.<sup>9</sup> And this matters. According to Robert Putnam in his influential study of declining US social capital, *Bowling Alone*, these increasingly physically spaced-out suburbs are partially causative of declining Americans

<sup>&</sup>lt;sup>2</sup> Building Better Building Beautiful Commission, *Living with Beauty* (2020), p.99.

<sup>&</sup>lt;sup>3</sup> K. Sundquist, F. Golin and J. Sundquist, "Urbanisation and incidence of psychosis and depression" (2004) 184 *British Journal of Psychiatry* 293–29. Or see C. Graham and A. Felton, "Inequality and Happiness: Insights from Latin America" (2006) 4 *Journal of Economic Inequality* 107–122. However, these studies do not give insight on impact of urban form itself.

<sup>&</sup>lt;sup>4</sup> A. Stutzer and B. Frey, "Stress that doesn't pay: the commuting paradox" [2008] *Scandinavian Journal of Economics* 339–66.

<sup>&</sup>lt;sup>5</sup> Cited in H. Frumkin, L. Frank and R. Jackson, Urban Sprawl and Public Health (2004), p.143.

<sup>&</sup>lt;sup>6</sup> R. Strum and D. Cohen, "Suburban sprawl and physical and mental health" (2004) 118 *Public Health* 488–496. E. Sandow, "On the road. Social aspects of commuting long distances to work" (2011) unpublished PhD thesis, Umeå University.

<sup>&</sup>lt;sup>7</sup> S. Luthar and K. D'Avanzon, "Contextual factors in substance use: A study of suburban and inner-city adolescents" (1999) 11 Development and Psychology 845–867.

<sup>&</sup>lt;sup>8</sup>C. Montgomery, Happy City (2013), p.54.

<sup>&</sup>lt;sup>9</sup> Due to increasing spatial segregation of uses, the length of all US trips has grown. From 1969 and 1995, on average, work trip lengths grew by 26% and shopping trips by 29% The numbers of trips have grown also; commuting trips by 24% per household while the number of shopping trips have almost doubled. "In all instances, the likelihood that the driver is alone in the vehicle has gone up by a third and for commuting trips it has doubled." R. Ewing and R. Kreutzer, *Understanding the Relationship between Public Health and the Built Environment*. LEED-ND Core Committee Report 2006, p.93.

participation in civic and political organisations, social and sports groups, charitable donations, dinner parties, and community projects. Putnam measures that all have reduced over the last 50 years with a major acceleration in the 1980s and 1990s. Putnam has attributed about 10% of this overall loss to the isolating impact of suburbanisation, commuting and sprawl. Specifically, he has calculated that each additional ten minutes spent in daily commuting time cuts involvement in community affairs by 10%:

"Controlling for demographic variables, Putnam finds that time spent commuting is second only to education in determining an individual's level of civic participation. Additionally, he finds that overall civic involvement falls in a community as the average commuting time of its citizens rises. Thus, reductions in participation are almost as great for retired people, otherwise very active community members, as they are for the commuters themselves."<sup>10</sup>

#### Green is good for you

From the garden from which we are all exiled to the Rose Gardens of Blandings Castle; from William Blake's concerns about the satanic perversion of rural England to the representation of the same in the 2012 Olympics, a delight in greenery is axiomatic in much literature and in much modernist and late Victorian urban planning. Port Sunlight, Welwyn Garden City and mid-20th century towers in the park were both (opposite) responses to the perceived need to introduce more greenery into quotidian lives.<sup>11</sup> Certainly, the presence of greenery in the urban environment tends to have a positive impact on our mental and even our physical health. This has been widely demonstrated and is both a psychological and a physical phenomenon.

Researchers have found that the presence of greenery can help in keeping down pollutants and in reducing noise pollution.<sup>12</sup> It can also induce more physical activity—as shown by Billie Giles-Corti and Melvyn Hillsdon and their wider teams.<sup>13</sup> Greenery seems also positively to impact the psychophysical status of city dwellers by lowering levels of stress.<sup>14</sup> At least 10 studies have now shown a link between regularly looking out at an attractive green environment and mood, stress, recovery from mental fatigue and well-being.<sup>15</sup> Though not strictly a matter of public space, the most well-known (and one of the first) studies was carried out by Roger Ulrich in 1984:

"Records on recovery after cholecystectomy of patients in a suburban Pennsylvania hospital between 1972 and 1981 were examined to determine whether assignment to a room with a window view of a natural setting might have restorative influences. Twenty-three surgical patients assigned to rooms with windows looking out on a natural scene had shorter postoperative hospital stays, received fewer negative evaluative comments in nurses' notes, and took fewer potent analgesics than 23 matched patients in similar rooms with windows facing a brick building wall."<sup>16</sup>

<sup>16</sup> R. Ulirch, *View through a window may influence recovery from surgery* (1984). This is a brilliant piece of research which carefully chose 23 pairs of patients controlling for their condition, lifestyle and even nurse so that their windows remained the main variable.

<sup>&</sup>lt;sup>10</sup> R. Putnam, *Bowling Alone* (2000), pp.183–84, pp.212–3, p.283. R. Ewing and R. Kreutzer, *Understanding the Relationship between Public Health and the Built Environment*. LEED-ND Core Committee Report 2006, p.93.

<sup>&</sup>lt;sup>11</sup> Port Sunlight is doubly influential. Not just did it physically point the way to the garden city movement and to the suburbanisation of British design. Its patron, Lord Leverhulme also funded the world's first school of town planning, The Department of Civic Design, at Liverpool University in 1909 with funds won in a libel action from *The Daily Mail*.

<sup>&</sup>lt;sup>12</sup> J. Yang, J. McBride, J. Zhou and Z. Sun, The urban forest in Beijing and its role in air pollution reduction (2005) and D. J. Nowak, D. E. Crane and J. C. Stevens, Air pollution removal by urban trees and shrubs in the United States (2006). A. Chiesura, The role of urban parks for the sustainable city (2004) and A. Gidlöf-Gunnarsson and E. Öhrström, Noise and well-being in urban residential environments: The potential role of perceived availability to nearby green areas (2007).

<sup>&</sup>lt;sup>13</sup> B. Giles-Corti, M. H. Broomhall, M. Knuiman, C. Collins, K. Douglas, K. Ng and R. J. Donovan, *Increasing walking: how important is distance to, attractiveness, and size of public open space*? (2005) and M. Hillsdon, J. Panter, C. Foster and A. Jones, *The relationship between access and quality of urban green space with population physical activity* (2006).

<sup>&</sup>lt;sup>14</sup> T. Hartig, M. Mang and G. W. Evans, *Restorative effects of natural environment experiences* (1991) and H. Conway, *Parks and people: the social functions. The regeneration of public parks* (2000).

<sup>&</sup>lt;sup>15</sup> For a more extensive discussion of the evidence linking greenery and mental wellbeing see, F. E. Kuo and W. C. Sullivan, *Environment and crime in the inner city: Does vegetation reduce crime* (2001).

These benefits carry through into the measurable well-being of residents. There is excellent recent evidence that (at least in prosperous areas) well managed communal gardens can be positively associated with high levels of neighbourliness, activity and community awareness.<sup>17</sup> And at least eight studies have shown some level of vegetation near to buildings can be associated with lower levels of expected crime, fear of crime or with lower levels of residents' violence.

More strikingly, a study of one city's poorest districts showed how buildings without trees and greenery round them suffered from predictably more crime than buildings with trees and vegetation. This was true even when building height and size were controlled for. Levels of vegetation explained as much as 7-8% of variance in crime block to block. Academics believe that this is due both to the calming effect of greenery and to its association with greater outdoor use of spaces.<sup>18</sup>

#### Street trees are as close to a "no-regrets" move as you will get

Over many years, a combination of poor maintenance, pollution or traffic engineers' concern over safety killed off older street trees and prevented newer ones ever being planted. Comparing photos of the same streets in 1921 and 2021 can be pretty depressing. We could not have got it more wrong. To take the point on safety first, the key determinant to how fast we drive is *not* the speed limit but how safe we feel. The rational response to obstacles on an urban street such as trees is to drive more slowly. This is precisely what we do. One study found that the presence of trees on an otherwise similar stretch of urban street reduced speeds by 7–8 miles per hour.

This in turn makes streets safer. A study of five arterial roadways in central Toronto found that mid-block car crashes declined by 5% and 20% in areas where there were features such as trees or concrete planters along the road. Similarly urban "village" areas in New Hampshire containing "on–street parking and pedestrian-friendly roadside treatments" were "two times less likely to experience a crash" than the supposedly safer roadways preferred by most transport engineers. Several other American studies corroborate this.<sup>19</sup>



A new street in Dorset complete with life-enhancing street trees. Andrew Cameron

<sup>19</sup> E. Dumbaugh, *Safe Streets, Liveable Streets* (2006).

<sup>&</sup>lt;sup>17</sup> J. Andersson, "Living in a communal garden" associated with well-being while reducing urban sprawl by 40%: a mixed-methods cross-sectional study (2015).

<sup>&</sup>lt;sup>8</sup> F. Kuo and W. Sullivan, *Environment and Crime in the Inner City: does Vegetation reduce crime?* (2001).

But the benign impact of streets trees on public well-being appears to be much more profound than this. Urban trees improve air quality.<sup>20</sup> They moderate heating and cooling energy use.<sup>21</sup> And people aesthetically prefer streets with trees in them.<sup>22</sup> Above all, and perhaps astonishingly in the complexity of human life, street trees have a measurable effect on human health even taking into account income, age and education.

One recent Canadian study is incredibly compelling. It was able to map the precise location of 530,000 Toronto trees and compared them to the health records of 30,000 Toronto residents. They found that "people who live in areas with higher street tree density report better health perception and fewer cardio-metabolic conditions compared with their peers living in areas with lower street tree density".<sup>23</sup>

The comparison took account of age, income and education levels and was able to quantify the impact:

"having 10 more trees in a city block, on average, improves health perception in ways comparable to an increase in annual personal income of \$10,000 and moving to a neighbourhood with \$10,000 higher median income or being 7 years younger."24

Another recent London study found an association between the density of streets trees and the rates of antidepressant prescribing:

"After adjustment for potential confounders ... we find an inverse association, with a decrease of 1.18 prescriptions per thousand population per unit increase in trees per km of street (95% credible interval 0.00, 2.45). This study suggests that street trees may be a positive urban asset to decrease the risk of negative mental health outcomes."<sup>25</sup>

#### The case for gentle density

Twenty years ago, Lord Rogers proposed an urban Renaissance. His task force argued that Britain's towns should be better places. His argument was strong. It has led to many important improvements, in cities like London and Manchester, but it was not flawless. Some subsequent development visions have made a naively unnuanced argument that high density development is the future and the answer to all our housing needs.

But the broad mass of the British people has rejected this vision. Like the vast majority of people in all countries they seek the joys of the garden suburb: the place to call your own, the places "which even when they are communal are not official-the pub, ... the back garden, the fireside and the 'nice cup of tea'" as George Orwell fortuitously put it. Even pre-Covid, the most popular form of home in this country, as nearly everywhere, is the private house.<sup>26</sup> People want space.

But this very understandable desire is not without consequences. Sprawling suburbs need a lot more countryside to build upon. That is, to put it mildly, not always very popular with the people who live there already. Nor, in its most elongated variant, is it very good for residents. As we've seen sub-suburbs are associated with knowing fewer neighbours, and with less active, less healthy lifestyles. Nor are homes which rely upon miles of new roads to get anywhere the affordable, sustainable future to which we aspire.

<sup>25</sup> M. Taylor, B. Wheeler, M. White, T. Economou and N. Osborne, "Research note: Urban street tree density and antidepressant prescription rates—A cross-sectional study in London" (2015), pp.174-179.

<sup>&</sup>lt;sup>20</sup> D. J. Nowak, D. E. Crane and J. C. Stevens, Air pollution removal by urban trees and shrubs in the United States, Urban forestry & urban green (2006) and D. J. Nowak, S. Hirabayashi, A. Bodine and E. Greenfield, Tree and forest effects on air quality and human health in the United States (2014). <sup>21</sup> H. Akbari, M. Pomerantz and H. Taha, *Cool surfaces and shade trees to reduce energy use and improve air quality in urban areas* (2001).

<sup>&</sup>lt;sup>22</sup> R. C. Smardon, *Perception and aesthetics of the urban-environment—review of the role of vegetation* (1988).

<sup>&</sup>lt;sup>23</sup> O. Kardan, Neighborhood greenspace and health in a large urban center (2015).

<sup>&</sup>lt;sup>24</sup> "Scientists have discovered that living near trees is good for your health" *Washington Post* 9 July 2015.

<sup>&</sup>lt;sup>26</sup> ING International Survey by MORI, September 2013. Homes in Europe: "Dream Home" Hopes and Economic Realities.



Low density suburbs need much more space—even for their infrastructure. Siena v a Houston interchange. Create Streets

Fortunately, there is an answer that often works: gentle density, optimising between the undoubted sustainability and connectedness advantages of propinquity and the personal benefits of more space and on-plot access to greenery and personal space: a network of beautiful streets and squares, of mansion blocks and terraced and semi-detached houses anchored around real middles, a village green or a local corner-shop; tree-lined avenues, streets that children can safely walk along, beautiful houses that cherish and evolve the local vernacular and nestle thoughtfully in the landscape. Blocks with clear backs and fronts which are associated with lower crime and better use of "little and often" green spaces. Such places tend to be more popular, and more prosperous. No one ever complained that a town had too many squares. As we shall see, people respond more warmly, innately and organically to streets which have coherent complexity, colour, texture, and whose forms and features invite you to walk or mimic, however imperceptibly, some of the patterns of nature.



Gentle density can optimise between the advantages of personal space and of neighbourly propinquity. Create Streets

#### Create traditional blocks with clear backs and fronts

Evidence supports the use of traditional blocks; fronts with clear, well observed entrances to the public realm and backs which are safe entirely private places, 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.<sup>27</sup> 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.<sup>28</sup> The public realm (the street,

<sup>&</sup>lt;sup>27</sup> e.g. see presentation made by T. Stoner on 11 March 2014 available at www.slideshare.net/tstonor/tim-stonor-predictive-analytics-using-space -syntax-technology [accessed 8 October 2021].

<sup>&</sup>lt;sup>28</sup> Poyner and Webb, "Crime Free Housing" Butterworths-Architecture (1991).

the square) should normally be fully delineated from the private interiors of urban blocks with their private or communal gardens.

### Creating traditional blocks with clear backs and fronts is associated with lower crime and high well-being. Create Streets

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### Façades matter

Façades also impact behaviour. As long ago as 1961, the 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 strengthen social ties and provide increased natural surveillance.<sup>29</sup> Jan Gehl has used the distinction of "walking architecture" versus "driving architecture" to encapsulate this. "Walking architecture" is readily appreciated at pedestrian speed or at eye level. It tends to be fine-grained urban and rich in details. "Driving architecture" is characterised by simpler design, which offers unambiguous signals to those driving at speed.

Subsequent research is justifying these concepts. Jan Gehl has conducted the best known studies and found that the "treatment of the city's edges, particularly the lower floors of buildings, has a decisive influence on life in city space". In many cities around the world, the most attractive shopping centres all share the same rhythms: 15–20 shops per 100m of street, which corresponds to new experiences for pedestrians every 4–5 seconds.<sup>30</sup> For example, in one Copenhagen study, two very different types of façade were compared. The first, the active façade, featured "varied facades with many doors, visual contact between outside and inside and various functions". The second, the more passive façade, was composed of "uniform facades with few doors, blind or no windows and few or no functions". Gehl's team then compared the number of people passing, their speed and the number of people who stopped or turned their heads on a series of summer days and autumn evenings. They found that:

- pedestrian traffic was 13% slower along the interesting facades;
- 75% of people turned their heads along the interesting facades compared to only 21% along the less interesting facades; and
- 25% of pedestrians stopped in front of the interesting facades compared to only 1% in front of the sterile facades.

It isn't just that people stop more either. Sterile "edges" have actually been proven to impact levels of sociability and helpful behaviour; all meaningfully correlated with well-being. In a fascinating experiment led by Charles Montgomery in Seattle, researchers selected two facades in the same neighbourhood. One was highly "active" with "a high concentration of small businesses, opportunities for pedestrians and a high level of visual interest". The other, a block-long blank warehouse wall was highly "inactive". Volunteers posed as lost tourists at both locations. They stood on the pavement, looking confused and with an open map. The "lost tourists" did not approach anyone. They waited for random passers-by to offer help.

"The results were remarkable. Pedestrians at the active façade site were nearly five times more likely to offer assistance than at the inactive façade site: 10% of passers-by offered assistance at the active site versus 2.2% at the inactive site. Of those who helped, seven times as many at the active site

<sup>&</sup>lt;sup>29</sup> J. Jacobs, *The Death and Life of Great American Cities* (1961).

<sup>&</sup>lt;sup>30</sup> J. Gehl, Cities for People (2010) pp.75, 76.

offered to let our 'tourist' use their phone (7% versus 1%). Four times as many offered to actually lead our tourist to their destination (4% vs 1%)."<sup>31</sup>

Place we find attractive also encourage us to walk more. In one study, following environmental changes, men who reported increased perception of neighbourhood aesthetics were 2.25 times more likely to walk more than those who did not. Each additional neighbourhood feature perceived to have changed favourably was associated with increased walking for transport by 3.0 minutes per week and increased recreational walking by 2.2 minutes per week.<sup>32</sup>

Academic research is starting to suggest why. A study of 29 shopping areas in Maastricht was conducted by Harmen Oppewal and Harry Timmermans to determine which public areas people preferred to visit. 214 participants were asked to rate 128 images of places based on a list of 10 attributes of appearance, layout and furnishing of shopping centres. They found that the four most important variables that mostly influenced people's choices were; maintenance levels, shop front appearance and presence of activities and cafes with the presence of green areas a little way behind. Maintenance levels, attractive large shop windows, the number of street activities and the number of cafes all had what statisticians call p-values of 0.000 or 0001. This means that there is almost 100% probability that the appearance of the place depends on these factors.<sup>33</sup>

Researchers are starting to find that "people consistently prefer moderate levels of visual complexity but also tend to like inherent order".<sup>34</sup> For example, Thomas Herzog conducted an important 1992 cognitive analysis on which urban spaces students preferred at Grand Valley State University. 326 undergraduate students were shown 70 colour slides of urban settings (with no people). They showed four categories of urban spaces: 8 were open or undefined; 19 were spacious but well structured; 11 were enclosed; and 9 had blocked views. Participants were asked to rate how much they liked each space based on a scale from 1 to 5, where 1 was "not at all" and 5 was "a great deal". They found that nine predictor indicators explained 87% of the variance in people's preferences. The key ones were "coherence", "legibility", "complexity" and "mystery". They also found that well-structured spaces were consistently the most favoured images.<sup>35</sup>

#### People like some colour

People also seem to prefer streets with some colour in them. The most photographed streets in many cities are colourful (think Burano or Murano in Venice).

<sup>35</sup> Indicator predictors they considered accounted for: spaciousness, refuge, enclosure, coherence, legibility, complexity, mystery, typicality, and age.

<sup>&</sup>lt;sup>31</sup>Edible Urbanism Project, Happy Seattle available at www.thehappycity.com/wp-content/uploads/2015/03/Editable-Urbanism-Report.pdf[accessed 8 October 2021]. In addition to these findings, people at the active façade reported a significantly higher level of trust in strangers (5.1 v 4.8 out of 10), walked more slowly and lingered more. <sup>32</sup>M. Kärmeniemi, T. Lankila and T. Ikäheimo, "The Built Environment as a Determinant of Physical Activity: A Systematic Review of Longitudinal

<sup>&</sup>lt;sup>32</sup> M. Kärmeniemi, T. Lankila and T. Ikäheimo, "The Built Environment as a Determinant of Physical Activity: A Systematic Review of Longitudinal Studies and Natural Experiments" (2018) 52(3) Ann. Behav. Med. 239–51 available at https://academic.oup.com/abm/article/52/3/239/4815762 [accessed 8 October 2021].

 <sup>&</sup>lt;sup>33</sup> H. Oppewal and H. Timmermans, "Modelling consumer perception of public space in shopping centres" (1999) *Environment and behaviour*.
 <sup>34</sup> J. Zacharias, *Pedestrian behavior and perception in urban walking environments* (2001), p.11.



Burano Island, Venice. Maddalena Iovene

In 2006, a cross-cultural research project was conducted on the impact of light and colour on psychological mood in indoor working environments. 899 people across four very different countries (UK, Sweden, Saudi Arabia, and Argentina) each with different light and climatic conditions, filled in surveys over a four-month period from September to December. Participants' psychological and emotional states were estimated, with questions focused on how people had felt over the previous few days. This was then compared to local lighting and colour conditions. Those who were in the most colourful settings, had a visible mood improvement.<sup>36</sup> Consistently those living in more colourful environments felt better.



Colour has beneficial effects on mood, on a scale 1 (negative) to 4 (positive

### Symmetry helps

Research is also increasingly demonstrating that humans tend to prefer symmetrical design. A 2004 psychology study was conducted on people's design preferences by comparing symmetric and non-symmetric images. 40 undergraduate students were shown 10 pairs of non-familiar geometric images. They were asked to choose the more attractive from each pair. Each pair contained images that were symmetrical and asymmetrical by colour or by shape or had images that were orientated with or without vertical symmetry. The findings were startling. Symmetry won three times out of three. On a scale from 1 to 10, designs with symmetrical shape were judged to be more attractive than designs with asymmetrical

<sup>36</sup> R. Küller, S. Ballal, T. Laike, B. Mikellides and G. Tonello, *The impact of light and colour on psychological mood: a cross-cultural study of indoor work environments* (2006).

shape (6.9 versus 3.1). Symmetrically coloured designs were judged to be more attractive than asymmetrically coloured designs (7.1 versus 2.4). And designs with a vertical axis of symmetry were chosen as more attractive than designs with a non-vertical axis of symmetry (7.1 versus 2.9). Without ambiguity or cavil, people like their symmetry.<sup>37</sup>



## Mixing up land use works

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 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% of the time compared to 3.9% of trips in single use communities".<sup>38</sup> Encouraging more people to work near to where they live reduces transport needs. Although this flies in the face of planning policy until very recently this should be self-evident. The good news is that with industry cleaner than 70 years ago and with a far higher proportion of jobs in the service sectors, dismantling planning-led barriers to land uses now becomes far easier to achieve for more people than in the past.

## Traffic impedes neighbourly friendships

People do feel safer in streets where traffic is reduced, children play more, and adults spend more time standing by the doorsteps watching or having conversations with the neighbours. Heavy vehicular traffic has a malign impact on social connectivity and neighbourliness; both of which we know to be associated with well-being.

The best-known study (by Donald Appleyard and Mark Lintell as long ago as 1972) into the impact of traffic on neighbourliness is far from perfect due to very material differences in social demographics and length of tenure. These are not controlled for. Nevertheless, its findings are intuitively compelling. People living on lightly trafficked streets (2,000 vehicles per hour) were friends with three times as many people

<sup>38</sup> R. Ewing and R. Kreutzer, Understanding the Relationship between Public Health and the Built Environment. LEED-ND Core Committee Report 2006, pp.20–23.

<sup>&</sup>lt;sup>37</sup> R. A. Cárdenas and L. J. Harris, Symmetrical decorations enhance the attractiveness of faces and abstract designs (2006)

on their street as those living on the "heavy street" (15,750 vehicles per hour). They also twice as many people and far more people on the opposite side of the street.<sup>39</sup>

Put simply, on busy vehicular streets people know far fewer of their neighbours particularly from the other side of the carriageway. This must be in part due to differing lengths of residence. However, the researchers' notes on their interviews with residents are fairly convincing that traffic plays a far more than incidental role. They wrote of the lightly trafficked street: "Front steps were used for sitting and chatting, sidewalks by children for playing, and for adults for standing and passing the time of day (especially around the corner store)." However, the heavy street had "little or no sidewalk activity and was used solely as a corridor between the sanctuary of individual homes and the outside world. Residents kept very much to themselves so there was no felling of community at all".

In spring 2008, Joshua Hart and Graham Parkhurst replicated this study in Bristol in the UK.<sup>40</sup> They took three streets with different levels of traffic and compared the average number of friends and acquaintances that people had on each street type. Then they compared the results with the mean values in San Francisco. The table below summarises the findings for both cities, showing the average number of friends and acquaintances in relation to the traffic volume for each street type. Both studies show that people living on streets with heavy vehicular traffic tend have fewer friends on their street and not many acquaintances. Those living on lightly trafficked streets appear to have three or four times as many friends and twice as many acquaintances. Lots of cars make for bad neighbours.

Study area	San Francisco (1972)		Bristol (2008)			
Street	Low	Medium	High	Low	Medium	High
Traffic volume	2,000	8,000	16,000	140	8,420	21,130
Avg. no friends	3	1.3	0.9	5.4	2.5	1.2
Avg. no acquaintances	6.3	4.1	3.1	6.1	3.7	2.8
Mean length of residence	8.o	9.2	16.3		-	
Percentage of renters	50	67	92		-	

Average number of friends and acquaintances in Appleyard's original study in San Francisco and in 2008 Bristol study

## If you can use them, steps are good for you

For those who can use them, stairs are provably good for you. Their frequent use is associated with improved physical health. Multiple studies show this in office buildings.<sup>41</sup> This has also been shown to be true for the elderly, for whom, like patients, their use is normally discouraged. A remarkable three-year longitudinal study of older residents in Miami partly found that:

"Elders who resided on blocks with more front porches, stoops [a small staircase leading to platform and front door] and buildings built above grade had significantly better physical functioning at 24-month follow-up than did elders who resided on blocks with fewer of these architectural features."42

<sup>&</sup>lt;sup>39</sup> D. Appleyard and M. Lintell, *The environmental quality of city streets: the residents' viewpoint* (1972).

<sup>&</sup>lt;sup>40</sup> J. Hart and G. Parkhurst, Driven to excess: Impacts of motor vehicles on the quality of life of residents of three streets in Bristol (2011).

<sup>&</sup>lt;sup>41</sup> e.g. see P. Meyer, B. Kayser and F. Mach, "Stair Use for Cardiovascular Disease Prevention" (2009) 16 European Journal of Cardiovascular Prevention & Rehabilitation S17–S18.
<sup>42</sup> S. Brown, C. Mason, T. Perrino, J. Lombard, F. Martinez, E. Plater-Zyberk, A. Spokane and Szapocznik, "Built Environment and Physical

Environment in Hispanic Elders: the role of 'eyes on the street'" [2008] Environmental Health Perspectives 1300-1307.

## Modest front gardens support neighbourliness

Modest front gardens are associated with knowing more neighbours and speaking to them more frequently. Good fences make good neighbours. One study, in Melbourne, compared levels of activity over entire days on 17 residential streets, some with and some without front yards. The most activity (69%) very clearly took place in front of the houses with front yards or gardens. It was by these types of houses that neighbours stopped to chat or children played. However, front gardens which were too small to sit in had less of an impact.<sup>43</sup> A series of Gehl's studies elsewhere back this up. A 1977 study of 12 Canadian residential streets found that 89% of street life was carried out "in or near the semi-private edge zone". A 1980 study of 1970s social housing in Copenhagen found, found that 35% more people used the outdoor areas of a block with "semi-private forecourts" than did the outdoor areas of one without. Another 1980s study, also in Copenhagen but this time of two parallel Copenhagen streets (one with and one without modest front gardens), saw 21 times as much activity in the street with front yards as the one without. The more detailed findings are worth citing:

"the front gardens were widely used by adults. They spent much time there sitting, eating, knitting etc taking in the street scene and the sunshine in the process ... the high activity level in and around the front gardens was seen to draw quite a few people from the upper two storeys down to the street scene. Thus 'where people are, people will come'."<sup>44</sup>

The semi-public front gardens of streets don't just encourage neighbourliness in a safe and controlled way. They also encourage a sense of ownership. One excellent case study was that of Diggs Town in Norfolk, Virginia into the use of what the researchers termed "Traditional Neighbourhood Design". They found that placing short white metal fences (approximately 75cm tall) around properties allowed and encouraged residents to manage and care for their own property, giving them a sense of ownership and a "safe space". They went on to argue that the movement away from traditional design post war had destroyed the distinction between public and private space, and that "as a result residents lost a critical venue for social exchange".<sup>45</sup>



Front gardens added onto a street in Grimsby. Create Streets

<sup>43</sup> Cited in J. Gehl, Cities for People (2010), pp.82–3.

<sup>44</sup> J. Gehl, "Soft Edges' in Residential Streets" (1986) 3 Scandinavian Housing and Planning Research 89-102.

<sup>45</sup> Bothwell, Gindroz and Lang, "Restoring community through traditional neighbourhood design: a case study of diggs town public housing" [1998] Housing Policy Debate 89–114. D. Halpern, Promoting Positive Outcomes: How the physical and social environment can affect behaviour in Hillington Square (2015), p.20.

#### Place satisfaction

What impact does the character or beauty of a whole neighbourhood or city have on its denizens? The answer is quite a lot. Environmental psychologists have shown that alongside green space and soft edges we enjoy gentle surprises and pleasant memories.<sup>46</sup> We dislike sharp edges, darkness, sudden loud noises.<sup>47</sup> The strong preferences that most of us show for a more locationally and historically-referenced architecture is therefore psychologically credible, even sensible.<sup>48</sup> We choose our homes and experience the world around us emotionally as well as intellectually.<sup>49</sup> This is why Walt Disney built Main Street in Disneyland to look like an idealised American small town, in which visitors can relax lulled by the reassuring historic references of the streetscape. And it means, it turns, out, that what places look like, whether we like them or not, does affect our mood and our behaviour. It is not just that visitors to Main Street, Disneyland have been shown to be more friendly and forgiving in mood than they would usually be.

In a remarkable series of studies, Yodan Rofè has run feeling surveys on how people feel in certain parts of a neighbourhood. Respondents are asked to rate whether they feel very good, good, bad or very bad in certain places. The results are that people felt better in the types of place with more greenery, more complicated elevations and a more conventional façade and urban form. Location alone, as opposed to social profile or individual tendencies, predicted 69% of responses. Personal preferences or background coloured responses but did not drive them.<sup>50</sup>

The potential importance of the beauty of urban areas on health rather than just natural scenery is also starting to emerge from a growing list of meta data studies. In one important recent British project, Dr Chanuki Seresinhe at the University of Warwick took advantage of the power of crowd-sourcing to gauge 1.5 million ratings by over 20,000 people 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".<sup>51</sup> One of the researchers commented:

"This is a fascinating finding. Just because a place is green does not compel us to feel better on its own. It seems to be that the beauty of the environment, as measured by scenicness, is of crucial importance. Our results suggest that the beauty of our everyday environment might have more practical importance than was previously believed. In order to ensure the wellbeing of local inhabitants, urban planners and policymakers might find it valuable to consider the aesthetics of the environment when embarking upon large projects to build new parks, housing developments or highways. Our findings imply that simply introducing greenery, without considering the beauty of the resulting environment, might not be enough."<sup>52</sup>

The research team also performed a colour analysis on the photographs. Again, the findings of this study of 1.5 million individual judgements found that attractive aesthetics are not just a matter of fields and trees:

<sup>&</sup>lt;sup>46</sup>R. Walker, J. Skowronsiki and C. Thompson, "Life is Pleasant—and Memory helps to keep it that way!" (2003) 7(2) *Review of General Psychology* 203–10.

<sup>&</sup>lt;sup>47</sup> D. Kahneman, Well-Being: the foundations of hedonic psychology (2009).

<sup>&</sup>lt;sup>48</sup> The evidence on this is not set out here for reasons of space. See Iovene, *Of Streets and Squares* (2019) and Boys Smith, *Heart in the Right Street* (2016).

<sup>&</sup>lt;sup>49</sup> See S. Robinson and J. Pallasmaa, *The Mind in Architecture* (2015). On the role of emotion in choosing homes see RIBA, *The way we live now* (2012), pp.4–5, pp.10–12.

<sup>&</sup>lt;sup>50</sup> Y. Rofè, "Mapping the sense of well-being in a neighbourhood: survey technique, and analysis of agreement and variation" [2010] *Planum*.

<sup>&</sup>lt;sup>51</sup>C. I. Seresinhe, "Quantifying the Impact of Scenic Environments on Health" (2015) 5 Sci. Rep. 16899 available at https://www.nature.com/articles/ /srep16899 [accessed 8 October 2021].

<sup>&</sup>lt;sup>52</sup> "Beautiful urban architecture boosts health as much as green spaces" *Daily Telegraph* 28 December 2015.

"Our colour analysis also reveals that scenicness does not simply constitute large areas of green. Indeed, we find that the most scenic areas do not contain the most green, but rather contain high proportions of blue, grey and brown."<sup>53</sup>

Create Streets worked with the authors of this report to explore the components of place quality which were best associated with attractive places.<sup>54</sup> We used the learning algorithm that rates the "scenicness" of different places created by Create Streets fellow, Dr Chanuki Seresinhe.<sup>55</sup> We applied the tool to, and performed a regression analysis on, the actual form, nature, age and shape of the immediately surrounding city. We found that the most attractive places in London were best predicted by:

- distance to a listed building;
- high built-up area density;
- richness of land uses;
- richness of urban furniture;
- the immediate presence of a listed building;
- richness of commercial activities;
- high average proportion of pre-1939 buildings; and
- generous proportion between footways and carriageways.



Some of London's most ugly and least ugly places compared based on an algorithm of 1.5 million human responses. The same themes keep emerging

This measurable emotional attachment to beautiful places would appear to have consequences. A 2011 survey of 27,000 respondents in 10 US cities found stronger correlations between a place's physical beauty and people's satisfaction with their communities than any other attributes. It had, for example, a correlation of 0.560 with overall place happiness, 0.534 with city satisfaction and 0.510 on recommending a city as a place to live for family and friends. Factors such as "overall economic security" came nowhere close.<sup>56</sup> 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 behind "Social Offerings" (what there was to do) and "Openness" (perception of openness to different types of resident) as a predictor of attachment. However, it still ranked above

- <sup>55</sup> C. I. Seresinhe, T. Preis, and H. S. Moat, Using Deep Learning to Quantify the Beauty of Outdoor Places (2017) and S. Law, C. I. Seresinhe, Y. Shen and M. Gutierrez-Roig, Street-Frontage-Net: Street-level Knowledge Discovery using Deep Convolutional Neural Networks.
  - <sup>56</sup> K. Leyden, "Understanding the Pursuit of Happiness in Ten Major Cities" (2011) 47 Urban Affairs Review 861–888.

<sup>&</sup>lt;sup>53</sup>C. I. Seresinhe, "Quantifying the Impact of Scenic Environments on Health" (2015) 5 Sci. Rep. 16899.

<sup>&</sup>lt;sup>54</sup> Iovene, Boys Smith, Seresinhe, Of Streets and Squares (2019).

education, basic services or safety.<sup>57</sup> 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.<sup>58</sup> A less exhaustive 2015 survey by MORI also found indicative associations between levels of perceived beauty in residential areas ad both physical and mental health.<sup>59</sup>

#### Better places are worth more money

People will pay for this too. Popularity and wellbeing feed through into higher values. Recent Dutch research into 60,000 property transactions across 86 comparable housing developments found that pure neo-traditional style houses on average sold at a premium of 15% compared to non-traditional houses. For houses that "refer" to traditional styles, the premium was 5% compared to non-traditional houses.<sup>60</sup> Style, it would seem, does matter but not always in the way that stylists would wish.

Primary research conducted by the Create Streets research team agrees.<sup>61</sup> We analysed every 2016 property sale in six English cities (London, Birmingham, Manchester, Leeds, Liverpool, and Newcastle). We then used open datasets to compute basic urban characteristics, such as street network connectivity, population density, amount of greenery, availability of different transport modes. The point of the analysis was not to investigate them separately, but together—and to permit city-wide conclusions and inter-city comparisons. We discovered that places really matters.

The heritage and place premiums are more important than the new build premium. In every city studied, proximity to a listed building was associated with more additional value than the premium associated with a newly built home. A home closer than average to a listed building in London was worth 10% (or £49,770) more than one that isn't, holding everything else equal. The equivalent new build premium was only \$8,795. Similar, though not quite so consistent, patterns held true for a high proportion of older properties and for measures of traditional street patterns.

The findings—part predictable, part surprising—tell us much about the state of our cities. One thing they do show is that urban form really does matter in understanding value. Our models for urban form can predict up to 74% of the official UK poverty index—the Index of Multiple Deprivation—and up to 54% of sales values. Place matters. And what makes for popular, healthy and valuable places is not random.

#### What does this mean for planning?

One of the most beautiful and still relevant phrases in the Book of Common Prayer is the aspiration to "be godly and quietly governed". Our planning and development system is the obverse: noisy and controversial, regressive and reactionary, it creates, slowly and at huge expense, bad places which are objectively less popular than those we created in the past. Just look at the leaflets of the winning Liberal Democrat candidate in the recent Chesham and Amersham by-election which shouted ominously and clearly effectively of handing power to developers. Nor does it create enough of them with catastrophic consequences for standards of living and generational inequality.

As we saw above, most historic neighbourhoods and homes are consistently worth more than new neighbourhoods and homes even when you adjust for most other factors. A study of every property sale in six British cities found a premium associated with older neighbourhoods up to seven times greater than the premium for new build homes. Two thirds of British adults say they would never consider buying a

<sup>&</sup>lt;sup>57</sup> Soul of the Community Project, (2010), Soul of the Community 2010 Overall Findings, p.9 available at www.knightfoundation.org/sotc/overall -findings/[accessed 8 October 2021].

<sup>&</sup>lt;sup>58</sup> R. Florida, "Beautiful places: the role of perceived aesthetic satisfaction in community satisfaction" [2011] *Regional Studies* 33–48. R. Florida, *Who's your city* (2008), pp.163–5, pp.314–5.

<sup>&</sup>lt;sup>59</sup> A. Harvey and C. Julian, A Community Right to Beauty (2015), p.13.

<sup>&</sup>lt;sup>60</sup> E. Buitelaar and F. Schilder, "The Economics of Style: Measuring the Price Effect of Neo-Traditional Architecture in Housing" [2016] *Real Estate Economics*.

<sup>&</sup>lt;sup>61</sup> See Venerandi, Boys Smith, Toms, Beyond Location (2017).

newly-built home. Only 21% say a new home is their preferred option. <sup>62</sup> Given the lamentable build quality, you can hardly blame them. A recent survey by UCL found that at least three quarters of new developments were mediocre or poor.



UCL's Place Alliance judged that only 26% of new developments were very good or good

But it is a problem of quantity as well as quality. The ratio of average UK house prices to average incomes has doubled since 1998. The UK had the highest growth in real house prices of any OECD country over the last 45 years—nearly four times the average. This means that Britain's housing challenges are not just retarding the age of home ownership. They are fundamentally changing generational fairness.<sup>63</sup>

A smaller proportion of people born between 1981 and 2000 are homeowners, at this life stage, than for any previous generation since 1926. And their rent payments have increased from 10% of net income 30 years ago to around 30% now. This has enhanced generational inequality on a seismic scale with immense political ramifications. As the post-war politician, Iain Macleod, put it: "you cannot ask men to stand on their own two feet if you give them no ground to stand on." Is it surprising that the politics of so many of the educated urban young are becoming so flippantly revolutionary? What do they have to lose?

What should be done? In times of trouble, many turn to what they already believe. However, many facets of the British housing market routinely "blamed" for high housing costs are not actually that different from other countries. Some blame cheap credit, but credit rates are not lower (0.1% bank base for sterling versus 0% for the Euro area). Others blame the lack of affordable housing, but the overall proportion of affordable housing in the UK (18.6%) is not lower than the EU average (10.8%). Nor are there more empty homes (there are far fewer).

<sup>&</sup>lt;sup>62</sup> See RIBA, *Improving Housing Quality* (2009), p.8. HomeOwnersAlliance, *In the rush to build more homes—concern that new homes standards are slipping* (2015) available at *www.hoa.org.uk* [accessed 8 October 2021].

<sup>&</sup>lt;sup>63</sup> See Boys Smith, *More Good Homes* (2018) for all evidence on pricing and housing in this section.

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Country	Empty Homes per hundred people	Homes Socially rented % <sup>8</sup>	Credit rate %	
Ireland	8.7	7	0	
Spain	7.3	2.5	0	
Portugal	7.0	4	0	
Italy	4.5	5	0	
France	3.7	18.9	0	
Greece	2.8	0	0	
Germany	2.2	12	0	
UK	1.1	18 (8) <sup>10</sup>	0.75	
Finland	5.5	15	0	
Netherlands	2.5	35	0	
Austria	NA	23	0	
Denmark	NA	20	-0.65	
Belgium	NA	6	0	
Average	3.7	11.9	0	

UK is not discrepant in credit rates, socially-rented homes or empty homes ...

Looking at data comparatively, it is hard to escape the conclusion that we just don't have enough homes in the right places. Nationally our ratio of homes to households (0.99) is one of the tightest in Europe (average: 1.12). Nor does this reflect suppressed household formation due to high prices. We probably need at least a million more homes.

Country	Homes per inhabitant	People per home	Homes per household
Greece	0.59	1.7	1.46
Portugal	0.556	1.8	1.45
Austria	0.555	1.8	1.17
Spain	0.538	1.9	1.37
Finland	0.534	1.9	1.00
Denmark	0.491	2.0	1.19
Belgium	0.473	2.1	1.13
Ireland	0.440	2.3	1.18
UK	0.437	2.3	0.99
Netherlands	0.429	2.3	1.00
France	0.423	2.4	1.18
Luxembourg	0.406	2.5	0.97
Poland	0.360	2.8	0.99
Average <sup>16</sup>	0.492	2.0	1.12

... but it does have fewer homes per household

Many studies demonstrate that "greater" regulation of housing markets tends to be aligned with constrained supply and higher prices. However, it is difficult to argue this simplistically in Britain. The annual supply of planning permissions is now outstripping the Government's annual target (of 300,000) and the gap between homes permitted and homes completed is widening (from less than 100,000 seven years ago to nearer 200,000 in 2016–2017). What is going on?

There is a smoking gun. Since 1947, the right to develop in the UK has been nationalised. But the implementation of that nationalised planning right is profoundly unpredictable. A new building in England needs a planning permission; a case-by-case judgement by a planning officer. This judgement is based on the local plan which is a policy document not a regulatory one. It gives principles and guidance. It doesn't set rules. Knowing what you can build, "winning" permission (a telling phrase) takes time, judgement, experience; and money.

Country	Link to policy instruments		Exceptions to the plan?
Austria	<ul> <li>'Application must be in compliance with binding plans &amp; regulations'</li> </ul>	•	'Only very limited flexibility to vary from the plan'
Belgium	<ul> <li>'Application must be in compliance with binding plans &amp; regulations'</li> </ul>	•	'Only when not in conflict with the plan principles'
Denmark	<ul> <li>'Application must be in compliance with binding plans &amp; regulations'</li> </ul>	•	'There is only very limited flexibility to vary from the plan'
France	'The application must conform with the POS'	•	'There is only very limited flexibility to vary from the plan'
Germany	'The application must conform with the B-plan'	•	'Exemptions from the provisions of a B-plan may be allowed in certain circumstances'
Greece	'Decision should not infringe provisions of town plans'	•	'For areas covered by town plans there is only very limited flexibility to vary from the plan'
Ireland	'The Plan is binding'	•	'Flexibility to vary from the plan through the material contravention process'
	<ul> <li>'Application must be in compliance with binding plans &amp; regulations'</li> </ul>	•	'No Exceptions to the plan'
	<ul> <li>'Application must be in compliance with binding plans &amp; regulations'</li> </ul>	•	'Departures from the plan are allowed in some circumstances'
Portugal	<ul> <li>'Application must be in compliance with binding plans &amp; regulations'</li> </ul>	•	'Minor changes that do not conflict with the plan's principles'
Spain	<ul> <li>'The application must be in compliance with binding plans and regulations or the old plan modified'</li> </ul>	•	'Only for state public works, in case of exceptional public interest'
UK	<ul> <li>'The plan is not binding, but is the primary consideration in determining an application. Each application is considered on its merit.'</li> </ul>	•	<sup>'D</sup> Departures are allowed if other material considerations justify this, but they are subject to a special procedure.'

English planning is more reliant on development control and less on local regulations

This is fundamentally different to most other countries where the right to develop is not nationalised but regulated. In countries as diverse as the US, France, and Germany, as long as landowners follow the local regulations, the difficulty, complexity and cost of achieving development is very modest compared to the UK.

In Germany, for example, the freedom to build is a part of the constitutionally-guaranteed definition of property. It is not granted to the property owner by the law. It is innate. Bottom-up not top down. Since 1947, the opposite has been true in Britain. The right to develop property is granted by the state. It does not come with the land. Even exceptions (so-called "permitted development") are just that: exceptions carved out by legislation from the universal need for individually negotiated case-by-case permission.

As a way of regulating an entire section of the economy our approach is inadequate. All standard frameworks of good regulation suggest that regulation should be predictable, certain, not subject to producer capture or to "who you know". When this is not the case then markets become "hard to enter" and are unduly influenced by an oligopoly of large firms and producer not consumer interests.

This is what has happened in England. Greater uncertainty and a slow process with major expense up-front before the right to build is certain has increased planning risk, enormously pushed up land prices with permission to build and acted as a major barrier to entry for small developers, minor landowners, self and custom builders and innovators generally.

Far more people commission their own homes directly in most other countries. You can literally order then from a catalogue or engage a small local builder. That's just not feasible in this country. Only the big boys can negotiate all the cost and risk. Our self-build market is miniscule. And small British firms build fewer new buildings proportionally than any other European country; and still falling. Thirty years ago, small builders built 40% of new homes. Today it is 12%.



SMEs, self-build and custom build in the UK compared to Europe, Eurostat

This lack of choice leads to too many poor homes and not enough of them. Developers sell at the speed "the current market" will bear. Unlike the rest of the world, there is no meaningful competition from small builders or self-commissioned homes to meet demand and constrain prices. Hence those slow build out rates and the vicious circle of high costs, constrained competition, constrained supply, high prices and bad places.

England should introduce more predictable planning for mass market new homes and for simpler situations. We should stop treating all development as a bespoke process and "move the democracy forward" where possible from the development control process to the setting of the local plan.

The bespoke planning permission process should be reserved for the difficult, the different and the controversial. Then, as in the US or much of Europe, the (important and necessary) democratic debate can take place at the plan-making stage not the development-specific stage. Then we can regulate development not nationalise it.

This is the approach we took historically. (See the Georgian Housing and Building Acts or the Victorian Public Health Acts). And it is the approach that the late Sir Roger Scruton and I set out in the recommendations of the Building Better Building Beautiful Commission. Some of our recommendations have already been taken up in the National Model Design Code and the new NPPF. Others were mentioned in last year's Planning White Paper which, I hope, will continue to influence the government's approach to the evolution of the planning system.

## Making it visual: What role can design codes play in creating better places? What makes for good and bad design codes?

I was very struck by the evidence of one very experienced London official to the Building Better Building Beautiful Commission: he told us: "I was brainwashed in the world of thinking that development control is planning but it isn't. The plan-making process has been marginalised."<sup>64</sup>

But tiny proportions of the wider public engage in the plan-making process. If you look at any local plan, you can hardly blame them. Hundreds of pages of hard to disentangle, sometimes contradictory, policy. It's then left up to the individual development to resolve the tensions, sometimes stark tensons between different policies. This is sometimes right but it's not right for the "good ordinary".

This subject matter, of how we create new places and steward existing ones, is of huge interest and relevance to all of us. Many, for example the RTPI, who gave evidence to the Building Better Building Beautiful Commission recommended the use of design codes. They said:

"One of the best ways for achieving quality design in more major schemes has been to use design codes ... design codes are most successful if they: are evidence based (as for any other planning policy or guidance); are very localised; are drafted by urban designers or architects (depending on their content); and use clear language."<sup>65</sup>

The advantage of design codes, or (if you prefer) of form-based pattern books, is that they are accessible because they are essentially visual and they oblige the resolution of some of these tensions, between height and light, between public and private, between vehicular connectedness and urban re-greening. They help a local council, parish or landowners rapidly and clearly set out what is acceptable either to the landowner or the planning authority. They do not necessarily or in all circumstances "ban" other approaches but they certainly set out the "fast track" to development and help de-risk the process, above all for smaller developers.

<sup>&</sup>lt;sup>64</sup> Building Better Building Beautiful Commission, Living with Beauty (2020), p.58.

<sup>65</sup> Building Better Building Beautiful Commission, Living with Beauty (2020), p.37.

The new National Model Design Code, published in post-consultation form in July 2021, is an excellent document put together by consummate professionals which I commend to anyone. It is given some umph by para.110c of the new National Planning Policy Framework which states:

"The design of streets, parking areas, other transport elements and the content of associated standards reflects current national guidance, including the National Design Guide and the National Model Design Code."

Paragraph 129 adds:

"All guides and codes should be based on effective community engagement and reflect local aspirations for the development of their area, taking into account the guidance contained in the National Design Guide and the National Model Design Code. These national documents should be used to guide decisions on applications in the absence of locally produced design guides or design codes."

Speaking purely personally and based on our work at Create Streets with councils, neighbourhood groups and landowners up and down the country, I would recommend six principles for those seeking to use it:

#### • Always set out the vision, principles and aims at the beginning.

This will frame the rationale of the contents.

#### • Use simple clear and concise language throughout:

Coding with things developers "must do", "should do" and "could do".



• Underpin the code with the evidence and research on what makes for happy, healthy, popular and sustainable places.<sup>66</sup>



<sup>&</sup>lt;sup>66</sup> A simple two page summary of the evidence set out in section one is available at *https://www.createstreets.com/wp-content/uploads/2020/01/OSS* v4-1.pdf [accessed 8 October 2021].

#### • Keep codes short, visual and numerical.

This makes them easy to read and more accessible to users. Picture and drawings are an effective way of expressing what you are trying to say quickly and clearly. It also prevents ambiguity when you wish to very clear about what is, and is not, readily buildable within a neighbourhood.



#### Co-create codes with the community who have knowledge of the local area.

There are several reasons why this is sensible. The earlier you are to involve people the more likely they are to trust you. It is important to let local people tell you about their place; often they will have local knowledge that no one else will. It will also ensure that design codes reflect local aspirations and can help to develop a strong relationship and trust with local communities. How should you go about this? We recommend engaging *wide and deep*, both with a wide range of people and in depth with a few. Engage using a *range of tools* to ensure you are reaching a wide audience; combine online mapping tools with in-person engagement. Never be afraid to ask *simple questions* that too many designers eschew: "what is your favourite place?" "Where do you like to spend time". If you start from the position that you need to "educate" the public, as too many "engagement professionals" with an agenda do, then you are lost. Pointing out the consequences of people's choices is entirely different.



This online engagement using the Create Communities tool garnered 905 comments in four days

• *Co-create codes with builders and local craftsmen and women* to ensure it can be created and built efficiently and effectively. One of the most important themes that emerged in the evidence to the Building Better Building Beautiful Commission what that many people felt the victims of development which "could be anywhere" and profoundly failed to recognise or care about the local, the particularly and the truly vernacular. People felt done to. Local builders and craftsmen and women can help rectify this in the setting of local codes as well as aiding with commercial buildability. They have knowledge of local materials and supply chains. They understand local build costs. They should be invited to local workshops and wherever possible local codes should support the use of local vernacular materials which can be manufactured locally. For example, in Nansleden, the use of Cornish slate and granite has created new jobs and secured the future of several local slate and granite quarries and businesses for a generation.<sup>67</sup>

# Deep green: Why and how are older paces an ineluctable part of the path to net zero.

The Climate Change Act 2008 committed the UK to an 80% reduction in carbon emissions relative to 1990 levels by 2050. In 2019, Parliament passed secondary legislation extending that target to "at least 100%". Both the House of Lords and the House of Commons passed this unopposed. The political consensus for tackling climate change is clear. And the built environment contributes about 40% of Britain's emissions.<sup>68</sup> What does this mean for planning and development?

Above all, it means taking a holistic "deep green" approach. Designing for sustainable growth is too often siloed within professional fields. What you focus on depends on whom you are talking to. If you have a hammer ever problem looks like a nail. Too much discussion of sustainability is focused on ongoing energy usage or transport. Self-evidently future buildings will need to be energy efficient. However, a truly sustainable "deep green" approach will need to be more broadly based. As well as considering the readily measurable thermal efficiency of new buildings and the location of and transport to new places, three additional factors will crucially influence new places' lifelong carbon footprint.<sup>69</sup> Though these are now starting to be recognised, they are still insufficiently discussed:

#### • form:

the shape and height of buildings;

• longevity:

the resilience, quality and flexibility of design; and

• materials;

some materials require far more energy to create.

## Form and height: Lower buildings use less energy

Increasingly strong evidence suggests that the height and depth of buildings matters to their energy consumption. For example, a recent study of the energy use of over 700 buildings' energy usage in London found that when comparing buildings of six storeys and fewer ("low-rise") with buildings of 20 storeys and more ("high-rise"), electricity use in the high-rise was nearly two and a half times greater than in the

<sup>&</sup>lt;sup>67</sup> Boys Smith, A Place to call home (2018).

<sup>&</sup>lt;sup>68</sup> See *11241wholelifecarbonguidancev7pdf.pdf (architecture.com)* [accessed 8 October 2021].

<sup>&</sup>lt;sup>69</sup> This discussion does not include the important issues of re-greening and biodiversity net gain.

low-rise (a 135% increase). The increase in fossil fuel use (by 40%) was less marked but still stark. Carbon emissions more than doubled going from "low-rise" to "high-rise".<sup>70</sup> (A similar pattern has emerged in a Hong Kong study where each additional storey added on average three kilowatt hours per square metre.<sup>71</sup>)



Energy usage, carbon emissions and height in office buildings<sup>72</sup>

Research has also shown that buildings can tend to become less energy efficient when they are wider than about 14–15m in depth ("deep plan space"). This is the point at which buildings normally have to be air conditioned, which increases their use of electricity, unless they are cleverly broken up with internal open space such as courtyards creating air conduits. In short if new places are to be sustainable in energy use over time, they should normally rely on a range of smaller or medium sized buildings.

## The most sustainable buildings are adaptable and long-lived

New places should be built adaptably for the long term as the needless destruction of buildings is grotesquely wasteful not just of financial resources but of embodied carbon. As has been reported in a parliamentary select committee:

- The largest producer of waste in the UK is demolition and construction which produces 24% of the annual 434 million tonnes.
- For every inhabitant in the UK, six tonnes of building materials are used every year. •
- It takes the energy equivalent of a gallon of petrol to manufacture six bricks. The embodied • energy in the bricks of a typical Victorian terraced house would drive a car more than 10 times around the world. The equivalent for an older civic building will be many multiples of this.73

Old places should be reused wherever possible. And, when we create buildings, particularly large ones, we should also build for the long term if we wish to do so sustainably. The one thing of which we can be certain is that the future is unknown. We cannot design precisely to meet it. But we can anticipate it. To be sustainable, buildings and places need to be flexible and readily adaptable. They should also be beautiful. Ugly buildings rarely outlive their primary use. But beautiful buildings transcend their first transitory

<sup>&</sup>lt;sup>70</sup> See https://www.ucl.ac.uk/bartlett/energy/news/2017/jun/ucl-energy-high-rise-buildings-energy-and-density-research-project-results [accessed

<sup>8</sup> October 2021]. <sup>71</sup>C. Lam, "Electricity use characteristics of purpose-built office buildings in subtropical climates" (2004) 45 Energy Conservation and Management 829-844

<sup>&</sup>lt;sup>12</sup> UCL Energy Institute, (2017), High-Rise Buildings: Energy and Density available at https://www.ucl.ac.uk/bartlett/energy/news/2017/jun/ucl -energy-high-rise-buildings-energy-and-density-research-project-results [accessed 8 October 2021].

<sup>&</sup>lt;sup>3</sup>See https://publications.parliament.uk/pa/cm200506/cmselect/cmcumeds/912/912we59.htm [accessed 8 October 2021].

purpose and sail on into the future: the Edwardian powerplant turned into a café, the medieval barn turned into an art gallery, the ground floor of a terraced home turned into a shop and then perhaps an office and now a home again.



A 600 year old barn turned into an art gallery

Resilient and successful places flex their uses easily over the centuries. And in doing so their whole life carbon costs collapses. Constructing a new-build two-bedroom house uses the equivalent of 80 tonnes of CO2. Refurbishment uses eight tonnes. Even with the highest energy-efficient specification the new build would take over 100 years to catch up. As many have put it, "the greenest building is the one that is already built".

To meet our legally binding commitment to becoming a carbon neutral nation by 2050, we need to incentivise the reduction of emissions from buildings. It is estimated that the carbon embodied in new residential buildings can account for more than 50% of their lifetime greenhouse gas emissions. Recycling buildings is normally more sustainable than demolishing them and starting afresh.<sup>74</sup>

Over 20% of our residential building stock is now over 100 years old. A further 16% dates from before the Second World War. However, there are currently few policies targeted at extending the life of these buildings or reducing their carbon emissions. Historic buildings that are underused and vacant could provide much needed homes and spaces for businesses. For example, it is estimated that there are over 2,400 underused or vacant mills in the North West and West Yorkshire. If refurbished, these historic mills could provide over 52,000 new homes, without the substantial carbon emissions from equivalent new builds.<sup>75</sup>

The retention and use of historic buildings also brings about secondary social and economic benefits. Research indicates, for example, that the quality of the historic environment is as important a factor as road access when businesses decide where to locate. The greater the density of heritage assets, the better the performance of the creative industries and the greater the level of specialisation towards the creative industries.<sup>76</sup>

I am very excited about the forthcoming Future Homes Standard. But focusing on fabric won't be enough in itself. We need to think about embodied carbon and the lives of the people.

Creating beautiful gentle density places is also to build sustainably.

<sup>&</sup>lt;sup>74</sup> See https://www.rics.org/uk/upholding-professional-standards/sector-standards/building-surveying/whole-life-carbon-assessment-for-the-built -environment/ [accessed 8 October 2021].

<sup>&</sup>lt;sup>75</sup> See https://historicengland.org.uk/get-involved/protect/mills-of-the-north/why-re-use-mills/ [accessed 8 October 2021].

<sup>&</sup>lt;sup>76</sup> See Building Better Building Beautiful Commission, Living with Beauty (2020).

I think that does highlight that the government should consider making bringing derelict buildings back into use VAT free, or charge at most a reduced VAT of 5%. It could do the same for core improvements to existing buildings, including reroofing, extensions, conversions and renewable heating. It is not necessary that VAT be reduced for DIY or interior decoration, which do not have corresponding environmental significance. Based on research that I have seen I think it is possible that such a move could:

- provide a £15.1 billion stimulus to the wider UK economy and 95,480 extra jobs by 2020; and
- lead to almost 240,000 tonnes of CO2 equivalent savings from 92,000 homes.

At any rate, similar VAT reductions have resulted in an increase in consumer demand and employment in the Isle of Man and the Netherlands.<sup>77</sup>

## Materials also matter

The embodied carbon of new places will include any carbon dioxide created during the manufacturing of building materials (material extraction, transport to manufacturer, manufacturing), the transport of those materials to the site and the construction practices used. Some materials inherently have far lower embodied carbon than others as shown in the table.



In short, buildings using stone, brick and wood but not cement will tend to have lower embodied carbon. It is also better to achieve high thermal efficiency through design and the use of materials such as stone than through over-reliance on some artificial insulation materials. This also chimes with the evidence on longevity. The evidence on embodied carbon represents another problem for the lifetime efficiency of buildings that are too tall. A 2001 Australian study found that the embodied energy per square metre of floor area in Australian office buildings was 60% greater in buildings of 42 and 52 storeys than in three and seven storey buildings.<sup>78</sup> The differences were largely—as one might expect—due to structural components.

## Conclusion

My four pain points have been that:

#### Good design is not subjective:

There are discoverable and often predictable links between place with health, happiness, prosperity and sustainability. These links matter.

<sup>&</sup>lt;sup>77</sup> See https://www.ihbc.org.uk/resources/VAT-research-FINAL.pdf [accessed 8 October 2021].

<sup>&</sup>lt;sup>78</sup> J. Treloar, "An analysis of the embodied energy of office buildings by height" 19 Facilities 204–214.

#### • Planning better:

Planning is not a 1940's creation. It is as old as cities. We should do it following the precepts of "good regulation" and "bring the democracy forwards". The current approach is reducing both quality and quantity by creating an overly-concentrated market with insufficient self-build and community-build.

#### • Make it visual:

Design codes can play an important role in helping the public visualise better places and trade off different pros and cons. They are probably the best way to democratise planning.

#### • Deep green:

Re-using older paces and building for the long term is a critical part of the path to net zero. That has policy implication which we all need to consider.

Under any political future, many homes are going to be built in Britain in the 20 years to come. Existing towns, many in the "left behind" parts of the UK, will be invested in (they have potential for enormously more prosperity, activity and homes). And we will grapple with, and hopefully succeed in, the struggle to bring our carbon emissions under control. I hope that as we face these challenges, the lessons in this paper are kept in mind. If they are, I believe that we will find these aims easier to achieve. And I believe that more of our fellow citizens will be well-housed in beautiful, neighbourly and life-enhancing places. That will be good for them. And good for all of us.