

of suburbs and cities

Will Galloway reports on the findings of a study on sustainability on the urban fringe in Japan that points to a need for an objective re-evaluation of suburbs and what they have to offer



Will Galloway

Above

New homes in the suburbs of Toyama

Placing faith in a national policy called 'Urban Renaissance', governments at all levels across Japan are working to revitalise fading urban centres – to densify and re-inhabit traditional cores using the concepts of the compact city model. After years of decentralisation the explicit ambition is to attract residents back from the urban fringe by encouraging patterns of mixed land use in old centres, connecting communities with public transportation and encouraging the creation of walkable neighbourhoods with easy access to all the needs of daily life.

On the face of it there is a clear agenda to move Japan's cities towards a more sustainable urban form, and yet the focus is almost entirely on the centres, as

though suburbia was insignificant, even irredeemable. While that is not an uncommon position to take, there are a number of strong reasons to challenge that bias – not least that it is based on an incomplete vision of the modern city (i.e. one that disregards half of the urban population). Of more concern is the possibility that focusing on only one part of the city may miss opportunities to make suburbia more sustainable, and indeed miss opportunities to make entire cities as a whole more sustainable.

In Japan the bias against suburbia is not founded entirely on ideology. It is also quite rationally grounded in a reaction to what can only be described as a demographic crisis. Japan's

population is simultaneously aging and shrinking, threatening to leave entire communities empty as the young move elsewhere and as older residents age and pass away. Over the next few decades Japan's total population is expected to shrink by about 30 million people (a figure close to the current population of Tokyo), returning the nation to a size unseen since the 1960s. The difference is that this time around, instead of a population dominated by the young, nearly a third will be over 65 years old. This time, too, cities that were built quickly to accommodate a vital and growing population will now need to serve a much less mobile group.

Complicating the situation further, the problem is far from geographically neutral. The last several decades have borne witness to a pattern of suburban growth powered by the young, who moved ever outwards in search of affordable land and homes, leaving behind their parents and grandparents – and inadvertently producing a situation where the centres and inner suburbs of most Japanese cities are now populated in large part by its oldest citizens. Without radical transformation there is little doubt that many of these areas will become all but empty in the near future.¹ Indeed the process has already begun. So far, the effect is most

noticeable in rural parts of Japan, especially in small towns and villages, but the expectation is that the same process will transform cities across the nation.

Governments are understandably worried, and in this regard the Urban Renaissance policy is not merely a tool for making cities more walkable; rather, it is being used as a way of answering the very real question as to what shape Japan's cities will need to take to adjust to the demographic shift.

These are very serious concerns, and ones that touch entire cities and regions, not just the centres. And yet suburbs are seldom included in the calculations. In the face of the current crisis it is understandable that Japanese politicians and scholars view suburbia largely as a problem that needs to be overcome. However, if the intent is to entice suburban residents to a more compact version of urban life, then the relationship between the old centre and the new suburbs is best seen as something more intertwined than adversarial. The possibility that suburbia could be part of the solution should also be considered.

Sustainable urban forms on the fringe?

In comparison with their counterparts in Europe, Japanese planners lack the authority to enforce many of their ambitions within their cities. This is

- 1 **Class I Exclusively low-storey residential district**
In addition to single family detached homes, allows nursing homes, clinics, apartment houses, dormitories, as well as small offices/home offices (up to 50 square metres area)
- 2 **Class II Exclusively low-storey residential district**
Allows all in Class I, plus larger stores and dining facilities (up to 150 square metres area)
- 3 **Class I Exclusively medium-high residential district**
Allows all in 'Class I Exclusively low-storey residential district', plus universities, hospitals, welfare centres, child recreation centres, and small garages. Intended to be used mostly for mid-rise condominiums as well as stores and offices up to 500 square metres)
- 4 **Class II Exclusively medium-high residential district**
Allows all in Class I, plus larger stores and offices (up to 1,500 square metres)
- 5 **Class I Residential district**
Intended to be used mostly for residential activities, as well as stores and offices (up to 3,000 square metres)
- 6 **Class II Residential district**
Intended to be used mostly for residential activities
- 7 **Quasi-residential district**
For use in areas along roadsides. Intended to mix vehicular-oriented functions with houses
- 8 **Neighbourhood commercial district**
A variety of industrial and commercial uses are disallowed, including theatres and dance halls
- 9 **Commercial district**
Intended to be used mostly for commercial activities
- 10 **Quasi-industrial district**
Industrial facilities that do not cause serious hazards are allowed to be mixed with housing
- 11 **Industrial district**
Intended to be used primarily for industrial activities
- 12 **Exclusively industrial district**
Intended to be used for large-scale industrial activities (housing is not allowed)

Source: Adapted from 'Urban land use and control in the Japanese'² and *The Making of Urban Japan*³

Above

Fig. 1 Japanese zoning categories under the Building Standard Law

especially true when it comes to the direction and type of growth on the urban fringe, and constitutes a strong barrier to the planned development of sustainable urban form. For this reason there is a real need to find alternative paths to sustainability – ones that do not necessarily rely on the power of mandate and prescriptive regulations. To that end the research that is partially presented here was undertaken to examine the possibility that suburbia and the processes that create it might be used as tools for the creation of sustainable urban form in Japan. Intriguingly, the evidence seems to indicate that suburbia may indeed have a role to play.

The research itself took the form of a case study, designed to measure the ways in which a typical Japanese suburb is inhabited and how it changes over time. The subject of the research was a suburb in the relatively small city of Toyama (population circa 300,000), located on the west coast of Japan. Like most cities of its size, Toyama is already struggling with a rapidly emptying centre, but is also characterised by thriving suburban communities on its fringe. In response to that situation, the city is aggressively implementing Urban Renaissance policies and has initiated a number of projects intended to attract both residents and businesses to the old centre.

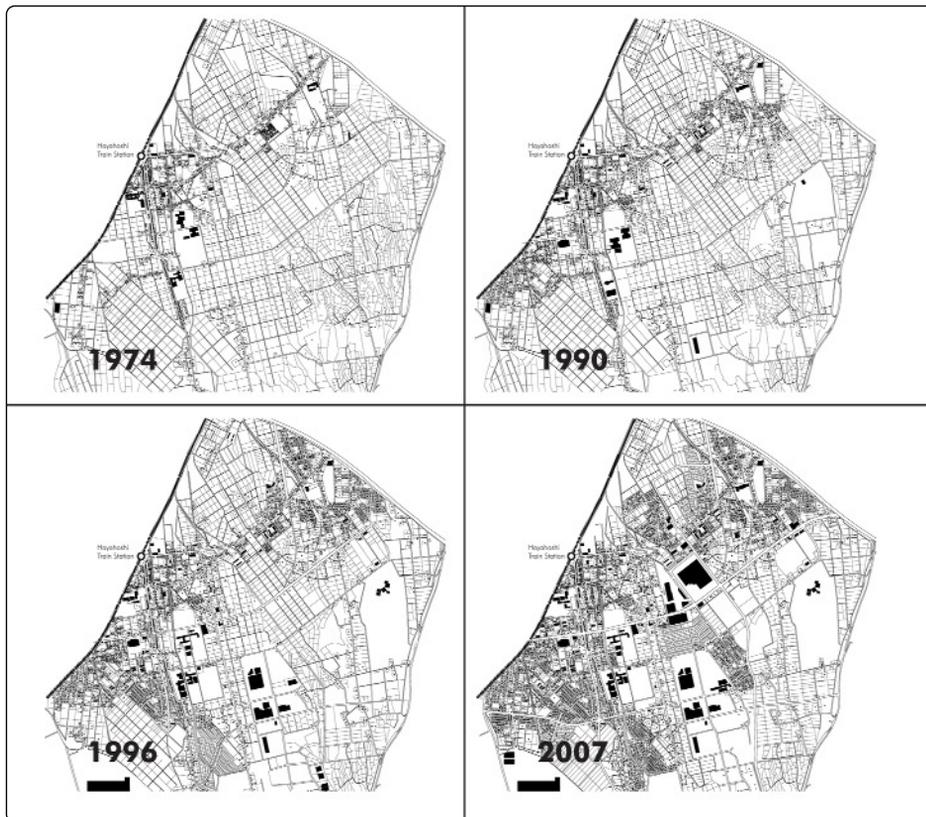
While it is still too soon to properly judge the impact of these projects, early results are not

encouraging. As a secondary ambition then, the research was designed to examine the suburban competition, so to speak – to find out if patterns on the urban fringe might be affecting the outcome of policies designed exclusively around the city centre.

Questionnaires and morphological analysis spanning a 30-year time frame were used to build up a picture of the suburb that included not a few surprising results. Taken altogether, the research seemed to indicate, for instance, that suburbs in Japan are remarkably flexible, and may already meet several of the objectives of the compact city model, including mixed land use and the integration of social groups.

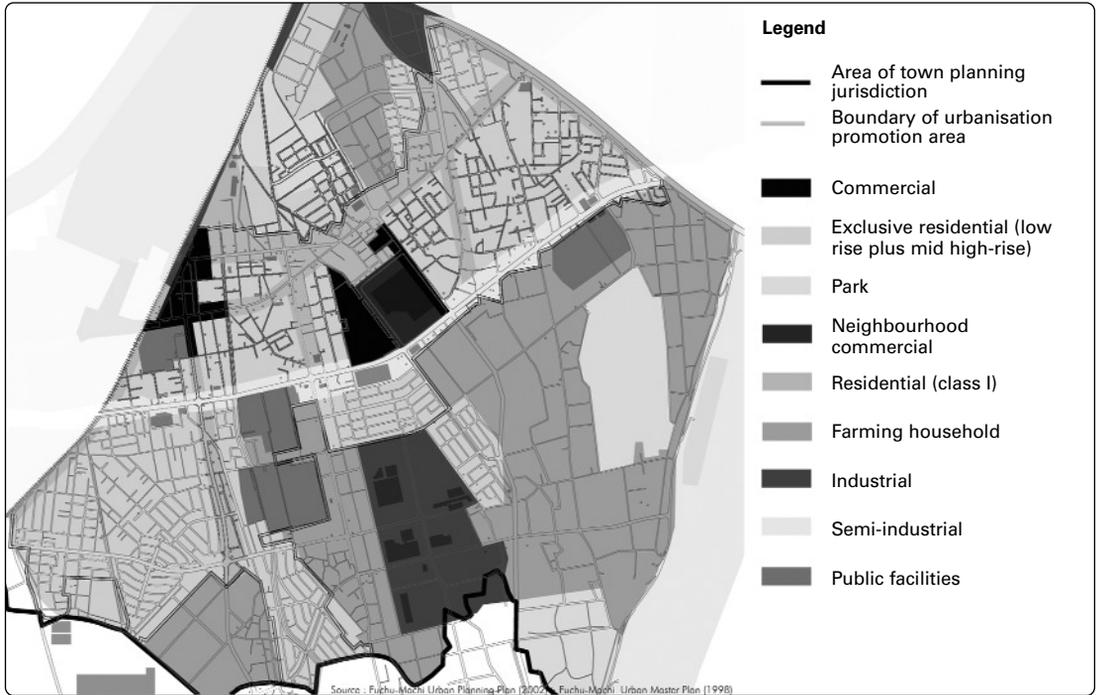
A brief introduction to suburbia in Japan

Japan's suburbs would be most familiar to a North American city dweller. They are unambiguously automobile-based, equipped with enormous shopping malls and 'big box' stores surrounded by seas of parking. They also come with near-endless strips of four-lane roads, dotted on both sides by chain-store restaurants and retail shops. Most of all, they are made up of sprawling expanses of detached homes, spreading outwards from the city centre with little control. At the regional level it is difficult to label the Japanese version of suburbia as anything other than typical 'sprawl', entirely un-sustainable. And yet the Japanese suburb is remarkably un-familiar as well, even unique in several respects.



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Fig. 2 Animation stills from the case study suburb in Toyama from 1974 to 2007

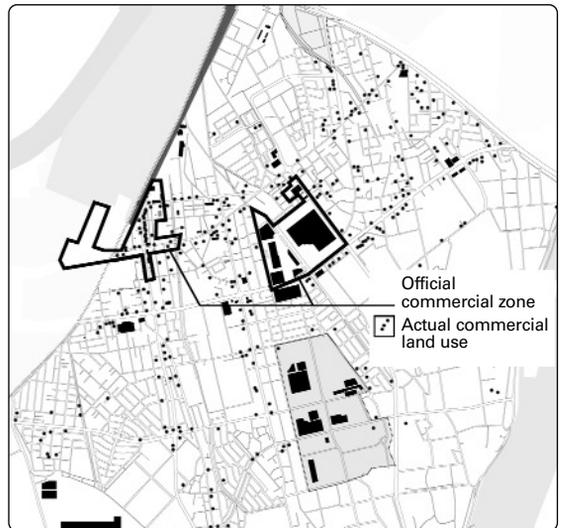


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Fig. 3 Zoning map of the case study suburb in Toyama

In comparison with the North American suburb, Japan's version of the urban fringe is not as reliant on the automobile as one might expect. For instance, commuter trains remain a common feature of many suburban communities. However, by far the most essential feature of the Japanese suburb is its lack of exclusionary zoning. Born of a different history from North America and Europe, the purpose of zoning in Japan has never been overly concerned with ensuring the compartmentalisation of functions. Instead, the laws which govern land use are performance-based, directly controlling functions only in as much as they cause problems with health or economic concerns.

The system is performance-based in the sense that elements that define urban form, such as building heights and setbacks, are decided by a group of interconnected formulae rather than explicit limits. The system is also *cumulative*, meaning that land uses are arranged hierarchically from most controlled to least controlled, with functions allowed in 'higher' zones automatically also being allowed in 'lower' ones. This is perhaps more easy to see in Fig. 1, which shows the 12 zones used to control land use for all of Japan. In this example, zones progress from exclusive residential use at the top towards commercial and industrial uses at the bottom. Each step down in the zoning chain indicates a step towards more freedom in possible activities that can be applied to a particular area.



Above

Fig. 4 Zoning versus actual land use in the case study suburb in Toyama

Ironically, while the names applied to each zone often include definitive terms such as 'exclusive', and 'residential', the types of activity possible within each category clearly show that the titles are in fact more convenient than descriptive. In practical terms, what this means is that while there is a legal

framework to control land use through zoning in Japan, the distinction between one area and another is often difficult to see on the ground, as the regulations are, by design, profoundly inclusive.

What zoning can do

Lack of planning authority has led inexorably to classic sprawl on the urban fringe in Japan – leapfrog development and ad hoc growth is entirely common (see Fig. 2 – stills taken from an animation sequence documenting the growth of the study area from 1974 to the present). However, a closer look shows that as a result of the open zoning system, geography does not equal destiny. For instance, Fig. 3 shows the nominal zoning

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subdivisions for the case study area used for the research project. In the entire area only two very clearly defined pieces are zoned for commercial use, and yet Fig. 4 reveals that commercial land use is in reality sprinkled generously throughout the community.

It seems that while planners are not able to impose mixed land use on residents of Japan, the residents themselves are quite content to introduce

the idea on their own. This effect is significant, and not limited to commercial land use. Small medical clinics can be found dotted throughout suburban tracts, along with small shops and retail stores. Similarly, income groups share communities in complete freedom, and indeed it is not uncommon for expensive detached homes to sit alongside multi-family and even transient housing (see Fig. 5).

Fig. 6 adds even more detail to this picture. Taken from Federal Census data, it compares the degree of access that residents have to basic daily needs in the case study suburb, as well as the centre of Toyama. Although there are instances where one part has better access than another (for example the suburban area understandably offers better access to green space), the differences are remarkably small. In this regard at least, the ambitions of the compact city are already consistent with the reality of the Japanese suburb.

The importance of a closer look

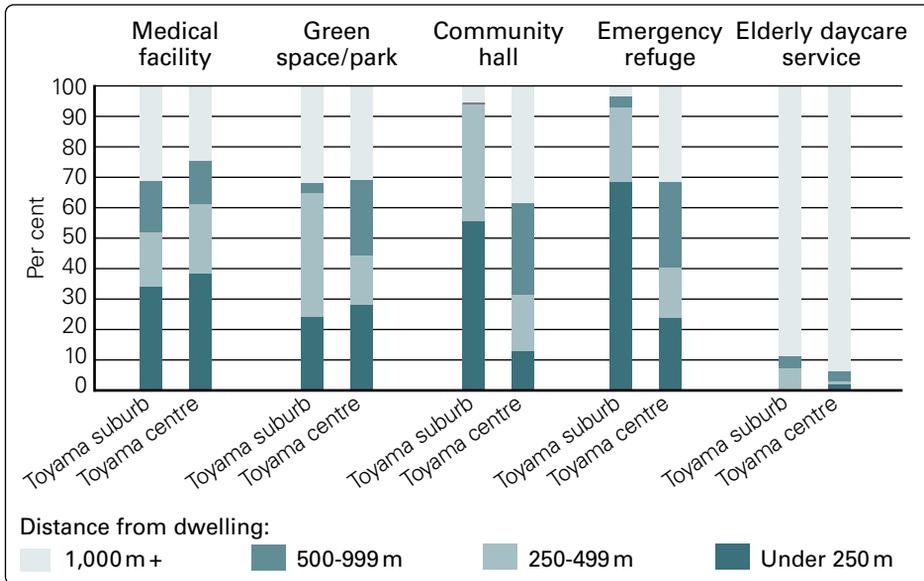
Although it is beyond the scope of this brief article to elaborate overly much, the research project in Toyama revealed that while mixed land use appears to be a normal presence in suburbia today, the actual activities on any given property are far from static. In fact, measured over a 30-year study period the research showed a constant background of changing land use in residential areas. The amount of change was not large by any means – no more than 1-2.5 per cent of properties changed function each year. And yet this is not a small number at all – houses became parking lots, clinics became homes, and shops transformed into apartment buildings. Year to year, this may be barely noticeable, but taken over



Above

Fig. 5 Mixed land use and income groups in a suburban neighbourhood

Top row: Apartments and a typical detached home Bottom row: Restaurant, a chiropractor's office, and a shopping mall



Left

Fig. 6 Access to community functions

a time span of decades the character of a neighbourhood can change radically. And yet without taking the time to look closely at the suburbs the process would remain entirely hidden from view, especially if the viewer looked only at the larger (and static) picture that is all too common when examining urban form. At that level the clearest picture available is the one shown in Fig. 2: sprawl, and little else.

It is not possible to argue that Japanese suburbs are sustainable in their current form. Dependence on automobiles and the wasteful use of land as a result of ad hoc development make that plain. However, the prevalence of mixed land use patterns as well as an existing process of constant change suggests they could be transformed at least as easily as the centre.

Although the examples shown here are from a single case study area, it seems that the role of suburbia may need to be reconsidered if the Urban Renaissance is to have any effect. For instance, the fact that accessibility to daily needs is barely improved by moving to the centre from the suburbs (including health care, an important consideration in an aging society) suggests that it will be difficult to entice residents to move from one area to another. It is clear that the image of suburbia that is being used to set policy in Japan is incomplete. A closer look is required.

Lessons for the West?

Because every country is unique it is difficult to take direct lessons from the Japanese example and apply them to other nations. And yet the example discussed here serves as a cautionary tale. Suburbia does not always fit the assumptions that have grown up around it, and it is well worth taking the time to examine suburban areas more closely. It is possible

that the very tools that will make future cities more sustainable may be found there, rather than in traditional notions of what a city should be. Without in any way making excuses or offering support for the negative effects of suburban life, if the ultimate goal is to create sustainable urban form, it seems that an objective re-evaluation of suburbs and what they have to offer is worth undertaking.

The research introduced here also offers some insight into the importance of zoning. In the Japanese example culture certainly plays an important role, and yet the openness of the zoning system can also be seen to have contributed to the creation of a suburban typology that easily accepts mixed land use, relatively high accessibility, and the mixing of peoples from various income groups. It is entirely possible that the problem may not be suburbs in general, but instead the rules that regulate them.

● **Will Galloway** is an architect and a planner, recently graduated with a PhD from the University of Tokyo. He is currently a partner at the design firm, *frontoffice*, in Tokyo, Japan. The views expressed here are personal.

Notes

- 1 Tokyo is a notable exception. While many cities and towns are expected to lose as much as 25 per cent of their current population in the next few decades, Tokyo is projected to lose only 1 per cent over the same period. Like most world-class cities in relation to the rest of a nation's cities, Tokyo is not a good representation of the future of the rest of Japan
- 2 D.L. Callies: 'Urban land use and control in the Japanese city: a case study of Hiroshima, Osaka, and Kyoto'. In P.P. Karan and K. Stapleton (Eds): *The Japanese City*. The University Press of Kentucky, 1997
- 3 A. Sorenson: *The Making of Urban Japan: Cities and Planning From Edo to the Twenty-first Century*. Routledge, New York, 2004