

# RECONSIDERING DENSITY: ALTERNATIVES FOR NEW ZEALAND

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Most planners will no doubt take the prevalent form of density regulation in New Zealand – controlling density by a ratio of residential units per area of land, or by minimum lot sizes – as a given. This think-piece questions whether the status quo of density regulation in New Zealand is the most effective, efficient or even desirable regulatory tool. A case is put forward for an alternative system – described as “flexi-density” by the author – which, it is argued, allows for more flexibility in design and living arrangements, aids in housing affordability and better responds to modern society’s diverse and evolving socio-economic and cultural

characteristics, while adequately protecting the environment. The article also reviews recent initiatives introduced in Vancouver, Seattle and Portland to create more flexibility with density.

Controlling residential density is arguably the most significant and influential regulatory tool of the Planner. In regulating density, the Planner controls, directs or guides (depending on your philosophical leaning!) the form, function and appearance of our urban settlements. Density regulation has both micro (amenity and character) and macro (urban form) functions.

In New Zealand, density is regulated exclusively through controlling the ratio of

residential units to area of land, expressed in square metres. For example, the Residential 6a zone in Auckland City allows one residential unit for every 375 square metres of land to be erected.

There is the rare scenario where density itself is not regulated. This, for example, occurs in some of Wellington’s inner residential areas (although development above two units is regulated), and in Napier.

## Criticism of density status quo

As a critic of the status quo, I will outline my own perceptions of the negative attributes of this system. There are benefits to the system and I am not suggesting it should be discarded (alternatives forms of density control can complement rather than override).

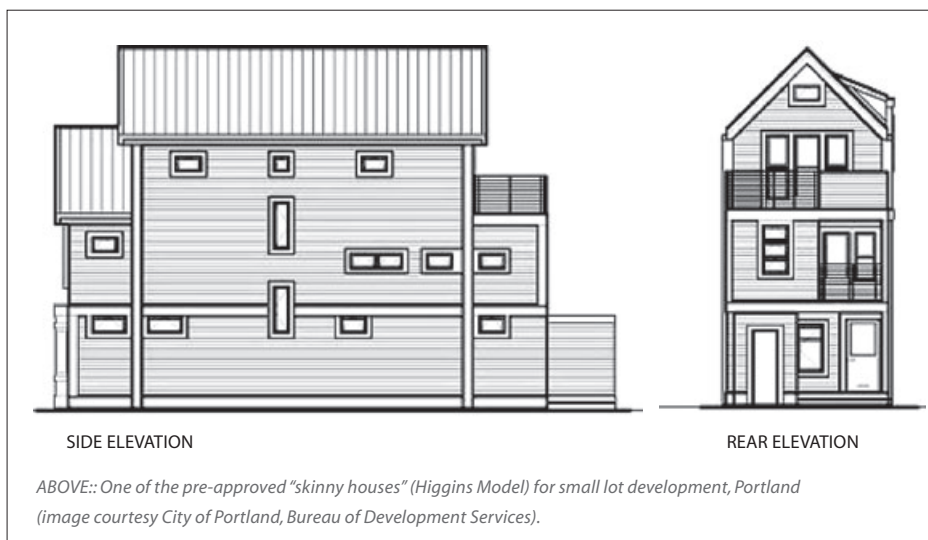
## Lack of flexibility and efficiency in design and living environments

Kevin Lynch, urban designer and author of the influential *Image of the City*, states in his less well known *Site Planning* that:

*Minimum lot sizes are obstacles to efficient and commodious design,*

and that:

*Official regulations frequently cite standards for building spacings, setbacks and lot sizes. The standards attempt to ensure adequate light, privacy, fire safety, and “amenity”, using mechanical rules that can be repeatedly applied. But the rules result in inflexible layouts and the waste of land.*



By regulating density based on units per land unit area or minimum allotment sizes, such rules cancel out efficient land use solutions such as duplexes (two attached units) and low scale cluster housing, common housing forms in low density neighbourhoods in Europe.

#### **Lack of housing choice**

If we are to achieve our goals of more compact urban development, we need to expand the range of housing types available to consumers. Nearly all housing being built today consists of either single family houses on large full lots, or multi-family units in larger buildings and terraced housing complexes, largely a product of the present black and white density regulations. The lack of flexibility in planning regulations means that there is a lack of housing choice between these extremes. Potentially fertile ground exists for alternative housing typologies such as conjoint housing, duplexes, and cluster housing – a “third way”.

#### **Discourages diversity at the micro-urban scale**

Homogeneity in resident profile (family size, marital status, socio-economic status, age and ethnicity) is encouraged by these rules. In particular, the planning rules for low-medium density neighbourhoods are biased towards the nuclear family.

Likewise medium-high density developments can be equally homogeneous, with single people or young couples often predominating. Such dualistic zoning based on crude density control measures is a simplistic and inflexible system. The resulting urban form is one of increasingly mono-cultural districts characterised as low or high density, rich or poor, family or single person orientated.

#### **Negative impact on housing affordability**

The current form of density control in NZ is a conservative statutory tool, one that either directly or indirectly seeks to preserve the status quo, protect property values, and keep affordable

housing out of most neighbourhoods. Such factors underlie “the cloak of amenity value protection” that is put forward as a reason for such rules. As Lynch says in relation to minimum lot size requirements “sometimes they are deliberate devices for zoning out low-cost housing.” Indeed this form of density regulation has been dubbed “exclusionary zoning” in the USA.

Land costs have risen significantly in New Zealand. By requiring a minimum dedicated area of land per unit, unit-based density rules automatically price property beyond the means of many low and middle income wage earners.

One reason housing costs so much is that cities have traditionally zoned to require large, single-family lots, and costly land necessitates an expensive house. Banks won't let builders put a \$150,000 house on a \$300,000 lot because the house becomes essentially worthless. At the very least the house must equal the value of the land.

As a result, efficient and cost effective forms of low to medium density housing are effectively “banned” from many low to medium intensity suburbs

#### **Unresponsive to needs of modern society**

New Zealand society has undergone substantial demographic changes in the last 20 years, and will continue to do so. Some of the most significant demographic/social and economic changes include:

- the ageing population. The impact of the ageing population will be particularly evident in approximately 10 years time when the “baby boomers” demographic bulge reaches retirement age
- people are generally having children much later in life, if at all, or having smaller families (one or two children)
- fewer people are getting married. Amongst those who do get married, the divorce rate is high (50% by age 50)
- handicapped persons and the mentally ill are now encouraged to live in the community rather than being “institutionalized”

- the large number of young people leaving tertiary education with substantial student loans.

The implications of these demographic dynamics are such that small households (1-3 persons) are increasingly becoming the norm. Yet the status quo planning controls do not reflect these changes.

Dolores Hayden, Architecture/Planning Professor at Yale University, USA, and critic of the existing zoning systems in the USA, with a statement that could be equally applicable to New Zealand, forecast that:

*Over two or three decades most of the single family housing stock and most of the R-1 [single-family] neighborhoods will change to reflect the basic demographic shifts the U.S. faces. The adaptation of suburban house forms to new uses is as inevitable as was the adaptation of brick row houses and brownstones.*

Vancouver has recently recognised this, and is responding with innovative density strategies. In their eco-density strategy they note:

*Housing choice will be limited as the needs of residents who want to stay in their neighbourhoods, particularly young families and the elderly, cannot, because there are no alternatives to single family homes, such as row houses, infill and duplexes.*

#### **Density control of yesterday – re-evaluated for today and tomorrow?**

As early as 1958 Auckland Metropolitan Planning Organisation and Auckland City Council (in the First Operative “District Planning Scheme”) were regulating density by seeking to control the number of people per area unit of land, following the influence of Sir Patrick Abercrombie’s County of London Plan of 1944 (Britain still regulates density in this manner).

The Council implemented a “Flexible Zoning system”, and had three main residential zones – Residential B (125 persons per hectare), Residential C (250 persons per hectare, Residential D (500 persons per hectare). Persons per hectare

was practically expressed in rule-form by controls limiting development to bedspaces or habitable rooms per unit area of land.

This system of density regulation was maintained well into the 1970s and 1980s, before being discarded in some of the last district schemes developed before the arrival of the Resource Management Act.

Why were these rules discarded? A number of factors contributed to the downfall of this system. However the most influential factor was probably the “sausage flat phenomenon”.

#### **The sausage flat phenomenon**

“Sausage flats” (long, single or double-storeyed multi-unit blocks, usually brick and tile construction) can be witnessed in many of our urban districts. They were a direct product of the bedspace density control, which allowed a row of several small one or two-bedroom units as an alternative to one or two large homes.

Critics of this phenomenon rightfully point out that sausage flats had substandard amenities and have resulted in somewhat of a blight (although some are worse than others) on our suburban landscape.

However in retrospect it would appear that it wasn't the type of density control that was to blame. Rather, it was that this form of density control was not refined or developed enough to ensure adequate residential living environments and amenities. A combined Mt Albert/Auckland regional Authority “Housing Density Study” from 1976 found that “the Auckland lifestyle of a preference for open, outdoor living is reaffirmed, but is not being catered for in most medium density housing”. A survey undertaken in the study of people living in these developments, and next to them, found that it was not so much the density of these developments which caused problems, but their design.

The major problem of this form of regulation was, in hindsight, its lack of sophistication. The bedspace density control was not adequately complemented by performance and design

standards such as minimum outdoor living areas and landscaped area requirements.

#### **The case for bedspace-based density regulation – “Flexi-density”**

Rudlin and Falk (urban designers/economists), in “Building the 21st Century Home – The Sustainable Urban Neighbourhood” state:

*It is important to realise that the number of units to the hectare is less important than the number of people to the hectare. Indeed one of the problems with falling household size is that the population density of many urban areas is falling even though all of the housing remains fully occupied. The two measures generally used to estimate population density are bedspaces and habitable rooms.*

It is the author's opinion that the population or bedspace-based density measure is a superior measure to the unit-based density measure as it is more flexible and responsive to the varied and changing housing needs of society, whilst still maintaining amenity values and overall intensity of development. Zoning controls should be regulations of physical development and its physical consequences – they are not vehicles for discriminating among housing types having similar environmental effects. (I would like to acknowledge at this point that in no way am I advocating extreme juxtapositions of density eg. apartment buildings in low density areas. Rather, I am advocating subtle variations of density and building forms within a suburb).

I consider the benefits of the population-based/bedspace density measure to be:

#### **Flexible and fluid**

A range of housing typologies can be implemented across suburbs, rather than neighbourhoods becoming characterized crudely as “low density” or “high density”. As the Auckland Regional Authority stated in 1967 in its *Regional Master Plan: Housing*:

*The issue is not, in fact, simply between two alternatives, between high density inner areas and low density peripheral areas; neither of*

*these two propositions alone would satisfy the demands of our household structure. Housing of all types is needed in all sectors of the city, because households of all types will be living in all sectors.*

#### **Encourages diversity and choice**

Suburbs can attain greater diversity in resident profile, becoming diverse and interesting, rather than uniform and monotonous. A full range of people have greater choice to live in a traditional suburban setting with its associated amenities. Flexi-density allows for the potential for greater housing choice, helping to facilitate small lot detached housing, semi-detached housing and cluster housing.

#### **Increase safety**

With more diverse communities that provide for a greater range of people living a range of lifestyles, there is likely to be greater day-round neighbourly surveillance.

#### **Encourages affordability**

With smaller dedicated land areas per unit, and smaller floor areas, property would become more affordable. The increased production of units under the rule would also assist affordability.

Overly restrictive land use controls are recognised as a factor in housing unaffordability. Whilst this fact has undoubtedly been exaggerated by extreme neo-liberals, many of whom simplistically suggest that land use planning is solely responsible for our growing housing affordability crisis, it is certainly an important factor. One of the fundamental laws of economics is that if supply is limited in the face of increasing demand, prices will rise.

A study by University of California (Berkeley) economists Katz and Rosen on land use regulation's effect on house prices found that one of the major causes of huge price increases in California between 1970 and 1980 was “a massive increase in the use of land use techniques to slow and stop new housing production”.

Note however that the bedspace density

BELOW LEFT:: Large expensive homes on large lots, Auckland. Dubbed “McMansions” in the USA, such housing development is encouraged by current density controls.

BELOW CENTRE:: “Sausage flat”, Auckland.

BELOW RIGHT:: Duplex in Wellington – two small attached homes: equivalent in bulk and scale and overall environmental impact to a mid-to-large sized single detached house.



measure does not do away with regulation in favour of a “pure free market approach”. Rather it is a different form of regulation with less explicit supply-side effects on the urban land resource.

**Reduces Ecological Footprint**

Flexi-density would reduce the drive for the construction of huge homes, creating greater incentive to build smaller homes which have less environmental impact.

As Shay Solomon states in *Little House on a Small Planet*:

*Throughout North America building has been influenced by “green thinking”, and houses have improved, but despite major advances in insulation and design, the typical house built today requires as much energy to heat and cool as one built in 1960. Why? Because it’s bigger. House size and location are the greatest determinants of a home’s effect on the environment.*

Adequately protects the environment and amenity values

By tying development to bedspaces and associated population density, key environmental impacts such as traffic movements, loading on infrastructure, noise and so on are adequately protected. Amenity values are sufficiently protected by bulk and location controls.

With more stringent performance standards (such as minimum outdoor living yards, landscaped areas and design controls) applied to the person/bedspace density control, the problematic issues encountered in the 1960s

and 1970s, as expressed in the sausage flat phenomenon, can be avoided.

**Proposal for Aotearoa, borrowing from overseas**

A hybrid approach is recommended which retains the unit-based density measure, being complemented by bedspace-based density options. For example, the Residential 6a zone would still have as its primary control the 1/375 density control.

However an additional layer would allow, subject to resource consent approval (recommended status: permitted activity for up to two units / controlled or restricted discretionary activity for more than two units) more than one unit to be established on a site where the density did not exceed, for example, one bedspace per 100m<sup>2</sup>. Naturally, the level of bedspace intensity could vary from zone to zone just as unit-based density measures vary. Additional layers of performance standards would apply, including the usual development controls and parking standards. Private outdoor open space requirements would be prescribed on a “per-bedspace” basis – eg 25m<sup>2</sup> per bedspace.

**What would this mean in practice?**

For a 600m<sup>2</sup> site subject to a density control of 1 bedspace per 100m<sup>2</sup> (total allowable bedspaces = six) the following development scenarios could be possible:

- Build one detached large home;

- Build two semi-detached, “duplex” units, provided the two units do not involve more than six bedspaces ie. each unit could have one double bedroom and one single bedroom;
- Build three attached units, each with one single bedroom;
- Build one house and one small “granny flat”.

A further possibility is that use of the flexi-density option could be subject to a requirement that the design be undertaken by a registered architect. Whilst no guarantee of design excellence, this requirement would recognize the higher degree of design skill required for smaller sites.

An even more stringent approach could be to require developments utilising “flexi-density” to choose from a range of pre-approved design templates, selected from a public design competition. Such an approach has been adopted in Portland, USA, for small lot development. While reducing design flexibility and freedom, it does provide certainty that new units will be erected to high design standards.

Conversely there is the possibility that by limiting, and overtly directing, potential developers to only several designs a monotony will result. In terms of neighborhood fit and site compatibility the “permit-ready” designs would also seem by default to preclude modifications to adapt to particular site constraints and local characteristics – including views and privacy relative to adjacent properties, as well as sustainability issues such as solar orientation and existing tree locations.

Meanwhile, Seattle is also exploring options for

compact living in traditional suburban areas, also grappling with the way in which positive infill can be encouraged. At the forefront of this movement is architect Dean Sarti, who stated in a recent *Seattle Times* article:

“It would seem to me more interesting and surely more incremental if the city would promote subdividing these standard lots into two small lots, to accommodate two little houses. I always thought of Seattle as a city of little houses. If builders and homeowners were encouraged to build these smaller houses, the city could continue to keep that finer grain. Unfortunately, that's not the way these L zones are being developed.”

In Vancouver, Urban designer Patricia St. Michel says that homeowners in outlying single-family areas are now willing to “engage the topic” of higher density because they realize that their own children might be priced out of Vancouver. Working with community groups, the city came up with a series of plans for how two to four houses could be fit onto formerly single-family lots, “a new menu of housing variety” with the potential for creating 20,000 additional units.

Vancouver is also experimenting with many options to “eco-densify”, including converting single-family houses to three-dwelling units without changing the facade of the home – dubbed “invisible density” (such a practice was once common in Auckland where bungalows and villas were split into two or three flats. Since the introduction of unit-based density controls such a practice is prohibitive).

Nearby in the city of Victoria, British Columbia,

small lot housing zoning allows for detached housing on sites as small as 260m<sup>2</sup> to be developed. These provisions are a direct response to low housing affordability and lack of housing choice through the various life cycles.

### Conclusion

While planning seems to pride itself on its objectives of seeking to create diverse, sustainable and inclusive communities, it is in fact evident that many planning controls, and in particular the status quo of density control, actually defeats the rhetoric of the profession, however unintentional this may be. It is the opinion of the author that the current planning system actually fosters the evolution of mono-cultural, segregated and static suburbs that are unresponsive to the needs of modern society.

Whilst many Councils seek to create diversity in living choice at the macro-urban level (by, for example, identifying specific strategic growth areas for higher density development), such policies actually reinforce monoculturalism at the micro-urban or suburban level. As a result choice within suburbs and communities is constrained.

Infill housing has become somewhat of a dirty word in recent years, both in planning circles and within the general public. Yet higher density development in strategically identified growth management areas has also proven to be controversial and unpopular. Although a relatively significant number of New Zealanders live in multi-family housing, anecdotally single family, detached housing is the overwhelming preference

of New Zealanders. It is likely that this preference would be similar to Americans, where surveys indicate that upwards of 85 per cent of Americans would prefer to live in a detached house.

Growth has to be accommodated somewhere, and infill housing can be successful if regulated in an appropriate manner with controls sufficiently implemented to protect amenity. References in this article to recent initiatives introduced in Vancouver, Seattle and Portland indicate that, internationally, small lot development / infill is very much back on the agenda as part of a suite of development scenarios, subject of course to more stringent standards. Small lot development is viewed as a more affordable and environmentally friendly anecdote to the “McMansion” phenomenon of ever growing houses on large lots.

Alternative regulatory methods of controlling density are available to planners, which, it is concluded, offer adequate protection of character and amenity values, whilst allowing a more flexible and fine grained approach to city development that addresses modern demographics and the pressing issue of housing affordability, whilst reducing the ecological footprint of housing development.

Of course, density is very much a political football. The controversial nature of density may mean that implementing an alternative density regulatory framework could be a major challenge. However, in the author's opinion, alternatives should be considered as the next generation of District Plans are contemplated.

### REFERENCES:

- Auckland City Council (1956) *City of Auckland District Scheme: Code of Ordinances and Scheme Statement*. Auckland: Auckland City Council.
- Auckland Metropolitan Planning Organisation (1951): *Outline Development Plan for Auckland*, Auckland: Auckland Metropolitan Planning Organisation.
- Auckland Regional Authority (1967), *Regional Master Plan: Housing*, Auckland: Auckland Regional Authority.
- Auckland Regional Authority and Mt Albert Borough Council (1976) *Housing Density Study*, Auckland: Auckland Regional Authority.
- Auckland Regional Authority (1977) *Isthmus Sub Regional Study*. Auckland: Auckland Regional Authority.
- City Of Vancouver (2006) *Eco-density Initiative Brochure*. Department of Statistics, Census.
- Glaesar, E. and Gyourko, J. (2002) *Zoning's Steep Price in Regulation*, Volume 25, No. 3, Fall.
- Hayden, D. (1984) *Redesigning the American Dream: The future of Housing, Work and family Life*. New York: W.W. Norton.
- Katz, L. and Rosen, K. (1980) *The Effects of Land-use controls on Housing Prices*. Berkeley, CA: Institute of Business and Economic Research.
- Liebmann, G.W. (1996) *Modernization of Zoning – A Means to Reform*, Cato Institute .
- Lynch, K (second edition, fifth printing – 1975) *Site Planning*. Cambridge, Massachusetts: The M.I.T. Press.
- McShane, O. (1998) *Land Use Control under the Resource Management Act – A “think Piece”*. Wellington: Ministry for the Environment.
- Mt Eden Borough Council (1973) *Mt Eden District Scheme*. Auckland: Mt Eden Borough Council.
- Mt Eden Borough Council (1981) *Borough of Mt Eden District Scheme – third Review 1981*. Auckland: Mt Eden Borough Council.
- Rapoport, A. (1975) Towards a Redefinition of Density, in *Environment and Behaviour* 7(2), pp. 7-32.
- Rudlin, D. and Falk, N. (1999) *Building the 21st Century Home- The Sustainable Urban Neighbourhood*. Architectural Press.
- Solomon, S (2006) *Little house on a Small Planet*. Lyons Press.
- Weisman, L.K. (1992) *Discrimination by design; a feminist critique of the man-made environment*. Chicago: University of Illinois Press.