Understanding developers’ perspectives in sustainable urban design

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Abstract

Auckland, the largest metropolitan area in New Zealand, is rapidly growing in population. With this growth comes additional pressure on natural resources and physical infrastructure. The Auckland Region has adopted policies of residential intensification to accommodate growth which will also assist in achieving sustainability goals such as reducing environmental impacts through the containment of growth. Medium density housing is one of the tools being used to implement these policies. In addition, some Auckland councils, and other city councils in New Zealand, have recognized the opportunities for environmental protection and infrastructural cost-savings by producing a variety of low-impact design strategies and guidelines. Developers are a key stakeholder group in the process of implementing low-impact design. This paper presents the findings from a pilot study on the barriers to the incorporation of sustainable urban design as identified by developers in medium density housing developments in Auckland and Christchurch. Understanding the barriers is an important step in helping to determine appropriate solutions towards implementing more sustainable practices in the development of the built environment.

Keywords: Sustainable urban design, developers, barriers, low-impact urban design and development, low impact urban design and development.

1 Introduction

Auckland is New Zealand’s largest urban conurbation, consisting of four cities, Auckland, Waitakere, North Shore and Manukau. The region contains 1.2 million people, representing 31% of the country’s population. Currently, Auckland grows by 49 people and 21 houses per day [1]. The accelerating rate
of urbanization in Auckland is increasing the rate of urban ecosystem deterioration.

Rapid urban growth puts pressure on the capacities of natural resources and physical infrastructure [2]. Both greenfields development and urban retrofitting lead to increasing demands on conventional infrastructure (e.g. stormwater piping). The costs of maintaining existing and new stormwater and waste systems using conventional design and engineering approaches are escalating.

Conventional approaches to residential land development in New Zealand substantially contribute to the problems [3,4]. In particular: (i) New subdivisions alter the land surface, significantly increasing impervious surfaces and compacting hard ground to the extent that there is a near-total loss of permeability after development [4–6]; (ii) Topsoil is commonly compacted or destroyed, washed away in storms, discarded into landfills, or sold, which increases the need for irrigation of gardens and green spaces and the cost of planting and restoration strategies [6]; (iii) During infill housing, retrofitting and new development, impervious surfaces proliferate across whole districts, resulting in increased stormwater runoff and catchment-scale impacts [7–10].

Low impact urban design and development (LIUDD) has been identified as an alternative approach which could address some of the issues associated with conventional development. LIUDD is defined here as a cost-effective design and development approach that utilizes natural systems and enhances sustainable design.

Faced with a rapidly growing population and pressing environmental problems, Auckland politicians established the Regional Growth Forum as a voluntary initiative and produced the Auckland Regional Growth Strategy, setting policies in place for the next 50 years (Auckland Regional Growth Forum, 1999). A critical element of this strategy is residential intensification. It is envisaged that by 2050 25 to 30 percent of people will live in multi-unit housing in the region, much of which will occur in the existing metropolitan area. The Auckland Regional Growth Strategy [11] anticipates that 70% of all new growth over the next 50 years will take place within metropolitan Auckland, making LIUDD a critical component of achieving urban sustainability.

In the paper we identify the barriers to the implementation of sustainable urban design features in new housing developments from the perspective of developers. We use this information to identify four areas for further attention to assist the uptake of low impact design principles in development practices.

2 Barriers to the incorporation of sustainable urban design

2.1 Method

In a pilot survey, we interviewed ten developers who had constructed medium density housing developments within the Auckland and Christchurch areas within the last four years [12]. MDH is defined here as including terraced housing, cluster housing and low rise apartments. In selecting developers to interview, we selected housing developments that had been built recently in the
four city councils of Auckland (Auckland, Manukau, North Shore and Waitakere City Councils) as well as Christchurch City Council. We asked council staff from each city council (listed above) to suggest either developers or housing developments that incorporated aspects of sustainable urban design area. Though the majority of developers interviewed were commercial property developers who had completed a number of housing projects, three developers belonged to non-profit organisations concerned with providing housing that met specific community needs.

Our research approach was qualitative in nature and we developed a list of questions to ask developers at the meetings and recorded the interviews for transcribing and analysis later. We asked a range of general questions which aimed to determine the knowledge of developers about terms such as sustainability and sustainable design including what sustainability meant to them, whether they have incorporated sustainable urban design features in any of their developments and, if so, what the incentives were, what they considered the barriers to be and what would help them to incorporate more of these features in their developments.

2.2 Findings

Seven interconnected themes emerged from the analysis of our interviews:

2.2.1 Developer definitions of sustainability

We made a deliberate decision not to define ‘sustainability’ for the participants, but to find out what such terms meant to them. It became clear that the research participants understood both ‘sustainability’ and ‘sustainable urban design’ in a number of widely ranging ways. The extent of knowledge ranged from what could be characterized as very minimal to comprehensive. Definitions given by developers included elements of: durability, infrastructure and zoning; long term market satisfaction; longevity and livability; and environmental and social considerations. For example some developers viewed minimum lot sizes, location and the desire to improve product and reputation as examples of sustainable urban design. Others suggested that internal features such as liveability and how well a housing development functions in its neighbourhood were examples of sustainable urban design. One important point to emerge from the interviews was that a number of developers were driven by personal motivations and satisfactions to incorporate sustainable design features in their developments.

2.2.2 Time factors

Time is an important factor in a number of ways. Larger developments take longer to develop, and expose the developer to greater financial risk in terms of changing markets. Developers have a short-term investment in terms of selling the individual units upon completion of the project. In this situation, the developer does not benefit readily from the incorporation of sustainable urban design features as much as future owners and residents. Developers were frequently concerned about the length of time it takes for city and district
councils (who are responsible for land use planning, noise, sub-division controls, etc) to process applications for housing developments. This time delay is often longer if the application proposes to use features which are outside the norm, such as low impact urban design. Developers consider that it is easier to do what councils expect as it takes less time to get approval.

2.2.3 Cost drivers
Developers perceive cost as being a barrier to the incorporation of sustainable features into developments. They believe it always costs more, whether in terms of planning, materials or time. Some council staff also supported this view. Some developers stated that it was more affordable to undertake a development that did not incorporate specific sustainable design features as such developments were more likely to meet council requirements, as noted in the following comments from three developers:

... it is easier for us to give in and do something which we know is going to go through [council] – even though it might fly in the face of sustainable design...we know what is right – but you also know what you can get away with – if you don’t do what you know you can get away with, then you are into notified applications.

...their rulebook was ridiculous – if we had wanted to get it through quickly, we would have done everything that they said in the rulebook and then we would have been compromised in our design – but we would have satisfied their thing [and] we wouldn’t have had to spend so much time.

...I think we could have achieved a better urban design outcome or a liveability outcome ...[but] because of the council rules or policy we have not been able to do that.

2.2.4 Size matters
An issue raised by a small number of participants was that of size. They thought that the smaller the lot or development, the more difficult it is to incorporate sustainable urban features. Conversely, larger greenfield developments were more likely to be ‘master-planned’ and therefore incorporate sustainable urban design features, such as communal amenities. The other issue identified was that smaller lots are more likely to be developed by individual builders. In these situations issues of sustainable urban design are not recognised to the extent they are by larger, more experienced developers, who have often learned from their experiences of constructing developments.

sustainable design considerations [are] applicable on large tracks of land – very difficult to do on one-off blocks – if you are doing a twenty-lot development, sustainable design does not come into it – it is one of my bugbears about the whole planning process – small chunks of land are just cut up into sections, maximised, and a sign put up in front – that is not sustainable design...... I don’t need to be
encouraged to do it [sustainable design] because I have a large block and I can’t see how else you can do it – it is ugly and self-serving if you just chop it up and haven’t got that plan, and most parties now...when they are doing master plans are looking at a much more sustainable design – the master plan is not a new word anymore – it is accepted.

...those sorts of developers are quite inexperienced and so they are just going for what they can...sell – the cheapest thing that they can build and what they can sell it for and they think that is going to...make them the most profit – which is not necessarily so......the biggest constraint here is that they are small developers and they can’t afford to...amalgamate sites and they can’t afford to do the development themselves – a huge constraint really

2.2.5 Market forces versus council concerns
On the one hand, developers are required to comply with council requirements relating to matters such as transport and stormwater, and on the other, appeal to the desires of homeowners for requirements such as privacy, parking and comfort. Developers argue that the market drives what they deliver. If the consumer is not educated about the options and the benefits of doing things differently then it is less likely that developers will make changes to the way they operate. Though some sustainable urban design considerations were regarded as ‘plain common sense’ by both developers and home-buyers (such as durability of materials, location, north-facing, etc.), it was argued that sustainability issues were not a major draw-card or consideration for home-buyers and that buyers or the market lacked discernment in terms of sustainable urban design.

I wanted a building that would be high quality and low maintenance...the cost is enormous – but valuers and purchasers don’t value my building any higher than a similar building that is high maintenance...they don’t distinguish – they don’t have that ability......I believe that people generally like good design, but 90% of them don’t understand it and don’t always know why they like something – they also have no perception, off-plan, what good or bad design is......my comment on environmental [sustainability] is that New Zealand doesn’t really focus on environmental issues – particularly medium density – and the reason for that is that there are no incentives offered to do it......I don’t think I have ever had a question from any investor or purchaser about environmental issues...

2.2.6 Mindsets and attitudes
One of the biggest barriers seems to be related to mindsets and attitudes. Developers regard councils as overly bureaucratic, technocratic and text book-orientated, while developers see themselves as stereotyped by others as being
overly profit-driven and lacking in a public/community focus. Developers also stated that councils offered no incentives to incorporate sustainable urban design features into their developments. Most developers genuinely believe their housing development plan is of greater value and benefit than the suggestions and amendments put forward by council staff. In some cases developers and private urban designers feel their creative designs are stamped out by council rulebooks.

A lot of council officers believe that they should design our developments for us – I guess that stems out of a lack of trust.....I think a number of people who are doing the resource and building consent process applications are stuck in the mud – they are stuck in a book that they have learnt somewhere – they are not actually applying that reality and that becomes oppressive in what we are trying to do...

Disincentives – there aren’t any council incentives at all – we find it a major struggle working with councils – fundamentally the council officers just don’t understand what we are trying to achieve and so they have a book of rules which they autocratically apply – they don’t understand the whole picture – we haven’t got any incentives at all from the council.....I am not necessarily talking about the financial incentives – but every step of the way we get knocked back from council...the RMA actually stops us doing what we are trying to do...because it doesn’t have the right legislation and clauses to cover a high density development and so they have to rewrite the book every time we put an application in – it hampers us all the way

2.2.7 Other observations
Many developers interviewed stated their wish to have their developments regarded as having a long-term positive and enhancing effect on the community in which they were based. Such developers regarded good urban design as a personal philosophy or vision rather than an external driver.

As a developer, what would influence you to incorporate more sustainable design features? I think at this point in time it is only our conscience – I think that at this stage if a developer wants to go ahead and put up the most cheapest, most rotten block of flats that he can – then he can do it.....there are plenty of developers out there like us who just aren’t prepared to build a rubbish product – I honestly believe that there are lots of reputable developers out there who you never see in the papers...they build a good product and they move on to the next one – they are proud of what they leave behind....that is why our smallest unit is 65 square metres and yet in the city you can get a one bedroom unit for 27 square metres...there is a big cost to us in doing that.
Despite consistent criticisms of councils, it was noted that some councils are attempting to ‘lead by example’ and also looking at public-private partnerships to encourage a focus on sustainable urban design.

... the council, in its role, tends to incorporate or be a driver in considering environmental issues – trying to show examples where alternatives can be used – even if there is a slight premium involved in the construction cost – it is more of an example...we are also using those same strategies when we are building libraries and community centres...we are changing our philosophy - passive heating – not using air conditioning – we are using a lot of other features within the building- solar heating......what we are [also] trying to do is encourage partnerships...we might provide the land and try and encourage developers to take some partnership role in meeting the outcomes...

3 Discussion

Through this pilot study we have identified four areas for further attention. These focus on improving perceptions and understandings by the raft of groups involved in the development process and scrutiny of the regulatory regime in place that manages the development process.

- **Shared Understanding.** There needs to be a shared understanding and set of outcomes for sustainable urban design. This means that there needs to be a commonly understood set of terms such as low impact design and sustainable urban design so that stakeholders have similar outcomes in mind. Such a convergence of understanding can then be incorporated in council planning documents which lay out key development principles for development to take place at local levels.

- **Relationship Building.** There needs to be an improvement in the perceptions and understandings between all those groups involved in land development, that is, between regulators, developers, and consumers. An improved understanding of respective positions would assist in bridging conflicting perspectives, particularly on the part of council staff and developers. For example, a heightened appreciation of how the private property market works in relation to funding development projects would be beneficial for councils and planners in understanding the impact of regulatory approaches. Similarly, an improved understanding of what councils are trying to achieve in relation to regulating and guiding developments would be helpful for developers.

- **Education and Knowledge Delivery.** This is core to achieving the outcomes government at all levels is seeking in terms of sustainable development. Developers and others need to understand the importance and ways of achieving sustainable urban design. Education plays a vital role in changing perceptions and there is also a need to educate...
consumers to get their buy-in into alternative ways of doing things. Major attention needs to be given to educating consumers who, in effect, define the “market”. Developers are very sensitive to changing market preferences, hence their focus on short term outcomes rather than longer term horizons. There also need to be a process of getting buy-in from all involved into the benefits so that choosing alternatives to conventional development become the rule rather than exception.

- **Review of Regulatory Regimes.** Any long term and comprehensive transformation to sustainable urban design is unlikely to occur without addressing the mix of regulatory and voluntary approaches used by councils to influence developments. It is important to identify specifically where council plans and policies are preventing creative approaches to developments that could result in better outcomes than are currently being achieved. Conversely, where innovative approaches are yielding positive results, these need to be singled out and investigated further.

## 4 Summary

The focus of our research for this paper was to identify and understand the perspectives of developers as one major stakeholder group whose voice is often not well documented. We intend to further this preliminary work and extend it to other stakeholders such as housing consumers and councils. The findings from this pilot study are now feeding into a major research programme, led by Landcare Research, which has recently been funded by the New Zealand Foundation for Research, Science and Technology. It is a six-year programme (2003-2009) designed to improve the adoption of low impact urban design and development principles in the urban environment. The programme is based on a four-pronged strategy through detailed exploration of four case study sites in Christchurch, Taupo and Auckland. First, the barriers to LIUDD are being identified and explored through a programme of consultation with key stakeholders in the case study areas in order to achieve “buy-in”. Second, the technical efficiency of low impact design and development approaches at site, neighbourhood and catchment levels is being undertaken. Third, economic analyses that translate biophysical data into economic outcomes at different scales will yield important information on the costs of LIUDD in comparison with conventional approaches and suggest incentives that councils could adopt to encourage more sustainable approaches to development by developers. Finally, low impact design and development techniques need to be incorporated into a raft of council plans, strategies, asset management plans and codes of practices. In addition, on site development practices by developers and residents are important in influencing change. The final part of the strategy will oversee the development of a series of guidelines for plans and practices that can be adopted by stakeholder groups to encourage the implementation of LIUDD principles.

Finally, LIUDD is a critical means for achieving more sustainable growth, particularly given the population increase predicted for the Auckland region over the next 50 years. Auckland is now identified as the priority focus in the
Government’s Sustainable Development for New Zealand’s Programme for Action in Auckland [13]. A key element of meeting the outcomes sought by Government is the mainstreaming and implementation of approaches such as LIUDD. Implementation is, of course, dependent on the willingness of stakeholder groups, such as developers, to embrace principles of LIUDD.

References