

Common Ground:

Multivalent Communal Space in Medium Density Housing

Executive Summary

Of a thesis
submitted to the Victoria University of Wellington
in fulfilment of the requirements for the degree of
Master of Architecture

Research funding provided by
New Zealand Centre for Sustainable Cities

2011

Scope and Limitations

This research is limited to the study of communal space in the context of medium density housing in New Zealand. The focus is on principles of multivalence for communal space. This study does not address legal or technical issues relating to site planning and ownership, construction or landscaping details.

Executive Summary

This thesis addresses the loss of urban open space resulting from increasing demand for residential floor space within a limited supply of urban land. Demand for floor space is being driven by a number of factors – falling household size (meaning a need for more one- and two-person dwellings and a demand for more floor space per person); a growth in multi-generational households (meaning a need for homes with more than three bedrooms); the trend towards bigger homes; and steady population growth in New Zealand’s main urban centres, especially Auckland.

This demand for more residential floor space within limited areas of urban land drives intensive development. In Auckland, intensive housing in the form of terrace houses and apartment buildings makes up 35% of the housing market (2007) and is predicted to become the housing market rather than just a segment within it. A consequence of intensification is a steady loss of urban open space. This thesis addresses the problem of how to deliver more amenity within less open space.

The thesis argues that multivalent communal space will make more efficient use of urban land and improve the quality of living environments for residents compared with current observations of typical medium density housing in New Zealand. The aim of the research is to find principles for making communal space multivalent.

The research design arises from the view that both people and the environment matter – the one shapes the other. The research attempts a participatory approach whereby practitioners (professional designers, planners, developers, builders etc.) and academic researchers assist communities to develop their own ‘best-fit’ solutions to problems of providing quality environments for caring communities. The research therefore investigates the viewpoints of practitioners, academics and the community to develop principles of multivalent communal space in medium density housing.



Fig. 1.16 Open-air library, Magdeburg, Germany, opened 2009. (Source: CCCB 56, 57)

‘Multivalence’ describes places that are rich in a diversity of meanings, uses and values. An example of a multivalent place is the open air library at Magdeburg, Germany (Fig. 1.16). This 24-hour free library includes a café (upper floor), green space and covered stage. It is used by local residents for public

meetings, by young people for hanging out, for youth band concerts, school plays, book and poetry reading festivals – all managed by residents. The neighbourhood is enriched with the many shared values integrated on this ‘common ground’, showing the potential of multivalence for communal space in medium density housing.

Multivalence is best achieved through a participatory ‘placemaking’ process:

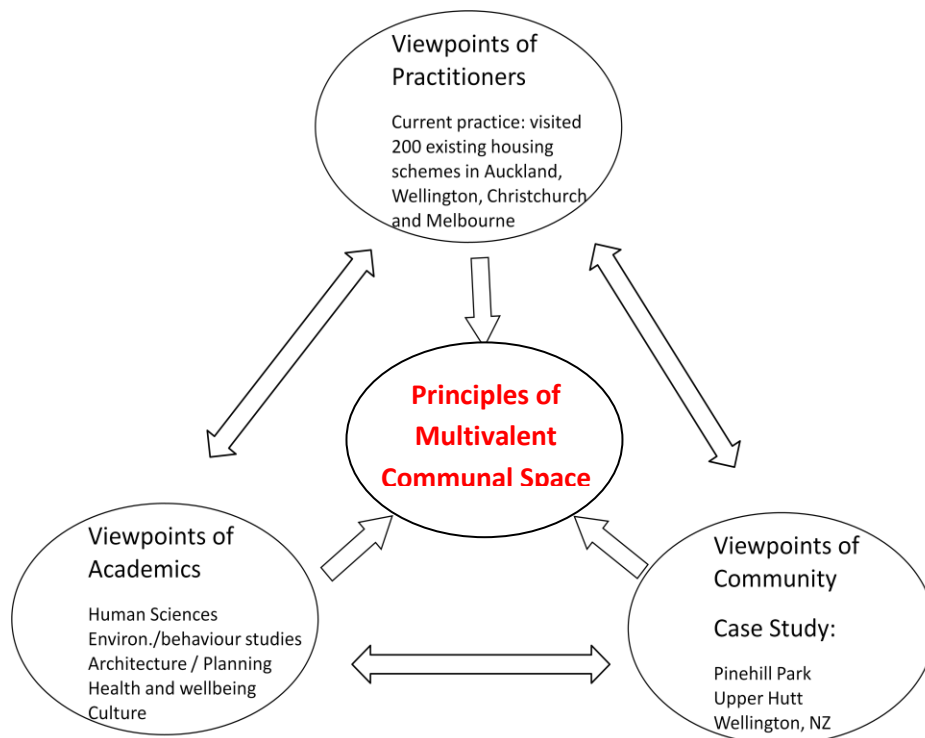


Fig. 2.2 Participatory placemaking, including practitioners, academics and community (S.J. Pattinson)

Attempting a participatory approach, the research investigates four questions:

Question 1: “What is the nature of communal space in existing medium density housing developments in New Zealand?”

This question explores the views of practitioners and current practice regarding communal space in medium density housing. The writer visited 200 medium density developments in Auckland, Wellington, Christchurch and Melbourne to observe first-hand the nature and quality of communal spaces. The writer also talked with a number of architects, planners, urban designers, developers, and builders to find out their viewpoints on communal space in medium density housing.

The finding is that little consideration is given to communal spaces, and that these spaces tend to be *univalent*, i.e. having only one purpose, meaning or value – usually determined by the designer.



Fig. 3.28 150 Symonds Street, Auckland (Photo: S.J.Pattinson)

In lower status developments, communal space tends to be car-dominated, i.e. dedicated to car parking and manoeuvring (Fig. 3.28).



Fig. 3.36 The Point – Viaduct Harbour, Auckland. (promotional website)

In higher status developments, communal space tends to be landscape-dominated, for passive outlook (Fig. 3.36).

A common viewpoint is that communal space in medium density housing is primarily for children, however few developments are found to cater for children’s needs. Furthermore, the thesis challenges this conventional viewpoint, asserting that by making communal space multivalent, it has potential to be rich in meaning for all age groups, not just for children. This leads to the second research question:

Question 2: “What is the potential multivalence of communal space in medium density housing?”

This question explores the viewpoints of academic researchers and finds there is very little literature on multivalent communal space in medium density housing. The search was therefore broadened across several disciplines to find possible uses, meanings and values communal space could have in housing projects. From this literature search it is suggested that, potentially, communal space can:

- enhance neighbourhood identity
- foster neighbourhood attachment
- invite walking, recreation and exercise
- foster social interaction, inclusion and heterogeneity
- enhance mental health
- foster inter-generational interaction
- provide places for children’s play
- provide places for teenagers to hang out
- enhance safety and crime prevention
- provide opportunities for community participation
- enhance the environment and improve property values
- foster urbanity and a sense of community

The above suggested meanings for communal space are not new, but a new way of looking at communal space that allows these uses and meanings to mix and overlap, acknowledging the relatedness of things, suggests some principles for multivalence:

Question 3: “What are the principles for achieving multivalent communal space in medium density housing?”

Five principles are proposed for multivalent communal space, viz.: #1 – the context of sustainable neighbourhoods; #2 - houses clustered to create ... #3 - green open spaces, to meet ... #4 the needs of children, and ... #5 foster a ‘sense of community’:

The potential uses and meanings for communal space can be grouped under these five principles which relate to five criteria for a more sustainable city form (Frey 339-340). This locates the proposed principles for multivalent communal space in the context of sustainable cities:

Principle #1. Sustainable neighbourhoods

- Urbanity thresholds / walkable urbanism

Principle #2. Cluster housing to create communal open space

- Enhance the environment and property values

Principle #3. Green open space

- Walking, recreation and exercise
- Mental health
- Inter-generational interaction

Principle #4. Needs of children

- Places for children
- Places for teenagers

Principle #5. Sense of community

- Neighbourhood identity
- Neighbourhood attachment
- Social interaction, inclusion and heterogeneity
- Safety and Crime Prevention
- Community participation

Frey suggests there is considerable consensus among academics on criteria for a more sustainable city form. The following tables (Tables 5.1a, b) relate these five proposed principles for multivalent communal space to sustainable city form:

<i>Maslow's hierarchy of human needs</i>	<i>What a 'good' city should provide</i>	<i>Commonly agreed sustainability criteria for the city and the city region</i>
1. Provision of all physical needs	<ul style="list-style-type: none"> ▪ a place to live and work ▪ a reasonable income ▪ education and training ▪ transport (mobility) and communication ▪ access to services and facilities <div data-bbox="444 814 730 932" style="border: 1px solid black; padding: 5px; margin: 10px 0;">#1 - Sustainable Neighbourhood</div> <div data-bbox="428 1703 721 1816" style="border: 1px solid black; padding: 5px; margin: 10px 0;">#3 - Green Open Space</div>	<p>Physical properties of the city / city region:</p> <ul style="list-style-type: none"> ▪ <i>some form of containment</i> of development to stem or even reverse sprawl and preserve the countryside; this can be aided through the reuse or underused and disused derelict and contaminated land to make it productive again, help make the city more compact and, by doing so to a tolerable degree, avoid unnecessary development of greenfield sites ▪ <i>a reasonably high population density</i> to achieve viable local services and facilities, i.e. a high level of activities and interactions and thus vibrant settlement places, and viable public transport ▪ <i>a mixed use environment</i>, specifically a higher concentration around public transport nodes in walking and cycling distance from peoples front doors, in order to increase access to services and facilities and thus generate a vibrant environment, maybe even a sense of community, and to reduce to some degree the need to travel. ▪ <i>adaptability to changing socio-economic conditions</i> so that the city can change, expand and contract without major upheaval. <p>Provisions of the city /city region:</p> <ul style="list-style-type: none"> ▪ <i>public transport</i> in order to increase access to services and facilities, help reduce car dependency and thus congestion and pollution, achieve a reduction of energy consumption and help maintain a high level of energy-efficient and environment-friendly mobility inside the city or city region and between cities. ▪ <i>reduced traffic volumes and dispersed vehicular transport</i>, as a result of the availability of public transport and the design of road profiles, to avoid congestion of roads and urban areas ▪ <i>a hierarchy of services and facilities</i> of different capacity and scale, from local provision in close proximity to one's front door to city centre provisions; this, together with a high degree of mobility, will increase choice. ▪ <i>Access to green open spaces</i>, the city's green lungs, for recreation and sports, nature reserves, city farming, forestry, etc.

Table 5.1a Criteria for more sustainable city form – Frey, in Urban Design Reader 2007 (339-340)

<i>Maslow's hierarchy of human needs</i>	<i>What a 'good' city should provide</i>	<i>Commonly agreed sustainability criteria for the city and the city region</i>
2. Safety, security and protection	<ul style="list-style-type: none"> ▪ a visually and functionally ordered and controlled environment ▪ a place free of pollution and noise ▪ a place free of accidents and crime 	Environmental and ecological conditions <ul style="list-style-type: none"> ▪ <i>an environment free of pollution, noise, congestion, accidents and crime</i> ▪ <i>personal private outdoor space</i> for each individual dwelling in form of gardens, roof gardens, terraces, loggias, etc. (without a return to low-density suburbs) ▪ <i>a symbiotic relationship of the city with the country</i> through the inclusion of open space linking directly with nature; the spaces to be used for forestation, farming, large-scale industries, sports and recreation, for the production of food and timber (for the construction industry, paper production and as renewable fuel) to make the city self-sufficient to as high a degree as possible
	#4 - Needs of Children	
3. A conducive social environment	<ul style="list-style-type: none"> ▪ a place where people have their roots and children their friends ▪ a sense of community and belonging to a place or territory ▪ a place that provides a sense of confidence and strength ▪ a place that gives a status and dignity 	Social-economic conditions <ul style="list-style-type: none"> ▪ <i>social mix</i> to reduce or eliminate social and locational stratification. achievable through higher population densities and a wide range of dwelling and tenure types ▪ <i>a degree of local autonomy</i>, the ability of individuals and the communities to shape their own environment according to their needs and aspirations; this would also support if not generate a sense of place and community, a sense of belonging
	#5 - Sense of Community	
5. A change to be creative	<ul style="list-style-type: none"> ▪ opportunity for individuals to shape their personal space ▪ opportunities for communities to shape their own districts and neighbourhoods 	<ul style="list-style-type: none"> ▪ <i>a degree of self-sufficiency</i>, with different degrees of intensity, in terms of employment, energy (CHP), water, goods; the city not only as a consumer but also as producer of goods
		#2 - Cluster Housing
6. An aesthetically pleasing environment	<ul style="list-style-type: none"> ▪ a place that is well designed (aesthetically pleasing) ▪ a place that is physically imageable ▪ a city that is a place of culture and a work of art 	Visual-form quality <ul style="list-style-type: none"> ▪ <i>imageability</i> of the city as entity and of the parts of the city, the neighbourhoods, districts and towns ▪ <i>provision of a sense of centrality and place</i>

Table 5.1b Criteria for more sustainable city form. Frey, in Urban Design Reader 2007 (339-340) Five principles for multivalent communal space correlate with aspects of Frey's agreed criteria for a more sustainable urban form (highlighted by writer).

The following diagram (Fig. 7.3) shows the key aspects of each of the five proposed principles of multivalent communal space, under the theme of sustainable city form:

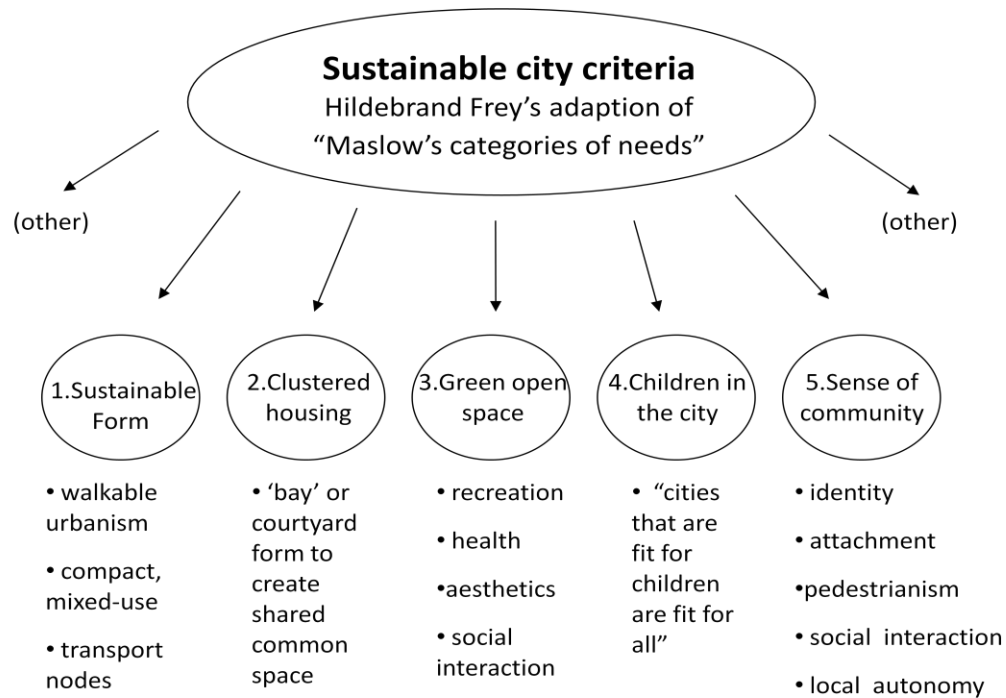


Fig. 7.3 Five principles of multivalent communal space in medium density housing in the context of sustainable city form. (S.J. Pattinson, adapted from Frey 339-340)

Briefly, the five proposed principles for multivalent communal space are:

1. Sustainability – It is noted in the literature (e.g. Lozano 165-166; Leinberger 114; Calthorpe 91) that compact urban form of a certain density and diversity of land use supporting transit-oriented development (TOD) is required for a walkable urban environment (in contrast to a car-dependent suburban environment). It was observed during field visits to medium density developments that car-dominated environments generally lack human presence and pedestrian activity;

2. Clustered housing – Martin and March (20, 21, 45) theorised that medium-rise perimeter blocks, with central open space, make the most efficient use of urban land. Projects utilising this form of development seem to confirm this hypothesis (Scoffham and Vale 67-69). Cooper Marcus and Sarkissian (7-9, 189) advocate clustered housing (low-rise perimeter blocks limited to four storeys) as ideal for medium density housing because of the benefits to residents of the central communal space. Clusters can be arranged in varieties of ways, e.g. around curved bay forms or rectangular courtyards, to facilitate and express a sense of community;

3. Green open space – The central open spaces created by the clustering of houses provide a natural focus for a potentially wide variety of uses, including courtyards, pocket parks and accessible greens (Alexander et al. 304). Kazmierczak and James (354) identify many benefits of shared green spaces, including recreation, physical health and mental well-being, aesthetic enjoyment, sharing in voluntary work, and social interaction;

4. The needs of children in the city – a wide body of literature addresses the needs of children in city environments. As noted by Cooper Marcus and Sarkissian, communal spaces within housing clusters can be particularly beneficial to children. These authors, following the approach of Alexander et al. (1977), provide many design patterns and guidelines for meeting the needs of all age groups of children in medium density environments;

5. Sense of community – Joongsub Kim (2001) has shown that the design of the physical features of a neighbourhood can facilitate a sense of local community. Kim identifies four necessary factors for fostering 'sense of community' - neighbourhood identity, neighbourhood attachment, pedestrianism and social

interaction. Gehl's research has demonstrated the impact of semi-private front yards on neighbourly interaction (21-24). Milton Kotler (in Hester 11) and Jane Jacobs (117) suggest another important factor for a 'sense of community' is local political autonomy.

Case Study: Terrace Housing at Pinehill Park, Trentham, Upper Hutt

The above five principles for multivalent communal space were tentatively proposed from broad investigations of professional practice and reviews of academic research and theory. An in-depth case study of a medium density housing development provided an opportunity to explore these five principles in more detail. This case study of Pinehill Park, Upper Hutt, focussed on the viewpoints of residents of the terrace housing adjoining three sides of the park. Pinehill Park was selected for the case study because its current arrangement seems to have potential for multivalence. The site is well served by public transport (bus and electric rail), and is close to many recreational facilities within walking distance. Pinehill Park is a public reserve vested in and maintained by Upper Hutt City Council, but the arrangement of the terrace housing around the park gives it the perception of being more of a 'communal' park (for the terrace house residents).



Figure 4 – Aerial view of Pinehill Park, Trentham, Upper Hutt, New Zealand.
(North is up the page)

Source: Google map



Figure 5 – Pinehill Park, Trentham, Upper Hutt (from the eastern end looking to the west).
(Photo: S. J. Pattinson)

Detailed observations of Pinehill Park, totalling 21 hours, were made by the writer during a full week in November 2010 to find out how the park is currently used. It was found that young children are the main users of the park. The presence of children in the park attracts other children from the terrace houses out to chat and play, including kicking a ball around, throwing a frisbee, practising golf, playing on the playground equipment (especially the swings), and climbing the trees.

Young adults use the park almost exclusively for rugby ball kicks and passes, usually for quite extended periods of time (up to 40-50 minutes). Teenagers and children often join in and the atmosphere appears quite relaxed and friendly. Very few adults use the park, and then only to supervise preschoolers and young children.

Of the 2,000 or so vehicles that passed the park during the 21 hours of observation (at an average rate of about 1.5 vehicles per minute) only one stopped to use the park. No cyclists, joggers or walkers (in total 128) stopped to use the park.

Overall, this 3,720m² park is under-used. The nature of the park may be described as univalent, i.e. it is primarily treated as a children's park. Could not such a spacious park achieve more?

Survey / Interviews

The potential multivalence of the park was explored by asking the terrace house residents for their viewpoints. (The five principles of multivalent communal space, however, were never discussed with respondents.) Residents views were sought through a survey and interviews, carried out in December 2010. The written survey and oral interviews consisted of the same two open-ended questions. The first question asked “What does it mean to you living beside the park? (How do you use the park, what do you like/dislike?)”. The second question asked “How would you design the park? (What other layouts, uses, landscaping, furniture or equipment etc do you think the park could have? How could the park be designed to mean more to you?)”.

The questions were accompanied with aerial maps of the terrace housing and Pinehill Park for respondents to draw and make notes on if they wished to. Residents were given the choice of taking the survey forms and completing them in their own time for collection at a later time. Alternatively residents could discuss the survey questions in an interview with the author, while the author’s assistant took notes of respondents’ comments.

Most respondents choose to do both, that is to take the survey forms and fill them out in their own time, and then discuss their responses in an interview with the author and assistant when they returned to collect the response forms. This seems to have the effect of giving the respondents time to provide considered comments. Interviews typically lasted for 30 to 60 minutes.

Responses were received from 13 of the 14 terrace houses, in most cases several responses from each house. In total, 26 respondents participated from the overall terrace house population of 49 men, women and children.

Table 1 shows the breakdown of respondents according to broad age categories (adults, teenagers and children):

	Adults (20+ yrs)	Teenagers	Children (up to 12 yrs)	TOTAL
Number in the terrace houses:	29	10	10	49
Number of respondents:	18	7	1	26
Percentage:	62%	70%	10%	53%



Table 1 Percentages of terrace house residents at Pinehill Park, Trentham, Upper Hutt, who responded to the survey / interviews. (Source: S.J. Pattinson)



The length of time that respondents have lived in the terrace houses ranges from four months to the time when the houses were built 3 1/2 years ago (2006/7).



Respondents come from a mixture of countries of origin including New Zealand, South Africa, Zimbabwe, Singapore, and the United Kingdom.


Because the two questions in the survey/interview were open-ended, respondents were able to express their views to whatever extent they thought relevant to the topic. The data received was wide ranging and rich in detail (totalling 7,500 words plus some hand-drawn diagrams). Responses were later analysed within the framework of the five principles for multivalence communal space. The five principles were never discussed with respondents. All responses could be correlated with principles in this framework; no responses lay outside this framework. This suggests the framework of principles is reasonably comprehensive. A sample of residents viewpoints follows.


and summarise the perspectives of practitioners (best current practice), academic researchers and a Case Study community (Tables 7.1 – 7.5) regarding uses and meanings for communal space



1	Sustainable Neighbourhoods: TABLE 7.1		(S.J. Pattinson)
	Ch.3 Practitioners (Best Practice)	Ch.4 Academics (Current Theory)	Ch.6 Community (Pinehill Park Residents)
	 <p>Compact, mixed-use walkable urbanism - Merivale Mews, Chch, Architect: Peter Beaven (Google)</p>  <p>Compact, mixed-use walkable urbanism, Ropata Village, Lower Hutt, Architect: Roger Walker (Photo: S.J. Pattinson)</p>	<p>Walkable urbanism <i>Leinberger 2009</i></p> <p>Compact, mixed-use <i>Frey in The Urban Design Reader 2007, 339-340</i></p> <p>Public transport nodes / TOD <i>Calthorpe 1993</i></p> <p>Low-impact environmental design</p> <p>Living sustainably <i>Vale & Vale 2009</i></p>	<p><i>"It is just five minutes walk to the bus or train which take 6 minutes to Upper Hutt or 30 minutes to Wellington City" (Couple, 50+)</i></p> <p><i>"I walk to a gym on the other side of the CIT campus several times a week (Male 50+)</i></p> <p><i>"The park needs some paths" (Male 30-50)</i> <i>"The park needs [paths] for C___ to walk about" (disabled resident) (Couple, 50+)</i></p> <p><i>"The park is dark at night, a bit scary" (Female 30-50) "... there was a threatening incident in the park, we couldn't see what was happening" (Female 50+) "Security lighting would be good" (Male 50+) "Needs lights for gardens, footpaths, not floodlights - intimate, in-ground lighting to gently follow at night" (Male 50+)</i></p> <p><i>[Trentham Ecological Restoration Project – Heretaunga Drain adjacent to Pinehill Park]</i></p> <p><i>"Why didn't they put in solar hot water heating?" (Couple, 50+)</i></p> <p><i>"I am planning on planting a cherry tree [to help with shading the windows]. I want to put in an organic garden" (Female 50+) "We would like communal fruit trees" (Couple, 50+)</i></p>

2	Clustered Housing:	TABLE 7.2		(S.J. Pattinson)
	Ch.3 Practitioners (Best Practice)	Ch.4 Academics (Current Theory)	Ch.6 Community (Pinehill Park Residents)	
	 <p>Perimeter terrace housing, Takapuna, Architect: Jensen, Chambers, Young (Google)</p>  <p>Communal open space – Epsom, Ak Architect: not known</p>	<p>Perimeter housing up to four storeys</p> <p><i>Martin & March 1972; Scoffham and Vale 67-69; Cooper Marcus and Sarkissian 7-9, 189</i></p> <p>Central communal open space</p> <p><i>Levitt 2010; Martin & March 1972</i></p>	<p><i>“We don’t like the way [detached] houses are built so close together in New Zealand, that is why we like living here, it gives us a feeling of personal space. At our previous [detached] house in Johnsonville, we could see into the neighbours’ places on [three] sides. This [terrace house] is great. It has a feeling of openness.” (Couple, 50+)</i></p> <p><i>“The house has good party walls. You don’t hear neighbours next door.” (Couple, 50+)</i></p> <p><i>“The park is an asset to the place, it gives a sense of more space and is an extension of the back yard.” (Female 30-50)</i></p> <p><i>“The park is good, you don’t have neighbours everywhere - you’re not boxed in with houses - there are no big fences and it is open planned. You can see a nice view outside.” (Male 16-19)</i></p> <p><i>“As part of a community you can sit and watch people enjoy the park. You meet people out in the park and it is safe.” “Its used heaps in the evening especially by kids playing sport” (Females 30-50) “It encourages socialising amongst the youngsters - kids playing, meeting each other” (Male 30-50)</i></p>	

3	Green Open Space: TABLE 7.3		(S.J. Pattinson)
	Ch.3 Practitioners (Best Practice)	Ch.4 Academics (Current Theory)	Ch.6 Community (Pinehill Park Residents)
	 <p>The Parc – Viaduct, Auckland Central Perimeter mixed-use around green.</p>  <p>Whisper Cove, Snell’s Beach (Photos: S.J. Pattinson)</p>	<p>Recreation <i>Kazmierczak and James 2007</i></p> <p>Health – physical and mental <i>Kazmierczak and James 2007</i></p> <p>Aesthetics / status / value <i>Kazmierczak and James 2007; Kaplan and Talbot, 1988; Kweon et al., 1998; Rogers, 1999</i></p> <p>Social interaction <i>Kazmierczak and James 2007; Jacobs 1961</i></p>	<p><i>“I really enjoy living beside the park, mainly for the kid’s sake.” (Male 30-50)</i></p> <p><i>“It is a lovely playground for little children ... but there’s nothing for us.” (Couple 50+)</i></p> <p><i>“I don’t use the Park. There are other parks I go to like Harcourt Park and the [CIT]. It has a tennis court and I play tennis there with my friends.” (Female 30-50)</i></p> <p><i>“We don’t use the park unless walking across it to have a wine with a neighbour. I would like to read a book in the park but I would like more trees, benches, a water feature.” (Female 50+)</i></p> <p><i>“It is a great place to live but the park is characterless. There is enormous potential out there. I’d like to see it maximised, then it would draw you into it. There is nothing to attract me. I would like to see more invested into it. The park is an integral part of a good development, and the potential of the park needs to be thought through.” (Male 50+)</i></p> <p><i>“I would love a water feature” (Male 50+)</i></p>

4A	Needs of Children: TABLE 7.4A		(S.J. Pattinson)
	Ch.3 Practitioners (Best Practice)	Ch.4 Academics (Current Theory)	Ch.6 Community (Pinehill Park Residents)
	 <p data-bbox="275 1015 762 1162">Soft and hard surface playgrounds – with seating and trees for shade. Talbot Park, Glen Innes Ak. HNZA (Photos: S.J. Pattinson)</p>	<p data-bbox="783 532 1230 829">For Pre-school Children - There is comprehensive advice on facilities to meet children’s needs, including design of doorsteps, balconies, yards, tot lots, sand, water play etc. (Cooper Marcus and Sarkissian 138-150)</p> <p data-bbox="783 889 1230 1187">For Five to Twelve Year Olds – provide opportunities for mobility, biking, ball games, equipment variety, flow of play, lookouts, adventure playgrounds, huts and self-made enclosures etc. (Cooper Marcus and Sarkissian 151-179)</p>	<p data-bbox="1268 493 1818 630"><i>“The kids use the park a lot” (Couple with children) “The park allows the kids to play together, so the kids in the area become good friends.” (Female 20-30)</i></p> <p data-bbox="1268 656 1818 792"><i>“If the kids are stuck inside playing computers and they see someone in the park they will go out to play with them, the park draws them outside” (Male 30-50)</i></p> <p data-bbox="1268 818 1818 987"><i>“Our grandchildren play in park. They team up with other neighbours’ grandchildren. (Couple, 50+) “I use the park when I visit grandad and grandma. I would like a bigger climbing frame and tree house” (Boy, 5 yrs)</i></p> <p data-bbox="1268 1013 1818 1398"><i>“A lot of people travel on that road. Cars speed past” (Couple with children) “It is not safe for children. I can’t relax there, the children can run out on road” (Male 30-50) “If 2-3 year olds run to road, there is nothing to stop them. People do burn outs. The noise draws the children out to the road to see what is going on” (Couple with children) “Motorbikes sometimes use park as a shortcut. Could be dangerous if children playing (Couple 50+) Needs fence/speed bumps (Several parents)</i></p>

4B	Needs of Teenagers: TABLE 7.4B		(S.J. Pattinson)
	Ch.3 Practitioners (Best Practice)	Ch.4 Academics (Current Theory)	Ch.6 Community (Pinehill Park Residents)
	 <p>Sports fields; soft and hard surface areas with seating and trees – places for teenagers to ‘hang out’ Talbot Park, Glen Innes Ak HNZC (Photos: S.J. Pattinson)</p>	<p>Cooper Marcus and Sarkissian offer suggestions for a range of facilities for teenagers, including space for ball games, hanging out (informal gathering places), a teen centre, teen entertainment, and access to off site facilities. For specific design guidelines oriented to teenager’s needs, see the patterns suggested by Cooper Marcus and Sarkissian (180-184)</p>	<p><i>“We use the park to hang out with friends. We use the benches to sit and eat. Maybe we could have some separate parts so that when there are kids in the park, we can still hang out there” (Teenage Girls, both 16-19)</i></p> <p><i>“Young teenagers are the ‘forgotten age’. Parks have things for 0-5 year olds and over 18’s can go into the city, but there is nothing for the in-between age” (Teenage boy, 13-15)</i></p> <p><i>“Should have more equipment, e.g. slides, swings, more benches and a bin!” {Teenage Females both 16-19) “Add a BBQ” (Male 16-19)“The teenagers sometimes go outside into the park ... It becomes extra ... spill over space for the teenagers when visitors come, while us adults talk inside.” (Male 50+)</i></p> <p><i>“The new trees in the middle of the park cut out view of children and area for kicking balls.Trees should be on the border of the park” (Male 30-50).The new trees push the ball playing to side of park close to our house (Females 30-50; 50+)“The ground needs to be levelled out so that its not so rough for playing on” “Needs to be flat for playing soccer” (Female 30-50) (Boy 11-15)</i></p>

5	Sense of Community: TABLE 7.5		(S.J. Pattinson)
	Ch.3 Practitioners (Best Practice)	Ch.4 Academics (Current Theory)	Ch.6 Community (Pinehill Park Residents)
	 <p>Lancewood Courts, Chch. Courtyard. Architect: Common Ground (MfE)</p>  <p>(Source: WCC)</p> <p>Salisbury Garden Court, Karori, Wgtn Duplex houses around a tennis court</p>	<p>Neighbourhood identity <i>Kim 2001;</i></p> <p>Neighbourhood attachment <i>Kim 2001; Morgan 2010</i></p> <p>Pedestrianism <i>Leinberger 2009; Kim 2001</i></p> <p>Social interaction <i>Kim 2001; Gehl 1997, 1977</i></p> <p>Local autonomy <i>Kotler, in Hester (11); Jacobs (117); AMCORD 2005 PND5; Wood, in Bell & Tyrwhitt (327); Newman (1972)</i></p>	<p><i>"We call it Coronation Street - the houses all look the same." (Male 50+) "The house lacks identity, we can't personalise it." (Couple, 50+)</i></p> <p><i>"...only one sitting area in the park, yet a lot of people want to sit" (Male 30-50) "Make 2 or 3 areas - not just for the children" (Female 50+)</i></p> <p><i>"Everyone uses the park not just the terrace house people" (Male 30-50). "People stop in cars to use the park" (Female 50+)</i></p> <p><i>"I have seen the picnic table used only once in the last 6 months – it's exposed psychologically - out in the middle of the park, not near trees" (Male 50+) "Put chairs / seating / tables around the side so different families can use on special occasions, own area to use" "Nobody asked us about the playground, picnic table or trees before they were put in" (Male 30-50)</i></p> <p><i>"The park could have walkways, little areas like outdoor rooms, nooks and crannies, coin-operated BBQ... keep it communal for all residents but you might have responsibility for taking care of certain parts of it, but others could use it all" (Male 50+)</i></p>

proposed principles of multivalent communal space and applies these principles to a medium density subdivision to investigate the effectiveness of these principles for making more efficient use of urban land and enhancing the living environment for residents.

Chapter 8 presents the conclusion of this research and discusses its general applicability.

This paper highlights the need for more creative thinking about communal space in medium density housing. It aims to stimulate discussion and collaborative action

among academics, professionals and local communities towards the development of multivalent, 'best fit' living environments.

Communal space in New Zealand's medium density housing tends to be univalent, having only a single purpose or meaning, typically either landscape-dominated or car-dominated. Communal space has the potential to be more than this.

It is timely to consider the potential of multivalent communal space because medium density is a growing market in New Zealand. Mead and McGregor report that 'intensive housing', which they define as 'terrace or apartment type housing' (62), makes up 35% of Auckland's total housing market (2007), and is likely to become *the* housing market in Auckland in the future, not just a segment in it (62).

Accompanying a trend toward smaller households is a trend towards larger floor space per individual. The combination of these trends places significant demand on limited urban land supplies, quite apart from any population increase. This leads to smaller lots, with 80m² -140m² lots for terrace houses becoming typical.

Open space is diminishing. This is evidenced in reduced private outdoor space and in a significant reduction in public open space - narrower streets, fewer footpaths, and smaller public reserves (e.g. pocket parks). It is within this context of diminishing open space that the potential multivalence of communal space in medium density housing becomes very important.

What is 'medium density' housing in New Zealand?

'Medium density' is a relative term indicating housing somewhere between low density detached suburban housing and high density high rise. Biddulph describes medium density as broad, ranging from 30 to 450 dwellings units per hectare (2).

In New Zealand, according to Turner et al. (22), medium density housing is at the low end of this range, i.e. at about 30 – 66 dph (dwellings per hectare), mainly in the form of terrace housing (typically narrow, two-storey dwellings attached in a row).

What is communal space?

Levitt describes the key characteristics of communal space:

“There is a difference between true public open space, to which anyone and everyone has access, and shared communal space – such as a central courtyard, garden or pocket park enclosed by terraces of houses or flats – access to which is restricted to certain groups of residents.” (110)

This definition distinguishes ‘communal space’ (shared by a certain group) from ‘private space’ (the realm of the individual), and ‘public space’ (which is for everyone).

What is multivalence?

According to Charles Jencks (14), multivalence is imaginative architectural fusion:

“Certain buildings have a richness and density of meaning which make them more enjoyable to inhabit, view and visit than others. ... We return to them again and again because of the exciting and deep way in which the meanings are ... fused together into a powerful pattern.

“... multivalence consists of ... imaginative creation, or the putting together of parts in a new way ...”

Janz and Beckley (7) use the term ‘multivalence’ in urban design to “embrace many values ... (people, objects, events, patterns, etc.). It is concerned with the process as well as the product of design.”

According to Janz and Beckley, univalent design “expresses a single value, a single idea, a single approach ... most often ... the value of the designer”, whereas a multivalent approach expresses a synthesis of political, cultural and historical phenomena that are unique to a particular place (7, 8).

What is ‘multivalent communal space’?

Multivalent communal space is shared space enriched with many uses, meanings and values, making it more enjoyable to inhabit, use and visit. An example from the public realm which could be applied to communal space in medium density housing is an open-air library in Salbke, Magdeburg, awarded the 2010 European prize for urban public space. It demonstrates multivalence for a shared space.

The local community developed its own ‘best fit’ solution for the new library, facilitated by a collaborative of architects, and built full scale models on site of possible designs. (CCCB 55-57).



Fig. 1 Open-air library, Magdeburg, in former Eastern Germany (Source: CCCB 58)

This 24-hr free library is managed by local residents. It has a café (upper floor), a covered stage and green open space. It is used by local residents for public meetings, for primary school plays, youth band concerts, book and poetry reading festivals, as well as being a place for young people to hang out (CCCB 56, 57)

“... [T]his project was not generated by a top-down approach that could later easily fall prey to negligence and vandalism – just the opposite. It was the result of a patient social intervention process ... When the first attack of vandalism occurred ... the people were aware of its meaning and defended their space. They organised the repairs and thus propagated a strong signal, that they would not tolerate such actions.” (CCCB 55, 56)

This project synthesizes local politics, culture, history and site in ways that enrich the neighbourhood with many shared values integrated on this ‘common ground’.

“ ... it is still possible for [communal] space to work as a place of meeting and contact, indispensable for mutual recognition, which is the basis for any form of truly possible coexistence ... given the imperative need for different peoples to learn to live together ...”

Josep Ramoneda (CCCB 18, 19)

The open air library described above suggests how more could be done with shared space in housing developments than merely using it for passive landscaped outlook. The author decided to research communal space to investigate its potential.

The research design

The author’s research paradigm is that people and their living environments both matter: the one shapes the other (Hall 4, 106; Sommer 7). The aim of the research was to develop principles for multivalent communal space in medium density housing that achieve more efficient use of urban land and enhance the living environment for residents.

The research questions were:

1. “What is the nature of communal space in existing medium density housing in New Zealand?”
2. “What is the potential multivalence of communal space in medium density housing?”
3. “What are the principles for achieving multivalent communal space in medium density housing?”
4. “Will the application of these principles achieve more efficient use of urban land and enhance the living environment for residents?”

The author regards the ‘bay’ and ‘courtyard’ as natural architectural forms for expressing and supporting ‘community’. This declaration of the writers’ perspective follows Bourdieu on the point of ‘reflexive’ research, i.e.

“investigation in which the researcher is aware of their contribution to the construction of meanings throughout the research process”, a process in which “researchers ... explicitly recognise (or declare) ... their perspectives on the objects of their research” (Webster 6, 102)

According to Hillier and Rooksby (3-6), Bourdieu challenges the traditional assumption of practice is applied theory. The following diagram expresses a participatory approach, inclusive of the views of practitioners (primarily expressed through current practice), academics (from the literature of various disciplines), and the community (represented by residents in a case study of Pinehill Park, Upper Hutt, Wellington). From these three perspectives, the author aimed to develop principles for multivalent communal space in medium density housing (Fig. 2).

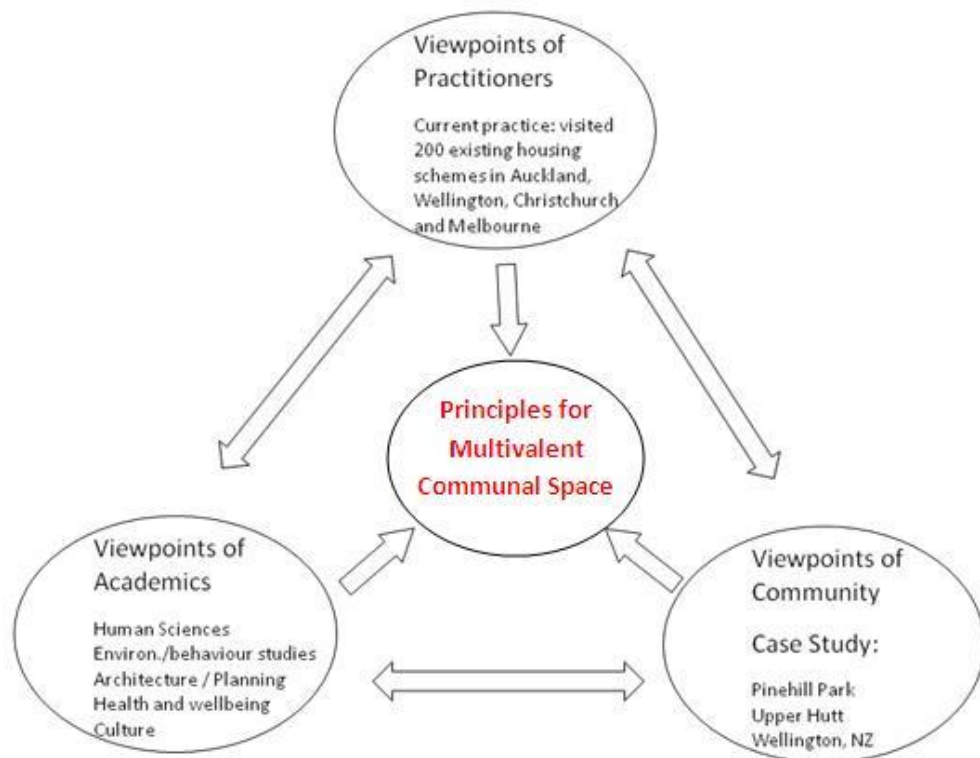


Fig. 2 A participatory approach to developing theory and practice, inclusive of the viewpoints of practitioners, researchers, and the community.

The fi

(Source: S.J. Pattinson – adapted from Hamdi, 2010)

HOUSING DESIGN GUIDES AND PUBLICATIONS ON MULTI-UNIT HOUSING DESIGN AND PRACTICE, and by the author visiting 200 medium density housing developments - mostly in

Auckland, Wellington and Christchurch in New Zealand, and some in Melbourne, Australia. The author discussed communal space with several practitioners from various fields - planners, urban designers, architects, developers, builders and residents. The main finding of these investigations is that communal space is generally given little consideration and, as mentioned earlier, tends to be univalent in nature – typically for passive, landscaped outlook.

The second research question was addressed by reviewing literature from several disciplines including planning, design, environment-behaviour studies, human health and well-being, culture and sociology. The aim of was to find potential uses and meanings for communal space in medium density housing.

The author found little academic research or literature on communal space in multi-unit housing, and even less on multivalence. There are some excellent publications that address communal space in multi-unit housing, most notably Cooper Marcus and Sarkissian (1986). However, these authors refer to communal space in medium density housing as being primarily for the benefit of children. While the needs of children in housing environments are very important, this research proposes the view that communal space needs to be multivalent for the benefit of all age groups in multi-unit housing environments, and not be regarded as just children.

Sustainability:

“I am planning on planting a cherry tree [to help with shading the windows] ... I also want to put in an organic garden.” (Female 50+)

“When it gets really cold we have to put extra bar heaters on, which really uses up the power. Why didn’t they put in solar hot water heating like the Scandinavian system with the solar tubes on the roof?” (Couple, 50+)

Cluster housing:

"The house has good party walls (good sound insulation). You don't hear neighbours next door" (Couple 50+) (Female 30-50)

"The patio has no cover [overhead shelter].Our own backyard [facing the park] is not private enough. The patio needs roofing, and screening from the park for more privacy for a family BBQ." (Male 50+)

"We call it Coronation Street [the houses all look the same]." (Male 50+)

"The house is not our own, it lacks identity and we can't personalise it." (Couple 50+)

Green open space:

It's a nice and quiet park (Teenage Male 16-19)

"I have seen the picnic table used only once in the last six months. The picnic table is exposed psychologically - out in the middle of the park" (Male 50+)

"Put the picnic tables and benches under the trees, or nearer the trees, for shade." (Teenage Male 16-19; Teenage female 16-19)

"The grass is a park mix – heavy duty, stalky and uncomfortable on bare feet."

"The ground is clay so in winter when it rains heavily the park becomes very marshy and boggy. Then in summer when it dries out the ground turns to rock and is very hard ." (Female 50+)

"I don't play in the park. The ground is rough and uneven - me and my mates hurt our ankles if we play soccer on it, so we don't. " (Teenage Male 11-15)

"I would be delighted to see the park used differently. At the moment it lacks care, attention and character." . (Male 50+; Couple with children; Teenage Male 16-19)

"Don't put trees or tables or benches in the open play area in the middle of the park. The new trees in the middle of the park are in the way. The trees should be on the border of the park, and the picnic tables too." (Male 30-50)

"If the kids are stuck inside playing computers and they see someone in the park they will go out to play with them, the park draws them outside" (Male 30-50)

“There is enormous potential out there. At the moment the park is like having a house that’s 100 square metres, but only using 10 square metres of it. It could have paved paths and walkways, little areas like outdoor rooms” (Male 50+)

Needs of children:

“Young teenagers are the “forgotten” age. Parks have things for 0-5 year olds and over 18’s can go into the city, but there is nothing for the in-between age.” (Young Teenage Male)

“I really enjoy living beside the park, mainly for the kid’s sake. It is great for them to be able to go out and expend some energy with their peers.” (Male 30-50)

Sense of community:

“It’s an ill-defined space, which makes people ill at ease, or appear to be. Maybe they are thinking, “Am I allowed to enter in here or aren’t I?”. There is no sense of being invited in. There is no sense of ‘welcome to our park’, no sense of the sharing of the space, and no psychological indicators to say that it is for them, maybe more a feeling they should move on!” (Male 50+)

“The park seems like it’s the people who live in the terraced housing- “its our park” and “my back yard” (Teenage Male 16-19)

“We see this as our park” (Couple with children)

“As part of a community you can sit and watch people enjoy the park. You meet people out in the park and it is safe” (Female 30-50)

Practical Application

The following exercise of applying the five proposed principles for multivalent communal space hypothetically to a 5 hectare subdivision at Pinehill Crescent was carried out by the author. It is intended to be indicative of possible outcomes of a participatory approach between practitioners, researchers and the community.

The purpose of this exercise was to explore whether the application of these principles would result in more efficient use of land, as well as enhance the living environment for residents (thus addressing the fourth research question).

Council's District Plan soon allow a minimum lot size of 300m² per dwelling. The author 'developed' the 5 hectare site assuming minimum 300m² lot sizes (Fig. 7).

The outcome is compared with an alternative development of the 5 hectare site based on the five principles for multivalent communal space (see Fig. 8 below). The site is considered suitable for this type of development because of its close proximity to bus and electric rail passenger services, and a wide range of nearby recreational facilities, as noted earlier.

It can be seen from a comparison of the two alternative developments (Figs. 7 & 8) that the development employing the principles of multivalent communal space has a number of significant advantages over the conventional development model, which uses only detached dwellings – see Table 2 below:

	Scheme A: Conventional development of detached houses on reduced lots	Scheme B: Alternative development applying five principles of multivalent communal space
Overall area of development:	5 hectares	5 hectares
Total number of houses:	120	140
House types and sizes:	Less variety and choice	More variety and choice
Number of storeys:	1	2 - 3
Average house lot size:	320m ²	140m ² (estimate only) plus share in communal open spaces and facilities
Open space:	Nil (children play on streets)	<ul style="list-style-type: none"> • orchard (1600m²) • comm. gardens • soccer field • 2 tennis courts • park (1800m²) • landscaped pond • trees, biodiversity • community centre, café, youth centre, child care, etc. as focal point for

		neighbourhood identity/attachmt/ social interaction/ local autonomy
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The following discussion comments on the general applicability of the five principles for multivalent communal space to other medium density housing developments:

The following comments suggest why principles for multivalent communal space on this particular site may be more generally applicable for achieving multivalent communal space in other medium density housing developments.

Sustainability – The Pinehill Crescent exercise demonstrates the feasibility and value of intensifying land use close to existing transportation nodes and corridors, and recreational amenities. This is essential to creating a pedestrian environment, which should ideally also include retail and employment;

Clustered housing – The housing in the Pinehill Crescent exercise was ‘borrowed’ from a wide variety of locations (Snell’s Beach, Gulf Harbour, Takapuna, Epsom, and Christchurch). This indicates the variety and choice in the range of house types, style and layout which can be achieved in any locality in accord with local context and aspirations;

Green open space – The open space made possible by the clustering of houses offers a wide variety of uses; it might include an open-air library. In the Pinehill Crescent exercise, opportunities are indicated for a communal orchard, vegetable gardens, ornamental pond/water features, café, a community building for local meetings and/or offices and/or some small retail ventures, youth facilities, outdoor playing fields, tennis courts, communal swimming pools, plus outdoor pockets for rest, relaxation, reading, sketching or painting etc.;

Meeting the needs of children – the Pinehill Crescent indicates the rich variety of opportunities that can be created for meeting the needs of children of all ages and stages, including doorstep play, ‘tot lots’, and a range of spaces with appropriate levels of passive surveillance for primary children, young teenagers and also places for older teenagers to hang out;

Sense of community – the residents of the terrace houses at Pinehill Crescent demonstrated in their responses that, collectively, they are well able to direct the shaping of their own environment to suit their needs and aspirations. It is about communities creating their own opportunities.

Conclusion

Both people and the environment matter: one needs to be given the opportunity to help shape the other. This is best done collaboratively, with the community participating in the process of place-making. All five principles (sustainability, clustered housing, green open space, the needs of children, and sense of community) appear to be necessary for shaping multivalent communal space in medium density housing. The hypothetical application of these five principles at Pinehill Crescent resulted in more efficient use of land while also enhancing living environments for residents. These principles may achieve similar results in other medium density housing developments.



Table 7 Scheme A: Hypothetical development of a 5 hectare site (Pinehill Crescent, Trentham, Upper
120 detached houses on minimum 300m² (average lot size 320m²). (Source: S.J. Pattin



Table 8 Scheme B: Hypothetical development of 140 houses in clusters on a 5 hectare site (Pinehill Crescent, Trentham, U one possible application of the five principles of multivalent communal space proposed in this paper.

(Photos: S.J. Pattinson – clockwise from top right: Epsom, Auckland; Gulf Harbour, Whangapaora; Merivale Mews and office Papanui and Office Roads, Christchurch; Pinehill Park, Trentham, Upper Hutt; Whisper Cove, Snell’s Beach; Terrace houses and The Promenade, Takapuna; Whisper Cove, Snell’s Beach.)

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