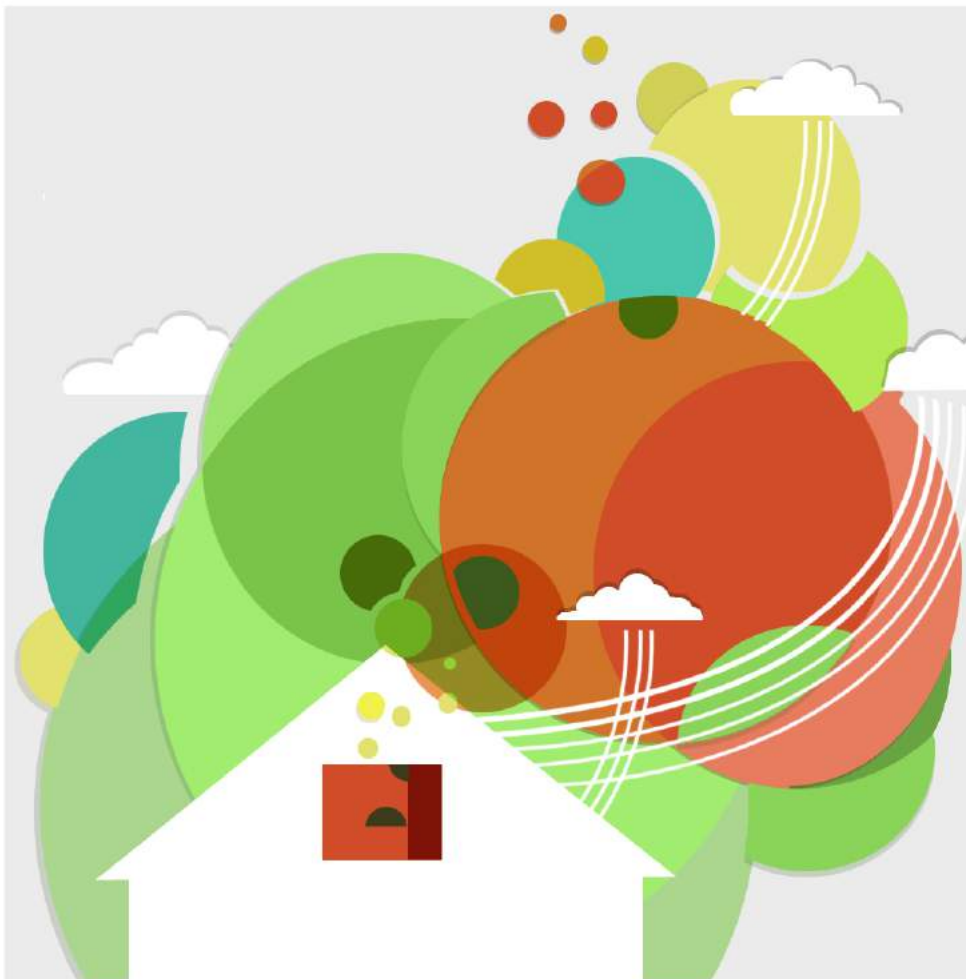


Project Report: **Research Study Exploring Best Practices and Lessons Learned with Small Market Units**

Submitted to the Project Advisory Committee
by Heather Evans Consulting, Margaret Forbes, and Louise Godard

January 30, 2015 – Final Report



Acknowledgement

Thank you to the organizations and individuals that led and informed this study:

Project Partners



The Real Estate Institute
of British Columbia



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Urban Development Institute, Pacific Region: Anne McMullin

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Small Housing BC Society: Akua Schatz, Bob Ransford

Participants in Information Interviews, Survey and Focus Group

Key informant interviewees are listed in Appendix 1.

Names of survey and focus group participants for this research project are not identified in this report.

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Executive Summary

The purpose of this study is to learn more about small market housing from experiences in BC and in other jurisdictions. The partners for this research project are the Real Estate Institute of British Columbia, the Manufactured Housing Association of BC, BC Housing, the Urban Development Institute Pacific Region, and Small Housing BC. The study aimed to learn what is working well and what is not working as well with small market housing development, and how future development can be informed by this insight. The study included a literature review, interviews with 22 key informants, an online survey of occupants of small homes (limited response rate), a focus group with occupants of small homes in Vancouver BC, and a review of secondary research studies of occupants' experiences in small units.

Small market housing is of interest in the general context of scarcity of land for residential development and home prices growing at a quicker pace than incomes, driving housing affordability problems for many. There is also a strong and growing trend of many small households (one or two people), which are the principal market for small homes. Demand for this type of housing is projected to continue, and further empirical information to characterize the demand could be beneficial. The study found that the most appropriate contexts for small housing are generally urban areas that have close access to amenities such as transit, entertainment, and community services. These are places where many people would like to live for convenience but could not afford a larger home.

The project defined a small home as a dwelling that is sized to meet occupants' needs with little excess space, and could be in a variety of forms including an apartment (e.g. a micro-apartment, or mini-suite), a detached dwelling (e.g. a laneway home), or a moveable unit (e.g. a tiny house on wheels). The size of a small home can range from under 200 square feet, and up to around 750 square feet for a larger household. However, most of the small homes included in this study were less than about 600 square feet.

The study asked key informants (designers, architects, developers) and small home residents to define key elements for a livable small home to ensure functionality and livability. In a small home you are "trading space for place", so the quality of the space is very important for livability of residents. Some key elements identified as improving the functionality and livability of small homes were:

- Furnishings and the elements of the home need to be efficient and durable, as there will be more wear and tear in a small space.
- Windows and layout must ensure a lot of light and air and access to the outdoors which expands the space and makes the unit feel bigger.
- Design and building technique to reduce noise including: specific building materials and methods, interior space planning to reduce transfer of noise between and within dwellings in multi-unit buildings, and site planning to reduce noise from outdoors (particularly in dense urban contexts).
- Lack of permanent walls to define the space can improve functionality.
- A fully functional kitchen and bathroom are highly valued and must be appropriately sized to fit into small and highly functional spaces, often requiring custom millwork and smaller appliances.
- Furniture and spaces that transform into different uses (i.e. living space transforms into sleeping space) can save the amount of space taken up by furniture.

- Small home residents often share some facilities (e.g. laundry, lounge space, etc.).

On a “cost per square foot” basis, small homes cost more to build than larger units. Bathrooms and kitchens are just as expensive to build in smaller units and small units often have high-quality construction materials and finishing – and these costs are averaged over a smaller overall area. However, since the space is small, the overall cost to build the units is lower, and this is passed along to the buyer or renter. To make the small market housing development feasible it is important to reduce costs where possible, such as eliminating or reducing parking requirements and making design as efficient and repeatable as possible. The study explored the opportunities and lessons with factory-built construction methods (e.g. modular, manufactured, panels) for small units and found some successful examples. There may be an opportunity to explore this further and understand the success factors and constraints in a BC context.

Some key community considerations about the development of small housing include the commitment to ensuring that livability standards are maintained in small units. Also, there is a need to understand and rationalize the impact of small market units on the affordability of other housing in the area, and neighbourhood fit, and to quantify both the cost and benefit that small housing brings to existing community infrastructure and amenities.

The study found that communities are taking different approaches to small housing policy and regulations, and that this is a new area where experience is being gained. Some cities have adjusted policies to accommodate small market housing (particularly micro-apartments) by reducing the minimum dwelling size requirement in the community, while other places have pursued “pilot” approaches to small housing. The regulations around small housing encompass objectives and responsibilities related to residents’ well being (e.g. light and air) as well as the neighbourhood (e.g. design, parking) and the future community (e.g. how flexible can small housing be to meet future needs?). Meanwhile, undefined local policy and regulations can make the process of gaining approvals for and building small housing very challenging.

Insight gained from the study would suggest that there is further work that can be done to increase understanding among people who have experience and perspectives, including building and development professionals, planners, designers and architects. By pooling knowledge more could be understood about the future market for this housing product, the financing parameters, efficient building methods, successful policies to guide communities, and more.

For certain, small market housing will continue to be an issue / opportunity at the forefront given trends including small household demographics, rising costs of land and real estate, and affordability challenges. It is hoped that this “Research Study Exploring Best Practices and Lessons Learned with Small Market Units” report provides some new knowledge to readers that will inform their practice, and that the findings raise questions of interest, areas of opportunity and divergence for further discussion, and opportunities that fuel further practical work and research.

Please also refer to the Infographics that have been created to summarize and present information from this report on the next two pages: 1. Small Market Homes Facts; and 2. Design that Adds to Livability of Small Homes.

Design That Adds to Livability in Small Homes



Four Key Design Elements

- Trade Space for Place
- Durability
- Air and Light
- Privacy and Noise Reduction

Storage Spaces

- Rental of storage space is a hit, and ample in-unit storage is critical too
- Make use of wall niches and creative shelving
- ... And avoid accumulating 'stuff'!

Living Spaces

- Keen eye on circulation space
- Sliding doors and walls, flexible and convertible furniture
- Tall ceilings, good ventilation and air circulation
- Access to the outdoors



Sleeping Spaces

- Soundproofing construction, and orient away from outdoor noise
- Murphy beds
- Define a comfortable sleeping area

Eating and Cooking Spaces

- Heart of the home .. full cooking facilities and meal preparation
- Space can fit in a 6-foot linear bank
- Seating nook or bar
- Ample ventilation to avoid odours

Bathroom Spaces

- Preference for conventional bath/shower over euro
- Ample bathroom storage
- High quality and durability

Shared Spaces

- City is the living room - location needs to be very close-by
- Shared amenities and outdoor space are appreciated by some residents
- Sharing is part of small living



SMALL MARKET HOMES

Research Study Exploring Best Practices and Lessons Learned with Small Market Units

REPORT HIGHLIGHTS

Definition of a small home



- ✓ Any form of housing (apartment, detached dwelling, moveable dwellings)
- ✓ Sized to meet its occupants' needs with little excess space
- ✓ Less than approximately 500 sq. ft. (46 sq. m.) for 1-2 people, or slightly larger (e.g. 750 sq. ft./ 70 sq. m.) for a household of 3 or more.

Demand for Small Homes

62%

62% of people would prefer to live alone in a smaller space than live with a roommate in a larger apartment.

Small Homes in BC



There are 17, 893 small homes in BC between 300 and 500 square feet, mostly in Vancouver / Sea to Sky region.

SMALL HOMES MATCH SMALL HOUSEHOLDS



In Canada there are more 1-person households (27.6% of all households) than couples with children, and the proportion of one-person households has been increasing over many years.



DEMAND FOR SMALL HOMES

A Micro Apartment typical resident may be.....

- Under 40 years old
- Single
- Holds a post-secondary degree
- Walks or takes transit to work downtown
- Has many interests outside the home

For Rent

Many people interested in purchase of a micro-apartment have housing budget of \$900 to \$1000 per month.

Many tiny homes (moveable) are sold to young couples and older couples.

CMHC defines a non-family household as "consisting either of one person living alone in a private dwelling or of two or more people who share a private dwelling but who do not constitute a family."

■ Vancouver and Victoria (VTS) ■ Other locations in BC (OTL)

Where are the Non-Family Households in BC?

Building Small Homes



Small homes cost more per square foot to build than larger homes. Expenses include kitchens, bathrooms, furnishings.



Many small homes are built in transit accessible neighbourhoods and close to many amenities, eliminating or decreasing parking requirements

...But the rental or purchase cost is also higher on a per square foot basis, but lower unit cost due to less space.



Smaller Homes are Good for the Planet



Smaller homes overall use fewer materials, less energy, and less GHG emissions than a larger sized 'energy star' home.

It's Worth Considering



Factory-built (e.g. modular, pre-fabricated elements) can save on construction costs, time, and disturbance

Introduction

Purpose of this Study

This study gathers and reports on insights about small market unit design and liveability from various stakeholder perspectives. The purpose is to learn from experiences in British Columbia (BC) and in other jurisdictions. What has worked and not worked with small market housing design and development? Can we glean lessons and insights that will inform future development of small market unit housing in BC? This study addresses current trends and lessons learned in regards to the development, design and livability and the building of small market units.

Land available for residential development is becoming scarce, and home prices are growing at a faster pace than are incomes. For some individuals, “small living” is part of a movement that embraces simpler living with fewer possessions, spending less of their income on housing, and being able to afford to do a broader range of activities in their life (e.g. travel, entertainment).

This report summarizes the research that was completed in this study, and shares it with developers, planners, designers, and community organizations so that they can apply experiences and lessons in their future practice, and consider areas whether further work and collaboration in the area of small market housing would be beneficial. This report may provide general information, spark further discussions, and identify areas that need more research and work.

Outline and Structure of this Report

This report is comprised of the following components:

- Section 1 describes the project organization and methodology.
- Section 2 provides definition(s) and context for small market units, as well as an overview and examples of small homes.
- Section 3 presents the key findings from the research, on the following topics:
 - Snapshot of current trends for small market housing
 - Market demand for small market units
 - Benefits and challenges of small market units, from a few different perspectives:
 - Occupants / residents
 - Small housing developers and builders
 - Communities / neighbourhoods
 - Policy-makers and regulators
- Section 4 offers a summary of key themes and lessons, recommendations for future practice that emerged during the research study.

Appendices are referenced throughout the report. They contain further information for readers who are interested in further details and resources.

1. Project Organization and Methodology

An Advisory Committee, which was comprised of representatives from each of the partner organizations: the Real Estate Institute of BC, the Urban Development Institute, the BC Manufactured Home Association, BC Housing, and the Small Homes BC Society, initiated and guided this research study.

A consulting team was retained to research, analyze and report on the findings of this study: Heather Evans Consulting (Heather Evans, Community Planner, MCIP, RPP), Margaret Forbes (Project Researcher, MPA), and Louise Godard (Project Researcher, MSW). The project took place between June and December 2014.

Research Questions

The research questions that guided this study were:

1. What are the characteristics of those who are living in small market units?
2. Why did they choose this housing form (e.g. age, income, household composition, access to vehicles/transit, etc.)?
3. What is the demand for small market units in BC? Does demand vary by tenure?
4. What are the advantages or benefits of small market units from the perspective of builders?
5. What factors went into the decision of building a small market unit?
6. What are the advantages or benefits of small market units from the perspective of occupants?
7. What are some of the design features of small market units that work well and do not work well from the perspective of occupants?
8. Are there best practices and lessons learned around small unit design from other jurisdictions?
9. What are the cost-savings of small market units in terms of construction compared to larger units?
10. If using modular construction for small market units, what are the best practices to manufacture units and opportunities to increase efficiency?

Methodology

A mixed methods approach was employed for this study, which included the following methods of data collection:

- Literature review;
- Individual interviews with key informants;
- Input from 15 small unit occupants through an online survey and focus group; and
- Secondary research of surveys of small unit occupants.

The project focused on information that could be applied in BC, and sought information from sources in BC as well as from other jurisdictions in North America. The project team was based in the Vancouver BC

area, and leans on Vancouver-based sources because of local contacts and knowledge. However, sources of information from throughout the province as well as other jurisdictions are also included in the study and in information woven throughout this report.

Data Collection

Literature Review - A review of both academic and community-based studies, reports, data, and articles from a range of sources such as popular media and articles, statistical agencies, blogs and other online sources was conducted.

Individual Interviews - Interviews were conducted with 22 key informants in September and October 2014. Advisory Committee members and the project teams scan of the literature guided the identification of individuals and stakeholders invited to participate in an individual interview. Key informants have a variety of small housing experience and knowledge in their respective roles as developers, real estate professionals, architects, builders, community planners, market and demographic analysts, financial experts, and stakeholders/advocates. Most of the interviews took place by telephone and were recorded to ensure accuracy of the key informants comments. Consent was obtained from each key informant for the use of his or her quotes throughout this document.

A list of key informant interviewees is available in Appendix 1. The interview questions can be found in Appendix 2.

Online survey - An online survey for small home occupants was administered between September and October, 2014.

A variety of strategies were utilized to recruit survey participants including, sharing the survey information on relevant social media sites and twitter feeds via Advisory Committee member and stakeholder networks, and hanging posters in local libraries and coffee shops as well as in the lobbies and elevators of some small home developments.

Consent was obtained prior to participants completing the online survey.

The survey questions can be found in Appendix 2.

Focus group - A focus group with small home occupants was held on October 20, 2014 in Vancouver, BC.

Similar to the survey participants, focus group participants were recruited by hanging posters in local libraries and coffee shops as well as in the lobbies and elevators of some small home developments, sharing the focus group information on relevant social media sites and twitter feeds via Advisory Committee members and stakeholder networks, and advertising in local newspapers.

Each focus group participant signed a consent form at the time of the focus group.

The focus group interview questions can be found in Appendix 2.

Secondary research - Some applicable secondary research sources were also reviewed to supplement the data on design and livability, including:

- “SmartSpace™: Opportunities for a New Real Estate Product”. Qiu, S.Y. (2009)¹ – This is a master’s thesis (Massachusetts Institute of Technology) that explores SmartSpace™, a micro-apartment that was built in San Francisco. The author stays in the unit and provides feedback, as well as surveys other occupants. Further, the study analyzes and recommends the market for this product.
- “Residents’ Satisfaction with Mini-Suite Housing: A Case Study of 600 Drake”. Sidjak C.T. (1995)² - This is a master’s thesis (University of British Columbia) that studies the market need and demand for mini-suite housing (including a survey of residents), explores whether an existing mini-suite building in Vancouver satisfies residents’ needs, and explores policies in this area.
- "Laneway House Occupant Survey- Detailed Results." Vancouver BC: City of Vancouver (2012)³ – This is a survey of laneway housing occupants administered by the City of Vancouver and included results about tenure, motivations, experience and recommendations around laneway housing.

Data Analysis

Qualitative data from the individual interviews, survey and focus group was analysed using established coding and grounded theory methods. A coding protocol was developed using inductive methods consistent with qualitative analysis to identify convergent and divergent themes. The coding system was tested prior to full coding in order to ensure high inter-coder reliability.

Key themes and findings from the research were then compared with the findings from the literature review to identify if and where there was alignment. Similarities and differences were also highlighted in comparing the key messages of the key informant groups (e.g. do messages from developers and community planners and occupants align and/or diverge?).

Limitations of the Findings

There are limitations to the data collected from the online survey for small home occupants, administered between September and October, 2014. Only 13 survey responses were completed, despite extensive promotional efforts and outreach. Since one of the objectives of the study was to gain occupants’ perspective on design and livability of small living, we used additional methods to collect this information: a focus group with small unit occupants, and secondary data sources (explained above in “Data Collection”) which brought in perspectives of small unit occupants to supplement data collected in this study.

Also of note, is that this study aimed to explore a few different forms of small housing in the context of the research questions including small apartments, small detached homes (e.g. laneway homes), and small moveable dwellings (e.g. tiny houses). Since the study was shaped by its context of being carried out in the Vancouver area, the key interviews and the focus group drew mostly from Vancouver-based experience with more urban forms of small housing. As a result, the study does not delve as deeply into experiences, considerations and lessons around small moveable dwellings (e.g. tiny houses).

¹ Si Yuan Qiu, "SmartSpace: Opportunities for a New Real Estate Product". Masters Thesis, Massachusetts Institute of Technology, 2009.

² Craig Thomas Sidjak, "Residents' Satisfaction with Mini-Suite Housing: A Case-Study of 600 Drake". Masters Thesis, University of British Columbia, 1995.

³ City of Vancouver, "Laneway Housing Occupant Survey", 2012.

2. Definition and Context: What is Small Housing?

Multiple Forms and Definitions for Small Housing

Is There a Definition for 'Small Home'?

This study included a 'working definition' of a small home in order to help define the scope for the project: a dwelling in any form (apartment, detached dwelling, moveable unit, etc.) that is sized to meet its occupants' needs with little excess space, approximately 500 sq. ft. (46 sq. m.) for 1 to 2 people, or slightly larger (e.g. 750 sq. ft./ 70 sq. m.) for a household of 3 or more.

Through the study, insight and feedback was heard from various perspectives about what defines a small home with respect to the form, context, and size. There is not a single definition for what is a small home. Most people's definitions of small homes are based on an individual's familiarity and experiences with small housing forms (apartments, detached), types, and contexts (e.g. urban area, smaller community).

Size of Small Homes – qualitative and quantitative definitions

Qualitative definitions of small homes include the concept of being "sized to meet your needs with little excess space"⁴, or as Architect, Ross Chapin defines them: homes being "right sized"⁵.

Quantitative definitions of small homes include:

- "Micro houses are structures that are often smaller than 200 square feet."⁶
- "A micro-housing unit means a dwelling unit housing no more than eight non-related persons, comprised of no more than eight micros, and having a common kitchen that is a minimum of 120 square feet in net floor area that is available for use by all person residing in the micro-housing unit."⁷
- "Micro-units are small studio apartments, generally less than 400 square feet and in many cases less than 300 and even down to 200."⁸

⁴ International Living Future Institute, "Build Small/Live Large Housing Summit," in *Build Small/ Live Large Housing Summit*, Portland, Oregon, 2012.

⁵ Ross Chapin - Ross Chapin Architects, Key Informant Interview, 2014.

⁶ International Living Future Institute, "Build Small/Live Large Housing Summit.", 2012.

⁷ Podowski / Wentlandt, "Director's Report and Recommendation Micro-Housing Units and Congregate Residences February 28, 2014," in *Podowski/ Wentlandt*, Department of Planning and Development City of Seattle, 2014.

⁸ R. Disbrow, "The Economic Viability of Micro Units in New York City:When the Market Wants to Build Big", Masters Thesis, Massachusetts Institute of Technology, 2013.

- ❑ In places with high density and high land value, what is considered a small home seems to be between 200 and 400 square feet.⁹
- ❑ “The ideal size for a tiny house seems to be 200 square feet (the size of a one-car garage) for 1 to 2 people, or 400 square feet (the size of a double-car garage) for a 4-person family.”¹⁰
- ❑ Ross Chapin Architects, an architecture and community planning firm known for “pocket neighbourhoods”¹¹, has partnered with builders to create small homes ranging from 400 to 1800 square feet, most of them 1000 to 1500 square feet in size.¹²
- ❑ Small Housing BC defines small housing as homes between 100 and 1500 sq. ft. They can be detached homes such as cottages and laneway houses or attached houses akin to town homes or secondary-suites. They tend to manifest as medium-density infill development.¹³

Different Forms of Small Homes

A variety of forms and types of units were identified and discussed as examples of small housing throughout the research for this study:

- ❑ Micro-suites and micro-apartments: self-contained small suites in multi-family multi-storey buildings.
- ❑ Small apartments in smaller-scale buildings, e.g. four-plex, eight-plex, etc.
- ❑ Small apartment suites with some shared facilities such as cooking; typically grouped in multi-family multi-storey buildings (sometimes called “apodments”).
- ❑ Groupings or clusters of small detached houses on a single lot or site (or strata lots); in some cases these are called pocket neighbourhoods.
- ❑ Small houses (tiny houses) that may be pre-fabricated or hand-built, and transported on wheels (e.g. a moveable dwelling) or assembled on site. Most are on a surface foundation, and could be dismantled and moved.
- ❑ Laneway homes, coach houses, or accessory dwellings that are detached and self-contained buildings, which share a lot with another principal detached dwelling.

This study focused on newly constructed small dwelling units, and did not contemplate small homes created through modifications within dwellings (either at the time of construction or renovations) within the building to accommodate a secondary dwelling unit (e.g. lock-off suites in townhouses and apartments, secondary suites in detached/attached dwellings). Although the study does not address dwellings within existing buildings, it is recognized that they too are part of the overall picture of small housing options and forms.

⁹ Sarah Watson - Citizen Housing Planning Council New York, Key Informant Interview, 2014.

¹⁰ C. Dobson, "Homes for Less: Report for BC Housing on Challenges, Lessons Learned, Recommendations," 2013.

¹¹ Pocket neighbourhoods are clustered homes gathered around a shared open space (e.g. garden courtyard, a pedestrian street, a series of joined backyards), each home with a clear sense of territory and shared stewardship. More information is available on <http://www.pocket-neighborhoods.net/whatisaPN.html>

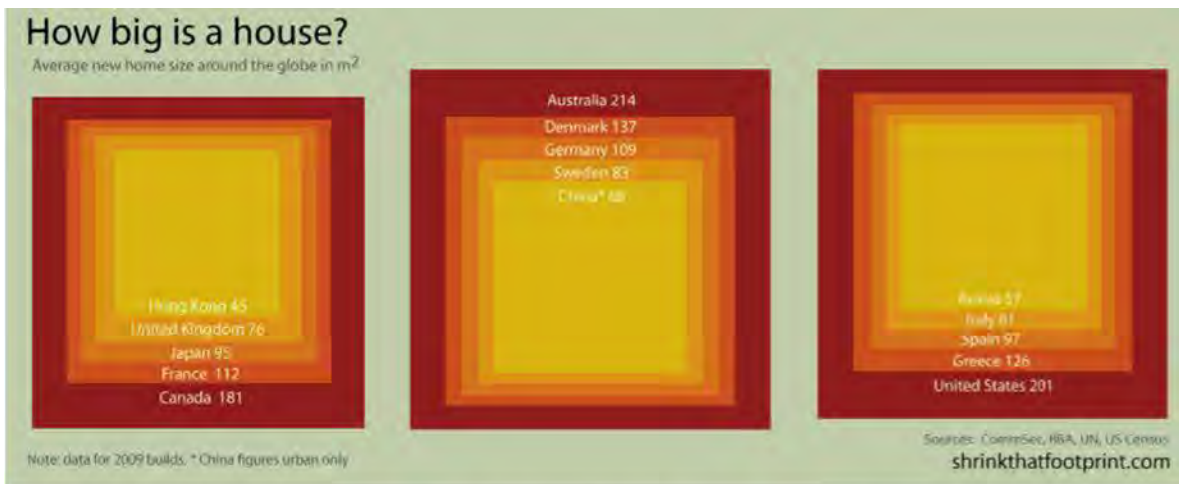
¹² Ross Chapin - Chapin Architects, "Key Informant Interview, 2014.

¹³ Akua Schatz, personal communication, December 1, 2014

Contexts for Small Homes

The community and neighbourhood context for small homes varies, and is not limited to cities. Downtown urban neighbourhoods may include multi-family housing projects such as micro-suites. Suburban neighbourhoods, smaller communities, and rural areas may include infill housing projects such as laneway homes, pocket neighbourhoods or cottage-style communities, and moveable tiny homes.

Expectations about size of living space are very much shaped by culture and experience. As Paul Merrick, Architect, stated: “Some people will think that 250 square feet is small, and others will think 2000 square feet is small. It depends hugely on perspective.”¹⁴ Average living space per person varies significantly by country. Therefore, what is considered to be a small living space depends on the context. To illustrate, Canadians occupy the third-largest living area per capita (behind residents of United States and Australia) at 779 square feet per capita. In contrast, Hong Kong residents occupy an average 150 square feet per capita. The Hong Kong average of 150 sq. ft. per person would be considered to be very small in Canada, even for a “small home”!¹⁵



*Visual comparison of average new home sizes around the globe (2009 data). Canadian home average new home size is 181 sq m (1948 sq ft). Source and image credit: Shrink that Footprint (using sources CommSec, RBA, UN, US Census). Note: data for 2009 builds. * China figures urban only.*

¹⁴ Paul Merrick - Merrick Architecture, Key Informant Interview, 2014.

¹⁵ Information found at: <http://shrinkthatfootprint.com>

Policy and Regulations

The size of a small home may be considered or defined in relation to policy and regulation. Perhaps a small home could be considered as the minimum size of dwelling, or smaller, than is currently allowed in a municipality.¹⁶ For example, in Vancouver most laneway homes are no bigger than 650 square feet, because this is the maximum area that can be achieved when the City's calculations for maximum size are followed on most average sized lots.

Key Points re: Definition of Small Housing:

There is no key universal definition for small housing – it's all about the context!

Many small homes are well under 500 square feet (200 to 400 square feet). In some situations, families or people accustomed to larger spaces would still consider a larger space (e.g. 750 to 1000 sq ft) but we are not focusing on these larger units in this study.

A key concept in small living is space that meets your needs without excess space.

From a regulatory perspective a small home is one that is the minimum size, or smaller than the minimum size, that is currently permitted for a dwelling in the city or town.

¹⁶ New York University Furman Centre for Real Estate and Urban Policy, "Working Paper: Responding to Changing Households: Regulatory Challenges for Micro-Units and Accessory Dwelling Units " in *What Works Collaborative White Paper*, New York City: NYU's Furman Center for Real Estate and Urban Policy, 2014.

3. Key Findings from this Research Study

Through a variety of methods this study addressed the research questions (listed above in the methodology section of this report). The key findings from the study are grouped into the following sections:

Snapshot of current trends for small market housing:

- This section includes brief examples of different types of small housing projects, estimates of numbers of small units BC, and sample rental and purchase costs.

Market demand for small market housing:

- Points addressed include a characterization of the target market, description of the ‘affordability driver’ for smaller units, location influences on demand, and observations about the breadth and depth of the market for various forms of small housing.

Benefits and challenges of small market housing from various perspectives:

- Points addressed include the feasibility of small market housing units from a development and business perspective, and livability from an occupant’s perspective. The benefits and challenges of small housing from a community perspective, as well as regulatory and policy angles are also explored.

Snapshot of Current Trends in Small Market Housing

The intent of this section is to provide a quick picture of current trends in small market housing with a few current “snapshots” as of fall 2014 including: some examples of different types of small housing projects and estimates of numbers of small units in BC. Sample rental and purchase costs of small housing in BC are provided in Appendix 9.

How Many Small Market Units are in BC?

One of the aims of this study was to get a sense of how many small market units currently exist in BC. The following information reports on highlights of data on this topic provided by BC Assessment. The number of units in the province of BC that fall within the study’s unit size parameters were analyzed by the consulting team and summarized below, including Figure 1. The data was summarized for BC, by region, from 2006 to 2014. Additional data can be found in Appendix 3.

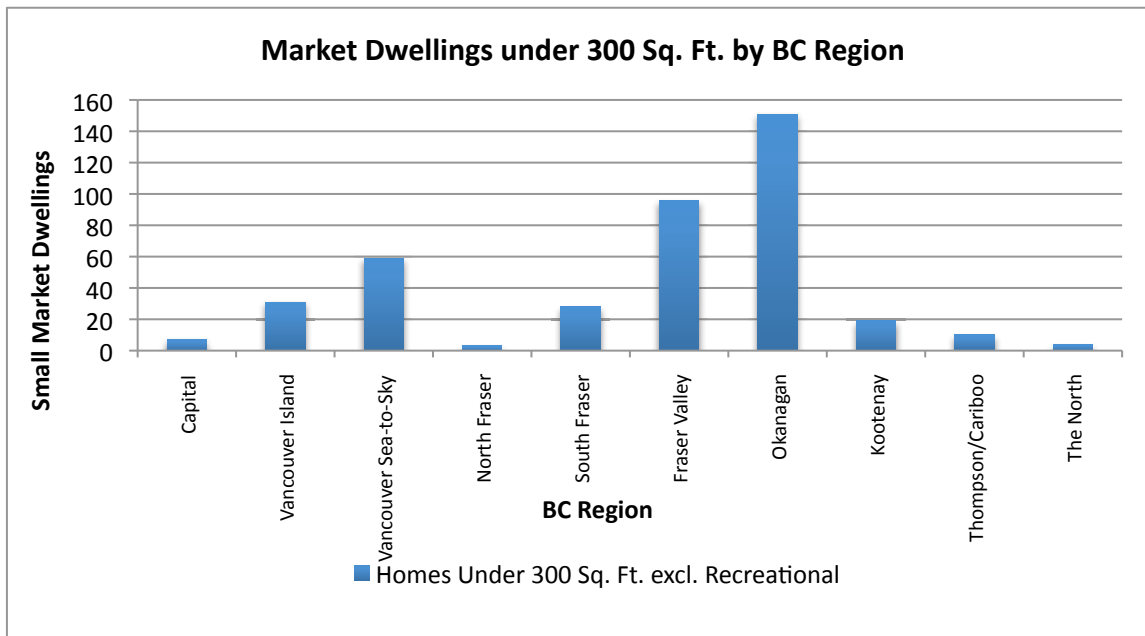


Figure 1 Distribution of Small Housing Units in BC, Smaller Than 300 square feet in Area.
 Source: BC Assessment Data, 2014

BC Assessment data categorizes market housing units by building forms (for example 1-, 1.5- and 2- storey homes, duplexes, row houses, apartment, properties with strata title in various building forms, and recreational use of property if designated as such meaning accessory units, and units that are not lived in full-time). To focus on small homes within the BC Assessment data set, we explored how many small homes exist in BC that are below 300 square feet in size, and how many are below 500 square feet:

- How many housing units are smaller than 300 square feet in BC as of 2014? 4,107. However 90% of these are for recreational use and not permanent homes. Of the 400 homes in BC that are less than 300 square feet and used as main residences, the vast majority are in the Okanagan and Fraser Valley area. (See Figure 1 above.) Perhaps a contributing factor could be regulations in these regions that allow smaller units to be legally constructed, and/or other factors that would need to be explored in further research.
- How many housing units are between 300 and 500 square feet in BC as of 2014? 17, 893. A bigger proportion of these units sized 300 and 500 square feet are used as permanent homes, than in the smaller (below 300 square feet) category. The largest portion of these sized units are located in the Vancouver / Sea to Sky region. Perhaps this regional stand-out can be explained (at least in part) by higher land values and more small units and multi-unit residential buildings being built in the most urban areas of BC.

For certain, there is an opportunity for further inquiry, study and analysis of the BC Assessment data described above in general terms, perhaps as a component of a future research project.

Examples of Small Market Housing - What do these homes look like in BC and elsewhere?

A variety of small market housing project examples in BC and across Canada were identified through this study, as well as projects in the United States and abroad. Below is a trio of images to illustrate some wide-ranging examples of the varying forms of small housing that exists. These examples, and others, are listed in Appendix 4.



Nagakin Capsule Tower in Toyko Japan was built in 1972 with modular components, and is comprised of many apartment capsules. Source and Image credit: Megan Sveiven, February 9, 2011.



Street entry to Burns Block (Reliance Properties) micro-suites, West Hastings Street, Vancouver BC. Image: Heather Evans



Tiny House in transport. Source and image credit: Rocky Mountain Tiny Homes.

While small units represent a relatively small share of units in North America (reliable figures not available), an increase in media reporting and online groups and blogs point to an increasing popular interest, awareness and curiosity about small living. Some examples of articles and popular media on small living are provided in Appendix 5.

Key Points re: Snapshot of Current Trends:

Many BC small market units are currently in the Vancouver and Sea to Sky Region.

There are many forms of small market housing in BC including micro-apartments, laneway homes, and tiny homes (moveable dwellings). Specific information about how many, by type, is not readily available.

Ideas for possible next steps and additional information:

Additional research about the trends in small market housing by type and by region in BC, including more detailed questions and analysis (e.g. BC Assessment Data, Multiple Listing Service data).

Analysis of the (average) rental and purchase prices of small market units, compared with other types of housing units in BC (and regionally), and possibly involving information on average cost by square foot for various unit sizes and types.

Market Demand for Small Housing

This study uncovered insight and observations about market demand factors and considerations for small market housing in general, and in BC. Much of the information gleaned in this study is general and qualitative; 'hard numbers' characterizing demand for small housing were not prevalent in this study. Insights about market demand that were provided by key informant interviews for this project were similar across interviewees, and were also echoed in the literature sources.

Who is the Market for Small Housing - Demographics and Household Size

Small Housing Appeals to Small Households - Roughly two-thirds of North Americans live in 1- and 2-person households.^{17,18} In the 2011 Census in Canada, there were more 1-person households (27.6% of all households) than couples with children, and the proportion of one-person households have been increasing over many years.¹⁹ As BC based demographer Andrew Ramlo describes, the market for small housing is "largely related to demographics and lifecycle, for example the number of people and the composition by age that changes over time".²⁰

The Canadian Mortgage and Housing Corporation (CMHC) defines a non-family household as "consisting either of one person living alone in a private dwelling or of two or more people who share a private dwelling but who do not constitute a family".²¹ The 2011 National Household Survey also revealed that 41% of adults between the ages of 20 - 29 years are living within the family home in British Columbia. Based on this study's research finding, laneway homes appeal to families wishing to find an affordable solution for adult children, especially in an urban context.

A closer look at this demographic in BC based on the information found on CMHC's Housing In Canada Online (HICO) database²², revealed that there were 508,920 non-family households in BC. Of these non-family households 165,790 were 65 years of age or older and 343,130 were under the age of 65. Just over 60% of all non-family households in BC were located in the two largest urban centres of Vancouver and Victoria.

Table 1 below provides median incomes, shelter to income ratios and average shelter costs for these non-household families.

¹⁷ Ross Chapin – Ross Chapin Architects, Key Informant Interview, 2014.

¹⁸ R. Disbrow, "The Economic Viability of Micro Units in New York City: When the Market Wants to Build Big", Master's Thesis, Massachusetts Institute of Technology, 2013.

¹⁹ Statistics Canada, "National Household Survey," Statistics Canada, Ottawa: 2011.

²⁰ Andrew Ramlo - Urban Futures, Key Informant Interview, 2014.

²¹ Ibid.

²² According to information found on the website, <https://www.cmhc-schl.gc.ca> CMHC HICO online database includes information extracted from the 2011 National Household Survey as well as the 2006, 2001, 1996 and 1991 Censuses to provide community specific housing data.

Table 1. Household Types by: Location, Number of Households, Average Income, Average Shelter Cost, and Shelter to Income Ratio (STIR)²³

<i>Household type and location</i>	<i>Total # of Households</i>	<i>Average Household Income</i>	<i>Average Shelter Cost</i>	<i>Shelter to Income Ratio (STIR)</i>
Total Non-Family Household in BC	508,920	\$48,270	\$ 859	28.8%
Senior Non-Family Households in BC	165,790	\$37,109	\$616	26.4%
Non-Family Households Under the Age of 65 in BC	343,130	\$53,662	\$976	29.9%
Non-Family Households in Vancouver BC	256,040	\$52,347	\$959	30%
Non-Family Households in Victoria BC	53,785	\$48,385	\$890	29.9%

There is some sense that North America in general has not been keeping pace with provision of housing to meet our changing household sizes and needs. And, as a result, many people are living in housing that is bigger than they would prefer, living together but would prefer to live alone, or living in small illegal housing units (that do not confirm to zoning, building code, etc.).²⁴

Small housing may address people’s housing needs at various intervals of the lifecycle. According to Jon Stovell, a BC developer who was interviewed for this project: “We say that small living is for everybody, but when? When in your lifetime do you need a small unit?” The answer seems to include both young and old: “Young people with complex and involved social relationships outside of the home and limited finances.... We are also seeing a lot of people coming back and recompressing later in their lives.”²⁵ For others that maintain smaller households throughout their lifecycle, small living may end up being a longer-term housing solution. Sarah Watson of the Citizens’ Planning and Housing Council in New York noted: “The government (and the market) is beginning to understand that the single population is incredibly diverse There is a common pre-conception that single people are young and transient, and will eventually transform into a family”.²⁶

As for a younger market segment, many small units are often occupied by “Generation Y” (20 to 35 years old) people who are just getting into the market. They are likely to be young urban professionals who

²³ Information found in , "Housing in Canada Online (Hico) Database."

²⁴ New York University Furman Centre for Real Estate and Urban Policy, "Working Paper: Responding to Changing Households: Regulatory Challenges for Micro-Units and Accessory Dwelling Units " in *What Works Collaborative White Paper*, New York City: NYU’s Furman Center for Real Estate and Urban Policy, 2014."

²⁵ Jon Stovell - Reliance Properties, Key Informant Interview, 2014.

²⁶ Sarah Watson, "Time to Make Room " *The Urbanist*, August 2013.

want to live in an urban environment to suit their lifestyle. They may be singles or couples, first time homebuyers, or renters. Some of the market is also comprised of immigrants used to living in smaller spaces and settling in urban areas with high land values. A 1995 UBC thesis by Sidjak (an older report with information and insight that still seems relevant today) surveyed residents living at 600 Drake Street in Vancouver, a micro-apartment purpose-built rental building and found that the “typical resident” is under 40, single, holds a post-secondary degree, walks or takes transit to work downtown, and has many interests outside of the home. A City of Vancouver laneway home survey (2012) of current residents found that about one-third of the respondents were between 20 and 34 years old. Almost half of the respondents were 2 person households, while one-person households made up the second largest household group. A small portion of the households included children.²⁷

Middle-aged (35 to 49) and older (50+) market segments for small market homes were most often referenced in this study in association with laneway homes and other types of small-detached dwellings. A City of Vancouver laneway home survey of current residents (2012) found that about 35% of the respondents were between 35 to 49 years old and 22% were over 50 years old. Some of the middle-aged segment are couples without children,²⁸ while an older segment is aiming to downsize to a more manageable housing form while continuing to live in a neighbourhood they are familiar with and attached to,²⁹ as described by Kim Little, a BC real estate agent who specializes in this type of housing product.

”[The market] is not driven by the fact that people particularly want to live in small spaces; it’s driven by the fact that people want to have a smaller cost.”

***Ben Smith,
Rennie Marketing
Systems***

Some other target market segments for small market housing may include second homebuyers who want a pied-a-terre, caregivers who can live on the same property (e.g. laneway home or accessory unit), and temporary workers. These were mentioned by key interviewees though not specifically researched and discussed further, and could be explored more deeply in a further study.

Cost and Affordability

Small housing is an affordability response to market conditions. Many North American cities with high land costs are experiencing demand for small housing and are taking initiative to support it, e.g. San Francisco, Seattle, New York City, Boston, Seattle.³⁰

Small housing units’ rental or purchase prices tend to be higher on a ‘per square foot’ basis, but the total rent or purchase price tends to be lower and more affordable due to the smaller area. Small housing appeals to people who need small housing costs to meet low and even moderate-income budgets.³¹ There was consensus among key informants in this study that people are looking for market housing options that meet their affordability

²⁷ Anonymous, Key Informant Interview, 2014.

²⁸ Kim Little - Independent Realtor, Key Informant Interview, 2014.

²⁹ Kim Little - Independent Realtor, Key Informant Interview, 2014.

³⁰ Ibid.

³¹ V. Wong, "Living Small in the Big City," Bloomberg Businessweek, March 18-24, 2013.

and lifestyle criteria, whether it be an affordable monthly rent, or a reasonable purchase option that does not require them to “mortgage their lives”³², and has the added benefit of a lower maintenance cost.

Several developers in this study explained that small apartments are purposely being priced for purchase at a price point on the same level as the target market’s current housing rental costs, to encourage them to buy rather than rent. Micro-apartments are being planned and constructed according to costing criteria (building and development cost, and selling price) that effectively targets a young buyer. Ben Smith of Rennie Marketing Systems in Vancouver described: “When you are in an area where you know the buyer is going to be young and have a certain price threshold, you build to a certain price threshold, so you are often “reverse-engineering” to a unit size that is affordable to the target buyer. If a buyer has 20% down payment, that means they can afford “this much (\$)” mortgage, they have “this much (\$)” income, therefore the suite size can be no more than “this price range”.³³ This is not only occurring in BC but in other jurisdictions as well. For example, in London, UK a condo development called “Pocket” targets young professionals who do not qualify for social housing, but earn a professional salary and want to purchase instead of rent.³⁴

A California survey in 2013 found that 62% of people would prefer to live alone than live with a roommate in a larger apartment.³⁵ Some of the focus group participants for this study verified that this is their situation precisely, so it is indeed happening in BC as well. One focus group participant said: “Initially I was sharing a one-bedroom place with a friend in the West End (of Vancouver). We sectioned off the living room so that I had one section (as a bedroom) and we still had a living room. He made too much of a mess, so figured I would get my own place. . . . I figured it’s small, right downtown, and this will be a good place to stay. I was there 9 years!” Solo living is more expensive in most cases, but living in a micro-unit can make living on one’s own more within budgetary reach than living in a more expensive larger studio or one-bedroom apartment.³⁶

Small detached housing forms (e.g. laneway housing) can provide a housing option for people who want to live in a predominantly single family neighbourhood but cannot afford to rent or buy a bigger space. For example, in a 2012 City of Vancouver survey of laneway homes, 68% of respondents said that they chose to live there so they could live in a detached dwelling; 57% of respondents made the choice due to affordability, given the prohibitive cost of purchasing a house or condo.³⁷

According to the Canadian Manufactured Housing Institute, small modular or moveable units are usually purchased by first-time homebuyers.³⁸ Some who buy tiny houses are looking for a way to live more cheaply by possibly avoiding property taxes and rent by living in a moveable dwelling.³⁹ Many older

³² Ross Chapin - Ross Chapin Architects, Key Informant Interview, 2014.

³³ Ben Smith r Rennie Marketing Systems, Key Informant Interview, 2014.

³⁴ Information found at: <http://www.theguardian.com/housing-network>

³⁵ New York University Furman Centre for Real Estate and Urban Policy, "Working Paper: Responding to Changing Households: Regulatory Challenges for Micro-Units and Accessory Dwelling Units " In What Works Collaborative White Paper. New York City: NYU’s Furman Center for Real Estate and Urban Policy, 2014.

³⁶ R. Disbrow, "The Economic Viability of Micro Units in New York City: When the Market Wants to Build Big.", Master’s Thesis, Massachusetts Institute of Technology, 2013.

³⁷ City of Vancouver, "Laneway House Occupant Survey- Detailed Results," 2012.

³⁸ Kathleen Maynard - Canadian Manufactured Housing Institute, Key Informant Interview, 2014.

³⁹ Wilkinson, "Let's Get Small.", The New Yorker, 2011.

buyers choose manufactured or moveable units (as a lifestyle choice to live more simply or after selling a home they can no longer afford⁴⁰) and choose to live in land lease communities⁴¹.

The strength of the market for both rental and ownership of micro-apartments depends on the location, the context, and the market. A US study concluded that micro-apartments (250 to 350 square feet) are generally viewed as too small for long-term residence, and this dissuades purchasers.⁴² Differing from the previously mentioned US study's conclusion, a sample of small unit residents in the focus group for this study indicated that many micro-apartment dwellers are actually living in their units for several years (both rented and owned) due to lifestyle and affordability factors. In Vancouver and Victoria there is vibrant demand for both ownership and rental of small units, according to developers and market analysts informing this study.^{43,44,45}

“Our experience so far is that there is unlimited demand in both tenures [for micro-suites]; it is such an unaddressed segment of the market.”

*Jon Stovell,
Reliance Properties*

Ownership - A market analyst observed that many single-owned small condominium apartment units are purchased by investors as an affordable way for them to enter the investment market with a unit they will be able to rent to others at an affordable rental rate, yet allow them to build equity while providing them with consistent income from their investment with a strong rental market.⁴⁶ Vancouver has a history of tight rental markets and condominiums are estimated to provide 95 % of market rental in Vancouver.⁴⁷

Other micro-apartment purchasers tend to be first time homebuyers.⁴⁸ Many prospective purchasers are making enquiries to developers, saying that they want to purchase based on their housing budget of \$900 to \$1000 per month.⁴⁹ A pre-construction project for micro-lofts in Victoria, The Janion, recently nearly sold out in a single weekend. The remaining units available were two-bedroom units so these were reconfigured into smaller units to meet market demand.⁵⁰ Similarly, owners of micro-apartment buildings have waiting lists of renters who are interested in their fully occupied buildings.

Rental – Of the several rental micro-apartment buildings surveyed by the consultants, they are all generally fully occupied and have waiting lists.⁵¹ Laneway homes (e.g. in Vancouver) are generally rental properties as they cannot be purchased, since they are secondary units that share the property of a principal dwelling. As described by Bryn Davidson, a laneway home designer and builder, “Laneway

⁴⁰ Ibid.

⁴¹ Kathleen Maynard - Canadian Manufactured Housing Institute, Key Informant Interview, 2014.

⁴² Si Yuan Qiu, "Smartspace: Opportunities for a New Real Estate Product", Thesis, Massachusetts Institute of Technology, 2009.

⁴³ Jon Stovell - Reliance Properties, Key Informant Interview, 2014.

⁴⁴ Bob Ransford - BC Small Housing Society, Key Informant Interview, 2014.

⁴⁵ Brian McCauley - Concert Properties, Key Informant Interview, 2014.

⁴⁶ Michael Ferreira - Urban Analytics, Key Informant Interview, 2014.

⁴⁷ Ibid.

⁴⁸ Ibid.

⁴⁹ Jon Stovell - Reliance Properties, Key Informant Interview, 2014.

⁵⁰ Paul Merrick - Merrick Architecture, Key Informant Interview, 2014.

⁵¹ Informed by information gathered from focus group with small housing residents in Vancouver BC (2014), and rental property websites and inquiries to Concert Properties, BlueSky Development, Reliance Properties (Vancouver).

“Micro-apartments can be an appropriate housing alternative in urban areas with great amenities and it is possible to live, work and play in close proximity.

I see it as a very urban housing model and not applicable to all municipalities.”

*Brian McCauley,
Concert Properties*

houses break down into thirds: one-third rental were built as revenue properties, one-third were owners renting out their homes and living in the laneway house, and one-third were family members living on the property in the laneway home”.⁵² In addition to rentals, there are some creative rental and co-ownership arrangements in place between multi-generational families members living on the same property (e.g. aging parents, and their young adult offspring entering the housing market) who are both renters and owners living in the principal dwelling and the laneway home. Some North American homebuilders (e.g. Lennar Corporation, PulteGroup, Ryland, and KB Homes) mention that a multi-generational living trend is happening in other places in North America as well, and that they are responding by building many homes with detached suites (similar to laneway homes) and accessory units within homes.⁵³

Future Demand - Community Location / Context

The future demand for small housing is understood in part by analyzing market data, trends, and demographics. However, according to interviewees in this project (developers and market analysts) much of the “intelligence” is informed by experience, and the depth of demand (i.e. the future) is somewhat empirically undefined. Developers pay attention to the velocity of absorption of new housing products, anecdotal information about how many people are interested, and wait lists.

Many interviewees in this study concurred that, due to land economics, future demand for small apartments will continue to exist in urban areas where affordability is a significant challenge for the target markets, and where there is a high concentration of amenities.^{54 55} Jon Stovell, a Vancouver developer offered that in his opinion “the true societal need for compact housing is for young people who want to be in energy centres (e.g. Downtown Vancouver, Surrey, Metrotown)”⁵⁶. In addition, market analyst Michael Ferreira offered that “Perhaps micro-apartments could also be successful in areas near post-secondary institutions where demand for student housing exists”.⁵⁷

As for the demand for new micro-apartment construction to meet demand, interviewed developers said that they could certainly build and then sell or rent more micro-apartments in Vancouver. A perspective from Michael Ferreira, a market analyst was: “I don’t see demand for small apartments being widespread. Demand for this product is very location-specific”.⁵⁸

In this study there was some variance in opinions and nuances heard about the appropriate contexts and neighbourhoods for detached small housing and moveable/tiny dwellings in the future. While one

⁵² Bryn Davidson - Lanefab, Key Informant Interview, 2014.

⁵³ New York University Furman Centre for Real Estate and Urban Policy, "Working Paper: Responding to Changing Households: Regulatory Challenges for Micro-Units and Accessory Dwelling Units ", 2014.

⁵⁴ Andrew Ramlo - Urban Futures, Key Informant Interview, 2014.

⁵⁵ Jon Stovell - Reliance Properties, Key Informant Interview, 2014.

⁵⁶ Jon Stovell - Reliance Properties, Key Informant Interview, 2014.

⁵⁷ Michael Ferreira - Urban Analytics, Key Informant Interview, 2014.

⁵⁸ Michael Ferreira - Urban Analytics, Key Informant Interview, 2014.

developer, Brian McCauley, stated that there is a market for laneway housing and appropriate scale of infill in many communities⁵⁹, a couple of other developers felt that suburban areas will continue to experiment with smaller forms but “this is not where the real thrust of demand for small housing is”.⁶⁰ One laneway homebuilder, Bryn Davidson thinks that uptake on laneway housing opportunities is slow in many communities due to land economics, i.e. lower land cost or housing rental costs, relative to the cost of construction.⁶¹

The demand for detached small housing options is believed to be strong in areas close to the urban area of Vancouver. According to Small Housing BC’s Bob Ransford, very few detached small houses have been built over the past three to four decades, resulting in a pent up demand for this form of housing⁶². The findings of a City of Vancouver survey (2012) of people living in laneway housing points support Ransford’s observation about the attraction to more affordable detached housing options. The survey found that of the Vancouver laneway home respondents 56% downsized, 70% are paying more than their previous home, and 68% chose to live where they do because they want to live in a detached dwelling.⁶³ Kim Little, a realtor who specializes in small homes, noted that laneway homes are a preferred type of housing, reflected in generally higher rental costs than other secondary suite types (e.g. basement suites, etc.).⁶⁴

As for future community context(s) for tiny and moveable dwellings, smaller and rural communities are more likely to host these dwellings due to lower land costs and looser regulations to park these relatively low-cost homes. However, Dobson (2013) points out from his experience with placing tiny homes in smaller communities that tiny and moveable dwellings could also fit on sites that are too small for regular housing in several types of settings.⁶⁵ Some larger cities in the United States have developments where tiny and moveable homes are grouped on a single lot (e.g. Boneyard Studios in Washington DC) and a town in Texas is the first to declare itself Tinytown, USA. (See Appendix 4 for these examples.) It is unknown by sources in this study whether similar trends could take root in Canada as well.



The City of Spur, Texas has declared itself the United States' first Tiny House Friendly Town, in 2014. Source and image credit: City of Spur, Texas.

⁵⁹ Brian McCauley - Concert Properties, Key Informant Interview, 2014.

⁶⁰ Jon Stovell - Reliance Properties, Key Informant Interview, 2014.

⁶¹ Bryn Davidson - Lanefab, Key Informant Interview, 2014.

⁶² Bob Ransford - BC Small Housing Society, Key Informant Interview, 2014.

⁶³ City of Vancouver, "Laneway House Occupant Survey- Detailed Results", 2012.

⁶⁴ Kim Little - Independent Realtor, Key Informant Interview, 2014

⁶⁵ C. Dobson, "Homes for Less: Report for BC Housing on Challenges, Lessons Learned, Recommendations", 2013.

Key Points re: Market Demand:

Small housing demand is fuelled by high land values, particularly in urban areas.

Smaller household size trends (many one- and two-person households) are suited to smaller forms of housing.

The market for rental and owned small housing appears to be high in urban areas, and it is predicted that this form of housing are less likely to have uptake in smaller communities and places with lower land values.

Ideas for possible next steps and additional information :

Further empirical study and analysis of market demand factors in BC for various forms of small housing could inform various sectors (development, regulatory, community) about the demand in various BC communities / regional contexts.

Benefits and Challenges of Small Market Housing, from various perspectives

This study's findings about the experiences, benefits and challenges of small market housing are reported below, in four areas:

1. Design, livability and residents' satisfaction
2. Developer/business perspective
3. Community considerations
4. Regulation and policy

1. Design, Livability and Residents' Satisfaction

The sub-sections below provide insights gained in this study on the design characteristics, livability elements, and occupant experience with small living pertaining to:

- Design considerations for various functions and spaces: general living, sleeping, meal preparation, bathing, storage, amenities and common spaces;
- Community context; and,
- Broader considerations for health and safety, sustainability.



Laneway home's linear kitchen and natural light through skylights. Source and image credit: Lanefab.

Small Housing Design – Four Key Themes

A high degree of concurrence about what makes a good 'small' place to live is expressed in the literature, key informant interviews, and survey/focus group for this study. Some key themes most frequently identified as factors that influence livability and residents' satisfaction in small units are:

1. Trading Space for Place - Numerous sources concur that comfort and livability in a home is less about the actual size of a home (e.g. whether it is 200 square feet bigger or smaller) and more about the layout, functionality, and design of that space. One architect interviewed called this "trading space for place"⁶⁶, a common mantra in small housing design. Particular aspects of wise small unit design such as circulation space, kitchen, storage, and bathroom are mentioned and discussed with respect to small units below. One focus group participant who lives in a small home stated, "It's like [the designer / developer] was consciously thinking about how we can use every bit of space so it won't be wasted."

2. Durability – As addressed well by Ross Chapin, Architect: "There is increasing aptitude for making small units livable and effective. It has to do with things 'doing double duty', things being interchangeable, and a certain amount to do with adjusting residents' expectations."⁶⁷ In order for furniture, furnishings, and other materials to do 'double duty' with intensive use and multiple purposes, they need to be designed well, made well, and maintained well.

⁶⁶ Paul Merrick - Merrick Architecture, Key Informant Interview, 2014.

⁶⁷ Ross Chapin - Ross Chapin Architects, Key Informant Interview, 2014.

3. Light and air - The importance of well-placed windows that provide sufficient daylight, views, and ventilation in smaller units is stressed by many. The height of the unit ceilings can also directly affect natural daylight and air quality, through the use of tall windows, and “make a small space seem significantly more spacious and comfortable, which could make them easier to market.”^{68, 69}

4. Privacy and quiet – Construction and unit design that minimizes noise and disturbance from outside, from other tenants, and from multiple activities within a small home, is really important in creating a livable and calm place to live.

Each of the above four key themes is reflected in the following analysis of small living design considerations, by functional area.



Use of translucent walls and partitions in micro-apartments at 18 West Hastings Street, Vancouver. Source and image credit: Bruce Carscadden Architect.

Design Considerations within Functional Areas of a Small Home

A typical small unit does not have conventional room divisions. Instead it has functional areas: sleeping/quiet area; meal preparation and dining area; living/socializing area; bathing area; common area; outdoor area, and storage area. In many small units the same floor area serves a couple of different functions, e.g. the main space is a living area during awake hours and a sleeping area during sleeping hours.

⁶⁸ R. Disbrow, "The Economic Viability of Micro Units in New York City: When the Market Wants to Build Big", Master's Thesis, Massachusetts Institute of Technology, 2013.

⁶⁹ In a recent document that outlines the City of Vancouver's Microsuite Guidelines emphasis was placed on concern for resident comfort, due to concern over "small size of the unit and limited window area". Maximum exposure to natural daylight, consideration to "the Horizontal Angle of Daylight provisions" and use of reflective light shelves are suggested.

The following sections share findings about recommended design for each functional area in a small home. These findings have been gathered by learning from residents about their living experience, as well as through observations and design experience by professionals in small market unit development, design and building.

Functional Area #1 - General Living

Circulation Within the Unit - Circulation space within the unit needs to be well-planned to serve a number of functions. For example, a walk-through space doubles as a space to set up a table and chair depending on the time of day and occasion.⁷⁰ Tumbleweed Tiny House Company suggests that one of the most important design tips is to provide an open space right inside the front door, rather than entering into a narrow aisle or hallway.⁷¹ Thoughtful interior design and intentional placement of built-in furniture, kitchen and bathroom and other set fixtures is important to creating a small space that is easy to get around and function without frustration.

Thoughtfully Configured Space - The ability to change the configuration of the living space to meet different functional needs is seen by many as an essential component of small living. For example, sliding glass doors, moveable walls, or partitions create a private space for a guest to stay over, or just create a temporary place to dress.⁷² For example, Hong Kong's innovative small apartments are transformed by many walls on tracks.⁷³ In Vancouver sliding doors and



APT. #4D - DUSK
Preparation for a dinner of 6 is underway.



APT. #4D - NIGHT
Dishes have been cleared, foldable table hung on a rail.
Murphy bed folded down from bookshelf, counter also
folded down, ready for breakfast tomorrow.

Layout of suite (dusk – ready for dinner, night – ready for sleeping) in microapartments that are currently being built (modular construction) in New York City. Source and image credit: nArchitects.

⁷⁰ Bryn Davidson - Lanefab, Key Informant Interview, 2014.

⁷¹ C. Dobson, "Homes for Less: Report for BC Housing on Challenges, Lessons Learned, Recommendations", 2013.

⁷² R. Disbrow, "The Economic Viability of Micro Units in New York City: When the Market Wants to Build Big.", Masters Thesis, Massachusetts Institute of Technology, 2013.

⁷³ See Hong Kong's small apartments with walls on tracks here: <https://www.youtube.com/watch?v=DQM7a5Yip9g>

walls are already somewhat designed into new small apartments, e.g. BOSASpace moveable walls and flexible furniture.⁷⁴ It was suggested that the use of glass (clear or translucent) instead of solid walls, can increase the sense of space and volume. For example, in Reliance Properties' Burns Block building (Vancouver) the wall between the bathroom and main room is translucent glass, which costs more than drywall but has a big impact on the quality of the space.⁷⁵

Carefully designed architectural elements enhance the quality of the space. To illustrate this point, a focus group participant shared his experience about this detailed level of design that really impacted the livability of a small apartment that he formerly lived in: "It had a tiny little kitchen with a very narrow wall separating it so you could see out to the window, but when you were lying in bed you weren't looking at the kitchen, which was really important."

Secondary research reviewed for this study included recommendations from residents to developers/designers.^{76, 77} In one of these studies participating residents were asked in a survey if they would prefer to live in a 250 square foot apartment furnished with built-in multi-use furniture, or in a 300+ square foot apartment without any built-in furnishings⁷⁸. Most indicated preference for a smaller furnished unit because they liked the convenience of not having to furnish it. The survey results correlate with the focus group input for this study. Residents in units with multi-use furniture (e.g. wall bed) and minimal furnishing needs mentioned that they liked this, and residents in units that they had to furnish themselves have had trouble with the layout and finding suitably sized appliances and furnishings to fit properly.

When developers build small units they often include furniture that serves multiple purposes (e.g. bed, dining table). There is specially designed furniture being created for small living. For example, the SmartBench™ can be used as a table with chairs, bench, or spare bed (add a cushion) as well as providing stored stools inside the bench, which also contain nested storage.⁷⁹

High-quality and high-durability furnishings (e.g. high durability laminates on cupboards, well-functioning mill work on the wall bed, etc.) are important because the residents are using every square inch in the apartment quite intensively.

In many small units, space needs to be reconfigured throughout the day (e.g. folding down the bed, hanging up the dining table, etc.). As such, it has been recommended that it is best to design multi-functional aspects as simply as possible, so that 'packing and unpacking' is kept to a minimum. One focus group participant shared her appreciation for the small space with mostly fixed rather than complicated convertible furnishings in her small unit. "One thing I like about our building is there isn't a lot of unpacking. When I look online

A Vancouver focus group participant listed the favourite parts of her micro-suite, which she characterized as being much like a hotel:

clever storage, good light, and a Juliet balcony.

She noted that it is the most modest apartment she has rented in Vancouver, and yet her favourite one.

⁷⁴ Information about Bosa Space available here: <http://ud.bosaproperties.com/bosospace/>

⁷⁵ Anonymous, Key Informant interview, 2014.

⁷⁶ R. Disbrow, "The Economic Viability of Micro Units in New York City: When the Market Wants to Build Big." Masters Thesis, Massachusetts, 2013.

⁷⁷ Si Yuan Qiu, "SmartSpace: Opportunities for a New Real Estate Product" Masters Thesis, Massachusetts Institute of Technology, 2009.

⁷⁸ Ibid.

⁷⁹ Ibid.

at some of the micro-apartments you have to unpack your bed from underneath somewhere and put things together. I'm not interested in that. I like that the kitchen is there and the bed is here, and I don't have to store and un-store things."

TV location and placement can be a challenge in small units. To address this challenge, a San Francisco small apartment developer, Panoramic Interests, provides a wall mounted flatcreen TV in every unit.⁸⁰ In another small unit type, called the "L41", movies can be projected onto a screened blind on one side of the studio, and a built-in electronics system allows single-control adjustment of lights, music, videos, etc. Residents feedback in a San Francisco study (2009)⁸¹ indicated that they really liked these types of luxury features.⁸²

Sense of spaciousness – Windows, High Ceilings, Air Circulation - Carefully designed architectural elements enhance the quality of the space. "How you create the space inside, where you place the windows, and where you place the architectural elements are the most important things ... because you have four walls that are very close to you."⁸³ Illustrating how important this is, a focus group participant explained that awkwardly located windows in his apartment leave him no option but to place his table and chair for eating and studying in the darkest corner.

Higher ceilings are emphasized by many sources as a feature that makes units of all types much more livable. Micro Dwelling Guidelines for the City of Vancouver encourage ceiling heights with a minimum height of 9 feet 6 inches⁸⁴ and San Francisco micro-apartment developer Kennedy suggests a ceiling height of at least 9 feet in his experience.⁸⁵ If the ceilings are even higher, 10 to 11 feet, it can create room for loft storage space or potentially a loft sleeping space.⁸⁶

Movement of air is important for making a place feel bigger and more comfortable.⁸⁷ A resident's experience is that proper heating and ventilation that works with higher ceilings is essential, to prevent heat from rising and the unit feeling chilly in winter months.⁸⁸

Connecting with the Outdoors - When living in a small unit, a connection to the outdoors is important for light, views, spaciousness, and connection to the broader context. Depending on the form of the home (e.g. apartment or ground-oriented dwelling) a connection to the outdoors may be through a large window with a good view, or a Juliet balcony, or useable outdoor space such as a balcony or terrace. As one designer/builder states, "if the connection between indoors and outdoors is made then the space feels larger".⁸⁹ A focus group interviewee who lives in micro-suite echoed this, and stated: "My suite... has floor to ceiling windows, so even though it's a small space, there is a lot of light and I love that." As one

⁸⁰ V. Wong, "Living Small in the Big City", 2013.

⁸¹ Si Yuan Qiu, "Smartspace: Opportunities for a New Real Estate Product", Masters Thesis, Massachusetts Institute of Technology, 2009.

⁸² Ibid., 2009.

⁸³ Bryn Davidson - Lanefab, Key Informant Interview, 2014.

⁸⁴ Ibid.

⁸⁵ R. Disbrow, "The Economic Viability of Micro Units in New York City: When the Market Wants to Build Big" Masters Thesis, Massachusetts Institute of Technology, 2013.

⁸⁶ V. Wong, "Living Small in the Big City" 2013

⁸⁷ R. Disbrow, "The Economic Viability of Micro Units in New York City: When the Market Wants to Build Big," Masters Thesis, Massachusetts Institute of Technology, 2013.

⁸⁸ Information from focus group attended by residents of Small Market Units in Vancouver.

⁸⁹ Bryn Davidson - Lanefab, Key Informant Interview, 2014.

architect and developer noted, "What are the views from the windows, and is it oriented to the sun? When you want to look out the windows, the home will feel and function bigger".⁹⁰

Vancouver architect Michael Katz and designer/ artist Janet Corne have developed a contemporary modular 200 square foot unit called L41. In this unit, "a retractable glass wall [is used] to provide the option of opening the living space to the outdoors, where there is bicycle and solar battery storage on the deck."⁹¹ The purpose of this design is to connect the indoors with the outdoors, and to create a feeling of spaciousness for residents of this small unit.

The City of Vancouver's newly developed Micro Dwelling Guidelines⁹² recognize the importance of access to outdoor space and fresh air, as it is important to the health and well-being of occupants. The Guidelines give preference to private outdoor spaces in the form of balcony, patio or deck areas, however they acknowledge this may not always be possible. The Guidelines recommend a 4.54 square metres of outdoor space or at a minimum the provision of "a strong relationship with the exterior form of large operable windows and / or "Juliet" balconies with a space "large enough to accommodate 2 adults side by side."⁹³

Outdoor communal space is often required and provided in the form of rooftop gardens or courtyards. However some focus group participants said they do not use communal outdoor spaces at their apartment buildings, and they visit public parks in the area instead. One focus group participant said that she wished she could "trade communal outdoor space for her own mini-in-suite washing machine!" More about common amenities is provided below in this report (see "Functional Area #6 – Overall Building – Amenities, Common Spaces").

Functional Area #2 - Sleeping and Quiet

Architects and designers noted the importance of developing a layout to enable quiet spaces and privacy, as challenging as it is within small units that may have few interior walls. An architect noted that when units are designed for more than one person it is very important as it ensures that one person has a space to relax or sleep, while the other person is able to work or be more active and noisier. In the housing development project studied by Si Yuan Qui (2009) the builder included soundproof sliding doors to section off part of the unit. This would allow for privacy if a guest was spending the night or to seal off sounds from another part of the unit, even to minimize noise coming from the refrigerator, heater, and the hallway at night.⁹⁴

Developers noted that selection of construction materials is a very important consideration within a building with multiple tenants because it really affects in-unit noise levels. Concrete construction is well suited to micro-apartment buildings, as concrete material between spaces makes it quieter. Residents can attest to that! One focus group member has moved up to 4 times in the city, each time because of noise

⁹⁰ Ross Chapin - Ross Chapin Architects, Key Informant Interview, 2014.

⁹¹ C. Symons, "Compact Cube Reduces Conventional Housing to the Basics." Vancouver Sun, N.D. 2014.

⁹² City of Vancouver, "Micro Dwellings Policies and Guidelines Adopted by the City Council March 15, 2014."

⁹³ Ibid.

⁹⁴ Si Yuan Qiu, "Smartspace: Opportunities for a New Real Estate Product.", Masters Thesis, Massachusetts Institute of Technology, 2009.

issues. She stated, “they would have parties...in the unit next to mine and below me. I could hear all of the noise and I was paying \$1440 a month. I thought I would have luxury...and it was an absolute disaster.” This person now lives in a concrete building and finds it satisfactory. A small apartment builder in San Francisco knows that sound-proofing is a big issue for residents and built thicker walls, installed acoustical mats and additional sheet rock, and specially made and sealed electrical outlets to prevent sound leakage.⁹⁵

The City of Vancouver’s Micro Dwelling Guidelines considers the impact of sound transfer from outdoors, making note that balcony placement and opening direction of windows and vents should be situated to minimize noise.⁹⁶



Stairs access to loft sleeping space in a Tiny Home. Source and image credit: Tumbleweed Tiny Homes.

In addition to soundproofing, a sleeping area needs a bed! Many micro-apartments have built-in “murphy beds” that pull down from the wall to use when they are needed, and can be pushed back up into the wall and out of the way when not in use. Some murphy bed structures also cleverly integrate storage space or a table for dining. The placement of the murphy bed is often critical for the functionality of the unit, since a bed that did not fold away would make it difficult to create a living space. A focus group participant explained that the fixed location of her murphy bed is right the middle



Kitchen in a NOMAD Micro Home. Source and image credit: NOMAD Micro Homes.

of her apartment, and should have instead been positioned closer to an outside wall for more efficient use of space. Another focus group participant found that his bed is right next to the window, the brightest place in the apartment, which is not conducive to sleeping.

A few interviewees and articles mentioned small living recommendations related to sleeping arrangements for people with mobility and accessibility needs: a loft unit with bedroom accessed via steep stairs or a ladder would not work well for a person with mobility issues⁹⁷; a murphy bed may need to be specially designed or customized; and a two-storey unit (e.g. a laneway home) with bedroom or other needs

upstairs would only be livable for people who do not have mobility issues or challenges.⁹⁸

⁹⁵ Ibid.2009.

⁹⁶ City of Vancouver, "Micro Dwellings Policies and Guidelines" adopted by City Council March 15, 2014."

⁹⁷ C. Dobson, "Homes for Less: Report for BC Housing on Challenges, Lessons Learned, Recommendations", 2014.

⁹⁸ Bryn Davidson – Lanefab, Key Informant Interview, 2014.

Functional Area #3 - Meal Preparation and Dining

Sources in the study concur that a fully functional kitchen area allowing for preparation of full meals is strongly preferred in a small unit, and this requires skilled layout and appropriately sized appliances. In a 2009 study that reported on testing period results for a prototype unit (prior to building multiple apartments), feedback from pilot residents resulted in a change of plans to create a slightly larger kitchen space with two burners (instead of one burner), adding an oven (prototype had toaster oven and microwave), increasing the size of the kitchen sink, and adding a nook area to sit⁹⁹ because residents valued these things.

Echoing a similar point of view, Journalist Christina Symons noted that within the L41 modular small unit, "the kitchen is the epicentre" and this adds to the "quality of experience within the space".¹⁰⁰ The unit designer of L41 commented that most small units tend to "compromise" in the kitchen area. A small house architect figures that most of the "working parts" of a kitchen can fit in a six-foot linear bank, with 22 inch wide appliances, and the whole kitchen area could fit in 12 square feet.¹⁰¹



*Layout of micro-suite at 600 Drake Street, Vancouver BC.
Source and image credit: Concert Properties.*

City of Vancouver Micro Dwelling Guidelines for kitchen areas also note that a resident's ability to cook is an essential component of unit livability. They suggest that "each Micro Dwelling must include a kitchen that is properly ventilated and includes a sink, ample counter space for food preparation, a stove/oven and a modestly-sized refrigerator with freezer."¹⁰²

A focus group participant for this study said "even though I have a great kitchen I rarely have people over", since she instead meets her friends at bars and eateries instead of cooking. However, another focus group participant, who cooks a lot at home, said that he really appreciates the island separating the kitchen from the living area because it provides food preparation space as well as a counter to sit and eat.

Several developers and architects that informed this study noted that historically it has been challenging to source 'right sized' appliances for small homes. A focus group participant shared his experience with a full sized refrigerator and dishwasher in his small apartment. He described that the full size fridge is "like a cavern" most of the time, and he runs the dishwasher once a week at the most: "If you live on your own the dishwasher is really only useful if you have a dinner party, which you don't have the space for anyway."

⁹⁹ Si Yuan Qiu, "Smartspace: Opportunities for a New Real Estate Product", Masters Thesis, Massachusetts Institute of Technology, 2009.

¹⁰⁰ C. Symons, "Compact Cube Reduces Conventional Housing to the Basics", Vancouver Sun, N.D. 2014.

¹⁰¹ Ross Chapin - Ross Chapin Architects, Key Informant Interview, 2014.

¹⁰² City of Vancouver, "Micro Dwellings Policies and Guidelines", adopted by City Council March 15, 2014.

In the L41 small dwelling, and several other newer micro-suites as well, the designers have been able to source space-efficient European appliance brands.¹⁰³

Ventilation and windows that can open were identified as important to the livability of a small home, as a small space can quickly get stale air or overwhelm with odours particularly when cooking. The City of Vancouver suggests "a minimum of two operable vents ...placed as far a part as possible, to facilitate good airflow".¹⁰⁴

Functional Area #4 - Bathing and Toilet

A euro shower (a waterproof bathroom space with a room drain) is installed in many small units to save space instead of a shower stall or bathtub. However, a regular bathroom setup rather than a euro shower room is often preferred by residents.^{105,106} In a "size-optimized" accessible bathroom, a euro shower in the middle of the bathroom can be shown to work as well.

The City of Vancouver Micro Dwelling Guidelines around bathroom design, suggest that consideration should be given to offering a full bathroom with shower or bath, ensuring privacy, and a partition and door to separate this space from the rest of the unit.¹⁰⁷ This point was echoed by a focus group participant who when speaking about the features she liked within her small unit she shared that "even though it's a very small bathroom you still have everything in there, it works, and you don't have to compromise the size of your shower or bathtub."

A focus group participant mentioned that she was particularly satisfied with bathroom storage in her rental unit: a built in mirrored medicine cabinet is installed in the corner so that there is lots of space for storage but little interference with bathroom space when the door of the cabinet is open.

Some units have inspired some unconventional design approaches aimed at more functional use of limited space. For example one designer experimented in the past with locating the bathroom sink in the main living area, providing sufficient space in the large room to stand in front of the sink, rather than being crammed into the smaller bathroom space. It also made the unit more functional for two people.¹⁰⁸ Detached small homes and tiny homes may have options for sustainable features like composting toilets, solar energy systems, grey water treatment system, and rainwater collection systems as well.¹⁰⁹

¹⁰³ C. Symons, "Compact Cube Reduces Conventional Housing to the Basics", Vancouver Sun, N.D. 2014.

¹⁰⁴ City of Vancouver, "Micro Dwellings Policies and Guidelines" adopted by City Council March 15, 2014..

¹⁰⁵ R. Disbrow, "The Economic Viability of Micro Units in New York City: When the Market Wants to Build Big", Masters Thesis, Massachusetts Institute of Technology, 2013.

¹⁰⁶ Information from focus group attended by residents of Small Market Units in Vancouver.

¹⁰⁷ City of Vancouver, "Micro Dwellings Policies and Guidelines", adopted by the Council March 15, 2014.

¹⁰⁸ Bryn Davidson – Lanefab, Key Informant Interview, 2014.

¹⁰⁹ Catchet Real Estate Finance, "Just How Sustainable Is the Micro Housing Trend?", 2014.

Functional Area #5 - Storage

Storage space is an important functional need for people who are living small; it is an important consideration for most occupants to have as much storage space as possible available to them. Focus group participants mentioned they have full closets, and that they long for loft storage and convenient building storage areas. A developer and rental building owner, focus group participants, as well as an interviewed planner all concurred that rented storage lockers within the building is a great way to offer storage space to those who need it enough to want to pay for it.^{110,111,112}



*Open and closed in-suite storage spaces in micro-suite at 600 Drake Street, Vancouver.
Photo: anonymous.*

City of Vancouver Micro Dwelling Guidelines include recommendations for in suite storage space both open and closed shelving and loft areas in addition to consideration for accessible secure storage areas location outside the unit. Utilizing space within the walls for storage (make walls thick to accommodate this) was suggested by some key informants.^{113,114} A focus group interviewee shared that she is able to use kitchen cupboard storage space for non-kitchen items because she does not have many kitchen supplies.¹¹⁵

Developer and architect Michael Geller suggests that we “think of small homes like the inside of a boat or travel trailer. The more that can be built in or furnished, the more livable the space is.”¹¹⁶

Strategies noted within L41 small unit model, include a built-in workstation and cubby that doubles as spy-door to the mechanical room within the living area. And the floor-to-ceiling closet and storage system is stepped back to visually broaden the space.¹¹⁷

Functional Area #6 - Overall building - amenities, common space

¹¹⁰ Information from focus group attended by residents of Small Market Units in Vancouver, 2014.

¹¹¹ Brian McCauley - Concert Properties, Key Informant Interview, 2014.

¹¹² Anonymous, Key Informant Interview, 2014.

¹¹³ Ross Chapin - Ross Chapin Architects, Key Informant Interview, 2014.

¹¹⁴ Kim Little - Independent Realtor, Key Informant Interview, 2014.

¹¹⁵ Information from focus group attended by residents of Small Market Units in Vancouver, 2014.

¹¹⁶ Michael Geller - The Geller Group, Key Informant Interview, 2014.

¹¹⁷ C. Symons, "Compact Cube Reduces Conventional Housing to the Basics." *The Vancouver Sun*, 2014.

Shared communal space is an important ‘cultural feature’ of communal cottage type developments such as Sabin Green (a small housing cohousing project in Portland, Oregon). For small-detached homes that are grouped on a lot (e.g. community clusters, pocket neighbourhoods) it has been suggested that groupings of 6 to 12 units provides a feeling of communality but not crowding.¹¹⁸ A culture of sharing can be developed in small living situations; everyone does not have space nor do they need to privately own everything for their needs, and can share among neighbours.¹¹⁹ Along a similar theme of sharing, a focus group participant who lives in a small apartment said that television and internet subscriptions are provided by the building management in common areas, which can bring tenants together and share this resource rather than individuals paying for it on their own.

The idea that “the city becomes the living room for small housing dwellers” was heard from multiple sources in this study. Small home residents utilize community amenities such as parks, restaurants, coffee shops and libraries to work, socialize and relax. In the recent Micro Dwelling Guidelines developed by the City of Vancouver this theme has influenced where micro-suites are to be built. These guidelines note that “Micro dwellings will preferably be located in close proximity to open green space, commercial, and community and recreational facilities.”¹²⁰

In a Vancouver focus group, many participants shared that location is a key factor in their decision where they live, and identified location and amenities as a key part of their satisfaction. The location and amenities that were valued were the seawall, cheap grocery stores, transit, yoga studios, entertainment, and restaurants. One focus group participant highlights that “the smaller space forces me to go out and spend less time at home and be more sociable, find some different things to do.”

In small units, some spaces and functions that might be in a larger home need to be put into common shared amenities, e.g. laundry; dog washing stations; bike repair, storage, and wash stations; work out rooms. A new micro-apartment building in Victoria BC, which is located close to the waterfront, is planning on providing storage for canoes and kayaks. Many buildings do not have parking, or visitor parking only, and this was not a problem, according to occupant input sources for this study.¹²¹

Focus group participants said that the quality and upkeep of the common spaces and facilities is a very important factor in deciding where to live, e.g. waste and recycling, washers and dryers, common rooms. For one focus group participant, the actual size of unit is not the most important factor in deciding to rent. He said: “I am more concerned with the upkeep of the building, how well maintained and clean is it?”¹²²

Focus group participants agreed that the functional sharing of amenities such as laundry was important to them, but some do not



Sabin Green development, Portland USA. Shared courtyard and accessory (guest) space. Source and image credit: Small House Bliss.

¹¹⁸ International Living Future Institute, "Build Small/Live Large Housing Summit." 2012.

¹¹⁹ B. Sweeney, "Megaprojects in Microliving (Multiple Cities)", 2014.

¹²⁰ City of Vancouver, "Micro Dwellings Policies and Guidelines" adopted by City Council March 15, 2014.

¹²¹ Information from focus group attended by residents of Small Market Units in Vancouver, 2014.

¹²² Ibid.

use the common spaces, and instead choose to usually spend their spare time at home or out in the city. Their comments included: “Our building is pretty transient; I know a couple people but nobody on my floor”, and “It’s a friendly building, people are nice, but I don’t know anyone well”¹²³. While deep insights about common space did not arise in the study, it would be interesting to study whether, in general, residents use the social common spaces and what are the contributing factors. In several current micro-suite building examples that were explored in this study, there are extensive common spaces being planned and built indoors, on each floor, and roof terraces.



Communal amenities at SmartHouse micro-apartments development in Toronto (in planning / construction phase) include fitness facility show kitchen, two lounges and exterior terrace. Source and Image Credit: Smarthouse.



Mapped location of SmartHouse micro-apartment development in Toronto (planning/construction phase) in relation to galleries, medical services, key transportation links, entertainment, etc. Source and image: Smarthouse.

¹²³ Ibid.

Table 2. Small Housing Design: Summary of Key Findings

<p>4 Key Elements ...for livability and resident satisfaction in a small home</p>	<p style="text-align: center;"><u>#1. Trading Space for Place</u> <i>it's not the size that counts, it's the quality of the space</i></p> <p style="text-align: center;"><u>#2. Durability</u> <i>double- or triple- duty functions</i></p> <p style="text-align: center;"><u>#3. Light and air</u> <i>daylight, views, ventilation</i></p> <p style="text-align: center;"><u>#4. Privacy and quiet</u> <i>quality construction, unit layout</i></p>
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Key Design Points for the Functional Areas in A Small Home	
General living area	<input type="checkbox"/> Plan circulation within the unit <input type="checkbox"/> Be able to change unit configuration – sliding doors, convertible furniture etc. <input type="checkbox"/> Tall ceilings, careful window placement, attention to ventilation <input type="checkbox"/> Connect with outdoors – more space and air
Sleeping and quiet area	<input type="checkbox"/> Soundproofing, construction methods for quiet between units <input type="checkbox"/> Wall bed – attention to placement
Meal preparation and dining area	<input type="checkbox"/> Fully functional kitchen – linear configuration <input type="checkbox"/> Right sized appliances <input type="checkbox"/> A place to sit and eat <input type="checkbox"/> Proper ventilation for cooking
Bathing and toilet area	<input type="checkbox"/> Shower stall and bathtub preferred by most (rather than a euro shower) <input type="checkbox"/> Well planned storage space <input type="checkbox"/> Durable finishings <input type="checkbox"/> Opportunities for sustainable water systems
Storage area	<input type="checkbox"/> In-unit storage areas and clever storage (e.g. niche spaces in the walls) <input type="checkbox"/> Rental storage lockers
Amenities and common areas	<input type="checkbox"/> Share amenities ... well planned common facilities – social, functional, active – both inside and outside <input type="checkbox"/> The city = the living room

Health and Safety

Susan Saegert, Professor of Environmental Psychology at CUNY Graduate Centre and Director of the Housing Environments Research Group, has written about concerns about health impacts of living in micro-suites, for larger households (e.g. 3 people) that are crowding into small units long-term for affordability reasons.¹²⁴ In particular Saegert has concerns about the health impacts on children who live in crowded apartments (not just micro-suites specifically) and lack of privacy in their day-to-day homes.¹²⁵

Along similar lines to Saegert, Dak Dopek, Director of Design for Human Health at Boston Architectural College and author of *Environmental Psychology for Design*, believes that micro-suites can be unhealthy for people older than the target market, i.e. over 30 or so, because they tend to “face different stress factors that can make tight living conditions a problem”¹²⁶. These stresses are not specifically outlined in the article but imply relationships, the possibility of children, and a lifestyle that is less focused outside the home. In the same article a counterpoint is presented: possibly it is better for health to live in a small apartment than to commute to the suburbs.

While health issues were not frequently raised in this study, there was some discussion about length of stay, and suitability based on lifestyle and preferences. A focus group participant explained that micro-apartment living is just right for him and it has suited him for many years; in fact he moved away the city for work opportunities, but when he was able to move back to Vancouver he moved back to the same micro-apartment building because he liked it so much. And, other focus group participants have been living in their units for several years because they feel it continues to suits their lifestyle and personal objectives over time.

The suitability of households for apartment living is an issue that is being broadly considered and discussed in Vancouver. A trend has also been noted in many expensive North American cities: more families are living in apartments. In Vancouver 11,000 families live in studios or one-bedroom apartments¹²⁷ which, according to one 2014 article, is not necessarily the planned or target market for these units.¹²⁸ However, an important part of the consideration around suitability of apartment size is one’s experience and expectations, which can be cultural. People living in many parts of the world are accustomed to living in closer quarters, a smaller home may not be an issue or concern for them.

Health and safety cautions can arise specifically with tiny houses, when people lacking construction knowledge and experience opt to embark on a “do it yourself” project and build their own tiny house. There can be issues that may come up which require expertise to ensure occupant health and safety, e.g. adequate ventilation, heating, materials, and plumbing systems. Basic skills and knowledge can be taught to aspiring tiny home builders in courses, e.g. hands-on classes or even an online one- or two-week “crash courses” on small home building.¹²⁹

¹²⁴ J. Urist, "The Health Risks of Small Apartments," *The Atlantic*, 2013.

¹²⁵ *Ibid.*

¹²⁶ *Ibid.*

¹²⁷ F. Bula, "Two Kids, Two Salaries – and an Extremely Compact Inner-City Loft," *Globe and Mail*, 2014.

¹²⁸ *Ibid.*

¹²⁹ Information found at: <https://tinyhousebuild.com/free-7-day-ecourse/>

Occupants' Overall Satisfaction - Living in a Small Home

In this study's Vancouver focus group, participants shared that they are satisfied small living because it fits their lifestyle and values, stating: "I like that I could leave in a suitcase; I like to travel", "I like living a somewhat 'edited' life"; "I don't want to have attachment to a lot of material things"; and, "it's feeling free and feeling insecure for me at the same time."

Most residents choose to live in a small apartment because they prefer it to their housing 'alternatives'. The alternatives may be to live in a location that is not as central or to share a larger place with roommates. People who value being able to live on their own, and live in a central location, will choose a small apartment if they can afford it. A focus group participant shared "I want to be in the downtown core of the city, somewhere there is life happening and I am walking distance to everything. My dream would be a penthouse in downtown if I could afford it." Generally the cost of living in a smaller unit is priced higher per square foot, but that does not particularly matter to residents. What matters is if it meets their price point and represents a good and liveable trade-off for them.¹³⁰ It is not that units are particularly "affordable" by nature, "it's just that you get less space"¹³¹ and this decreases the cost of the unit.¹³² A focus group participant thought that the micro-apartment would be an affordable and good place to stay temporarily, and has now been living there for 9 years.¹³³

A Boston, Massachusetts study found that many young professionals (the target market) thought that luxury finishes and extra space in an apartment would be expendable in exchange for living in a hip urban area and having a shorter commute to their job.¹³⁴ Echoed by a focus group participant: "I always choose first on location and price, and then on things like where it's facing - things that are luxuries."¹³⁵ As stated earlier, with smaller spaces, occupants are forced to go out more, be more social and become part of the social fabric of their local community.

A few of the respondents to the online survey that was administered as part of this study were planning to move out of their small units. One reason for moving was that they were planning to build their own, and another reason was that their growing child needed a separate bedroom that did not exist in their current unit.¹³⁶

While feedback on small living experiences heard in this study was generally positive, there are certainly cautions that small living is not for everyone depending on their space preferences, possessions, priorities, stage in life, household size, etc.

¹³⁰ R. Disbrow, "The Economic Viability of Micro Units in New York City: When the Market Wants to Build Big", Masters Thesis, Massachusetts Institute of Technology, 2013.

¹³¹ Ibid.

¹³² Pricing of small apartment units is further discussed in the next section of this report, where the developer/business perspective is explored.

¹³³ Information from focus group attended by residents of Small Market Units in Vancouver, 2014.

¹³⁴ Loth (2012) as cited in Disbrow, "The Economic Viability of Micro Units in New York City: When the Market Wants to Build Big.", 2013.

¹³⁵ Information from focus group attended by residents of Small Market Units in Vancouver, 2014.

¹³⁶ Information from survey respondent, 2014.

Key Points re: Design and Resident's Perspective:

The livability of a small home is less about the size, and more about the layout, functionality and design.

Durable, high quality, and suitable furnishings and design are essential – all parts of the small home need to be hard-working and functional.

Particular attention is needed to ensure that small homes are designed to access a lot of daylight (window placement, tall ceilings, site orientation), air (windows, circulation and ventilation), and connection to the outdoors.

Privacy and quiet can be achieved with appropriate and quality construction materials and methods.

Small living is not for everyone, and health and well being can be compromised if people are crowded and stressed in a small space.

2. Developer/Business Perspectives on Building Small Homes

Introduction

Overall the study found that a development and business rationale certainly exists for building small units to meet demand in some areas. However, small market unit development is not without challenges, including: feasibility and cost associated with small units; financing challenges; building management considerations (for micro-unit rental buildings); and uncertainty about the future market and regulatory environment for small housing. Findings from this study about opportunities and challenges of building small units are included in this section of the report. This section of the report also includes findings and discussion topic of factory-built housing with respect to best practices to manufacture small housing units and opportunities to increase efficiency.

Developer /Builder Motivations and Rationale to Build Small Housing Units

Profitability - A key business driver for small units, from a development perspective, is enhanced revenue per square foot in selling price or rental rates.¹³⁷ An interviewed developer explained his perspective on the motivations within the housing development industry to build small: “The cost of land will continue to increase in urban areas that are amenity-rich and transit-rich – conditions that support the opportunity for small housing.”¹³⁸ From a developer’s perspective, the project’s financial pro forma motivates and encourages them to build smaller apartments in order to carry high urban land costs. Since condominiums are built and sold on a cost per square foot basis, smaller suites are the best way to keep the price at a per-unit cost level that is attractive to the target market.¹³⁹

From a development perspective there is hope for growing acceptance for smaller and smaller units, within reason and tolerance. One market analyst explained that small apartments are a unique product to deliver, which is not based on a large body of evidence and guidelines about recommended cost per square foot for land purchase, etc. It has to be uniquely suited to the property and the context in order to work.¹⁴⁰

Niche Market: “Quality of Experience” - In addition to profit motivation for small units, small housing may also be built (usually on a smaller scale than apartment units) with goals in addition to profitability motivation. For example, Ross Chapin has been designing small homes since the 1980s and shared in an interview for this study that his firm is motivated from a “values perspective” to offer smaller housing options to people who are interested in something different in the housing market. By building what Chapin calls a “right sized” home, this architect is able to give clients a high quality of experience in their home without a lot of space and expense. Chapin’s firm tries to design homes that maximize the “livability quotient”, which is the extent of livable space per square foot.¹⁴¹

¹³⁷ V. Wong, "Living Small in the Big City." 2013.

¹³⁸ Ben Smith - Rennie Marketing Systems, Key Informant Interview, 2014.

¹³⁹ Ibid.

¹⁴⁰ Michael Ferreira - Urban Analytics, Key Informant Interview, 2014.

¹⁴¹ Ross Chapin - Ross Chapin Architects, Key Informant Interview, 2014.

Meeting Family Needs - Laneway houses are an example of a small housing form that a property owner often builds with motives besides profit gain. In Vancouver, one-third of laneway homes are built as “one-off” projects by detached homeowners as a way to accommodate additional family members on the property¹⁴² and meet various family needs including family care assistance, affordable housing for family members, etc.

Sustainability - Sustainability outcomes are associated with infill housing (e.g. laneway housing) and reducing sprawl by intensifying existing neighbourhoods. Overall, smaller homes use fewer materials, less energy, and lower greenhouse gas (GHG) emissions than a larger sized energy star home.¹⁴³ Sustainability can be a strong motivation for building small homes. A Vancouver custom designer and builder of laneway homes, Bryn Davidson, of Lanefab, explained that their firm builds sustainable homes as a way of doing regular business, on every home they build and not as a client’s design option. The firm chooses to place high value on sustainability and efficiency, and to enable a repeatable building method. This particular company’s interest and commitment to efficient buildings also helps to define a niche market with clients who are interested in living in more efficient buildings.¹⁴⁴

Builders and designers have also actualized cost and sustainability benefits through manufactured building and innovative building practices in both single family and multifamily small



A glimpse at the solar thermal capillary heating and cooling system in the L41 micro home by Michael Katz and Janet Corne. Photo Credit: Jason Payne, Vancouver Sun.

homes with some advantages. For example, the L41 home, is constructed of cross-laminated timber (CLT) fabricated with beetle-killed wood. According to a 2014 article in the Vancouver Sun, the "strength of CLT provides a means for wood to be used in mid-rise buildings (or stacked L41 modular units, as the case may be) which the architect and designer, Katz and Corne feel presents a viable and responsible alternative to emissions-producing concrete. At this time, they are exploring the feasibility of a 12-storey L41 modular

¹⁴² City of Vancouver, "Laneway House Occupant Survey- Detailed Results", 2012.

¹⁴³ Oregon Public Broadcasting, "Smaller Homes-Smaller Footprints," Oregon Public Broadcasting found at: <http://www.opb.org/news/blog/ecotrope/report-smaller-homes-smaller-carbon-footprints/>) This is a study about the environmental benefits of smaller homes.

¹⁴⁴ Bryn Davidson - Lanefab, Key Informant Interview, 2014.

building."¹⁴⁵ Several builders and manufacturers (e.g. NOMAD, Lanefab) incorporate green systems and prefabrication within some or all of the building of their units to gain efficiencies. Detached small homes and tiny homes may also include design options for sustainable features like composting toilets, solar energy systems, greywater treatment system, and rainwater collection systems.¹⁴⁶

Development Feasibility and Costs

It costs more per square foot of buildable space to construct a small unit, compared with larger units.¹⁴⁷ The most costly components of residential building are most certainly kitchens and bathrooms (i.e. appliances, hook-ups, plumbing, fixtures) and you have to build these components for each suite no matter how big it is.¹⁴⁸ The cost of a kitchen and bathroom is about 25% of the total unit cost of constructing each unit.¹⁴⁹ Adding to the cost of building small homes, premium quality finishings are very important in smaller suites to make them livable and command a high selling price or rent. The cost to install the essential small unit appropriate furnishings (including wall bed etc.) was estimated to be about \$10,000 to \$15,000 per unit. A BC development industry interviewee advised that the costs of material and labour when building small units may be quadruple to an average apartment unit.¹⁵⁰



*Layout of micro-suite at 18 West Hastings Street, Vancouver BC.
Source and image credit: Bruce Carscadden Architect.*

It can be a challenging balance for developers to sufficiently budget within their project to build in high-value elements within small spaces, e.g. high quality and space-appropriate appliances in each suite, and very high-quality common facilities for gathering, exercising, laundry etc. In addition to the up-front cost of providing these costly elements is the extra challenge of higher maintenance fees in order to maintain them, which is of particular concern for rental properties.¹⁵¹

A costly item on any financial pro-forma is providing parking spaces. For a small housing project it is critical for a developer to reduce or eliminate requirements to building parking spaces on site, because this saves a lot of money and can offset the costs

¹⁴⁵ C. Symons, "Compact Cube Reduces Conventional Housing to the Basics." 2014.

¹⁴⁶ Catchet Real Estate Finance, "Just How Sustainable Is the Micro Housing Trend?", 2014.

¹⁴⁷ Concert Properties - Brian McCauley, "Key Informant Interview for Research Study Exploring Best Practices and Lessons Learned with Small Market Units."

¹⁴⁸ Sarah Watson - Citizens Planning and Housing Council, Key Informant Interview, 2014.

¹⁴⁹ R. Disbrow, "The Economic Viability of Micro Units in New York City: When the Market Wants to Build Big", Masters Thesis, Massachusetts Institute of Technology, 2013.

¹⁵⁰ Anne McMullin - Urban Development Institute, Key Informant Interview, 2014.

¹⁵¹ Ben Smith - Rennie Marketing Systems, Key Informant Interview, 2014.

When building small units...

“you have to work hard to find ways to economize on your construction costs using standardized products, modularity, repetitive units efficiencies, and manufacturing efficiencies”

*Jon Stovell,
Reliance Properties*

that a developer bears for higher building costs, furnishings and appliances that are mentioned above.¹⁵² If the location for a small housing project is in a transit rich urban area, residents will have a lesser need for cars and reduced parking can be justified.

Despite the fact that it costs more per square foot of buildable space to construct a small unit, an advantage of building condominiums or rental apartments is that economy of scale from building multiple units can result in a profitable development project (as discussed in the section above: “Developer /Builder Motivations and Rationale to Build Small Housing Units”). In contrast, the motivation to build a one-off detached small home (e.g. a laneway home or a coach house) is not always profit driven because sometimes there is little profit to be had. A developer/owner’s motivation to proceed with this smaller scale of small housing must be to derive tremendous value in another way (e.g. providing housing for family) or stem from a lack of other options to meet their needs.¹⁵³

There can be opportunities to economize on construction costs for both apartment and detached small dwellings with standardized factory-built construction components, so long as the transportation costs to bring these components to the site do not remove the financial incentive to use them.¹⁵⁴ More information about factory-built construction considerations are explored below in the section “Factory-Built Housing – Considerations for Small Housing”.

Management Considerations for Small Housing Units

In micro-suite apartments that are developed as purpose built rental projects (or a condominium project with permitted rentals), managers/landlords can expect to encounter some unique issues and costs associated with smaller units through the lifecycle of the building.¹⁵⁵ In smaller units (especially apartments) shorter-term rental agreements tend to be attractive to a target market that may be more transient than other forms of apartment rentals. As a result of shorter tenancies owners and managers can expect to address requests around lease terms, sub-leasing policies, and possibly incur higher management costs. A further implication of shorter tenancies in this form of housing is a high level of “wear and tear” on the units. Given the small space, each square foot of the unit is used quite intensively, and the furnishings in the units need to stand up to daily use (e.g. high-quality convertible furniture, durable floor finishes and fixtures, etc.) and be well-maintained in order to sustain a solid reputation for quality.

¹⁵² Urban Analytics - ibid.

¹⁵³ Bryn Davidson - Lanefab, Key Informant Interview, 2014.

¹⁵⁴ Paul Merrick - Merrick Architects, Key Informant Interview, 2014.

¹⁵⁵ Anonymous, Key Informant Interview, 2014.

A higher quality and quantity of amenity spaces in a micro-unit building also needs to be provided in order to provide shared communal living space that is often well-used by residents. For example, focus group participants of one development mentioned that common rooms are well used because the building owner subscribes to localized Internet and television in common areas. This requires concerted resources to manage and maintain the common spaces for good condition, safety, etc.^{156,157}

Financing Challenges

There can be financing challenges, both to developers of small units, and to prospective buyers of small units.

Possible development financing challenges - Due to lenders' perceived high risk of developing small unit apartment projects, a developer has to demonstrate to the bank that 15% profit can be anticipated,¹⁵⁸ which is a profit level that is higher than some other lending terms for housing development projects.

In this study developers described challenges with securing CMHC insurance on development property financing for small-unit projects. When underwriting a development, financiers consider potential risk based on a number of factors including: financial security of the project, location, unit mix, projected rents, market comparables, sustainability of the project and marketability in the future. For small market units, it was explained that the market comparables could be limited and this could make approvals a challenge.

A prospective developer of a detached small housing development did not believe that financing would be a hurdle for this particular form of small housing, since it will be easy to demonstrate pent up demand for these units.¹⁵⁹

A property owner's needs and options for financing the construction of a single laneway home are at a much smaller scale than for a multi-unit development property. Some financial institutions (e.g. Van City Credit Union) are creating innovative lending practices that may assist those who want to develop laneway homes, e.g. separate mortgages for laneway home construction¹⁶⁰ and "mixer mortgages" that allow for multiple parties to own a property (and outline the ownership rights in a separate ownership agreement¹⁶¹). Co-ownership mortgages are another financial instrument being researched and considered (but not available in BC) as a means of financing the development of laneway and possibly other small homes.¹⁶²

Possible Consumer Purchase Financing Challenges – Prospective purchasers of individual micro-apartments may encounter difficulties with securing financing (i.e. a mortgage) from their bank.^{163,164} A

¹⁵⁶ R. Disbrow, "The Economic Viability of Micro Units in New York City: When the Market Wants to Build Big", Masters Thesis, Massachusetts Institute of Technology, 2013.

¹⁵⁷ Anonymous, Key Informant Interview, 2014.

¹⁵⁸ Anne McMullin - Urban Development Institute, Key Informant Interview, 2014.

¹⁵⁹ Bob Ransford – BC Small Housing Society, Key Informant interview, 2014.

¹⁶⁰ Information about Laneway Housing Mortgages can be found at: <https://www.vancity.com/Mortgages/TypesOfMortgages/HomeRenovationOptions/LanewayHousing/>

¹⁶¹ Information about Mixer Mortgages can be found at: <http://www.rew.ca/news/news-trends>

¹⁶² Personal communication with A. Schatz, Small Housing BC, November 21, 2014.

Additional information: In the United Kingdom a co-ownership mortgage allows a resident to own a 'share' of their home, and pay rent on a remaining 'share(s)' that another party (e.g. a housing association) owns. More information is available here: <https://www.gov.uk/affordable-home-ownership-schemes>

¹⁶³ Michael Ferreira - Urban Analytics, Key Informant Interview, 2014.

November 2014 article in The Toronto Star Newspaper explored this issue, and reported that all of the big banks in Canada are hesitant to lend for micro-unit purchases. Many of the banks have policies stating that they will not mortgage units smaller than 600 square feet, so to consider a mortgage on a smaller property is an exception that has to be considered and specially approved. Some of the reasons for the banks' hesitancy to lend are that the value of small units has yet to be established on the resale market, and since the purchase of these units is associated with investors there is some nervousness that they would be "prone to a sell-off (that would devalue their worth) if market conditions turn", according to the Senior Vice President of Urbanation in Toronto.¹⁶⁵ However, for some recent projects, small unit buyers have had their mortgages pre-approved by the banks with no problem, and one Toronto developer cited in the 2014 Toronto Star article believes that banks may reconsider their policies when more and more small units are built.¹⁶⁶

Factory-Built Housing – Considerations for Small Housing

Various definitions and terminology exist for factory-built housing types, which can cause confusion in discussions about this type of housing construction. The Canadian Manufactured Housing Association provides definitions of modular, manufactured, prefabricated, and panelized housing, provided in Appendix 6, and these are the definitions that are intended in this report.

It has been estimated that prefabrication can potentially reduce the hard costs of construction in the order of 20% to 25%.¹⁶⁷ Cost savings from factory-built housing can come from avoiding some of costly pitfalls that may be encountered with on-site construction, including: avoiding construction time delays due to weather, avoiding delayed materials delivery, and scheduling difficulties with the coordination and timing of trades.¹⁶⁸ Some interviewees with experience building small units are finding advantages of modular and prefabricated construction, not only financially but also logistically. For example, in a tight urban environment with surrounding development and small sites such as in New York City, a pilot project is showing so far that the modular building assembly with a crane will be cheaper and easier than on-site construction.

The following are some findings from this study and discussion about implications of prefabricated construction for various forms (i.e. apartment and detached forms) of small housing.

Apartments - The study found North American examples of prefabricated multi-unit residential buildings for small apartments, but none of them in BC. According to the Canadian Manufactured Housing Institute, the manufactured housing industry is producing more and more multi-family products¹⁶⁹, but information is not available about how many of them are small homes.

Some interviewed developers of small apartment housing in Vancouver shared that they have previously considered prefabrication methods in feasibility and planning stages for projects, and their analysis did not

¹⁶⁴ Anonymous Key Informant Interview, 2014.

¹⁶⁵ Found at: (http://www.thestar.com/business/real_estate/2014/11/12/banks_take_hard_look_at_micro_condos.html)

¹⁶⁶ Found at: (http://www.thestar.com/business/real_estate/2014/11/12/banks_take_hard_look_at_micro_condos.html)

¹⁶⁷ M. Sorkin, "Little Boxes," The Nation, 2014, available at: <http://www.thenation.com/article/180814/little-boxes..>

¹⁶⁸ Kathleen Maynard - Canadian Manufactured Housing Institute, Key Informant Interview, 2014.

¹⁶⁹ Ibid.

suggest that modular construction would save them time and money over onsite construction methods for those projects.^{170,171}

Several interviewees shared that they were not as familiar with factory built housing opportunities and implications for small housing, though they were curious about the various types and terminologies of manufactured and modular housing. It is recommended that professional awareness-raising activities of the CMHI and others continue. Studies that explore examples and financial analysis for prefabricated construction could be useful, in order to assist with analysis and perhaps dispel some lingering myths about the limitations of former technologies, and show demonstrated cost savings on relevant / transferrable projects.

Here are two examples, from New York and San Francisco, of small apartment projects in the U.S.A. that have been (or are in the process of) being built with modular prefabrication methods:

- Panoramic Interests, a developer in San Francisco, is working with Zeta Communities (a prefabrication building specialist) on small-unit apartment buildings called The Panoramic and SoMa.¹⁷² Each apartment fits in one module, and there is a double wall between each unit (including ceiling and floor) for excellent acoustics.¹⁷³ Identified advantages are cost-effectiveness, ability to build five units per day under high quality control, and energy efficiency (LEED Platinum standard, which is a first for rental residential buildings in the USA).¹⁷⁴
- A small-apartment demonstration project in New York City (My Micro)¹⁷⁵ referenced above is being constructed with modular components as well. The modular components are being manufactured in nearby Brooklyn. According to Commercial Property Executive, about 40 multi-family modular projects are in the cue in New York City.

Images of the above-referenced New York and San Francisco projects are on the next page.

¹⁷⁰ Ben Smith - Rennie Marketing Systems, Key Informant Interview, 2014.

¹⁷¹ Jon Stovell - Reliance Properties, Key Informant Interview, 2014.

¹⁷² See <http://www.panoramic.com/smartspace/mission-san-francisco/>

¹⁷³ See <http://www.panoramic.com/smartspace/mission-san-francisco/>

¹⁷⁴ Si Yuan Qiu, "SmartSpace: Opportunities for a New Real Estate Product"

¹⁷⁵2009. See <http://www.narchitects.com>



Factory-built construction of Modular Units for Panoramic Interests micro-apartment project in San Francisco by Zeta Communities. Source and image file: Panoramic Interests and Zeta Communities.



Installation of modules for micro-apartment building at 38 Harriet Street, San Francisco. Source and image file: Panoramic Interests and Zeta communities.



Rendering of installation of modules at My Micro New York pilot project site. Source and image credit: nArchitects.

A University of Washington 2013 study¹⁷⁶ explored the potential for modular prefabricated multifamily construction in the Pacific Northwest area in particular. This study identified 9 constraints for modular prefabricated multifamily construction: market demand, transportation, logistics, costs, codes, permitting and inspection, labour and unions, architectural design and delivery, and regional manufacturing. The study also identified 3 major opportunities of this type of construction: schedule, cost, and quality. The findings may be somewhat applicable in a BC context, and/or perhaps a similar type of study could be helpful in BC (if such study does not already exist).

Prefabrication may bring some distinct advantages for micro-apartments. The narrow width of prefabricated units (in an example for a prototype project, the units were 10 feet 11 inches wide) could be configured and designed to fit on urban sites with very little frontage space.¹⁷⁷ In terms of aesthetics, several interviewees noted that the design of prefabricated construction has significantly improved over time, and lends itself well to modern architectural style that appeals to the current market and aesthetic preferences of a younger demographic, which forms a large part of the market interested in small housing.

Small Housing BC offered an observation from experience, that prefabricated construction lends itself well to infill contexts that are common to many forms of small housing projects. Prefabricated buildings often result in less disruption to existing neighbourhoods: less noise, less traffic disruption, and a shorter timeframe for building on site.¹⁷⁸

Several sources suggested that trades and design experience with modular construction methods could be learned to make it more efficient and seamless. For example, when modular units are stacked on top of one another in multi-family housing projects, there can be some design issues to resolve pertaining to alignment and integration of mechanical systems, in order to be meet BC Building Codes requirements with respect to distance to venting.¹⁷⁹ Other areas of required modular experience and expertise would be in the areas of project planning to ensure proper timing of delivery with on-site preparation works, and the development of trades' expertise in modular-specific planning and onsite assembly.^{180,181}

There can be a high cost to transporting manufactured panels and modules over long distances, which obviously factors into the feasibility of selecting a prefabricated construction method. The above-referenced 2013 Washington study estimated that a maximum distance of 200 miles from the factory is feasible and economical as a rule of thumb¹⁸², assuming truck transportation. However, an architect interviewee suggested that even with long distances to travel (e.g. \$7-9000 cost per unit to transport from a plant in Oregon to British Columbia) the cost savings of prefabricated units may still provide a significant

¹⁷⁶ N. Javanifard, N. Markert, S. Strobel, J. Yap, "Modular Prefabricated Residential Construction Constraints and Opportunities", University of Washington, 2013.

¹⁷⁷ Si Yuan Qiu, "Smartspace: Opportunities for a New Real Estate Product", Masters Thesis, Massachusetts Institute of Technology, 2009.

¹⁷⁸ Akua Schatz personal communication, November 21, 2014.

¹⁷⁹ Si Yuan Qiu, "Smartspace: Opportunities for a New Real Estate Product", Masters Thesis, Massachusetts Institute of Technology, 2009.

¹⁸⁰ C. Dobson, "Homes for Less: Report for BC Housing on Challenges, Lessons Learned, Recommendations", 2013.

¹⁸¹ *ibid.*

¹⁸² *ibid.*

cost advantage, perhaps up to half the cost of constructing a unit on-site.¹⁸³ The most significant savings from pre-fabrication could be when the same unit plan can be used for a large-scale project.¹⁸⁴

Detached Small Homes and Moveable Dwellings - There are several BC examples of detached small homes (e.g. laneway homes, tiny houses, small detached homes) that are built using prefabricated construction methods.

Vancouver-based laneway homebuilders are using prefabricated wall panels, which achieve energy efficiency and cost savings that are aligned with the sustainability goals of their firms and their customers. Lanefab custom laneway homes are constructed with prefabricated wall panels. "Lanefab's standard hybrid wall - which has an effective insulation value of R35 - is a combination of two walls: an outer structural wall and an inner service wall. The Passive House version, with a thicker SIP, is R55."¹⁸⁵ SmallWorks, a builder of laneway homes, also uses a combination of prefabricated systems combined with on-site hand-building.¹⁸⁶

NOMAD micro-homes¹⁸⁷ are constructed with metal insulated panels that are manufactured in a controlled environment, and then shipped to the site to be assembled by snapping them to together. They are built on a foundation or on a series of beams supported by screw piles (metal piles hand-screwed into the ground). Some tiny homes (e.g. Tumbleweed Tiny Homes) are built according to standardized plans and are hand-built.



Installation of structural insulated panels (SIPs) at a laneway home construction site. Source and image credit: Lanefab homes.

¹⁸³ Paul Merrick - Merrick Architects, Key Informant Interview, 2014.

¹⁸⁴ K. Bender, "Little Boxes: The New Movement to Seriously Downsize Our Homes," The Environmental Magazine, 2009.

¹⁸⁵ Bryn Davidson - Lanefab, Key Informant Interview, 2014.

¹⁸⁶ Information found at SmallWorks website: <http://www.smallworks.ca/>

¹⁸⁷ For more information see NOMAD Micro Homes website: <http://www.nomadmicrohomes.com>

Key Points re Developer / Business Perspective:

Small living costs for residents (in rent and purchase cost) are higher per square foot, but the idea is that it costs less per unit because the space is smaller than other units they would otherwise rent or purchase.

Many types of small homes (particularly apartments and laneway homes) are suitable in urban (or near-urban) areas with high land values and many very close-by amenities like transit.

It costs more per square foot to build a small unit – kitchens and bathrooms, high quality furnishings and amenities.

There can be financing challenges for building and buying small units, because they are relatively new and need to be ‘proven out’.

Prefabricated construction seems to bring advantages for building small units including with cost, time, quality, and logistics. These are opportunities to be further explored in the BC context.

Ideas for possible next steps and additional information:

Increase understanding about the financial / lending challenges for small units.

Increase depth of understanding about the economics and feasibility of various types of factory-built construction methods, with respect to applicability to particular types of small housing projects.

Study and increase understanding about the depth of the market for small housing.

Share knowledge between development and policy/regulatory sector about the financial considerations and key issues around feasibility of small housing projects.

3. Community Considerations Related to Small Housing

Community positions and opinions about small housing projects can influence communities' overall receptiveness to small housing (various forms and types), and can also influence policy and regulations that guide small unit development. In this section are some considerations about small housing that inform opposition and support for small housing, which were outlined in the literature and raised in interviews with key informants for this study.

Livability Standards for Small Housing Residents

Some articles on the subject of small housing explain that community residents are concerned that small units will bring lower living standards and poor conditions reminiscent of tenement buildings in previous centuries. In the past, small housing units in decrepit conditions motivated the introduction of housing standards aimed at protecting city residents' health and quality of life.¹⁸⁸ There are some fears that new micro-units "could create a slippery slope of allowing other exemptions [i.e. in addition to minimum unit size] on standards such as natural light and ceiling height", and decrease livability and quality of life.¹⁸⁹

There are also some fears that the household size of small units will not be used as intended/promised by the developers and the municipal regulations, i.e. small households of one or two people at the most. In San Francisco, for example, the City places a limit on the number of people per household but the enforceability of this regulation is questioned.¹⁹⁰ If larger families moved into apartments there is concern about their well-being (as described below in Policy and Regulations).¹⁹¹

Impact on Affordability of Housing

Small units often rent at a lower monthly rental price per unit than comparable units in the area, but a higher price per square foot. There can be community concerns that the introduction of these units in the neighbourhood will influence an increase in the rental rates of larger units (1-bedroom units, etc.), and will "drive up" land costs to make the neighbourhood less affordable.¹⁹² However, in a New York study it was also noted that micro-units have the potential to reduce the demand among singles for shared 2- to 4-bedroom housing units, which could render those units more affordable to households with lower incomes.¹⁹³

¹⁸⁸ R.Disbrow, "The Economic Viability of Micro Units in New York City: When the Market Wants to Build Big", Masters Thesis, Massachusetts Institute of Technology, 2013.

¹⁸⁹ New York University Furman Centre for Real Estate and Urban Policy, Vicki Been, Benjamin Gross, John Infranca."Working Paper: Responding to Changing Households: Regulatory Challenges for Micro-Units and Accessory Dwelling Units" in What Works Collaborative White Paper. New York City: NYU Furman Center for Real Estate and Urban Policy, January 2014.

¹⁹⁰ Kimia Haddadan - City of San Francisco, Key Informant Interview, 2014.

¹⁹¹ F. Bula, "Two Kids, Two Salaries – and an Extremely Compact Inner-City Loft." Globe and Mail, 2014.

¹⁹² New York University Furman Centre for Real Estate and Urban Policy, Vicki Been, Benjamin Gross, John Infranca."Working Paper: Responding to Changing Households: Regulatory Challenges for Micro-Units and Accessory Dwelling Units" in What Works Collaborative White Paper. New York City: NYU Furman Center for Real Estate and Urban Policy, January 2014..

¹⁹³ Ibid.

Impact on Neighbourhoods

The introduction of small units can bring into a neighbourhood a different type of housing than currently exists there, as well as different type of residents. This brings change to the neighbourhood, and has the opportunity to “foster sociability” (according to Architect Ross Chapin) in the urban environment,¹⁹⁴ among different types of people in a mixed neighbourhood. According to Chapin good design is essential to fostering sociability in a neighbourhood, e.g. preserving privacy with well positioned windows, and connecting people to one another through room-sized porches and laneway gardens.

Despite perception among some of the interviewees that some community opposition exists toward small units, there was a lot of support among various sources in this study for the potential of small units to help mix different types of units and people throughout the city, and contribute to creating a whole and healthy community. In particular, smaller units increase vibrancy, with young people living downtown and in a variety of neighbourhoods they might not otherwise be able to afford.^{195,196}

In the process of small unit development, concerns or questions may be raised about the proportionate burden that small unit dwellers would place on the capacity of community amenities, e.g. such schools, transportation and open spaces.¹⁹⁷ Other concerns include transportation and parking demands that are a burden on the neighbourhood, particularly in response to parking exemptions that are often given to small-unit developments.¹⁹⁸ It has been suggested that small homes should be built within close access to community amenities and transportation to cut down on concerns and complaints from the neighbourhood about parking problems associated with infill development.¹⁹⁹

Another type of consideration is whether or not the design of the new small housing buildings fit in with the character of a neighbourhood.²⁰⁰ A developer/builder of small homes suggested that the site orientation and placement of infill small homes in a neighbourhood is a critical factor for neighbourhood support. Suggestions are to site new homes in order to maintain privacy of surrounding uses, as well as sited to the street and thereby improve the street life.²⁰¹ This point is illustrated by interviewee Bob Ransford's visit to a pocket community of 15 units built on two 60-foot lots in Bothell, Washington. When Ransford visited this community he “drove by and missed it at first. It is on a residential street, a fairly almost rural edge of rural and suburban, large single-family lot with lots of trees in front of it. It was just in a row of houses along the street and integrated very well into the community, but a different project than its neighbours. When you walk into the courtyard you know you are in a different type of development than the houses next door.”²⁰²

¹⁹⁴ Ross Chapin - Ross Chapin Architects, Key Informant Interview, 2014.

¹⁹⁵ Jon Stovell - Reliance Properties, Key Informant Interview, 2014.

¹⁹⁶ R. Disbrow, "The Economic Viability of Micro Units in New York City: When the Market Wants to Build Big", Masters Thesis, Massachusetts Institute of Technology, 2013.

¹⁹⁷ G. Goodale, "Could You Live in 150 Square Feet? Cities Try out Micro-Housing," *Christian Science Monitor* 2012.

¹⁹⁸ R. Disbrow, "The Economic Viability of Micro Units in New York City: When the Market Wants to Build Big", Masters Thesis, Massachusetts Institute of Technology, 2013.

¹⁹⁹ Bryn Davidson - Lanefab, Key Informant Interview, 2014.

²⁰⁰ New York University Furman Centre for Real Estate and Urban Policy, Vicki Been, Benjamin Gross, John Infranca. "Working Paper: Responding to Changing Households: Regulatory Challenges for Micro-Units and Accessory Dwelling Units" in What Works Collaborative White Paper. New York City: NYU Furman Center for Real Estate and Urban Policy, January 2014.

²⁰¹ Ross Chapin - Ross Chapin Architects, Key Informant Interview, 2014.

²⁰² Bob Ransford - BC Small Housing Society, Key Informant Interview, 2014.

Opportunities for Community Dialogue

Schatz (2013) explored residents' attitudes to small housing in a lower-density Vancouver neighbourhood and found a dominant anti-densification view led by a local residents' association. However, she also noted that there are some "hidden narratives" suggesting cautious support for laneway housing.²⁰³ She notes that the planning orientations of the city may differ from particular neighbourhoods, and that a public participation process should capture the views of a broad range of residents.²⁰⁴

Other interviewees suggested that to reduce NIMBYism (Not In My Backyard), people who live in cities and neighbourhoods where small housing is being provided should be provided with information and rationale about the proposed small housing policies and/or projects and the intended market it serves, and should also be provided with a respectful forum to discuss neighbourhood planning prior that occurs prior to meetings that propose specific development projects. There have been some initiatives and pilot projects that display small apartments for the general public to get some familiarity and experience with this form of housing, e.g. an exhibition at the City Museum of New York "Making Room: New Models for Housing New Yorkers".²⁰⁵

Key Points re: Community Perspective

Some key community considerations about development of small housing include:

- Ensuring that livability standards are maintained in small units – small does not mean poor quality
- Understanding the impact of small market units of other housing affordability in the area, ensure neighbourhood design and fit, and what burden and/or opportunities for community infrastructure and amenities.
- How can small housing be understood and discussed with 'neighbours'?

²⁰³ S. Schatz, "Neighbourhood Intensification: Attitudes Towards Laneway Housing in the Dunbar Neighbourhood", Masters Thesis, Simon Fraser University, 2013.

²⁰⁴ Ibid.

²⁰⁵ See <http://www.mcny.org/>

4. Policy and Regulatory Perspective – Benefits and Challenges

This section outlines some observations and commonalities among several municipal policies and regulations for small housing, and shares some suggestions that emerged from the findings which may be transferable ideas in a BC context.

Common Themes among Municipal Policy and Regulations for Small Market Units

Approaches to Small Housing Policy and Regulation - The minimum allowable size for micro-apartments, in the North American cities explored, seems to be approximately 225 to 300 square feet (with exceptions, e.g. efficiency dwelling units in Seattle, Washington (described in Appendix 7) are much smaller units). In Vancouver the Micro Dwelling Guidelines apply to “smaller than 320 square feet and may be relaxed down to 250 square feet and are intended for single occupancy”²⁰⁶.

Several cities and municipalities have taken an approach of allowing some micro-apartments to be built through ‘pilot projects’ or in ‘innovation districts’, while maintaining their jurisdiction’s existing minimum apartment size (e.g. around 400 to 500 square feet) in the rest of the city as a whole. Alternatively, some cities have taken another approach by lowering the minimum dwelling unit size in the city, and considering micro-apartment applications in certain areas that meet zoning or other criteria (e.g. urban areas with high level of amenities and transit access).

Small Housing Issues Addressed Through Local Policy and Regulation - Cities’ policies and regulations for small housing, as a whole, have a primary goal to ensure basic livability conditions²⁰⁷, namely exposure to light and air which can be ensured through design requirements and guidelines such as relatively high ceiling heights and solar access guidelines/requirements. For example, the City of Vancouver’s Guidelines specifically address venting, air, and light.²⁰⁸ A challenge that was identified is municipalities’ limited regulatory sphere of influence on the interior details that can affect the livability of this form of housing.²⁰⁹

Most cities that have policies and regulations around micro-units require less parking spaces for micro-apartment developments than usual residential parking requirements, with a rationale that the reduction saves on development costs and micro-apartment residents rarely own cars anyway, relying on bikes, public transit and car sharing programs. Many of these cities are also requiring that more common space in buildings be provided in micro-apartment buildings, with the rationale that private spaces (apartments) are smaller, and common areas provide more living space to meet residents’ social needs. A further area of regulation is around storage space: requiring enough storage space to make the units livable, while not imposing a heavy storage requirement that drives up development costs for storage space that is not needed. (In a survey of laneway housing in Vancouver 41% are not at all satisfied with their storage space.²¹⁰)

²⁰⁶ City of Vancouver, "Micro Dwellings Policies and Guidelines" adopted by Council March 15, 2014.

²⁰⁷ Kimia Haddadan - City of San Francisco, Key Informant Interview, 2014.

²⁰⁸ City of Vancouver, "Micro Dwellings Policies and Guidelines", adopted by City Council March 15, 2014

²⁰⁹ Anonymous, Key Informant Interview, 2014.

²¹⁰ City of Vancouver, "Laneway House Occupant Survey- Detailed Results", 2012.

Monitoring of Small Housing Outcomes - Some cities are monitoring the impacts of smaller units on residents and on the economy. For example:

- The City of San Francisco will allow a maximum of 375 micro-units units to be built, and at that time they will do an assessment of the impact before allowing more small apartments to be built. The City is not yet close to the 375 units. Market uptake and development of small apartments is not happening quickly.
- The City of Boston has commissioned a study with Harvard's Rappaport Institute (not yet complete, began in 2013) to measure the local economic impact of small units in their innovation district, since the rationale of allowing small units in this district was to provide housing that encouraged young professionals and entrepreneurs to live in the city.
- The City of Vancouver conducted a survey of laneway home residents in 2011-2012 to inform the revision of their policies and regulations.

Policy-Making According to Community Goals - There was some discussion in the literature and key informant interviews about the myriad of opinions, factors, and goals that direct a community's regulations and policies around small housing. The point was made that rigorous analysis in relation to a particular community's policy goals should drive to policy development around small housing.²¹¹ The focus of analysis and conclusions would not be the same for all contexts because it depends on the local conditions and goals. For example, a community that intends to increase housing density, as a broad community goal, should rigorously explore the forecasted impact of small housing in relation to this goal. A quick calculation and analysis by Disbrow²¹² suggested that the density (defined as number of people by area) of a building containing micro-apartments may actually be lower than the density of a building of two-bedroom units, in some neighbourhoods and conditions. The analysis compared a micro-apartment scenario and two-bedroom apartment scenario according to residential efficiency, net residential area, and average number of residents per unit type. This type of analysis and information can be useful for informing policy.

Building in Flexibility for the Future - Policy makers are tasked with addressing housing needs for many household types, as well as having foresight to changing demographics and housing needs in the future. For example, an intention to create flexible design small units is included in the recently developed Micro Dwelling Guidelines for the City of Vancouver where it is suggested that "considerations should be given to the consolidation of building services (i.e., electrical, plumbing, etc.) in order to allow the potential combining of units (conversion to one or two bedrooms) to address future housing need in the area."²¹³

²¹¹ Ibid. 2013

²¹² R. Disbrow, "The Economic Viability of Micro Units in New York City: When the Market Wants to Build Big", Masters Thesis, Massachusetts Institute of Technology, 2013.

²¹³ City of Vancouver, "Micro Dwellings Policies and Guidelines" adopted by the Council March 15, 2014.

Scan of Communities' Policy Approaches to Small Housing

Table 3 below outlines various communities' (some larger cities, some smaller towns) approaches and examples of small housing policy and regulations. The purpose of this Table is to provide a range of ideas and approaches, which might be interesting and perhaps partly adaptable in some communities in BC. The information is based on a snapshot of available information about the policy and regulations, which changes over time.

For readers interested in further detail, a paper that reviews various North American cities' approaches to small housing is "Responding to Changing Households: Regulatory Challenges for Micro-Units and Accessory Dwelling Units", by the Furman Center at New York University, written in 2014.²¹⁴

Of further potential interest is a 2014 Small Housing BC Society research project that identifies innovations in small housing from within North America with the express goal of inspiring greater diversity and uptake in the development of small-scale homes in the BC. This will be a valuable resource for interested professionals, since it includes innovative examples with a description of the historical context, the technical levers supporting the housing form, the benefits and drawbacks experienced, photos and design drawings.

Table 3. Examples of Communities with Policies and Regulations addressing Small Housing

<i>Community</i>	<i>Policy and Regulatory Response to Small Housing and/or Innovation</i>	<i>Type(s) of small housing addressed</i>
San Francisco, California	As of 2013 the City of San Francisco approved an ordinance that allows units as small as 220 square feet. San Francisco added common space requirements for micro-suites, and integrated some requirements for proper light and air into the legislation. San Francisco also requires that residency in smallest units is limited to two people. The City also has policy and regulations for secondary dwelling units on detached housing lots.	Apartments Detached small homes (accessory)
New York City, New York	Smallest apartment size in the City that is currently permitted is 400 sq. ft. An innovation project to test the market for smaller units (minimum 230 sq. ft.) is currently under construction. The innovation development is part of a "Making Room" approach to housing policy. This approach included an analysis of the need and market for smaller apartments, a demonstration project, and awareness-raising activities such as a micro-housing exhibition at a major museum, an innovative housing conference, etc.	Apartments

²¹⁴ New York University Furman Centre for Real Estate and Urban Policy, "Working Paper: Responding to Changing Households: Regulatory Challenges for Micro-Units and Accessory Dwelling Units" in What Works Collaborative White Paper, New York City: NYU's Furman Center for Real Estate and Urban Policy, 2014.

Table 3 Continued. Examples of Communities with Policies and Regulations addressing Small Housing

Community	Policy and Regulatory Response to Small Housing and/or Innovation	Type(s) of small housing addressed
Boston, Massachusetts	The City designated an innovation district, Seaport, and has allowed apartments 300 to 350 square feet in this area. In the rest of the city 450 sq. ft. is the minimum area.	Apartments
Vancouver, British Columbia	Laneway housing policy (summarized in included in Appendix 8) Approved applications for micro-apartments Micro Dwelling Guidelines Mayors' housing task force (2014) includes and considers micro-suites	Apartments Detached accessory (laneway) homes
Langley, Washington (Pop 1000)	"Cottage housing", which means a development comprised of at least four cottages (single-family dwelling units) arranged on at least two sides of a common open space with a maximum of 12 cottages per development. The regulations limit the size of each cottage, and an average size is 600 to 800 square feet.	Detached small dwellings
Seattle, Washington	Previously permitted efficiency dwelling units with shared kitchen facilities. Updated policy in 2014: "Micro-housing will be regulated as individual small efficiency dwelling units. A new code subsection will specify allowable configurations of interior spaces. Groupings of sleeping rooms with a shared kitchen within a single dwelling unit (a previous model for micro-housing) will no longer be allowed. Instead, developers may construct small efficiency dwelling units, which are complete dwelling units containing a full kitchen / kitchenette. Small efficiency dwelling units will be required to have a minimum size of 220 square feet." (City of Seattle) Group / congregate housing is being considered separately.	Apartments
Various Municipalities in BC and in Washington USA	See summary comparison of regulations for laneway homes, coach houses, etc. in Appendix 8	Detached small dwellings – accessory

Suggestions for Municipal Policy and Regulations - Small Market Units

In this study some BC-based development professionals offered suggestions and key messages about their experiences with policies and regulations in small housing development projects:

- Some municipalities require a mix of units sizes in a new multi-unit building, and require that new developments include a proportion of larger units with small apartments. The mix can be problematic from a development perspective as building geometry and amenity design for smaller units are much different than for larger units. Also, it can be challenging to design small units into a large floor plate.²¹⁵
- Amendments and variances to regulatory requirements for new small housing developments can make a big difference and positively influence the feasibility of small housing projects so that they can become a reality. In particular, reducing the requirements for in-suite and in-building storage space for residents, and reducing the quantity of on-site parking spaces required for residents and visitors are helpful.
- It was noted that laneway housing regulations (in Vancouver, and in general) address in detail the design of laneway homes, particularly with an eye to ensuring that laneway homes do not interfere with privacy of homes on adjacent lots. Some of these requirements aimed at preserving privacy are creating challenges and limitations for designing livable units. One such example is the building height restriction (20 feet).²¹⁶
- Some development professionals interviewed in this study shared their perspective on the regulatory process for developing small housing in communities, particularly the in Greater Vancouver area . Developers are finding that one of the biggest obstacles to building small housing (particularly micro-suites) is a general resistance from some (not all) municipalities that are saying it is not ‘appropriate housing’. Approvals for small housing involves a high level of scrutiny and discretionary approvals, partly reflecting a housing product that is new to the Council and community and requires additional contemplation. The implication of longer processing times is that the extra financing costs incurred can in turn increase the cost of the units to consumers.²¹⁷ One developer expressed, “I almost find it offensive that cities continue to moan and groan about affordability but fall back on outdated and antiquated sentiments about small housing to not allow the solution to be brought forward”.²¹⁸
- Community regulations for tiny housing (moveable dwellings) were not extensively discussed in this study, though it was noted that various communities’ regulations can (intentionally or unintentionally) encourage or discourage tiny houses. The regulations that most directly relate are the maximum number of allowable dwellings on one lot, minimum unit size, servicing requirements, and in some cases the definition of ‘temporary building’ in the local bylaws.²¹⁹

²¹⁵ Jon Stovell - Reliance Properties, Key Informant Interview, 2014.

²¹⁶ Bryn Davidson - Lanefab, Key Informant Interview, 2014.

²¹⁷ Brian McCauley - Concert Properties, Key Informant Interview, 2014.

²¹⁸ *ibid.*

²¹⁹ Ian Kent - NOMAD Micro Homes, Key Informant Interview, 2014.

Several BC urban municipalities are formulating questions and agendas for policy development in the area of small housing (e.g. City of Richmond), and perhaps a forum for discussion to increase an understanding of industry-related and community-related questions would be a helpful step forward. In this study, a few planners discussed that more information could assist with informing policy development: clear information on the estimated demand for these units and who are the expected buyers and tenants; economic analysis of the value generated in developing micro-suites and the affordability of the units in comparison to value of current smaller units;²²⁰ and information about the impact of small units on community infrastructure.²²¹



Community for Tiny Houses, California. Source and image credit: Tinyhousetalk.com

Uncertainty – in the Market, and Regulatory Environment

There was a sense among several key informant interviewees that at this time there is a lot of demand for small housing products in Vancouver, though the depth of the market is an uncertainty. There is some sense among those involved in development that small market units will continue to be popular, in urban locations where land costs and housing costs remain high (one interviewee estimated that in Vancouver at least half of the cost of a 600 square foot unit is the land cost).^{222, 223}

As discussed above, several interviewees indicated that a lack of defined policies and/or local regulations about small housing in some jurisdictions creates uncertainty for developers, leading to development applications processing time delays that add significant expense to projects due to financing costs. At least one BC developer stated a concern that there will not be enough small market units built in a timely manner due to delays imposed by regulatory standards and requirements.²²⁴ And, a BC based academic remarked that there are two intertwined issues: the market and the regulatory framework ... and “if there is a lot of uncertainty from the regulatory framework as to small housing, then it’s going to be a problem.”²²⁵

²²⁰ Anonymous, Key Informant Interview, 2014.

²²¹ Anonymous, Key Informant Interview, 2014.

²²² Michael Ferreira - Urban Analytics, Key Informant Interview, 2014.

²²³ Michael Geller – The Geller Group, Key Informant Interview, 2014.

²²⁴ Jon Stovell - Reliance Properties, Key Informant Interview, 2014.

²²⁵ Tsur Sommerville - University of British Columbia Centre for Urban Economics and Real Estate, Key Informant Interview, 2014.

Key Points re: Policy and Regulatory Perspective

Some cities have adjusted policies to accommodate small housing (particularly micro-apartments) by reducing the minimum dwelling size requirement in the community, while other places have pursued “pilot” approaches to small housing.

The regulations around small housing encompass objectives and responsibilities related to residents’ well being (e.g. light and air) as well as the neighbourhood (e.g. design, parking) and the future community (e.g. how flexible is small housing to meet future needs?)

Undefined local policy and regulations can make the development process for small housing very challenging, time consuming and thus increase costs to developer and buyer.

4. Overall Themes in the Findings of this Study and Next Steps

Overall Themes in the Findings of this Study

Small Housing is Part of the Housing Continuum - Smaller housing does provide opportunities to meet some segments of housing demand, particularly addressing smaller households and some affordability needs in particular market segments, specifically the young, single urban professional and older single individuals, particularly women and seniors.

Small Housing - Occupant/Residents' Perspective - Affordability drives people's housing decisions: people will choose the best possible housing option for their needs and priorities. From occupants' perspective we heard that the actual size of a unit is not the determining factor in livability. More important to livability are the following factors: noise attenuation, attention to the layout and functionality, suitable furnishings that make the space work, connection to outside (e.g. windows, outdoor space), the context in proximity to preferred amenities (e.g. entertainment) and transit, and good building management.

Various Perspectives and Roles in Small Housing - There are many different perspectives and professionals involved in creating small housing options, and each of them comes to the table with different capabilities, expertise, and mandates that may not be well understood across the professions. For example, here is some of what was heard in the study about roles and expertise:

- Developers and real estate professionals (including real estate agents) are adept at assessing demand and innovating to create housing products that meet needs in the market and changing demographics.
- Architects and designers are skilled at designing homes that work well for occupants' functionality, livability, and design.
- Housing manufacturers are able to provide an array of prefabrication and manufacturing solutions suitable for small housing.
- Policy makers, regulators, and planners are charged with creating policy and regulations that ensure safety, livability and quality of life for the whole population / constituents.

Some sectors' and professionals' roles and mandates in small housing did not seem to be as well understood by one another as they could be. This would indicate a future opportunity for dialogue between these professionals to better understand constraints and rationale, and perhaps work through the challenges with compromises or areas of agreement that allows small unit development to proceed in a way that is practical and feasible. (An example heard in the study was around different opinions and familiarity about the livability and habitability of small housing.) There also appears to be some misconceptions among key informants in regards to the utility, efficacy, cost savings and design opportunities of factory-built homes. The study also found that there is a lack of understanding about the rationale for CMHC's inability to insure many types of small units, and the reasons behind difficulties with financing for small units.

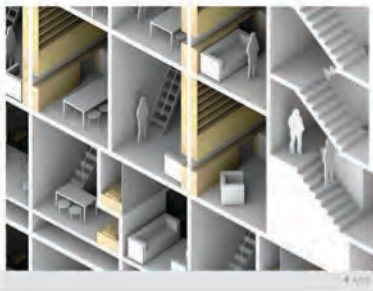
Possible Next Steps

Seeking and Sharing Information Together to Inform Small Housing in Future - Many informants and resources for this study are experienced in a particular niche / type of small housing, e.g. micro-apartments, tiny houses, laneway houses, etc. and offered some insightful key lessons and important questions about the future, including these points:

- Small market units need to be built in a diversified environment, and can be used to create vibrant neighbourhoods. Small market units should not be clumped altogether as the only form of housing in a neighbourhood, as social mixing is thought to be an important ingredient in the creation of a healthy community.
- We need to develop some experience with scale; how many small market units should be constructed in one building?
- What more can be learned about market demand? From some sources we heard that demand for small units will be slow to grow, from others we heard a concern that units are not being built with as much speed and quantity that is warranted by demand, and in some other cities (e.g. San Francisco) we heard that building of small units was not as fast as predicted.

Sharing and discussing these lessons and questions among the interested professionals could open up a broad discussion about how to move ahead together.

Design Proposals From The Making Room 2011 Design Showcase



Making Room is a New York initiative of Citizens Housing & Planning Council that seeks to better match a city's housing stock with the needs of its households, and includes a design competition for a pilot micro-housing project.

Detailed market data (answering the question: “Who is buying and renting small housing now, and in 5 years, 10 years?”) and project feasibility data (answering the question: “Where and under what conditions do various forms of small housing make sense, and what is the cost of construction?”) for small housing in BC were not readily available in numerical form through sources in this study. Several of the key informant interviewees noted that their understanding of data for small housing is based largely on anecdotal and general information. Perhaps then there is an opportunity for joint studies to create some case studies and share more detailed market information.

This study tapped into some existing data sources from CMHC and BC Assessment for preliminary assessment. It could be valuable to gain additional insight from further analysis, and further input from data experts to drive the focus of the study so that the outputs are useful to them.

Small Housing BC (established in 2012) is a resource in supporting the development of small housing, contributing to research, and acting as a voice advocating small housing.

Opportunities for Efficiency and Information-Sharing - Informants in this study who are involved in delivering small housing (e.g. developers, architects, housing manufacturers) are operating and making decisions about small housing that are based on their own experience. The small housing field is evolving, and there could be opportunities to analyze and share information that would contribute to greater efficiency and cost of construction. For example, some developers have a great deal of experience with prefabrication and modular building components and believe there are significant cost savings, while

others have not yet found an advantage to using these methods. This would be a good opportunity for information-sharing and analysis.

Innovation, Transferrable Experiences - This report outlined some examples of small housing projects, and small housing policies, and pilot projects that already exist. For those who are newer to small housing, perhaps there are resources, contacts or parallel experiences in this report that could provide insight into how small housing can meet certain housing demand in their communities. In addition, Small Housing BC will be launching a valuable toolkit with examples of small housing policies, regulations and projects that have been implemented in various communities.

Going broader - More Information and Engagement - It would be valuable to share more about what is happening and learn about small housing opportunities across the diversity of BC regions and communities, perhaps through regionally-based or locally-based inquiries or projects. There could be many diverse opportunities for small housing to meet a variety of needs, possibly including housing for aging populations, increasing the diversity of housing, creating affordable solutions, and creating suitable housing opportunities for temporary workers in resource/remote locations.

This study did not explore small housing units that are being created within existing buildings, it only focused on new buildings. To get a full picture of small housing inventory and opportunities, it could be valuable to study (or access existing studies if they exist) about small housing that focuses on small housing units that are created within existing buildings, for example: multiple (e.g. 4 to 6) small units in existing detached homes; accessory (secondary) units within homes (e.g. lock-off suites, secondary suites), conversion of former commercial buildings into small housing units.

There could be some benefit to seeking more in-depth understanding of the tiny house (i.e. moveable dwellings) movement to better appreciate challenges and opportunities with this particular form of small housing. This study relied mostly on secondary sources related to tiny homes, supplemented by the perspectives of only a few representatives with experience in this area. There is a sense that while this is a small niche area in BC, it may grow as more people try to create workable housing solutions that avoid high land costs in urban areas.

This study focused on small housing for market purchase and market rental, and did not include social and assisted housing within the scope. There may be opportunities to share lessons, and conversely learn lessons, with the social housing sector. There are also some examples of community-based housing projects that use small housing as a way to deliver very affordable non-profit or social housing in communities.

Community Dialogue and Awareness - Several interviewees mentioned that they think that many neighbourhood residents are unaware and unfamiliar with the rationale and purpose of small market housing, and the impact on their properties and quality of life. It was felt that public education and awareness needs to happen before major development applications for small housing, if support and understanding is to grow.

Closing

For certain small market housing will continue to be an issue / opportunity at the forefront given trends of small household demographics, rising costs of land and real estate, and affordability challenges. It is hoped

that this “Research Study Exploring Best Practices and Lessons Learned with Small Market Units” provides some new knowledge to readers that will inform their practice. It is also hoped that the findings in this report have raised questions of interest, areas of opportunity and divergence for discussion, and opportunities that fuel further work and research.

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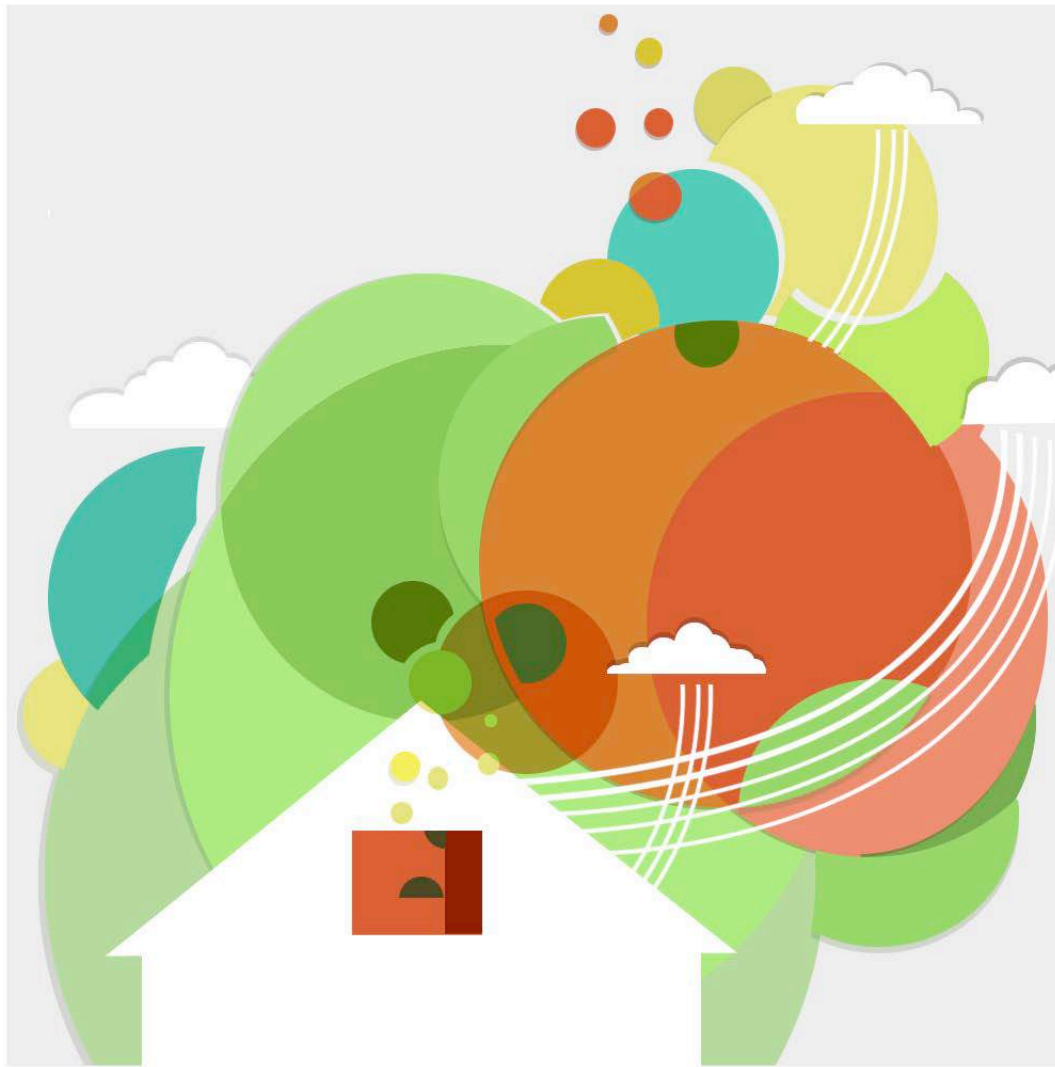
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Appendix 1

List of Key Informant Interviewees for this Project





The Real Estate Institute
of British Columbia



Key Informant Interviews for Research Study Exploring Best Practices and Lessons Learned with Small Market Units, 2014

<i>Interviewee Name and Role</i>	<i>Affiliation and Location</i>	<i>Interview date</i>
Allison Dunnet Planner, Housing	City of Vancouver Vancouver BC	November 27, 2014 (email interview)
Andrew Ramlo Executive Director	Urban Futures Vancouver BC	September 10, 2014
Anne McMullin Executive Director	Urban Development Institute Pacific Region Vancouver BC	September 4, 2014 (in person interview)
Ben Smith Vice President Sales and Marketing	Rennie Marketing Systems Vancouver BC	September 16, 2014
Bob Ransford Director	Small Housing BC Vancouver BC	September 29, 2014
Brian McCauley President and Chief Operating Officer	Concert Properties Toronto ON	September 19, 2014
Bryn Davidson B.Eng (UC Berkeley) M.Arch (UBC) LEED-AP	LaneFAB Homes Vancouver BC	September 22, 2014
Heather Burpee Planner, City-Wide and Regional Planning	City of Vancouver Vancouver BC	November 4, 2014 (email interview)
Ian Kent Designer	NOMAD Homes Vancouver BC	September 9, 2014
Jon Stovell Acquisitions and Development, and Property Management	Reliance Properties Vancouver BC	September 15, 2014
Kathleen Maynard Chief Executive Officer	Canadian Manufactured Housing Institute Ottawa ON	September 17, 2014

Kim Little Realtor	Independent Realtor North and West Vancouver, and Vancouver, BC	September 19, 2014
Kimia Haddadan Planner	City of San Francisco San Francisco, CA	September 30, 2014
Michael Ferreira Managing Principal	Urban Analytics Vancouver BC	September 15, 2014
Michael Geller Architect, Planner, Real Estate Consultant, and Property Developer	The Geller Group Vancouver BC	September 8, 2014
Paul Merrick Architect	Merrick Architecture – Borowski Sakumoto Fligg Ltd. Victoria BC	October 14, 2014
Phil Chapman Planner	District of North Vancouver North Vancouver BC	October 1, 2014 (email interview)
Robyn Newton Planner	City of Coquitlam Coquitlam BC	October 13, 2014
Ross Chapin Architect	Chapin Architects Washington USA	September 4, 2014
Sarah Watson Deputy Director	Citizens Housing Planning Council New York City, NY	September 10, 2014
Staff (anonymous)	Financial analysis and housing organization	n/a
Tsur Somerville Associate Professor Real Estate Foundation Professorship in Real Estate Finance Director	UBC Centre for Urban Economics and Real Estate Vancouver BC	September 17, 2014

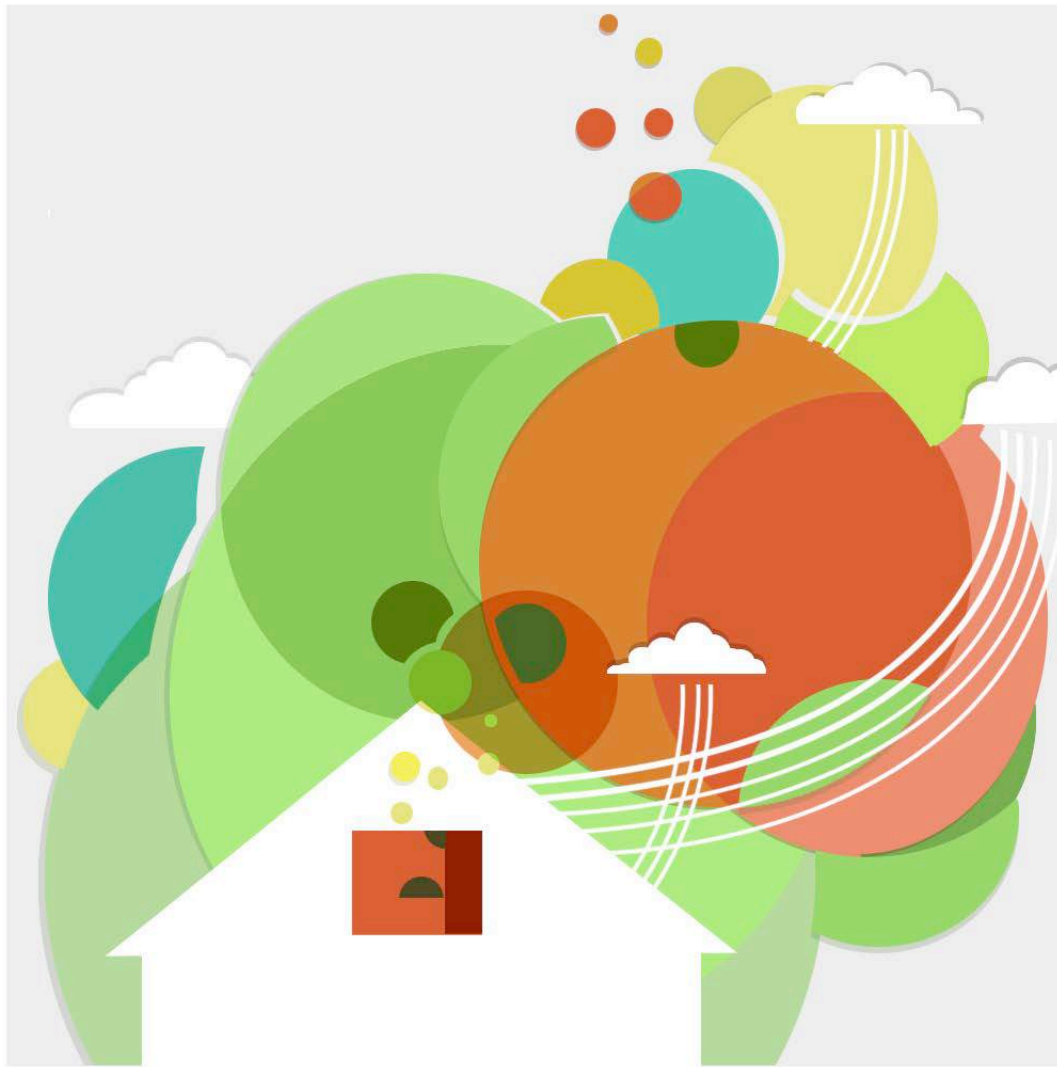
Except as noted in the table (right column), interviews were by telephone.

Interviews were conducted by Heather Evans, Louise Godard, or Margaret Forbes (the consulting team).

The interview questions are also included in an Appendix to this report.

Appendix 2

Questions for Key Informant Interviews, Survey, and Focus Group



Research Study: Exploring Best Practices and Lessons Learned with Small Market Unit Design

Key Informant Interview Questions

A small market unit is defined as a dwelling (in any form - apartment, detached house, moveable unit, etc.) that is sized to meet its occupants' needs with little excess space, approximately 650 sq. ft. for 1-3 people, or slightly larger (e.g. 800 sq. ft./ 74 sq. m.) for a larger household.

Employment / Role information

1. Please state your name and the organization for which you work.
2. What is your role/position within the organization?
 - a. Please describe your primary responsibilities.
3. How long have you been working in this industry / field?

Context and Experience with Small Market Units

1. What is your experience with small market units?
2. Who do you see this type of housing appealing to?

Probes:

- a. In your local/regional market? In general?
 - b. What is your understanding of who this type of housing appeals to based on? Do you have data sources to support your assessment that you could share?
3. Does demand for small market units vary by tenure?

Probes:

- a. If so, why do you think this is the case? (Trends with rental versus ownership demand, insights related to demographics, affordability, etc.)

- b. Could you describe which parts of the market spectrum for home ownership and rental are met with small market units?

General Questions about Benefits and Challenges of Small Market Units

1. If you have been involved in developing / building small market units, could you describe the factors that contributed to your decision to build small market units?

Probes: Cost of development, pricing, local/regional market conditions, regulations

- a. If you have not been involved with small market units, what would encourage you to become involved in this type of units?

Probes: Cost of development, pricing, local/regional market conditions, regulations

2. What are the advantages and benefits of small market units from the perspective of your role/industry (e.g. builders, developers, planners)?

- a. What are the risks and challenges from the perspective of your role/industry (e.g. builders, developers, planners)?

3. What are the advantages and benefits of small market units for communities?

- b. What are the risks and challenges of small market units for communities?

Design Features and Functionality of Small Market Units

(For builders, manufacturers, architects, designers, and other select stakeholders)

1. What unique design and construction factors do you take into consideration when building small units?
2. In your opinion, what are some of the important design features in small market units?

Probes

- a. What design features help contribute to the functionality of small units?
 - i. Why?

- b. What are the costs implications of providing these features?

- c. What features have not worked well? Why?

3. Are there features for small units that have improved over time?

Probes:

- a. If yes, how have they improved over time?
- b. What has contributed to their improvement?

(Questions 4 and 5 will also be asked to planners)

4. What amenities are beneficial in a small market unit building or in the surrounding neighborhood?
5. Are small market units better suited to certain housing forms and structures (e.g. single detached, semi detached, multi-unit, moveable) and contexts (rural, urban, suburban)?

Probe:

- a. What are some of the advantages or challenges of small unit design in various forms and contexts?

Feasibility, Market Demand and Economic Considerations

(For builders, manufacturers, architects, realtors, market analysts, and designers and select stakeholders)

1. What is the current and future housing market demand (both rental and purchase) for small market units in British Columbia?

Probes:

- a. In your local/regional market?
 - b. How do you quantify the demand for small market units currently? Do you have any data to support these findings you could share?
2. What factors need to be in place to make small market unit development feasible (e.g. economic factors, community demographics, market conditions)?

Probes:

- a. Can you provide an estimate of the per unit cost of development compared to larger units?
 - b. What are the price points and figures that make this type of development feasible?
 - c. Are there costs savings or other advantages to building small market units (instead of other types/sizes/forms)?
3. What are some of the challenges of small market unit housing, at various stages in the development process and construction?

Probes: Feasibility, development, provincial and local policies, bylaws, financing, permit approval, community acceptance, building, marketing, selling/ absorption, resale

Modular Construction

(For builders, manufacturers, architects and designers)

1. Do you use, or consider using, modular construction for small market units?
What factors go into your decision?
2. What are the opportunities and challenges of using modular construction in small market units?

Probe:

- a. Can you identify effective manufacturing practices?
- b. Are there opportunities to increase efficiency?

Future Practice – What can we learn and where are we going?

1. What, if any, are your cautions or concerns around small market unit housing?

Probes:

- a. Are there risks unique to small market units? Can you describe the risks?
 - b. How do you view the risks, benefits and challenges now compared to five years ago?
 - c. How do you see the risks, benefits and challenges evolving in the near and medium term?
2. What can we learn from small market unit initiatives and their design in BC and other jurisdictions to apply to future practice?
 3. What do you see as a desirable future for small market unit housing (within your area of experience/practice) and generally?

Probes:

- a. What do you think will assist in achieving this future? (Probe: regulations, bylaws, update development standards, development and implementation of appropriate reviews and standards)
- b. What do you envision as the role of your industry/field in achieving this future?

Survey Questions

1. Do you live in British Columbia?

- Yes
- No

2. What region of BC do you live in? Check only one

- Vancouver & Lower Mainland
- Fraser Valley
- Vancouver Island
- Cariboo
- Kootenay
- Nechako
- North Coast
- Northeast
- Thompson/Okanagan
- Prefer not to say
- Outside of BC
 - o Please specify _____

3. Do you live in a rural, urban, or suburban community?

- Urban
- Rural
- Suburban

4. Do you currently live in your small home?

- Yes
- No

a. If no, go to question 6

b. If yes, Do you live at this residence all year round?

- Yes
- No

c. How long have you lived in your small home?

- Less than 6 months
- 6 months – 1 year
- 1 year – 3 years

- 3 years – 5 years
- 5 years or more

5. Do you have plans to move out of your small home?

- Yes
- No

d. If yes, when do you plan to move out?

- In less than a year
- In one year
- In two years
- In three years or more

e. Why do you have plans to move out?

6. If no, how long did you live in the small home?

- Less than 6 months
- 6 months – 1 year
- 1 year – 3 years
- 3 years – 5 years

Why did you move out of your small home?

5. Do you rent or own your small home?

- Rent
- Own

6. What is your definition of a small home?

7. Please check the box below which best describes your current residence.

- Laneway housing
- Congregate housing
- Mobile home
- Modular home
- Prefabricated home
- Apartment or condominium
- Micro-apartment
- Townhouse
- Detached house or Duplex
- Moveable unit
- Other _____
- Unsure

8. What is the area of this residence?

- 250 sq ft (23 sq m) or less
- 251 sq ft (24 sq m) – 400 sq ft (37 sq m)
- 401 sq ft (38 sq m) – 550 sq ft (51 sq m)
- 551 sq ft (52 sq m) – 650 sq ft (60 sq m)
- more than 651 sq ft (61 sq m) and less than 875 sq ft (81 sq m)
- Unsure

9. A) How many total rooms (including the kitchen, bedroom(s), bathroom(s), and living room) does your current residence have? If your unit is open concept (few or no walls) go to question 9.

- 1
- 2
- 3
- 4
- 5 or more

B) How many bedrooms?

C) How many bathroom(s)?

10. Is your unit open concept?

- Yes
 No

11. If your unit is open concept (few or no walls) how many functional living spaces (including the kitchen, bedroom(s), bathroom(s), and living room) does your current residence have? Please describe below.

12. What was your motivation(s) for deciding to rent/own a small unit? Please rate the following list of factors in relation to how important each of them was in your decision to rent/own a small market unit.

Factor	Extremely important	Important	Somewhat important	Not at all important	No opin
Smaller footprint/less environmental impact					
Support green building					
Affordability					
Location e.g. "walkable" community/close to amenities					
Access to rapid transit					
Did not need any more space than what unit provides					
Dynamic and innovative living space					
Sense of community with others in building and/or neighbourhood					
Low maintenance					
Entry into the housing market					
Trendy					
Other _____					

13. In your opinion, what are some of the advantages to living in a small home? Please describe below.

14. What are the most important design features for you in a small home? Please rate the following list of design features based on how important they are to your home's livability and functionality.

Design Feature	Extremely important	Important	Somewhat important	Not at all important	Not applicable
High ceilings					
Windows					
Functional space					
Multi-purpose/flexible furniture					
Bicycle parking					
Green building					
Outdoor space					
Soundproofing					
Moveable walls/furnishings					
Dual purpose furnishings					
Common amenities shared with other residents					
Open concept design					
Built in appliances (e.g. washer, dryer, dishwasher)					
Look and character of the unit					
Accessibility of the unit (e.g. wheelchair accessible)					
Storage space (inside the unit)					
Storage space (in the building)					

Unit can be added to in the future					
Unit is moveable					
Is multilevel (e.g. has a loft)					
Other _____ _____					

15. A) Do you have a private outdoor usable space (e.g. balcony or patio)?

- Yes
 No

B) If yes, how important is this space to the functionality of your home?

Extremely important	Important	Somewhat important	Not at all important	No opinion

C) On average how much of your day do you spend in this outdoor space?

- Less than one hour
 One – two hours
 Two or more hours

16. A) Do you have access to a shared common space?

- Yes
 No

B) If yes, how important is this space to the functionality of your home?

Extremely important	Important	Somewhat important	Not at all important	No opinion

C) On average how much of your day do you spend in this shared common space?

- Less than one hour
 One – two hours
 Two or more hours

17. Are there any design features that don't work well in your home?

- Yes
- No

If yes, please explain why.

18. What are the challenges of living in a small home?

- Lack of functionality due to small space
- Limited parking
- Lack of privacy
- Noise from neighbours
- Shared communal areas
- Storage space
- Community acceptance
- Finding furniture and appliances that fit
- Accessibility
- Ventilation
- Other _____

19. What, if any, were the lifestyle adjustments you had to make when you moved into this space?

- Increased sense of community
- Having guests visit
- Adjusting to limited space
- Reduced privacy
- Other _____

20. What is your current level of satisfaction of living in your small home?

Extremely satisfied	Satisfied	Somewhat satisfied	Not at all satisfied	No opinion

21. Thinking about before you moved into your small home and your idea of what it would be like, on the scale below please rate how your actual experience of living in a small unit compares to your perception of what it would be like previous to you moving in.

Experience much better than expected	Experience as expected	Experience less than expected	Experience significantly less than expected	No opinion

22. Did you have any hesitations about moving into a small market unit?

- Yes
- No

23. If yes, were those concerns actual issues once you moved in?

- Yes
- No

Please explain _____

24. If you could change one feature in your home what would it be?

Why?

25. What are your ideas for design features to make small units work better?

26. If you could add one feature to improve your small home what would it be?

Why?

27. What is your gender?

- Female
- Male
- Transmale
- Transfemale
- Other _____
- Prefer not to say

28. What is your age?

- Under 25
- 25 – 34
- 35- 44
- 45 – 54
- 55 – 64
- 65 – 74
- 75 & older
- Prefer not to say

29. Including yourself, how many people live within your household?

- One
- Two
- Three or more
- Prefer not to say

30. Included in the above household count, are there any children currently residing with you?

- Yes
- No
- Part-time
- Prefer not to say

31. If there are 2 or more of individuals residing in your household, please check the box that applies to your relationship with the individual(s) residing with you.

- Partner/spouse/common-law
- Child(ren)
- Friend(s)/roommate(s)
- Parent(s)
- Other _____
- Prefer not to say

32. What is your annual household income? Please click where your annual household income falls on the scale below.

\$0 -----\$50,000-----\$100,000 -----\$150,000 -----\$200,000-----\$250,000

- Prefer not to say

33. What is your primary mode of transportation?

- Bike
- Car
- Car sharing (e.g. Zip car)
- Public transit
- Walking
- Other _____

Thank you for taking the time to complete this survey!

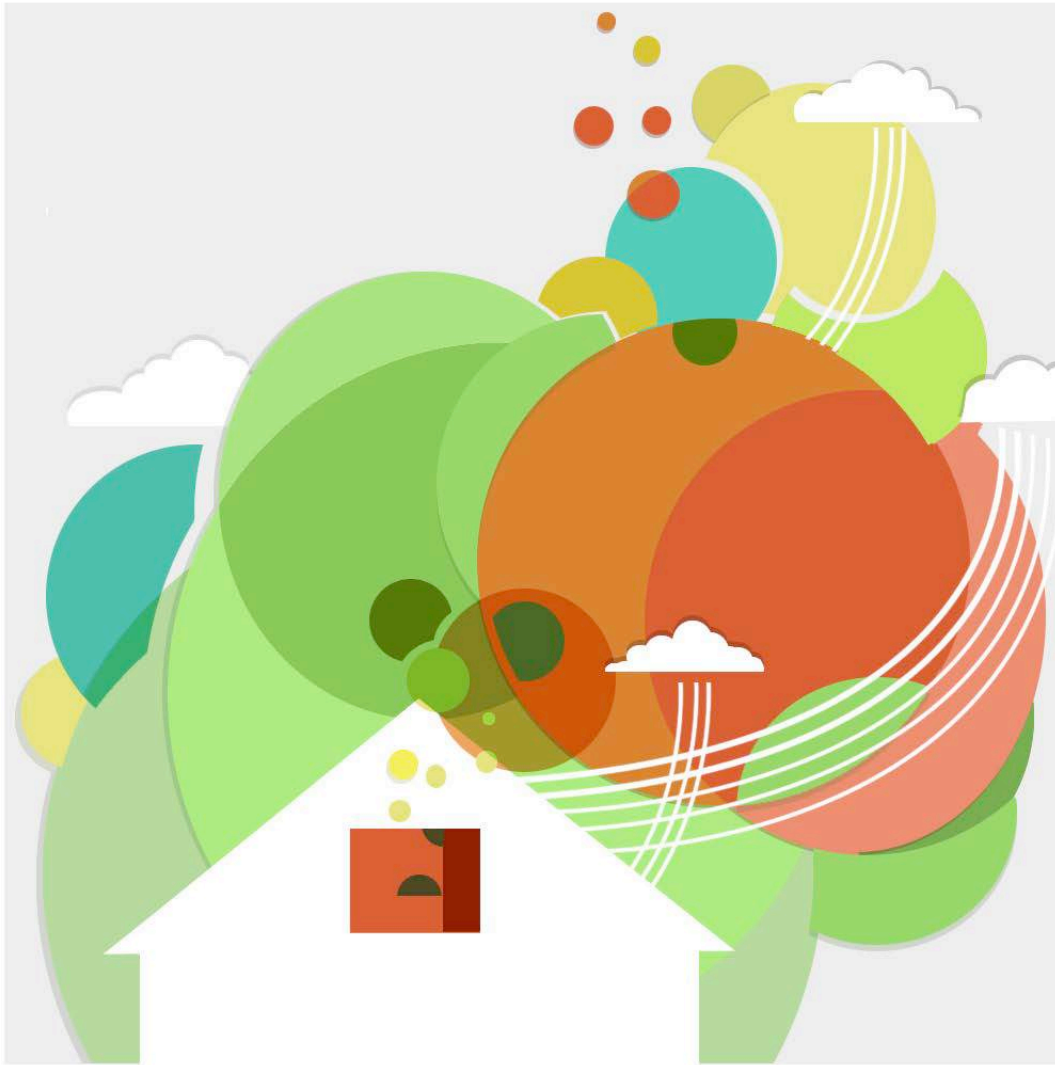
Focus Group Discussion Questions

Monday October 20, 2014
Creekside Community Centre Meeting Room 4

- Facilitators Louise Godard and Heather Evans
1. What is your definition of a small home?
 - a. Where do you live and what is the square footage of your home?
 - b. How many people live in your home?
 - c. Do you rent or own your small home?
 2. What factors contributed to you deciding to move into a small home?
 - a. Prompts: smaller footprint, affordability/getting into housing market, location
 3. Please describe your home's layout.
 4. Please describe the most important design features for you in your small home?
 - a. Prompts: high ceilings, common amenities, soundproofing, moveable walls/furnishings, bicycle parking, outdoor space
 5. Please describe any design features that don't work well in your home.
 - a. What ideas for design features would you suggest that could make small homes more liveable?
 - b. If you could add one feature to your home what would it be?
 6. What kinds of lifestyle adjustments did you have to make when you moved into your small home?
 7. What are some of the advantages to living in a small home?
 8. What are some of the challenges to living in a small home?

Appendix 3

BC Assessment Data: Small Market Unit Highlights



BC Assessment Data: Small Market Unit Highlights

Source: BC assessment data, 2006 to 2014

The following information is based on highlights from data provided by BC Assessment to the consulting research team, which summarizes units in the province within the study's unit size parameters. The data was summarized by region from 2006 to present.

- Market units were categorized by building forms (for example 1, 1.5 and 2 Storey homes, duplex, row house, apartment, properties with strata title in various building forms and recreational use of property if designated as such.

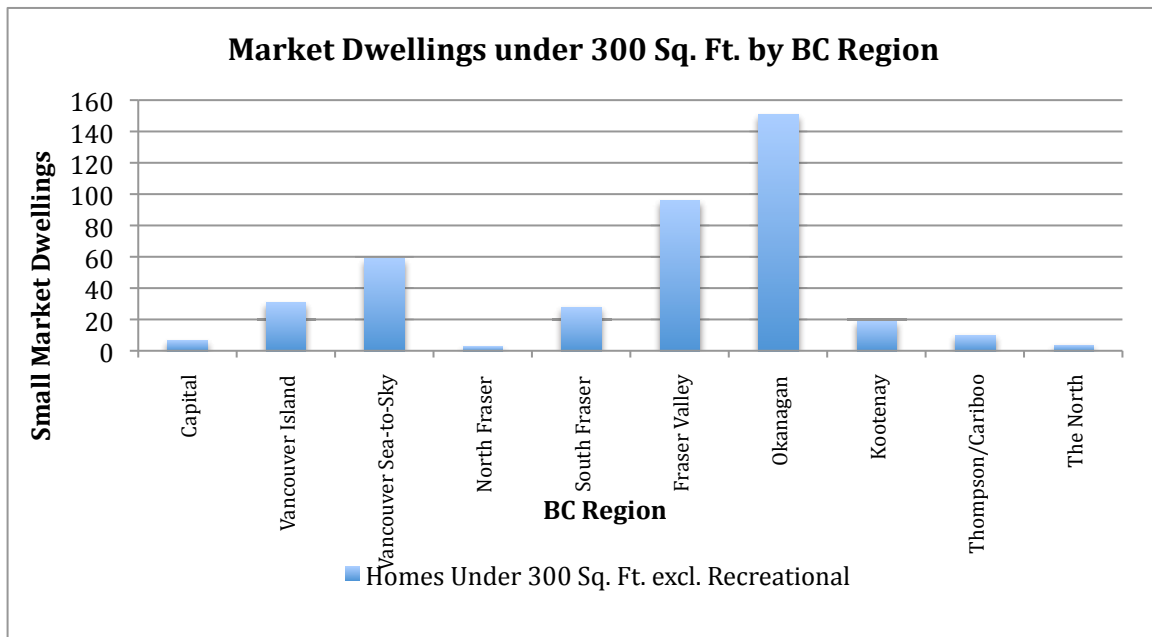


Figure: Distribution of small housing units in BC, smaller than 300 square feet in area.

Source: BC Assessment Data, 2014

300 sq ft Small Market Units

- As of 2014 there are 4107 market units under 300 square feet province wide in British Columbia. Of those 10% is residential use and 90% is defined as recreational use homes. The residential use of these units through out the province has declined slightly (4%) since 2006.
- The chart below illustrates their distribution within the province. Of note the largest number of less than 300 square foot units were in the Okanagan and next largest was the Fraser Valley region, rather than Vancouver's urban core according to the data available.
- 300 square foot units very few in most regions of BC once recreational properties are excluded for.

500 sq ft Small Market Units

We heard from key informants in the housing industry that this was considered a typical unit size rather than 'uniquely small'.

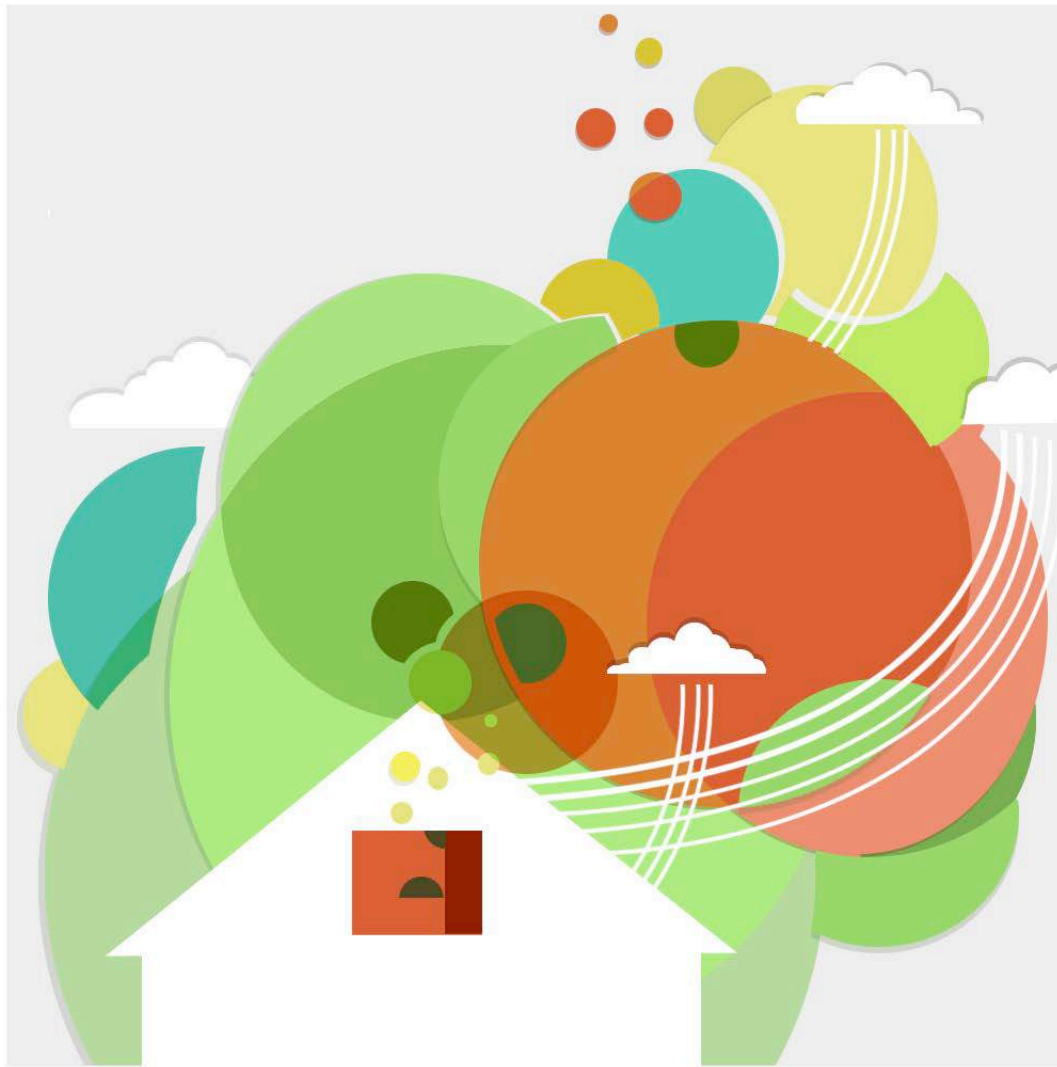
- Within the province of BC there are 17, 893 units in this category, with 57% residential use.
- The largest portion almost half of all the units in the province (5, 756) were located in Vancouver/ Sea to Sky region.
- There were 1,388 2 bedroom units in this size range. 41% of these were residential use. These 2 bedroom units were distributed throughout all regions in the province.

750 sq. ft. Small Market Units

- Similarly, we heard from key informants that 750 sq. ft. two bedroom units were seen as a typical size.
 - Since 2006 the number of units in this category has remained constant, representing between 83 and 85% of the market when recreational dwellings were excluded for.
 - There are 25,083 2-bedroom market units that are less than 750 sq. ft.
 - Just under one third or 6698 of these two bedroom units in this size category are located in the Vancouver/ Sea to Sky Region.

Appendix 4

Sample List of Small Housing Project Examples



Sample List of Small Home Project / Developments

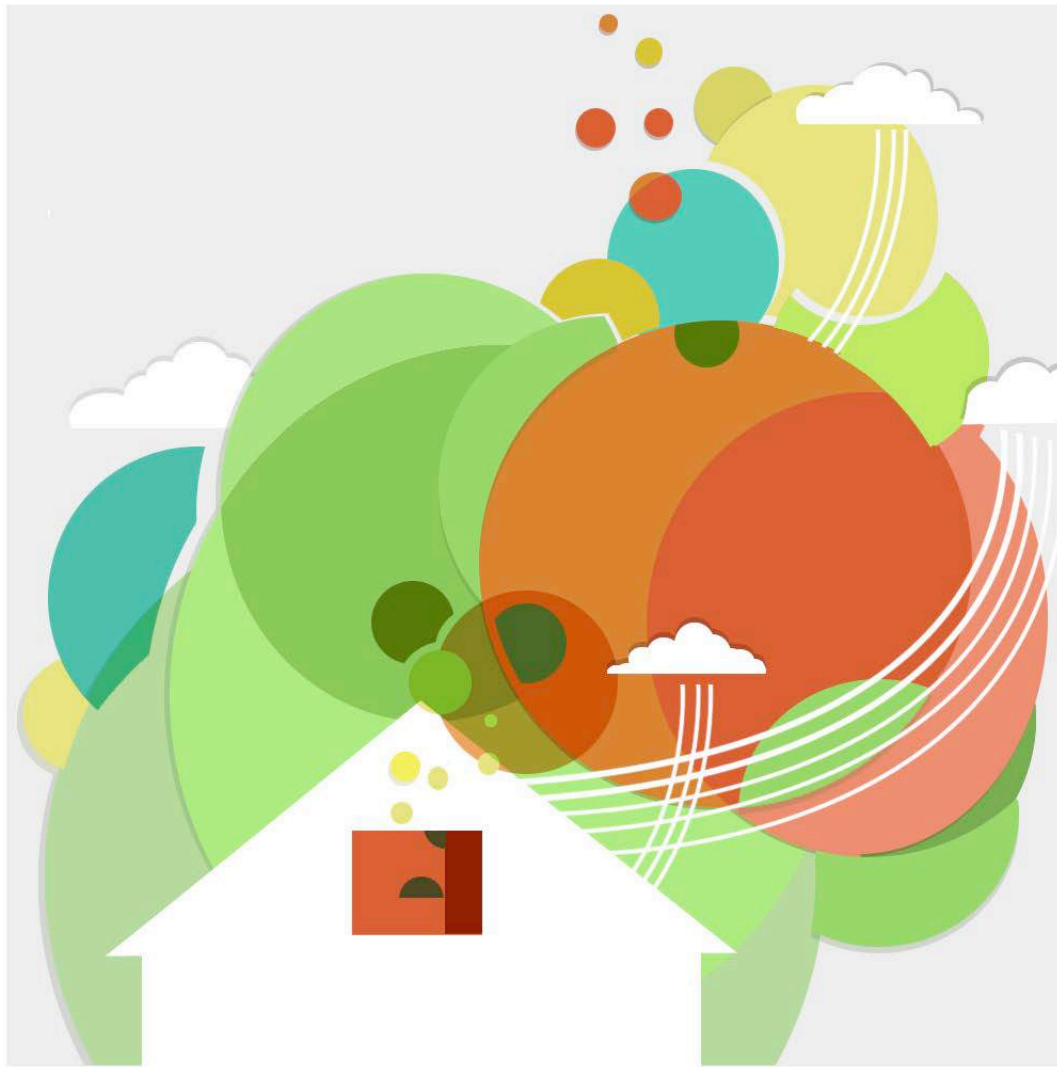
The following is a list of small home projects, to facilitate interested exploring a range and types of small housing. The list is not intended to be comprehensive.

<i>Name</i>	<i>Location</i>	<i>Description / Notes</i>
Kisho Kurokawa's Nakagin Capsule Tower	Tokyo	Micro-apartments
nArchitects demonstration project – My Micro New York	Kips Bay New York City	Micro-apartments
Tiny House on Wheels – Tumbleweed Tiny House Company	Moveable Throughout the United States	Tiny houses (moveable)
Katrina Cottages designed by Marianne Cusato		308 square feet cottage home, and bigger models as well
China Vanke	Dongguan China	160 square feet micro-apartments
SmartSpace SOMa and other projects, including The Harriet	San Francisco	Micro-apartments
Arcade	Providence Rhode Island	Landmark commercial building repurposed
Tata Housing development	Outside of Mumbai India	1244 apartment units
SNAP microhomes	No specific site, moveable	Micro-homes 120 to 750 sq ft
Sabin Green	Portland	Infill neighbourhood with small homes

Bunning and Born, Jim Potter Calhoun Properties Kauri Investments	Seattle	Apodments projects in Seattle
Hong Kong Green Home	Hong Kong	Micro-apartments
Pocket Flats	London	apartments
Suite Living 360 Degrees	Ontario	Houses remodeled into micro-suites
Beljan Development	Edmonton	Micro-apartments, development permit
Balance TienSher	Surrey	Micro-apartments
Burns Block – Reliance Properties	Vancouver	Micro-apartments
MicroHomes by NOMAD	moveable BC	Microhome (modular, moveable)
The Janion – Reliance Properties	Victoria BC	Micro-apartments
600 Drake – Concert Properties	Vancouver BC	Micro-apartments
TinyHouses Nelson	Moveable Based in Nelson BC	Tiny house (moveable) manufacturer
Boneyard Studios	Washington DC USA	Tiny House intentional community (moveable) community
Spur (a town)	Texas	Tiny House Friendly town
LaneFAB	Vancouver	Laneway homes
SmallWorks	Vancouver	Laneway homes and small homes

Appendix 5

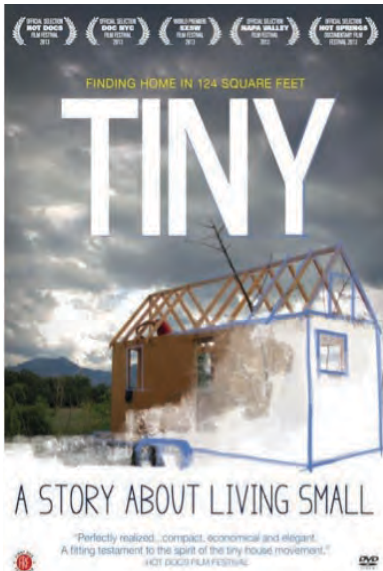
Popular Interest in Small Living – media, articles



Popular Interest in Small Living – media, articles, etc.

There is a considerable and growing amount of popular interest in small living. Small homes are the subject of media coverage and articles, drawing attention to benefits and challenges of small living. Questions and curiosities about small living are raised, for example:

- Human interest: Who is living in small units, and why did they choose to live there (e.g. reasons including affordability, sustainability, lifestyle)?
- What is the experience of living in a small house (design and furnishings, functionality)?
- How do small units fit in to the neighbourhood?



Here are some mainstream examples of popular presence and attention on small living:

- “Tiny”, a Story about Living Small: a 2014 documentary film that claims to be one of the 10 most popular documentaries available on itunes¹
- “Tiny House Nation”, an American television show features the ingenious and innovative small homes and their residents.²

*Advertisement for Tiny, a film by Merete Mueller and Christopher Smith.
Source: <http://tiny-themovie.com>*

Many organizations and forums of various types discuss, advocate, inform, and sell small housing to an audience that is interested in small living. A few examples include:

- In British Columbia, Small Housing BC Society was established in 2012.³
- In the United States, a tiny house blog gets about 2500 hits on its blog per day.⁴
- In Vancouver there is a ‘Meet Up group’ to bring together people with a common interest in small living for talks and mutual assistance.⁵
- Life Edited website is dedicated to advice and interaction about how to design your life to include more money, health and happiness with less stuff, space and energy.⁶

¹ <http://tiny-themovie.com>

² <http://www.fyitv.ca/on-fyi/>

³ <http://www.smallhousingbc.org>

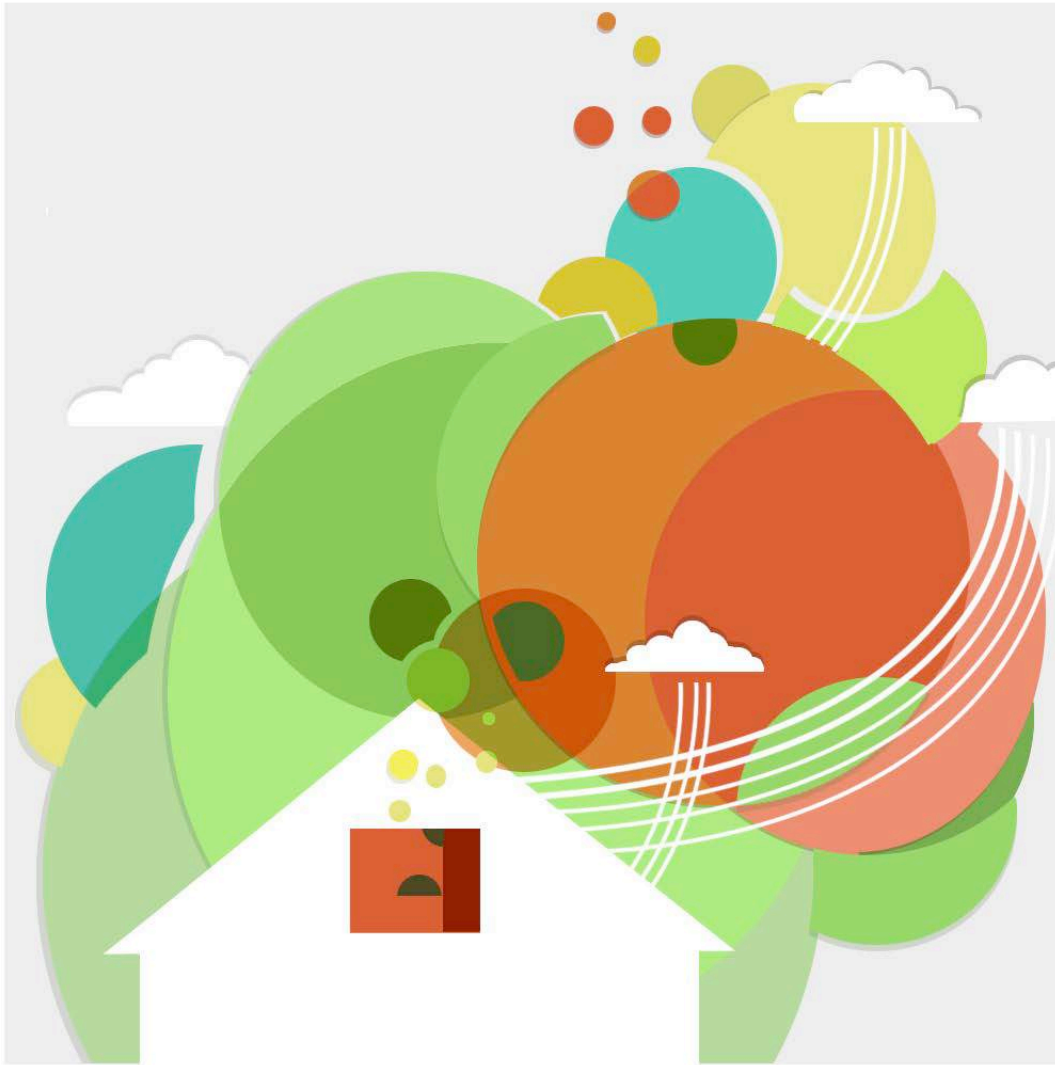
⁴ <http://tinyhouseblog.com>

⁵ <http://www.meetup.com/Vancouver-Tiny-House-Meetup/>

⁶ <http://www.lifeedited.com>

Appendix 6

Factory-Built Housing Terms



What is Factory-Built Housing?

Source: Canadian Manufactured Housing Institute

<http://www.cmhi.ca/buying-a-home/what-factory-built-housing>

“As the name implies, factory-built housing refers to homes that are built in a factory, or manufacturing facility. There are a number of building systems that result in varying degrees of completion in the factory before delivery to the building site. Factory-built homes are available in many sizes, designs, and layouts, with a wide selection of standard and customized features.

Modular homes are built in a factory as three-dimensional modules that may be combined on-site to make one-, two- or three-storey homes. Typically, a bungalow will consist of one or two modules, while a two-storey home will use four or five, or more modules. The homes are typically set on full-perimeter foundations—a crawl space or full basement—but may also be placed on surface-mount foundations. Insulation, air/vapour barrier, plumbing, wiring, exterior siding and other construction details are largely completed in the factory. Interior work is usually well advanced, including drywall, trim, flooring, cabinets and bathroom fixtures. Finishing the home on-site generally takes a couple of weeks, sometimes more, depending on the size, style and features of the home. Some features are best done on-site, such as brick siding and some types of flooring.

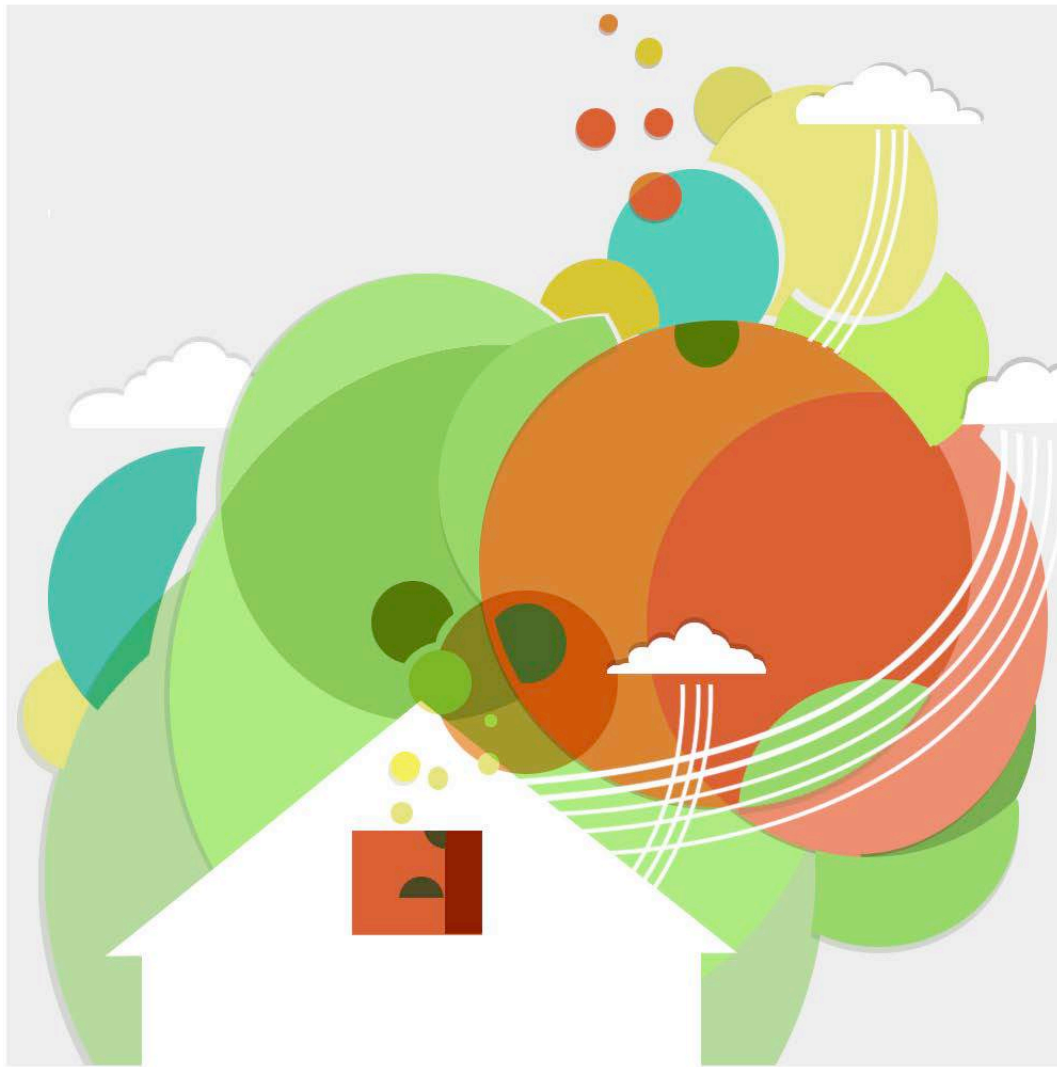
Manufactured homes are typically built in one section, although some manufacturers offer these homes in two sections as well. Manufactured homes are virtually complete when they leave the factory—often ready for move-in the same day or a few days after arriving on the site. Due to their unique structural design, these homes can be installed on surface-mount foundations, such as piers. They can also be relocated, although most are never moved from their original site.

Panelized homes refer to homes built with pre-fabricated wall, floor and/or roof assemblies. Panels may be partially or fully completed in the factory, with windows, doors and siding often installed already. They are shipped flat to the site where they are assembled, and the home is finished inside and out. The use of panels reduces on-site construction time significantly.

Pre-engineered homes are essentially "pre-packaged" homes. All major building components are prepared in the factory and shipped to the building site ready for assembly—including framing materials, doors, windows, roofing, siding, interior wall partitions and sub-flooring. The pre-engineered building system emphasizes precision design and pre-cutting, and can be used for virtually any home design.”

Appendix 7

Multi-City Comparison of Micro-Housing / Congregate Residence / Group Housing



Various Cities' Strategies on Micro-Housing

	San Francisco	New York City	Boston	Portland
Approved / Proposed Micro-Housing S.F.	<p>220 minimum (Approved)</p> <p>Revised Building Code regulation for Efficiency Dwelling Units</p>	<p>250 - 370 (Approved pilot project)</p> <p>Launched a pilot project 'My Micro NY' with 55 micro units range between 250 and 370 square feet, 40 percent of them affordable</p>	<p>350 minimum (Proposed)</p> <p>Established a minimum of 350 square feet for micro-units and so far limit them to the developing South Boston Innovation District (Permitted construction of about 195 smaller units, some 355 s.f.). The City of Boston will work with Harvard's Rappaport Institute to study the impacts of the first batch of the smaller-size units going up in the Innovation District.</p> <p>Mayor has proposed altering city regulations to allow for the construction of hundreds of micro-units, some as small as 375 square feet and most around the 400-square-foot mark</p>	<p>295 - 385 (Developed)</p> <p>Opened the first micro apartments at The Freedom Center in Portland's Pearl District, with 150 studio apartments, ranging from 295 to 385 square feet</p> <p>City supports microapartments (housing choice)</p> <p>https://www.portlandoregon.gov</p>
Current Regulations	<p>Efficiency Dwelling Units: 220 square foot minimum total area of the unit (adding the bathroom and closets)</p> <p>Efficiency Dwelling Units with Reduced Square Footage: a Dwelling Unit that (1) measures less than 220 square feet; (2) meets the criteria described in Building Code Section 1208.4; and (3) is not affordable housing, group housing or student housing, as defined in the Planning Code.</p> <p>Capped the number of Efficiency Dwelling Units with Reduced Square Footage that may be approved at 375. Evaluate after the approval of 325 units....Efficiency Dwelling Units that are affordable housing or student housing as defined in the Planning Code are not counted towards the cap.</p> <p>These amendments apply only to new construction, and are not applicable to existing units</p> <p>https://www.google.com/url?q=http://www.sf-planning.org/ftp/files/legislative_changes/new_code_summaries/120996_Cap_on_Efficiency_Dwelling_Units.pdf&sa=U&ei=UttUdbcfseuiQLI2oHABg&ved=0CAcQFIAA&client=internal-uds-cse&usg=AFQjCNEAFHA4kySupq6z71LqEd9WJVDlqQ</p>	<p>A dwelling unit shall have an area of at least 400 square feet of floor area. (Article II Chapter 8 - The Quality Housing Program)</p> <p>In a dwelling unit, at least one habitable room shall have not less than 150 square feet of net floor area. Every habitable room or space shall have not less than 80 square feet in net floor area.</p> <p>Kitchen: A room with 80 s.f. or more of floor area which is intended, arranged, designed or used for cooking or warming of ood. (habitable space)</p> <p>Kitchenette: A space with less than 80 s.f. or more of floor area which is intended, arranged, designed or used for cooking or warming of ood. (not a habitable space)</p> <p>http://www1.nyc.gov</p> <p>http://www.iccsafe.org/</p>	<p>Minimum 450 square feet</p> <p>http://www.mass.gov/ocabr/government/oca-agencies/dpl-lp/opsi/consumer-prot-and-bus-lic/license-type/csl/building-codebbrs.html</p>	<p>http://ecodes.biz/ecodes_support/free_resources/Oregon/10_Structural/10_ORStructural_main.html</p>
Parking Requirement	<p>Parking requirement varies based on zones</p> <p>http://www.amlegal.com/nxt/gateway.dll/California/planning/planningcode?f=templates\$fn=default.htm\$3.05vid=amlegal:sanfrancisco_ca\$sync=1</p>	<p>Parking requirement varies based on zones</p> <p>http://www.nyc.gov/html/dcp/html/zone/zonetext.shtml</p>	<p>Parking requirement varies based on FAR. Some cases do not require off-street parking (SECTION 23-6)</p> <p>http://www.bostonredevelopmentauthority.org/zoning/downloadZone.asp</p>	<p>city planning commission proposed a minimum of one parking spot for every four apartments. That would apply to buildings with more than 40 units (large apartments).</p> <p>Parking study: https://www.portlandoregon.gov/</p>

Appendix 8

Comparison of Laneway Home Policies and Regulations Across Communities

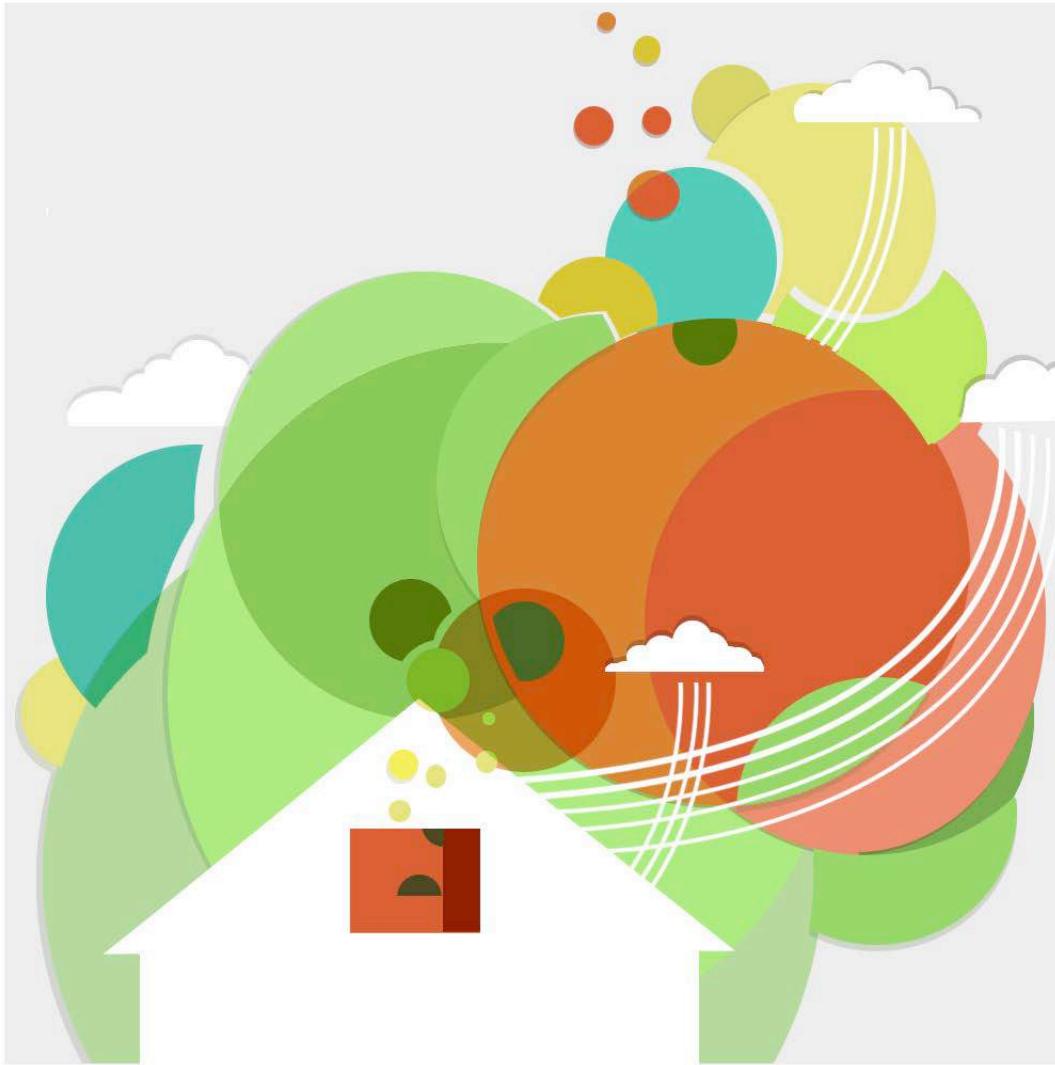


TABLE 1-A: OVERVIEW OF COACH HOUSE ‘REGULATIONS’ IN SELECTED METRO VANCOUVER COMMUNITIES: COQUITLAM, DELTA, LANGLEY TOWNSHIP, AND MAPLE RIDGE

	COQUITLAM	DELTA	LANGLEY TOWNSHIP	MAPLE RIDGE
Term Used	<p>Garden Cottage A one-storey, at-grade residential structure accessory to a one-family dwelling unit.</p> <p>Carriage House An accessory residential suite, located on the second storey above a garage</p>	<p>Secondary Dwelling Unit Term used in Zoning Bylaw but not specifically defined.</p> <p>Coach Housing (OCP definition) A second dwelling unit located in an accessory building on a lot. The accessory building is typically a separate garage with the dwelling unit situated on the 2nd storey or at ground level.</p>	<p>Coach House An accessory dwelling unit which is located within the second storey of the garage on the lot.</p>	<p>Detached Garden Suite A self-contained dwelling unit, accessory to, subordinate and detached from a one family residential use, limited to one dwelling unit on the same lot, located within the rear yard.</p>
Where Allowed per OCP and Zoning Bylaw?	<p>Properties designated in the SW Coquitlam Plan as “Neighbourhood Attached Residential” (NAR) can be developed with garden cottages or carriage houses, under RT-1 zoning.</p> <p>Approximately 1,100 of 1,500 NAR-designated lots are already zoned RT-1; the balance would require rezoning.</p> <p>RT-1 Zone establishes following requirements for garden cottages / carriage houses:</p> <ul style="list-style-type: none"> - Min. 370 m² lot area and 10 m lot width if there is a lane; Min. 12m lot width without lane - Not permitted on a lot with a secondary suite or lots less than 740m² - lots larger than 740m² can have both a secondary suite and a garden cottage/carriage house 	<p>OCP identifies coach houses as appropriate for urban areas close to community services and amenities in Ladner, North Delta and Tsawassen – i.e., in areas with a “Ground-Oriented Residential” designation</p> <p>Rezoning to RS 9 Zone - Single Family (330 m²) Infill Residential is required (considered on a site-by-site basis)</p>	<p>Primarily in new neighbourhoods in Willoughby, but also in newer developments in Fort Langley and Murrayville.</p> <p>Rear lane requirement</p> <p>Residential Compact Lot Zone R-CL(CH); and CD-4 Zone</p>	<p>Properties zoned RS-1b, RS-1, RS-1a, RS-1c, RS-1d, RS-2, RS-3, A-1, A-2, A-3 or A-4.</p> <p>Min. lot size 557 m² (5995sqf.t)</p> <p>Not permitted on a lot with a secondary suite.</p>
Additional Density	Yes. Floor area of garden cottage/carriage house is in addition to the max. floor area of for the principal dwelling.	No. Floor area of coach house is within the max. 0.65 FAR permitted for the lot.	No (see Unit Size below)	To be determined
Unit Size	Max. 50 m ²	Min. 42 m ² excluding garage; Max. 110 m ² including garage	Unit size not specifically defined in Zoning Bylaw: R-CL(CH) Zone: Max density in accordance with density provisions outlined in community or neighbourhood plan;	Min. 37 m ² / max. 90 m ² or 10% of lot area, whichever is less.

**TABLE 1-A: OVERVIEW OF COACH HOUSE 'REGULATIONS' IN SELECTED METRO VANCOUVER COMMUNITIES:
COQUITLAM, DELTA, LANGLEY TOWNSHIP, AND MAPLE RIDGE**

	COQUITLAM	DELTA	LANGLEY TOWNSHIP	MAPLE RIDGE
			CD-4 Zone: Max. FAR of all buildings and structures ≤ 0.65; Max. 2-person occupancy.	
Max. Height	Garden Cottage: <i>3.0 metres; or 4.3 metres for buildings with roof slope of ≥ 3:12 for an area of at least 80% of all roof surfaces.</i> Carriage House: <i>5.0 metres; or 7.0 metres per above requirements.</i>	2 storeys 9.8 metres to ridge of pitched roof 7.3 metres to mid-roof (or to top of a flat roof)	R-CL(CH) Zone: Lesser of 9.0 metres or 2 storeys. CD-4 Zone: Lesser of 3.75 metres or 1 storey; except where an accessory coach house is situated above a detached garage: 7.0 m.	(1) Lesser of 4.5m or 1 storey for lot sizes < 0.4 hectare, except: (a) 6.0 metres for properties zoned RS-2 or RS-3; and (b) on properties with lane access, detached garden suite above an accessory structure or garage: 6.0 metres; or ground level unit: 4.5 metres (2) Lesser of 6 metres or 2 storeys for lot sizes of ≥ hectares, except: (a) on properties zoned A-1, A-2, A-3 & A-4, may build a detached garden suite above the detached residential structure or an off-street parking structure to a maximum height of 7.5 metres
On-Site Parking	1 space for accessory rental suite, plus two spaces for principal house	1 space for secondary dwelling unit	R-CL(CH) Zone: 1 space for coach house; CD-4 Zone: 2 additional spaces	1 (covenanted) space for detached garden suite
Approval Process	Building Permit only	No Development Permit required, but applicants must enter into a design covenant in accordance with Ladner Coach House Guidelines for single-family neighbourhoods	Building Permit only	Building Permit only. Prior to permit issuance, covenants are required for the following: - Housing Agreement for provision of affordable rental housing and owner-occupancy - Dedicated parking space for the detached garden suite
Notes	- Introduced January 2012 - 4 applications in process in Southwest Coquitlam - To date: 8 building permits issued in Somerton Development in East Coquitlam; 6 more in process	- 1999 – First coach house rezoning (in Ladner) - 2007 – Ladner Area Plan amended to include Design Guidelines for coach houses - To date: 30 coach houses built in Ladner; 4 in North Delta		- Introduced in 2008 - 15 approved or in process

**TABLE 1-B: OVERVIEW OF COACH HOUSE REGULATIONS IN SELECTED METRO VANCOUVER COMMUNITIES:
NORTH VANCOUVER CITY, RICHMOND AND VANCOUVER**

	NORTH VANCOUVER CITY	RICHMOND	RICHMOND (Edgemere)	VANCOUVER
Term Used	<p>Accessory Coach House <i>A detached unit that is subordinate in size to the principal home, and must be non-stratified. The owner must reside on the property.</i></p>	<p>Coach house - a self-contained dwelling that: [Bylaw 8922, Nov 19/12] a) is accessory and either attached or detached to the single detached housing unit, except in Edgemere where it must be detached from the principal dwelling unit; b) has at least 75% of its floor area located above the garage, except in Edgemere where a maximum of 60% of its floor area must be located above a detached garage; c) has cooking, food preparation, sleeping and bathing facilities that are separate from those of the principal dwelling unit located on the lot; d) has an entrance separate from the entrance to the garage; and e) is a separate and distinct use from a secondary suite, and does not include its own secondary suite.</p>	<p>Granny flat - a self-contained dwelling that: [Bylaw 8922, Nov 19/12] a) is accessory to and detached from the single detached housing unit; b) is located totally on the ground floor in the rear yard of a single detached housing lot; c) has cooking, food preparation, sleeping and bathing facilities that are separate from those of the principal dwelling unit located on the lot; d) has an entrance separate from the entrance to the garage; and e) is a separate and distinct use from a secondary suite, and does not include its own secondary suite.</p>	<p>Laneway House <i>A small house at the rear of a lot near the lane which may include both a dwelling unit and parking/accessory uses.</i></p>
Where Allowed per OCP and Zoning Bylaw?	<p>OCP established Coach House Development Permit Area designation.</p> <p>Accessory Coach Houses are permitted in all single-family (RS-1) zones. Lane required. Rezoning may be required for some Level 'B' units.</p>	<p>Rezoning required on a site-by-site basis. Permitted use in the following zones:</p> <ul style="list-style-type: none"> - Coach Houses (RCH) - Infill Residential (RI1, RI2) - R/9 (Hamilton) - ZS12 (Broadmoor) - ZS20 (Burkeville) <p>Lane required in RCH, R/0 and ZS20 Zones</p>	<p>As an outcome of Richmond's current OCP review process, a portion of the Edgemere area was re-zoned to RE1 Zone (to permit granny flats and coach houses) in November 2012. The draft OCP includes Development Permit Area Guidelines for Granny Flats and Coach Houses in Edgemere.</p> <p>Lane required.</p>	<p>RS1 and RS5 zones city-wide.</p> <p>Min. lot width: 10 metres</p> <p>Lots must have access to an open lane, be located on a corner with an open or dedicated lane, or on a double-fronting lot.</p>
Additional Density	No	Yes: Additional 0.05 FAR in R/9 Zone; and additional 0.10 FAR in RI1, RI2, and ZS12 Zones	Yes: Additional 23.2 m ² (0.05 FAR x 464.5 m ²) on lots with an accessory dwelling	Yes: Additional 0.125 FAR and laneway house in addition to secondary suite (3 units on one lot)
Unit Size	Lesser of 0.15 times lot area or 74.32 m ² for Level 'A' units or 92.9 m ² for Level 'B' units.	Min. 33 m ² and max. 60 m ² in the RCH and ZS20 Zones; Max. 60 m ² in the R/9, RI1, RI2 and ZS12 Zones.	Granny Flat: min. 33 m ² / max. 70 m ² Coach House: min. 33m ² / max. 60m ² , of which at least 40% is on 1 st storey.	0.125 FAR to max. 70 m ² , results in 46.5 m ² on typical 33x120 lot and 70 m ² on 50x120 or larger lot.

**TABLE 1-B: OVERVIEW OF COACH HOUSE REGULATIONS IN SELECTED METRO VANCOUVER COMMUNITIES:
NORTH VANCOUVER CITY, RICHMOND AND VANCOUVER**

	NORTH VANCOUVER CITY	RICHMOND	RICHMOND (Edgemere)	VANCOUVER
Max. Height	Level 'A' Units: 1 storey, 4.57 metres Level 'B' Units: 1.6 storeys, 6.7 metres	RCH, R/9 and ZS20 Zones: Lesser of 2 storeys or 7.4 meters RI1, RI2 and ZS12 Zones: 9.0 metres.	Granny Flat: Lesser of 1 storey or 5 metres Coach House: Lesser of 1.5 storeys or 6 metres	1-storey: 3.7 metres; 1.5-storey: 6.1 metres
On-Site Parking	2 spaces; 1 for main dwelling and 1 for coach house	RI1 and RI2 Zones: 1 space per dwelling or 0.5 space per bedroom, whichever is greater; max. 1.7 spaces per dwelling unit R/9 and ZS20 Zones: 1 space for coach house ZS12 Zone: 2 spaces per primary dwelling; 2 per additional smaller dwelling	1 space per granny flat or coach house.	Min. 1 parking space on the lot, for use by any of a potential three dwelling units on the lot (including the laneway house). On lots up to 740 m ² , max. 1 enclosed or covered parking space up to 21 m ² . On larger lots, max.2 enclosed or covered spaces up to 42 m ² .
Approval Process	Development Permit required (delegated to staff). Development Variance Permit (DVP) or Rezoning required to permit Level 'B' Units.	Building permit only.	Development permit required (delegated to staff).	Applications subject to "Development Planner (staff) Review", which focuses on the massing and design of the partial upper storey, to reduce impacts on neighbouring properties.
Notes	Introduced in 2012. As of November 23, 2012: 12 units occupied or under construction; Development Permits for another 8 units issued or under review.	Introduced in 2004. Approximately 100 units built to date.	Introduced November 2012 n/a	Introduced July 2009. As of November 16, 2012: 739 applications approved (of these ±400 have had final inspections and are occupied)

TABLE 2: OVERVIEW OF ‘COACH HOUSE’ REGULATIONS IN OTHER BC MUNICIPALITIES: KELOWNA, SIDNEY, VICTORIA

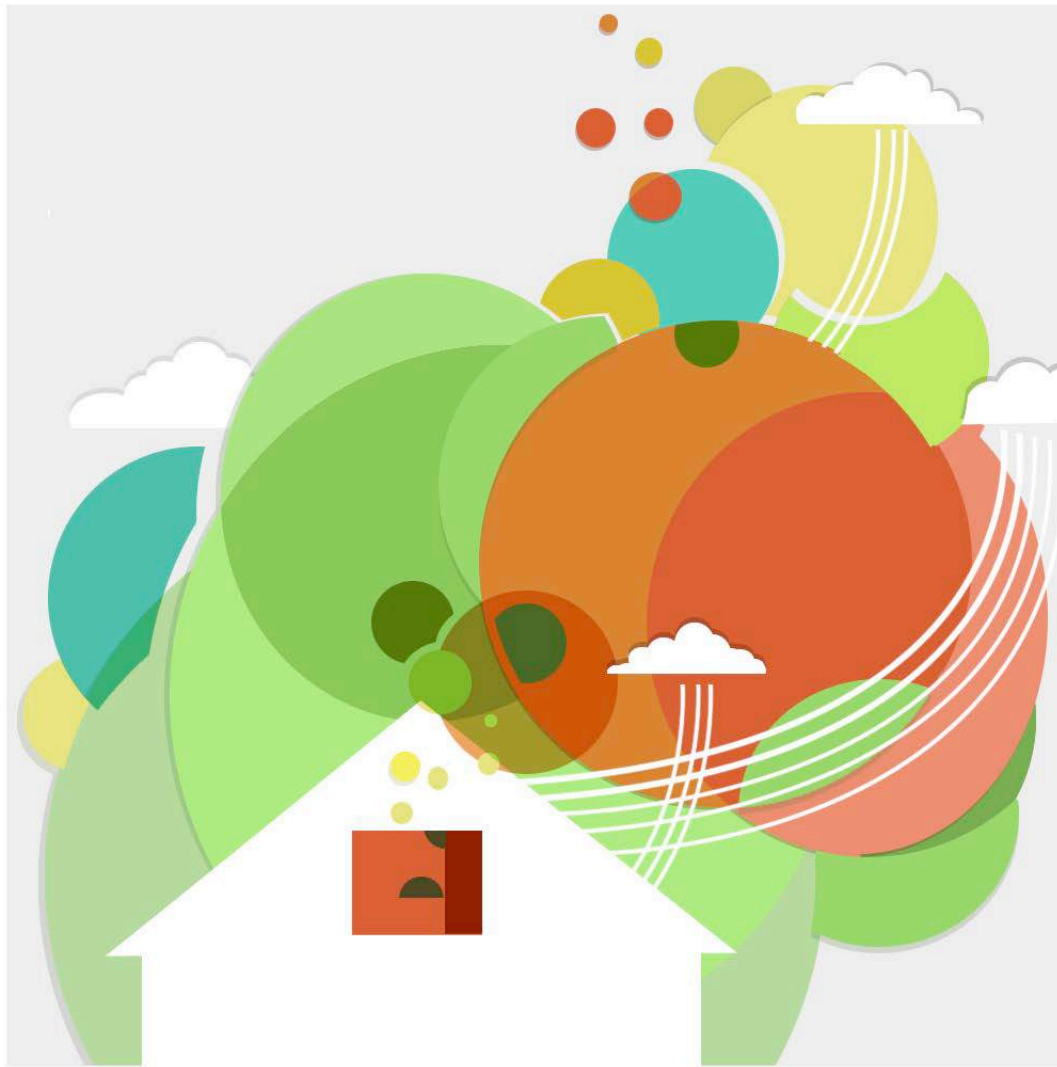
	KELOWNA	SIDNEY	VICTORIA
Term Used	Carriage House <i>An additional dwelling unit located within an accessory building that is subordinate to the principle dwelling unit and is a single real estate entity.</i>	Detached Secondary Dwelling <i>A secondary dwelling located in an accessory building.</i>	Garden Suite <i>A building used or designated as a self-contained dwelling unit located on a lot with a single family dwelling and does not include a strata lot.</i>
Where Allowed per OCP and Zoning Bylaw?	Permitted use in the RU6 (Residential) Zone Requires rezoning to the ‘c’ version of the following zones: (e.g., RU1 to RU1c) <ul style="list-style-type: none"> ▪ A1 (Agricultural) Zone ▪ RR1, RR2, RR3 (Rural Residential) Zones ▪ RU1, RU2, RU3, 	R1.3 and R3 Zones in the Orchard Avenue area. Owner occupancy required Only in conjunction with a single-family dwelling with no secondary suite Min. lot area = 400 m ² Min. lot width = 10 metres	OCP establishes Development Permit Area 15E – Intensive Residential Garden Suites Rezoning on an individual site basis is required Garden suites are permitted in the R1-B-GS and R1-B-GS2 Zones
Additional Density	Yes. Floor area of carriage house is in addition to that allowed for principal dwelling.	No. Size of building is regulated through lot coverage: max 35% for 2-storey; and 40% for 1-storey. Balance of site coverage not used for principal dwelling may be used for detached secondary dwelling.	Yes. Floor area of the garden suite is in addition to that of the principal dwelling.
Unit Size	Lesser of 90 m ² or 75% of the total floor area of the principal building. <u>Note:</u> A secondary suites is the lesser of 90 m ² or 40%.	Min. 37 m ² Max. 60 m ²	Max 37 m ² except: potential for larger unit size for conversion of existing garages (R1-B-GS); and Max. 56 m ² on “plus sites” – i.e., on lots located on corner, with two street frontages, rear lane, and > 557 m ² (R1-B-GS2).
Max. Height	The lesser of 4.5 metres or the height of the existing principal dwelling unit on the same property.	Max. 2 storeys. Lesser of 85% of height of principal dwelling or 6 metres	3.5 metres (R1-B-GS) 5.5 metres (R1-B-GS2)
On-Site Parking	1 space for carriage house.	1 space for detached secondary dwelling	No additional parking requirement for garden suite, but primary dwelling requires min. 1 space
Approval Process	Development Permit required (delegated to staff).	Building Permit only. DVP required to allow for detached secondary dwelling on properties that do not have sufficient unused lot coverage.	Development Permit (DP Area 15E) is processed concurrent with rezoning (Council approval). Heritage Designation requested if property is on Register.
Notes	Introduced circa 1998. To date: 167 carriage houses (from rezoning); and over 500 units in the RU6 (Two Dwelling Housing) Zone, where coach houses are a permitted use	Introduced June 2012. To date: 1 Building Permit approved, but project is not proceeding.	Garden Suite policy adopted in Sept 2011; OCP amended to establish Development Permit requirement for garden suites (as intensive residential development). To date: 2 approved rezoning; 1 denied; and 1 in process.

TABLE 3: OVERVIEW OF ‘COACH HOUSE’ REGULATIONS IN WASHINGTON STATE COMMUNITIES

	KIRKLAND	SEATTLE
Term Used	<p>Accessory Dwelling Unit (ADU) – A subordinate dwelling unit added to, created within, or detached from a single-family structure, that provides basic requirements for living, sleeping, eating, cooking and sanitation.</p> <p>Related Terminology (for multi-unit development in low density zones):</p> <ol style="list-style-type: none"> 1. Cottage – A detached, single-family dwelling unit (≤ 1500 sq.ft.). 2. Carriage Unit – A single-family dwelling unit (≤ 800 sq.ft.) located above a garage structure in a cottage housing development. 	<p>Backyard Cottage – A small residential structure sharing the same lot as a house, but self-contained and physically separate from the primary house. Referred to in zoning terms as “Accessory Dwelling Unit, Detached”.</p>
Where Allowed?	In conjunction with any single-family dwelling, unless specifically excluded in Zoning Code – e.g., not permitted with cottage or carriage units.	SF 5000, SF 7200 and SF 9600 Zones Min. lot requirements: - Area = 371.6 m ² - Width = 7.62 metres - Depth = 21.34 metres
Additional Density	No, but not counted as a “dwelling unit” in sections of the Zoning Ordinance which limit the number of detached dwelling units in a single-family zone to one.	No
Unit Size	The lesser of 74.32 m ² of gross floor area or 40% of the of the primary residence and ADU combined.	Max. 74.32 m ² (including garage or storage)
Max. Height	Must conform to the height restrictions for single-family dwellings in the applicable zone (usually 7.6 metres to 9.1 metres)	3.7 metres to 4.9 metres (varies depending on lot width)
On-Site Parking	One parking space for the accessory dwelling unit.	1 parking space for backyard cottage. No parking required if located in a designated urban village or urban centre.
Approval Process	Assumed to be building permit only.	Building permit only (Washington State equivalent). Owner occupancy covenant.
Notes	An ADU is a rental-only use, whereas cottages and carriage units may be developed as either ownership or rental housing.	Introduced in Southeast Seattle in 2006; expanded city-wide in 2009. Approximately 55 units approved through April 2011.

Appendix 9

Snapshot of Rental and Purchase Costs for Small Homes in BC



Snapshot of Rental and Purchase Costs for Small Homes in BC

The examples in the table below are focused on urban BC market figures. Sample purchase costs for small homes in various BC communities could be found by researching and analyzing BC Assessment data for recent sales and the multiple listing service (MLS). Sample rental costs for small homes in various BC communities could be found through Craigslist classified online advertisements, or other online searching. In addition, real estate agents in communities of interest could be consulted for information.

Form and location	Price Range and other info	Example
Small / micro apartments Vancouver	Rentals (Vancouver): Between \$750 and \$1250 (and up, for new and higher end furnished units). Lease periods seem to vary from 6 months to a year.	Listing on Craigslist for a 250 sq. ft. micro-apartment in the Gastown neighbourhood of Vancouver in the Burns Block (18 West Hastings Street) recently renovated building. It advertised as suitable for one person (occupancy February 2015), \$1035 per month, 1 year lease. ¹
	Purchase: Purchase prices for micro-apartments vary with size, location, whether it is new or renovated, features and amenities, and whether it is furnished or unfurnished, etc. Based on examples, \$110,000 to \$170,000 and up.	Example: a 335 sq. ft. unit in a multi-story building with balcony in Surrey BC is selling (pre-sale) for \$134,900. ² Example: Sample sale prices for The Janion micro-loft units (approximately 250 sq. ft. to 350 sq. ft.) in Victoria BC are \$110,000 to \$170,000. ³
Tiny Houses (moveable)	Based on examples, price range is \$13,000 to \$54,000 Does not include cost of land and cost of transport	The Tumbleweed Tiny House Company sells tiny homes (65 sq. ft. is the smallest model and 130 sq. ft. is the largest) for \$16,000 to \$23,000 if you build the home yourself (i.e. for building materials kit and plans), or \$39,000 to \$54,000 if you have it built for you. The cost does not include land and transport of the building. ⁴ A website listing already-built tiny homes for sale in various North American locations, included advertisement for two tiny homes offered for sale in the Lower Mainland for

¹ Reference retrieved January 12, 2015 from Vancouver craigslist

² Reference retrieved December 1, 2014 from: <http://vancitypresales.com/>

³ Reference retrieved December 1, 2014 from: <http://www.janion2013.com/affordability.html> Alec Wilkinson, "Let's Get Small,"

⁴The New Yorker, 2011.

Form and location	Price Range and other info	Example
		<p>\$33,000 to \$35,000 as of October 2014. This cost does include land and transport of the building.⁵</p> <p>NOMAD Homes sells a microhome that screws and snaps together for under \$30,000, and can be assembled with handyman level skills.⁶ Another company, Snap Microhomes builds factory-built dwellings from 120 sq. ft. to 750 sq. ft., and the price per home spans from \$37,950 to \$135,000.</p>
Laneway homes	Rental-only in Lower Mainland. ⁷ \$1200 to \$2200 in Vancouver, for small 1-bedroom size (up to approximately 600 sq. ft.)	<p>Most laneway homes are rental units in the Greater Vancouver area. A real estate website with listings for laneway home rentals included options for one-bedroom laneway home rentals as low as \$1200 per month.⁸</p> <p>Lanefab laneway homebuilder in Vancouver estimates that monthly rental for a one-bedroom would be \$1500 to \$2200 per month.⁹</p>

⁵ Reference retrieved December 1, 2014 from: <http://tinyhouselistings.com>

⁶ NOMAD Homes - Ian Kent, Key Informant Interview, 2014.

⁷ Many municipalities in the Lower Mainland have policies that allow laneway homes on properties with specific zoning and other characteristics, as detached accessory dwellings that are owned and rented out by the owner of the principal dwelling (i.e. a single family or duplex) and lot. This is to say that laneway homes cannot be separately purchased and sold. See the section of this report "Financing Challenges" for further discussion about possible new financing models that are being explored to enable (in the future) shared ownership and purchase of laneway homes.

In a few isolated situations, separate lots are being proposed (i.e. subdividing a larger lot into smaller lots) with the intent to construct smaller detached dwelling unit(s) on smaller lots that would be separately owned.

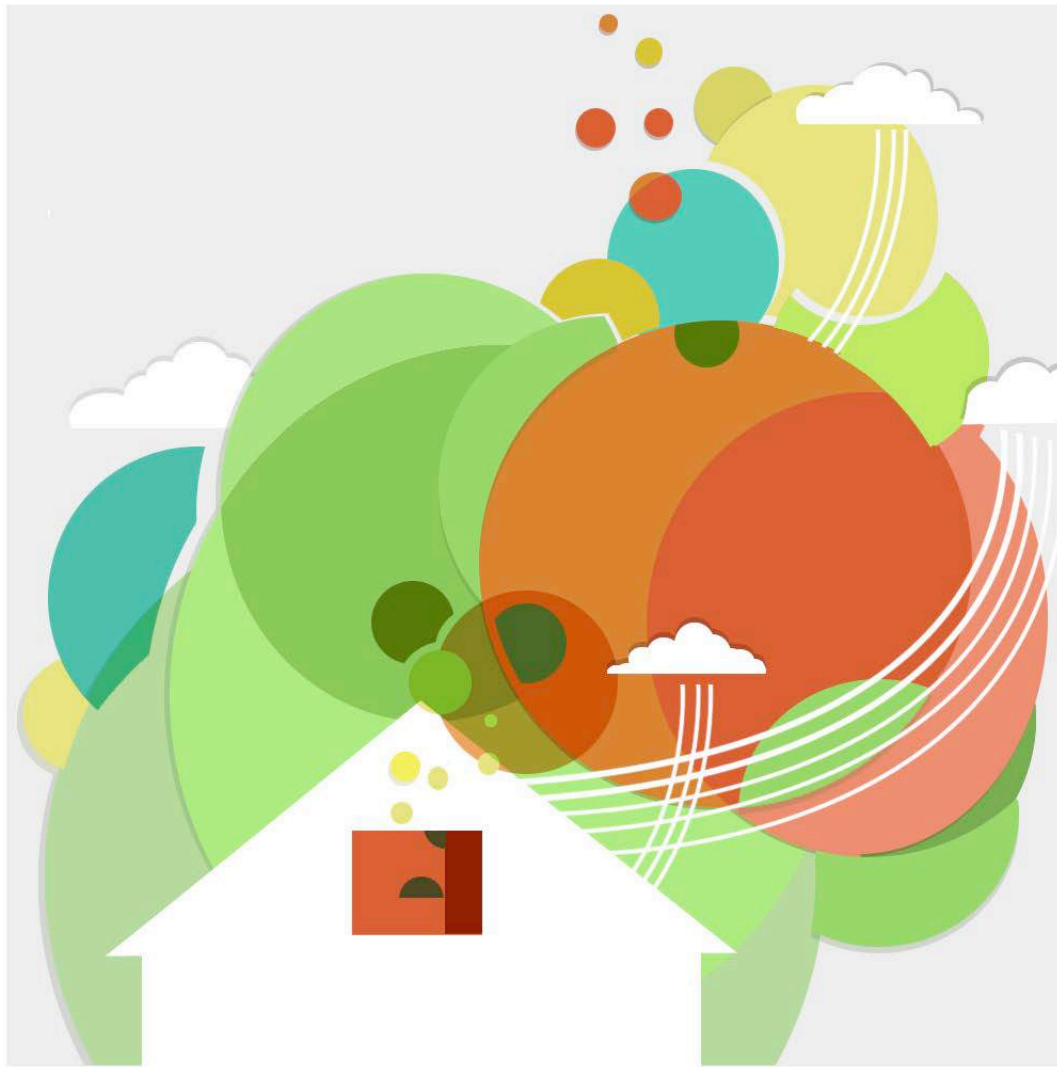
Note that some detached dwellings termed as 'coach houses' can be strata-titled (separate ownership from the property with principal dwelling), and these can be purchased as distinct units. However, most coach houses are larger than the small housing definition that this study contemplates; therefore, these types of dwellings and sample purchase costs are not provided here.

⁸ Reference retrieved December 1, 2014 from: <http://laneliving.ca/rentals-vancouver-east.html>

⁹Reference retrieved December 1, 2014 from: Lanefab website <http://www.lanefab.com>

Appendix 10

Summary of Key Points in this Research Study (Exploring Best Practices and Lessons Learned with Small Market Units) and Possible Next Steps



Summary of Key Points and Possible Next Steps

The following is a collection of some key points and next steps emerging from this research study and findings, which are included in the body of the Project Report: Research Study Exploring Best Practices and Lessons Learned with Small Market Units.

For more summary information, please also refer to the Executive Summary and InfoGraphics at the beginning of the Report.

Definition and Context: What is Small Housing?

This study included a ‘working definition’ of a small home in order to help define the scope for the project: a dwelling in any form (apartment, detached dwelling, moveable unit, etc.) that is sized to meet its occupants' needs with little excess space, approximately 500 sq. ft. (46 sq. m.) for 1-2 people, or slightly larger (e.g. 750 sq. ft./ 70 sq. m.) for a household of 3 or more.

Key Points re: Definition of Small Housing:

There is no key universal definition for small housing – it’s all about the context!

Many small homes are well under 500 square feet (200 to 400 square feet). In some situations, families or people accustomed to larger spaces would still consider a larger space (e.g. 750 to 1000 sq ft) but we are not focusing on these larger units in this study.

A key concept in small living is space that meets your needs without excess space.

From a regulatory perspective a small home is one that is the minimum size, or smaller than the minimum size, that is currently permitted for a dwelling in the city or town.

Snapshot of Current Trends

Key Points re: Snapshot of Current Trends:

Most small market units are currently in the Vancouver Sea to Sky Region of BC.

There are many forms of small market housing in BC including micro-apartments, laneway homes, and tiny homes (moveable dwellings). Specific information about how many, by type, is not available.

Ideas for possible next steps and additional information:

Additional research about the trends in small market housing by type and by region in BC, including more detailed questions and analysis (e.g. BC Assessment Data, Multiple Listing Service data).

Analysis of the (average) rental and purchase prices of small market units, compared with other types of housing units in BC (and regionally), and possibly involving information on average cost by square foot for various unit sizes and types.

Market Demand

Key Points re: Market Demand:

Small housing demand is fuelled by high land values, particularly in urban areas.

Smaller household size trends (many one- and two-person households) are suited to smaller forms of housing.

The market for rental and owned small housing appears to be high in urban areas, and it is predicted that this form of housing are less likely to have uptake in smaller communities and places with lower land values.

Ideas for possible next steps and additional information :

Further empirical study and analysis of market demand factors in BC for various forms of small housing could inform various sectors (development, regulatory, community) about the demand in various BC communities / regional contexts.

Design and Residents' Perspective

Key Points re: Design and Resident's Perspective:

The livability of a small home is less about the size, and more about the layout, functionality and design.

Durable, high quality, and suitable furnishings and design are essential – all parts of the small home need to be hard-working and functional.

Particular attention is needed to ensure that small homes are designed to access a lot of daylight (window placement, tall ceilings, site orientation), air (windows, circulation and ventilation), and connection to the outdoors.

Privacy and quiet can be achieved with appropriate and quality construction materials and methods.

Small living is not for everyone, and health and well being can be compromised if people are crowded and stressed in a small space.

Developer/Business Perspectives on Building Small Homes

Key Points re Developer / Business Perspective:

Small living costs more (in rent and purchase cost) per square foot, but the idea is that it costs less per unit because the space is smaller than larger spaces.

Many types of small homes (particularly apartments and laneway homes) are suitable in urban (or near-urban) areas with high land values and many very close-by amenities like transit.

It costs more per square foot to build a small unit – kitchens and bathrooms, high quality furnishings and amenities.

There can be financing challenges for building and buying small units, because they are relatively new and need to be ‘proven out’.

Prefabricated construction seems to bring advantages for building small units including with cost, time, quality, and logistics. These are opportunities to be further explored in the BC context.

Ideas for possible next steps and additional information:

Increase understanding about the financial / lending challenges for small units.

Increase depth of understanding about the economics and feasibility of various types of factory-built construction methods, with respect to applicability to particular types of small housing projects.

Study and increase understanding about the depth of the market for small housing.

Share knowledge between development and policy/regulatory sector about the financial considerations and key issues around feasibility of small housing projects.

Community Considerations

Key Points re: Community Perspective

Some key community considerations about development of small housing include:

Ensuring that livability standards are maintained in small units – small does not mean poor quality

Understanding the impact of small market units of other housing affordability in the area, ensure neighbourhood design and fit, and what burden and/or opportunities for community infrastructure and amenities.

How can small housing be understood and discussed with ‘neighbours’?

Policy and Regulatory Perspective

Key Points re: Policy and Regulatory Perspective

Some cities have adjusted policies to accommodate small housing (particularly micro-apartments) by reducing the minimum dwelling size requirement in the community, while other places have pursued “pilot” approaches to small housing.

The regulations around small housing encompass objectives and responsibilities related to residents’ well being (e.g. light and air) as well as the neighbourhood (e.g. design, parking) and the future community (e.g. how flexible is small housing to meet future needs?)

Undefined local policy and regulations can make the development process for small housing very challenging, time consuming and thus increase costs to developer and buyer.