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Syllabus Diploma Project

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Table of Content

Introduction.....	3
A Brief History	4
Single Family Detached Homes vs. Apartment Buildings	6
Thesis Statement	10
Precedents:	
Avant Townhomes, Vancouver, BC	12
Hintonburg Six, Ottawa, ON	13
Row Homes, Richmond, BC.....	14
Anatolia Court, Los Angeles, CA.....	15
Cottage Housing, Seattle, WA	16
Tango, Malmo, SE	17
Apartment House, Singapore, SG.....	18
Gairola House, Gurgaon, IN	19
Franklin Apartments, La Brea, CA	20
Lilong Housing, Shanghai, CN.....	21
Research Conclusions	22
Site Selection	24
Programming.....	25
Five Key Guidelines	26
Three Studies:	
The Modular Link.....	27
Loud vs. Quiet.....	27
The Hub	27
The Modular Link Explored	28
Bibliography	31

Introduction

After many months of house hunting in Vancouver, for a place to call my home, I came to the conclusion that what I was looking for did not exist. At least not within my price range and that is generally the case for a lot of potential home owners these days. This lack of the “right” product seems to be altering the way society lives. The ideology of being married with 2 1/2 children and living in a house behind a white picket fence just isn’t what it used to be. You are more likely to see multi-generational living arrangements where families living under the same roof provide each other with financial stability and aid with child care and elderly support. Either that or, young couples looking to start families, are stuck in apartments and towers with little to no useable outdoor space for kids to run and play in. So, it is because of these reasons, I began my research into residential housing in Vancouver. If we are mass-producing housing that is not meeting the needs of society, what’s the point? Is there a missing typology in need of development? One that can address how our society has changed over the years and one that will continue to change and evolve in the future? My goal is exploring where we have come from and come to some conclusion as to what our next step should be.

A Brief History

The city of Vancouver was originally laid out based on streetcar requirements and as outlined in what has come to be known as the “Bartholomew Plan” published in 1928. This plan created a grid pattern based on streets and service lanes with general rules for major road development, transit systems, harbour development, zoning and civic art. Requirements for recreation facilities such as parks, schools, swimming pools and community centres are also mapped out within the plan. The idea being that the lower mainland would be developed as one whole unit and upon reaching a size of approximately 1 million persons, a new larger plan would be developed to continue the unity of this major port city. (Bartholomew, H. (1928) *A Plan for the City of Vancouver, British Columbia*.)

The city grid layout noted in the above mentioned plan has been based off the surveyor’s standard 66-foot chain that created 660 square foot residential blocks all over the city. These blocks were then typically sub-divided into standard 33’-0” x 120’-0” lot sizes which allowed the creation of comfortable single family detached homes available to the everyday man. (Kluckner, M. (2012) *Vanishing Vancouver: The Last 25 Years*.) As the population of Vancouver began to grow in the post war era, neighbourhoods began to fill with new single family homes, and the city expanded in a similar way to many other prosperous cities through out the country, but, with one distinct difference. Vancouver is unique in its geographic location between the north Shore Mountains, the ocean to the west and America to the south, leaving expansion only possible to the east toward the Fraser valley. With this one direction the only option for expansion it did not take long for people to realize the fertile farming land of the Fraser valley was at risk of being obliterated by urbanization. As a result, the New Democratic Party (NDP) of British Columbia created the Agricultural Land Act in 1973 to give priority to the farmer and his farmland. This effectively made approximately 47,000 square kilometers of both public and private land off limits to any use other than farming and forestry. With this act, the last expansion window closed and architects in Vancouver were presented with a new problem; how to provide shelter for a growing population without taking up more land? The answer to this question came in the form of a new housing typology, the “podium-tower”, or as it has come to be known, Vancouverism. (Wikipedia (2014) *Vancouverism*.)

This new model allowed maximum density with minimum land use. It also incorporated commercial spaces adding conveniences and decreasing the importance of the automobile for residents that live and work in the downtown core. This is opposite to what happened in other major cities, where urban sprawl, the car-centric type of development that came to prominence in the 1950’s (with towns like Levittown in New York) continued at alarming rates. (Bacon Hales, P. (2009) *Levittown: Documents of an Ideal American Suburb*.) The tower-podium also came to prominence at a time when downtown Vancouver was becoming very office/ retail space heavy. This one sided occupancy, creating an animated community during work hours and a ghost town at night when everyone left for the outlying areas. The mass reintegration of residential housing to the downtown core created a more fully rounded community

atmosphere, but at the same time one needs to question the quality of space and life that was provided in these towers. Studies have been done to show the detrimental effects that tower living have on children's mental and physical health. And the lack of outdoor space and convenience of fast food restaurants has been touted as a cause of obesity in both children and adults. (Sewell, J. (1994) *House and Homes: Housing for Canadians.*)

That said, now that the downtown core has been saturated with tower-podiums, and the population continues to grow (if only for the time being as some studies anticipate the population will begin to decrease around 2050) where do we go? Can this typology be transplanted out of the downtown core and into neighbouring single family residential areas? For the sake of my thesis, I have chosen to rule out the relocation of the tower-podium to the outlying areas as a possible solution and instead to look into the existing single family and apartment building scale to inform my ideas on what the future could hold.

Single Family Detached Homes vs. Apartment Buildings

Besides the podium- tower the single family detached home and the apartment building are the other most prevalent housing typologies in Vancouver.

The Single Family Detached Home

The typical single family house in Vancouver sits on a 33'-0" x 120'-0" lot with main access from the street and secondary access from the service lane in back. Each typical two and a half storey home comes with private front yard, side yards and back yard of varying sizes and most often a detached garage accessed off the lane. Single family neighbourhoods take up the majority of land area in the lower mainland and are often located farther from commercial nodes than apartment buildings. Walkability is a popular word in real estate as access to work; commercial amenities and recreation are large factors in the desirability of a home. Within Bartholomew's original Vancouver plan, major transit and commercial nodes have been fairly well spaced to allow access from most neighbourhoods making single family homes in Vancouver relatively convenient in location. (Bartholomew, H. (1928) *A Plan for the City of Vancouver, British Columbia.*)

The single family home, though not exactly what it used to be, is still associated with the "American Dream" an ethos popularized in America in the 1940's which included ideals such as home ownership, a prosperous family life and upward mobility earned through hard work and the thought that "life should be better and richer and fuller for everyone, with opportunity for each according to ability or achievement regardless of social class or circumstances of birth".



DETACHED HOMES FROM STREETSCAPE

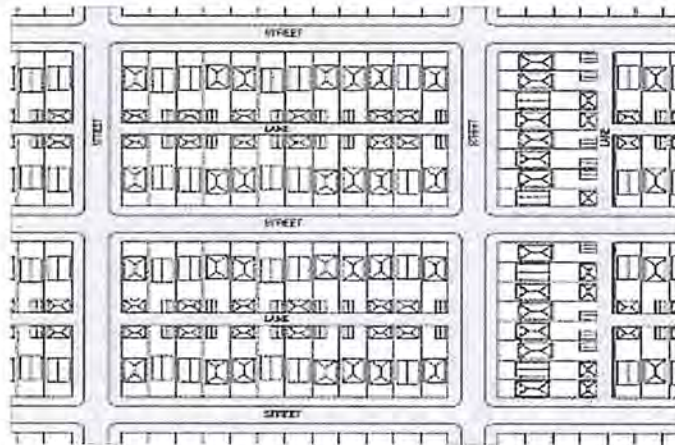


DETACHED HOMES NEAR BOUNDARIES



DETACHED HOMES FROM STREETSCAPE

(Wikipedia (2014) *American Dream*.) To this day a vast number of people still strive for the “home ownership” part of that ethos even though the circumstances of society have greatly changed since the ideas inception. People no longer receive a 30-year mortgage with no down payment and they do not work the same job for those 30 years so upon retirement the home is owned out right. Mortgage helper suites and multi-generational family living have become more prevalent in an attempt to make the “Dream” come true. So, one is logically lead to the question, why is this still the dream? Is it the draw of the “community and character” present in the single family typology or perhaps the human scale of detached homes relates better to residents making them feel more comfortable and relaxed? Also, individual homes can provide opportunities for a sense of identity not present in apartments and tower living. You also get the “over the fence” neighbourliness, which cramped hallways are not able to provide.



I would say one of the main reasons there is such a draw toward detached homes is the association with a sense of family and perceived safety. Neighbors will typically keep an eye out for unsavory activity in the area or look after your house (water your plants, collect your mail, etc.) if you are out of town on vacation. Where as in an apartment setting you are more likely to not even know who your neighbours are. Detached homes also provide desirable physical qualities such as multiple exposures for better light and ventilation, larger private outdoor spaces, separate enclosed spaces (garages) and the ability to adapt over time. In fact, single family lots have proven quite adaptable over the years with the development of basement suites and laneway housing. (Quadrangle Architects, Urban Research Associates, Alen Kani Associates, David Redmond and Associates (2000) *Multiple Housing for Community Sustainability*.)

With all these positives it becomes quite apparent why this typology is so popular, but these positives come with negatives as well. Current zoning bylaws restrict the use of a single family lot, typically creating a house size of approximately 25'-0" x 40'-0". (City of Vancouver Zoning and Development Bylaw (2009) *RS-1*.) This leaves underutilized spaces between homes that create poor sound and visual barriers between lots. In addition, while zoning maintains the desirable front yard setback and street pattern, this space becomes somewhat of a no mans land between road, public sidewalk and private home. Often under maintained and underutilized one has to think is there a better use for this yard space.

The Apartment Building

The typical apartment building in Vancouver is a 3 to 4 storey wood framed building. There are numerous varieties of apartment buildings situations, for example, rental units, co-op housing and stratified ownership. (Hanson, C. (1996) *The Cohousing Handbook: Building a Place for Community*.) Apartment buildings tend to be located closer to commercial nodes and major thoroughfares allowing for ease of access to desirable amenities such as work, retail and recreation. Within Vancouver it is fair to say one or 2 blocks off most major roads, such as Broadway and West 4th are populated by a higher number of these medium density buildings. This seems to work well for these areas as people in Vancouver put high value in convenience and transportation that does not necessarily rely on the automobile. Also, due to high real estate prices car ownership is a luxury that many people are starting to live without, which makes location even more important when putting down roots.

Apartments can often be considered more affordable due to smaller sizes, less outdoor space and shared amenities. They typically occupy larger lot sizes creating a building that relates closer to a “block scale” than a human scale. This can be harder to relate to as a resident and can cause a feeling of lost identity as there are usually little or no distinguishing features between units. Residents are made to identify with a large non-personal building and do not have the individualistic opportunities present in single family homes. Interior corridors, the “sidewalks” of an apartment building are usually quite uncomfortable spaces with no natural light, poor ventilation and no distinction between floors and units’ other



APARTMENT FRONT STREETSCAPE

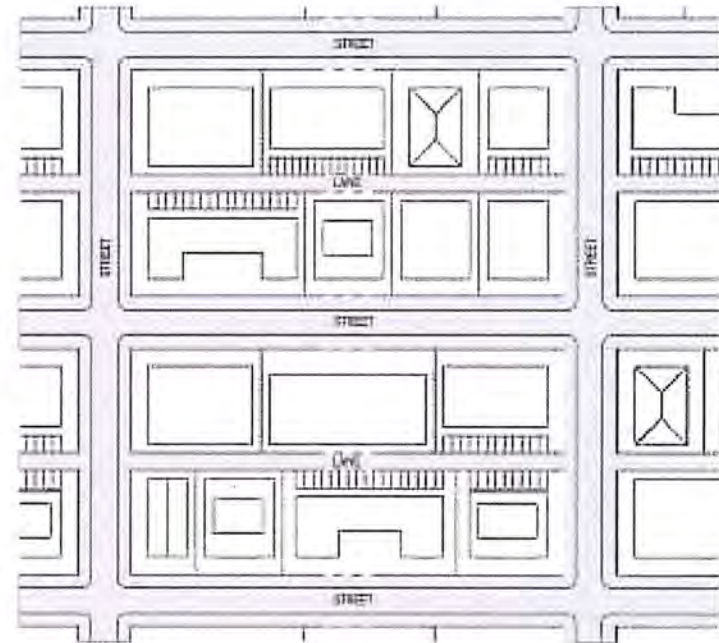


APARTMENT NEIGHBOURHOOD



APARTMENT REAR STREETSCAPE

than small apartment numbers on doors. The corridor also provides the only opportunity for residents to interact, which can cause a severe lack of community within apartment buildings. (Quadrangle Architects, Urban Research Associates, Alen Kani Associates, David Redmond and Associates (2000) *Multiple Housing for Community Sustainability*.) Apartments have more unit sizes which allow them to accommodate a wider range of residents than detached homes. Single people, couples, families, retired couples or individuals can all live together in harmony. While this is the case people do argue that apartment buildings are less conducive than single family homes to growing children due to the lack of outdoor space and opportunity to “play outside with the neighbour from down the street”. (Sewell, J. (1994) *House and Homes: Housing for Canadians*.) Apartment buildings do typically have communal outdoor space at the front of the building, but this space is similar to the front yard of detached homes, underutilized and often an uncomfortable space to be in. Single side exposure greatly limits natural light and ventilation into suites. Shared floors and walls if constructed well can provide sufficient sound separation, but at the same time if not done right can be the cause of hostile neighbours and a generally unpleasant home life.



Thesis Statement

Both of the typologies noted above have their pros and cons, but the question I want to answer is, is there something different or better? Single family homes, duplexes and laneway housing typically fall into the RS and RT zoning categories with a maximum density of 0.75 floor space ratio (FSR). Three to four storey apartment buildings are covered under the RM or CD zoning categories with an FSR greater than 1.4. Simple analysis of these current Vancouver zoning bylaws tells us that we are missing a typology for buildings between 0.75 FSR and 1.4 FSR. (City of Vancouver Zoning and Development Bylaw (1997) *RT-1*.) (City of Vancouver Zoning and Development Bylaw (2009) *RS-1*.) So, what does that building look like? Does it fit into the existing single family street fabric or does it combine lots to create new opportunities for interaction between residents. Does it evolve along with the residents and allow people to age in place and live out their lives with more independence and dignity than retirement communities? Can the increasing un-affordability of home ownership be eased through a new typology? With these questions in mind the following will be the focus of my diploma project;



“Vancouver is in need of a new residential housing typology that can fill the gap between single family housing and apartment living. One that increases density maintains positive community living and allows for societies changing needs.”

Precedents

For my precedent studies I focused on buildings that I think are currently trying to fill this missing link between existing typologies, as well as some examples of highly adaptable and innovative housing that has to some degree pushed the boundaries of the “norm”. I looked at both local developments and international ones in an attempt to gain a well rounded perspective, especially since Vancouver is such a multi-cultural city with a high number of immigrants from around the world.

Avant Townhomes, Vancouver, BC - Ramsey Worden Architects (2012), 48 units

The Neighborhood

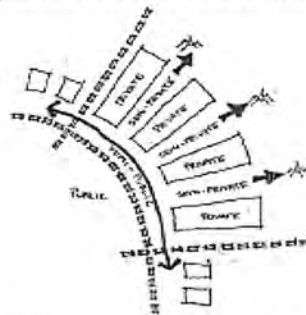
The Avant townhomes have been very specifically designed to suit the unusually shaped lot on which they sit and to blend into the surrounding single family neighbourhood. The four “finger-like” buildings give the appearance of regular single family homes from the street and have the added benefit of creating view corridors through the site to the North Shore Mountains and harbour beyond. Unlike most residential lots in Vancouver, there is no lane access to the back of this site which sits up against the rail yard. As a result, access to underground parking has been discreetly located off the front street.



The Lot

Each unit has an individual exterior entrance accessed off shared communal

walkways and stairs which help to foster a community feel. Exterior porches have been incorporated into entrances where possible to further integrate the building into the surrounding single family fabric. There are also separate interior amenity areas located at the same level as the underground parking, very similar to amenity areas provided in typical tower developments within Vancouver.



Private outdoor space is provided for each unit both at grade and at upper floors. The orientation of the building again allows views from the private outdoor spaces out to the mountains across the inlet. Communal outdoor space has not been provided, but the park adjacent the development has the potential to serve as such.

The Building

Unit sizes vary from 1,200 square feet to 1,800 square feet and consist of either two or three bedrooms. With the close proximity to an active industrial area sound proofing measures were implemented, both through building materials and by raising the building up above the parking creating additional distance between the suites and the existing rail yards below. Adaptability is limited as this is a typical strata ownership building and renovations would be at the mercy of the council. There are a mix of both single storey and multi-storey suites adding variety of layouts for residents varying needs. *(New Launch: Avant Vancouver Apartment Flats and Townhouses for Sale.)*



Hintonburg Six, Ottawa, ON - Colizza Bruni Architecture Inc (2012) 6 units

The Neighborhood

The Hintonburg Six is located in what used to be an industrial suburb of Ottawa. This area was developed by working class families and mill workers who built what they could afford with the materials that were available. This resulted in buildings that vary greatly in style and texture, giving the neighbourhood a unique character that has become quite desirable in more recent years.



It is this perceived ambiance that the Hintonburg Six has chosen to mimic. This was done by keeping the casual street scale through use of intimate porches and spartan landscaping and by creating collage-like massing with open and closed volumes. As well, by using metal cladding, reminiscent of the industrial era and using it to mimic traditional wood lap siding Hintonburg

was able to tie into the neighbouring street fabric. (Debanne, J. (Jan. 1, 2014) *Hintonburg Heroes.*)

The Lot

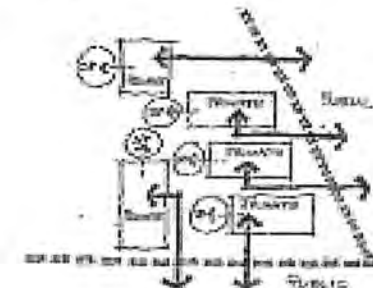


Originally a single home on a corner lot, the site was redeveloped into four detached and two semi-detached homes. The Architect was able to incorporate on site parking and small individual private outdoor spaces for each unit. By using permeable materials at the ground level and at the roof, privacy was achieved while still providing sufficient light to interior and exterior spaces. All units have their own individual identity distinguished through varying elevations, landscaping and site orientation, while fitting into the development as a whole. One thing lacking for the site is a communal area where neighbourly interaction can

occur. Instead the layout is reminiscent of typical single family lots where interaction has to occur “over the fence”. But, often when given the choice people would choose private outdoor space over communal.

The Building

Each home is approximately 1,100 square feet in size and is two and a half storeys. The vertical nature of the buildings is somewhat limiting for people with young families and the elderly. The interior layouts are quite open, with minimal dividing walls that show a potential for adaptability. The close proximity of each building makes one think that in the future they could be linked/ joined to create larger suites and to accommodate single floor units if desired.



Row Homes, Richmond, BC - Various architects, various sizes

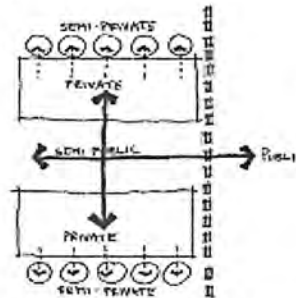
The Neighborhood



The City of Richmond has developed a signature style of row homes. If I were to name it, it would be called “car first” row homes. Devoid of the typical single family neighbourhood ambience or even the patterned rigidity of the London terraced home feel, the “car first” row home focuses instead on ensuring all residents have direct access to their automobile. This typically means taking a lot and dividing it down the middle with a fully paved drive aisle, then arranging the row homes off this. From the main access road, this gives the appearance of a gated community with private road, in a sense segregating the site from its neighbours and the community. Some may say this layout provides additional safety and exclusivity which reflect

positively on the property and its residents, but I tend to feel the opposite way.

The Lot



The interior drive aisle layout of these row home developments can take up to a third of the entire lot area. This direct access to private covered parking effectively reduces usable communal outdoor space to a paved road (perhaps only useful if organizing a neighbourly game of street hockey). Roads are not really safe for use as children’s play areas and are not particularly conducive to social gatherings. All of the row homes have individual entrances for resident individuality, but the repetitive nature of the row home, can sometimes make this harder to achieve. Units will usually have private outdoor areas in

addition to the access road, usually sandwiched between the home and the adjacent building, limiting natural light access.

The Building



Unit sizes are typically geared more toward families. With larger two and three bedroom homes more common than single bedroom units. Two and three sided exposures can provide ample light and ventilation into the individual homes, while at the same time providing views out to the street for security and supervision. The buildings are mostly two to three storeys, which can limit the ability for seniors to age in place once mobility becomes an issue in their daily lives. Adaptability of suites would be quite limited as well since there would typically be only one access point into the unit.

Anatolia Court, Los Angeles, CA - Arthur and Nina Zwebell (1926) 8-10 units

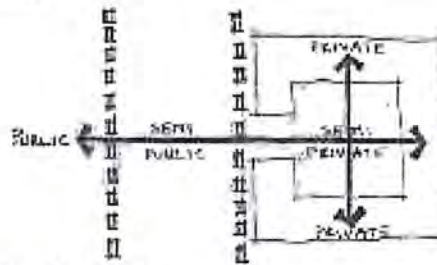
The Neighborhood

This is an example of typical courtyard housing that is prevalent in California. The warm climate is conducive to outdoor life and therefore providing a large communal outdoor space (often with a swimming pool) is practical for year round use. When I think of California courtyard housing, the first thing that pops to mind is the 1990's TV show "Melrose Place" (and yes, I am ashamed to admit this). But it does paint the picture of what life in these types of buildings could be like. A building that allows a wide variety of residents to interact in a semi-private courtyard, while everyone else in the building spies on them from behind closed curtains (i.e. security?).

The Lot

Anatolia Court has only one access point into the site. You enter through a gate from Havenhurst Drive into a private parking area that is yet separated from the inner courtyard by a pedestrian accessed archway. This hierarchical progression from public to private creates a sense of intimacy to be shared between all the other residents

that are also allowed to enter into the heart of the complex. Once inside the courtyard provides ample community space for interaction between residents. All units have access directly off the shared courtyard allowing for individual identity between units; however there is very limited private outdoor space. The courtyard does allow for natural light and ventilation from at least two sides of each suite and the fact that every unit looks out to the courtyard adds additional security, if somewhat limiting privacy at the same time.



The Building

The building has no shared services and does not function in anyway like a co-housing, which are features of similar buildings with the same courtyard layout. This is a high end apartment

complex limiting the mix of residents greatly (again, unlike similar buildings of the same type). In fact, the last unit sold in 2010 for approximately \$1,000,000. This is an interesting fact as the units within this building are of a relatively average size (+/- 1,600 square feet) comparatively speaking. The building has proven somewhat adaptable over its 85-year lifespan to date. Numerous renovations have occurred keeping the building up-to-date with current standards and even combining units over the years to provide for more lavish accommodations. Each of the ten original units had unique layouts with double height living spaces and multiple fireplaces. (Tackett, J. (June 17, 2013) *Andalusia, Historic Courtyard Apartments.*)

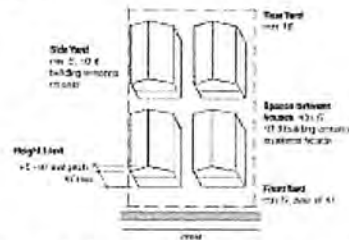


The Neighborhood



The city of Seattle has developed within their zoning bylaws, allowances for adding density to what is typically considered a single family housing lot. While Vancouver has gotten as far as the “in-fill” or “laneway” house, Seattle has taken it a step farther allowing for “tandem” and “cottage” houses within their RLS/C and RLS/TC zoning bylaws. While these bylaws have aided in densification and have possibly reduced home costs one wonders if this is the optimal solution or just an easy one. The new denser lot layouts provide minimal outdoor space and privacy, with setbacks between buildings ranging from 5'-0" to 10'-0". These tight outdoor corridors also do not seem like they would be comfortable spaces within which to

The Lot



the buildings, where the buildings directly off the front street would seem the primary or more desirable residences and the homes in back the secondary.

Buildings would range in size depending on the lot size and what the zoning bylaws allow. Layout of space within a cottage home is typically much more condensed when compared to a single family home and require a bit more thought and ingenuity to get everything in, especially when some of these homes incorporate built-in garages, further eating up valuable area. Adaptability of units could be incorporated into the design since most of these are new developments.



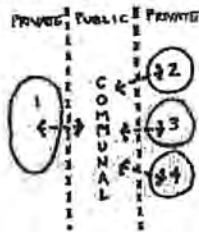
DISCUSSION

Tango, Malmo, SE - Moore Ruble Yudell Architects (2001) 27 units

The Neighborhood

This building is located on a reclaimed waterfront Brownfield, in the Western Harbour area of Malmo, Sweden. It was designed as part of a larger development whose aim was to revitalize the area since the closure of the shipping yard and the resulting decrease in population in the adjacent residential area. The apartment was designed to “showcase green residential building and renewable energy technologies.” While this is more of an apartment building, it has been designed to fit into the existing neighbourhood fabric. (*Canada Mortgage and Housing Corporation (2005) Innovative Buildings: Bo01 Sustainable Housing Development Malmo, Sweden.*)

The Lot



Tango has been designed in a U-shape around a courtyard populated by native marshland vegetation. The vegetation was chosen specifically due to its ability to clean pollutants from the soil aiding in the goal to repair the existing contaminated land. It received its name from the eight steel and glass towers around the inside of the courtyard that tilt and turn at various angles and appear to “dance” around the courtyard in brightly coloured outfits. The interior courtyard itself is a shared semi-public space from which all suites have private outdoor entrances allowing for individual identity in the larger complex. At the centre of the courtyard is an ovular gathering space used for shared social functions. The ovular shape is in stark contrast to the rigid concrete board and batten pattern at the exterior of the building.

The Building

Unit sizes vary from 600 square feet to 1,950 square feet, allowing for a diverse range of residents (singles, families, retired couples), but due to the energy goals of the project increasing construction costs above normal levels,

rental fees for these suites are noticeably higher than similar sized units in the area. These costly features include wind turbines, photovoltaic panels and an “intelligent wall” that carries all the wiring, fibre optic cables and mechanical services for the building. Relatively open unit plans and transparency from living space to private outdoor space to the semi public courtyard create a flow through the units that is seen to enhance community/ social interaction. Bedroom and bathroom spaces are pushed to the exterior non-courtyard



façade removing these private spaces from the public realm as it were. Adaptability within units is somewhat limited as this building is an apartment building with suite separations and other code requirements limiting many opportunities that may exist. (Chandler, R. Clancy, J. Dixon, D. Goody, J. and Wooding, G. (2010) *Building Types for Basic Housing.*)

Apartment House, Singapore, SG - Formwerkz Architects (2009)

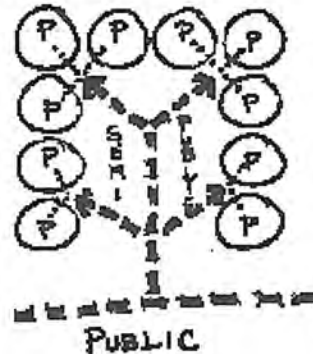
The Neighborhood

Interesting fact, Singapore has the world's highest rate of millionaires per household, which I suppose creates the opportunity for developments such as this apartment house. (Wikipedia (2014) *Singapore*.) Situated in a single family neighbourhood this home can almost be seen as a gated family community, with little connection to the surrounding buildings, other than the fact that it is a home behind a gate just like the other homes on the street. Apparently wealth buys privacy and good riddance to the community. Safety and security seem paramount in the design, with high gates and screens separating public from private spaces.

The Lot

This home was specifically designed for a three generation family with the caveat that it be flexible for the changing needs of the family as it evolves over time. In order to create the feel of separate residences, entry points for each family were separated which also gives a sense of individual

identity. Each family had very specific requirements for their own spaces, for example the family with two children requested an art studio the couple wanted a private media room. But at the same time large communal spaces were provided to ensure family unity could be maintained.



The Building

At approximately 10,000 square feet in area, this home is vastly larger than the typical detached home in Vancouver. But, divide that by the 4 families that occupy it and a size of 2,500 square feet does become somewhat more reasonable (a typical desirable home

size in Vancouver would be approximately 1700sf). The home is made up of two separate blocks, one two-storey block for the parents and one three-storey block for the three kids and their families. These blocks are separated by a communal pool at the ground floor and connected at the upper floors by the common living room. The common spaces act as buffer zones separating the individual families. Also, with the building circulation and services all located to one side of the blocks they are easily dividable into smaller units if required in the future. (Formwerkz Architects (2010) *The Apartment House*.)



Gairola House, Gurgaon, IN – Anagram (2009) 3 units

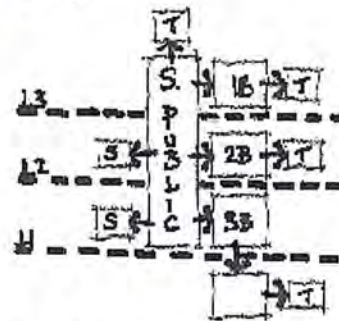
The Neighborhood



The city of Gurgaon is the third wealthiest city in India with a prosperous financial and industrial centre. Housing mainly consists of sectors of detached single family dwellings, but unlike the well maintained Vancouver neighbourhoods, the infrastructure in Gurgaon consists of broken roads and unreliable utilities that cause frequent problems and do not help the ever rising rate of crime. Similar to housing development everywhere in the world urban sprawl has pushed single family housing away from the city centre and housing costs up. (Wikipedia (2014) *Gurgaon*.) Gairola House, located in Sector 99, was developed as an investment property on a single family lot. The house is fenced off and not

particularly geared toward community interaction within the block, but instead focuses on interaction between people within the building.

The Lot



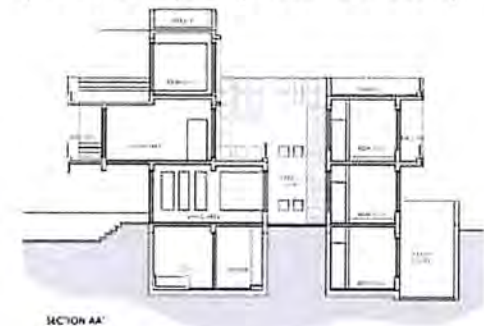
This building consists of three rental units that fit puzzle like together while maintaining the appearance of a single cohesive home. Varying Unit sizes allow for families, couples and individuals to all inhabit this building together. All units are centered off an interior shared courtyard which also serves as the central circulation. This space creates opportunities for social vibrancy, but at the same time the non-typical and varying sized units allow for privacy and a sense of individuality. There are private outdoor spaces for

each unit as well as a shared roof top terrace.

The Building

The home is approximately 5,600 square feet total and is four storeys including the basement. The stacking of external volumes around the central light well provides plenty of natural light and ventilation. This home comes with the unique cultural feature of two separate “servant” rooms located adjacent the larger suites, but on the opposite side of the home from the rest of the units. Adaptability of this home seems quite limited with all spaces designed with specific purpose.

(Pavlov, K. (2012) *Gairola House*.)



Franklin Apartments, La Brea, CA - Santos Prescott & Assoc. (1995) 40 units

The Neighborhood

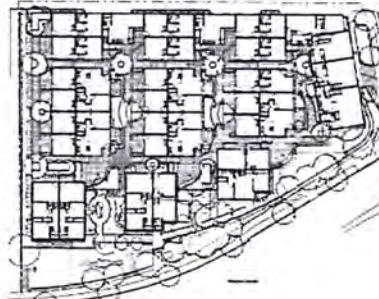


The Franklin Apartments are situated at the bottom of the Hollywood Hills in LA. It sits within a fairly typical North American apartment building neighbourhood and therefore is within relatively close proximity to schools, recreation, parks and transit.

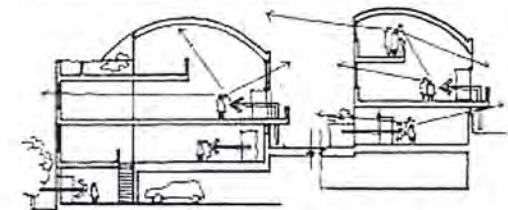
The Lot

The complex consists of rental units (some low income as the building is a tax credit property) of varying sizes allowing for individuals, couples, families and even multi-generational families. The development is arranged as 10 grouped buildings in a garden setting, with shared courtyards, laundry, parking and amenity spaces. This apartment can be considered a variation of “co-housing” where

residents actively participate in planning activities, such as group dinners and sporting events for the complex in an attempt to foster interaction and a sense of community. This “sense of community” can also be seen as providing an additional level of security within the complex where everyone knows their neighbours so views from units down to common areas provide surveillance and supervision throughout the complex. The layout itself also promotes a sense of community, breaking down the large complex into smaller building groups that each have their own areas for communal activities and socialization. But, at the same time private outdoor entrances and garden areas provide individuality between suites.



The Building



The individual units themselves are designed for flexibility with multiple entrances and private outdoor spaces. This creates the ability for live/ work units with separate access for your office space or perhaps a suite for an adult child who wants a sense of independence but cannot afford to move away from home. All units have openings/ access from at least two sides allowing better light, ventilation and views. Units range from between 500 square foot studios to 1,300 square foot four bedroom suites and parking is available under the main buildings, some with direct access to the units above. (Chandler, R. Clancy, J. Dixon, D. Goody, J. and Wooding, G. (2010) *Building Types for Basic Housing*.)

Lilong Housing, Shanghai, CN - Various architects, various sizes

The Neighborhood



Lilong or “alley” housing is a “legacy of Western influence” originally built by British developers as early as the 1840’s. Its purpose was to provide basic accommodations for Chinese labourers in the most economical way possible. While being quite a successful form of housing from years past the Lilong is currently at the mercy of a new form of capitalist-style development that began in the 1970’s in Shanghai. It took the form of the high rise condo tower, not un-similar to our tower-podiums here in Vancouver. Another issue to threaten this multi-generational housing typology was the



“one child policy” that started in 1979 and limited family sizes within China. However, the Lilong was able to evolve and change as the tenant’s needs changed and today existing Lilong’s have a much different dynamic within

the complexes. Less house-like and more like a walled in city, with work, play and home all located within.

The Lot

Lilong were developed as a walled in community, where individual units are accessed off narrow alleyways. Vehicular access within the complex was not a consideration. The density of the Lilong and the culture living within fostered extremely tight communities with the alleyways becoming the “activity hub” of the housing complex. But, while sense of community was strong within the Lilong (people looking out for neighbours like they were family) hostility to non residents was quite often a serious issue. The Lilong could be considered an older, denser version of today’s row homes, with no real distinguishing factors between units. Therefore, when moving from alley to alley within the Lilong one could get lost in a sea of sameness. A sense of identity was only available through personal touches added by residents to entrance ways and the limited lane space in front of their units.

The Building



The extremely efficient and high density layout of each unit (approximately 60 to 150sm) provided poor quality of light and ventilation as well as little personal space. However, despite this the residents proved the units were highly adaptable to multi-generational family living and the changing lifestyles of residents over the years. Units were subdivided into rental suites and converted to commercial spaces at ground floor to create income boosters. Typical units would be two stories in height with a small outdoor entrance courtyard directly off the alley, number of bedrooms would vary based on overall size and units originally did not include plumbing, electricity or gas services. (Arkaraprasertkul, N. (2009) *Resilient Lilong: Ethnography of Shanghai’s Urban Housing*.)

Research Conclusions

Upon completion of my precedent studies I have come to the following conclusion, desirable attributes in residential housing can be broken down into 3 major categories; the neighbourhood (macro scale), the lot or immediate surroundings and the building (micro scale). (Quadrangle Architects, Urban Research Associates, Alen Kani Associates, David Redmond and Associates (2000) *Multiple Housing for Community Sustainability*.)

Within the “neighbourhood” component, factors that attract residents include ambience which can be described as a feeling of belonging or permanence that an established area can possess. As well ambience is felt through spaciousness, natural light and views. Clear boundaries between public and private are also desirable, boundaries that control interactions between neighbours and allow socialization and sense of community. These boundaries can also extend to issues of safety, where vehicular and pedestrian areas are clearly separated. Porches and good street level permeability are desirable to increase a perceived sense of security and safety. The ease of access to transportation both public and private and no more than a 5 to 10-minute walking distance to desirable amenities. Finally, a variety of both neighbours and housing types are deemed ideal to create a diverse and well rounded community with people of all ilk’s and generations able to contribute to the whole and provide individual personality to a well maintained street fabric. (Quadrangle Architects, Urban Research Associates, Alen Kani Associates, David Redmond and Associates (2000) *Multiple Housing for Community Sustainability*.)

The lot or immediate surroundings focus on privacy and usefulness of outdoor spaces, individual identity within the community and access to home and parking. There are various versions of outdoor spaces with private back yards being the most desirable and front yards being seen as more communal/ social spaces where interaction between neighbours should occur. People also seem to like being able to share maintenance responsibilities of outdoor spaces to allow more time for other activities. Self-expression and personality are important to home owners, restrictions put in place by strata councils or co-housing facilities do not suit all people. It is fairly obvious that most people like to have direct access to their homes from grade and want the distance between home and parking to be at the bare minimum. (Quadrangle Architects, Urban Research Associates, Alen Kani Associates, David Redmond and Associates (2000) *Multiple Housing for Community Sustainability*.)

Lastly, the building itself has four items of concern. Those being overall size, layout, adaptability and flow between spaces. Studies show the ideal family home size in North America averages around 1,700 square feet with people generally preferring open plans with fewer, larger rooms to separate small cozy spaces. More than one entrance is preferred to allow for flexibility of use of space, especially when flex rooms that can be converted between office, gym, storage or bedrooms are provided. Strategically located

structural elements that make removing or relocating walls simple are ideal and efficiency and innovation of space that creates a logical flow and easy maintenance can make keeping a family well organized a much simpler task. (Quadrangle Architects, Urban Research Associates, Alen Kani Associates, David Redmond and Associates (2000) *Multiple Housing for Community Sustainability*.)

With these key factors in mind I thought it worth doing a few additional studies into the typical single family lot in Vancouver to see what possibilities it may still hold. That said, I tracked the evolution of the standard lot over the past 50 plus years and tried to anticipate what the future could hold. The conclusion I came to is that while the Bungalow homes built in the 1960's have been very successful at adapting to the changing needs of society, with the addition of basement suites, vertically sub-divided (strata) units, and laneway housing, the future possibilities appear somewhat limited based on what the average home owner appears to want. This result took me to the next study, of combining typical single family lots to determine at what lot size future developments between the 0.75 and 1.40 FSR are ideally suited. Quick schematic layouts resulted in a variety of options both promising and not.

The combination of two lots gave me a 66'-0" x 120'-0" lot. This allowed for some exploration with smaller courtyards and shared outdoor spaces. The FSR was coming in around the desired range but the links between spaces and the flow around the lot were quite tight. Parking for some instances was left on the street with a couple options having it secured on site. Many of the options explored were quite reminiscent of existing typologies such as the typical row house or the main house/ laneway house configuration, but a few had potential for further development.

The combination of 3 lots gave me a 100'-0 x 120'-0" lot. The additional area allowed an even wider array of possibilities. Combined outdoor space that was of a more usable size, the ability to provide vehicular access direct to each suite if desired and separation of suites to create a sort of mini neighborhood on the lot were explored. A higher density than my goal range was possible, but in turn this did not need to be utilized which allowed the outdoor space to become more developed/ programed.

Moving forward from here I explored possible project sites within Vancouver and began to lay out a program that would test my new typology over the lifetime of the building.

Site Selection

For site selection, I analyzed 2 different sites. One on the west side of Vancouver made up of 2 single family lots and one on the east side made up of 3 single family lots. The size, proximity to the downtown core, nearby amenities, property values and current zoning restrictions were reviewed on a macro scale. Key things noted were the relatively consistent access to recreation, schools, shopping areas, downtown and parks for both sites were fairly similar. Another interesting fact was that the property value of the 2 sites on the west side equaled the value of the 3 sites on the east side. These factors and the similar zoning of the 2 neighborhoods made the idea of a new typology seem plausible, a new home type that could be built in any area that consists of the 33' x 120' lots.

I then looked at the neighborhood scale, streetscape character and built vs. green space and how it was utilized under current zoning conditions. I noted the inefficiency of green space and sporadic pedestrian access as things that could be improved upon when combining lots. On the other hand, I concluded that the human scale of the 1 and 2 storey streetscapes was a positive feature and I would try and incorporate it into the new typology. Finally, at a micro scale, I chose to look at the east side site, as I liked the possibilities that the combined 3 lots offered more, and reviewed which current zoning restrictions I would enforce and what I would not include in my typology. Items I wanted to maintain included the front yard setback, life safety access, accessibility requirements, street/ lane lot configuration and overall building height. Items I chose to ignore included the intermediate side lot setbacks, parking requirements, rear yard setbacks and obviously the floor space ratio would be revised as this was one of my thesis goals.

Programming

For programming, I decided to track 3 “family groups” over a 100-year period. I broke up the time line into 20 year increments and plotted how the 3 families would grow and evolve over that time. I chose a young couple, empty nesters and a family of 3 as the owners that would combine their single family lots to create the new typology. I took free license in creating these storylines with the addition of some extra items, such as tenant spaces, workshops and live in nurses and daycare. Once the storyline was developed I was able to take a step back and see that other opportunities within the program were arising.

These opportunities manifested as distinct themes within each of the 20-year time periods. At the start the 3 lots (young couple, empty nesters and family) did not require all the space that would be provided with the new typology, but they did require space for home offices and workshops. As time progressed the need for income helper tenant space was required, then as families started to grow the number of children increased to a point where a live in nanny shared between all would be beneficial. Then as the owners aged more thought regarding accessibility and a live in nurse would be required.

Going forward from here I would need to develop a few key rules to guide my progress as I moved into my design phase.

Five Key Guidelines

1. Provide an adaptable house that not only works with the storyline that I have developed, but can adapt to any number of storylines and thereby become its own housing typology.
2. Provide shared (semi-public), family (semi-private) and individual (private) spaces to maximize usefulness of site.
3. I have chosen to take 3 families living on 3 single family lots and consolidate them into 1 big lot. I will be moving building area between families as the need arises with the assumption that some legal agreement will be made, outside the scope of this project.
4. The existing single family neighborhood character is to be retained as this is a key factor in why people strive to own a single family house. This includes the human scale (max 2 1/2 storeys), the familiar rhythmic pattern or streetscape, the welcoming front yard and balance between private and public space.
5. To fill the gap between existing single family (RS & RT) zoning and multifamily (RM) zoning I will be trying to maintain an FSR of between 0.75 and 1.40.

My next step was to develop 3 studies that explored how the above design guidelines could be incorporated into a housing typology.

The Modular Link (Study 1)

This study utilizes standard living modules and link spaces to connect them. The links were created to allow families to grow and contract as time progresses. They can be used as shared rooms between two families, they can be connector rooms that join two modules together creating a larger home or they could be totally separate and used as communal spaces. Each module would be designed as a large empty room with one plumbing wall for flexibility. The building was arranged around a central courtyard to consolidate shared outdoor space. Modules could be 2 to 2 ½ storeys to fit into the existing neighborhoods. The approximate FSR for this layout would be 0.75 to 1.00.

Loud vs. Quiet (Study 2)

This study separated loud living and dining spaces from quite sleeping and washing areas. A buffer zone was created with connector paths between. Sleeping pods were designed so that they could be swapped between families to create flexibility of space as required over time, but this module is more limited in the growth and reduction of living spaces. Further exploration into how to treat the buffer zone would be required to ensure acoustic separation. As well, the “connections” would need to be explored to make sure practical issues, such as close/ easy access to your child’s bedroom were available. This option would produce an FSR of approximately 0.85 to 0.95 depending on whether you built to 2 or 2 ½ storeys in height.

The Hub (Study 3)

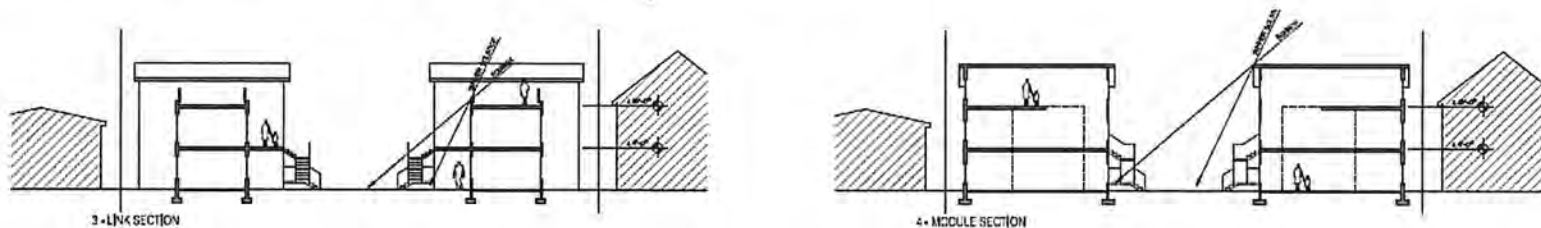
The third study was a combination of the first two studies and created modular/ link spaces around a loud hub that could be used as a communal space separate from the individual living areas. Uses such as a green house, music room, communal dining or games room could all be possible with this separate space. This option limited the growth of a single family’s space to a combination of 4 modules, but at the same time provided actual separation between units. Outdoor space is less ideal as it is broken up into more segregated areas, but this also allowed a little more individuality of space for the separate families living there. FSR for 2 to 2 ½ storeys would range between 0.85 and 1.20.

The Modular Link Explored

After a review of the three studies I decided to explore study 1 “the modular link” further. I further developed the courtyard layout which opened to the street with a communal space off the lane. Outdoor play areas, gardens and social areas were developed and the 2 1/2 storey single family neighborhood scale was maintained to ensure the typology fit into the existing context.

The modules were designed to be about 650 square feet with one plumbing wall for washrooms and kitchens. The interior would be left blank to allow for whoever moves in to make it suit their needs. The ability to have the size of your suite grow and contract horizontally is provided by the glazed link spaces, while the ability to grow vertically is possible by adding small circular stairs. As well, there is enough height at level 2 for a partial mezzanine space that provides access out onto the private roof terraces. A shared garage and amenity space was incorporated off the lane to “activate” it for both service and entertainment purposes for the complex.

To allow sun light to penetrate into the courtyard area the building depth was limited. The upper decks were also set back for light and to create the feel of the single family streetscape in the interior of the courtyard.



This typology manages to densify the site to within the 0.75 to 1.40 FSR that I am aiming for while maintaining the desired single family housing streetscape within the neighborhood context. The communal entrance “node” on the street side of the site acts to draw the neighborhood into the site. In addition, this space can be used for community activities such as yard sales, small farmer’s markets and block parties. Private stoops at the entrances to the modules provide individuality and a sense of ownership while shared gardens/play areas, etc. encourage community living. The central location of the play areas, entrances and gardens also provide added security from neighbors for this space. The outdoor areas themselves can also change and adapt over time as the residents needs change. For example; what starts as a playground sand box can be replaced by a basketball hoop or a hockey net or a flower garden.

The individual living modules could be designed to whatever architectural style suits the owner, as the link spaces separating them are meant to contrast the living modules by being mostly transparent or glazed. This allows individual identity at both block and module scale. The typology allows for insertion into the typical Vancouver single family neighborhood. Zoning could be developed to regulate the growth and development of this typology within the block scale. Offsetting buildings to provide more open space. Once enough of these 3 lot homes are built links between them can start to be explored. Connections across streets and lanes can be introduced.



In the end I took this new typology I designed and applied the 100-year family program I developed to ensure it had the flexibility and resiliency to evolve with the families and meet the original goal set out in my thesis statement.

The new typology was able to accommodate the scenarios I developed quite easily. With little need to completely move a family unit over the years, but at the same time giving people the space they needed when they needed it. When reviewing it in relation to the five guidelines I set out I came to the following conclusions:

1. Typology - As shown above this typology can adapt to the family program that I developed with little to no requirement for families to move to accommodate their evolving needs. The links work to connect families and allow growth and reduction in size.
2. Social - Outdoor space is centralized providing a great platform for community interaction between family units. The link spaces provide opportunities for shared indoor space such as shared dining rooms between parent and their grown children's families. Private outdoor spaces are also desirable and provided in the form of roof top terraces.
3. Economic – With the ability to have multiple generations living in the same building over the years, mortgages would be paid off after the first generation and future generations would be able to live mortgage free with possible incomes from rental tenants.

4. Contextual - The building was kept to a maximum of 2 ½ stories, with individual modules that could be designed to align with the occupants tastes or neighborhood's existing character.
5. Regulatory - With an FSR of approximately 1.0, I was able to meet the in between density that I set out in my original thesis statement. As well, general access to site was maintained for emergency services and ground level suites could easily accommodate accessibility requirements or the needs of the aging tenants.

In the end I conclude that this new residential typology could successfully house multi-generational families over a long period of time while at the same time increasing density and maintaining positive community living.

“Vancouver is in need of a new residential housing typology that can fill the gap between single family housing and apartment living. One that increases density maintains positive community living and allows for societies changing needs.”

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