



FEASIBILITY STUDY ON THE CONVERSION OF PARKING GARAGES INTO AFFORDABLE HOUSING

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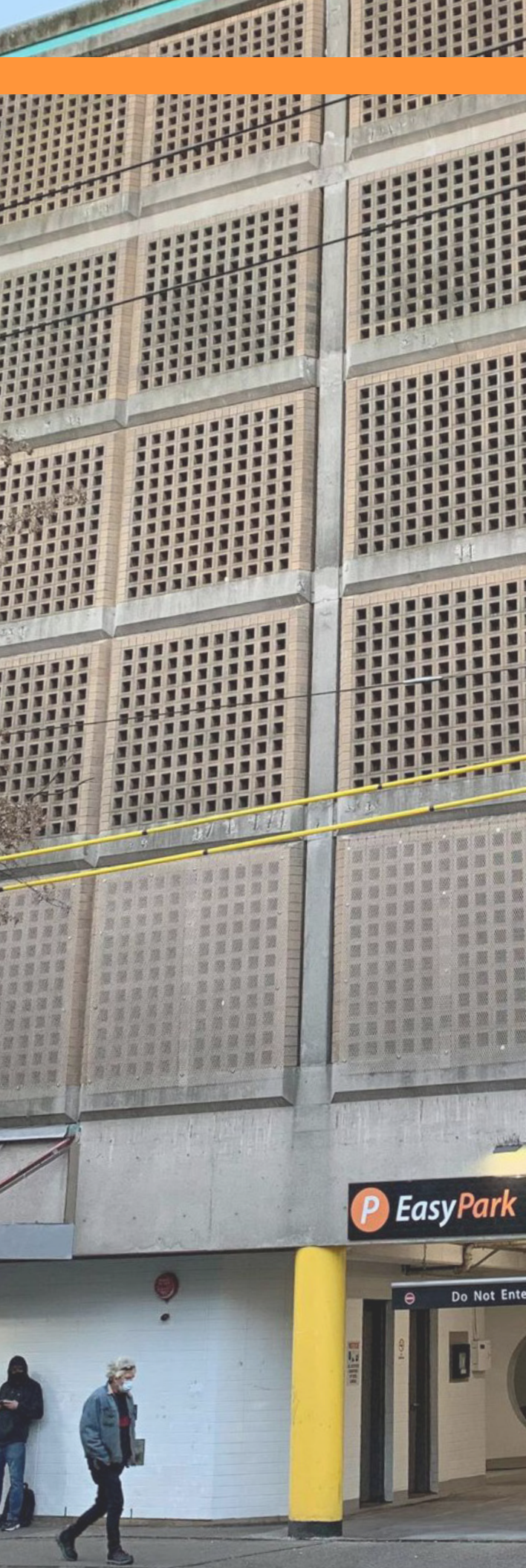
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EXECUTIVE SUMMARY

The City must apply a creative and innovative lens to look everywhere and anywhere to find opportunities to build more housing to meet our housing targets. Replacing underutilized parking garages with affordable housing could be a viable way to meet both sustainability goals and address the affordable housing shortage.

The literature review found that the introduction of car-sharing options and increased transit ridership has significantly reduced vehicle ownership and parking demand at the city scale. The City's recent adoption of the Climate Emergency Action Plan presents a timely opportunity for the City to reimagine its existing parking assets and rethink the role of parking lots and parking garages in our cities. This was supported by numerous case study examples, both globally and locally, of innovative ways to retrofit or convert parking assets or other existing infrastructure into other more pressing uses. The EasyPark Lot 4 features sloping floors and low ceiling heights. Lack of access to the site's parking utilization data was a major limitation of this study. Eight point-in-point parking occupancy counts conducted over the course of the study revealed low utilization rates ranging from 4.5% to 12% with an average rate of 9.8%. However, these counts were taken during the COVID-19 pandemic and may not represent an accurate baseline of typical parking demand.

The interviews confirmed that housing is a priority for the Downtown Eastside, that dignified self-contained housing is needed, and that women are particularly underserved and vulnerable. Numerous challenges, technical issues, and requirements that were identified throughout the interviews can be grouped into the following four general themes: safety concerns relating to residential use, structural attributes that limit the possibility of a retrofit, process challenges facing adaptive reuse projects, and loss of parking supply. Ultimately, the sloping floors, ceiling height, and seismic safety would likely make a retrofit infeasible. Some of the key informants who were interested in exploring an interim solution, in the form of prefabricated modular housing, stated the urgency of the housing crisis and unique opportunity to better maximize this underutilized site while awaiting more permanent housing. However, the majority of those interviewed were in strong support of a demolition and new build scenario citing higher density and quality of the potential redevelopment as the best use of this site.

The research concludes that redevelopment of this site is inevitable. The following four recommendations are

informed by the key takeaways of the interviews and could help prioritize this site for redevelopment:

1) Build a Case: Building a clear rationale for prioritizing this site for redevelopment, will be a critical step forward in convincing the City of Vancouver to consider this site. It is important to highlight the aspects that do make this an attractive candidate including providing transitional housing in the DTES resulting in the displacement of fewer people and the project would face less neighbourhood pushback which can typically delay social housing projects.

2) Replace the Parking: In order to address staff and community concerns regarding the loss of parking, any proposal to redevelop this site would require an interim agreement to provide replacement parking for the stalls that are required by the site's legal agreements with adjacent sites. There are several other public parking assets in the vicinity of this site that are likely also underutilized that could have the capacity to fulfill these agreements while a new housing project is constructed. In the long-term, the necessary parking reflecting a small proportion of the existing stalls could be provided on-site underground in the new development.

3) Advocate: To garner support it is important to focus on generating a positive narrative about providing housing for underserved and vulnerable women. An anti-parking narrative or an approach that frames it as a parking issue is unlikely to gain support from stakeholders. Instead, it is important to amplify the housing challenges felt by the women and families involved and humanize the housing crisis.

4) Collaborate: Continued collaboration with the relevant stakeholders, especially the Downtown Eastside Women's Center, is crucial. It would be prudent to engage with the Hastings Crossing BIA and other identified groups that could have possible concerns to determine how the redevelopment could address those concerns. Finally, in acknowledging that the City is faced with many competing priorities and services to provide, there is a need to establish partnerships between different levels of government and organizations that could contribute funding to the project.

INTRODUCTION

The City of Vancouver has identified the current housing affordability crisis as the most significant challenge facing the City today.¹ The lack of affordable housing is felt at all points along the housing continuum, but particularly at the lower end of the continuum. The 2020 Homeless Count in Metro Vancouver identified 2,095 individuals expressing homelessness in Vancouver.² Of those individuals, 1548 were sheltered and 547 were unsheltered with 52% of those counted located in the Downtown Eastside (DTES).² Rising housing prices have far outpaced local incomes and limited senior government funding for new affordable housing supply has “seriously impacted the region’s ability to meet estimated housing demand for very low- and low-income households”.³

Given that few housing options are available to vulnerable residents on limited or fixed incomes, Single Room Occupancy (SRO) hotels continue to play a critical role in Vancouver’s low-income housing stock, particularly in the DTES. The increasing demand for low-income housing means that despite the “poor building and room conditions” in many SRO buildings that are “impacting livability and further compromising SRO tenants’ health and ability to thrive” – these SROs serve as a last resort before homelessness for many of the City’s most vulnerable tenants.⁴ The overwhelming majority of tenants in SROs are male, and among the most vulnerable tenants, women living in SROs are at a greater risk of addiction and are more likely to have poor health.⁵ The Downtown Eastside Local Area Plan, adopted by Council in 2014, set a target to replace 5,000 SRO units with self-contained social housing over 30 years.⁶

It is clear that more social housing is urgently needed. Cities around the world have sought creative and inventive solutions to repurposing ageing or underutilized existing infrastructure into spaces that could fulfill these housing targets.⁷ By leveraging these existing assets, cities can reap big savings in construction and demolition costs, while alleviating the environmental impacts of construction. The City must apply a creative and innovative lens to look everywhere and anywhere to find opportunities to build more housing.

The City’s recent adoption of the Climate Emergency Action Plan presents a timely opportunity for the City to reimagine its existing parking assets and rethink the role of parking lots and parking garages

in our cities.⁸ In many cities, parking supply exceeds parking demand, resulting in underutilized parking assets. The 2012 Metro Vancouver Apartment Parking Study, the region’s first review of residential parking supply, found that parking supply exceeded parking demand by anywhere from 18% to 35%.⁹ There is an unrealized opportunity for municipalities and the development industry to better match parking supply and demand in order to meet both affordability and sustainability goals. Cities and companies around the world have sought creative and inventive solutions for repurposing parking garages into spaces that could fulfill other urgent societal needs, including housing.¹⁰

Research has found that “the longer one is homeless, the greater likelihood that preexisting and emergent health problems worsen and there is greater risk of criminal victimization, sexual exploitation and trauma.”¹¹ In a city like Vancouver that faces significant challenges in housing and homelessness, replacing underutilized parking garages with affordable housing could be a viable way to meet both sustainability goals and address the affordable housing shortage. While the conversion of spaces currently used to store cars into affordable housing could have multifaceted public benefits, it will not be an easy feat.

Nevertheless, Atira Women’s Resource Society (Atira) is not a stranger to visionary thinking and ambitious projects. Atira has proven again and again that they have the vision and the tenacity to see inventive projects through from development to completion despite roadblocks, criticism, or opposition. For example, in August 2013, Atira celebrated the opening of the first multi-dwelling containerized housing project in Canada.¹² While it was no easy feat, the success of the Oneesan Container Housing Project is a testament to the kind of commitment, and innovative thinking Atira is capable of.

METHODOLOGY

Atira would like to learn from the creative and inventive applications of repurposed parking garages from around the world in order to better advocate and fight for housing solutions. Starting with the feasibility of such a transformation at the EasyPark Lot 4 location at 107 East Cordova Street, this study aims to compile the challenges and opportunities identified by key informants to compile pertinent information to consider for a possible future conversion. The lessons and recommendations synthesized from this project will help determine the concrete possibilities of developing housing from converted parking garages as a model. The research consists of both quantitative and qualitative research methods and analysis throughout its three distinct phases:



PHASE 1 Information Gathering (October - December)

- Review literature around innovative housing solutions repurposing existing infrastructure into affordable housing.
- Identify case studies of parking garage conversions that could serve as applicable examples.
- Conduct a site analysis and parking occupancy counts of the 107 East Cordova Street parking garage.



PHASE 2 Key Informant Interviews (January - February)

- Identify and contact relevant key informants that would provide valuable insights regarding the challenges, technical issues, and requirements involved in the conversion.
- Conduct semi-structured interviews with urban planners, architects, designers, other industry experts, and women-serving agencies with a focus on housing.



PHASE 3 Coding & Recommendations (February - March)

- Examine and code qualitative data obtained through the interviews to assign and group them by theme.
- Distill and present the key insights from the key informant interviews.
- Develop broad recommendations for developing housing from converted parking garages.

Limitations

This research found a lack of academic and scholarly literature on the topic of parking garage conversions currently available. Parking garage conversions are only recently emerging and, as a result, the scope of the case studies examined in this report is limited both geographically and in their applicability. Of the case studies presented, only one case study of an above-grade parking garage has successfully been converted into housing units while others feature conversions into other non-residential uses and, in one case, an unsuccessful conversion.

As part of the key informant interviews, two interviews were conducted with three City of Vancouver staff. However, due to the lack of approvals, the researcher was unfortunately unable to include direct quotes or specific information gained from those conversations. Additionally, while the original scope of the research included a focus group with women directly facing housing shortages, the COVID-19 pandemic and vaccination timelines limited the researcher's ability to connect with the vulnerable residents within the project timeline.

Finally, the researcher was unable to obtain parking utilization data from the Parking Corporation of Vancouver or the City of Vancouver for this study. In lieu of access to this data, parking occupancy counts were conducted in order to gain insights into the current parking demand. The study acknowledges that, due to the COVID-19 pandemic, the utilization rates are not representative of baseline parking demand.

LITERATURE REVIEW

The Changing Role of Parking in Our Cities

The City of Vancouver identified parking as “one of the City’s biggest opportunities to effect change”.¹³ In focusing on moving more people with less pollution, Transportation 2040 outlines the hierarchy of transportation modes for the city - from “highest priority to lowest priority, walking is followed by cycling, then transit, taxis and shared vehicles, and finally the private car”.¹³ Additionally, the plan acknowledges that the City has a number of ways in which they can influence travel behavior and effect change in transportation. Donald Shoup, the author of “The High Cost of Parking” has found that the more cheap, abundant parking that cities build, the more traffic congestion and automobile dependence those cities get.¹⁴ Therefore, using the concept of induced demand, one could argue that building less parking space is one way to convince people to get out of their cars.

More recently, in November of 2020, the pivotal Climate Emergency Action Plan (CEAP) was adopted by the City of Vancouver’s council. The Plan’s Big Move 2 outlines six specific actions to support Transportation 2040’s target of achieving two-thirds of all trips in Vancouver made on foot, bike or transit by 2030.¹⁵ These actions, both individually and in combination, will have significant impacts on transportation trends in the Metro Core. Specifically, the promotion of remote and flexible work options, expansion and improvement of the active transportation network, and perhaps most importantly, the implementation of a congestion charge in the Metro Core are likely to decrease motor vehicles in Downtown Vancouver.⁸ Additionally, through the COVID-19 pandemic many employees have demonstrated the capacity for working remotely from home. As a result, we may see a shift to more hybrid or more flexible working models in the future, further reducing motor vehicle trips and parking demand.¹⁵

The CEAP also outlines bold policy changes to both on-street and off-street parking: the elimination of parking minimums and the introduction of parking maximums in new developments, as well as the implementation of a citywide residential parking program.⁸ On one hand, managing curb space through city-wide parking permit programs can certainly help address and mitigate concerns of unwanted parking spillover into residential areas

when considering the removal or reduction of off-street parking supply.⁷ Conversely, the compounded effects of these policy changes to reduce on-street and residential parking could actually increase the need for these off-street parking garages. With less residential parking provided in new builds and less curb space dedicated to parking, it’s possible that drivers may depend on public parking garages to store their vehicles. This is particularly true for older neighbourhoods, like the DTES, where older housing stock and commercial offices do not have on-site parking.

That being said, even prior to the Big Move 2 actions, research on residential parking demand has shown that there is already an underutilization of Vancouver’s parking supply as is. Research has shown that the introduction of car-sharing options and increased transit ridership has significantly reduced vehicle ownership and parking demand at the city scale.¹⁶ Occupancy studies suggest that many buildings currently provide more parking than building occupants actually use. As of the 2012 Metro Vancouver Apartment Parking Study, residential parking supply exceeded parking demand and utilization by an average of 18-35% across the municipalities.⁹ The findings from the updated 2018 Regional Parking Study were consistent with those in the 2012 study and found that rental residential buildings in Vancouver have a 44% oversupply of parking.¹⁷

In the context of these three factors, the DTES is primed for decreased parking demand on a neighbourhood scale. First, the DTES is overwhelmingly a neighbourhood of renters. Almost 90 percent of households are rented, compared to slightly over half city-wide.¹⁸ The DTES is also well served by TransLink’s Frequent Transit Network with transit services every 15 minutes or less between 6/7/8am-9pm depending on the day of the week.¹⁹ Finally, Evo Car Share, Vancouver’s local car-sharing company, has its headquarters located in the DTES and has announced an additional 250 car expansion to their fleet to meet growing the demand for their services.²⁰

Mobility trends and consumer preferences can be difficult to forecast. The proliferation of alternative transportation modes such as car-sharing, ride-

hailing, micro-mobility, and transit ridership is ever-growing and changing. In contrast, the construction of parking is inflexible. In Metro Vancouver, the cost of constructing one on-site parking stall can range from \$20,000 to \$45,000 per stall in fixed construction costs with an additional variable cost of maintenance costs.⁹ While reducing, unbundling, eliminating parking minimums entirely, or futureproofing of parking design can improve the financial viability of market and non-market residential development, these measures do not retroactively address the existing parking supply. This presents the timely opportunity to convert underutilized parking garages to fill more urgent societal needs facing Vancouver today.²¹

As a city, we need to continue to support strategies that reduce the need for parking, auto ownership, and use. As for the future of parking design and construction, in line with the parking policies outlined in Transportation 2040, we need to “design parking to be flexible and adaptable”.¹³ All future construction and design of parking should be flexible and require features to ensure it can later be repurposed into other resilient uses seamlessly. This includes having flat floors, removable ramps, a rectangular shape, and at least 12 feet of space between floors to make room for plumbing, lighting and other infrastructure required for housing.²²

On the macro-level, car ownership is dropping in Vancouver and there is an increasing surplus of parking spaces.¹⁷ This trend is only expected to accelerate, and it is only a matter of determining the best redevelopment opportunity for these existing pieces of infrastructure. While the repurposing of garages for housing is still quite novel, architects and city planners have already started to reclaim aboveground and underground parking garages and lots for parks, e-commerce fulfillment centers, shared commercial kitchens, office space, and other less obvious but equally valuable spaces.²¹

So the question then becomes: How can these underutilized parking garages and surface lots be converted to better serve Vancouver’s needs? What is the full potential of these properties? What is the priority for Vancouver?

For many cities, housing is one obvious contender for conversion.²³ Parking garage conversions have great potential for conversion into affordable housing because they are generally underutilized and dispersed throughout the city. Additionally, parking garages are often within walking distances of public transit, commercial venues, and other residences. In the United States, KTG’s Research and

Development Studio proposes a system that uses “repurposed shipping containers that can be simply “plugged in” to maximize efficiency and minimize the disruption to the existing context” of the parking garage where they are constructed largely off-site and delivered for installation.²³ In terms of retrofitting a parking garage, the use of these prefabricated housing prototypes seems to have the highest potential.^{21,23} By repurposing concrete parking structures, we could see significant environmental benefits as construction makes up a sizeable portion of all emissions.²³

It’s also important to note that removal of parking can often spark controversy for both existing parking structures or a surface parking lots. For example, the City of Toronto’s recent plans to replace a parking lot in East York with 64 unit of affordable housing for those experiencing homelessness has faced significant backlash from residents.²⁴ Described as one resident as “the heart of the community”, the parking lot currently serves a nearby elementary school, daycare, public pool, baseball diamonds, and a hockey rink.²⁴ Additionally, there are concerns from residents regarding safety and security. Meanwhile, social housing advocates are asking for compassion - “it’s going to be a little inconvenient, but we’re talking about something that is life versus inconvenience.”²⁴ The tensions in East York over a surface parking lot illustrate the uphill battle these kinds of parking garage conversions will likely face.

LITERATURE REVIEW

Retrofitting Existing Infrastructure for Housing

Like parking garages and surface lots, buildings that are no longer fit for their original purpose or no longer utilized to their full potential can also be repurposed for housing. Commercial assets such as empty office buildings or hotels can - and have been - recycled for social or below-market housing.

Hotel Conversion

An opportunity to retrofit existing infrastructure has emerged and quickly taken hold in light of the COVID-19 pandemic. Hotel facilities that find themselves suddenly underutilized due to international border closures and travel restrictions have partnered with housing providers to open their doors to provide temporary and emergency housing and shelter to those most in need.²⁵

In response to the public health crisis and physical distancing rules, a 60-unit private hotel in Vancouver became the city's first private space converted into housing for the homeless.²⁵ As part of the wider initiative Municipal Affairs and Housing to support British Columbians who need a place to self-isolate and to reduce the spread of COVID-19, the Province is partnering with local governments, non-profits and the hotel industry.²⁶ So far, more than 900 spaces have been secured at 23 sites including hotels, motels and community centers throughout B.C.²⁶ The province has signed lease agreements with participating hotels for the rooms, and will deep clean them and pay for any repairs before tourists stay in them again.²⁶

The BC government was the largest single buyer of hotel properties in Canada during the second quarter of 2020 - all of which are for supportive housing.²⁸ This alludes to a more permanent trend of re-purposing hotels for affordable housing units as a model. The City of Vancouver has also recently purchased the Balmoral and Regent single-room-occupancy hotels in the Downtown Eastside and will now work with BC Housing to turn the hotels into safe and secure low-income housing.²⁹

While this solution makes efficient use of hotels now sitting empty because of COVID-19 travel restrictions, there are unique challenges that arise from hotel conversions. First, most hotels are not designed for long-term stays and, therefore, lack essentials such as kitchenettes or adequate storage

for larger items. Secondly, like SROs, these units are small and cannot adequately serve as comfortable long-term homes for couples or families. Additionally, varying pet policies also means that individuals with a furry companion are unable to be housed in certain hotels. Finally, and most importantly, this opportunity will not always be available. Eventually, these contracts will come to an end and long-term self-contained social housing will be needed to ensure that no one is forced back into homelessness. The temporary standstill with conferences and other large gatherings cancelled, border closures, and travel restrictions has stifled tourism. It will certainly take time before travel resumes, but the rebound of the tourism industry seems inevitable.

Hotels play a critical role in supporting Vancouver's economy and prior to COVID-19, there was a growing gap between demand and supply for hotel rooms.²⁹ What will happen to those currently housed through the interim lease agreements? What are the impacts on Vancouver's already hotel supply? Hotel conversions have shown to have merit, but many questions remain to be answered.

Commercial Office Conversion

COVID-19 has undeniably changed how we work, learn, socialize and live. Many work entirely from home, while some continue to go in regularly with restrictions such as reduced capacity or staggered frequencies.¹⁵ While there is still on-going debate about the potential lasting impacts on our relationship with our office space, the pandemic has certainly illustrated that many have the technology and the capacity to work remotely. Some many continue to choose alternative work patterns as an ongoing model in preference to daily commuting.¹⁵ In some cases, companies may promote this flexible working-from-home model to cut down on ongoing overhead costs.

These observations suggest an increasing vacancy rate as workspaces have been moving away from offices.³⁰ Buildings could be transformed or redeployed through adaptive reuse for much-needed housing. One advantage of reusing a commercial building, particularly when compared to hotel conversions, is the relative openness of its floorplan.³¹ Commercial offices are typically spacious, with high floor-to-ceiling heights with

plumbing, ducts and rises, fire escapes, and other amenities for residential use already incorporated.²⁷ Commercial buildings are usually solid constructions and built to last, so their recycled concrete, steel and glass suits repurposing.³¹ While office vacancy may be increasing as a result of COVID-19, office conversions are not an entirely new idea.

In 2008, the Montgomery County Coalition for the Homeless (MCCH) repurposed a former office building in Bethesda.³² The previously vacant eyesore was transformed into 32 units of supportive housing for the homeless and support services.³² Similarly, in 2010, another developer, Urban Atlantic (UA), gutted and redesign two 12-story office towers to create what is now called The Lex with 535 new affordable apartment units with significant amenity space on the first and second floors.³² These examples illustrate the ability to repurpose underutilized office space into multi-family housing in the urban core and are viable, scalable models for commercial building repurposing.

Prefab Modular Housing, Shipping Containers, and Tiny Homes

While modular housing and tiny homes do not utilize existing infrastructure, they were worthy of mention due to their application for housing those who experience homelessness. Specifically, there is an opportunity to utilize and incorporate these interim housing types on underused sites across the city - including parking garages and parking lots.

Modular homes are built in a factory-like setting and are then transported to their final site to be assembled.³³ These homes are typically prefabricated, resulting in significant savings in time and resources.³³ Unlike permanent housing, temporary modular homes can be constructed in less than three months and their ability to relocate allows them to take advantage of vacant or unused sites across the city that are perhaps waiting for future development.³⁰ However, the city recognizes that this is an interim solution as modular homes supply the “right support until more permanent social housing is available”.³⁰ While temporary modular homes are not the end all be all solution, the City of Vancouver has embraced them as the first step in addressing Vancouver’s housing crisis and providing temporary shelter within the emergency housing and transitional housing sections of the housing continuum.³⁴ BC Housing has embraced this housing type, with the Province investing a further \$300 million towards more than 2,000 modular housing units, a mix of both permanent and temporary units, for those who are homeless or at risk of homelessness.³⁴

Shipping containers have also emerged The City of Victoria is piloting an innovative new project, dubbed “Hey Neighbour,” that repurposes 30 shipping containers into tiny homes for people as they await more stable, permanent housing.³⁵ Each 160-square-foot unit would come equipped with a bed, a desk, a hot plate and a mini-fridge. While these units are not self-contained, the project is an example of a temporary immediate solution that is preferable to park encampments. Shipping containers are more secure, provide privacy and insulation that can keep people more comfortable while they’re awaiting long-term stable housing.³⁵

Similarly, tiny homes may also provide a means of housing the homeless populations in large urban centers. Othello Village in Seattle comprises twenty-eight wooden tiny homes that were built to house some of the city’s homeless population.³⁶ Critics of this project advised against funding tiny house encampments, arguing the money would be better spent towards constructing permanent affordable housing.³⁶ On the other hand, residents of Othello have voiced that they feel grateful for the lockable doors on their cabins which offer more privacy than city shelters. Not only this, but shelters are also often at capacity and exclude many homeless people with rules barring couples and pets.³⁶

As tiny home villages pop up across cities in the United States, it is important to note that Vancouver’s bylaws and building codes do not currently allow for tiny homes.³⁷ The City of Vancouver has opposed the idea of formalizing one or more sites for small structures, citing concerns over fire safety and livability.³⁸ This stance is echoed by city staff in Toronto, where a local carpenter is currently fighting an injunction to stop building small wooden structures for unhoused people after a fatal fire.³⁹ Vancouver homebuilder, Bryn Davidson has designed a tiny townhome prototype and set up a demonstration site across from Oppenheimer Park to showcase their potential to be part of the City’s emergency response to homelessness.³⁸ One drawback of tiny homes, is their low density given the high price of land, however, if utilized within a parking garage structure, the density of these tiny home villages could increase significantly.

LITERATURE REVIEW

History of this Site

For the past four years, Janice Abbott, CEO of Atira Women's Resource Society, has lobbied the City of Vancouver to consider the redevelopment of a six-story parking garage for affordable housing for women and children.⁴⁰ The site is city-owned and getting the city to agree to the plan is the first step to redevelopment. This site, located at 107 East Cordova Street, is close to the DTES' robust support network and is located adjacent to Atira's office and the Downtown Eastside Women's Centre. The proposed redevelopment of the site would include more than 100 units of housing for women and children, expanded space for the Downtown Eastside Women's Centre, and a daycare.⁴⁰

After several meetings, city staff have confirmed that the loss of parking is a roadblock to developing the site into housing because any redevelopment would require replacement parking to be built elsewhere in the neighbourhood.⁴¹

City staff responded "this site is a neighbourhood public parking facility in an area of multiple heritage buildings that were originally built without parking, and buildings in the immediate area rely on these spaces. There are other locations in the city that make more sense for this type of housing, and more housing could be developed on empty land i.e. without the costs of having to demolish the existing parkade and also replace the parking spaces."⁴⁰

However, anecdotal observations suggest that this site is quite underutilized and sits about two-thirds empty on weekend afternoons.⁴¹ After hearing at each meeting that the plan won't work because of the parking spots that would be lost, Atira staff decided to make a public statement by putting up large window decals at along the building that read "housing for women & children, not cars".⁴⁰



Source: CTV News Vancouver

SITE ANALYSIS

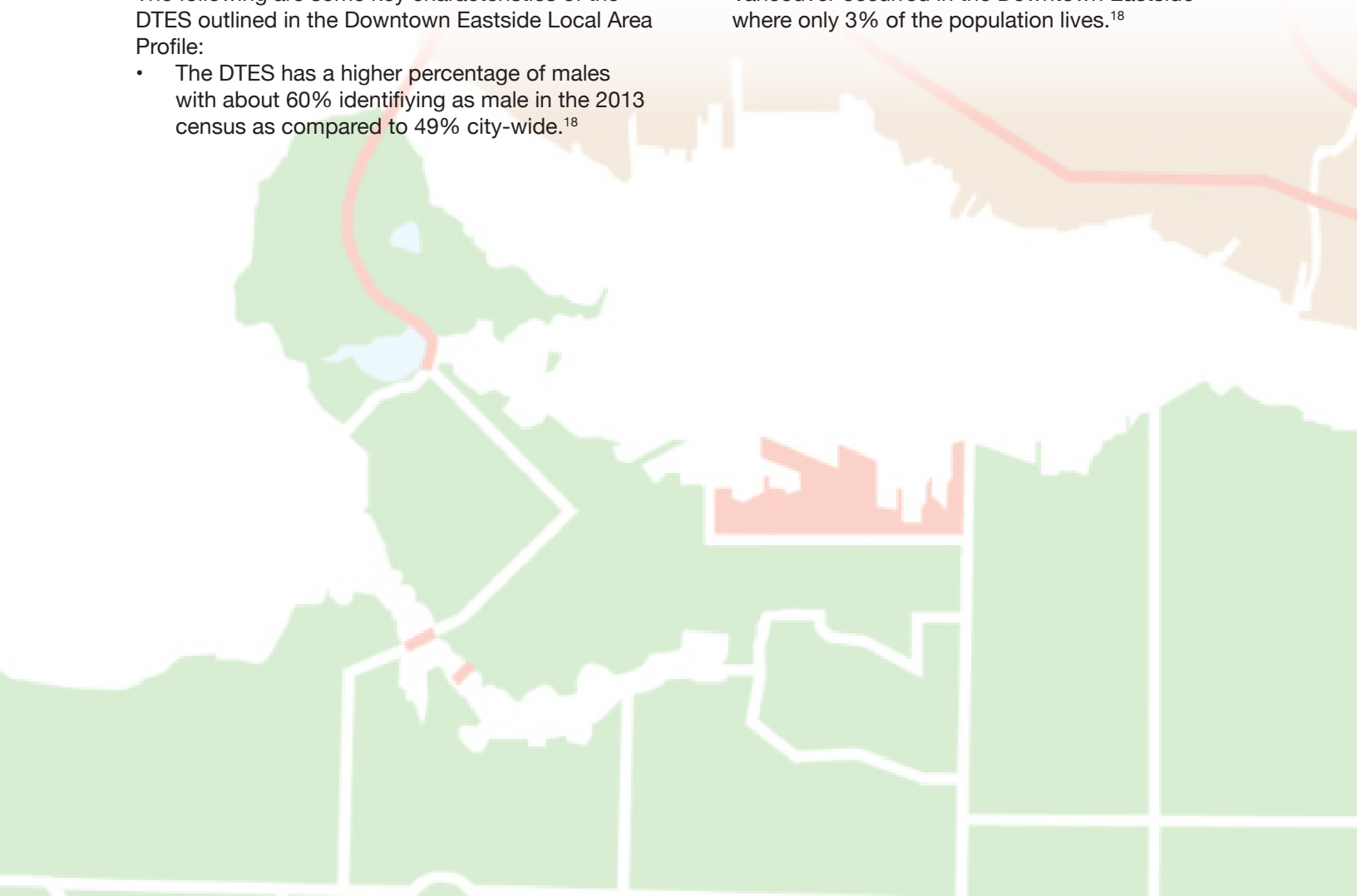
The Downtown Eastside

The Downtown Eastside extends through portions of the Downtown and Strathcona local areas including Chinatown, Gastown, Victory Square, Oppenheimer and Strathcona.¹⁸ It is one of Vancouver's oldest neighbourhoods and is home to the immigrant communities of Chinese Canadians and many other cultural groups.¹⁸ While there is a diverse mix of low-income, working poor, moderate-income and middle-income residents, the large majority of the groups in the DTES are considered vulnerable because they experience greater risk to health and wellbeing than the rest of the City of Vancouver population as a whole.¹⁸ The vulnerabilities and challenges experienced by these groups include "poverty, safety, adequate accommodation, unemployment, poor nutrition, poor health, a poor sense of self-esteem, a lack of wellbeing and connectedness and dependency on social services and charity".¹⁸

The following are some key characteristics of the DTES outlined in the Downtown Eastside Local Area Profile:

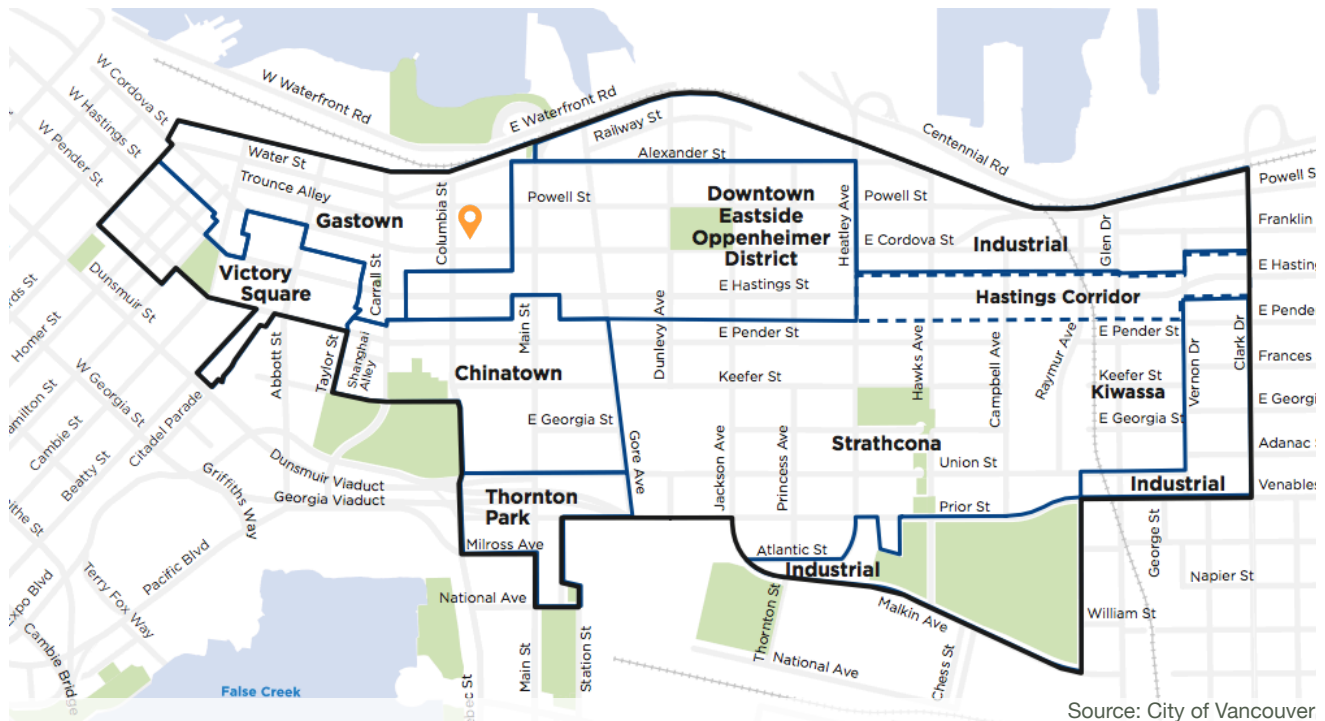
- The DTES has a higher percentage of males with about 60% identifying as male in the 2013 census as compared to 49% city-wide.¹⁸

- The DTES also has a low percentage of children and youth, approximately half of the city-wide average while also having a higher concentration of seniors than the city-wide average.¹⁸
- The DTES has a significantly higher proportion of Aboriginal people than the rest of the city as a whole.¹⁸
- The DTES has one of the lowest per capita incomes of any urban area in Canada.¹⁸
- City-wide slightly over half of the households are rented, but in the DTES, almost 90 percent of households are renters.¹⁸ Additionally, in contrast to other neighbourhoods in the city with high renter populations, the Downtown Eastside has a significant number of renters living in SROs.¹⁸
- Women in the DTES are particularly vulnerable to sexual, emotional, mental, and physical violence.¹⁸
- In 2012, 16% of reported sexual assaults in Vancouver occurred in the Downtown Eastside where only 3% of the population lives.¹⁸



SITE ANALYSIS

Site Location



Source: City of Vancouver

107 East Cordova Street, indicated above in orange, is located within the Gastown neighbourhood of the DTES and is adjacent to the Oppenheimer neighbourhood. The site is within the Hastings Crossing BIA boundary and is currently zoned for Commercial/Mixed-Use. The DTES has a robust network of resources and services dedicated and geared towards the low-income community. These include free or low-cost food services, safe injection sites, counselling, legal counsel, and more.¹⁸ Providing additional affordable housing units within the DTES would allow for the continuation of access to these services, as well as retain the existing ties to the community. Displacement of vulnerable residents can increase the feeling of loss of control over their lives, sever connections and access to essential services, and impact mental and physical health negatively.

There are many families with and without children that call the DTES home, but in 2011, housing for families in the DTES only made up 13% of the non-market housing stock.¹⁸ Most families live in the Strathcona neighbourhood where housing units tend to be larger but “obtaining affordable housing that is large enough for several people is challenging for low-income families where much of the affordable and non-market housing stock is geared towards single adults and seniors”.¹⁸ The proposed units at the site have the opportunity to more seamlessly transition those who have grown out of the SROs, such as families, couples, or those with children while staying in close proximity.

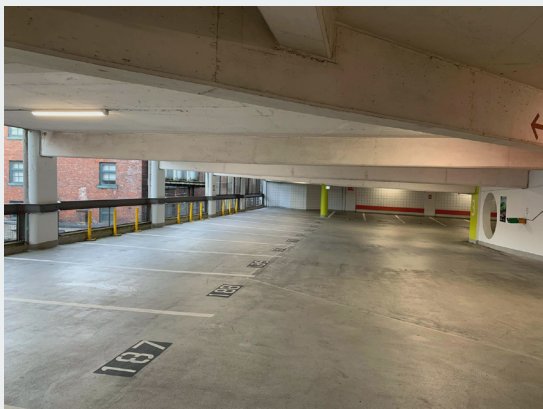
SITE ANALYSIS

Current Conditions

107 East Cordova Street is a City-owned property, listed on the City's Open Data Portal as part of the Property Endowment Fund (PEF).⁴² PEFs are defined by the City as "assets that are not immediately required for delivery of City services but are held for other purposes, such as investment or future civic uses, and is one of two major property asset pools owned by the City".⁴²

The site is currently an operational parking garage through an on-going lease with EasyPark (Parking Corporation of Vancouver). The Corporation manages and operates parkades and properties owned or leased by the City of Vancouver, or joint ventures between the City and third parties.⁴³ According to their website, the Corporation operates as a non-profit public authority and its share structure gives the City of Vancouver sole title to the assets of, and the revenues generated by, the Corporation.⁴³ EasyPark is governed by a board of two appointed and eight elected directors.⁴³ All net revenues go to the respective owners of the parking facilities (which is the City of Vancouver in the majority of cases) for reinvestment in the development of public parking facilities.⁴³ The terms of the lease are unknown.

The parking garage is six-storeys, with one entry/exit point onto East Cordova Street. There are a total of 376 stalls of public parking available. Like many parking garages, this structure features sloping floors and a low ceiling height of approximately 8 feet. The structure is estimated to have been constructed in the 1980s, is not sprinklered, and has no elevators. This lot also has active legal agreements with adjacent sites to provide parking. Again, the exact terms of those agreements are unknown.



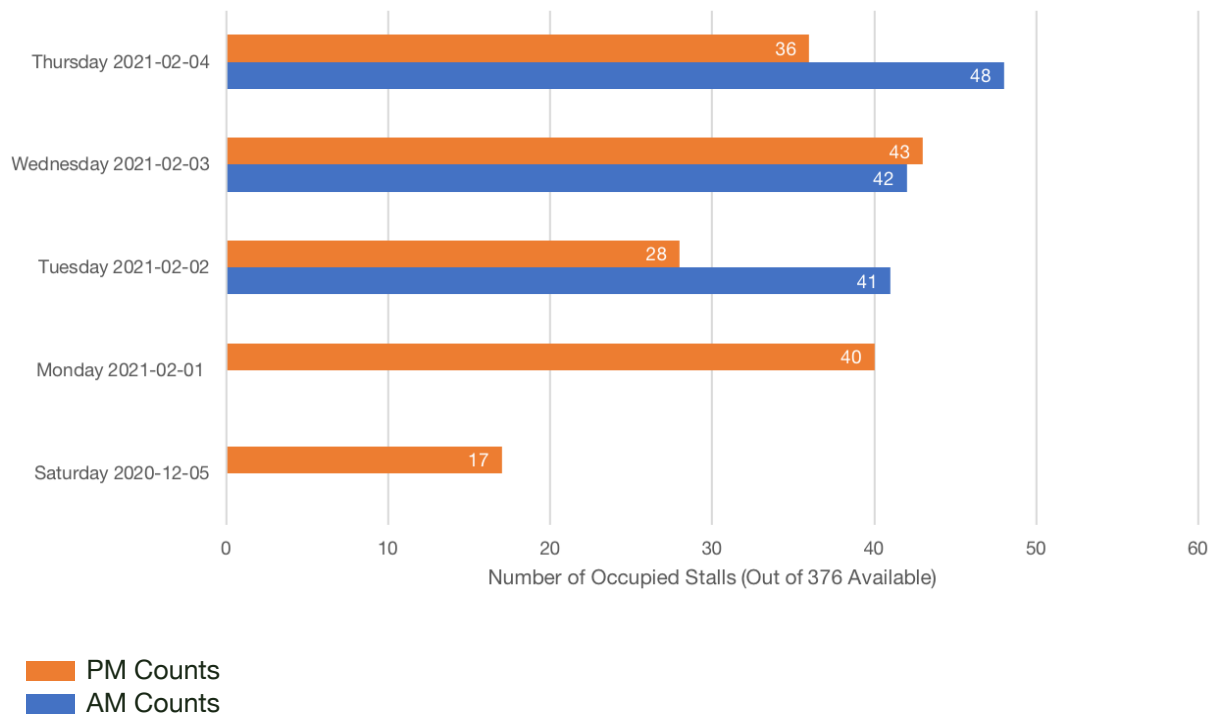
SITE ANALYSIS

Parking Utilization Data

After several attempts, the researcher was unable to obtain parking utilization data from EasyPark or the City of Vancouver for this study. Although the following data is limited, in lieu of historic utilization data for this site, parking occupancy counts were conducted in order to gain insights into the current use of this space and support anecdotal accounts that suggested this space is significantly underutilized.

These occupancy counts were taken during the COVID-19 pandemic where travel patterns, particularly for commuting, were widely fluctuating and reduced. While these numbers provide data about a point in time, they are not representative of a baseline of the parking demand for this lot. Further occupancy counts will be required as the city progresses with its COVID-19 recovery and beyond.

8 counts were conducted, including morning counts between the hours of 10-11 AM and afternoon counts between 3-4 PM to try to capture peak hours. The utilization rates of the dates surveyed ranged from 4.5% to 12% with an average rate of 9.8%. This is significantly lower than the 33% utilization rate previously noted by Atira staff prior to the COVID-19 pandemic - likely attributed to widespread remote work.



CASE STUDY ANALYSIS

Case study examples, both globally and locally, highlighted inventive ways to retrofit or convert parking assets or other existing infrastructure for other more pressing uses.

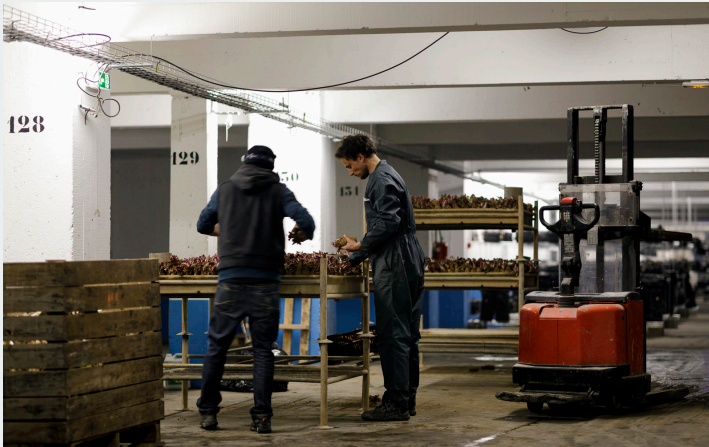
In Paris, Chicago, Los Angeles, and Evanston, underground parking conversions were successfully completed into an organic mushroom farm, a logistics and fulfillment centre, a shared commercial kitchen, and collaborative space for students and faculty respectively. The unprecedented Broadway Autopark development in Wichita, Kansas is the only known successful retrofit of an existing above-ground parking garage into permanent below-market housing. A similar project proposed in San Francisco that was nixed after facing much opposition provides insights into challenges that can arise in the conversion process.

Finally, local examples of innovative projects, including the ongoing surface parking lot conversion into supportive housing for women and children in the District of North Vancouver, a childcare centre addition on the rooftop of the Gastown Parkades, as well as both a fire hall and library branch mixed-use housing development were highlighted.



CASE STUDY ANALYSIS

Underground Parking Garage Conversions



Source: Cycloponics

Paris, France⁴⁴

With car ownership dwindling, many of Paris' garages were becoming derelict and hotspots for illicit activity. Meanwhile, the demand for local and organic produce has soared in Paris. As part of a number of renovation projects encouraged by the City, unused underground parking garages have been successfully turned into organic mushroom farms.



Source: The Garage at Northwestern

Evanston, USA⁴⁵

12,000 square feet of an existing and underutilized parking structure at North Western University was converted into an interdisciplinary innovation center. Fittingly called "The Garage", this conversion has embraced the parking design and features a café, conference room, open workspace for classes and events, AR/AV lab, and meeting rooms of various sizes for students, faculty and staff to access.



Source: Business Insider

Los Angeles, USA⁴⁶

The unprecedented popularity of on-demand, delivery food services has provided parking garages and surface lots with a new purpose. Shared commercial kitchens, like CloudKitchens, operate out of a single kitchen located in former parking garages that share pick-up facilities, overhead costs, as well as other services such as marketing.



Source: CommonSense Robotics

Chicago, USA⁴⁷

The real-estate firm JLL is converting an 8 million-square-foot parking garage situated under Millennium Park into a last-mile logistics facility for retailers. The parking garage is windowless, making it incompatible for conversion into housing, however, its central location and existing design to allow for trucks and other large vehicles, made the conversion into a fulfillment center seamless.

CASE STUDY ANALYSIS

Above Ground Parking Garage Conversion



Source: Retrofit Magazine



Source: Bokeh Development

Wichita, USA^{48,49}

The facility sat vacant and neglected until Bokeh Development acquired the building in 2016. The newly acquired parking garage was sound structurally but needed a major cosmetic overhaul which took a little more than two years to complete. Going from an open-air parking structure to an R-2 residential occupancy building type and getting the city to sign off on an unprecedented project was no easy feat. The developer successfully listed the property on the National Register of Historic Places in 2016 and received tax credits that help fund the conversion. The existing structure's flat floors and external ramps were key factors in making this retrofit feasible and cost-effective. Additionally, much of the original structure was preserved and maintained in the conversion which added up to savings in construction materials.



Source: Bokeh Development



Source: Bokeh Development

The end result embraced and highlighted the historic use of this space. The concrete materials were polished and retained to create modern, loft-like units. In the common areas, tinted windows original to the parking garage and the painted parking lines were preserved and intentionally kept visible. Exterior elevations were demolished to increase the amount of natural southern lighting to add a sense of security and transparency to the space. Deep living units with covered patios extended the lighting space from inside out. The top four floors of the 5-story garage are split between parking stalls and 44 narrow, below-market one-bedroom apartments. Each unit is accompanied by front-door parking, offering superior convenience and security. The units are rented for \$800-1000 USD per month by a mix of young, single professionals, retired people and military members.

CASE STUDY ANALYSIS

Surface Parking Lot Conversion

1577 Lloyd Ave, North Vancouver^{50,51}

A new supportive housing project in partnership with the province, the District of North Vancouver, and RainCity Housing and Support Society awaits a public hearing on March 2, 2021. The proposed site includes nine parcels of district-owned land currently zoned for the storage of vehicles that is currently used as overflow storage for a Volkswagen dealership. The OCP designates this site currently as light-industrial commercial and adjacent uses to the site include light industrial, commercial, and mixed-use commercial and residential buildings.

If approved and re-zoned, the five-story supportive housing project would comprise of 60 supportive housing units for women and women-led households experiencing homelessness, or are at risk of homelessness. Every unit's rent will be set at shelter rates ranging from \$375 to \$700 for a 1-bedroom up to 4-bedroom unit. While each unit will be self-contained with its own kitchen and bathroom, the facility will also include a cafeteria for meal service and other common areas for integrated services operated by RainCity Housing. The housing will also be low barrier, meaning the residents will not be evicted for drug or alcohol use. BC Housing has committed to providing 100% of the capital and operating costs.

It is undeniable this project would provide much-needed social housing in North Vancouver. However, this proposal is not without community opposition. Flyers stating concerns around property values, the presence of illegal substances, increased crime have been circulated in the neighborhood - illustrating the NIMBYism social housing projects can face.



Source: RainCity Housing

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A growing number of women-led families in our community are in need of safe and secure housing. This council has prioritized using district-owned land to create social and supportive housing, and this project would provide much-needed supportive housing options for these marginalized families.

- Mike Little, District of North Vancouver Mayor⁵¹

This is the first supportive housing project on the North Shore in a long time. And it's been a long time coming. It's desperately needed. This isn't just housing. It's also staffed 24/7, and it's there to help women and families find the stability that is needed in order for them to actually move forward with their lives.”

- Bowinn Ma, MLA for North Vancouver-Lonsdale⁵¹

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CASE STUDY ANALYSIS

Rooftop Parkade Conversion

Gastown Parkades, Vancouver^{52,53}

The city has recently undertaken a creative solution to the critical shortage of viable downtown child care sites. Two 37-space child care centres with outdoor play areas have been constructed atop of the existing Gastown parkades. The opportunity capitalized on existing City-owned land and infrastructure to provide new downtown facilities while making better use of an underutilized facility. The project has an estimated cost of around \$17 million, funded through Community Amenity Contributions (CACs) and a \$1 million Major Capital Grant from the Province of BC and the Union of BC Municipalities. Compared to other child centres, there are significant additional construction requirements needed to build on a parkade rooftop due to the unique challenges of the context and structure (eg. crane location, site access, and loading restrictions). The location for this project was made possible by the City of Vancouver's Property Endowment Fund and was supported by an analysis conducted in 2015 of "eight City-owned parkade sites" that found these two parkades were the only two "suitable for the development of rooftop childcare centres".⁵³



Source: Acton Ostry Architects/City of Vancouver

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Due to the increased shortage of viable childcare sites in the downtown Vancouver area, we need to capitalize on existing city-owned land and infrastructure to provide new facilities for children to learn and play. The creation of child care facilities on these two Gastown parkade rooftops is a great example of how the City and Province are collaborating to take an innovative approach to increasing access to childcare spaces for Vancouver families.

- Kennedy Stewart, Vancouver Mayor⁵²

These new spaces in Downtown Vancouver are a first step to giving more families access to quality early learning environments in their communities.

- Spencer Chandra-Herbert, MLA for West End Coal Harbour⁵²

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CASE STUDY ANALYSIS

Unsuccessful Above Ground Parking Garage Conversion

San Francisco, USA^{54,55}

The San Francisco Municipal Transportation Agency (SFMTA) issued an RFP to replace an underutilized and city-owned Moscone Garage. The 732-stall public garage at 255 Third Street has a 53 percent occupancy rate during peak parking hours and generates \$2.3 million annually for the city towards their transportation budget. Four development teams, each made of a hotel development group and a non-profit housing builder, submitted proposals to the SFMTA. While the details of these proposals are not publicly available, the redevelopment would include at least 650 hotel rooms and 100 affordable housing units at a minimum to fill two pressing needs: a hotel next to the convention center to support tourism and increase affordable housing units in the South of Market (SoMa) district.

The SFMTA has been criticized for “stonewalling” the project and for their lack of transparency by holding the details of the proposals private, not holding public meetings and delaying the selection process without a clear explanation. Ultimately, the SFMTA has rejected the four proposals and cancelled the RFP outright. SFMTA spokesperson Paul Rose cited that the four proposals did not meet the SFMTA’s goals for revenue and community benefits but declined to share what those goals were or exactly how revenue streams fell short.

The opportunity to convert underutilized public land to achieve the critical needs for SoMa was unrealized in this case study. This points to the highly challenging nature of these parking garage conversions – particularly when it comes to replacing the parking revenue and in balancing competing needs. SFMTA will now consider whether it will pursue the site for development or issue a new RFP.



Source: San Francisco Chronicle

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The public benefits of taking a single-use site like a parking lot and converting it to multiple uses, including housing, are multifaceted.

- Daniel Adams, Deputy Director of the Mayor's Office of Housing and Community Development⁵⁵

We desperately need affordable housing sites in SoMa - everywhere and anywhere we can find them. This project could be an innovative way to use public land to achieve two critical needs for SoMa and the city.

- John Elberling, Todco President⁵⁵

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CASE STUDY ANALYSIS

The Future of Parking



Source: GWL Realty Advisors

753 Seymour St, Vancouver⁵⁶

Construction has commenced on Vancouver Centre II, a 33-storey, 403-ft-tall AAA office tower at 753 Seymour Street. The multi-storey parkade, that includes above-grade parking on levels two through five, is designed to allow the space to be converted to an office in the future. Minutes from the design panel state that “pending future changes to the City’s parking requirements, the above-grade parking levels have been designed so they can be converted into office space at a later date”. This project illustrates that future re-development in Vancouver will see parking use as secondary and one that will require futureproofing.



Source: Henriquez Partners Architect

598 W Georgia St, Vancouver⁵⁷

Henriquez Partners Architects’ bright office space is proof that below-grade space should not be underestimated. Anything but typical, the airy office space is inviting and integrates creative design tactics to draw light into the space. From the glass sidewalk on Georgia Street, you can catch glimpses of the office. This project illustrates the many unconventional uses that below-grade structures can adopt when faced with underutilization. The more uses that can be accommodated below grade, the more density there is available above grade to provide housing.



Source: Divisare

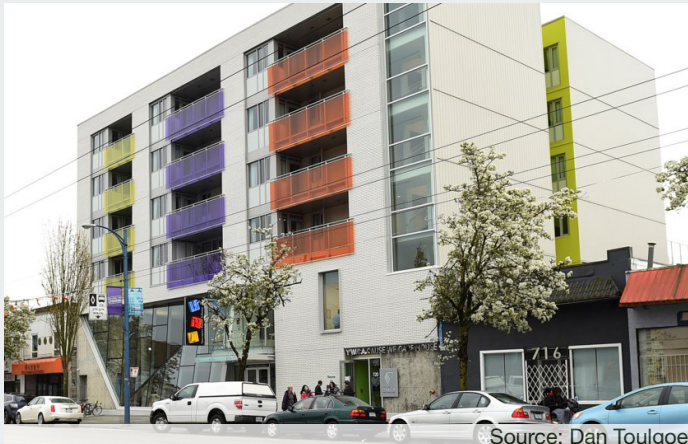
Paris, France⁵⁸

Baukunst and Bruter were the 2019 winners of a competition in Paris-Saclay to design a student residence with a convertible public car park on the Paris-Saclay campus. This development features a double-height first floor of shops and collective spaces for the students, followed by two levels of convertible public parking, three levels of housing, and finally an attic level featuring duplex housing units. Flat floors and removable ramps means that the parking structure can be seamlessly adapted for a different use in the future. In the meantime, the bright and airy parking structure feels welcoming, safe, and can accommodate 450 public parking stalls. This case study illustrates how the future construction of parking should be: where the consideration of the future conversion of dedicated parking space in response to the changing needs of parking demand is considered and integrated into the original design to allow for versatility and reversibility of uses.

CASE STUDY ANALYSIS

Innovative Mixed-Use City-Owned Sites

The City of Vancouver has seized opportunities to maximize city-owned sites to the best of their ability as part of their commitment to creating more affordable housing. Below are two examples of recent mixed-use developments that combine other city services with housing.



Source: Dan Toulgoet

730 E Hastings St, Vancouver⁵⁹

A decades-long wait for a library in Strathcona ended April 19 with the opening of a new branch near Heatley Avenue on East Hastings Street. Previously, this neighbourhood did not have a full-service library branch. The new 11,000-square-foot library takes up the first two floors of a six-storey building designed by Dialog, which also features four floors for the YWCA's Cause We Care House — 21 units of social housing for single mothers and their children. The library and social housing complex was made possible thanks to the close partnership between the Vancouver Public Library, YWCA Metro Vancouver and the City of Vancouver. It is also the first major civic building in Vancouver to have an official aboriginal name.



Source: Dan Toulgoet

3090 E 54th Ave, Vancouver⁶⁰

The four-storey, 31-unit housing complex over Fire hall No. 5's two-storey replacement building was in partnership with the City of Vancouver, Vancouver Fire and Rescue Services and YWCA Metro Vancouver. The previous fire hall did not meet current seismic codes and needed to be replaced. The new development features 28 two-bedroom and three-bedroom units, 15 of the units are for people on income assistance while another 16 of the units have rents based on Housing Income Limit. Women leaving abusive partners are being prioritized for units and residents have access to the full array of YWCA programs and services. This project is believed to be the first social housing complex built above a newly constructed firehall.

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We're leaving no stone unturned looking for opportunities to use City-owned land to build new housing in partnership with senior governments and partners to deepen affordability. I'm especially proud of partnerships like these that deliver urgently needed new housing while fostering stronger neighbourhoods and providing essential community services for families.

- Gregor Robertson, Former Vancouver Mayor⁶¹

Thanks to a new and creative approach, we're taking City-owned land and transforming it into not only a much needed new Fire Hall, but also 31 safe new homes for dozens of women and children. YWCA Pacific Spirit Terrace is an example of what government and non-profit organizations can do together when we partner to address the housing crisis.

- Kennedy Stewart, Vancouver Mayor⁶²

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INTERVIEW ANALYSIS

A total of 16 carefully selected key informants were contacted for an interview for this study. Of those contacted, 13 of them were interviewed over Zoom in January and February 2021. The final key informant list was made up of 10 industry experts and 3 women-serving agency representatives. Industry expertise ranged from urban designers, architects, City staff, former and current Councillors, financial consultants, planners, and developers.

A 2-page project summary was provided to all interviewees prior to the interview to give further context on the research, share site photos, and highlight the successful Wichita case study. This summary was also reviewed at the beginning of the interview with most of the key informants. The interviews were semi-structured and lasted between 30-90 minutes. With their consent, all interviews were recorded by the interviewer for transcribing and coding purposes. A set of questions was prepared, which can be referenced in Appendix B on page 35, to guide and facilitate the discussion on the feasibility of the parking garage conversion into affordable housing. Not included on this list are the more specific project-based or clarifying questions that emerged from the conversations that were relevant to the key informants' experiences.

The qualitative data from the key informant interviews was coded in 2 stages. First, the researcher developed initial codes from listening to the interviews once through (e.g. sloping floors, low ceiling heights). Those codes were then further analyzed for common themes and groupings (e.g. structural constraints). The content from the first few interviews was used to refine the codes and resulted in the development of new prompts and questions for the subsequent interviews. For the second stage of the coding, the researcher transcribed quotes of important takeaways as well as quotes that best encompassed a common theme.

Word clouds were used to visualize some of the key findings from the interviews where applicable. However, for more complex discussions, the researcher relied more heavily on direct quotes in the presentation of the findings. The quotes have been intentionally incorporated directly throughout the analysis section of this report to highlight their importance to the research. While findings and coding processes are susceptible to interviewer biases, particularly for qualitative data, the use of direct quotes reduces the chances of bias and better reflects the context and intention the key informants shared. Finally, the researcher also provided all key informants the opportunity to review their quotes to ensure and validate their thoughts.



INTERVIEW ANALYSIS

Housing is a Top Priority for DTES

To no surprise, the theme of housing - in terms of the affordability, availability, or quality of units - was the primary concern expressed by all those interviewed. There was a recognition that for residents of the DTES the various layers of poverty and health were often connected to having adequate and secure housing. For example, lack of food preparation facilities or limited shared kitchen facilities in SROs exacerbates the ability for residents to access nutritional food. As a result of these intersections, housing was considered by those interviewed as a *prerequisite* to improving and alleviating the complex challenges that the vulnerable groups living in the DTES experience. To begin to address the inequities present in the Downtown Eastside, we must create the basic conditions in which the residents can thrive rather than survive - and that starts with providing housing security. There was also an emphasis on the need to have the right *kind* of housing. One interviewee articulated it as 'dignified housing' and this theme came up throughout the interviews. But what does *dignified* housing look like?



More Self-Contained, Dignified Units are Needed in the DTES

All interviewees were in agreement that while "all of the above are missing in the housing stock", there was a targeted three key elements: larger units, self-contained units (with full kitchen and bathroom), and more transitional housing stock. While those interviewed recognized that micro-units and SROs could adequately serve a particular demographic, there was a consensus of a critical gap in the current non-market housing stock for non-nuclear families in the DTES. Micro-units may work for some, but there is a need for diverse housing types and sizes to accommodate. Key informants also strongly believed that self-contained units were necessary to provide dignified housing options for the very-low to low-income residents. Those interviewed acknowledged the safety concerns associated with sharing bathrooms and lack of privacy contributed to negative experiences and perspectives of safety. Finally, there was a stated need for more transitional housing. There was an acknowledgement that many low-income residents have no choice but to go into supportive housing because that was all they could afford and find available. So transitional housing would fill the gap for those that are unable to make the jump between supportive housing and market housing.



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Housing is a major aspect of being self-sufficient, but it has to be housing that supports that self-sufficiency. When you are in sub-standard housing, it's a vicious cycle - having proper housing sets people on a path to break that cycle.

- Alice Kendall, Executive Director of Downtown Eastside Women's Centre

A lot of what we are doing [in housing] is just sustaining people in their reality but not necessarily moving them along through the continuum to a better one. So, we either see people slipping through the cracks or we see simply in sustenance mode where they are sustaining life but not a quality of life.

- Sarah Kirby-Young, Vancouver City Councillor

People in the DTES need exactly what everyone else needs. Everyone deserves a home, a proper home where they can be self-determining. Their place with their own front door that they control and can have friends and family over for dinner. [Micro suites are not the answer], where is the housing for seniors, single parents, those with children?

- Alice Kendall, Executive Director of Downtown Eastside Women's Centre

Compared to Vancouver as a whole, DTES has a higher percentage of studios and there is an undersupply of family housing. Maybe it's single parents, intergenerational households, seniors, or non-nuclear families - but focusing on SROs wouldn't capture the whole picture of the housing need.

- Leslie Shieh, Co-founder of Take Root

The fact that we still have shared facilities doesn't provide for dignity, but we've also now seen during COVID how those shared and communal facilities can be problematic from a health point of view.

- Sarah Kirby-Yung, Vancouver City Councillor

We take for granted [in market housing] having a simple bathroom or a shower in our residence. A kitchen or stove is great, but a bathroom where these women can get out of bed and not have to walk down a hallway past other men and strangers or find that the bathrooms are full.

- Carolyn Johnston, Women's Health and Safety Liaison, Atira

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INTERVIEW ANALYSIS

Women are Underserved in Low-Income Housing Stock

While it goes without saying that all key informants recognized everyone needs housing, questions around target groups and those that are particularly vulnerable or not well served by the current housing stock were asked. Young women, single women, women with children, senior women, and Indigenous women were all mentioned as underserved demographic groups throughout the interviews. This is not surprising given the number of key informants from women-serving agencies, however, the need for more housing for women was echoed and supported by other interviewees from various backgrounds. There was consensus that women faced more vulnerable housing conditions than men due to pre-existing discrimination and gender inequalities. Examples of complex intersectionalities identified in the interviews included women fleeing domestic abuse, sex workers, Indigenous women, or women that have experienced sexual assault or violence.



single women
indigenous women
women with children
family housing
persons with disabilities
multi-generational families
women
those in precarious situations
mixed-income housing
illegal status
seniors

Other Candidates for Retrofit

A general theme around city-owned civic buildings such as fire halls, community centres, and libraries were seen as having limited potential for being retrofitted into affordable housing due to their low density and long-term leases. More generally, the interviews highlighted the need for further cost-analysis on city-owned sites to determine the most “bang-for-buck” scenario that could result in leasing, selling, or putting a revenue-generating use on this site to fund housing more efficiently elsewhere. Housing is undoubtedly a high priority, but all possible uses and civic needs must be weighed and balanced.

Hotel and commercial offices emerged as having the highest potential for being retrofitted into affordable housing: There was general consensus that hotel conversions have great potential for conversion into affordable housing because they are already zoned for residential use. However, there were limitations of hotel conversions that came up through the interviews that echoed our findings from the literature review. While hotel units include a self-contained bathroom, many of them only come with a little coffee bar or a kitchenette that is inadequate for long-term living. Unlike the reducing demand for parking, hotels are likely to see increased demand post-COVID. Three informants voiced concern that using hotel conversions as a model for providing affordable housing could exacerbate the City of Vancouver’s shortage of hotel rooms. There was an acknowledgement that Vancouver’s tourism sector depends on the city’s hotel accommodation capacity and that the hotel industry is a major employer of unionized jobs within the hospitality industry.

In the context of many working from home during the COVID-19 pandemic, several interviewees voiced the opportunity to explore retrofitting commercial space into affordable housing. There was speculation that some companies may want to keep more flexible remote work options in order to save on overhead costs. There was an acknowledgement that office conversions have not been completed on a large scale and office vacancies could be very temporary.

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It is often not safe for women who live in an SRO where they have to share bathrooms or cooking facilities in some cases. SROs don’t always have adequate protection in terms of working locks on doors or elevators locked off by floor.

- Lisa Rupert, VP Housing Services, YWCA Metro Vancouver

Atira and the Downtown Eastside Women’s Centre are right there so I think creating safe housing for women at that location would be a major leap forward. Within the women ‘category’, Indigenous women are particularly underserved and the biggest targets of violence.

- Andrea Reimer, Former Vancouver City Councillor

There are women right now that are having to choose between being with their children or breaking up their family just because they can’t find transitional housing [adequate for a family] when they are fleeing for violence or evicted. Not all transitional housing have the space or can accommodate these different situations.

- Carolyn Johnston, Women’s Health and Safety Liaison, Atira

If you convert more hotels to housing and the demand in the market for hotels is higher than the number of available hotel rooms, the pressure doesn’t dissipate. Instead it goes into Airbnb and other short-term rentals that displace renters and are much harder to track and regulate. So, I would rather hotels be hotels if the demand is there for the hotel rooms than housing be hotels. Otherwise, you get renters competing with tourists for housing vacancies and renters never win that competition.

- Andrea Reimer, Former Vancouver City Councillor

Often the timelines are slow in terms of the long-term acquisition of these assets. Often there is neighborhood pushback, particularly when they are in residential neighborhoods where there is a stigma about homelessness, poverty and drug use.

- Christine Boyle, Vancouver City Councillor

People have grasped onto that because hotel conversions appear to be easier in the short-term, but I think it carries a couple of challenges.

One is cost - it can be quite expensive because typically hotels are located in easily accessible areas where land prices are higher. So, the cost per unit for social housing can be higher. Another challenge is prior to COVID we actually had a shortage of hotel rooms in the City of Vancouver...Like social housing, hotels are very expensive to build. I’m not convinced that as a category of building, seems easy because they have bathrooms but no long-term suites or self-containment with unintended economic spin-offs.

- Sarah Kirby-Young, Vancouver City Councillor

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INTERVIEW ANALYSIS

Challenges, Technical Issues & Requirements for Conversion

There were numerous challenges, technical issues, and requirements that were identified throughout the interviews. They can be grouped into the following four general themes: safety concerns relating to residential use, structural attributes that limit the possibility of a retrofit, process challenges facing adaptive reuse projects, and loss of parking supply. For some of these challenges, there was a discussion of some of the creative solutions that could be implemented. For example, there are techniques that can be used to draw light into deeper floor plates. However, two factors were identified as “non-starters” for a permanent retrofit as seen in the Wichita case study for this site. The sloping floors and ceiling height limit what is possible in terms of a conversion - most likely making it outright infeasible.

Safety Concerns Relating to Residential Use

Fire safety, seismic safety, the perception of safety, and lack of light were all listed as possible safety concerns relating to the transition to residential use. Specifically, given the estimated age of the building, the costly seismic safety upgrades that are most likely required for this site make this building a poor candidate for retrofitting into residential use. The cost of the upgrades would be prohibitive, making a retrofit scenario more expensive and challenging than a demolition.

Structural Attributes that Limit the Possibility of a Retrofit

The structure's load capacity, condition of the existing concrete, sloping floors, and low ceiling height were listed as possible structural concerns. The structural constraints of this site are the most limiting for the feasibility study as a whole. The design of parking garages accommodates the live loads of cars and will likely be unable to handle the additional load required from plumbing, lighting, and other housing infrastructure. The sloping floors will require levelling, which, in addition to the already low ceiling height, will not give enough clearance to install services to support housing units.

Process Challenges Facing Adaptive Reuse Projects

Adhering to building codes, City by-laws, development permits, and design approvals would be challenging for this proposed retrofit. Going from a site zoned for car storage to permanent residential use will face many challenges. While the Wichita case study showed that it is possible, the other constraints of the site would likely prohibit reaching this stage in the process.

Loss of Parking Supply

Given the current operational use of the site, parking was discussed extensively throughout the interviews. There was consensus that at the city-wide level, parking demand was decreasing, with the caveat that COVID-19 may have had some impact on this trend. In general, those interviewed agreed that reducing parking was becoming less and less controversial and believed that sustainable modes of transportation were the future. It was also clear from the interviews that above-grade parking garages were not an efficient use of land. However, some interviewees voiced concerns regarding the loss of parking - pushback from BIAs, employees working near the area, residents living in buildings nearby with limited or no access to on-site parking. While many believed that the DTES in particular had less demand for parking, there was also an acknowledgement that many of the older buildings in this area did not have on-site parking. The majority of key informants wanted to see concrete data regarding the utilization rates of this site to better ascertain whether or not this parking supply is needed. While the need for housing was undebatable, parking was still an element of this project that needed to be solved. Additionally, the loss of parking revenue was another aspect of this project that warrants further consideration.

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Our planning departments are not set up to approve retrofits... Building code and rules all are set up for application to new builds, so trying to take an existing building and run it through those same rules and make it useable is a nightmare. The process was just not designed for adaptive reuse. It's probably possible, but what's the reason behind trying to adapt the existing building and can those reasons be dealt with in another way??

- Andrea Reimer, Former Vancouver City Councillor

Any parking garage in the Vancouver area that is old enough to be a candidate for demolition or re-use has a high likelihood of not being seismically sound. It costs a lot of money to make such structures seismically safe.

- Jay Wollenberg, Wollenberg Munro Consulting Inc.

The slope and ceiling height is really what you will be dealing with for this site. Those [two things together] will limit what you can do.

- Michael Ramsey, Bokeh Development

BIAs and small businesses often worry about the impact that reduced parking may have on them. There is still a gut reaction that businesses need that parking, and can't imagine surviving without it. So you can expect some pushback. I think generally, the political landscape is shifting towards understanding that we need to reduce parking over time, that change is important but it won't be easy.

- Christine Boyle, Vancouver City Councillor

We can anticipate lingering impacts of COVID including more people driving themselves in lieu of transit, but smaller-scale parking is the future. I don't see the city/society investing in underground car storage given the cost and impact on housing affordability. We're never going to improve affordability, or motivate transit usage, if we keep building underground parking.

- Scot Hein, Former Senior Urban Designer at the City of Vancouver

There is a slow shift in our thinking about parking demand. We are questioning whether we are overbuilding parking and how to future proof our buildings when the demand decreases. So, there is a shift, but the shift is not fast enough.

- Leslie Shieh, Co-founder of Take Root

In older parts of the city, there is a stock of older buildings that were built at a time where people didn't include structured parking. So sometimes these parking facilities are needed to support other uses in the vicinity. I accept that generally speaking parking demand is getting lower. That might be true on a macro-scale, but [for this feasibility study] you need to answer that on a micro-scale - is it really true we don't need this parking supply in this area?

- Jay Wollenberg, Wollenberg Munro Consulting Inc.

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INTERVIEW ANALYSIS

Future Vision for the Site

Arguments for Interim Use

It was clear, from both the desktop review as well as the interviews that a permanent retrofit, as seen in the Wichita case study, would almost certainly not be applicable or feasible for this site due to its sloping floors and low ceiling height. The interviews then evolved to the possibility of more immediate interim uses. In the first half of the interviews, several key informants brought up the potential application of prefab or modular housing units as an option. This question was then asked to other key informants to gauge their general thoughts and support.

The urgency of the housing crisis, the ability to build-up to the sloping floors, the desire for any improvement from current conditions, and the opportunity to better use the space until the building reached end of life were the main factors behind the arguments for an interim use. Prefab or modular housing units also provided the flexibility to relocate to another vacant or underutilized site once this site was ready to be demolished. Additionally, there was a possibility to convert floor by floor, starting from the upper floors, allowing for the site to retain some of its parking. Although with this scenario, there was also an acknowledgement that a mixed-used interim solution would likely present challenges of its own. Given the limited information available to the key informants, lacking specific measurements of the footprint, age of the building, and structural safety, some interviewees voiced their support for exploring an interim use. For most, there was hesitancy around an interim solution, voicing the need for a further cost-analysis. A few key informants were adamantly against an interim solution, citing the importance of maximizing the density of this site and providing quality, purpose-built units.

Finally, it was unclear whether the structural load would be able to handle prefabricated modular units. The issue of seismic safety also remained a concern for this option. There were many questions left to be answered to determine whether an interim solution would be possible: *How much would it cost? How many units could we get as compared to a more permanent solution? How quickly could we implement this interim solution? Is this an effective use of our limited funds?*

Arguments for Demolition

The majority of those interviewed were in support of a demolition and new build scenario. Those on this side of the argument were more concrete and firmly planted in their opinions. The main factors in favor of demolition were the ability to build purpose-built housing designed for the target group in mind and getting the highest and best use from this site. While the urgency for the need for housing was echoed by this group, the quality and density of the housing that could provide in a new build scenario was equally as important. The limited amount of funds dedicated to building and providing affordable housing meant that money towards any interim solution would take away from a long-term solution. There was concern from the key informants that any interim solution would only delay a more desirable and comfortable outcome.

Many key informants speculated that the cost and effort required for an interim solution would face many of the same challenges that apply to a permanent retrofit - such as loss of parking, load, and seismic safety. On the other hand, a new build could also include underground parking to alleviate the loss of parking and better incorporate integrated services. Ultimately, proponents of a demolition believed that while interim housing solutions are necessary for fighting the housing crisis and homelessness, this city-owned site has unrealized potential to provide permanent high-quality affordable housing for decades to come.

In being cautious of “building something twice”, those on this side of the argument would need a compelling reason to support an interim use.

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We are in a housing crisis and people need housing now. There are a lot of other projects that are going to take time and I'd like to see something that can be more immediate... If this is something that could be converted quite quickly, there is an opportunity to get something now while other on sites where there's no possibility to retrofit, we could start building purpose-built housing and get as much as possible. I don't think it should be either or - we have to be doing both and as quickly as we can.

- Lisa Rupert, VP Housing Services, YWCA Metro Vancouver

Ultimately, I think they will all be demolished. But until then, as underutilized structures, I think they have the potential for conversion into transitional forms of housing as an interim solution. I think parking garages are interesting as a superstructure for plug and live using prefab or modular units. If you could pre-load a series of shelter-like pods into a typical parkade floorplate you could create immediate shelter from the elements. Parking garage conversions have immediate potential to provide critical and timely shelter as interim, temporary uses for what are heavy, awkward structures.

- Scot Hein, Former Senior Urban Designer at the City of Vancouver

There is no question in my mind that the cheapest option would be to tear it down and start from scratch. It may not be the fastest option though and [that being said] an interim solution would still be way preferable to Strathcona Park - less exposure to the elements, more privacy

- Andrea Reimer, Former Vancouver City Councillor

The only reason for keeping the existing parking structure is either it's an extraordinary heritage resource or that you will save a lot of money by retrofitting instead of replacing. When you're making a conversion from non-residential to residential, I think you'll find there are very few instances where you would decide that the smart thing to do is to keep the existing structure and turn it into housing rather than to say let's get rid of this and build something that is residential by design and higher density.

- Jay Wollenberg, Wollenberg Munro Consulting Inc.

We keep going to the bottom of the pile. We don't have enough money for housing, so we instead build modular housing or interim solutions. but this isn't the solution. We need to knock it down and build purpose-built housing with supportive services.

- Alice Kendall, Executive Director of Downtown Eastside Women's Centre

The best use of the limited money we have for affordable housing is to do it right the first time. There are mental health impacts on people when you move them in and out like with temporary housing.

- Janice Abbott, CEO of Atira

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RECOMMENDATIONS

While there are still many unanswered questions, it is only a matter of time that the parking-only use of this site will be phased out. There are many societal needs, including but not limited to housing, that City-owned sites face pressure to fulfill. Given that tiny homes are not yet allowed in the City of Vancouver, and any modular interim use is unlikely to be feasible given the lack of seismic upgrades and limited load capacity of the existing structure, this research supports the future demolition and redevelopment of this site. The following four recommendations were developed to support the prioritization of this site for redevelopment into affordable housing:



Build a Case

Why this site? The city has stated in various articles that there are other sites that are currently being prioritized for housing - such as vacant lots, those that do not require demolition, or those that do not require replacement parking. As this structure has not currently reached the end of life, it is important to highlight and weigh the aspects that do make this site an attractive candidate for redevelopment. Building more housing in the DTES would displace fewer people and allow the community to stay close to the existing network of supports and services. It also means that the proposal is not as likely to face neighbourhood pushback, as other sites across the City of Vancouver would for supportive housing developments, which can result in a significant delay in projects costing money and resources. Additionally, as stated by one of the key informants, this site may be one of the cheapest city-owned sites to build housing on due to the limited uses of the zoning. Building a clear rationale for prioritizing this site for redevelopment, particularly in comparison to other options (eg. acquisitions of hotels, other sites) will be a critical step forward in convincing the City of Vancouver to consider this site.



Replace the Parking

In order to address staff and community concerns regarding the loss of parking, any proposal to redevelop this site would require an interim agreement to provide replacement parking for the stalls that are required by the site's legal agreements with adjacent sites. There are several other public parking assets in the vicinity of this site that are likely also underutilized that could have the capacity to fulfill these agreements while a new build is constructed. Finding a concrete solution to address these legal parking agreements will go a long way in building a case for the redevelopment of this site. The new build could provide the required minimum amount of parking needed underground, informed by both the legal agreements and historical utilization data. Housing should be prioritized over parking and replacement parking should not be 1:1 of all 376 stalls. With that in mind, it is not a zero-sum game, and the necessary parking can be accommodated.



Advocate

As with any project, advocacy and community support can drive action. While the need for housing is felt and understood by the community, the topic of parking can still be quite controversial. Several key informants mentioned the need to focus on the positive narrative about providing housing for underserved and vulnerable women. An anti-parking narrative or an approach that frames it as a parking issue is unlikely to gain support from stakeholders. Instead, it is important to amplify the housing challenges felt by the women families involved and humanize the housing crisis.



Collaborate

Collaborating with the relevant organizations and stakeholders, in this case, the Salvation Army and Downtown Eastside Women's Center, will be crucial. Additionally, it is important to identify groups that would have concerns regarding the redevelopment. It would be prudent to engage with the Hastings Crossing BIA to determine how the redevelopment could address potential concerns and what it would take to bring them on board. Finally, securing funding for the capital and operating costs is an obvious and crucial part of the feasibility puzzle. In acknowledging that the City is faced with many competing priorities and services to provide, there is a need to establish partnerships between different levels of government and organizations that could contribute funding to the project.

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The DTES, and that particular area, is the most protected from market residential upzoning and other uses that would drive up land value. The point of making it so hard was to preserve land for exactly this type of use. It would be hard to find other pieces of residential land in Vancouver that would be cheaper.

- Andrea Reimer, Former City Councillor

Building housing where people are connected to their community is important. What we really need in the DTES is family housing, where kids are close to the school that they are currently attending, where they are connected to their friends, family, and social support that they have had.

- Janice Abbott, CEO of Atira

Community advocacy goes a long way with this council - so the more voices that show up to say that we want this in our neighbourhood the better. Speaking to the need for housing for women is a powerful message, because it is a powerful and important need.

- Christine Boyle, Vancouver City Councillor

We really need to speak to the families involved and reach out to those directly affected and put faces to these stories. We're fighting for them, but their own voices are not heard.

- Carolyn Johnston, Women's Health and Safety Liaison, Atira

Perhaps a design competition that could generate not just the technical know-how but the dialogue that needs to happen between sectors and between disciplines. Because there will always be people who love their cars and parking, it's also important not to frame this inquiry as anti-parking. That approach might not be productive. So instead, frame it not as a parking issue but as a design challenge of adapting to an existing use that is underutilized.

- Leslie Shieh, Co-founder of Take Root

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APPENDIX A - INTERVIEW GUIDE FOR KEY INFORMANTS

Jimin Park
Masters of Community and
Regional Planning (2021)
UBC Sustainability Scholar

FEASIBILITY STUDY ON THE CONVERSION OF PARKING GARAGES INTO AFFORDABLE HOUSING

In partnership with Atira Women's
Resource Society

The study has three main components: 1) **literature review** of innovative housing solutions repurposing existing infrastructure; 2) **case studies** of parking garage conversions; and 3) **interviews** with key informants and a **focus group** with women affected by housing shortages. The lessons and recommendations synthesized from this project will help determine the concrete possibilities of developing housing from converted parking garages as a model.

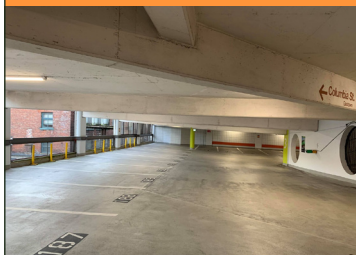
In a city like Vancouver that faces significant challenges in housing and homelessness, replacing parking garages with housing could be a viable way to support the City's sustainability goals while simultaneously addressing the affordable housing shortage.



107 EAST CORDOVA ST

The site is **City-owned** and is listed as part of the City's Property Endowment Fund. The 376-stall parking garage is currently under an on-going lease with EasyPark (Parking Corporation of Vancouver). While the terms of the lease and estimated parking revenue are currently unknown, site visits and parking occupancy counts over the past several years have indicated a low occupancy rate. The sloping floors and low ceiling height present structural and design challenges for a retrofit conversion.

Can these underutilized parking garages better serve the City's needs and priorities?



SOCIAL HOUSING IS URGENTLY NEEDED

Limited senior government funding for new affordable housing supply has impacted Metro Vancouver's ability to meet estimated housing demand for very low-income households. Poor building and room conditions in many SRO buildings are compromising SRO tenants' liveability and health. The DTES Local Area Plan, adopted by Council in 2014, set a target to replace 5,000 SRO units with self-contained social housing over 30 years. Cities around the world have sought creative and inventive solutions to repurposing existing infrastructure into spaces that could fulfill housing targets.

PARKING VACANCY EXPECTED TO ACCELERATE

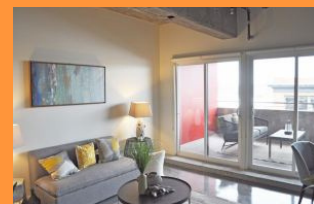
The recently adopted and seminal Climate Emergency Action Plan's Big Move 2 outlines six specific actions to support achieving two-thirds of all trips in Vancouver made on foot, bike, or transit by 2030. These actions, including the promotion of remote and flexible work options, expansion and improvement of the active transportation network, as well as the potential implementation of a congestion charge in the Metro Core will influence future travel patterns and decrease motor vehicles in Downtown Vancouver. Research on residential parking demand has shown that there is already an underutilization of Metro Vancouver's parking supply as is. Three major factors consistently correlated to a decrease in parking demand at a city-scale: 1) more renters than owners; 2) units in close proximity to TransLink's Frequent Transit Network; 3) high participation in carshare programs - all of which apply to the Downtown Eastside.

CASE STUDIES

Cities and companies around the world have sought creative and inventive solutions for repurposing parking garages into spaces that could fulfill other urgent needs.

In Chicago, Los Angeles, and Evanston underutilized parking garages were retrofitted to serve other more pressing needs specific to their context - a logistics center, commercial kitchen, and innovation center respectively.

In Wichita, a 500-car multi-level parking garage sat vacant and neglected until Bokeh Development acquired the building in 2016. The open-air parking structure was transformed into an R-2 residential occupancy building with 44 one-bedroom apartments.



APPENDIX B - INTERVIEW QUESTIONS

Interview Questions:

1. In your opinion, what are the key challenges facing very low and low-income residents of the Downtown Eastside today?
2. If this project takes place, what kinds of units do you think should be prioritized? What kinds of units are missing from the current housing stock in the Downtown Eastside? Who should be prioritized in occupying these units?
3. Besides parking garages and lots, what are some other alternative viable options of existing infrastructure that could be retrofitted for housing?
4. What kinds of challenges do you anticipate in converting the EasyPark Lot 4 location into affordable housing?
5. What are some factors or recommendations that you believe could increase the viability or support for this type of project?
6. City council has just passed the Climate Action Emergency Plan, which includes the implementation of a city-wide permit parking program on all residential streets as well as a future implementation of a congestion charge in the Metro Core among other actions. How do you think these policies will change parking demand trends in Vancouver's downtown area?
7. Given the current existing structure and condition of the EasyPark Lot 4 location, do you believe this conversion would be a candidate for a retrofit or demolition?

Prompts:

The DTES Local Area Plan set a target to replace 5,000 SRO units with self-contained social housing over 30 years. What role do SROs play in the housing stock currently? What are some of their successes/limitations?

For example, hotel conversions (context of COVID-19). What are some of the limitations and challenges of hotel conversions? Commercial office space?

Political, financial, structural?

How do you see the role of parking changing in future? Should parking be a top priority for the City?

How do you feel about an interim solution - perhaps using pre-fabrication or modular housing?

**Questions 6 and 7 were only asked to those in the industry expert category*

