

Complexity & Community

*Designing Social Intricacy
in Urban Neighborhoods*

by
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“They always say time changes things, but you actually have to change them yourself.”

– Andy Warhol, The Philosophy of Andy Warhol.

Author's Declaration

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including all final revisions, as accepted by my examiners.

I understand that my thesis may be made electronically available to the public.

Abstract

Over the last few decades, urban growth in Canada has shifted from continuous expansion of the urban periphery to the more complex layering of the urban centre. This change gives rise to a need to reassess our understanding of models of urban growth and to recalibrate them to suit the inherent value of urban neighborhoods.

The most significant chasm between “growing out” and “growing in” is the ability to manage the complexity and intricacy that exists both spatially and socially in urban neighborhoods. An inward-focused growth requires a sensitive understanding of place, typology, and socio-cultural ecology that contemporary development models not only fail to address, but are often willfully ignorant of, and therefore liable to destroy.

In thriving cities, the complexity and heterogeneity of the urban environment are unique and irreplaceable assets. These qualities are arguably one of the most essential aspects of the contemporary sustainable city, generating a rich urban fabric by maximizing points of contact, exchange and interface.¹ And yet, in contemporary mid-sized cities we tend to approach urban complexity with hesitation and suspicion because of its seemingly inherent messiness and refusal to become orderly.

This thesis is premised on theories put forward by Canadian Architect George Baird, who has written that we need to pay the same attention to the preservation and reuse of existing urban fabric as we do to the efficient use of energy.² This necessitates a more nuanced approach to complexity, which in turn promotes a reconciliation of good design and social commitment. Originally posited as an idea about returning to a historicist city, this thesis advocates for their reconsideration as a return to complexity, rather than tradition.

Set in Mary Allen Neighborhood in Waterloo, Ontario, this thesis leverages the richness of complexity within an urban environment to explore a model of growth based on inclusion rather than the superficial unity of exclusion.³ The proposed design embraces the specific over the abstract, acknowledging and valuing the vital role played by social engagement and architectural intimacy in city making.

¹ *Salat, 2010. (160-67)*

² *Baird, 1978. (13)*

³ *Venturi, 1966. (16)*

Acknowledgments

To Ryszard Sliwka, Andrew Levitt, and Rick Haldenby.

To Graham Whiting.

To Mom & Dad Aiken, and Theresa.

To Mom & Dad Wright, Peter, Andrew, Jonathan, and David.

To Charity Livingston.

To Daniel, my rock.

Thank you.

Dedication

To the little one
whose arrival into this world
I am racing as I type.

May your courage know no bounds.

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foreword





Introduction

This thesis is a study of bettering the neighbourhood I live in.

The site is one that I see and interact with daily. It is where I take my evening stroll, nodding at familiar faces on the street, and where I tend to my own little slice of the universe. It's where I brush my teeth, pick up litter, and grow tomatoes; and where I sneak off to swing-sets in the middle of the night to stare at the stars.

There were times when I questioned if this level of familiarity and intimacy would be problematic, but my work continued to reveal to me that it was, in fact, essential. It can sometimes be said that designers don't like knowing *too much* about a place, since it can complicate rational matters with irrational ones, blurring universal truisms with personal baggage. We prefer to work in abstractions and absolutes. This thesis was a challenge in letting design get messy and personal, learning when logic and efficiency don't apply, and when they do.

This thesis has three goals: to examine the socio-economic conditions that have made the growth of urban neighborhoods imperative; to reveal when and why certain methods of development are inappropriate and detrimental for these sites; and finally, to propose an alternative approach for incremental development that leverages and multiplies the latent strengths and intricacies of urban communities.

In the course of proposing this research, I was surprised by the amount of resistance I encountered to the notion of new and unfamiliar models of urban renewal and development. I'm sure this is in part due to a risk-averse mentality towards any change, but I wonder if it reflects a bias towards attaching ourselves to what we already have. I hope, through this thesis, to open a dialogue and a curiosity towards what could be possible if we loosened our constraints and learned to be more comfortable with an open-ended plan.

This thesis attempts to recognize and reveal that even as architecture and its possibilities get bigger and bigger, the scale of the human is the same as it has always been, and that design needs to reflect that.



Approach

This study examines the convergence of two simple ideas that stem from the current condition of mid-sized cities in Canada:

1

Urban communities in Southern Ontario are pressurized in multiple ways for rapid growth, largely due to their inherent and self-generating complexity and collateral value to cities and citizens. Provincial pressure to build into existing infrastructure, combined with a socio-cultural expectation of physical and economic mobility has redirected the gravity of development inwards.

2

Modern planning practice kills complexity; often, intentionally. If we apply these practices to urban communities, we will kill the complexity that makes them valuable and beneficial. The desire for methodical planning criteria and analysis has been reductive in its consequences, and poses a significant risk to the assets latent in urban communities.

It is from these two ideas that a strategy for incremental development emerges — one that works with the nature of urban residential fabric and not against it, and one that leverages its latent characteristics rather than destroying them.

This work is structured into three parts, each with components that are necessary for incremental development at an urban scale.

- | | |
|-------------------|---|
| <i>Know...</i> | your city
your people
your fabric |
| <i>Find...</i> | patterns
players
opportunities for connection |
| <i>Implement.</i> | the next best step.
create a feedback loop. |



theme

Cities & Society

“The great events of world history are, at bottom, profoundly unimportant; ... the essential thing is the life of the individual. This alone makes history, here alone do great transformations take place. ... In our most private and most subjective lives we are not only the passive witnesses of our age, and its sufferers. We make our own epoch.”

— Carl Gustav Jung¹

Cities, ultimately, are human. They are fascinating and unique organisms in that they are comprised of a collection of individuals, and as a result, become an entity in their own right having both inner and outer workings — body and soul. They are both a projection of the collective society, and a testing ground for the development of each individual that comprises it. In this regard, cities can be compared to living organisms which acquire certain distinctive characteristics early in their development and thereafter retain their personality structure while growing and aging.²

People are complex and multi-faceted, and thus the communities they form, and the environments they create are naturally complex as a result. Cities are a manifestation of our human nature and an extension of our own inner workings individually and collectively.

Just like the humans that inhabit and comprise them, cities transform. They change. Some changes happen slowly, some all at once; some consciously, some unconsciously; in some ways proactive, and others reactive. Some changes are enthusiastically embraced, and others, resisted and denied.

Just like humans, cities that thrive have learned how to manage change well.

¹ Jung, CG. *Collected Works, Vol. 10* (paragraph 315) New Jersey: Princeton University Press, 1970.

² Dubois, Rene. *The Spirit of a Place. Parabola: The City*, Winter 1993.

theme

Complexity & Community

Cities, and the communities that comprise them, are like ecosystems or habitats. They are complex systems of organisms and their environment, functioning as an ecological unit. To use Nobel laureate Herbert A. Simon's definition of complex systems, they are "a large number of simple parts that interact in a non-simple way".³

As with ecosystems, every part of a community's ecology is important and must be valued. As we know from nature, it is sometimes the pests that we view with disdain that actually hold the delicate balance of other systems in their grip.

This level of complexity can be overwhelming, and it is not unnatural for us to want to disregard it in the hope that it will work itself out in the end. However, as the growth of our cities becomes more inwardly focused, our ability to manage this complex ecology becomes paramount to our communities' success and resilience.

To face this complexity with confidence, we must understand how the built fabric and the community interact; uniting our conception of spatial complexity with social intricacy, and embracing a particular obligation towards the totality of these systems, or the whole.

In general, contemporary architects have become preoccupied with buildings as isolated objects and lack interest or involvement in the city as a totality.⁴ Orthodox Modern architects have tended to recognize complexity insufficiently or inconsistently. In their attempt to break with tradition and start all over again, they have idealized the primitive and elementary at the expense of the diverse and the sophisticated.⁵ This has led to a tendency towards abstraction and over-rationalization in our conceptions of urban space, and a paralysis in our capacity to embrace contradiction and mess in the process of initiating change or steering growth.

Architect and urban theorist Robert Venturi points to an opportunity latent in the complex urban condition when he

³ Venturi, Robert. *Complexity and Contradiction in Architecture*. New York: Museum of Modern Art, 1966. (88)

⁴ Baird, George, and Barton Myers. *Vacant Lottery*. Minneapolis: Walker Art Center, 1978. (7)

⁵ Venturi, 1966. (16)

states: “In an inclusive rather than an exclusive kind of architecture there is room for the fragment, for contradiction, for improvisation, and for the tensions these produce.”⁶

This tension is what allows architecture and urban space to evoke many levels of meaning and combinations of focus, becoming readable and workable in several ways at once. As Venturi articulates, a valid order accommodates the circumstantial contradictions of a complex reality. By accommodating as well as imposing, “it thereby admits ‘control and spontaneity,’ ‘correctness and ease’ — improvisation within the whole.”⁷

The difficulty of achieving an inclusive whole within a complex ecology is that it must include multiplicity and diversity in relationships. It must embrace, rather than erase inconsistencies.

Architect and urban theorist Aldo Rossi speaks to this in parallel to the multiplicity inherent in human nature:

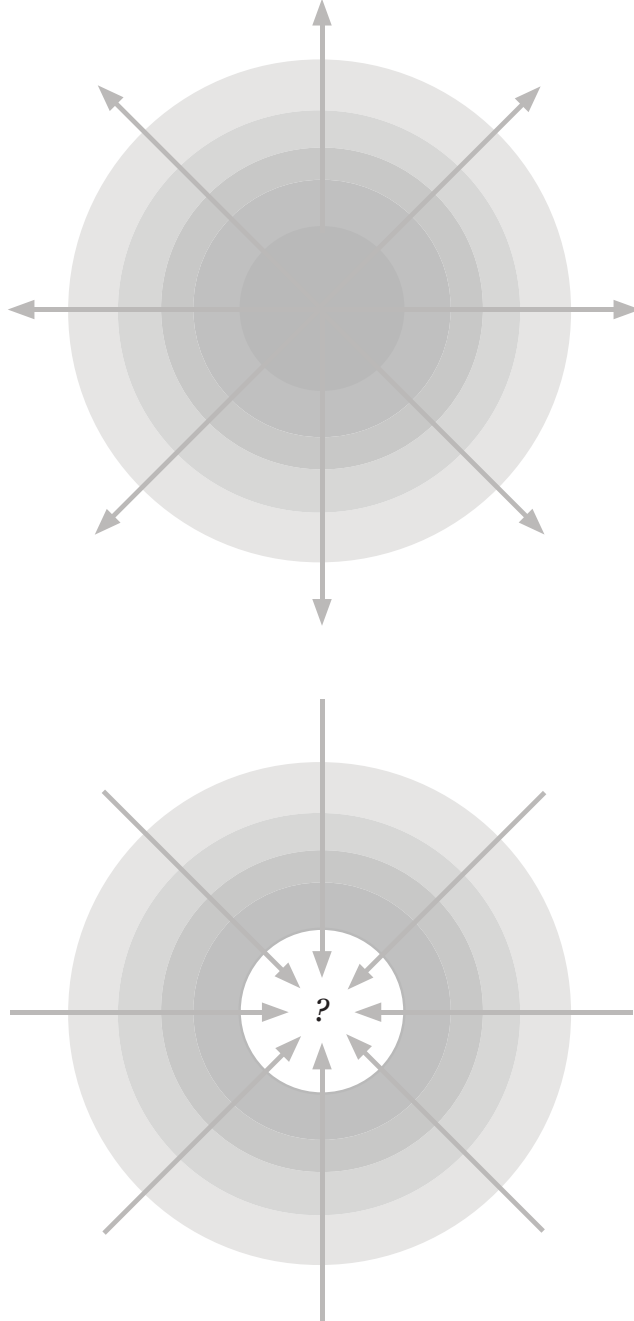
“Thus the complex structure of the city emerges from a discourse whose terms of reference are still somewhat fragmentary. Perhaps the laws of the city are exactly like those that regulate the light and destiny of individual men. Every biography has its own interest, even though it is circumscribed by birth and death. Certainly the architecture of the city, the human thing par excellence, is the physical sign of this biography, beyond the meanings and the feelings with which we recognize it.”⁸

It is due to this dynamic that the sum total of economic factors will continue to fail to explain fully the structure and behaviors of urban artifacts. Our cities are both fixed and fluid; object and human; habit and habitat.

6 Venturi, 1966. (17)

7 Venturi, 1966. (41)

8 Rossi, Aldo. *The Architecture of the City*. Cambridge, MA: MIT Press, 1982. (163)



8 *Fig. 005 — Diagram: Historic growth models (upper)
v. “smart growth” (lower)*

theme

“Smart Growth”

The term “smart growth” has cropped up over the last decade in a similar way to how “green” became popular in the 1990s — it acknowledges a paradigm shift and new socio-cultural priorities, and yet remains somewhat meaningless due to its combined overuse and varied interpretation. In the context of this work, the ambiguity of the term helps illustrate the fact that densification, growth, and intensification mean something different everywhere.

What we know for sure is that our definition of growth has changed significantly in the last fifty years. The paradigm has shifted from an outward expansion to an inward intensification. Our growth mindset has been changed from a bloating to a thickening; from a balloon to a watershed.

The important step that we all must take from here is determining what smart growth means for our specific city or circumstance. Each place must come to terms with what this concept means for them based on their existing urban fabric, typology and socio-economic condition. The answers should vary as widely, as each place is unique and, as in nature, what thrives in one ecosystem may die in another.

In any city or circumstance, the paradigm of smart growth begins to acknowledge that growth should not be exclusively focused on population density or real estate values. It relies on a more particular reading of typology and place, and demands a higher degree of nuance to our modes of intervention and measures of success.

This thesis explores what smart growth could mean for one particular city — Waterloo, Ontario, in the context of its layered history, unprecedented growth, and its ingrained cultural ambition to never back down from an opportunity to innovate.



theme

Mid-Sized Cities

— an overlooked majority

Mid-sized cities often exist out of the spotlight of architectural discourse. They are neither big enough nor small enough to be worth investigation; neither metropolitan nor remote. They do not offer the scintillating extremes of overpopulation or isolation that make huge cities and small tribes equally compelling, nor do they have the weight economically, politically or socially, to sway our attention and resources as a national or global populace.

And yet, mid-sized cities across Canada carry half of our national population. Their collective population is three times greater than that of our short list of metropolises⁹, and twice the rural population.

These places represent an overlooked majority, where the spatial and functional principles we've established for their big and little counterparts don't apply. Often cumulative, growing from earlier, smaller settlements, mid-sized cities have outgrown their intrinsic modes of operating, without the awareness to consider a new approach. They're prone to cling to "the way we've always done it" without recognizing or embracing that their entire makeup has transformed beneath their nose.

Borrowing haphazardly from metropolitan aspirations and rural bootstrapping to pave their own way, mid-sized cities are excellent examples, for better or worse, of what undesigned transformation can look like in a modern context.

This work focuses on one particular mid-sized city — Waterloo, Ontario, Canada — as a foray into better managing the growth and transformation of mid-sized cities nation-wide.

9 Metropolitan cities in Canada include Toronto, Montreal, Vancouver, Ottawa, Calgary & Edmonton according to Statistics Canada.

Polemical Summary

This work calls the works and attitudes of urban theorists from the 60s — 80s back into question for reconsideration within a new framework. Aldo Rossi, Leon Krier, Oswald Mathias Ungers, Colin Rowe, Jane Jacobs and George Baird all addressed a time in history when the shift towards modernist planning posed a threat to the the historical city, and each called for, in their own way, a return to traditionalism.

This thesis revisits their work through the lens of the contemporary sustainable city and the need for complexity and intricacy within it. Assessing the value of complexity outside of the context of a nostalgic historicism allows us to more readily consider the useful application of these ideas as tools for development, offering new, resilient growth models to mid-sized cities in Canada.

By disentangling the mechanisms and behaviors of the traditional city from their historical context, we can see that many apply as much today as they did then. The manifestations of these systems look and feel different than our historic references, but their rootedness in the complexity of human nature remains unchanged, thus inciting their exploration.

A Note on Tone

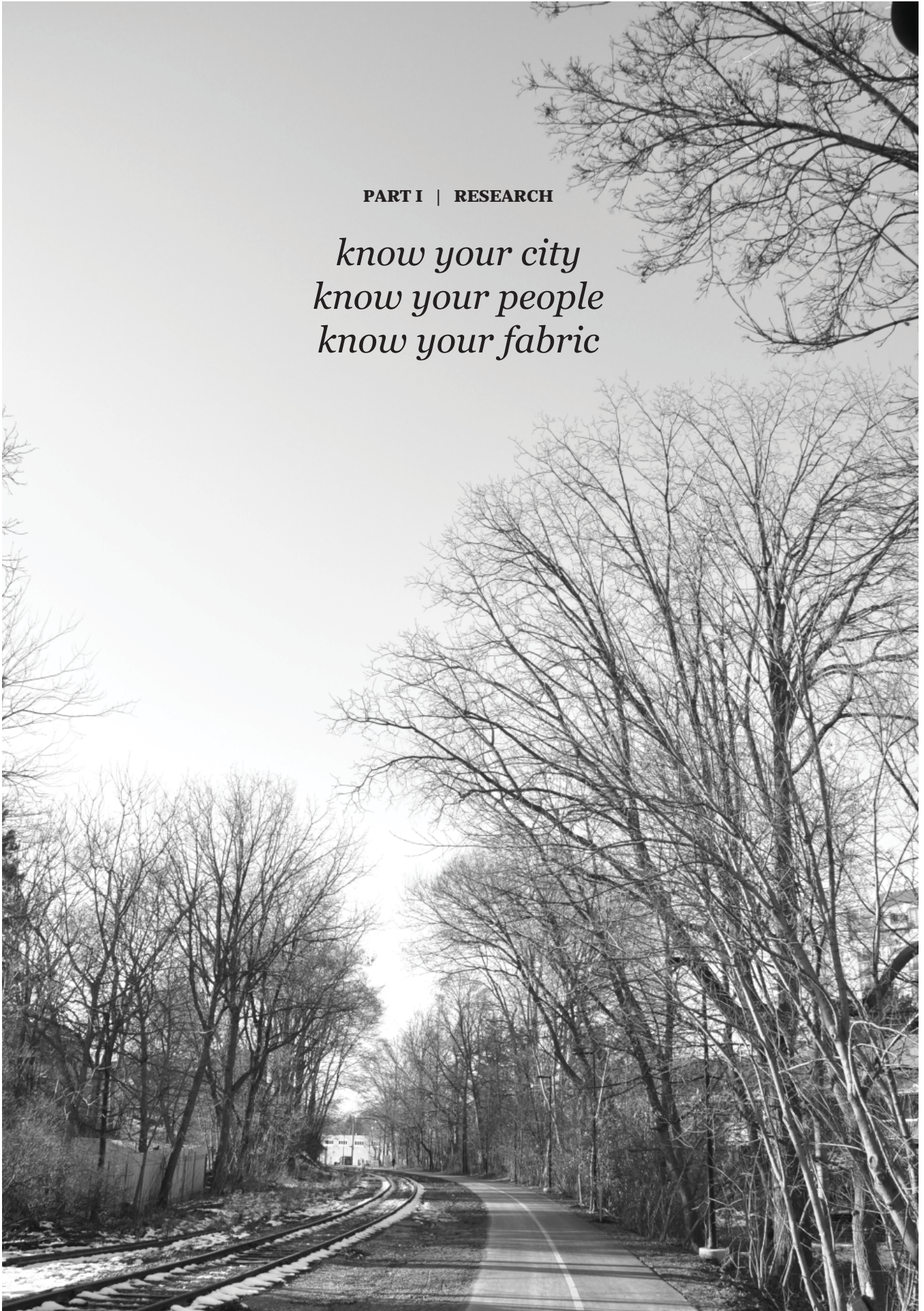
In my research I found that a surprising number of urban theorists employ a posture not typically found in academic writing — sass.

Most notably, I found that the writings of Jane Jacobs and Leon Krier included a refreshingly pithy bluntness that allowed for a more direct engagement with the material and its intent. The tone was surprising and delightful, animating the authors' frustration with existing conditions, and expressing an uncensored exasperation with the way things are.

I have attempted in a small way to incorporate this attitude of expression into my work where it felt like an appropriate or useful tool. It is not in a spirit of disrespect, but rather a pursuit of clarity and engagement. This tone is an intentional resistance to the notion that powerful ideas and observations need to be constrained to fit a formality of academic language that ultimately limit their audience.

PART I | RESEARCH

*know your city
know your people
know your fabric*





Know Your City

Architects, planners and urban designers have been trained to work in abstraction. In design professions, it is considered helpful, and often critical to be impartial to your site in order to make objective decisions. When a professional studies their site, they do it logically, rationally and quantifiably, because it is against these measurables that their success or failure will be gauged.

This dynamic is especially true in mid-sized cities where these design services are most often outsourced to teams of professionals from larger cities who have more experience and more resources than our local troupes. Facts are gathered, one or two public forums are held for community feedback, and a design is put forth and executed at whatever rate it is funded.

The difficulty is that a city is more than its statistics will ever convey, and a community is more complex than its census data and a token public forum will ever demonstrate. As Jane Jacobs articulates in *The Death and Life of Great American Cities*:

*“Neighborhood accommodations for fixed, bodiless, statistical people are accommodations for instability. The people in them, as statistics, may stay the same. But the people as in them, as people, do not. Such places are forever waystations.”*¹⁰

We each know our cities in a different way. A young child will know it differently than their parents, and a new neighbor will know it differently than someone “born and raised”. A politician will know it differently than a geologist, who will know it differently than an economist. Each version is equally valid and important to the conversation of growth.

It is for this reason that knowing your city is the seemingly simple, but too-often overlooked first step in any successful development strategy. Knowing your city means working to uncover the various narratives and perspectives that comprise a city’s identity, and never being closed-off to the idea of another perspective of what a place is or could be. Knowing your city in this multi-faceted way equips each of us to advocate well for its evolution and resilient growth.

¹⁰ Jacobs, Jane. *The Death and Life of Great American Cities*. Random House, New York. 1961. (140)



Waterloo, Ontario

My city, and the city examined in this thesis is Waterloo, Ontario, Canada. It is a mid-sized city that is unique in how successful it has become while lacking most of the elements that might historically give rise to a successful city.

Entrepreneurial Outlier

The history of Waterloo reveals the story of an outlier. It is a city that historically has been disadvantaged when it comes to site and situation, but has emerged as successful based on purely human factors of urban growth and development.

Studies of settlements in North America have consistently shown that places established early as ports or at water power sites tended to remain at the top of their local urban hierarchies. It has been suggested that they acquired economic and political influence which helped them to obtain early roads, industry and railroads. Thereafter, historical “inertia” has established such places to thrive, while their neighboring communities struggled to keep up during changing socio-economic conditions.¹¹

For this reason, Waterloo was historically disadvantaged to its neighboring Cities of Galt, Preston, Hespeler and Guelph, since they all had more direct access to both waterways and highways, and as a result had a stronger presence of settlements and economic activity until the mid-20th century.¹²

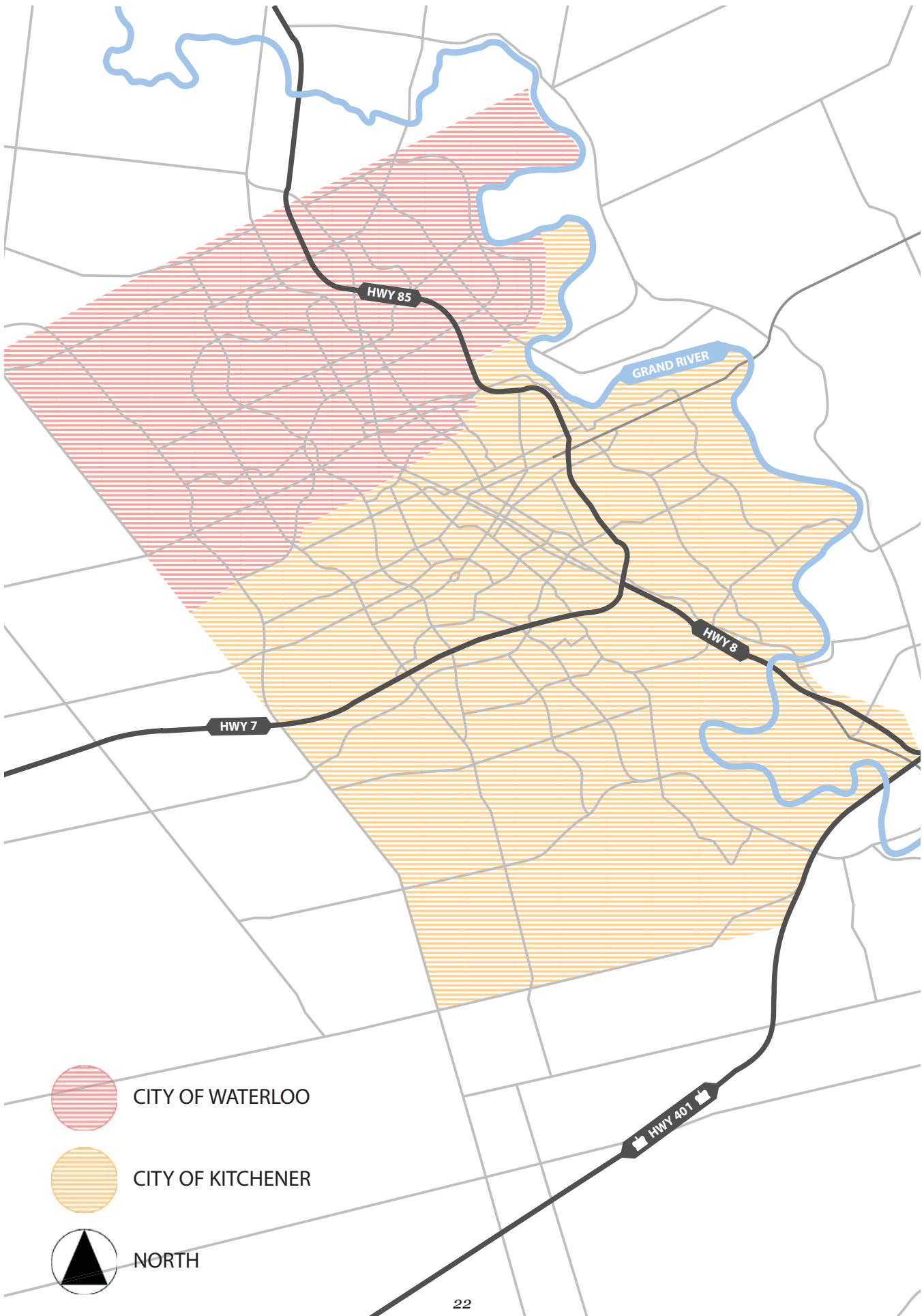
Waterloo is one of the few documented cities where a settlement with an inferior location and physical site outstripped its rivals purely on the efforts of local entrepreneurialism, boosterism and political influence. Waterloo and Berlin (now Kitchener), known historically as “sister cities” worked to acquire the technology and influence to propel it into a preeminent place in the urban hierarchy of Ontario, despite the odds.¹³

A big part of this success has been that Waterloo’s citizens were always willing to look for opportunities and go for it. Despite being local, regional, and global leaders in particular industries through their history, they have never become exclusively “the shoe city” or “the Blackberry city”, but rather they’ve leveraged their success in those particular worlds to build an ecology of successful business, such that when the “big entity” faltered or changed, the ecology that formed around it still remained.

11 Dahms, Fred. “Change and Stability Within an Urban Hierarchy: Waterloo 1864 to 1971.” *Urban History Review* Vol XX, No. 1 (June 1991) (38)

12 Dahms, 1991. (46)

13 Dahms, 1991. (46)



Growth Spurt

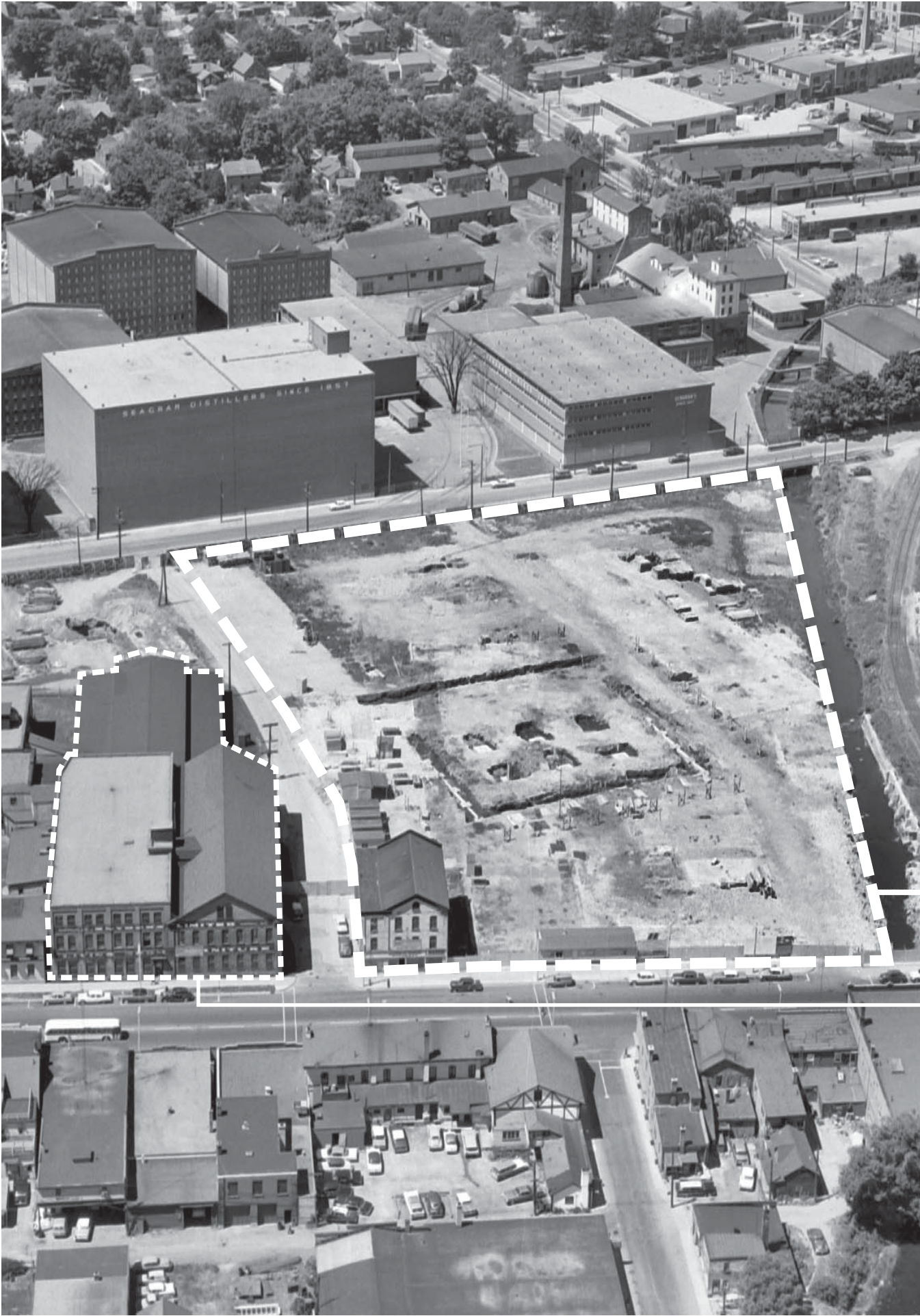
In the last decade the City of Waterloo has undergone a tremendous growth spurt. The city has grown by 20%¹⁴ since 2005 and the pressure for growth continues to escalate. It is anticipated that the city will grow by another 20% by 2029.¹⁵ This growth is divergent from the trends in the rest of the province, where growths of 4% were typical during the same timeline, including in the neighboring metropolis of Toronto.

The reasons for this growth are as multi-faceted as they are inconclusive. It is more helpful to consider this growth from a series of contributing conditions of inertia, rather than “reasons” per se. Among a tangled web of growth-factors, I will highlight the following:

- ① Waterloo has many prestigious academic institutions that continue to draw students and faculty to our region. These institutions are disproportionate to the size of the city both in quantity and in global reputation. Among them are The University of Waterloo, The Perimeter Institute of Theoretical Physics, The Balsillie School of International Affairs, Wilfred Laurier University, and Conestoga College.
- ② Waterloo has a diverse economy that includes many large employers that both draw people to our City, but also maintain a somewhat stable economy in the face of sector-specific recessions. Large sectors have historically included textiles and liquor, but modern strong sectors include financial services, and technology.
- ③ Waterloo has built a reputation as the tech capital of Canada, hosting many of the heavy-hitters of the tech industry, including Google, BlackBerry, Desire2Learn and Christie Digital. Waterloo is also offers the most venture-capital available nationally for start-ups, attracting entrepreneurs from across the country.
- ④ Waterloo is near enough to neighboring cities, that as the speed and ease of public transportation increase, it becomes attractive to people who still need to maintain access to larger metropolises, but want to take advantage of a lower cost of living. The average cost of a detached single family home in Waterloo is 1/3 the cost of the same in Toronto and surrounding regions.

¹⁴ Region of Waterloo, <<http://www.regionofwaterloo.ca/en/doingbusiness/population.asp>> (Accessed Nov. 23, 2016.)

¹⁵ Region of Waterloo, *Planning Information Bulletin*, <http://www.regionofwaterloo.ca/en/doingBusiness/resources/2013_Population_and_Employment_Forecasts.pdf>, (Accessed Nov. 23, 2016).



One of the “successful few”

Everywhere in North America, suburbanization has caused a relative and in many cases, absolute decline of downtown areas, beginning in the early twentieth century.¹⁶ The downtowns of “small-metro” or “mid-sized” cities were particularly wounded as automobile dependence drove centralized populations to the periphery and left urban districts with inadequate critical mass to self-restore for several generations.¹⁷

Waterloo is no stranger to this phenomena, and suffered directly at the hands of 1970s urban theory, which postulated that indoor retail shopping malls, an already well-established suburban shopping formula, were the key to restoring urban centres.¹⁸ Swaths of historic downtown urban fabric were destroyed in this era to make way for such establishments, cutting like a double-edged sword that both failed to compete with its suburban counterpart, and destroyed the fabric that many believe remains valuable in the character and success of a downtown to this day.

When we look at other earmarks of successful downtowns in mid-sized cities across North America, Waterloo has remarkably few inherent strengths. Its historic pre-WWII character has been compromised, its relationship to nearby campuses is indirect and detached, and it lacks natural amenities such as a waterfront or prominent landscape feature.¹⁹

Nevertheless, Waterloo has leveraged human factors of growth—entrepreneurialism, ambition, and strategy—to bounce back from an urban grave. In the last 10 years, Waterloo has sprung a bustling pedestrian core, concentrated employment centre, and growing street-oriented retail scene, making it now one of the few Canadian downtowns studied as a success story.

Waterloo’s successful business centre has given its urban residential neighborhoods a sense of gravity in recent years. The city offers a reason to be there and a reason to stick around, and thus, more and more people have been willing to pay a premium to live within walking distance to these areas.

Historic downtown block demolished for the construction of Uptown Square Mall

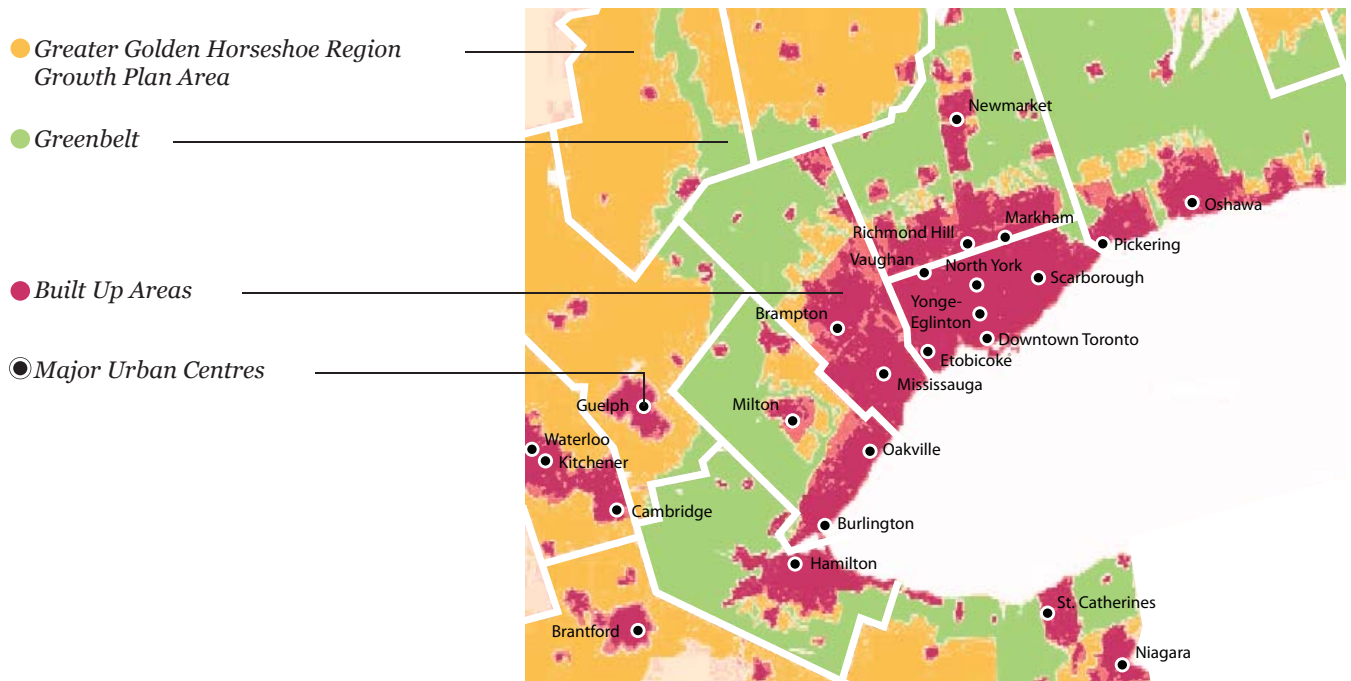
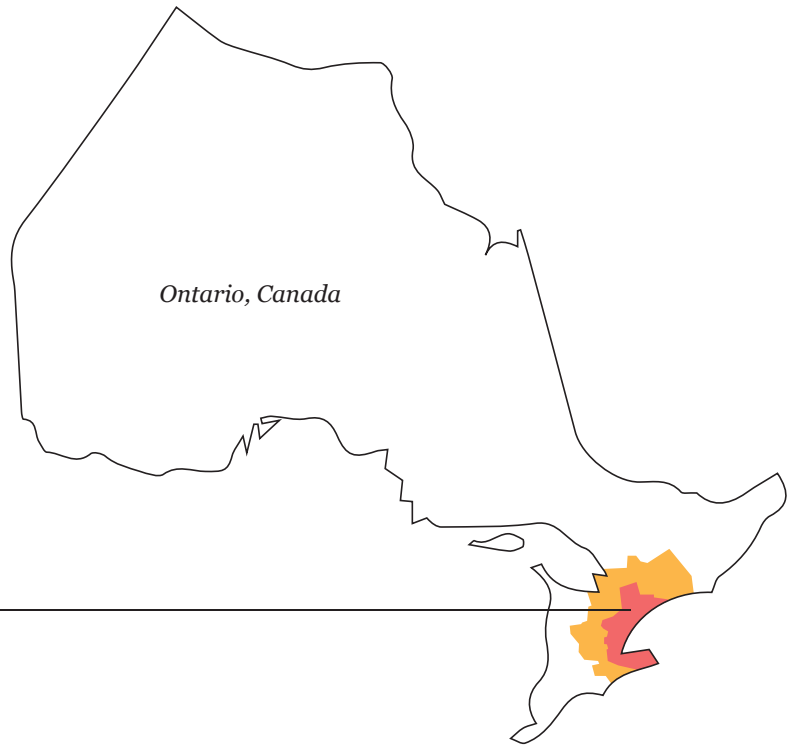
Historic buildings to be later demolished for the construction retail blocks.

16 Fillion, Pierre, et al., “The Successful Few: Healthy Downtowns of Small Metropolitan Regions”, American Planning Association. *Journal of the American Planning Association*; Summer 2004; 70, 3. (328)

17 Fillion, 2004. (330)

18 Fillion, 2004. (329)

19 Fillion, 2004. (332)



Provincial Pressure

A separate facet of pressure for growth in Waterloo comes from provincial legislation. The Places to Grow Act, issued in 2005 by the Province of Ontario has identified Waterloo as part of the “Greater Golden Horseshoe” (GGH), the fastest growing region in North America,²⁰ citing high quality of life and economic opportunities as the primary attractors. The Plan sets out a framework for implementing the Government of Ontario’s vision for building stronger communities by better managing growth from its inception until 2030.

This act specifically sets out intensification goals, calling for “smart growth” in cities within the GGH, including Waterloo and other similar mid-sized cities. Its overarching goal is to manage growth well in order to limit the negative effects of rapid expansion, including traffic congestion, deteriorating air quality, and the squandering of natural resources.²¹

Some of the Act’s primary directives are:

- To direct growth to built-up areas where the capacity already exists, specifically supporting “transit supportive densities” along primary connective non-vehicular infrastructure.
- To reduce automobile dependence through the development of mixed-use, transit-supportive, pedestrian friendly, urban environments.
- To encourage cities to grow as complete communities with a diverse mix of land uses, a range and mix of employment and housing types, high quality open space and easy access to local stores and services.²²

Places to Grow sets out a clear impetus for change, and lays clear goals and clear timelines , but it leaves the specifics up to each Municipality to determine for themselves how they wish to meet these goals. It is up to each of us to determine what this means in our city, and to turn this broad goal into a specific one that responds to an individual community.

²⁰ *Places to Grow: Growth Plan for the Greater Golden Horseshoe. Ontario Ministry of Infrastructure. 2006; Office Consolidation 2012. (6)*

²¹ *Places to Grow, 2012. (6)*

²² *Places to Grow, 2012. (14)*



Purchased for Demolition & Development *Home-based Landscape Business* *Home Office, tele-commute* *Etsy Shop* *Massage Therapy Clinic*



Rental Apartment *Extra Bedroom Expansion* *Home Office, telecommute* *Rental Apartment + Metalwork Studio* *Pottery Studio* *Home Office, telecommute*



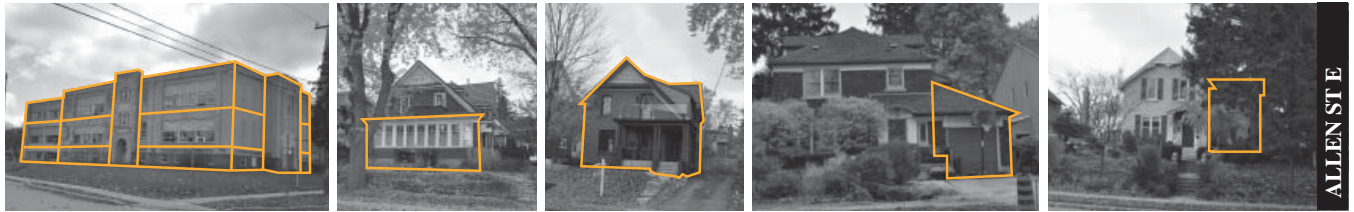
Student Rental *Dentist Office* *Tech start-up* *Jewelry Studio* *Yoga Studio*



House Flipped for Personal Use *Home Office, tele-commute* *Rental Apartment* *Rental Apartment* *House Duplexed for Income*



House 6-plexed for Income *Massage Therapy Clinic* *New Development, Semi'd for Income* *Furniture-Maker Shop + House Flip + Yoga Studio* *Rail Line — Community Trail*



School Converted into Condominiums *Consulting Business* *House Flip for Profit* *Garage Finished as Extra Bedroom* *Rental Apartment*



Artist Studio *Naturopath Clinic* *Duplexed for Income* *Dog-Walker* *Granny Flat Expansion* *Tutor*

Self-Generating Complexity

“... places take on “lived in” qualities (good and bad) that can be quite different from the intent of designers and decision makers... successful places may often be the product of pre-existing patterns of behavior and use; specifically the condition of equity, democracy, and civic participation. Successful places are often accidental”

—Kevin Hanna
Social Capital, A Planning Primer

Indication of Waterloo’s latent pressure for growth and centralization is already palpable in its urban neighborhoods. A quick stroll through the streets of single-family dwellings within a few blocks of the commercial core uncover signs of self-generating transformation already underway.

What at first glance appears as completely typical turn-of-the-century residential fabric, upon further investigation reveals a wide range of programmatic adaptations bubbling beneath the surface — businesses and art studios popping up within single family dwellings; large older homes divided up into smaller dwellings for either income or intergenerational care; lots that have been either severed or assembled to allow for new buildings to be inserted; old neglected homes swept up by eager handypersons; and community spaces being claimed in the most unconventional and informal of ways. There are homes transformed into businesses, and institutions transformed into homes, all while maintaining an overwhelming sense of conventional neighbourliness and vibrancy.

This dynamic of social complexity and programmatic diversity within urban residential fabric is what this thesis posits as symptomatic of imminent change in the way we live in mid-sized cities like Waterloo.

Most importantly, recognizing that these neighborhoods are pregnant with potential allows us to see and appreciate that this is not just a problem of density, but one of social *intricacy*.

I use the word intricacy deliberately because it speaks to a kind of valued complexity that is fine-grain, tangible, and ultimately, human. Whereas complexity can often be interpreted as a hindrance, or a frustration too large to manage, intricacy speaks to a kind of complexity that should be treasured and protected.



Know Your People

“Cities have the capability of providing something for everybody, only because, and only when, they are created by everybody.”

– Jane Jacobs,
The Death and Life of Great American Cities

People are the city

Cities, ultimately, are human. They are made by us, for us, and mirror their creators and builders long after they’re gone. Cities are both a projection of the collective society, and a testing ground for the development of each individual that comprises it. In this regard, cities can be compared to living organisms which acquire certain distinctive characteristics early in their development and thereafter retain their personality structure while growing and aging.²³

Thus, you cannot know a city without knowing its people. A place’s character, its quality and its resilience are inseparable from the human lives that constitute it, both now and historically.

Waterloo Past

In Waterloo, we’ve already identified that the people of the city have much to do with its success, over and above its geographic situation and natural assets (or lack thereof). This city’s narrative is one of human ambition and innovation, one that continues to define the city to this day.

This narrative began in the 1800s when Waterloo region was settled by a combination of Mennonite pioneers from Pennsylvania in the aftermath of the American Revolution, and German-speaking migrants from Europe, fleeing the economic, social, and religious restrictions at the end of the Napoleonic War. These early settlers created an influx of skilled farmers, craftsmen, artisans and tradespeople who brought not only skills and crafts, but a distinctive social attitude to what was then an underdeveloped part of Upper Canada.²⁴

²³ Dubois, Rene. *The Spirit of a Place. Parabola: The City, Winter 1993.*

²⁴ McLaughlin, Kenneth. *Innovation and Entrepreneurship are in the Waterloo Genome. University of Waterloo, Canada. 2015. (16)*

The lack of urban development and the early population's isolation from the dominant Anglo Saxon values of the rest of the province allowed for Waterloo to develop socially on a "blank slate" and benefit fully from the ambitions and new perspectives of these early settlers. This socio-cultural condition fostered a feeling of pride in the independent ways of the community, tolerance for new ideas and entrepreneurship and an impressive roster of business ventures that were innovative in their time. Many notable citizens and their families took pride in combining their business leadership with civic roles, continuing to define the community's identity. These include the Breithaupt family of leather tanners, Joseph Seagram blended whiskey brewer, the Vogelsang family of button-makers, and people like James Hoffman, Noah Ziegler and Isaac Shantz who are responsible for bringing steam boilers and engines to the region in the early 1800s.

It was this spirit of enterprise that laid the foundation for many first-of-their-kind ideas to take shape in Waterloo. The most notable ones in relation to the cities success stem from education. First, citizens of Waterloo were the first to propose co-operative education, where academic terms would be complemented by and interspersed with real-world work placements. This idea was considered radical and doomed to fail by academic contemporaries, but to this day continues to serve the purpose it intended, "To close the gap between academic theory and industrial practice".²⁵

Building on this feat of academic innovation, University of Waterloo was the first university in Canada to give intellectual property rights to students and faculty members. This was huge. It gave students and faculty the leverage and the motivation to take their studies and turn them into real, lucrative, and thriving businesses outside of the University. This was an idea unheard of at the time of its inception, but it started and has maintained a trend toward spin-off companies that began as university research.²⁶

The innovative climate of Waterloo to this day benefits from these critical ideas and innovators in its history.

²⁵ McLaughlin, Kenneth. *Innovation and Entrepreneurship are in the Waterloo Genome. University of Waterloo, Canada. 2015. (56)*

²⁶ McLaughlin. 2015. (144)

Waterloo Present

This entrepreneurial ambition still characterizes the people and city of Waterloo to this day. Known more recently as Canada's "tech capital", Waterloo region has been a huge player in the recent technology renaissance happening across Canada.²⁷ It has even been declared the "World's Smartest City" in 2007 by global Intelligent Community Forum, based in New York, based on how well a given community uses technology to benefit every sector of the community – including academic, governmental, and business sectors.²⁸

In part, this reputation feeds and is fed by the prestigious and innovative institutions that draw people to Waterloo to learn, to teach and to innovate with world-class faculty and resources at their disposal. Institutions like the Perimeter Institute of Theoretical Physics, Balsillie School of International Governance, University of Waterloo and Wilfred Laurier University are gravitational and instrumental in attracting and retaining intelligent minds and innovative thinkers to Waterloo. As a result, Waterloo's communities overflow with professors, physicists, engineers, and professional academics, as well as a huge brood of fresh-faced undergraduate students that flood the streets every September.

Over the last few decades, Waterloo has leveraged its scholarly reputation into a technological one. Starting with the rise of BlackBerry (formerly Research in Motion, or RIM), in the 1990s, Waterloo bootstrapped a reputation as a global leader in wireless technology. The reputation and gravity that this reputation brought to the city was larger and more resilient than the single company that pioneered it, drawing tech giants on a global scale to take interest, invest, and drop roots in Waterloo.

This high-tech notoriety secured a foothold in the business world for Waterloo as a hub for start-ups and entrepreneurship. With both academic and business expertise, Waterloo very quickly became the number one city in Canada for tech start-ups seeking capital investors as well as the mentorship and resources needed for small ventures to grow.

Waterloo's character of innovative vigor is not an abstraction. It is a manifestation of the people who comprise it.

²⁷ Bayne, Chad, et. all, "Canada's Technology Renaissance", 2014 Capital Markets Report.

²⁸ Carlson, Laura. "The World's Smartest City", *The Cord*. May 2007.

Creative Class

In recent years, we've found new ways of identifying, discussing and analyzing the type of unique population that dominates and heavily influences Waterloo's socio-economic condition and culture. This ingenuity and independence is what has come to characterize what Richard Florida defines as the "creative class", a class that Florida argues is the key to growing vibrant, resilient communities.²⁹

Creativity — broadly defined as the ability to transcend traditional ideas, rules, or relationships, and to create meaningful new forms, methods, interpretations³⁰ — is what Florida contends is the primary driving force in the modern-day knowledge economy. Just as agrarian societies valued physical labor, and industrialized societies valued consistency and repetition, modern societies depend on the human mind doing what only the human mind can do — think. Florida explains:

*"Both at work and in other spheres of our lives, we value creativity more highly and cultivate it more intensely than we ever have before."*³¹

Florida's "creative class" is defined in two subgroups. The core includes people in science and engineering, architecture and design, education, arts, music, and entertainment whose economic function is to create new ideas, new technology, and new creative content. Around this core, the creative class also includes a broader group of *creative professionals* in business and finance, law, health care, and related fields. These people engage in complex problem solving that involves a great deal of independent judgment and requires high levels of education or human capital.³²

Thus, creativity has come to be the most highly prized commodity in our economy — and yet it is not a "commodity". Creativity comes from people, and the people in Waterloo have it in spades.

29 Florida, Richard. *The Rise of the Creative Class*. Basic Books. New York 2002.

30 Definition; Creativity. Dictionary.com <<http://dictionary.reference.com/browse/creativity>> (Accessed Nov. 26, 2015).

31 Florida, 2002.

32 Florida, 2002.

Creative Class in Waterloo

The creative class is the norm-setting class of our time, bringing rise to values of individuality, self-expression, and openness to difference in lieu of long-held principles of homogeneity, conformity, and “fitting in” that defined the previous age of large-scale industry and organization.³³

Studies have supported the notion that the creative class assumes a leading role in economic develop, thus incentivizing cities to attract and retain these types of problem-solvers and forward-thinkers. Revealingly, all of the cities selected for a study of thriving and successful downtowns in 2004 were identified as having a high presence of the creative class.³⁴

Due to its socio-economic condition, harnessing a multifaceted reputation in academics, technology and business, Waterloo attracts and retains exactly the type of professionals defining the creative class, especially in the last decade. Over 40% of the employed individuals in Waterloo are in the sectors described, compared to the national average of 30%.³⁵ This number jumps to 50-60% if we look exclusively at the urban neighborhoods that are highlighted in this study.³⁶

Identifying this socio-cultural asset in Waterloo is a key part for planning its growth.

Florida contends that the secret to building better, more vibrant communities was not just attracting companies with handouts and tax breaks, but rather building a ‘people climate’ that could attract the diverse human talents that drive true prosperity.³⁷ In the case of Waterloo, Ontario, this “people climate” is emerging naturally and unmistakably; the key is to harness it, and to be cautious not to thwart it blindly.

³³ Florida, Richard. *The Rise of the Creative Class*. Basic Books. New York 2002.

³⁴ Fillion, Pierre, et al., “The Successful Few: Healthy Downtowns of Small Metropolitan Regions”, *American Planning Association. Journal of the American Planning Association*; Summer 2004; 70, 3. (329)

³⁵ Statistics Canada. *NHS Profile, Waterloo CMA Ontario 2011*. < <https://www12.statcan.gc.ca/nhs-enm/2011/>> (Accessed Nov. 26, 2011)

³⁶ Realtor.ca. *Demographic Analysis*. < <http://www.realtor.ca/Residential/Single-Family/16189404/>> (Accessed Nov. 26, 2011)

³⁷ Florida, 2002.

Demographic Niches

To more specifically analyze the demographic niches that drive the demand for downtown housing options, we can learn from a study conducted by the City of Kitchener, Waterloo's "sister city", located immediately to the south of its southern border. The study, conducted in 2000, confirmed that there is indeed a market demand for downtown living, and was able to determine 5 distinctive sub-markets that are driving this demand.

Seniors — People over the age of 65 represent an expanding market desiring downtown living. Many favor apartments because they don't have stairs, have low maintenance requirements, are affordable on a fixed income, and often feel safer for this vulnerable sector of the population. Some seniors already live downtown and do not plan to relocate neighborhoods, while others move inward from peripheral locations for better access to services, amenities and transit.³⁸

Downsizers — Individuals aged 45-64 choosing to downsize from their single-family dwelling to a condominium represent another growing market. There is a strong preference in this group towards owned rather than rented units, as well as a predilection for walkable, mature neighborhoods. This group includes a mix of those preferring the low-maintenance of an apartment condo, while others preferred town-homes because they still offered some outdoor space and street presence.³⁹

Renovators — Those interested in renovating core area single-family homes can be broken down further into 3 subgroups. First, there are young families attracted to the low cost of neglected downtown homes, and are willing to pay the same price as a suburban home to purchase an older home that they can restore themselves. The second group includes individuals who are attached to their existing core-area home and would rather adapt their current home to their changing family and lifestyle than uproot their lives by moving. Flexible development regulations offering the possibility to duplex, renovate, or expand existing homes are essential to retaining this group.⁴⁰ Finally, there are heritage enthusiasts who purchase old homes in these neighborhoods with the intention of restoring their original charm and character.

³⁸ Bunting, Trudi, et al. "Housing Strategies for Downtown Revitalization in Mid-Size Cities: City of Kitchener Feasibility Study" *Canadian Journal of Urban Research*. 9.2 (Dec 2000) (153)

³⁹ Bunting, 2000. (153)

⁴⁰ Bunting, 2000. (154)

Young Professionals — Sometimes colloquially referred to as “yuppies”, young urban professionals have a strong presence in the trend towards core living. Most prefer single family homes and have a strong desire for ownership. Among those who are childless — a bracket that has grown in the last decade due to shifting generational values away from traditional family models⁴¹ — lofts, condominiums and townhouses also rank high, but the desire for ownership is unchanged. Proximity to the workplace, possibilities of live/work units, and availability of heritage homes, arts & culture, and entertainment ranked high in the priorities and motivations of this demographic niche.⁴²

Students — Urban lifestyles hold particular appeal to a large proportion of students, especially where the downtown is proximate to campuses and learning institutions. A large part of the appeal also stems from the proximity to cafés, pubs, entertainment, and transit.⁴³ While much of Waterloo’s student housing stock is comprised of mass-produced tower blocks near campus, downtown holds particular appeal to those in graduate, post-graduate and specialty programs where their stage of life is more independent from campus culture.

Each of these subgroups offers a new perspective into what strategies could be successful in downtown communities, and who these places should be designed for.

Quality of Life

To understand social demands in urban areas, it is important to consider the ways in which the idea of ‘quality of life’ have changed over the last several decades. Looking at the general well-being of a person or society in terms of health and happiness, rather than wealth, quality of life is anything but.⁴⁴

In the 50s and 60s when convenience foods and electric appliances were first introduced, they were associated with higher quality of life because of the way they liberated women from their long hours of isolated domestic work. Now, these

⁴¹ See Appendix for study of shifting family models in Ontario over the last century. Page 156-159

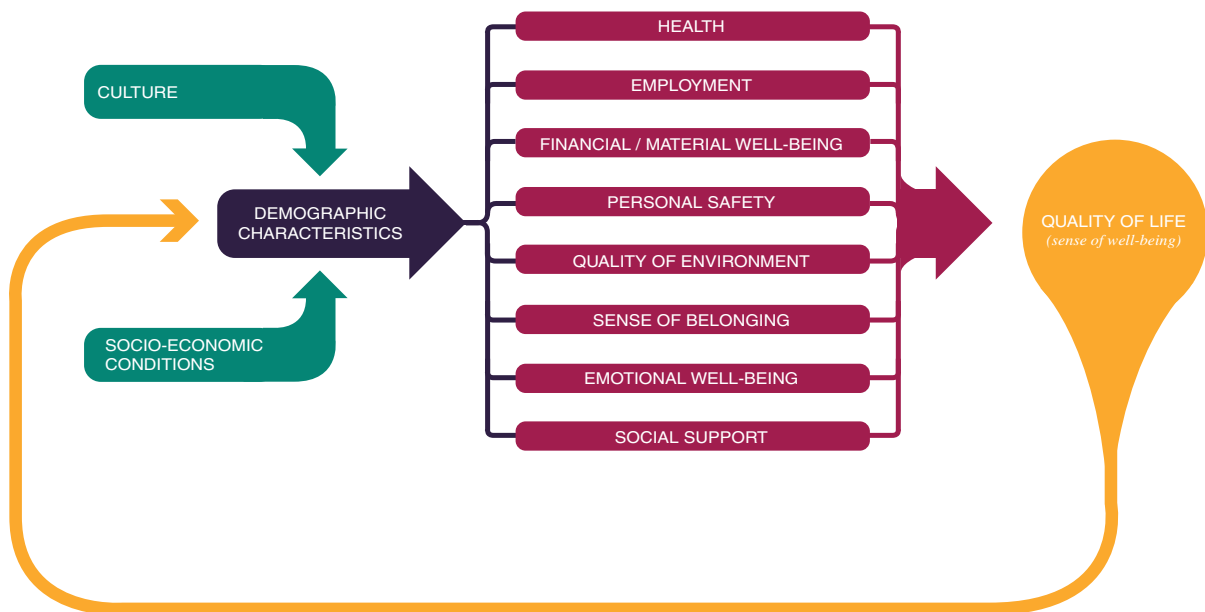
⁴² Bunting, 2000. (154)

⁴³ Bunting, 2000. (154)

⁴⁴ Collins Dictionary: Quality of Life < <http://www.collinsdictionary.com/dictionary/english/quality-of-life> > (Accessed Dec. 16, 2015)



Time Famine v. Time Affluence, print by Adam Simpson — editorial artwork for the Boston Globe, accompanying an article discussing the problem of having too much to do and not enough time to do it, compared to the elusive alternative of being ‘rich in time’.



same items, while still a part of most peoples' lives, are stigmatized as low-standard of living necessities since greater value is now placed on healthy living, and the industrialized food-chain has been villainized.

Car-dependence and suburbanization has undergone a similar paradigm shift. Once flaunted as symbols of mobility and freedom, vehicle-dependent suburbs are now stigmatized as isolated commuter-purgatories, where people can buy more for less, at the expense of the time taken to get around.

Time Affluence v. Time Famine

This points to a modern phenomenon that is critical to understanding the gravity of urban living — *time affluence and time famine*. Time famine was originally a social observation identified and given a name in modern media in the 1990s to describe the phenomena that modern citizens know all too well — having too much to do and not enough time to do it, creating a state of personal rolling crisis.⁴⁵ Time-famined citizens report being more stressed and less satisfied with their lives, in a way that even money doesn't appear to help.

Correspondingly, time affluence has become and remained an elusive goal for almost every citizen in North America — aiming to find more ways to gain control of our time and to feel like we have more of it.⁴⁶

The problem is of course that time is fixed. Unlike financial wealth, material resources or social prowess, every human on earth has the same 24 hours in each day.

Proximity is one way to cheat time affluence. If a person's workplace is walking distance from their home, and markets, cafés and amenities are within reach, they've earned back time that many throw away to commuting. This boost of time affluence is reported to be powerfully uplifting, improving not only personal happiness and satisfaction, but even physical health and civic engagement.⁴⁷

The power of proximity to remedy time famine is a huge reason that many are willing to pay more to live in urban centres, where work, life, entertainment, and services are within close reach.

⁴⁵ O'Brien, Keith. "How to Make Time Expand" *Boston Globe*, September 9, 2012.

⁴⁶ O'Brien, Keith. 2012.

⁴⁷ O'Brien, Keith. 2012.



Know Your Fabric

To plan for positive change in any place, designers must understand the medium with which they're working. In the case of neighborhoods, the medium is the urban fabric itself.

Urban fabric includes the physical aspects of urbanism, emphasizing building types, thoroughfares, open space, frontages, and streetscapes, but excludes functional, economic and socio-cultural aspects.⁴⁸ To study urban fabric is to look at the bones of a place, and examine the framework that exists beneath the rhythms of daily life. Urban fabric is formed over generations but can be altered rapidly, for better or for worse. It is the inherent nature of a place, and you must learn it well in order to leverage its latent strengths for successful urban growth and renewal.

Urban Residential Fabric

The fabric of urban residential neighborhoods is especially fraught with complexity and contradiction. Typically housing some of the oldest homes in the city, urban neighborhoods have often transformed from historic estate block-lots to fine grain urban parcels over several generations of lot divisions. Century homes that once stood as the only house on the street now sit cheek-to-jowl with their neighbor.

This gradual division and particularization of the urban neighborhood also gives rise to the coexistence of many different eras and ages of homes — each manifesting the time and generation in which they were built. You can often see the evidence of changes to the homes themselves, as larger older homes often get subdivided or added onto, while newer ones pop up in between.

Proximity to the historic urban core is a feature of these districts that simply can't be duplicated or manufactured. Often the central neighborhoods are within 1-2km from the city centre, where, if successful you can find employment, retail storefronts, markets and cafés.

This tight-knit relationship between homes and commerce is what lends itself to another prevailing asset of urban residential neighborhoods — walkability. With many services, amenities and opportunities for employment within a 10 minute walk,

⁴⁸ *Your Dictionary: Urban Fabric* <<http://www.yourdictionary.com/urban-fabric>> (Accessed Dec. 16, 2015)

Complexity

many urban-dwellers can live comfortably without regular use of a vehicle. The advantages of this are twofold. First, it means that each citizen benefits from a reduced cost of living simply by not needing to rely on regular vehicle use. Second, it dramatically increases the pedestrian activity.

In the urban residential neighborhoods surrounding Waterloo's historic centre, you will find people walking and cycling to and from work, school, children's schools, social gatherings, daily errands, dog-walkers, and aimless wanderers alike. This heavy pedestrian activity lends itself both to safety and community connectedness, all while creating a sense of vibrance overall.

The density, social intricacy and mobility in urban residential fabric leads to a kind of complexity that is invaluable to cities and citizens. It's this complexity that forges resilience in the face of social and economic changes.

The inherent connectedness of citizens in these districts, simply by virtue of proximity, allows for a broad range of live/work models that continue to feed into the synergistic loop of daily life and commerce that make these areas thrive. Many urban-dwellers operate businesses out of their homes, whether formally and publicly visible, or informally and incognito. Many run businesses that would not be successful if they could not be run from home, since they rely on irregular hours, part-time work and alternative business models. These small-scale operations are part of the lifeblood of the community, and offer immense value to the citizens in the district and the city at large.

The complexity of these districts extends far beyond the commerce that bubbles up in non-traditional ways. On an even smaller and more nuanced scale, the programmatic complexity that self-generates is remarkable. For example, an old, but still partially active railway extending through Waterloo's Mary Allen Neighborhood was used by urban dwellers as a trail connecting into the downtown. The "trail" was used so heavily and ubiquitously by citizens, that they eventually garnished enough support to convince the city to pave a path directly beside the tracks.

Another example of this programmatic intricacy is the community-bootstrapped skating rink that appears in Waterloo's Mary Allen Park every winter. The "rink" is the result

of community members boarding up the local basketball courts and flooding it annually for skating in the winter. It gets so well used by both young families and late-night shinny players that this year the community will create a second “junior rink” specifically dedicated to little learners.

This is a perfect example of what can happen when a fit between place and community is developed. This pop-up, makeshift community rink represents the way in which the place and the community interact.

Mobility

For those attracted to urban life in residential districts, the meaning of the word ‘mobility’ is multi-faceted. Mobility must be considered in terms of physical access, financial access and availability of time.⁴⁹

As discussed earlier, proximity begets time affluence. Thus the physical access to programming, employment, services, and other citizens afforded by urban neighborhoods can play a significant role in relieving time famine and associated stress for urban dwellers.

The definition of proximity and physical mobility will continue to transform and expand as public transit networks become faster, more robust, more reliable, and more interconnected. Upon completion of Waterloo’s light rail transit system (currently under construction and aimed for 2017 completion), its urban neighborhoods will suddenly have more immediate and vehicle-free access to (and conversely, be accessible to) citizens and services across the city. The service is intended to be connected to larger inter-city trains, intending to begin closing the gap between Waterloo and its neighboring metro regions.

Financial mobility is another huge piece of the puzzle, especially for younger generations. These groups prioritize financial maneuverability over the long-term “rooting” of the generations that came before them – leading them to lifestyle decisions that favour flexibility and independence over permanence. Mortgagees need not apply; this niche of urban-dweller prefers finding living options that allow an independent lifestyle, without the financial burden of a long-term mortgage. This shift in social mindset lends itself to share-economies, car-free living, and smaller/shared living arrangements.

49 See *Time Affluence & Famine*, p. 41.

Identity & Narrative

Urban neighborhoods carry the weight of a historic narrative that has painted pictures of civic identity for centuries, visible through the pride of well-kept century-homes and historic civic landmarks. These neighborhoods also carry signs of distress from the ways in which history has been unkind, palpable in the decay of neglected property and the graceless aging of the unkempt.

Capturing the layering of history in both form and function, these districts carry an important sense of identity that is integral to the city it plays a role in comprising. Often the homes of the city's founders and forefathers can be found on the streets of these districts, and their stories live on as rumors and murmurings among citizens to this day.

The churches that once stood as icons of faith and unity within each community still stand proud as distinctive features of the place, even though their role in the community has changed over time, particularly with the advent of the car.

Owners of older homes mark their front porch with a plaque stating the year it was built, both identifying and validating its historic weight and its role in the formation of the place.

Each piece tells a part of the story of the place, and the story is rich and layered. Unlike modern suburbs that are built in one fell swoop by unengaged developers, these places have a depth of narrative from the layering of stories built over generations.

The colour of the brick can tell you which quarry the materials came from, while the style of mortar and the shape of front porch can give you hints as to who built it. The size and shape of the home can tell you which era and lifestyle values presided when it was erected. The few mansion-like houses that sit perched on man-made hills overflow with a sense of both importance and prominence in the community's narrative.

*“One can say that the city itself is the collective memory of its people, and like memory it is associated with objects and places. The city is the locus of the collective memory.”*⁵⁰

- Aldo Rossi

⁵⁰ Rossi, Aldo. *The Architecture of the City*. Cambridge, MA: MIT Press, 1982. (130)

Ornery Beast

The confluence of an urban neighborhood's history, identity, complexity, density, and gravity for modern living give rise to an obstacle that must be faced — stubbornness. Since these places are made of people, it is natural and expected that there will be resistance to change. The very multiplicity and social intricacy that makes these districts attractive and resilient also makes them very difficult to change — and we are all still learning how to work with this challenging medium.

Canadian communities like Waterloo are particularly difficult because their newness, compared to their European counterparts, makes them more comfortable with preservation rather than adaptation. Very few single-family dwellings in Rome would be considered precious, so most of them mutate and transform without anyone thinking twice. In Waterloo however, heritage protection is a somewhat new concept, since ironically, it's new to us as a society to have old things.

But heritage preservation isn't the only reason these districts are difficult. Parcelization of land, and independent ownership makes change even more difficult. In a suburban development, one person, group, or entity can purchase a huge plot and make decisions on a blank slate without having to negotiate with anyone but the city and the bank. In urban residential neighborhoods, any proposal for change must be negotiated through a brood of independent citizens — most of which have lived there longer than you.

Fear of Change

These obstacles often manifest themselves in the form of well-meaning citizens, but their core motivation — fear of change — can be toxic to the growth that will be necessary in these districts over the next generation.

To facilitate resilient growth as a society, we need to embrace the fact that constant, nuanced, and incremental change has been part of the DNA of these neighborhoods since the beginning of time. We need to explore modes of transformation that leverage the strengths and intricacy of these places in order to grow them well, instead of killing them through the petrification of fear.

It is the role of the architect then, to become deeply familiar with a place and its workings, encouraging good communication among stakeholders and facilitating the conversations to keep things moving forward.



Fig. 019 (upper)
Fig. 020 (lower)

Prevailing Strategies

Clear Cutting

The deep-seated stubborn nature of urban residential fabric has led to two primary modes of operating within them — either preserving it in faux-antiquity or to wiping swaths of it out entirely to make way for larger development. Both models destroy the social intricacy and programmatic complexity that make urban neighborhoods valuable and beneficial to both cities and citizens.

Our known and familiar tools for intensifying these districts come from our understanding of densifying large metropolitan cities — either through condo towers in the core, or high-density row housing on the periphery. Both rely on the demolition of existing neighborhoods, or significant portions of them, often replacing heterogeneous, dynamic, urban fabric with homogeneous “copy/paste” typologies that can be replicated at minimal cost.

In a mid-sized city like Waterloo, these tactics manifest themselves as developers approaching homeowners and bribing them out of their homes. If the developer can pay off a cluster of 4-5 homeowners, they can successfully amalgamate the lots, demolish the homes, and replace them with a higher-density mid-rise to turn a profit. If they can pay-off 7-8 homeowners, they could build themselves a tower. Their impetus is to build as much as possible, at as low a cost as possible in order to maximize their return on investment. Hardly a mindset you would want determining the future of cities, and yet it does, almost ubiquitously.

The biggest factor that determines the success or detriment of these strategies is *scale*. A large-metro like Toronto can sustain the loss of one, or even several neighborhoods, since it is made up of innumerable neighborhoods and sub-neighborhoods. However, in a mid-sized city like Waterloo, while there are still a collection of neighborhoods that form the city as a whole, you could likely count the identity-critical ones on one hand. Demolishing pieces of these districts would be unnecessarily destructive to the identity, social fabric and resilience of the city at large. It is the difference between performing open-heart surgery on an adult and on an infant.



Clear Cutting — Northdale

When discussing this pervasive growth tactic of clear-cutting existing urban fabric, it becomes necessary to draw attention to the ways in which this strategy has run wild in adjacent communities in Waterloo specifically.

The community of Northdale for example, located less than 3km from Mary Allen neighborhood, has been utterly destroyed by this phenomenon over the last ten years. What was once a community of post-war homes has been swiftly replaced with an army of what the locals call “foam towers” — a contemptuous term referring to their poor conception and execution.

The towers themselves are not the enemy here; rather, it is the complete disregard for the relationship between each new development and its context, both spatially and socially that renders this transformation a perilous one. These particular towers are the blatant result of ROI⁵¹-driven decision making and a carelessness in the consideration of the communities that these developments impact. No relationship to the ground plane, no relationship to local typology or proportions, no contribution to the public realm, and no regard for the socio-spatial impact of their insertion; the decimation of Northdale serves as a reminder to the city at large of why they need to fear change, and hold developers in contempt.

These developments are not yet happening in Mary Allen neighborhood, but their impact on decisions made, and attitudes held is undeniable. They are what citizens see when they hear the word “densification” and are behind the reluctance of governing bodies to promote change. They are perfect examples of complexity destroyed and alienation created.

51 *ROI: Return on Investment*



Historical Preservation

*“At the root, it has to do with process, with change. When change occurs too suddenly and arbitrarily it’s destructive. And when things don’t change at all, that’s destructive too. We have to learn to admire and value the gradual, continual change, and to understand what kinds are constructive, and what aren’t.”*⁵²

— Jane Jacobs

Heritage preservation is an important idea, that is often executed in a well-intentioned but treacherous way. The idea that we need to respect the narrative of what came before us is a valid one, but it often leads to the fossilization of key pieces of our urban fabric, demeaning them to museums or relics.

As Jane Jacobs argues in her statement above, preventing change can be just as damaging to a city as sweeping, rapid, thoughtless change. German architect and theorist Oswald Mathias Ungers also reinforces this idea when he argues that the assumption that the city, or any part of it, can be restored to its former historic substance and configuration is at best the result of a misunderstood wave of nostalgia, and should be avoided due to its illusory character.⁵³

This thesis argues that our urban communities are not keepsakes or mementos of a quaint older time. They are an inheritance entrusted to us by our ancestors to continue on in the work that they began — building a better life for ourselves, for society, and for future generations. What we have inherited is not the value of the land, but the value of the paradoxical and challenging complexity that comes with it. To oversimplify it would be to squander it.

It is natural and to be expected that there will be resistance to any change, particularly since we are all just in the early stages of understanding how to work within the complexity of these environments. Part of our role as architects in facing this complexity is to find ways to make this democratic process work through education, facilitation, and mitigation, turning stakeholders into supporters, and opponents into allies.

⁵² Jacobs, Jane. “Where Trade Began” *Parabola*, Winter 1993.

⁵³ Ungers, Oswald Mathias, et al. “Cities within Cities” *Lotus International*, 1978. (83)



PART II | SITE & STRATEGY

*a case & site for
incremental development*

Incremental Development

The pressurization of urban neighborhoods in mid-sized cities like Waterloo, combined with the identification of the shortcomings and perils of modern methods of development leave us with one important and self-evident question — what do we do?

First and foremost it is clear that we need to work with the nature of urban residential fabric and not against it; we must identify and leverage its latent strengths and exploit and reinforce them. This means leaning into its complexity, both spatially and socially, and not trying to ignore, abstract, or tame it.

Second, we must resist the tendency to make the end-goal strictly about density. More people does not equate to better districts or stronger communities. We must consider both logic and human nature, and design for the wholeness of society, not just the parts that fit cleanly onto maps and charts.

Third, we must start small but think big. We must focus primarily on determining the next best step, while maintaining an openness to a multiplicity of end-results. Each intervention should respond to the scale of a human, but the relatedness between interventions should aim to be impactful on the scale of the district and the city.

“Everything new starts small. We can worship what has already become big because of its power, but we have to feel awe and wonder and love for what is small because of its possibilities. If we are good parents or grandparents we know that intuitively, but it also is basic for cities. New things must be allowed to come up instead of being slapped down.”⁵³

— Jane Jacobs

This thesis proposed a new model for urban development that is rooted in these values — *strategic incremental development*.

Strategic incremental development insists on acting at a small scale while thinking on a large scale. It also relies on a “choose your own adventure” spirit that allows you to gauge and recalibrate as you go rather than locking into a set series of

53 Jacobs, Jane. “Where Trade Began” *Parabola*, Winter 1993.

actions or phases from the start. This open-endedness is critical to its success as it allows the plan to crystallize as it unfolds and redirect as needed.

Another main goal of working in small, incremental, and people-focused stages is not to alienate or force out the diverse community that already exists and thrives in a neighborhood's existing fabric. Conversely, the strategy aims to provide a more engaged and inclusive process, encouraging the participation of citizens, and calling architects to own the process of turning stakeholders into supporters.

The best candidates for strategic incremental development will be districts that are already thriving, growing, and itching to evolve — which means that their existing population is a significant asset, not a hindrance to a development plan. Their immediate support or acceptance can never be expected or taken for granted, but it is an invaluable asset that any plan needs to work towards.

Incremental development focuses on determining the next best step, while always keeping an eye on how these steps, or any, could connect to one another to bring about more impactful change and resilient growth. Getting excited about the big picture is always a natural part of the process, but it is important to dial back and ask what one piece should happen next, and how it can catalyze the next step in its wake.

This might mean starting with one property, one block, one zoning initiative, or one meeting, but moving forward in a way that makes the most headway for the “supporting characters” or “next steps” to come up behind you, and have the most impact.

Most importantly, incremental development is intended to embrace the complexity and social intricacy that is inherent in our communities, in a way that will ultimately benefit the city and the people that comprises it. It takes the stance of valuing this complexity and protecting it, even if it requires changing the way we operate.



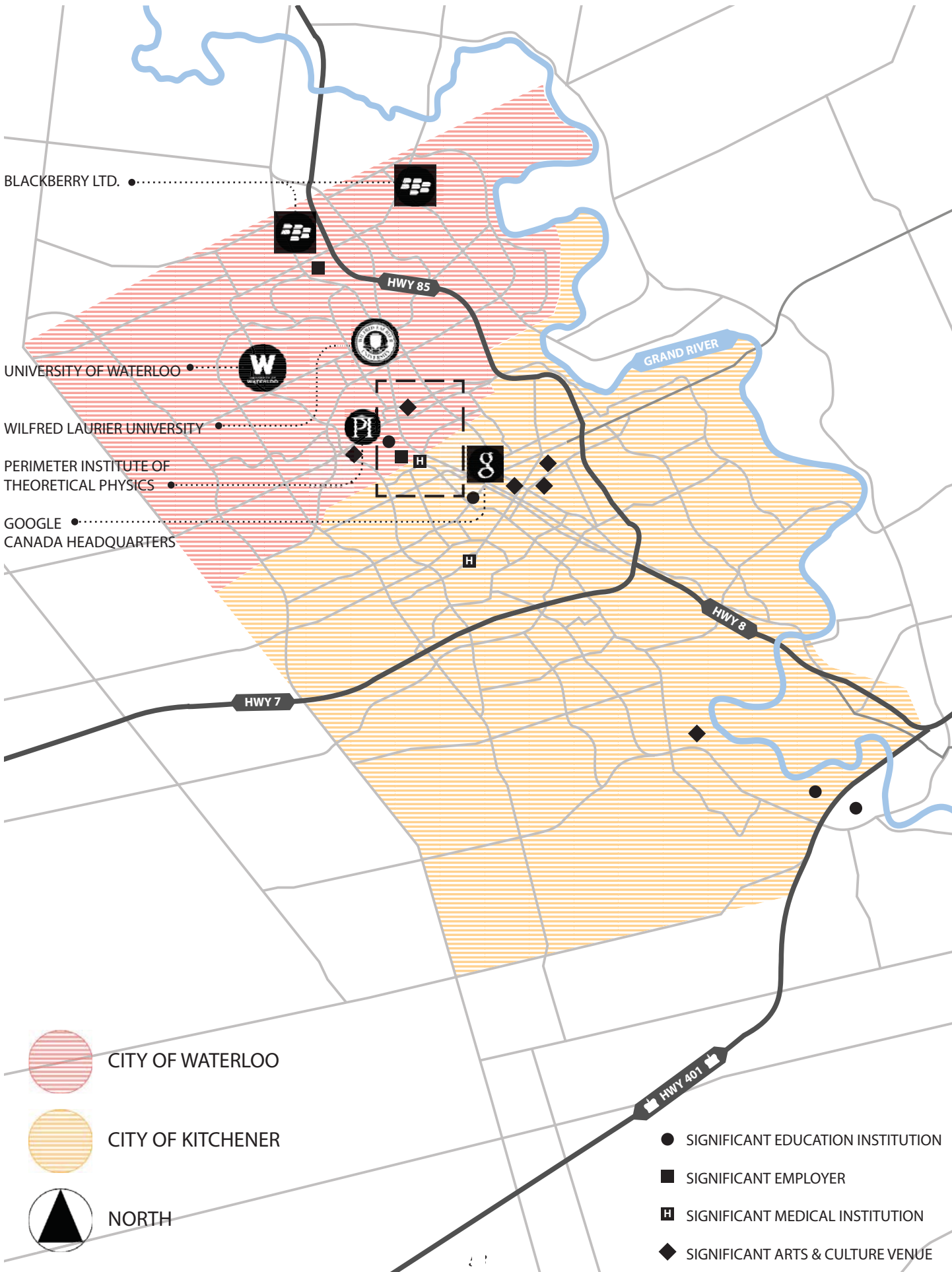
Site — Mary Allen Neighborhood

The neighborhood of Mary Allen is a district just South-East of the commercial business centre (or 'Uptown') of Waterloo, Ontario. Its name stems from the intersection of Mary Street and Allen Street, surrounding which the historic development originated. This pocket of historic and diverse residential fabric has become gravitational over the last ten years, and it is anticipated that its population will double in the next decade.

Much of the neighborhood's allure stems from the historic character of the homes, streets, and landmarks that comprise it, in combination with the district's proximity to employment and the commercial core. Many residents of Mary Allen work in the Uptown core, and enjoy a commute on-foot of 5-10 minutes. It is also home to one of many quality elementary schools in the city that attract young families alongside young professionals.

The most notable characteristic of Mary Allen, which can be seen in many urban residential districts — especially ones adjacent to thriving city centres — is that people walk. They walk to their kids to school, they walk to work, they walk to the store and they walk to the dentist. They walk in spring, summer, fall and winter without blinking an eye. Some will bike if they prefer, but for many the car is reserved for weekend errand-running to the big box stores on the outskirts or to the farmers' markets in neighboring towns.

The utmost reason that Mary Allen is an ideal candidate for exploring the potential of strategic incremental development is that regardless of its need to grow over the next several years, it is already showing symptoms of adaptation. Self-generating complexity is already bubbling up through live/work adaptations and reprogrammed/repurposed residential lots. It's an area itching to evolve, and incremental development is a tool designed to help it evolve in a way that leverages its strengths and protects its existing assets.



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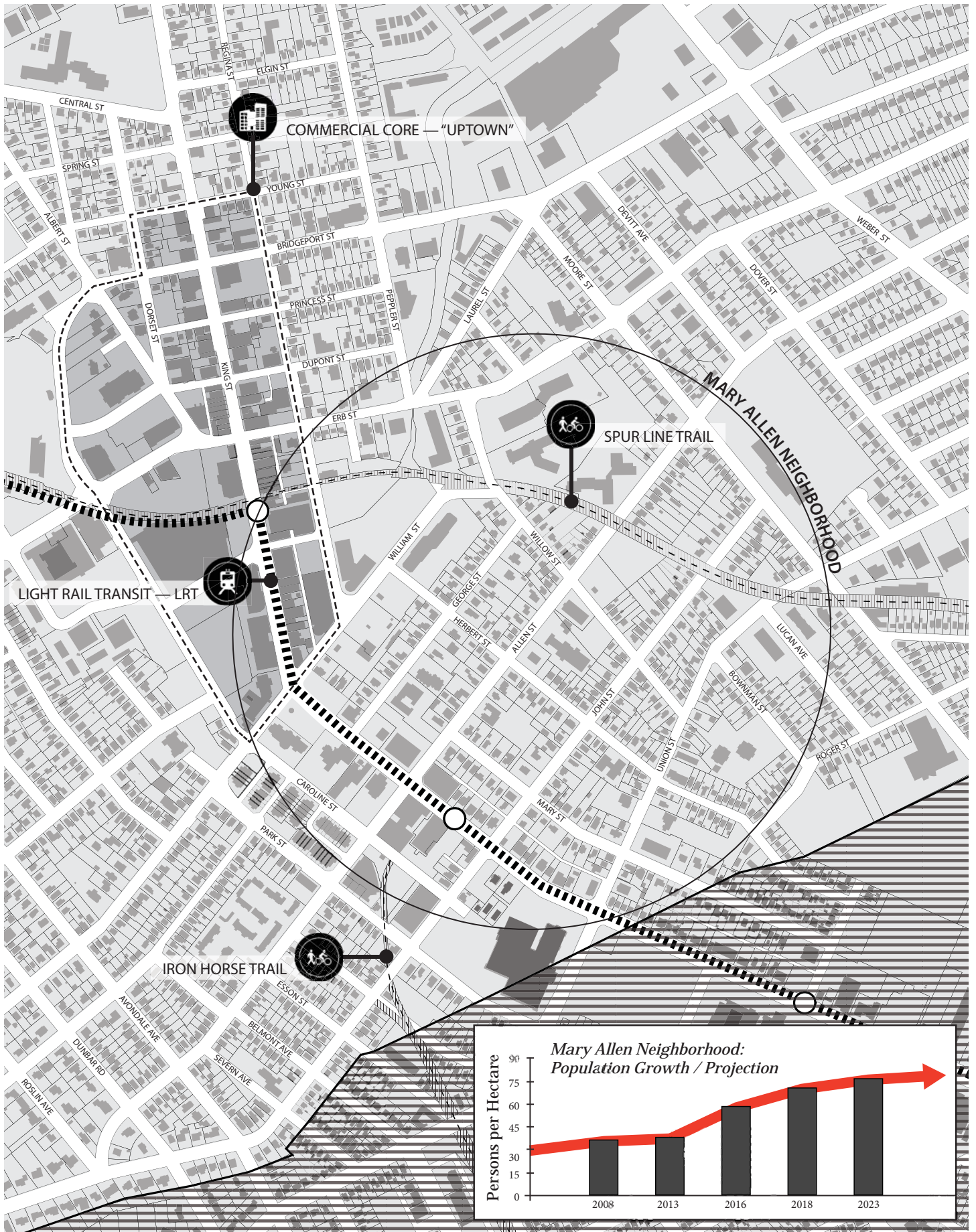
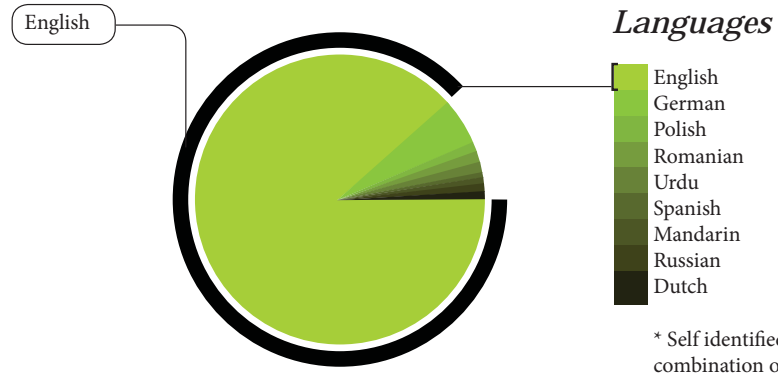
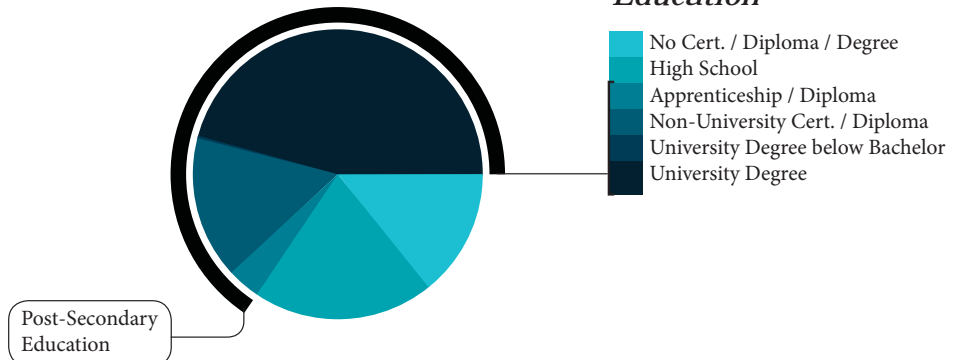
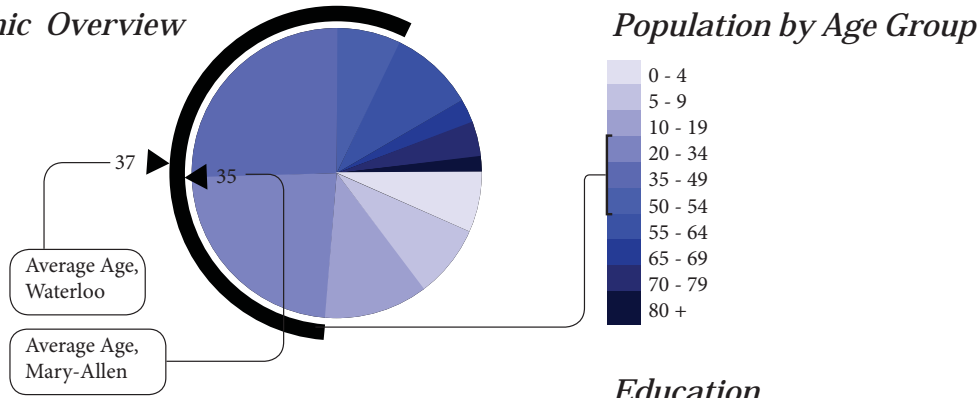


Fig. 025 (opposite)
 Fig. 026 (above)

Mary Allen Demographic Overview



* Self identified first language, or combination of languages.

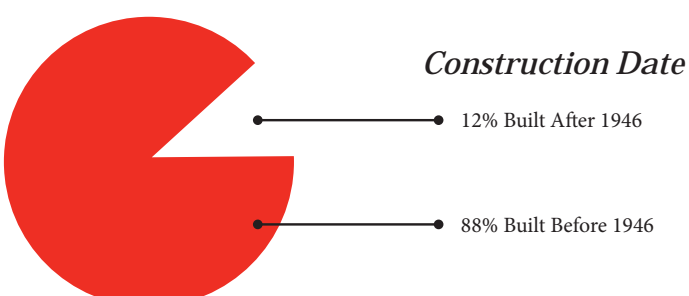
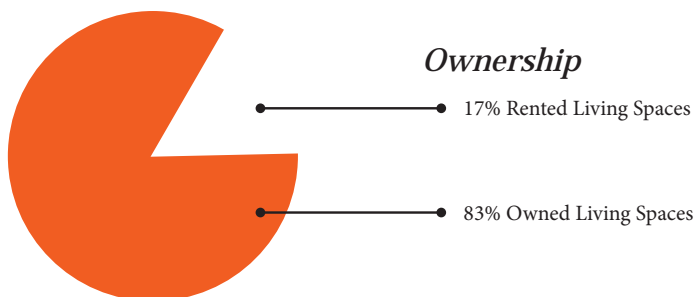
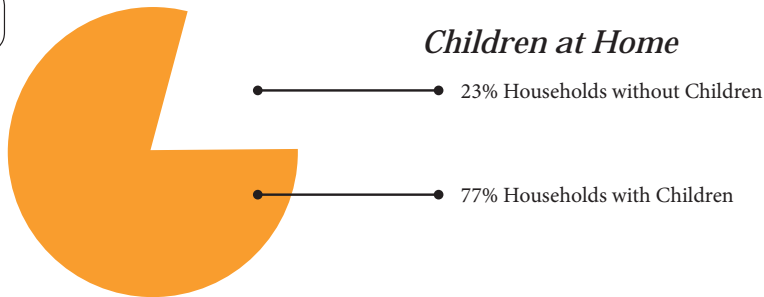
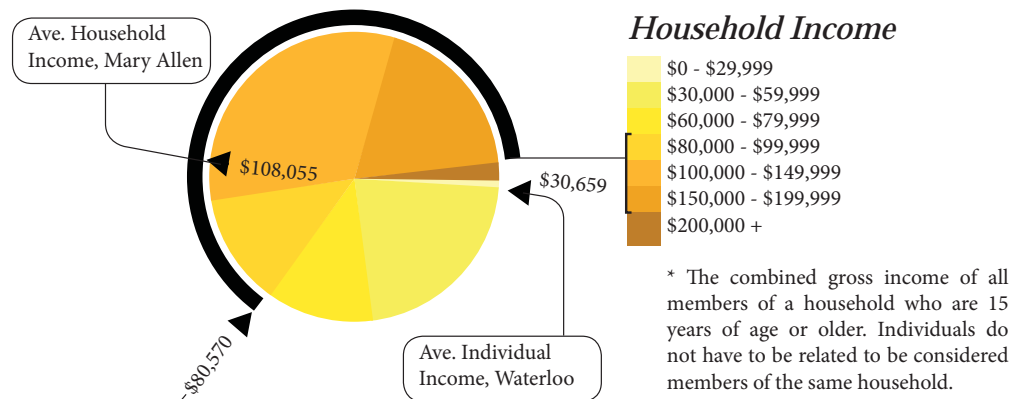


Fig. 027 — Diagrams opposite & above

PART III | ANALYSIS

find patterns
find players
find opportunities for connection



A Note on Analysis

Although abstraction in architectural discourse and design can be a slippery slope towards over-simplification, it can be a valuable tool in the process of analysis. Analysis allows for the breaking up of architecture and space into elements to allow for decision-making, communication and comparison.⁵⁵ Robert Venturi articulates this in his work *Complexity and Contradiction in Architecture* when he states:

*“Nor does complexity deny the valid simplification which is part of the process of analysis, and even a method of achieving complex architecture itself... It should not be mistaken for a goal.”*⁵⁶

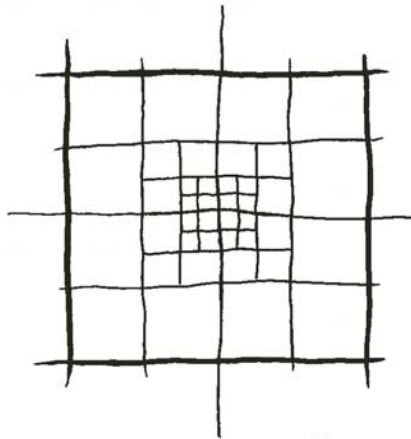
It is important then to remember that reactions and relationships can be isolated for analysis only with difficulty; they must be understood within the overall structure of urban artifacts.⁵⁷ Any attempt to use these analytical abstractions as absolute values would only fragment the urban conception into a series of technical targets, forgetting thereby the neighborhood's character as an interwoven system.

55 Salat, Serge, Loeiz Bourdic, and Caroline Nowacki. “Assessing Urban Complexity.” *International Journal of Sustainable Building Technology and Urban Development* 1, no. 2 (2010): 160-67.

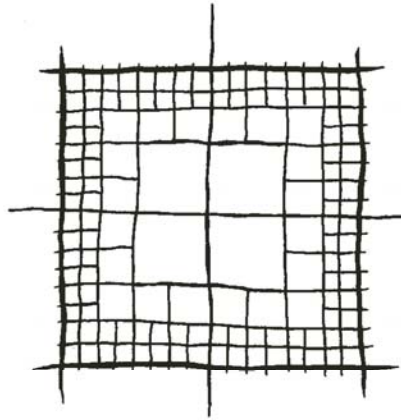
56 Venturi, Robert. *Complexity and Contradiction in Architecture*. New York: Museum of Modern Art, 1966. (17-18)

57 Rossi, Aldo. *The Architecture of the City*. Cambridge, MA: MIT Press, 1982. (162)

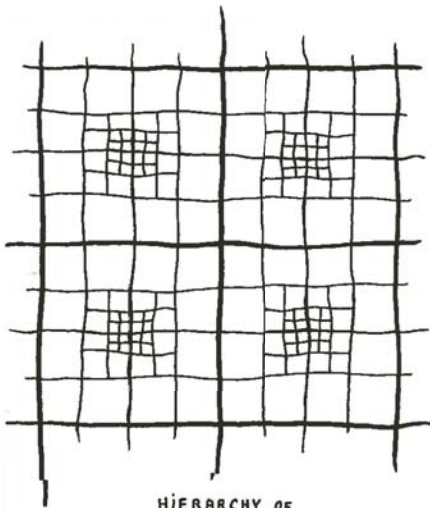
DIMENSIONING OF URBAN BLOCKS
WITHIN URBAN QUARTER



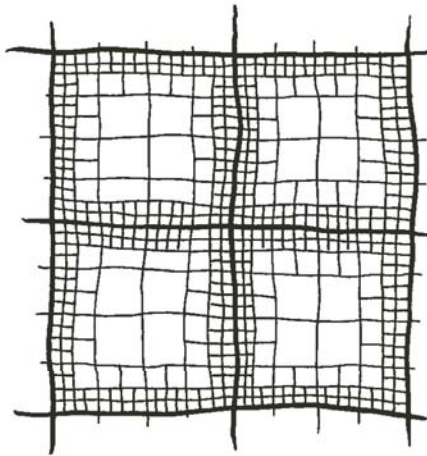
CREATING CENTRALITY
NETWORK PERMEABILITY INCREASED
TOWARDS
CENTER



IMPEDING CENTRALITY
NETWORK PERMEABILITY REDUCED
TOWARDS
CENTER



HIERARCHY OF
ROADS - BLOCKS - LOTS
HARMONIZED



HIERARCHY OF
ROADS - BLOCKS - LOTS
IN CONFLICT

Find Patterns

Our first responsibility in strategizing for incremental development is to determine the latent patterns that comprise the urban fabric of the district. These patterns will show us the bones of what we're working with, and the obstacles that we're working against. Identifying them will allow us to determine how to work with the existing frameworks, rather than against them.

It is not the intention to consider these patterns in isolation from the broader narrative. They are meaningless without also layering them against the socio-economic conditions that we have already discussed, and against the specific social conditions unique to it.

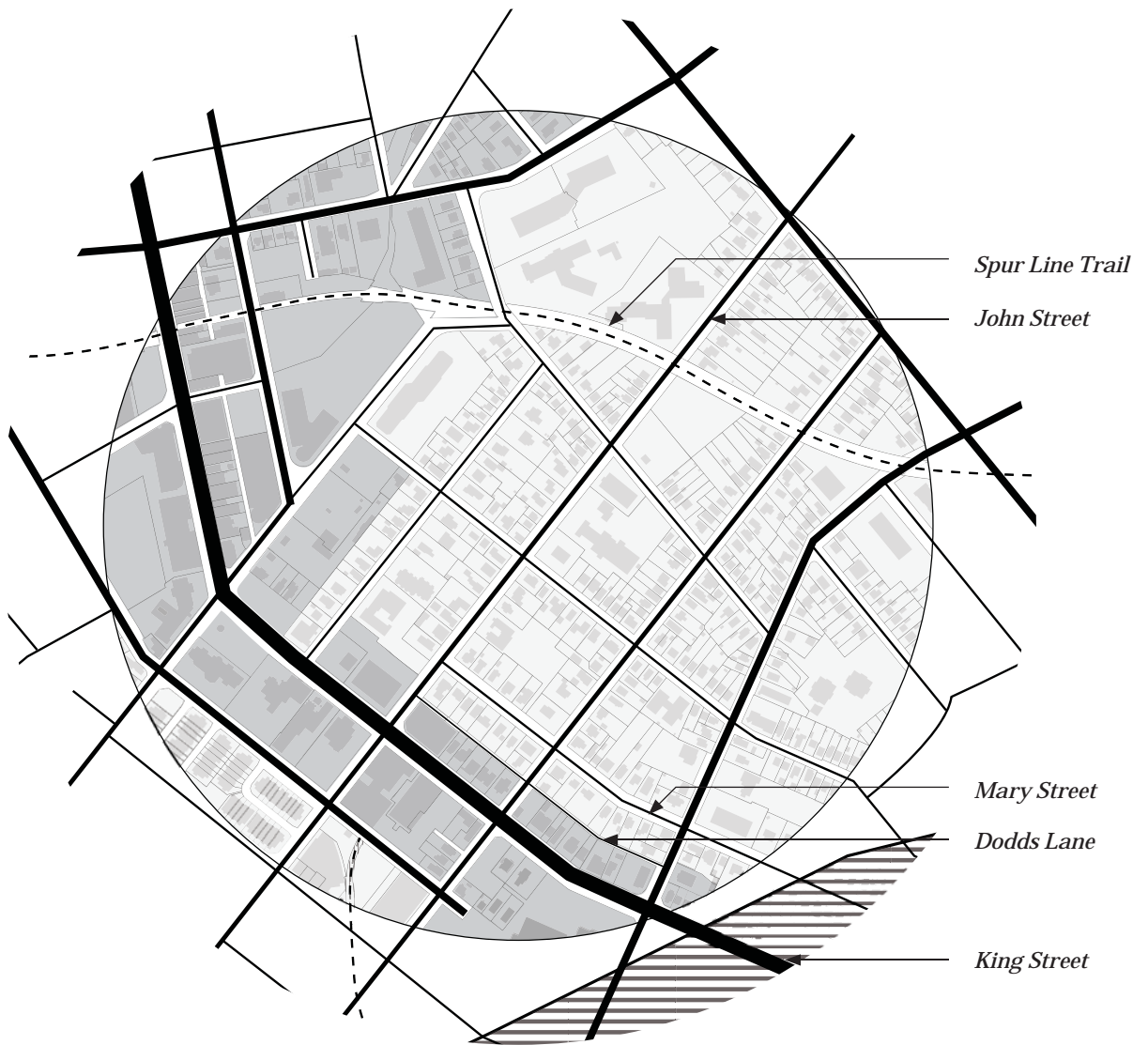
Hierarchy of Streets

The idea at the core of any theory of street hierarchy is that each circulatory artery plays a role and serves a purpose in a larger system. Whether existing or proposed, each thoroughfare in a district should have a purpose that sets clear parameters for what is or isn't appropriate for its use and development. In urban environments, this hierarchy is typically established by assessing to what extent an artery is for pedestrian or vehicular use.

Street hierarchies can occur intentionally or haphazardly. Regardless of planning, a place will inevitably end up with arteries that are heavier-use than others, but analyzing the full potential of this hierarchy is where the opportunity lies. It is in the tension between vehicular and pedestrian flow and presence where we can find thriving, viable streets.

Often, an existing hierarchy is incomplete or imbalanced, and it is up to designers, planners, and municipalities to identify the gaps and work toward balancing the system for the benefit of the public environment. The most common oversight is in the provision of purely pedestrian space, and the over-provision of vehicular access. This is where tension is lost through imbalance.

Restoring this balance and tension between pedestrian and vehicular activity is one way in which incremental development can begin to improve districts by reinforcing and building off of their hierarchy of streets.



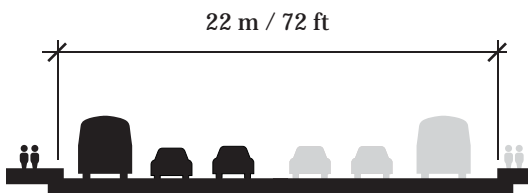
Mary Allen's Hierarchy of Streets

In Mary Allen Neighborhood, there are four levels in the existing street hierarchy:

1

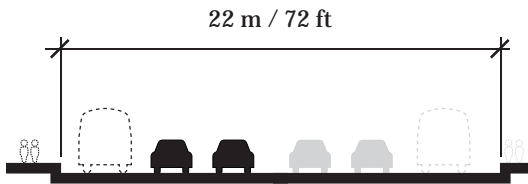
Major Streets

Major streets are identifiable by their high-prioritization of vehicular traffic over the pedestrian environment. Often carrying more than 4-6 wide lanes of traffic, including turning lanes at intersections for improved speeds, major streets are difficult to cross as a pedestrian, outside of a designated crosswalk. These arteries tend to connect major areas of commercial development within a city.



Major – Primary (eg. King St.)

Major streets are also marked by regular public transit routes and stops. A primary major street often has regular, designated lanes for express bus routes, streetcars, or light rail trains. This brings an influx of pedestrian activity to these areas. In Waterloo, King Street is an example of a primary major street. It connects downtown Kitchener to Uptown Waterloo, and is being currently outfitted with light rail transit infrastructure.



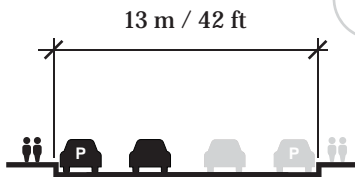
Major – Secondary (eg. Weber St.)

Secondary major streets are just like primary ones except for the public transit is often less permanent and the connectivity often extends between secondary zones of urban development. For example, Weber Street in Waterloo has regular bus stops in lieu of light rail transit, and connects areas of high commercial development that are not the formal urban centres themselves.

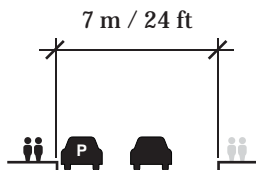
2

Minor Streets

Minor streets serve both vehicles and pedestrians, and act as medium-density arteries for both. Public transit is not common or consistent along these arteries, and additional road width is often provided for on-street parking. Minor streets are a critical part of the connective tissue of the city, but don't usually connect directly between urban centres. They often cut through residential areas and act as medium-density, medium-speed shortcuts for local drivers, and are punctuated by small commercial frontages due to their increased public exposure.



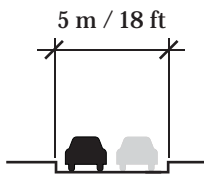
Minor – Primary (eg. John St.)



Minor – Secondary (eg. Mary St.)

Pedestrians can cross minor streets reasonably safely, though parked cars can make visibility treacherous except at 4-way stops or designated crosswalks. Parked cars also make these arteries treacherous for cyclists, who would benefit from a dedicated bike lane.

The difference between primary and secondary minor streets typically comes down to street width and number of vehicular lanes. A primary minor street often has one lane in each direction plus one lane for on-street parking. Lanes are often wider than necessary to allow cars to maneuver past one another without the provision of dedicated turn lanes. Secondary minor streets might be one way, with on-street parking, or two-way with no on-street parking, resulting in a much narrower profile, safer pedestrian environment, and quieter, lower-volume artery.

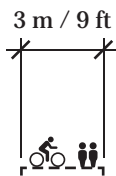


Service Lane (eg. Dodds Lane)

3

Service Lanes

While some cities (eg. Windsor, Ontario) rely on service lanes extensively, Waterloo is among the average mid-size cities for which lanes are rare. Even with their rarity, most urban districts have a few of them, and they provide an interesting added layer to the street hierarchy as they are one of the only exclusively-vehicular access routes that are not intended at all for pedestrians. The most interesting thing about lanes is their effect on adjacent arteries and land use, as they provide a car-only access and a “back-door” condition that frees other faces to serve pedestrians freely.



Pedestrian Trail (eg. Spur Line Trail)

4

Pedestrian Trails

Pedestrian trails are strictly for use by pedestrians and cyclists, often cutting through urban neighborhoods and connecting them to urban centres and public spaces. While they don't need to be completely separate from other arteries, in Waterloo's core, the two primary trails, Spur Line Trail and Iron Horse Trail, are their own entity with their own trajectory that splices across other layers of the urban fabric as opposed to corresponding to an existing grid. This morphology is due to the fact that both trails were originally railroad tracks. These trails are well used by community members for both commuting and recreation, though their existing use in this community is strictly connective and not designed or intended for spending time lingering.

Actions & Opportunities

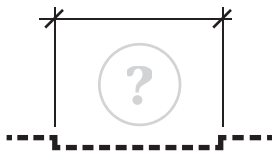
The curse of modern planning in North America is that cities often build streets that serve neither vehicles nor pedestrians well — vehicular flow is interrupted and congested, while the pedestrian environment is barren, unsafe, or marginalized.

Spaces that feel good strike a tension between pedestrian and vehicular presence and flow, but tension or balance does not mean dividing resources 50/50. It is up to us to determine the appropriate fit for the context, and to be opportunistic based on the unique circumstance.

Where it is determined that pedestrian space should be improved, allow for widened sidewalks, planted buffer strips, and bull-nosed curbs that narrow the distance for road-crossing. These moves allow for safer pedestrian flow, while also improving the quality of public space. Allowing and encouraging continuous retail and commercial frontage and discouraging parking within individual urban lots also reinforces the safety and vibrancy of streets with a strong pedestrian realm. Consider protected bike lanes to bolster the accessibility of the urban environment.⁵⁸

Where vehicular flow should be improved, limit points of access, and segregate vehicular use from other modes of transit. Lanes should be wider, and interruptions from intersections should be limited. These streets should discourage public frontages that would be better suited for pedestrian environments. Any pedestrian linkages provided on vehicular arteries should be especially separated and protected from the primary street.⁵⁹

What's Missing?



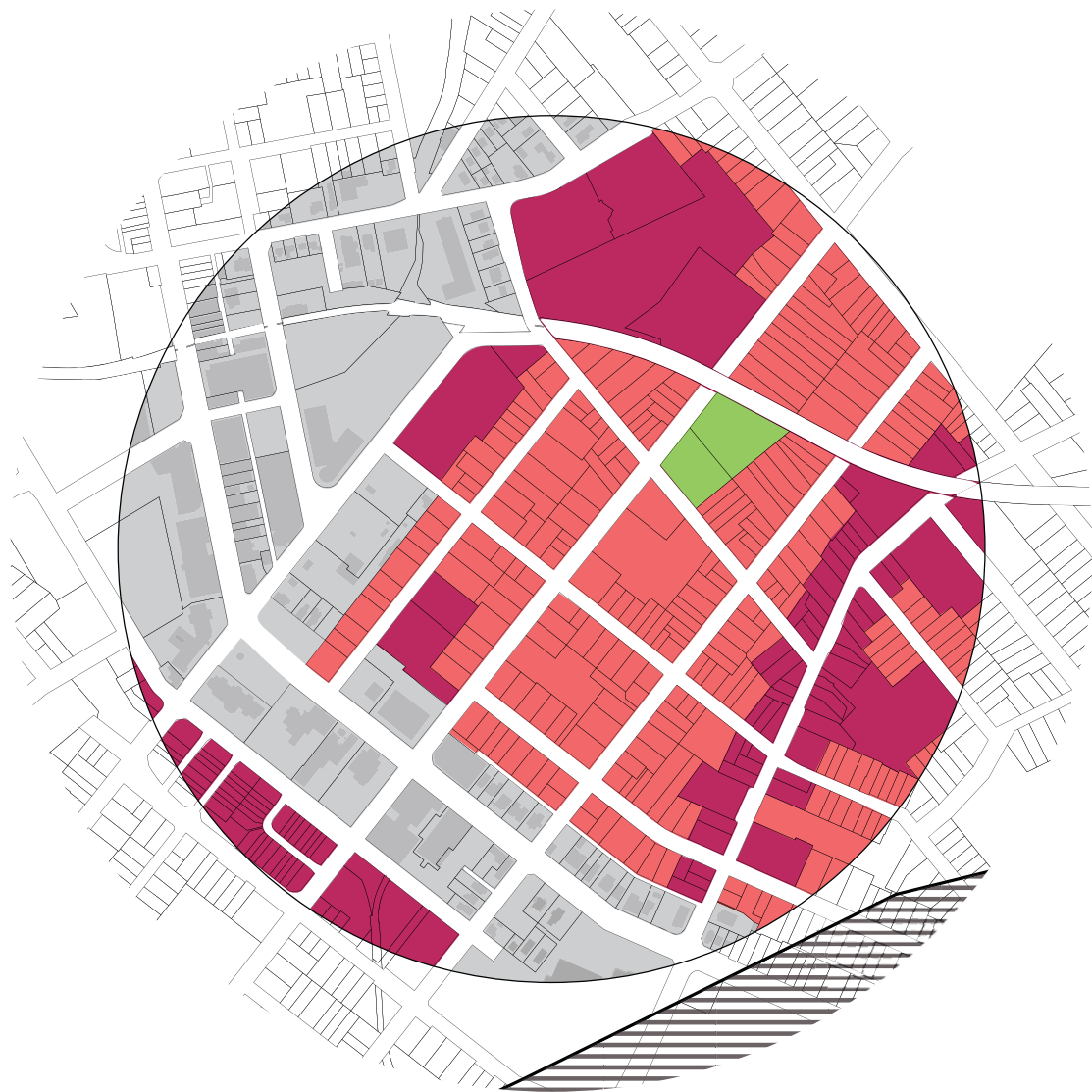
Most importantly, it is important to identify where there are layers missing within a hierarchy of streets. In Waterloo, there are no pedestrian-only streets even though this is a typology quite common in other areas of the world. Perhaps both trails and minor streets could benefit by inserting a new level into the hierarchy that bridges between them.

A successful hierarchy is a robust one, and often adding a new layer into it is the best way to relieve other arteries of trying to carry the burden (often unsuccessfully) of servicing both pedestrians and vehicles well.

Fig. 032 (diagrams opposite)
Fig. 033 (diagrams above)

58 Marohn, Charles. *Thoughts on Building Strong Towns Vol. 1.* CreateSpace Publishing, South Carolina, USA. 2012. (27)

59 Marohn, 2012. (41)



- *Multistorey Residential*
- *General Residential 2A*
- *Commercial*
- *Green*

Zoning

Simply put, zoning's role in cities is to keep similar things together and keep apart things that don't go well together. They divide things by types of activities, and by shape and size.⁶⁰

Popularized first by the Swiss in 1931 with the Charter of Athens, functional zoning was originally purely a technique for industrial development.⁶¹ Leon Krier argues in his book *The Architecture of Community*, that its widespread use since then has inevitably led to the breakup of integrated, poly-functional settlements (cities, urban quarters, villages), into mono-functional zones (residential neighborhoods, dormitory towns, campuses, shopping centres, industrial zones, business parks, etc.). Instead of encouraging the organic integration of urban functions, zoning imposes their mechanical separation.⁶²

As Canadian architect George Baird also articulates in his report *On Building Downtown*, the present system of zoning is not adequate:

*"Zoning regulates use, size and density and to a certain extent, setbacks and envelopes. It is a concept related to definable, isolated parcels of land, not to the more important issue — the relatedness of these parcels, their connections and their impacts on neighboring lands."*⁶³

The two main problems with this model are the destruction of social and programmatic intricacy that sustains a robust urban ecology, and forcing civic participants into a reactionary role.

60 *Envisioning Development, Guide No. 2. What is Zoning? New York City Edition. The Centre for Urban Pedagogy, NY. 2013. (10)*

61 Krier, Leon. *The Architecture of Community*. Island Press, Washington DC, USA. 2009. (102)

62 Krier, 2009. (102)

63 Baird, George, et al. *On Building Downtown: Design Guidelines for the Core Area. Report for Toronto Planning Board. 1974. (5)*

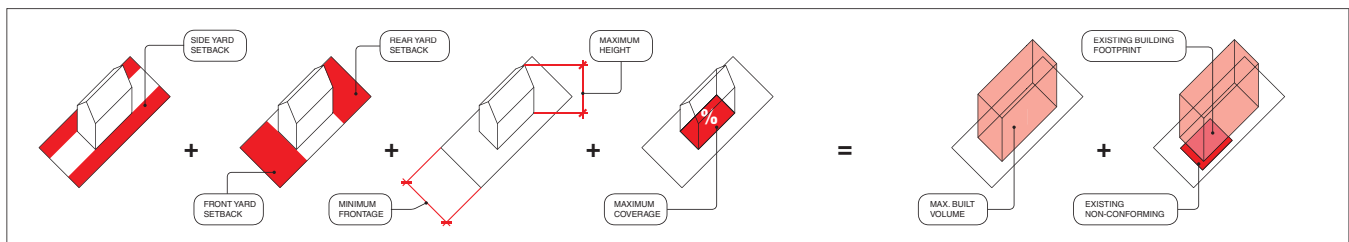
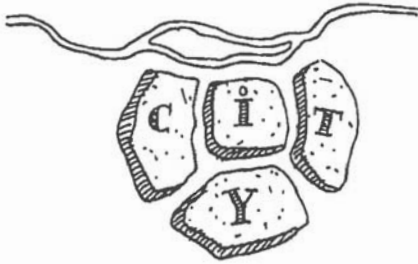


Fig. 034 (opposite)
Fig. 035 (above)



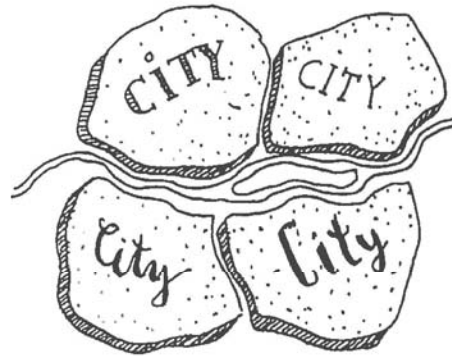
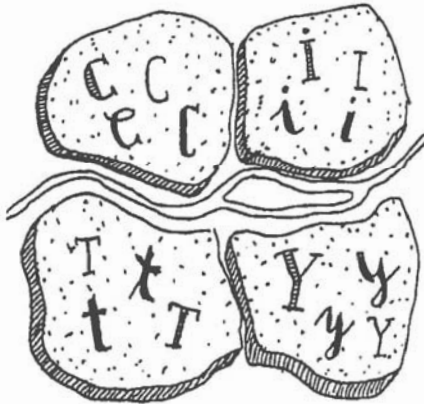
ANTI-CITY

VARIABLE NUMBER
OF
MONO-FUNCTIONAL
ZONES



CITY

VARIABLE NUMBER
OF
COMPLETE
URBAN COMMUNITIES



zoning



the city

Zoning + Social Intricacy

As we've discussed, cities and societies benefit from complexity and intricacy of use, and yet zoning to a large degree aims to keep parts of the city in separate silos.

Leon Krier discusses at length the value of creating an archipelago of cities within cities, rather than dividing things categorically. He criticizes functional zoning when he describes his interpretation of its role in the city:

*"The first imperative of zoning is to organize each part of the territory in such a way that the citizen can accomplish only one function in one place at one time. The second imperative of zoning is the effective daily mobilization of the whole society (adults, old and young, children and babies, the ill and healthy, rich and poor, the handicapped and the able-bodied, those in and out of work, the employed and their employers) in accomplishing simple daily tasks."*⁶⁴

Krier goes on to argue that zoning has made modern life extremely convoluted and wasteful in terms of transportation time, and that it has in fact maximized the consumption of time, energy, and land for the execution of the base daily functions of the whole society.⁶⁵

Fighting for the restoration of the true "urban quarter" as a tool for reforming the zoned-city, Krier encourages complexity and mixed use to achieve the archipelago he describes — a scattering of self-sustaining village within the city at large.

It is in this spirit that Interboro Partners bases the premise of their new book *The Arsenal of Exclusion & Inclusion*, which states, "Cities bring people together, but they're pretty good at keeping people apart too."⁶⁶ It should never be forgotten or overlooked that it is our togetherness as a city that makes us thrive and succeed, and weather the storms — the goals of policies such as zoning must be redirected to support this.

⁶⁴ Krier, Leon. *The Architecture of Community*. Island Press, Washington DC, USA. 2009. (102)

⁶⁵ Krier, 2009. (102)

⁶⁶ Interboro Partners. *The Arsenal of Inclusion and Exclusion*. (book to be published in 2016)

Waterloo Zoning



Zoning + Reactive Change

The second problem with modern zoning is that it forces civic participants into a reactive position, backing them into a narrow corner of possibilities and not allowing professional problem-solvers (ie. architects and planners) to propose anything that might actually work towards bettering the city and its citizens.

Waterloo is a perfect example of this frustration of policy versus practice. For example, if you look at Mary Allen Neighborhood on a zoning map, you'd be pleased to find it is among a very short list of districts that have a special type of residential zone (GR2A) — one that allows for small amounts of commercial activity, and division of homes into smaller units. This seems like a step in the right direction, at least on paper.

The problem becomes apparent when you take a look at the relationship between existing structures and applied zoning provisions — virtually none of the houses in the district meet existing restrictions. This forces every single development, including simple renovations, to apply for a Minor Variance to permit what already exists on their site to remain. The Minor Variance process entails presenting your proposal to a committee of volunteer citizens who will decide whether they will allow your project to proceed. Sound precarious? — It is.

The City of Waterloo has used zone GR2A to convince themselves that they are allowing for urban renewal, and yet in practice the obstacles are as endless as they are senseless. This is one of the many reasons that successful urban intensification relies on change within City Hall, even if only for an iota of self-awareness.

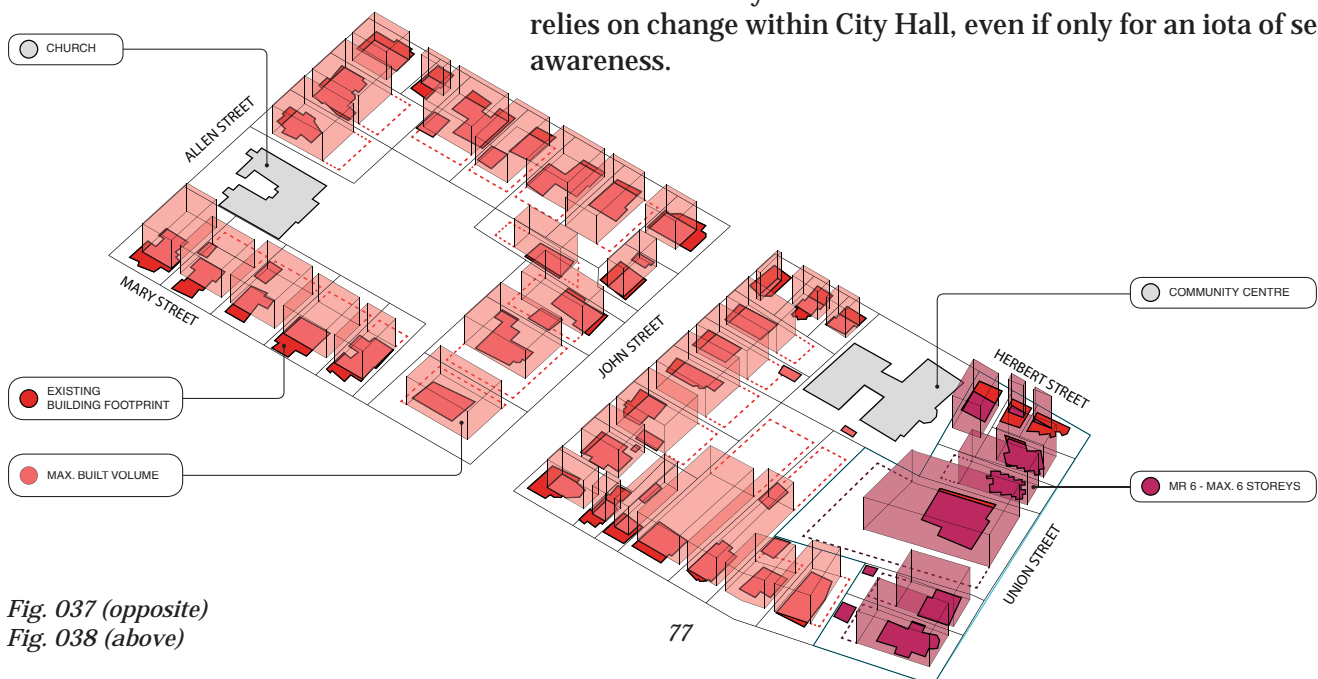
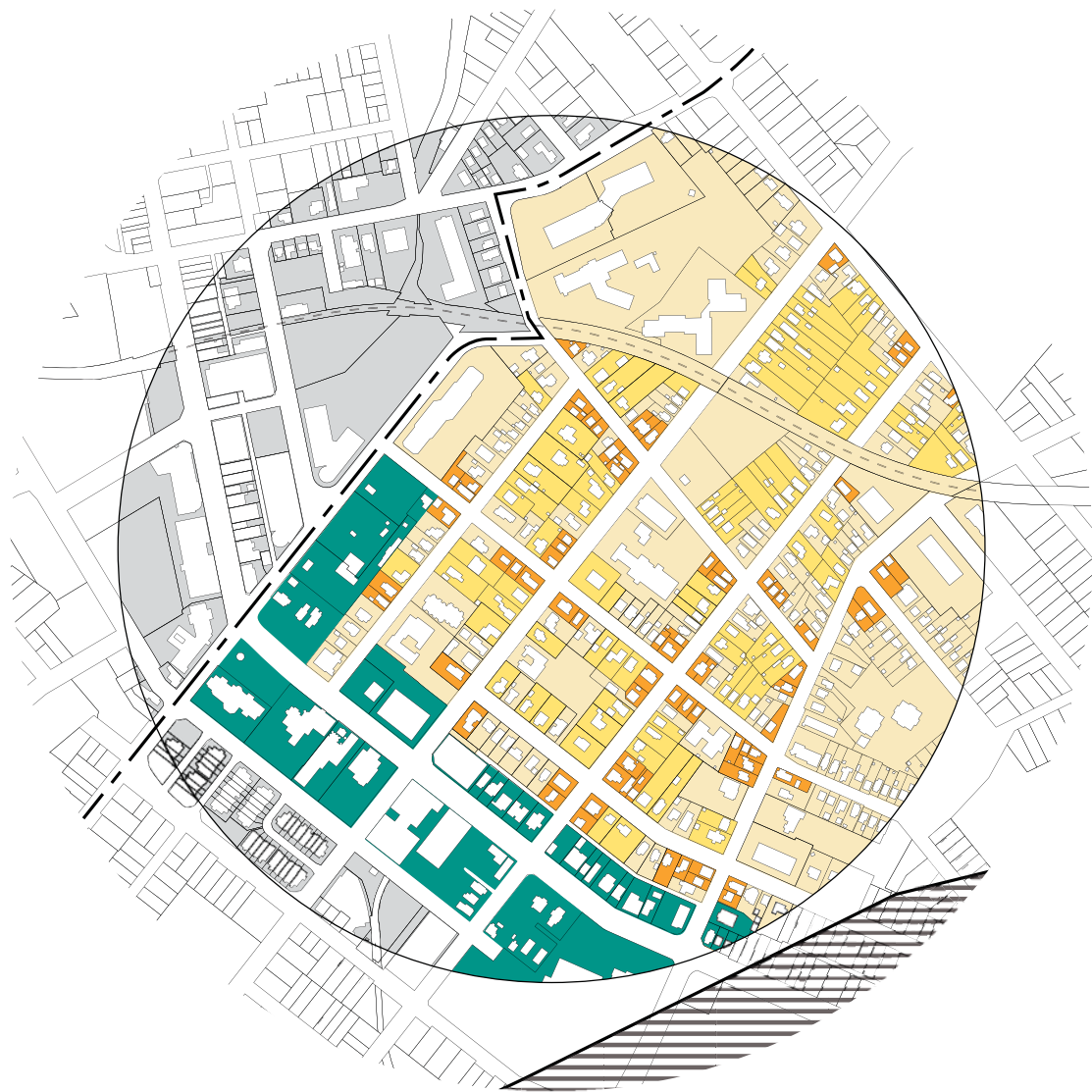


Fig. 037 (opposite)
Fig. 038 (above)



- *Low Pressure*
 - *Pressure to Tear-Down*
 - *Pressure to Petrify or Assemble*
 - *Commercial — Pressure to Tear-Down*
- *see Fig. 040, Page 82*

Development Potential

As pressure to intensify urban centres rises, development potential, as determined by a property's maximum buildable area in relation to its proximity to amenities and transit, has become a driving force behind many of the development projects springing up. Development potential is an indication of where we might expect tear-downs to occur if we left the system as it is now without redirecting it or guiding it towards something better.

This ROI⁶⁷ -driven model is one we see evidence of all around us, where 3-5 small homes are boarded up and torn down to make way for a mid-rise, low-budget, high-density insertion of suburban kitsch. It's a manifestation of what developers have determined is the fine line between how little value they can invest in the built environment and the maximum return on investment based on resale price per square foot.

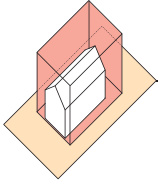
This isn't to say that good developments can't happen within the existing urban ecology, they just aren't that likely unless they're being championed by a Jane Jacobs loving idealist. The system is restrictive and the result is that the density, function, location, and, to a large extent, the form of these developments are decided before they land on an architect's desk. Krier argues that many architects are aware that it is the very nature of the current development system that prevents them from designing "true cities and villages", but they are individually powerless to change the system without risking their own livelihoods.⁶⁸

Development potential will drive the direction of intensification whether we want it to or not, and the more the city grows, the more imminent this reality becomes. It is our job as architects to understand it well enough to leverage it for the city's benefit instead of passively watching it run its course to the city's detriment.

⁶⁷ *ROI: Return On Investment*

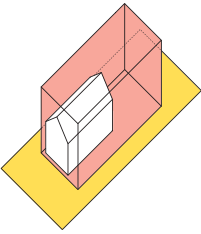
⁶⁸ Krier, Leon. *The Architecture of Community*. Island Press, Washington DC, USA. 2009. (117)

Low Pressure



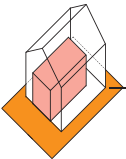
Where a building's footprint is close to, but does not exceed, the site's maximum built volume, there is little pressure to either keep or destroy. If external factors (such as location), have pressurized the lot for intensification, internal renovations and/or small additions could be explored to help facilitate new internal programming or division of suites.

Pressure to Tear-Down



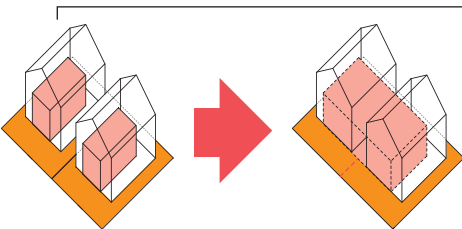
Where the maximum built volume of a site exceeds its existing building by over 50%, the resulting pressure is to tear down the existing structure and build something new. The cost of adapting the existing structure far outweighs the benefit of keeping it. Strategically adding building area and programming to such sites will reduce pressure for tear-down, and thus help preserve local vernacular.

Pressure to Petrify



Where a building exceeds the maximum built volume for the site it occupies, the possibility of any change, minor or major is restrictive to the point of paralysis. If the building's footprint was altered, the Municipality would have the authority to demand that the new footprint comply with zoning restrictions, thus reducing the overall area and housing/employment potential. Adaptations are typically limited to interior and cosmetic renovations, unless it is adjacent to a similar lot (see below).

Pressure to Tear-Down & Assemble



The only exception to the rule above is that if 2 or more such lots exist adjacent to one another, the resulting pressure is to assemble the lots into one larger lot, demolish all existing buildings, and build one larger one. The resulting maximum built volume of the assembled lot far exceeds sum of their individual potential. This scenario is the one most likely to result in high-density, low-budget developments driven almost exclusively by maximizing return on investment for developers.

● *Maximum Buildable Volume, as determined by zoning regulations.*

Expansion/Adaptation Massing Options for Urban Lots



1 Skinny / Deep Lot

- ▬ ample private outdoor space
- ▬ opportunity for new construction without impacting street presence
- ▬ limited frontage
- ▬ limited parking

2 Wide / Shallow Lot

- ▬ opportunity for new construction
- ▬ multiple street-facing entrances
- ▬ adequate frontage for parking
- ▬ diversification of street-facing typology
- ▬ limited private outdoor space

3 Corner Lot

- ▬ high visual impact
- ▬ adequate frontage for parking
- ▬ opportunity for frontage on two different streets
- ▬ limited private outdoor space

4 Compact Lot

- ▬ affordability (relative)
- ▬ low-maintenance lot
- ▬ constrained by existing structure
- ▬ limited private outdoor space
- ▬ limited frontage for parking

Fig. 041 (diagrams above)



Lot Parcelization & Ownership

The complex and fine grain break down of property parcelization and ownership in urban residential neighborhoods can be one of its greatest strengths in terms of its resilience and social intricacy, however it is also one of the greatest obstacles to initiating change. In looking at opportunities in urban districts, it is imperative to understand the comprising property ownership as a key for unlocking latent potential in a way that is viable for the community to sustain.

In urban districts, unlike suburbia, architects, developers and planners do not have the luxury of making sweeping decisions prior to the individual ownership of land, nor do they have the benefit of working from a blank-slate of recent farm land. In urban districts, the greatest resistance often comes from the people whose properties comprise it — whose expectations can sometimes be decades old.

To navigate this, I have explored the parcelization of land in Mary Allen Neighborhood in terms of a ratio between the **value of land** (in terms of size, access, exposure and connectivity), in relation to the **viability of negotiating change** based on number and type of property owners influenced.

The map on page left demonstrates this relationship as a gradient, showing the viability of negotiating change within each block based on ownership and parcelization alone. The lighter blocks show where one entity owns many connected lots (church, park, etc.) and the grey gets darker as the lots become more atomized and crowded into one another. The resulting imagery speaks to the permeability of each block and points to the areas where collaborating with property owners could be most impactful in the implementation of incremental development. Clusters of smaller parcels (darker grey) indicate where incremental development might meet the most resistance, whereas mid-grey areas might be successful with strategies that allow for opt-in or acceptance over time.



Fig. 043 (right)



Find Players

If the intricacy of a neighborhood is tied directly to its human composition and ecosystem, it is part of our unique role as architects to embrace the complexity of bringing stakeholders to the table. We must take our understanding of the built fabric and extend it into an engaged participatory process by which we can move forward into meaningful and supported action.

Once the patterns that comprise an urban district are established, it is important to determine whose support, participation or collaboration could be most impactful in implementing an intensification plan. This means going beyond a map-based analysis and determining what individuals or entities could play a role, either positively or negatively, in the success or failure of a district-specific plan for incremental change.

Essentially, *who do you need to get on board?*

The answer to this question might differ widely from district to district as primary influencers can take a number of forms, and may not always be visible to a third party. However, a good place to start looking in any area would be in the following categories:

1

Aggregate Land Owners

- Churches
- Parks
- Developers
- Industrial

2

Connective Land Owners

- Streets
- Trails
- Transit

3

Governing Bodies

- Planning (incl. Heritage & Conservation)
- Zoning
- Business Development

4

Independents

- Private Homeowners
- Private Businesses

5

Bridging Independents



Aggregate Land Owners

This group of players gains their influence primarily through land ownership. Looking back to the analysis of lot parcelization and ownership on page 84-85, these players are often among the lightest on the map — owning the properties marked as most viable for negotiated change. Their influence comes from the fact that they own large pieces of land, often comprised of many parcels, and often benefiting from more than one street frontage or access point.

In Mary Allen, many of these players are churches. St. Louis Church for example, owns a church, school (no longer in use), community centre, parsonage, and nunnery all on one block. It essentially acts as an intra-urban campus under one ownership, opening up a wide range of exciting possibilities if a mutually advantageous approach was proposed. Two motivations to keep in mind for proposals involving collaboration with a church property would be their struggle with both underutilization of space, and underfunding or financial uncertainty. Their assets usually include generous parking areas, and monumental structures that many would consider to be integral to the heritage character and narrative of the community.

Another example of this type of player would be a park, though their motives and assets would be very different. As municipally-owned property's primary priorities would be maintenance, safety, and funding, while the obvious assets would be planted open space, mature landscapes, and the potential to leverage existing public gathering space.

Development owners would also land in this category, as would owners of interconnected industrial lands or larger commercial establishments. Profitability is an obvious motive for these parties, though the connectedness of their properties often warrants the exploration of possibilities to propose something mutually advantageous.

Since the properties are large, connective and accessible, any plan for incremental development should explore ideas that leverage these sites first, and use them as catalysts for the next steps of transformation. They will act as both pioneers and as barometers — both garnering support and visibility for a new way of working, and gauging what is or isn't working.

Connective Land Owners

This group of players gains their influence primarily through the ownership and influence over connective arteries. Streets, trails, and transit are the most obvious ones, but there may be others in different types of districts — perhaps a creek or a power line.

In Mary Allen, the streets, trails and transit are all municipally owned, though each governed by a separate department that would need to be managed separately.

Since these players are municipally owned, their motives tend to be predictable — money, maintenance and liability. Knowing this allows us to propose something viable if not mutually advantageous as part of a greater plan. The significant benefit to collaborating with these players is that due to the connectivity of their existing assets, very small insertions or adaptations can go a long way in integrating and fulfilling a larger strategy. An incremental development plan could leverage very small tweaks to these existing networks to provide a sense of continuity, visibility, and accessibility within a larger unfolding framework.

Governing Bodies

Over and above a municipality's influence through their governance of specific systems like trails and transit, they have tremendous influence and impetus at broader levels such as through planning, zoning, and business development departments. These are the bodies tasked with making decisions at both a policy level and on a case-by-case level as projects get processed through City Hall. It is the people within these groups that would be knowledgeable about provincial legislature such as the Places to Grow Act (see page 28-29) and would be helpful allies in proposing a specific strategy that supports it.

Strategic changes at a municipal level could be far-reaching as they could promote change at a district or city level, rather than on individual lots. Correspondingly, this level of cooperation or collaboration may be the most difficult to achieve since municipalities are large, often multi-layered entities that can take a long time to redirect. For this reason, it is important to be selective about the scope of strategies that rely on municipal redirection since, especially at first, it will be more viable to achieve small changes than large ones. A successful incremental development plan might for example propose small changes or tweaks to an existing framework to garner trust and rapport that will help in negotiating for bigger changes down the line.

Independents

It's unquestionable that private homeowners will and should comprise a large ratio of any urban residential neighborhood, though their influence individually is trivial. These players are smaller, more site-specific, and less predictable than the ones outlined previously — including private homeowners and small business owners. The reason for their unpredictability is in part due to the fact that their motives vary widely and change often.

Private homeowners commonly find a collective voice through a local neighborhood association, such as the Mary Allen Neighborhood Association. As communication or collaboration becomes necessary with engaged homeowners at large, this is a good avenue for connection.

More often however, private homeowners are the ones that will make a surprise appearance at an approval meeting and derail a project well-underway. This is not the majority, but the scenario points to the risk inherent when proposing change in places where a wide range of values and opinions are on the line. It is for this reason that any incremental development plan should rely on independent players last, or electively — providing avenues for private opt-in as people choose to or want to, as opposed to relying on widespread agreement on an initiative.

Bridging Independents

Bridging independents is a term I am using to describe people who play a dual role as both a private property owner in the district as well as having a role of influence in one of the other player entities described. This scenario is not at all uncommon, but it can look very different from district to district. It could be a City Councilor, Heritage Planner, church pastor, or development executive, with the key factor being that they also live in the district.

These are the people who can help bridge the gap between private and public interests, and can be invaluable in prompting change within the more stubborn governing entities.

Leveraging relationships with bridging independents allows your voice to be stronger and more meaningful in conversations with bigger players. Incremental development plans may not rely on these players formally, but they should certainly be mindful of these relationships informally in order to lubricate the typical points of resistance from the inside.



Find Opportunities for Connection

One of the biggest pitfalls of modern planning and development practice is that it relies on processes intended to separate sites from their context and abstract their statistics from their nature. A big part of changing this approach is to look for opportunities for connection within the framework of what we've already discussed — in the context of a place's history, fabric, latent patterns and players.

This must be in part experimental, incremental, and inclusive, as there is no right answer.

The goal is to break away from traditional assumptions about development and explore what connections could be made if we bent some of the rules or reassessed our assumptions about the way things are typically done.

In establishing opportunities for connection within a district we can begin to see a framework within which a strategic incremental development plan could be successful. Assessing a district for these opportunities should lend itself to a sense of choice and openness as opposed to a fixed plan — the intention is to lay out a series of strategies that could interplay in a variety of ways, or a variety of sequences, with multiple possible avenues to success, and multiple opportunities to reassess and redirect.

Since urban residential districts rely so heavily on the success of their pedestrian environment, opportunities for connection in these areas should prioritize the following interconnected attributes:

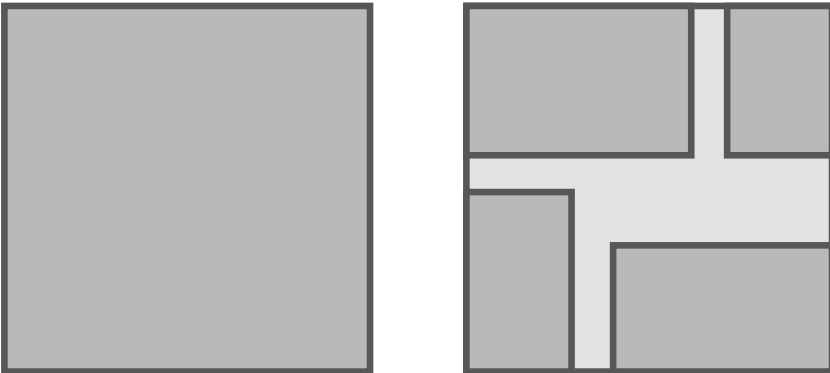
1

Hierarchical Layering

As discussed earlier, the hierarchy of streets is critical to the success of a district, particularly in how it ensures provisions for both vehicular and pedestrian flow without compromising either. Since our socio-cultural focus over the last few generations has been on an ever-increasing demand for vehicular access, it is often necessary in urban residential districts to re-prioritize the pedestrian plain. This can be achieved by inserting new layers into the street hierarchy that prioritize pedestrian circulation, as well as by bolstering the pedestrian zones of select minor streets that feed into it. This lends itself well to not only the provision of new public space, but also offers flexibility for what its form and relationship could be since it can be singularly focused on the pedestrian environment.



Block Permeability



Block Interiority

2

Permeability

With pedestrian flow at the forefront of priorities in urban neighborhoods, the permeability of urban blocks becomes particularly important. The fact that pedestrian movement is more organic than vehicular movement should be evident in all of the beaten paths that can be witnessed at too-tight curb corners or too-long paths that meander a little too far out of the way for our ambling sensibilities. Humans don't like being forced to the edge, especially if the edge doesn't have anything to offer.

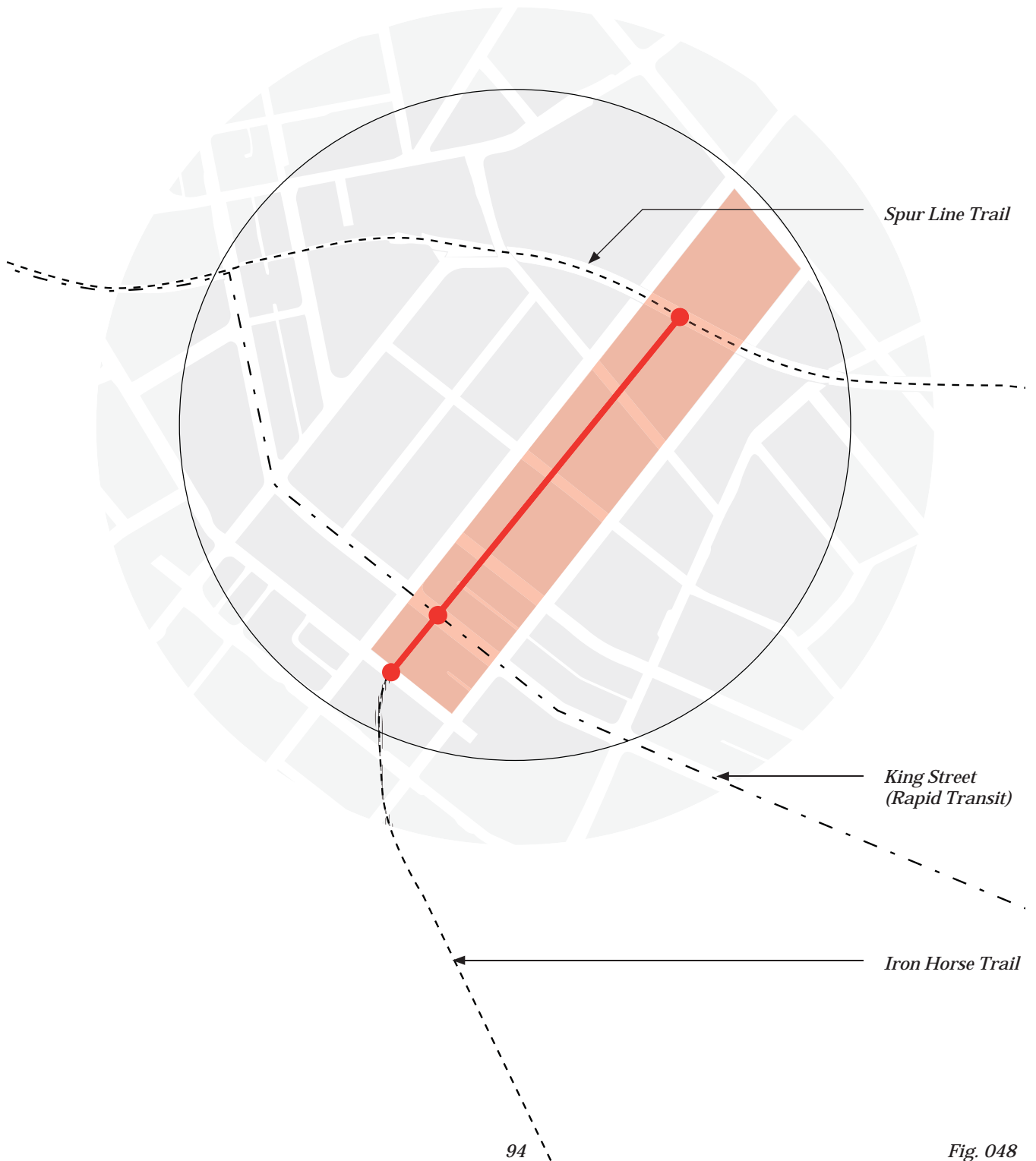
It is for this reason that wherever possible we should be creating moments of permeability in the urban block, allowing for the flow of pedestrians in and through an otherwise fortress-like condition. Permeability need not be ubiquitously applied, but strategically implemented in relation to the hierarchy of streets and incremental development strategy.

3

Interiority

In North America, we are particularly used to buildings facing out, and people interacting with the outside face of urban blocks. This is not common in other parts of the world, and the reversal of this condition often plays a key role in thriving pedestrian space that prioritizes people over cars. Outward facing blocks are certainly not bad, however, we shouldn't overlook the opportunity to harness prospective public space or development proposals simply because it isn't outward facing, especially if the permeability mentioned above is also being achieved. Creating interiority within urban blocks allows you to provide public space that feels more like an outdoor room than a hallway, which can be a tremendous asset to a community and open up a plethora of new ways to use a site.

Interiority of urban blocks is particularly an opportunity to look out for if a district has deep lots or many assembled lots offering mid-block open space. These are the sites that lend themselves most naturally to the reinterpretation of the block's interior.



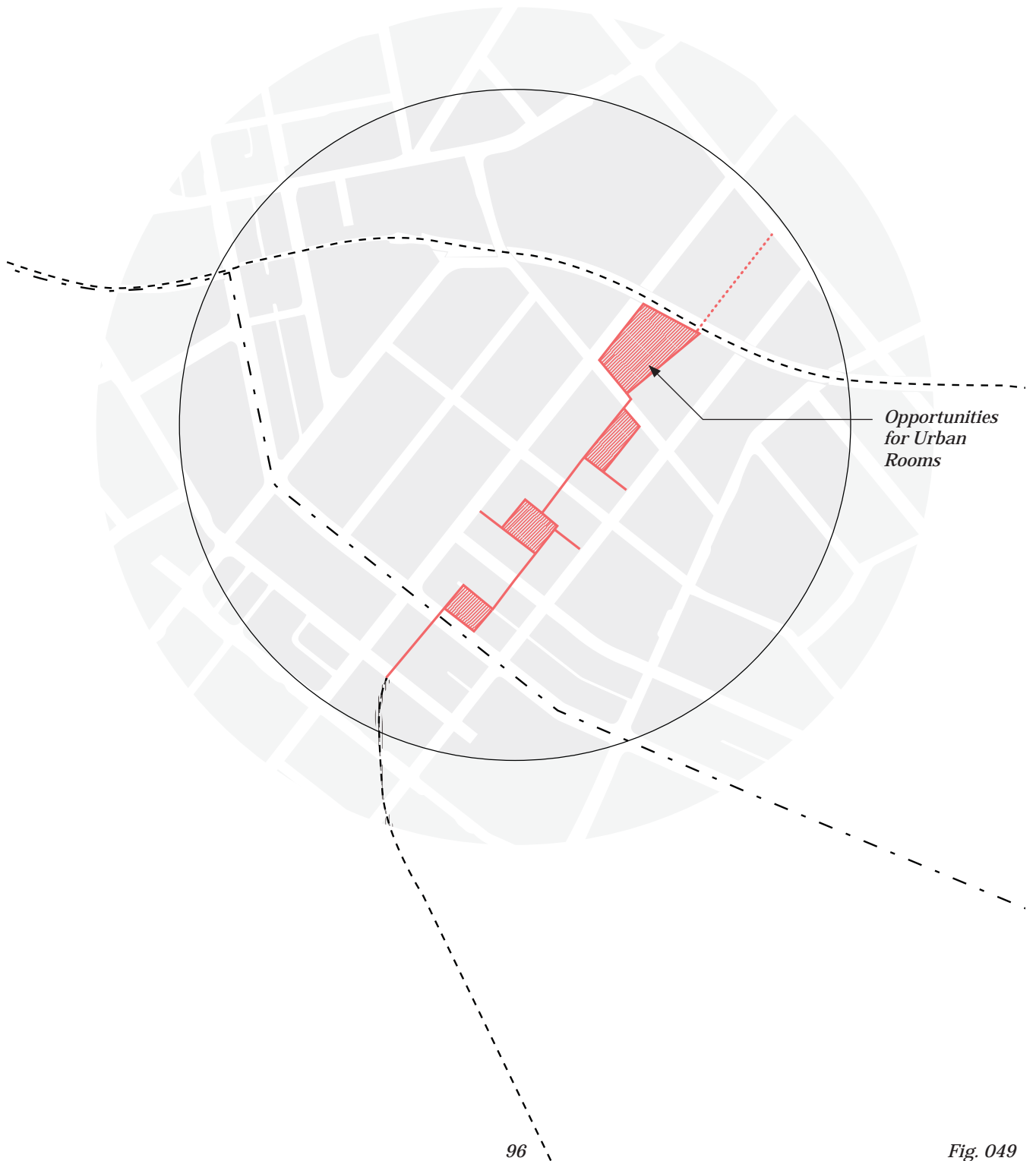
Pedestrian Linkages

Since bolstering the pedestrian realm is a vital priority in establishing a new hierarchical layer that can thrive within the existing fabric of a district, it is valuable to establish where an “short circuit” might exist. For example, are there pedestrian arteries with indeterminate beginnings or ends? Are there successful thoroughfares that could connect to one another to heighten the relationship of each to both the district in question and to the nearby urban centre? As the term *short circuit* implies, these are the potential linkages with lower resistance to transformation and greater ability to adapt and thrive with incremental development. Identifying potential short circuits in a district can help harness the flow of people that already exists.

In Mary Allen, I’ve identified a potential short circuit between the end of the Iron Horse Trail and the Spur Line Trail. This linkage intersects King Street at a rapid transit location and bisects the Mary Allen neighborhood through the centre of the Allen-John block.

The Allen-John block presents a few unique opportunities which make it an ideal candidate for trials as a short circuit anchoring an incremental development plan:

- ① Opportunity to connect and engage with multiple sites that form a critical part of the district’s history, narrative and identity. For example, St. John’s Lutheran Church, Mary Allen Park, Church of the Holy Savior and the Bauer Buildings.
- ② Opportunity to connect with Light Rail Transit stop and 2 existing public trails, thus leveraging a greater influx of pedestrian traffic.
- ③ Greatest viability for land negotiation (see page 84), and thus the ability to propose an initial development with broad impact.
- ④ Greatest presence of aggregate land owners (see page 88), thus providing unique opportunities for mutually beneficial public-private partnerships.
- ⑤ Appropriate walking distance (7 minutes) from urban centre to allow linkage to operate independently from core while still mutually contributing to each other’s traffic and success.
- ⑥ The block’s generous depth (~500ft) provides potential opportunity for inner-block conditions to be explored.



Hierarchical Layering

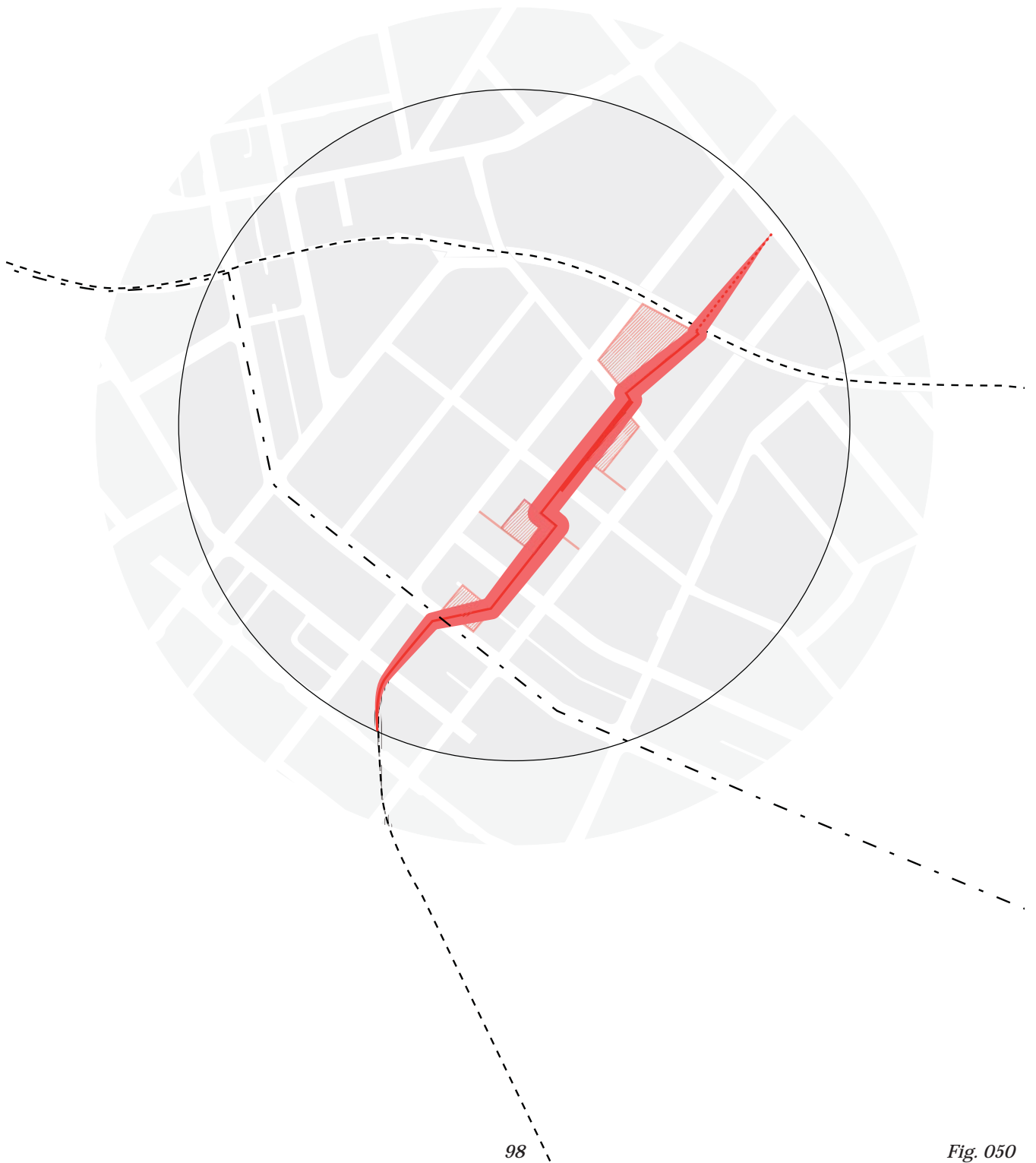
Zeroing in on the Allen-John block as a potential linkage allows us to explore the options that lie within it as it relates to the district's hierarchy of streets.

A pedestrian-focused system that extends through the centre of the block would allow the connection of many inner-block conditions highlighted in previous sections, opening up opportunities for both block permeability and interiority. Bisecting the block allows the narrow street-facing frontages to remain intact and car-accessible, while opening up the lot rear as a new face for urban experimentation. This is particularly viable on the Allen-John block due to its uniquely generous depth (~500ft) for an urban block.

The collection of large aggregate properties on this block, such as the churches, parks, and condominiums open up the possibility of reinterpreting or inserting new interconnected public gathering places into the block centres, almost like Italian piazzas. Urban piazzas would both lend themselves very well to an "urban room" condition while also providing new space for programming and/or internal developments. This new secondary frontage would provide a whole new face for development to relate to, rather than simply having to cram itself in between existing street-facing homes. As Rowe and Koetter articulate in their book *Collage City*, urban rooms become an instrument of field recognition, an identifiable stabilizer and a means of collective orientation. The combination of these traits provides a condition of mutual reference, complete reciprocity, relative freedom.⁶⁹

These inner-block rooms and corridors also have the potential to act like catalysts for the adjacent properties within the block. It wouldn't be critical for every lot to participate, but over time and with the right support from municipal zoning and planning initiatives, it is reasonable to predict that many independent property owners could elect to build secondary units that front onto the new linkages and public spaces. This could present opportunities for live/work developments, small-scale affordable housing units, artisan studios, or other district-enriching small-scale developments.

⁶⁹ Rowe, Colin, and Fred Koetter. *Collage City*. Cambridge, MA: MIT Press, 1978. (83)

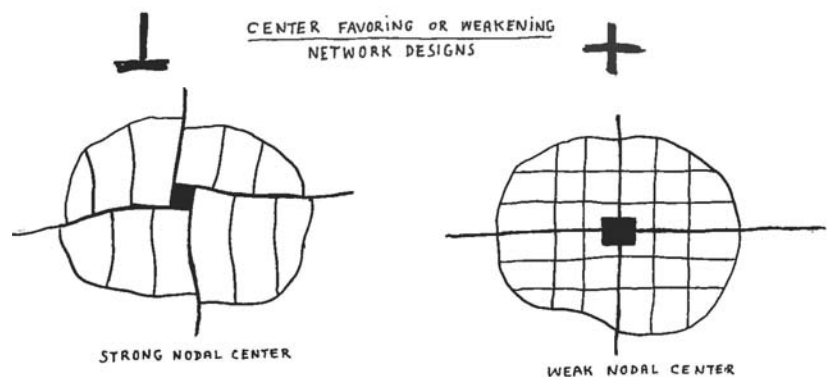


Arterial Inference

From the pedestrian linkage identified through the Allen-John block of Mary Allen neighborhood, and the imposed layering of pedestrian corridors and squares, we can begin to infer a central artery that could be leveraged as a spine of an incremental development plan.

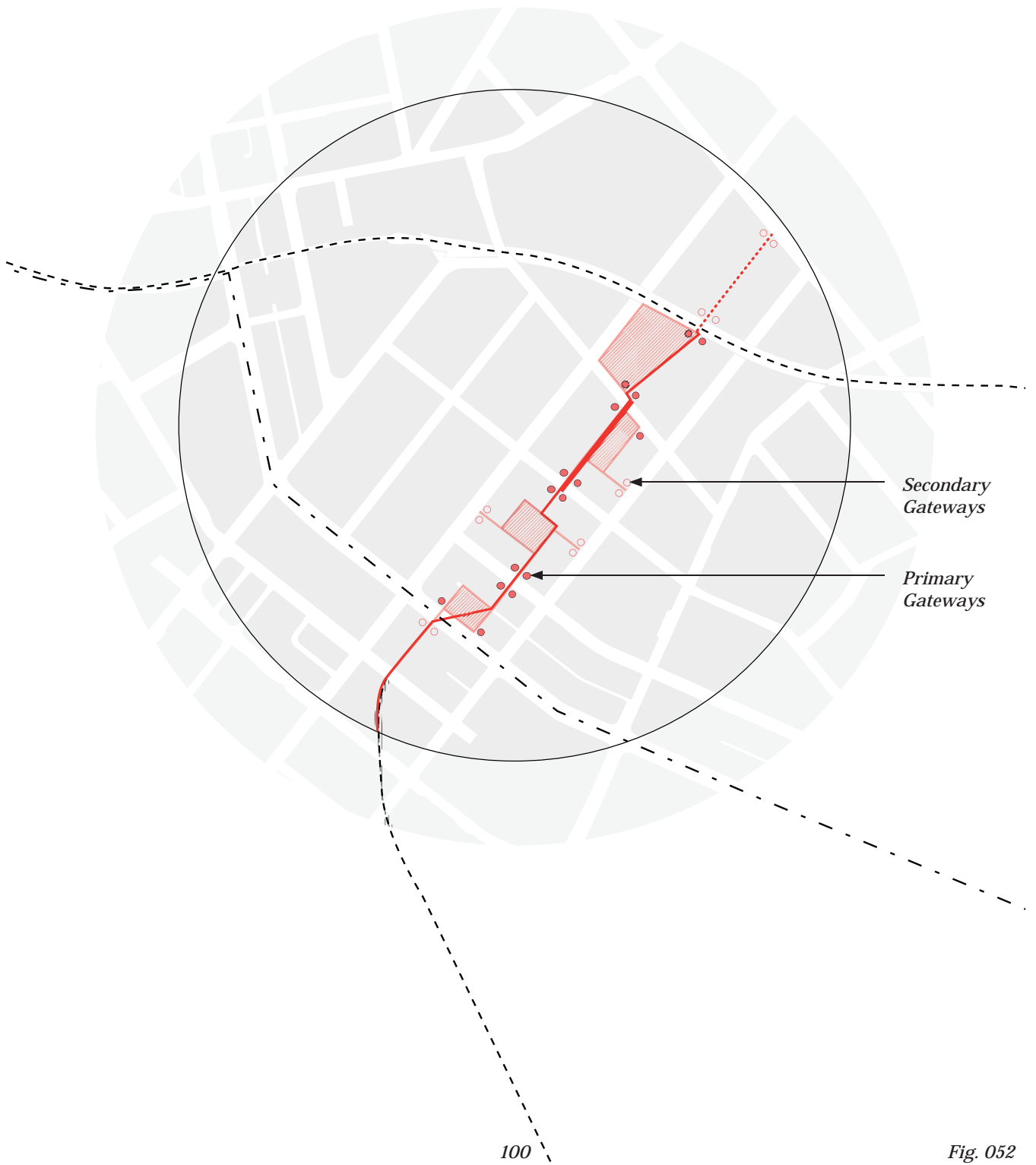
It is important to note that unlike the abstract “short circuit” shown on page 96, the proposed artery need not be straight, only continuous. Krier discusses the importance of irregular urban network geometries at great length in *The Architecture of Community* — favoring “T” and “Y” shaped intersections over more formal “+” arrangements as they provide nodal points of focus and connection. He describes irregular grids as having more capacity to provide “centre-favoring designs” that create a gravitational pull inwards towards primary public spaces or corridors, as opposed to “centre-weakening designs” that lack focus or gravity (see Fig. 051)⁷⁰. Krier also insists that irregular grids are more accepting of modest architecture⁷¹, which is critical to the success of an incremental development plan, as it will be executed in stages over time and not fully envisioned in the early stages of conception.

The intention of the artery is to both provide a gravitational spine along which new incremental programming and development can relate to one another, and also to connect the resulting public spaces where pedestrians can orient themselves and participate in the urban realm. Its most difficult task is balancing enough continuity and differentiation to successfully reorient existing spatial axes and encourage the flow of pedestrian traffic through an artery that didn’t formerly exist.



⁷⁰ Krier, Leon. *The Architecture of Community*. Island Press, Washington DC, USA. 2009. (149)

⁷¹ Krier, 2009. (163)



Secondary Gateways

Primary Gateways

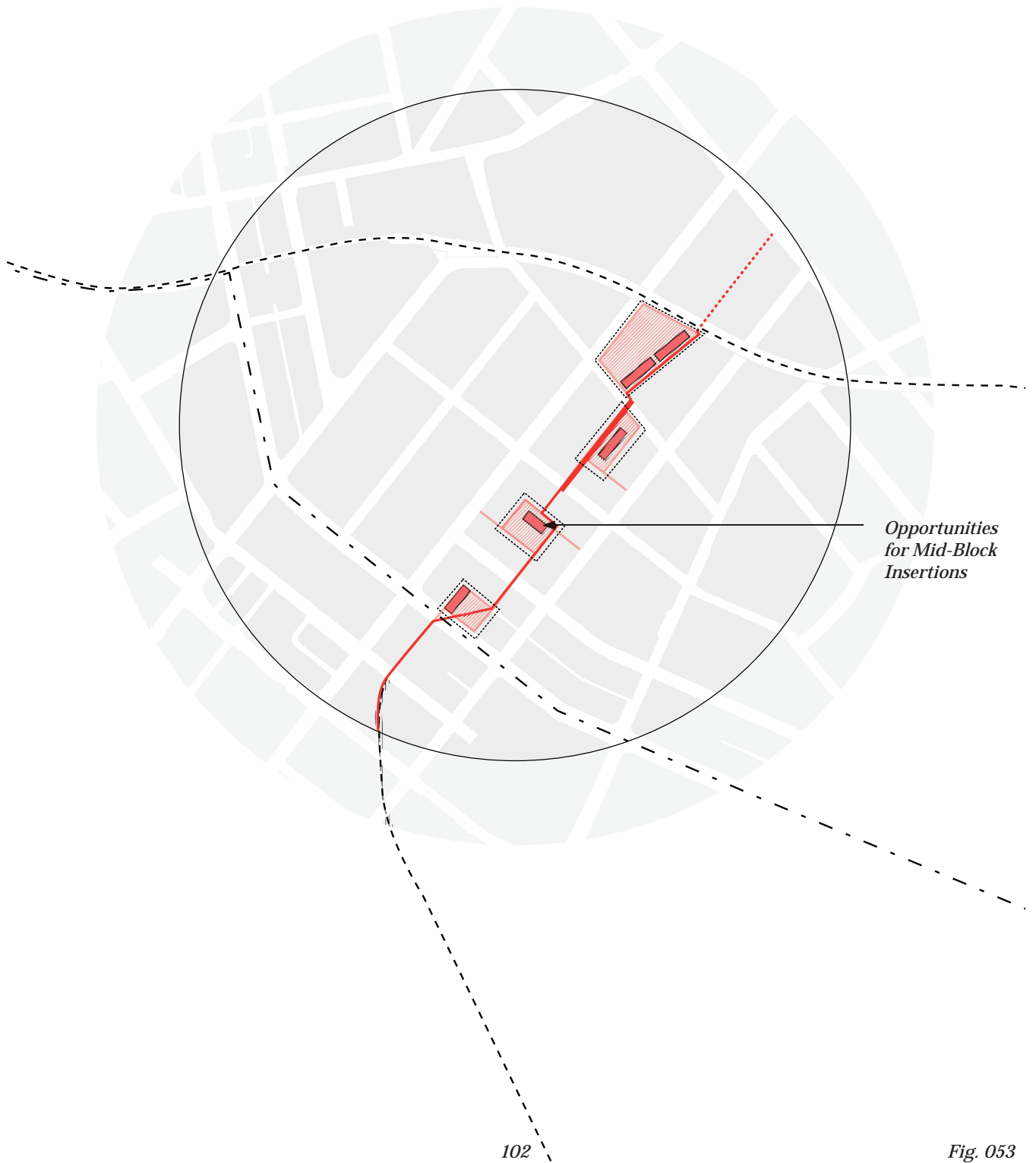
Gateways

The sites that exist at intersections between the proposed pedestrian spine and the existing street grid of the district should be treated uniquely as they form both visual landmarks of continuity along the spine and spatial gateways between the existing urban fabric and the new internal corridor. It's these properties whose treatment can determine the success or failure of a new inserted axis of circulation. Relating to and mediating between old and new, these sites should be treated with their own parameters to ensure that the new spine is both visible and complementary (not to exclude deliberate contrast) to the existing street frontages. These parameters are likely to look different from district to district, but may include factors such as setbacks, height, volume, public access and perhaps landscaping requirements.

Primary gateways are the sites that anchor the corners of the main arterial spine, however I've also shown secondary gateways that could play an integral role in anchoring the supporting laneways running perpendicular to the primary spine, or possible extensions to it.

Because of their particular obligation to negotiate the architectural language and planning frameworks of old and new, gateways in Mary Allen neighborhood would be great opportunities for strategic retrofits to historic homes. For example, maintaining a street-facing frontage from the original home, while inserting a perpendicular frontage to the pedestrian corridor, aligning with the internal developments beyond.

Gateways can be designed as either positive or negative space — meaning either structured volume or structured void. For example, a courtyard could form an excellent gateway for certain sites, especially where sitting, lingering or people-watching may be pertinent. Where negative space is desired, it is important to frame it formally or informally along the perimeter and provide some sort of visual anchor or focal point.



Centralizers

In order to activate latent open space within block centres and repurpose it for public means, it is important to provide programming and amenities that pull people inwards. Located mid-block, centralizing amenities play a key role in connecting multiple spines of circulation or activity, while also providing new opportunities for visual anchors and identity-forming elements within the neighborhood.

The ideal location for these proposals should be self-evident — they belong in block-centres where opportunity exists to reclaim space for public use, and should connect into a primary spine of pedestrian circulation. The primary challenge is that the insertion of centralizing amenities often relies on the introduction of underground parking, particularly if a significant amount of surface-parking is being eliminated. This is where public-private partnerships between aggregate land owners and the municipality can be critical. This is also where the architect's role in educating stakeholders on the viability of new typologies in mid-sized cities can be critical.

While seeming initially foreign to mid-sized city planning tactics, underground parking is a necessary step to take in urban districts when growth patterns push it out of its original comfort-zone of small-town planning tactics. By pushing parking below grade, we are able to achieve more parking without congesting the streetscape, and we reclaim a huge piece of valuable land that can serve as public space and a site for new developments. Not all sites will require underground parking to accommodate centralizing amenities, and it may be wise to begin a strategic development initiative with a proposal for a site that does not rely heavily on it, unless support is already established. These sites have huge potential in connecting multiple smaller initiatives across a district, as we can see in the Allen-John block of Mary Allen neighborhood — thus it is more and more likely to gain support for more invasive measures after one or two projects have already come to fruition and started to reform the district's centre.

Centralizing amenities can often take advantage of multiple storeys of programming but it is only critical that their ground plane be porous, public, and people-serving. Their main goal is to serve the people in the immediate community; however because of their connectedness to transit, and cross-city arteries, they are also likely to draw others in from across the city.



Amenities

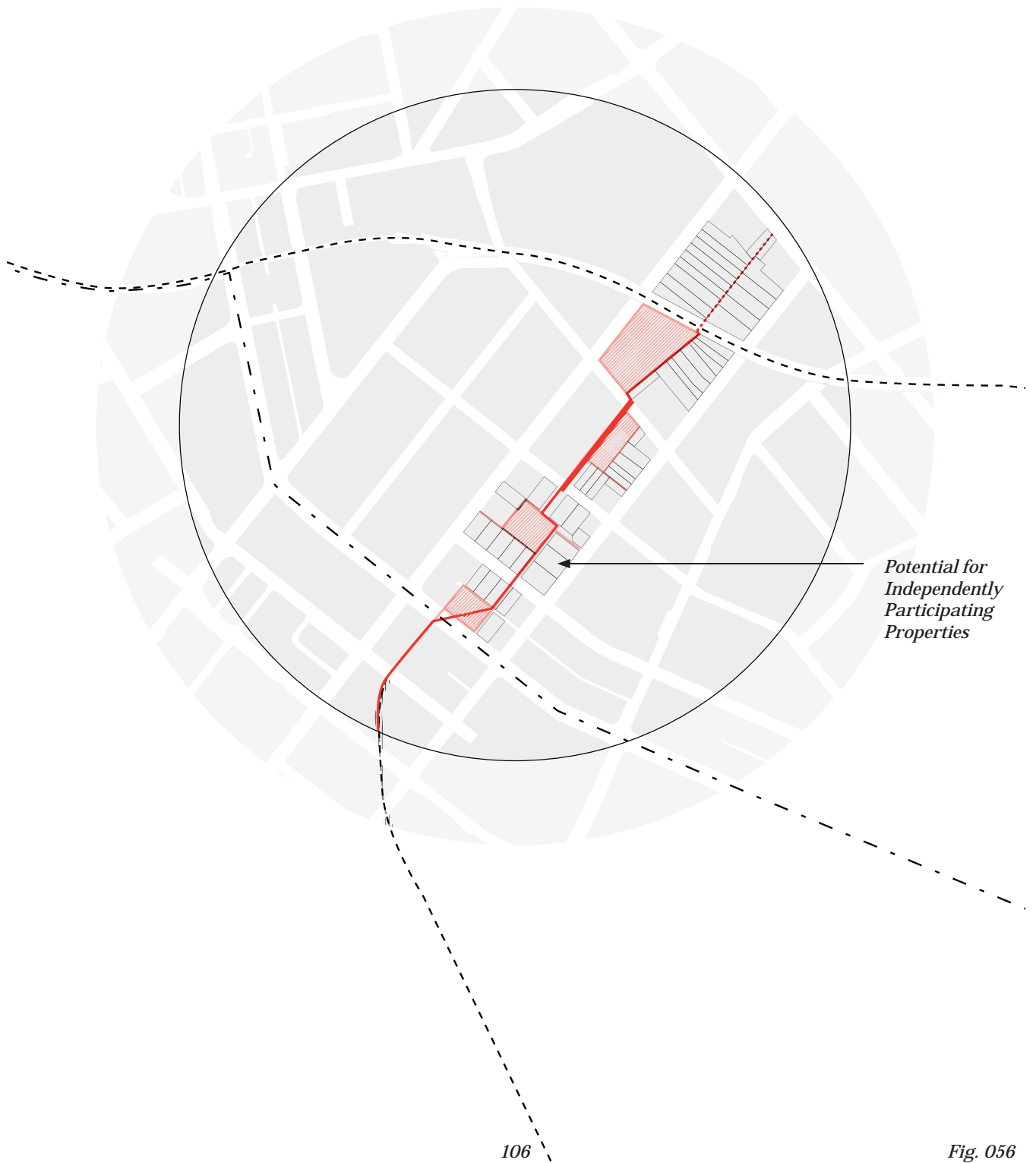
The programming and amenities proposed along new corridors of pedestrian traffic could vary widely by neighborhood; they should be considered carefully based on what the community already has provided elsewhere, and what they really need based on existing and projected use patterns and demographics. Examples of useful programming could be a market, a park, a recreation centre, a community education centre, a daycare, or a library. It could be something as simple as a public washroom, information centre, notice board or fountain, or as extravagant as an event hall or botanical garden. The important thing is that it is needed by the people in the immediate community and can assist in making it operate more like a city-within-a-city rather than a homogeneous, mono-functioning island of homes.

More modern examples of programming suitable for urban dwellers could be amenities that cater to those seeking smaller, more mobile lifestyles with less desire for ownership — for example, a bike-share hub, car-share hub, mobile work centre, or a share-library for borrowing anything from kitchen appliances to lawn care tools. They could also include more traditional commercial amenities such as grocers or coffee shops.

It is important that these amenities are not oversized, but rather suited to the scale of the community. If successful, they will, of course, draw in people from other districts, but the intention is to inspire growth by duplication, rather than growth by extended sprawl and transit.

Spatially, amenities should extend along any new pedestrian artery to improve street life and activity and should have a wide variety of 'open-hours' to ensure constant flow of people. In Mary Allen, it may also be appropriate to also cluster some of the city-serving amenities towards King Street where public transit can have more immediate access and visibility.





*Potential for
Independently
Participating
Properties*

Private Opt-In

It has already been established that a strategic incremental development plan must not rely on ubiquitous participation from adjacent property owners. Ideally though, the development will foster a desire for participation by citizens of their own accord. For this reason it is important to consider how independents that are adjacent or near the new axis of development can opt-in over time as the rest of the network is taking shape.

For example, in Mary Allen there are many homes that have large backyards that could potentially face onto the new public spaces or pedestrian corridors. If planned appropriately for access, service, fire safety, and volumetric proportions, these properties could benefit greatly from the ability to build an accessory structure that faces the new artery. These independent developments could be used as income properties to offset the high cost of real estate in the district, thus making it more accessible to a wider range of the population, while also providing smaller rental properties to bolster density and provide alternative housing types. These accessory structures could also be used as live/work units providing both residential and commercial space for smaller business, studio, or workshop endeavors — providing both housing and continued diversification of amenity and programming within each block. The third significant way these independent developments could benefit the community and its residents are as opportunities for generational care and aging-in-place — allowing families to care for elderly parents or struggling young-adult children in an independent but readily accessible format.

Each of these possibilities has huge potential to bolster the density and social intricacy of the district overall, making it more accessible, both demographically and financially.

To support this type of development it would be important to establish a guidebook for development alongside an initial incentive or lenience towards their development. This would lubricate the existing friction within the zoning system to encourage people to take advantage of this new possibility, and would then encourage good design within a set framework.

It is important that this initiative support each citizen's sense of autonomy and choice, as opposed to being forced. The collective sense of ownership over the district and its development will far outweigh any benefit to inflicting the change imposingly.

PART IV | DESIGN PROPOSAL

implement





The Next Best Step

Design Proposal

The strength of incremental development as an urban renewal strategy is that you do not need to have, or pretend to have, all of the answers up front. The goal is instead to establish the next best step based on what you have uncovered about the site, the district, and its people; by embracing their contradictions and complexity rather than abstracting or ignoring them.

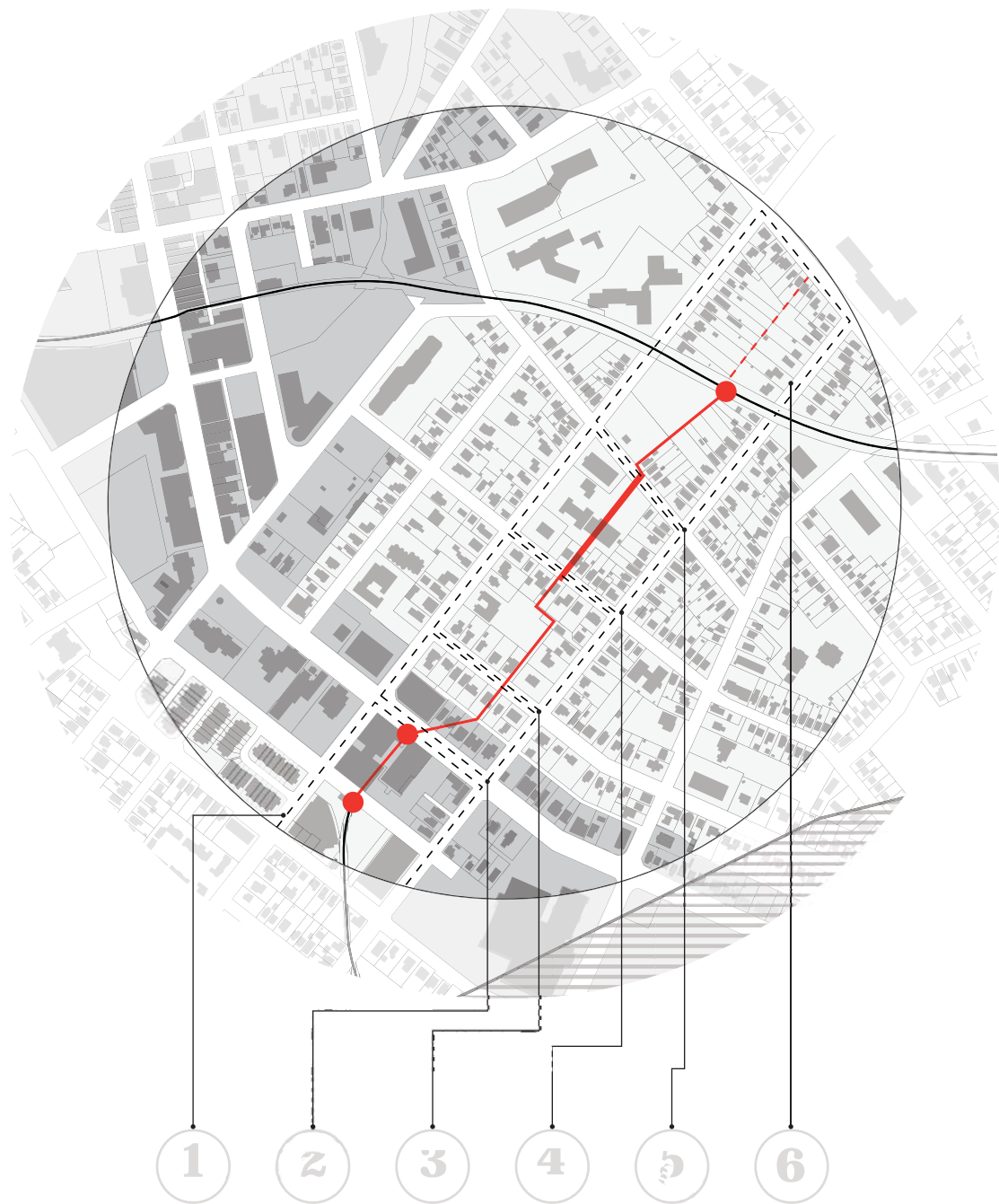
By “next best step” I mean — what is the most impactful singular action that could move the district towards its densification and intricacy goals, with minimal or manageable levels of friction and mediation? Not a masterplan, but one single step that moves us in the direction that seems right to us now, based on all of the information available.

This approach takes widely accepted colloquialisms like “best bang for your buck” and “path of least resistance” and puts them within a new framework of a constructive and inclusive process.

The next best step might be as simple as having a conversation with a key stakeholder, or educating pivotal decision-makers. In many cases it should mean selecting the most promising site, based on its capacity to be a catalyst, for the next architectural intervention. It could be as simple as selecting a new hardscape to tie together previous interventions into a common public realm, or as complex as designing the radical transformation of parcel or a block.

In any case, the next best step should be specific, achievable, and capable of motivating and catalyzing a multiplicity of steps that may follow it. It should not be a narrow-minded act of densification that does not look beyond its own property boundaries, but rather, it should open doors to possibilities that connect and thicken the district to and through itself.

In establishing the next best step, we should be careful not to assume what the second or third step is. Rather, we should aim to make room for a variety of possible next steps, and be open to where the first one takes us.



Block Breakdown

In Mary Allen, we've already identified a critical opportunity to connect existing arteries of pedestrian circulation through the Allen-John block, extending from the Iron Horse Trail on the South-West end, and to the Spur Line Trail on the North-East. Within this district-wide block, there are 6 individual blocks that each carry their own unique characteristics, including both challenges and opportunities in the context of incremental development.

- Block 1*
 - connects with terminus of Iron Horse Trail
 - intersects Bauer Building commercial development and condominium podium
 - contains southbound LRT hub
 - no single-family-residential properties

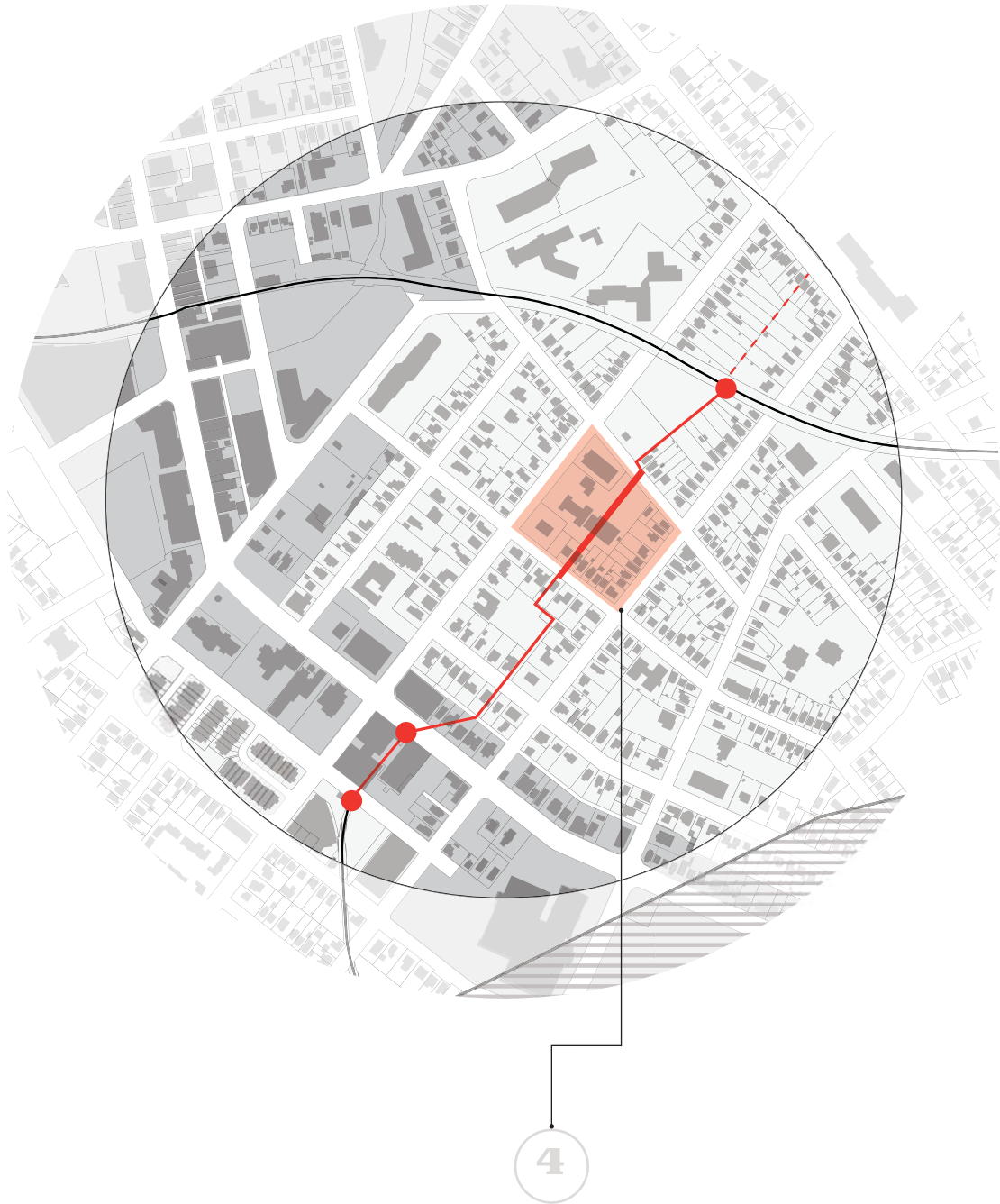
- Block 2*
 - contains northbound LRT hub
 - intersects The Red commercial podium
 - zoned for more intense levels of development
 - few single-family-residential properties

- Block 3*
 - contains Church of the Holy Saviour and associated central/mid-block parking area
 - many single-family-residential properties, lining block perimeter on 4 sides, and backing onto existing parking lot

- Block 4*
 - contains wide variety of buildings under consolidated ownership: St. Louis Church, (former) St. Louis School, parsonage, nunnery, gymnasium and central/mid-block parking
 - many single-family-residential properties, primarily fronting onto John St., and backing onto St. Louis property

- Block 5*
 - intersects Mary Allen Park
 - intersects with Spur Line Trail
 - many single-family-residential properties, primarily fronting onto John St., and backing onto Mary Allen Park.

- Block 6*
 - exclusively single-family-residential properties, with parallel frontages on Allen St and John St, backing onto each other (note: extra-deep lots)



St. Louis Block — Existing Conditions

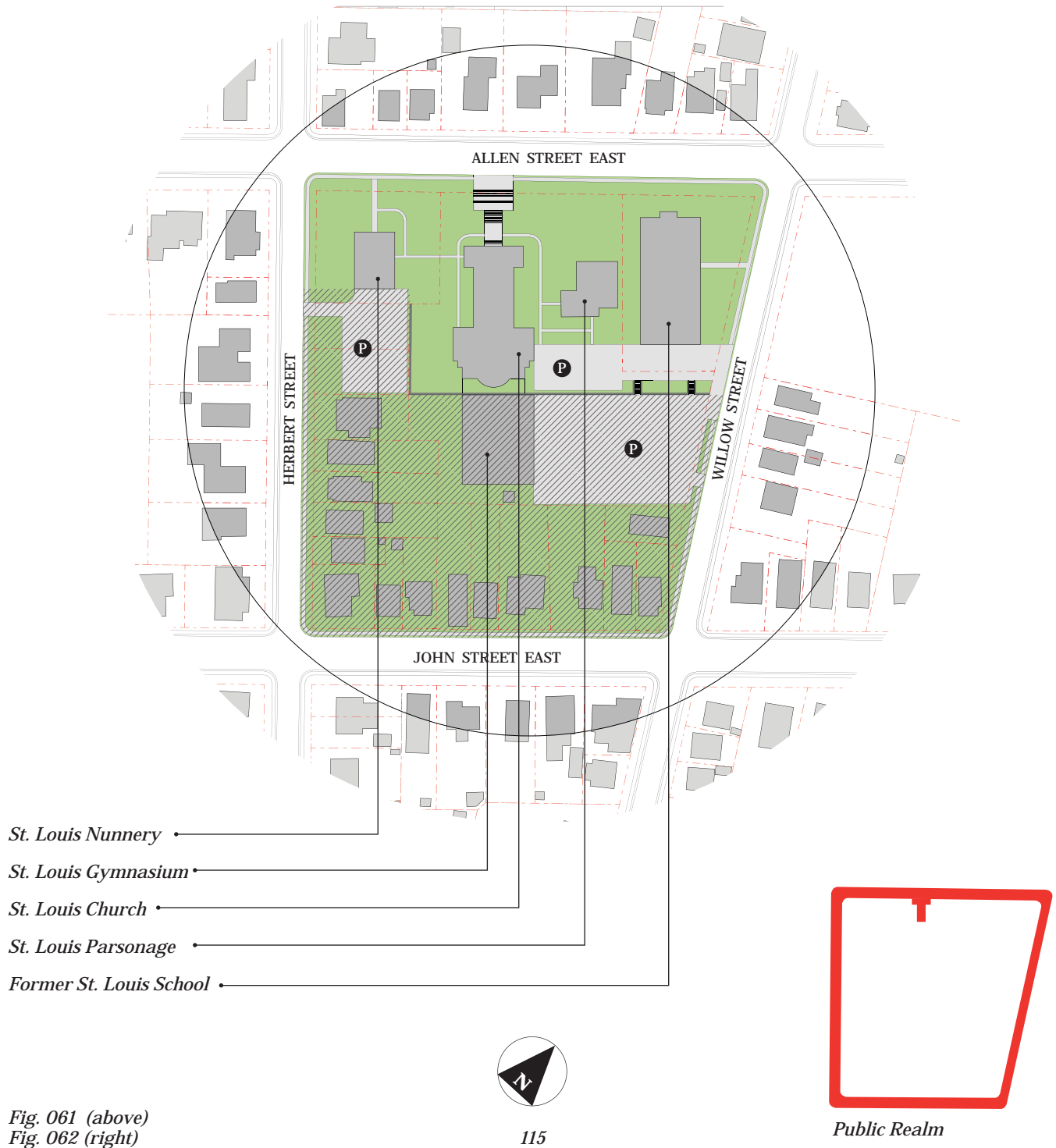


Fig. 061 (above)
Fig. 062 (right)



LOUIS

St. LOUIS

St. Louis Block

I have identified Block 4, or the St. Louis Block, as the most promising block for a pioneering intervention in the Mary Allen neighborhood, to kick-start the incremental development process and vision.

This block is a prime candidate partly because of the consolidated land ownership, which reduces the stakeholders significantly, and presents the opportunity to work with the primary land-owner (in this case, St. Louis Church) to propose something mutually beneficial. The relationship that exists between the consolidated ownership on the Allen St. face, and the parcelized ownership on the John St. face also presents a unique opportunity to explore how these entities might interact in framing and establishing new public space.

This consolidated land ownership is also appealing in the sense that its configuration interacts with 3 different street frontages, while maintaining ample mid-block opportunities for new extensions of public space. These frontages will afford a visibility to any intervention that will assist in building awareness and gravity to a larger initiative and movement in the district.

The St. Louis Block is also a prime candidate because of its centralized location along the short-circuit established in the Allen-John district-block, and relative proximity to public transit. This mid-point would be an ideal hub along an artery connecting the 2 existing, and well-used pedestrian arteries — the Iron Horse and Spur Line trails, while being close enough to King Street to support infrastructural commitments that will foster use of public transit. An intervention in this block has high potential for catalyzing an inner-block vein of pedestrian flow between the 2 pedestrian trails and rapid transit.

The massing of existing structures on the St. Louis Block also lends itself well to an exploration of the block interior as new public space. With prominent massing along Allen St. and John St., and a core comprised of parking and low-stakes, poorly maintained structures, this block is pregnant with potential for interiority and permeability.

Lastly, this block contains an icon of the district's identity — St. Louis Church itself. This historic monument presents an opportunity to connect place and community through the history of the site.



*Investment in Infrastructure
and Public Space*

The intervention on the St. Louis Block relies on a public private partnership aimed to reclaim and public space as a catalyst for change at an urban level — both as habit and habitat.

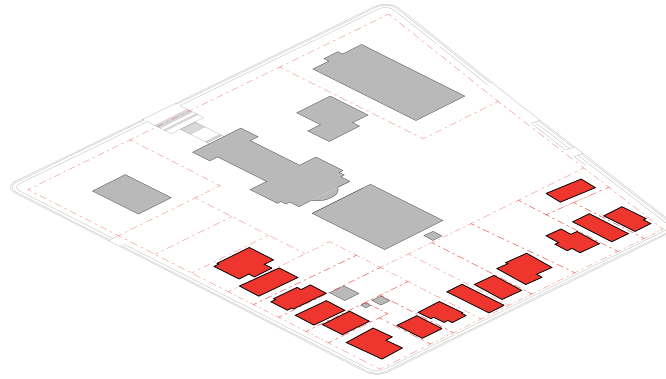
Typically, invasive measures such as underground parking would only be considered if the density it supported could directly outweigh the increased cost of the infrastructure — making it difficult to propose such a thing for a low-rise, high-density intervention such as the one discussed herein.

This proposal relies on an understanding that providing particular kinds of connections to multi-faceted public space at a pedestrian scale are a worthy investment as a catalyst for new types of space, developments, and urban life to be possible.

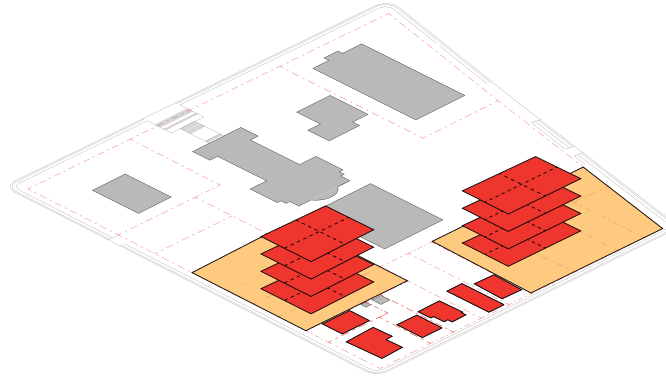
The St Louis Block provides a perfect opportunity to explore this confluence of public space and infrastructure, particularly as it relates both to the proposed new community hub, new circulatory artery, and to the adjacent rapid transit connecting to other parts of the city. It would be reasonable to propose that the City and primary stakeholders (in this case, St. Louis parish) could come to a mutually advantageous agreement to facilitate the infrastructure necessary to support this investment in a long term growth strategy.

This investment also provides ongoing impetus on the City's part to support the longer-term strategies for low-rise, high-density development in this community, perhaps giving them added reasoning to provide incentives or eliminate obstacles for citizens and stakeholders to participate in a new model of community-specific growth.

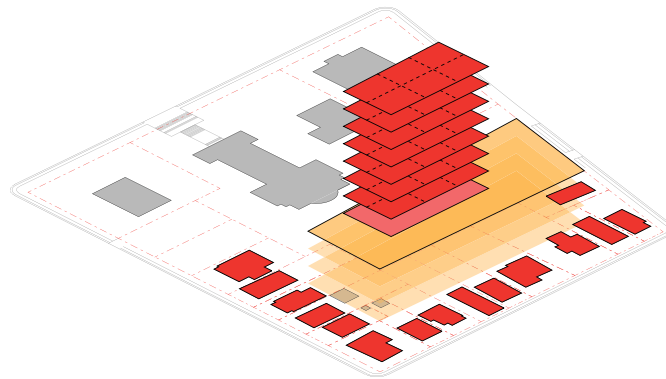
Development Model Analysis



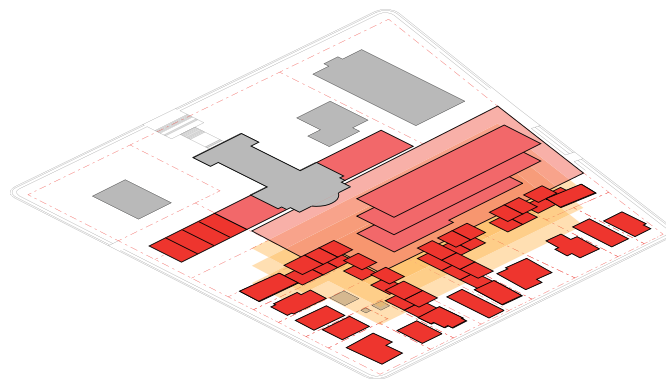
Existing Conditions



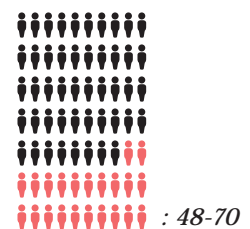
Mid-Rise Development









High-Rise Development



Incremental Development



-  Existing - not counted
-  "Live/Work Unit"*
-  Parking Required
-  Community Amenity (1-5 units per 500sf)

-  1 "live/work unit"*
-  1 "live/work unit"* from community amenity

* see description of "live/work unit", opposite page.

Development & Density

For the purposes of comparing development models for the St. Louis Block, I have leaned on the idea of density as articulated in the *Ontario Places to Grow Act*, which includes both residents and jobs as contributing factors towards density targets. This points to an equal valuation of places of residence, and places of employment as they both support “smart” or inward growth, and contribute to the intensification that we desire in our urban environments. In the context of this thesis, places of residence and places of employment are particularly beneficial in combination or close proximity, as they contribute to the complexity of the urban fabric and its use. Places of employment are particularly important to consider as they can offer an added service back to the community and create a sort of reciprocity at a small scale.

I have thus compared development models on page left using the approach of quantifying “live/work units”. Rather than speculating about individual residents and jobs represented in each building, I have quantified 1 “live/work unit” as a single dwelling or single place of employment.

Community amenities and their contributions to these density targets are quantified separately, as their level of employment can vary widely depending on specific programming. I have accounted for 1-5 units per 500 square feet, as they are likely to employ many people for various roles and purposes.

Interestingly, the density that can be achieved through low-rise, high-density, incremental development actually exceeds that of typical mid- or high-rise development models for this site. This is perhaps due to the nature of increased setbacks and infrastructural requirements for larger buildings.

This thesis also posits that the prioritization of ground-plane interaction, low-rise scale, and relationship with public space increases the opportunity for such small-scale insertions, while also reducing the necessary footprint for it to be successful. For example, a 500sf unit on the eighth storey of a tower would not be nearly as saleable or valuable as an equal-sized one on the ground-plane that interacts with a thriving public corridor. The tower unit would also require a significant amount of site infrastructure and circulatory and support space to sustain it, while offering limited “quality of life” factors such as independent frontage, independent outdoor space, structural autonomy, and direct vehicular access.

Interiorization of the Urban Block

The first step proposed on the St. Louis block is to reclaim the interior of the urban block, making it part of the fluid, occupiable public realm. This newly claimed public space can then be leveraged spatially to provide the types of centralizing amenities, pedestrian connections, and urban rooms discussed in analysis.

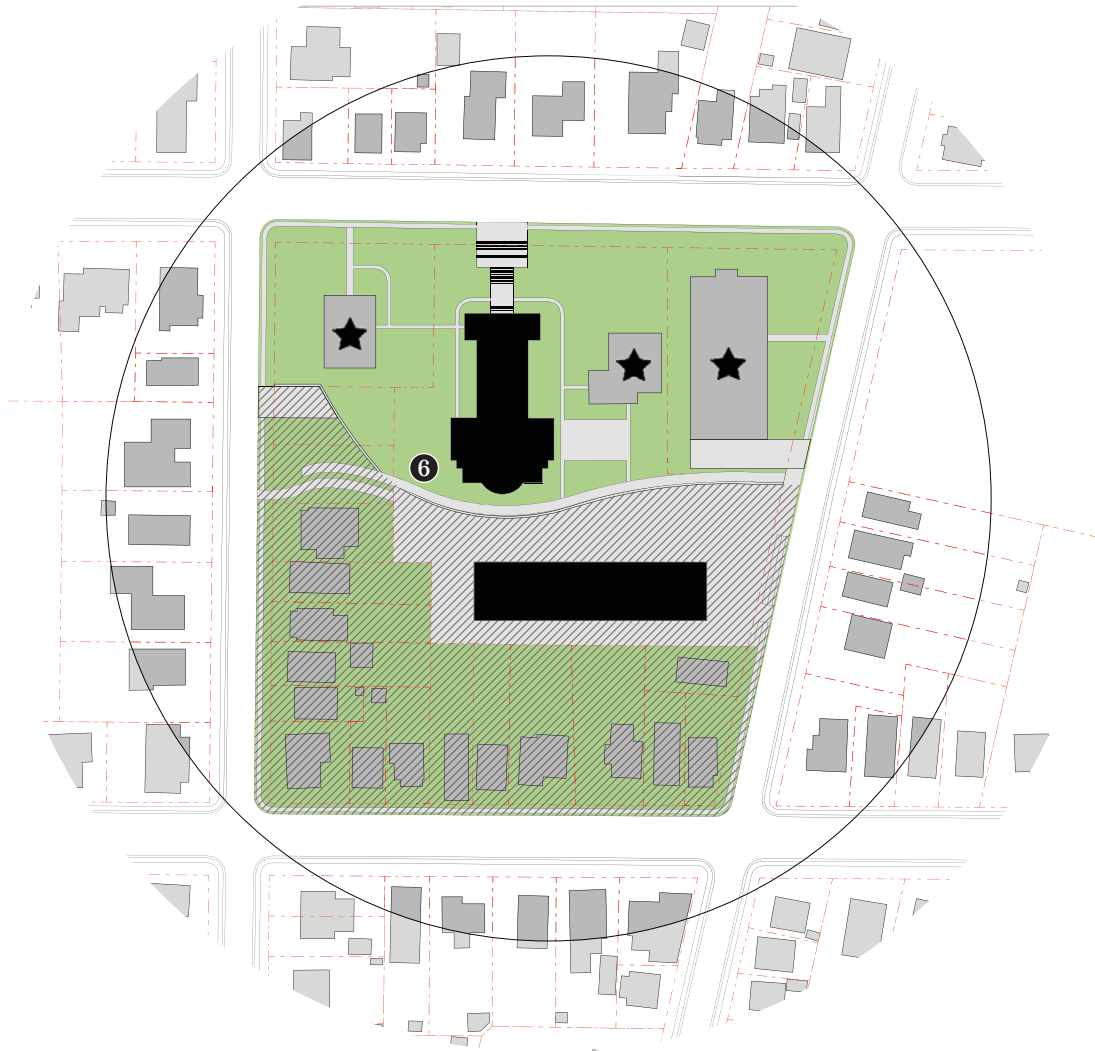
This strategy relies heavily on two make-or-break criteria: (1) a private-public partnership between the City and St. Louis Church, and (2) moving existing surface parking below grade. These two criteria do not typically fall within an architect's self-described job title, but in the context of incremental development, it is crucial that we begin to embrace the unique and complex role of educating, facilitating, and mitigating wherever necessary to bring about new avenues for change.

The topography of the St. Louis block also provides a unique opportunity to work on two levels. Since the Allen St. face is nearly a full storey above all adjacent grade levels, we have the ability to leverage an upper and lower level of programming and pedestrian flow. This allows for increased visibility between activities and programming and will thus benefit the overall impact of the intervention.

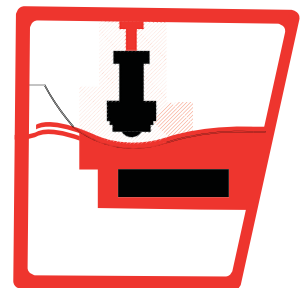
Components of this stage of development include:

- ① New 3-storey Community Recreation Centre
- ② Opening of the lower level of St. Louis Church to the public for the purposes of offering community support services
- ③ New commercial space extending from the St. Louis lower level, intended primarily for community education and support services (would be well-supported by retail or café units as well).
- ④ New mid-block public square, partially covered/shaded.
- ⑤ Through-block continuity provided by the provision of minor pedestrian paths extending from the new public space to adjacent frontage.
- ⑥ New upper cycling and pedestrian ramp connecting to upper tier of St. Louis Church and associated green space.
- Ⓟ New access to public underground parking.

St. Louis Block – Upper Level

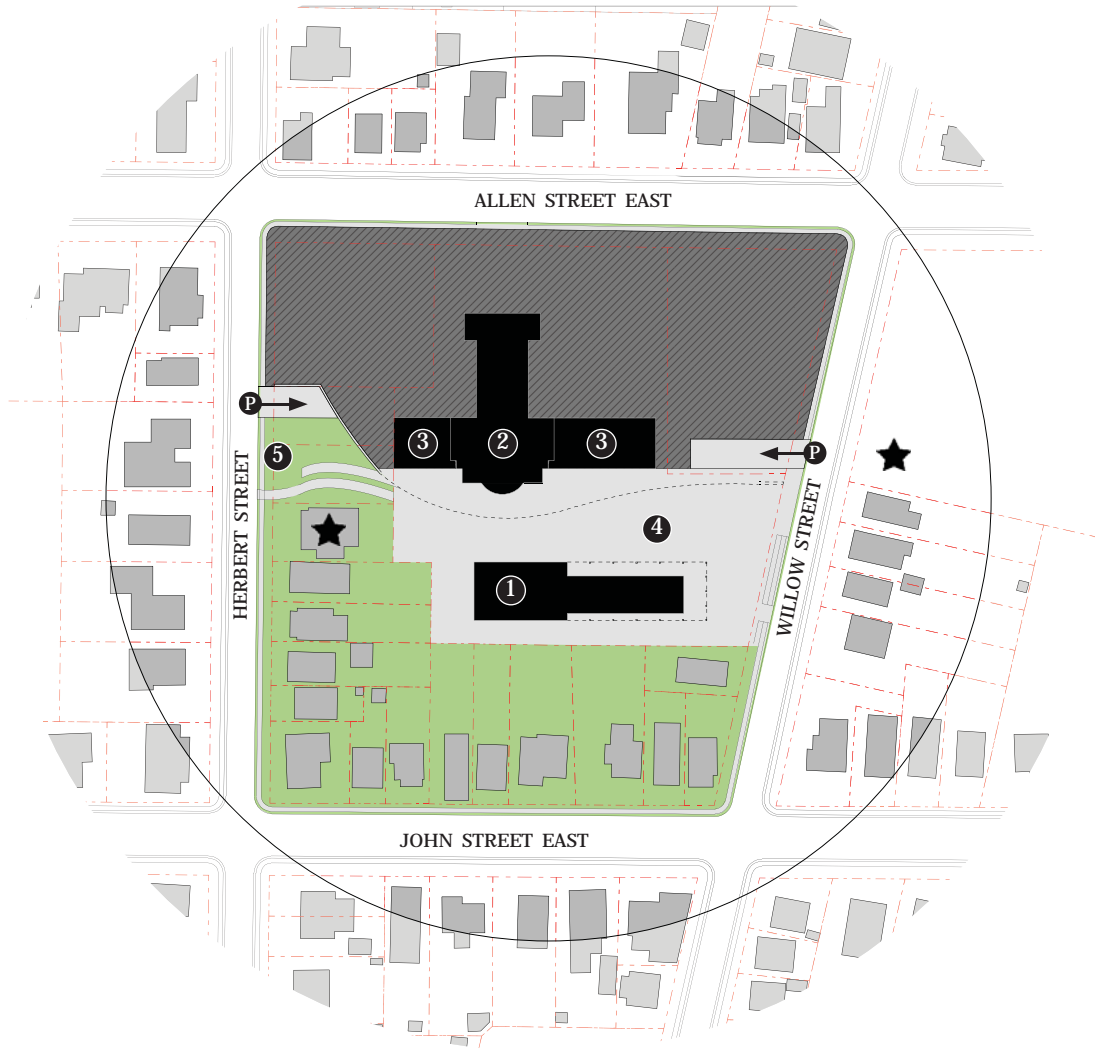


★ *Potential site activated or pressurized for change by proposed intervention.*



*Fig. 066 (above)
Fig. 067 (right)*

St. Louis Block – Lower Lane



★ Potential site activated or pressurized for change by proposed intervention.

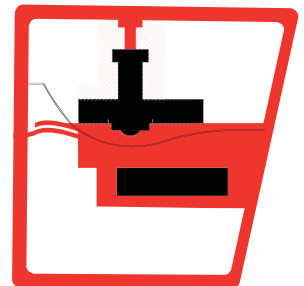


Fig. 068 (above)
Fig. 069 (right)

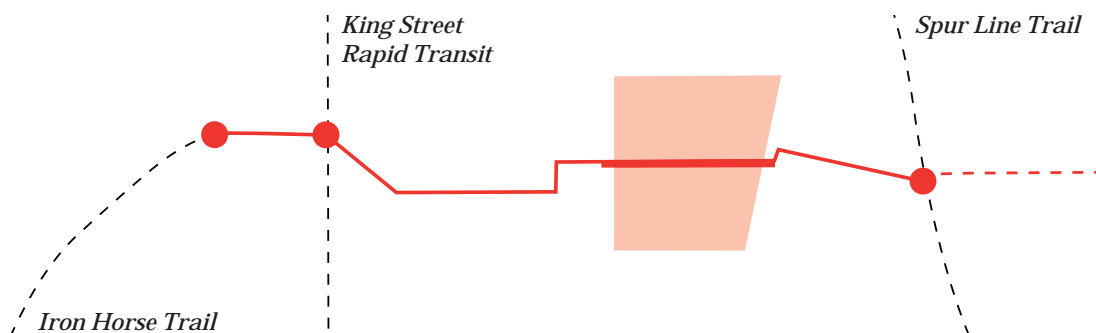
Reinforcement & Extension of the Spine

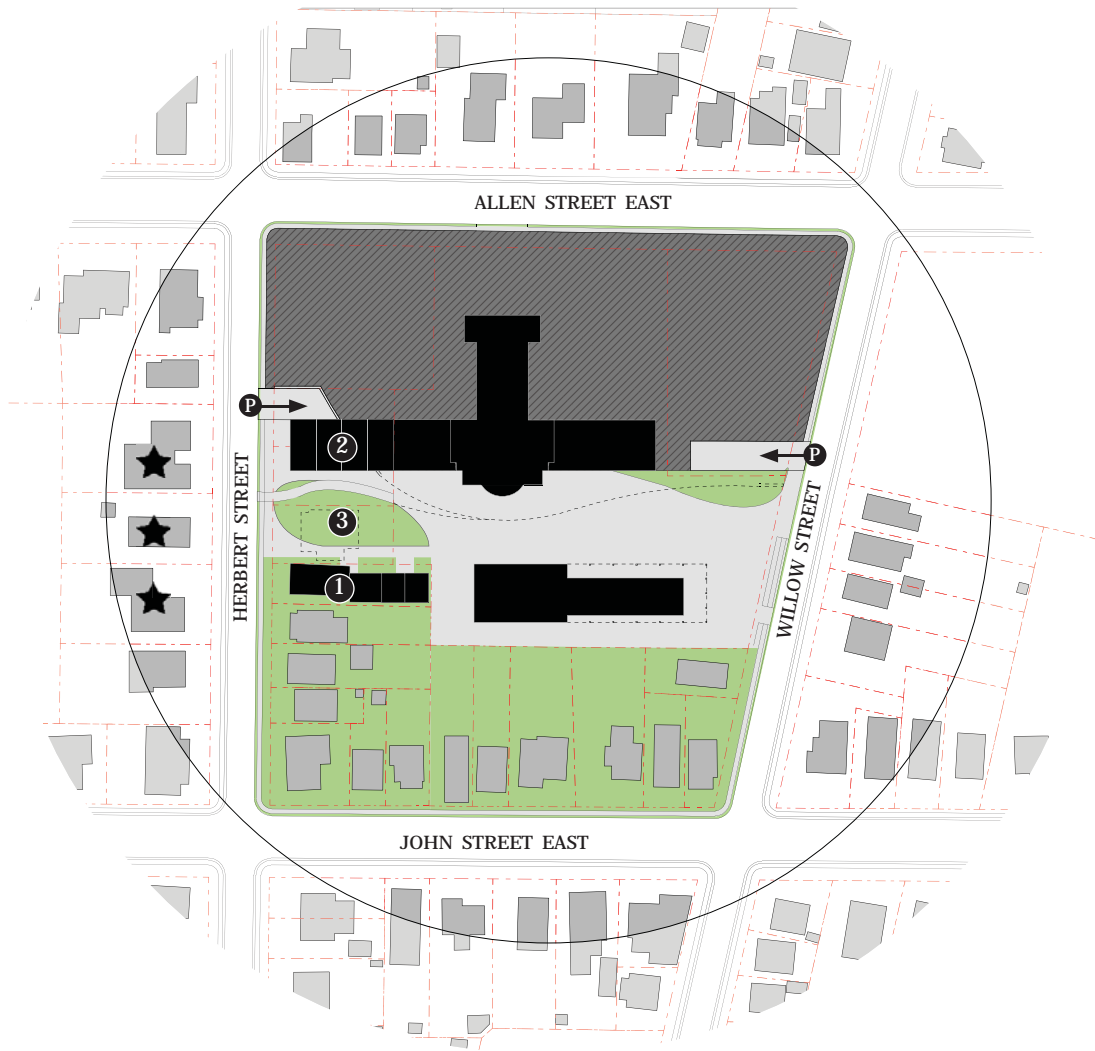
The next step proposed for the St. Louis block is to extend the newly-claimed public space all the way through to Herbert Street, thereby allowing the continuity of a spine of circulation and activated frontages. It is important here to introduce inward-facing frontages to reinforce the new internal artery of programming and pedestrian flow.

This move relies on the expropriation of one independent property, and the demolition of the single-family home that occupies the site. This small sacrifice allows for the strengthening of the mid-block artery that any continuing developments will rely on.

Components of this stage of development include:

- ① Newly rezoned and retrofit heritage home; maintaining historic residential frontage on Herbert Street, while introducing new commercial frontages facing the interior pedestrian artery. This property would be considered a “primary gateway” (page 102-103), thus making it important to mitigate new and old in both orientation and aesthetic.
- ② Extended commercial frontages; providing more fine-grain programming to support an active pedestrian realm. Retail and café units would be appropriate here, as well as certain types of offices or services.
- ③ Amalgamation of a new lot into the central urban room bolsters and fortifies the mid-block artery. Green space is recommended in this location to provide a visual landmark and an increase in softscape.





★ Potential site activated or pressurized for change by proposed intervention.

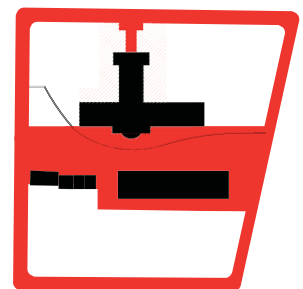


Fig. 071 (above)
Fig. 072 (right)

Increase Permeability & Centrality

The next step proposed for the St. Louis block is to increase the permeability of the block by creating a secondary vein of circulation extending from the mid-block public square, to John Street.

This move relies on the expropriation of one independent property, and the demolition of the single-family home that occupies the site. This sacrifice introduces 2 new activated frontages for commercial programming and increased amenity.

Components of this stage of development include:

- ① Two newly rezoned and retrofit heritage homes; maintaining historic residential frontage on John Street, while introducing new commercial frontages facing the interior pedestrian artery. These properties would be considered a “secondary gateway” (page 102-103), thus making it important to mitigate new and old in both orientation and aesthetic.
- ② New secondary laneway providing permeability and visibility between John Street and the mid-block developments on the St. Louis block. Since this lane is secondary to the main pedestrian artery, it is appropriate that it be narrower than its primary counterpart.

While not critical to the transformation of the block in isolation, this move becomes more advantageous as we consider the whole system extending from trail to trail. In the event that the St. Louis block becomes a primary hub connecting smaller interventions and connections, having increased permeability and a multiplicity of access points will be favorable to the flow and feasibility of increased pedestrian traffic and programming. Perhaps, in light of this, this strategy would be perceived as more imperative after some of the rest of the system began to take shape.

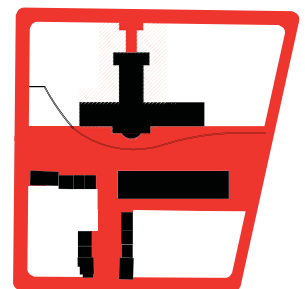
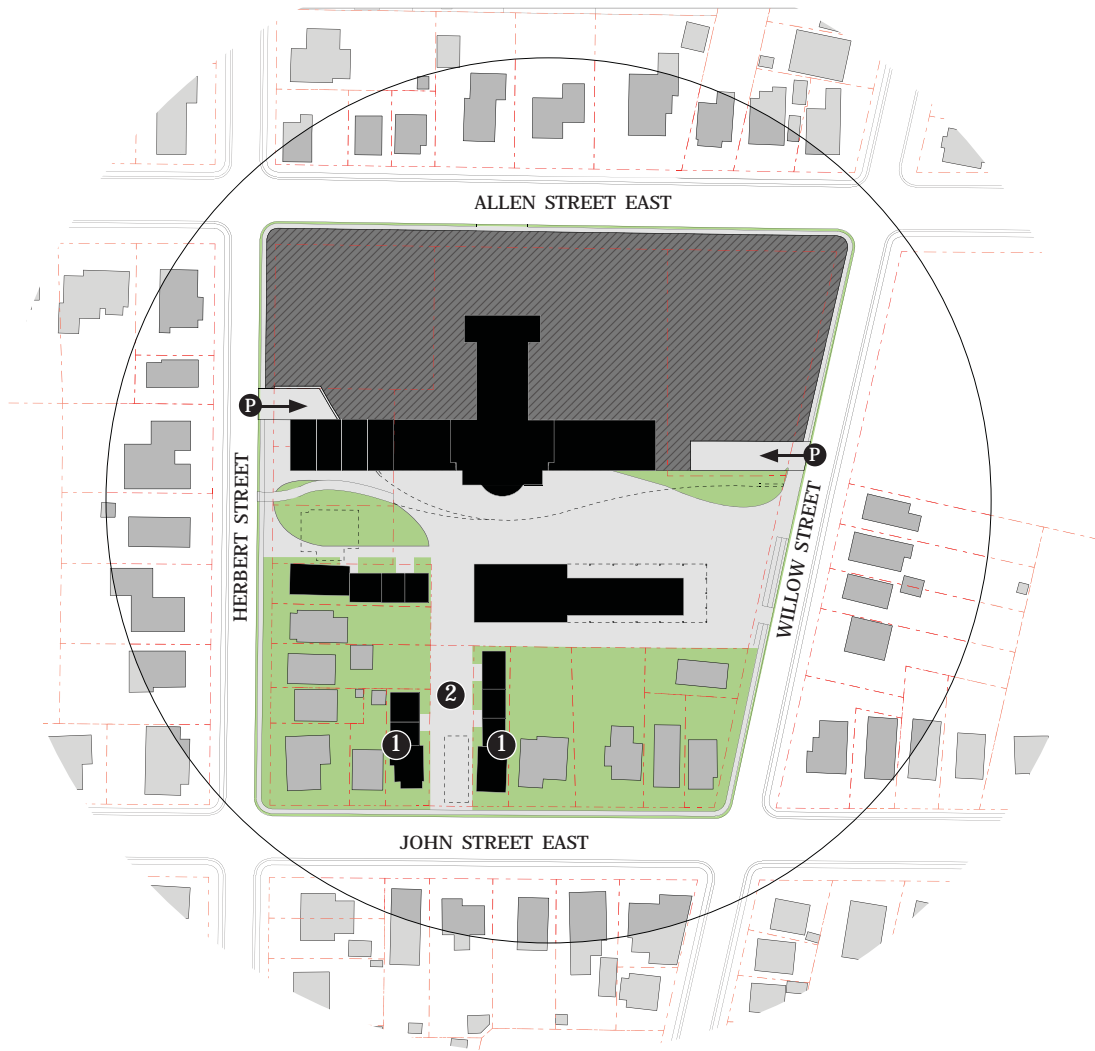


Fig. 073 (above)
Fig. 074 (right)

Participation & Opportunity

Participation of independent, adjacent property owners can theoretically occur at any point in an incremental development plan, so long as there is a framework to support it. It may however be most realistic to expect that individual property owners would be most likely to make a personal investment or take a personal risk once there is a substantial amount of development that has already taken shape and proven successful in transforming the nature of the urban block.

This stage of development is the most unpredictable, but also the most valuable in connecting a place to its people. There is tremendous value in allowing individual citizens to participate in their own way, allowing for autonomy and a sense of ownership within a guiding framework.

Private opt-in may happen sporadically or all at once, depending on the population and socio-economic condition. As each development pops up, the continuity of activated frontages is bolstered and reinforced. Each one makes a difference, and yet the overall system does not depend on any one in particular.

This is also where the irregularity and informality of an incremental morphology serves an important purpose: it lends itself readily to simple architecture. As Krier articulates in *The Architecture of Community*, the desire to force a pure geometry demands a formality of architectural intervention that simply can't be supported by a participatory, inclusive process.⁷² This means that the bricollage⁷³ of individual contributions will be perfectly at home in the public space that they will help comprise, due to the very nature of developing incrementally.

Components of this stage of development include:

- ① New accessory dwelling units built by private homeowners of adjacent properties within a framework of design guidelines and incentives provided by the city. These units could be used for living, working, creating, or any number of combinations, providing a second income for the primary homeowner.

Design guidelines might specify height, rooflines, setbacks, access to natural light and ventilation, and appropriate use. Tax incentives may be considered to prompt participation.

⁷² Krier, 2009. (163)

⁷³ Rohe, Colin, and Fred Koetter. *Collage City*. Cambridge, MA: MIT Press, 1978.

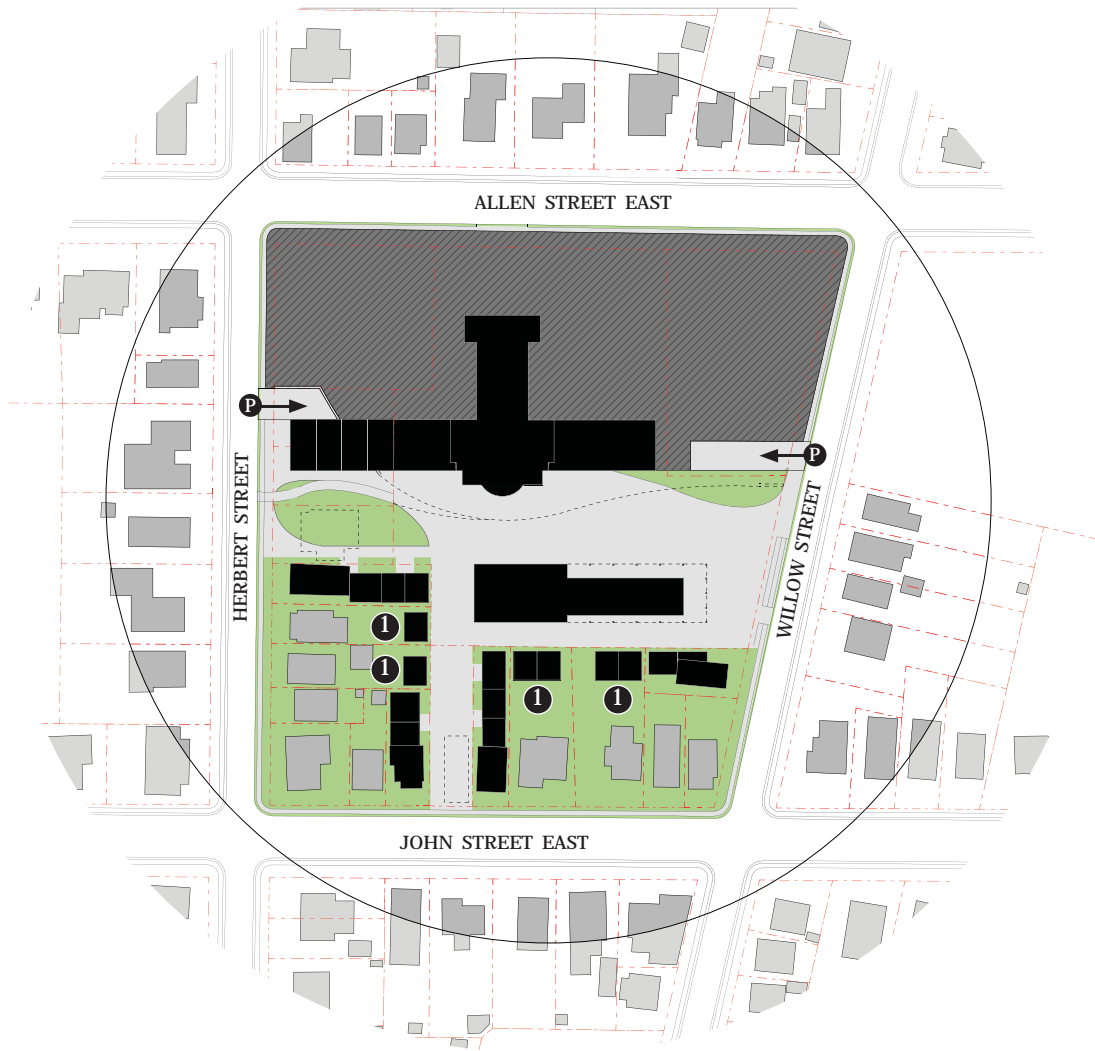
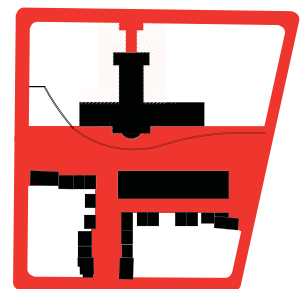


Fig. 075 (above)
Fig. 076 (right)



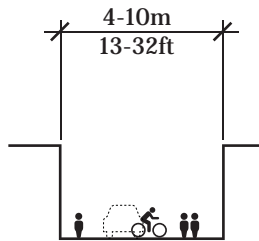
Hierarchy of Streets
 — A New Layer

This proposal hinges on the insertion of a new layer to the hierarchy of streets that offers a new type of circulatory artery, introducing a new typology and morphology to the urban condition.

Although the geometries proposed for this new pedestrian realm vary from space to space, I will refer to the activated pedestrian artery as either a *lane* or an *urban room*.

Lane

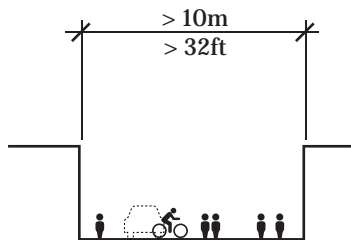
The lane is intended to be pedestrian-centric, but not pedestrian-exclusive. Meaning, local vehicular access is expected and accommodated, but the increased programming and unrestricted flow of pedestrians and cyclists would render regular flow of vehicles impracticable. The accommodation of clearances for safety vehicles will need to be decided on a case-by-case basis, which would determine whether widths below 8m would be appropriate. For the St. Louis block, I have opted to maintain clearances for safety vehicles to minimize the areas for concern with a new typology and morphology being proposed, but I would argue on a larger scale that there are definitely cases where it is unnecessary.



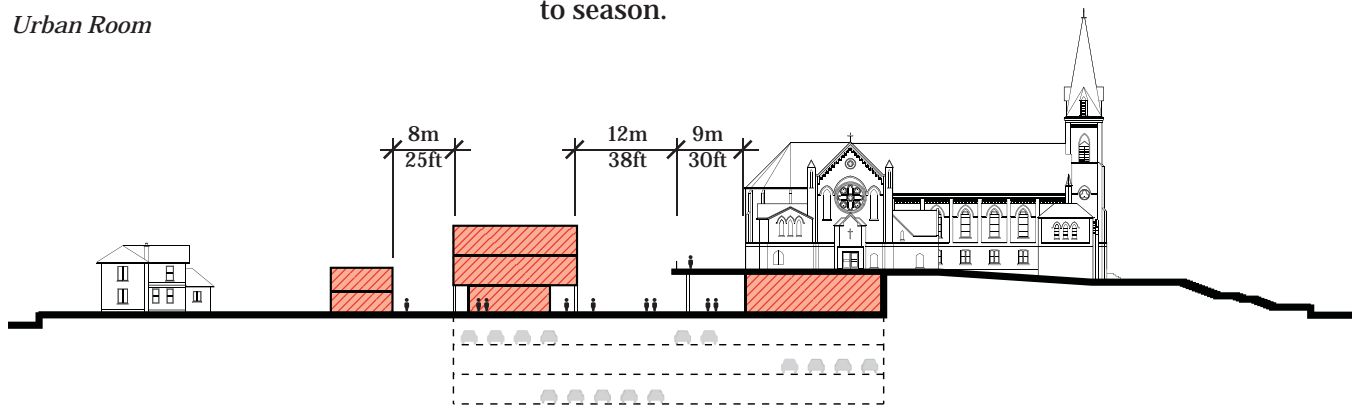
Pedestrian Lane

Urban Room

Once a dedicated pedestrian corridor exceeds 10m or 32ft, it should be treated as an urban room, where programming, plantings, street furniture, or art might occupy it in more of a centralized way. These spaces can be multi-faceted and host a multiplicity of programs and uses from day to day, and season to season.



Urban Room

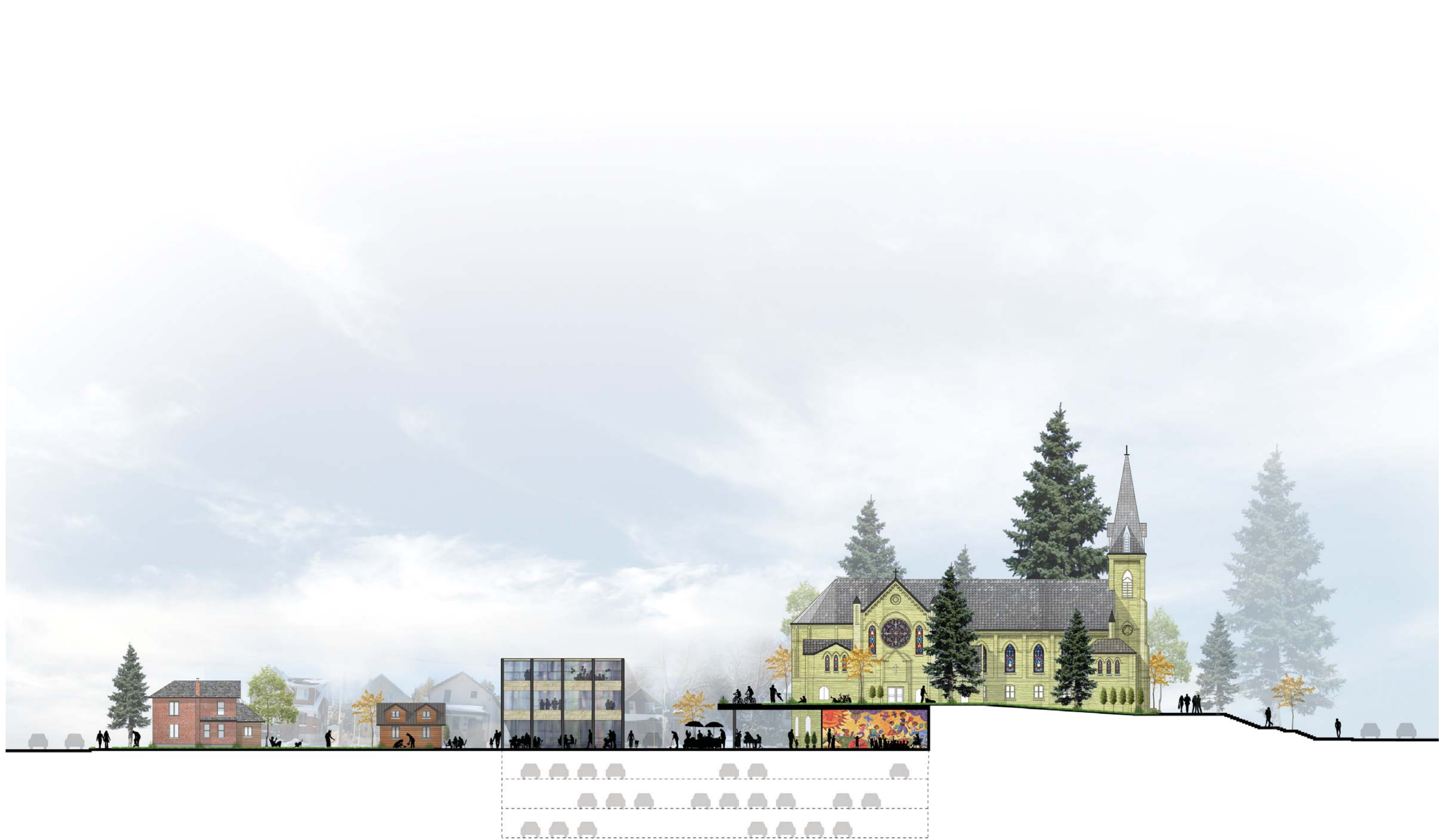


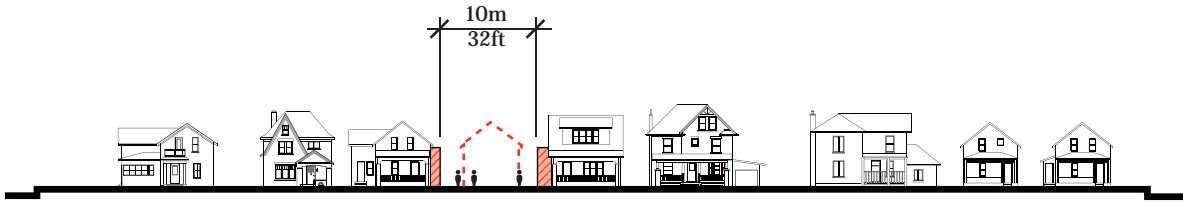
Site Section — showing proposed recreation centre, accessory live/work unit and commercial units below St. Louis Church

Fig. 077 (diagrams - upper)

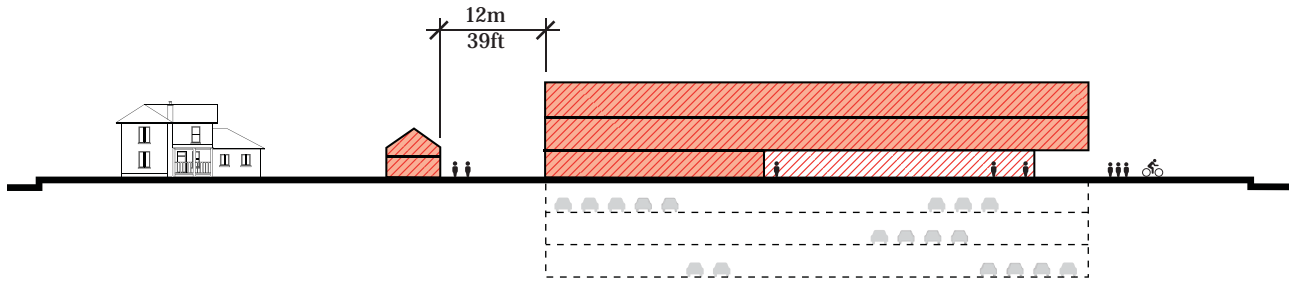
Fig. 078 (section - lower)

Fig. 079 (opposite - fold-out)

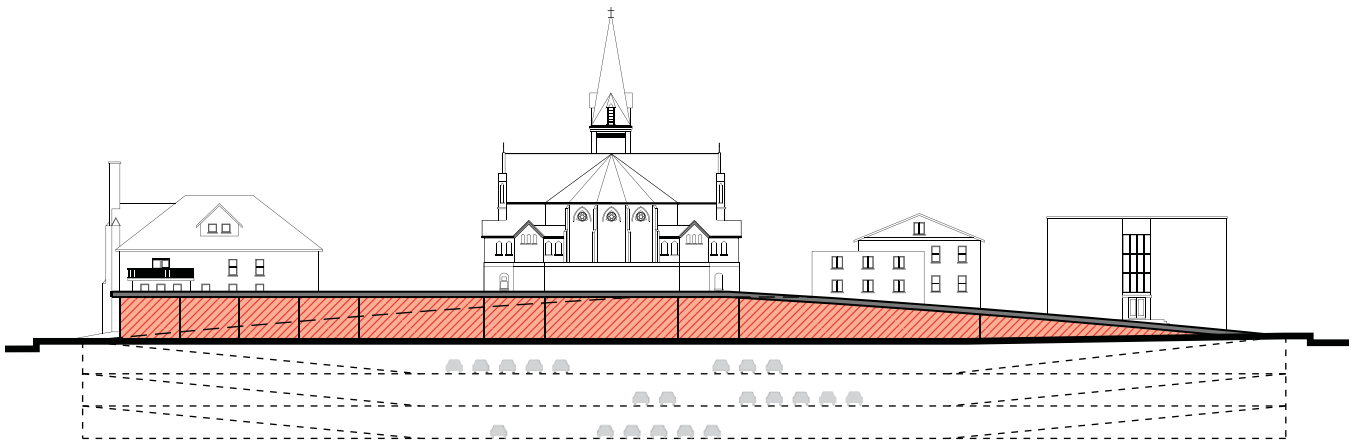




John Street Frontage — showing proposed insertion of secondary laneway into St. Louis block



Mid-Block Section I — showing proposed community recreation centre and accessory dwelling unit fronting on new lane



Mid-Block Section II — showing two-level pedestrian artery and proposed commercial frontage

- Fig. 080 (section - upper)*
- Fig. 081 (section - middle)*
- Fig. 082 (section - lower)*
- Fig. 083 (opposite - fold-out)*



St. Louis Block — Primary Lane

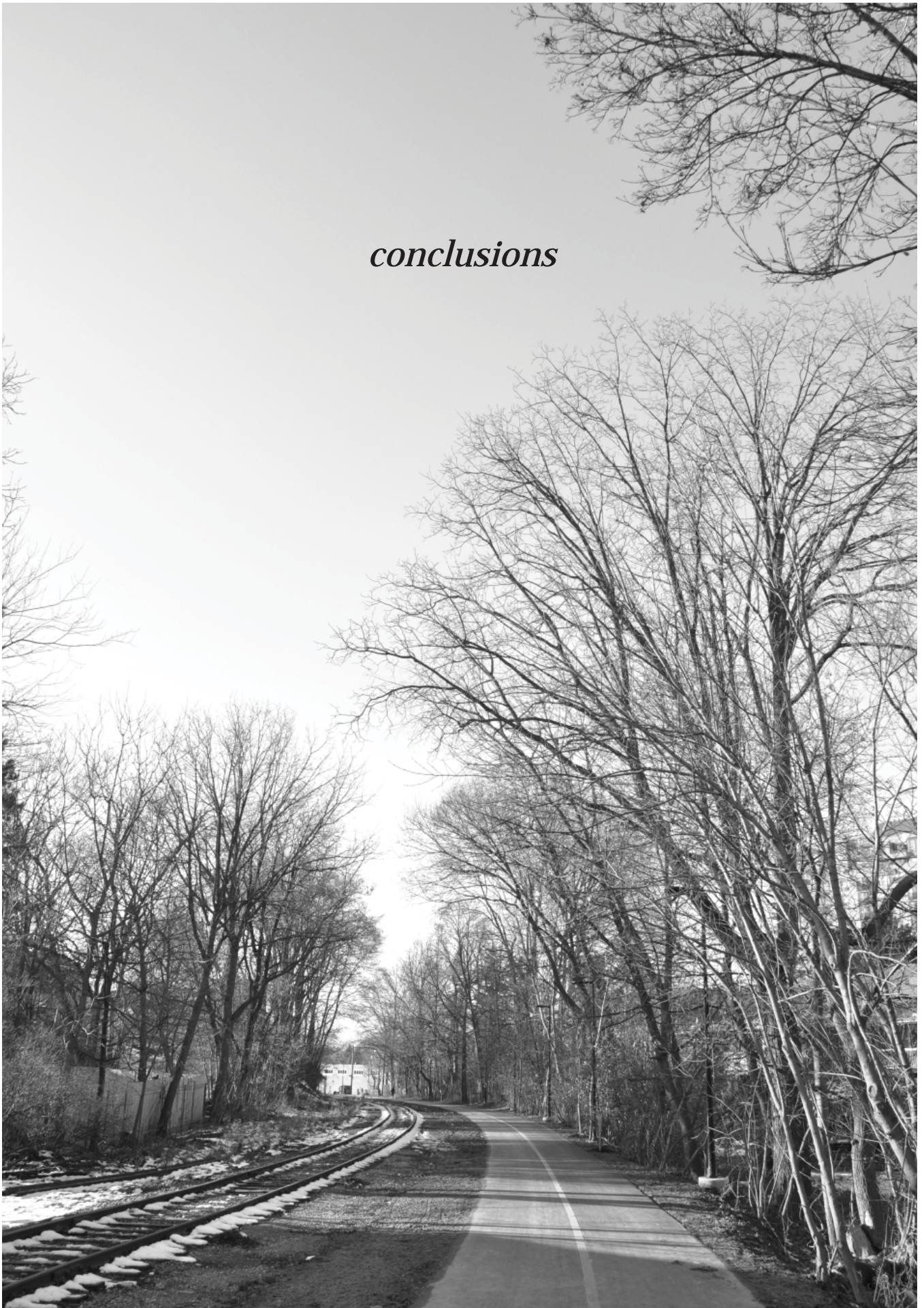


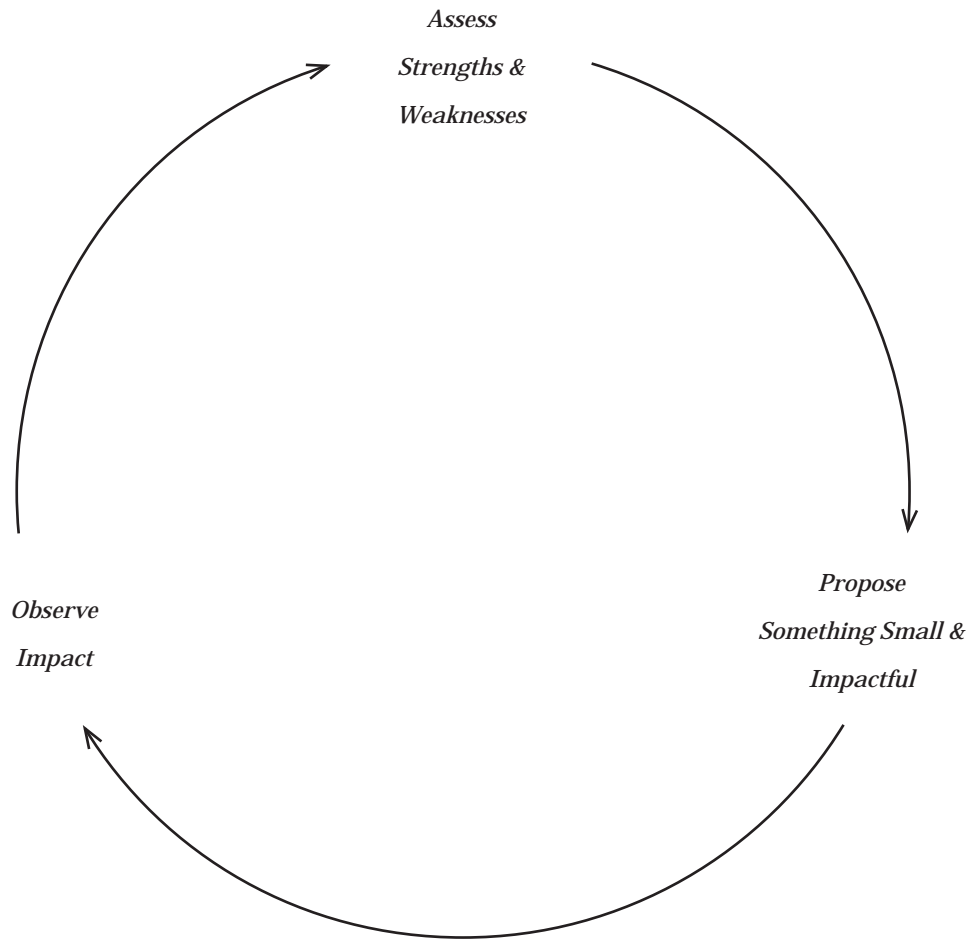


St. Louis Block — Secondary Lane



conclusions





Create a Feedback Loop

One of the primary ways in which incremental development differs from traditional modes of densification, is in its openness to redirection and recalibration mid-stride.

Part of the way complexity impacts growth-planning is that we simply can't anticipate all of the multi-faceted ways a system might respond to an intervention, let alone how the system itself may change simultaneously. Like in an ecosystem, whether a new entity will thrive, be rejected, or remain indifferent within an established system is best determined by simply testing it and observing the impact. Modern planning practice does not allow for this. It demands that we propose a solution wholesale and work towards its fruition piece by piece until it is complete. Whether it works or not cannot be seen until the damage is done, and any lessons learned are lost in wash.

As architects, the city is our laboratory. As such, incremental development is intended to allow us to operate in an exploratory and curious manner, and will hopefully allow us to make improvements to our practice faster than our profession would historically allow.

The premise is simple. Start with a question, not an answer.

By starting with a question, rather than an answer we change the conversation from "We need a condo tower." to "What's working well here, and what isn't?". We restore our role as architects from rote building-provider to multi-faceted socio-spatial problem solver; we reinsert ourselves back into the important task of determine what the problem actually is, rather than providing "answers" for problems as presented to us.

This approach promotes taking deliberate action on a small scale, and observing the outcome as you plan for next steps. This inclusive process allows us to continually evolve our assumptions about what works, and even allows us to redefine our measures of success as we face outcomes that challenge our assumptions and education.

It is through this iterative process that we can embrace the complexity that urban neighborhoods present. By modifying our process to accept the intricacy of the system, we can leverage it as a strength, rather than viewing it as an impediment or a nuisance.



Friction Factors

As with all new ideas, unfamiliar tactics will always be met with resistance. There are valid and undeniable reasons why incremental development isn't already happening, and why, even those who support the idea in theory, are limited in their ability to take action.

The biggest hurdle is that incremental takes time; it can't be rushed, and it doesn't have a clean close-out or wrap-up date. The world of architecture is already one that is slow moving, and this never-ending feedback loop is one that doesn't fit within our exist models of practice.

Our existing framework relies on securing a contract with a client (one where the problem is already established), fulfilling our duties to that client, and closing that contract while hopefully being compensated in a way that in commensurate to our time and resources invested. Once a project is complete, we wash our hands of it and move on. Post-occupancy inspections and feedback cycles are already incredibly rare because of the stronghold that this model has on our practice.

Architects already struggle with making this business model lucrative in a world where design is undervalued, and shallow-level knowledge is readily available to the masses via the internet. Most would argue that there is no room for adding "additional services" or expanded roles — such as educator, facilitator, or mitigator — outside of what is absolutely critical to a specific project.

If incremental development is going to work, then we need to reconsider how the expanded role of the architect fits into the framework of professional practice and business models.

The second major hurdle to incremental development is that it necessarily relies on support from a number of players and stakeholders in order to move forward. Even if architects began to take ownership of the process, they might meet resistance from a stubborn municipality or other governing authority.

This is where, on a broader scale, education and facilitation is paramount. We need to work towards partnerships and reciprocal relationships between architects and governing authorities that foster the types of exploration and observation that can move us forward towards more resilient growth models.



Call for Conversation

The challenges faced by incremental development as a growth strategy can be summed up in one word — *engagement*. Without it, these strategies will struggle to gain momentum and have impact.

For now, in the absence of a system that supports the idea inherently, we must fill the gap with individuals who care enough to push for change. We need relentless pioneers; we need champions.

Notwithstanding the need for change-makers, we can't rely on the odd maverick to move things forward and drive sustainable change. If incremental development is going to grow legs, we need to create regular discourse around it. We need to welcome a regularity of conversation, curiosity and debate that fosters the already-growing awareness of the importance of architecture and city-making among citizens. New methods of engagement and education should be considered to make this discourse accessible to a wider audience than those willing to endure weeknight town-hall meetings.

This dialogue could start in a number of places — an individual, a municipality, a historical group, or an enterprise group. It could manifest itself in public lectures, participatory workshops, or guerrilla urbanism. These events should not be saved for moments when there is a cause to either support or oppose, but rather they should happen with a regularity that invites a broader level of engagement and conversation among citizens on the topic of place and city-making.

Creating a participatory process and an open dialogue surrounding urban space is part of recognizing that as much as cities are formed by economic and political forces, they are also made by people. We need to educate as much as we need to listen, and we need to make room for voices to be heard.



Facing Complexity with Confidence

We understand inherently that complexity is challenging. It's difficult, involved, convoluted, and entangled. By abstracting it, negating it, ignoring it, and blaming it, we reveal our own hesitation to face it. We doubt our ability to manage it, and rightly so — it's bigger than us. It's messier than our minds are designed to handle. It's unpredictable in ways we would like to not feel responsible for.

What we need to remember is that in the case of our urban environments, complexity is a gift and an asset. It is a manifestation of our human nature and an extension of all that makes us whole.

The fact that we, and our built environments, are complicated is not the problem. It is our paralysis and negligence in the face of complexity that puts us at great risk of destroying this gift. We must learn to embrace this complexity and work with it rather than against it, around it, or adjacent to it.

Embracing complexity does not mean trying to control it; such attempts would be futile. It means accepting complexity as part of the territory and owning the process of getting good at working with it as a medium. It means calling an end to the glorification of the *tabula rasa*, or blank slate.

This paradigm shift may require reinterpreting or extending our perception of the role as architects to include more deliberately the realms of education, facilitation and mitigation. We are already equipped and experienced in these roles, but we need a renewed sense of ownership over them in order to leverage them in new ways.

We are capable of facing complexity with aplomb. The resilient and sustainable growth of our cities relies on it.

Reflection on Infrastructure

In reviewing my work in the final stages, and discussing its implications, the question of infrastructure — particularly the severity of it — continued to come into question.

Is underground parking really necessary? — Maybe not.

In the development of my work, I worried that a proposal that claimed existing parking space without replacing it elsewhere would be seen as naive or impractical. In the fruition of my work I can see that perhaps that concern was misplaced. Perhaps there are other approaches that would be better suited to an incremental approach. Below are 3 alternative perspectives on the matter of parking infrastructure, that could be implemented together or in isolation:

- ① *Could surface-parking be integrated in a fine-grain way, embedded into the incremental development proposed?*
- ② *Does the modern socio-cultural shift away from vehicular dependence make it reasonable to consider less parking-per-unit than current models would otherwise mandate? Could providing less parking actually strengthen the premise of a re-pedestrianized ground plane?*
- ③ *Could the existing underground parking below the tower blocks at King Street (Bauer Building and The Red) carry the parking capacity of the laneway in question? In what ways can incremental development leverage this infrastructure to perhaps avoid reproducing it mid-block?*

This dialogue is one example of the ways that ongoing dialogue in city-making can reap real reward for the communities we hope to impact. I hope the discussion does not end here.

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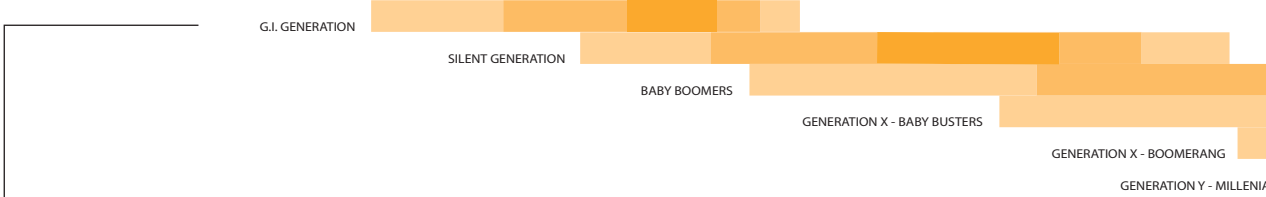
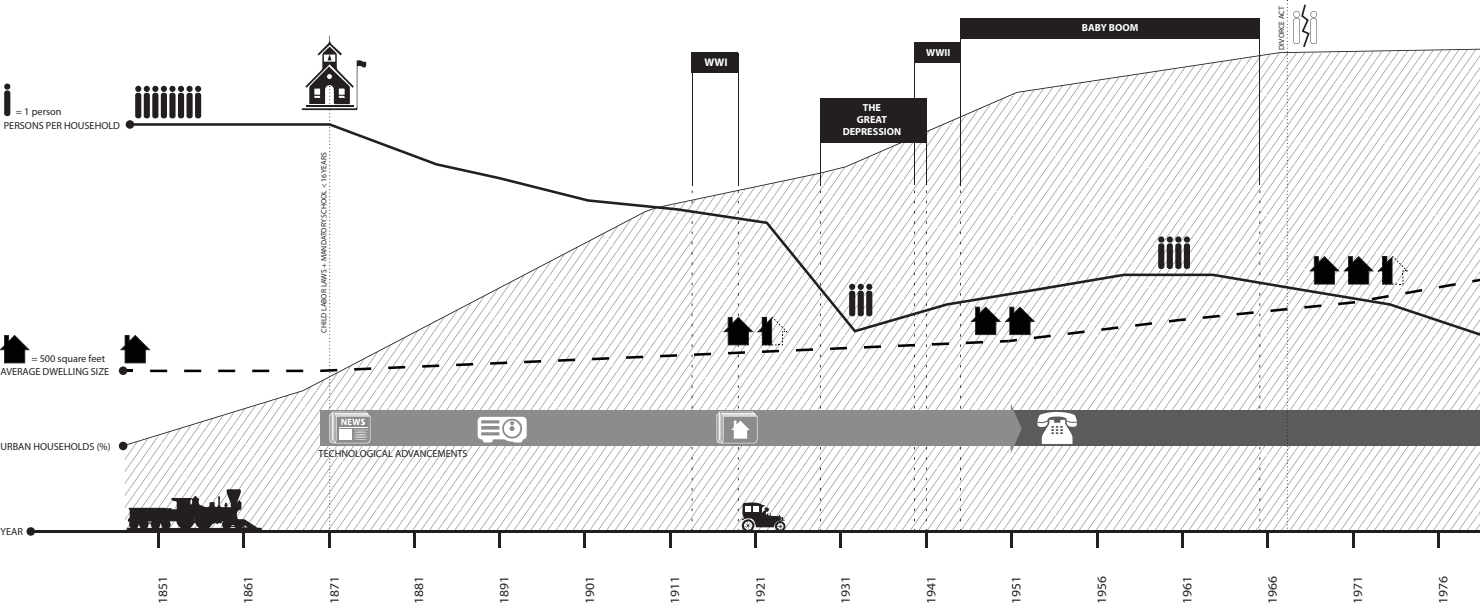
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appendix

Ontario Housing Trends in the Last Century



Timeline of Peak Generational Influence.

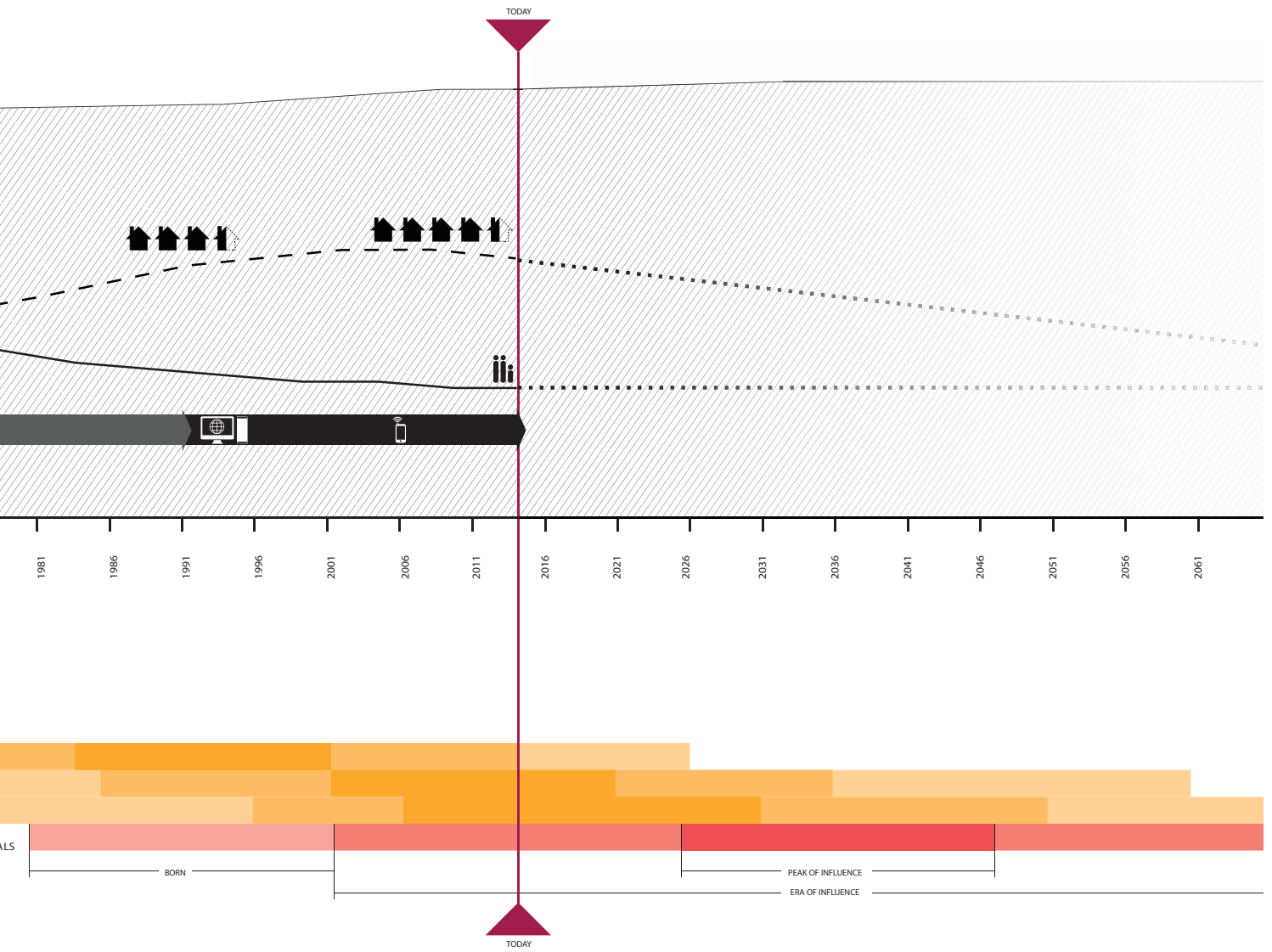
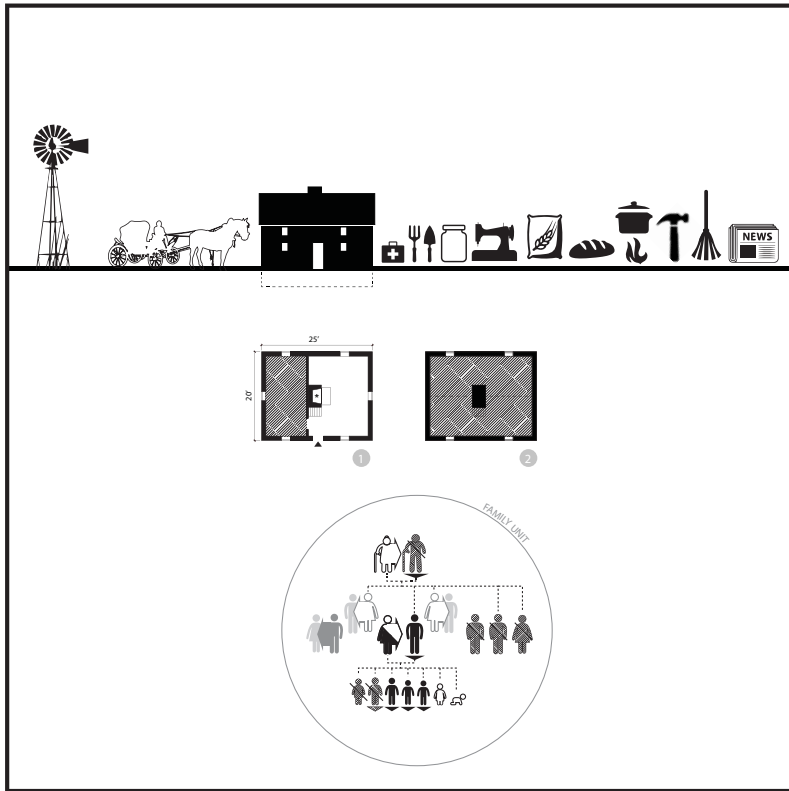


Fig. 092

1800 — Hamlet



Legend: House

- ▲ ENTRANCE
- * FIRE
- ▨ PRIVATE SPACE
- STRUCTURE / UNUSABLE
- STORAGE

Legend: Family

- ⊘ DECEASED
- MEMBER OF HOUSEHOLD
- ◐ LEFT HOUSEHOLD
- DEPENDANT
- ➔ MARRIAGE
- LINEAL INHERITANCE
- - - FAMILIAL LINEAGE

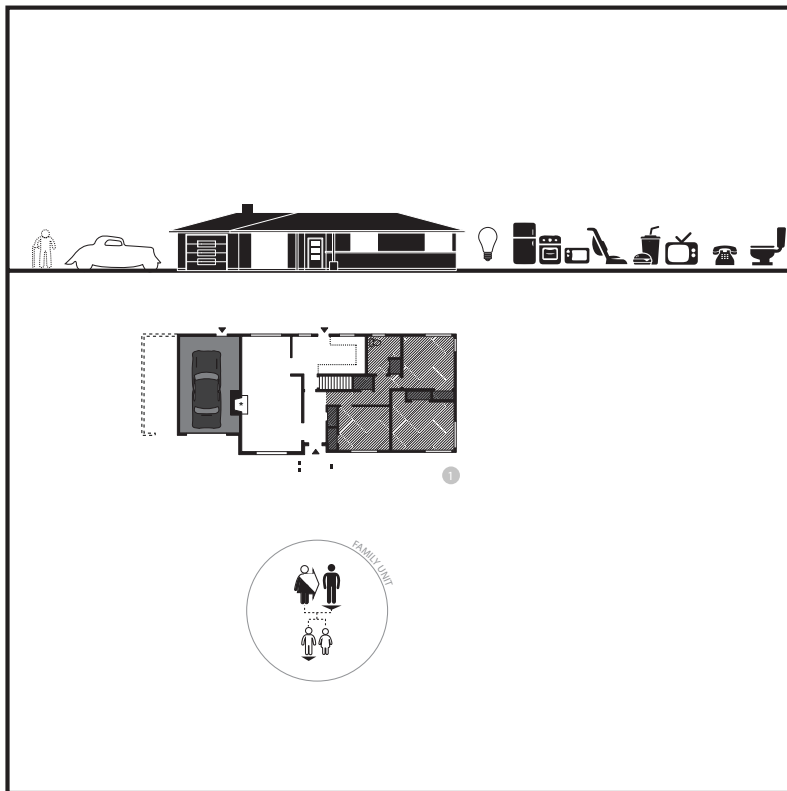
Fig. 093 Diagram of average family & family home in Ontario in 1800. This was the beginning of shared resources as homes began to cluster in small hamlets around common wells, and home-run businesses. In this era, almost every member of the family worked to contribute to the household.

1920 — City



Fig. 094 Diagram of average family & family home in Ontario in 1920 during the post-war era. In this era "kit-houses" that could be ordered from a catalog and assembled without a builder. Men began to work outside the home during the industrial revolution, and children were now mandated to attend school during the day. Due to the many casualties of the WWI, many women were widowed, and either remarried or raised their children independently.

1960 — Suburb



Legend: House

- ▲ ENTRANCE
- * FIRE
- ▨ PRIVATE SPACE
- STRUCTURE / UNUSABLE
- STORAGE

Legend: Family

- ⊙ DECEASED
- MEMBER OF HOUSEHOLD
- LEFT HOUSEHOLD
- DEPENDANT
- ➔ MARRIAGE
- ▼ LINEAL INHERITANCE
- - - - FAMILIAL LINEAGE

Fig. 095 Diagram of average family & family home in Ontario in 1960, during the rise of suburbia and car-culture. Homeownership as a cultural ideal was central to this generation of families, and household size dwindled down to the idealized nuclear family of two parents and two children.

2000 — Sub-suburb



Fig. 096 Diagram of average family & family home in Ontario in 2000, when suburbs birth suburbs, and homes house nearly as many cars as people. The legalization of divorce and common-law marriages have introduced many mutations of the idealized nuclear family, including blended families and non-family households. Home designs emphasize the division of public and private spaces and vehicular transportation remains a necessity.

Moments of Necessity

“Necessity is the mother of invention”

— English proverb

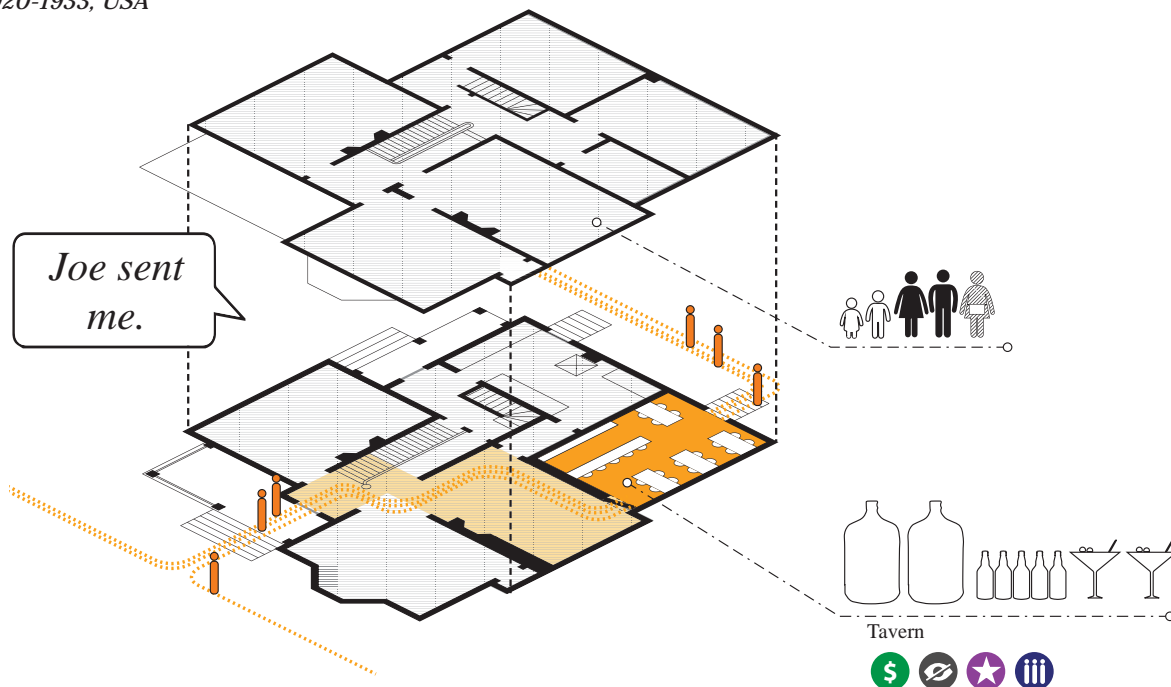
As the old proverb suggests, difficult or impossible circumstances prompt innovation often aimed at reducing the difficulty itself.

This investigation into the family home prompted an inquiry into moments of necessity that have birthed innovation within vernacular residential fabric throughout history. I looked to times of challenge to see how socio-economic difficulty has given rise to adaptation and organic transformation.

The case studies explored on the following pages are not designed interventions. They do not represent an architect’s interpretation of what “should be”. These examples represent what citizens will do of their own volition, adapting their physical space as a response to or symptom of a major socio-economic shift.

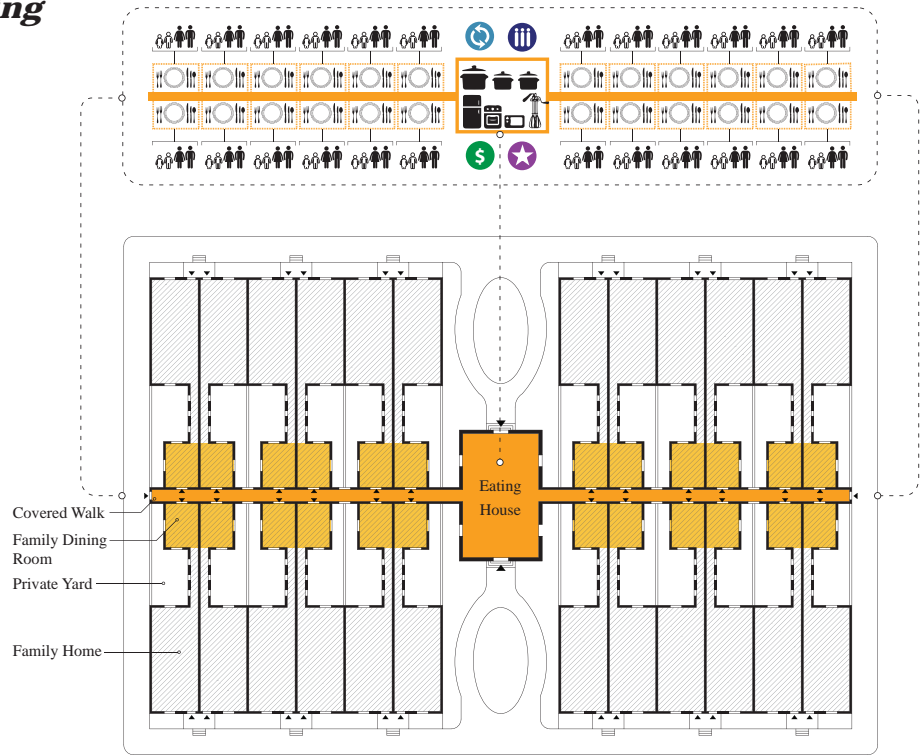
The Speakeasy

1920-1933, USA



Cooperative Housekeeping

1981, Grand Domestic Revolution



The Mobile Home

1950s, North America

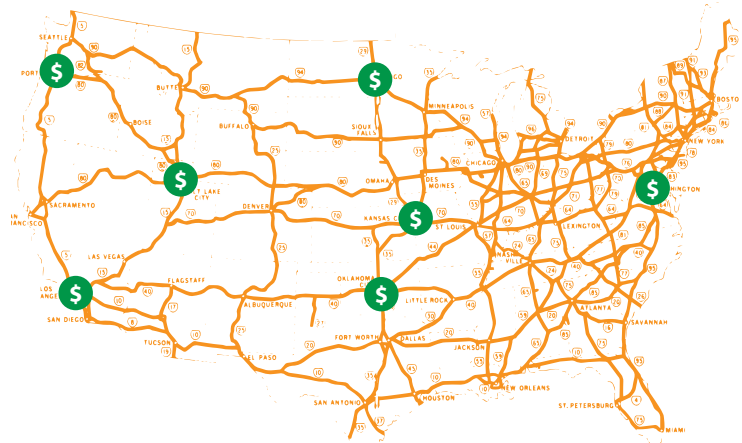
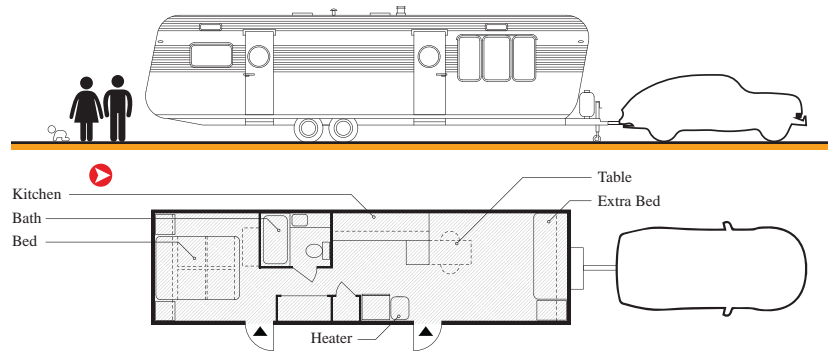
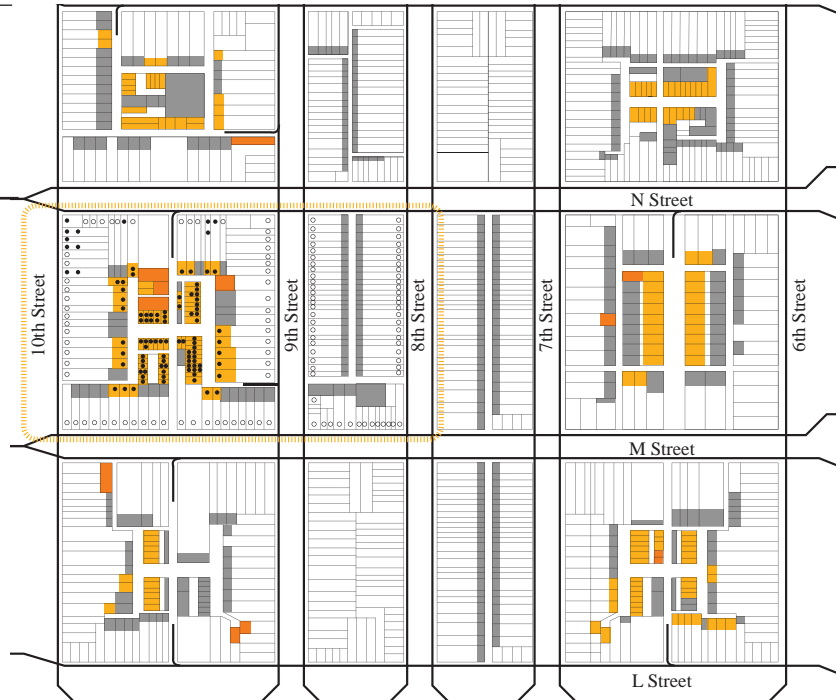
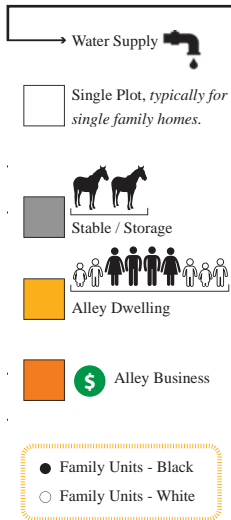


Fig. 098 (upper)
Fig. 099 (lower)

The DC Alley Dwelling

1850-1920, Washington, DC



AirBNB

2010, Worldwide

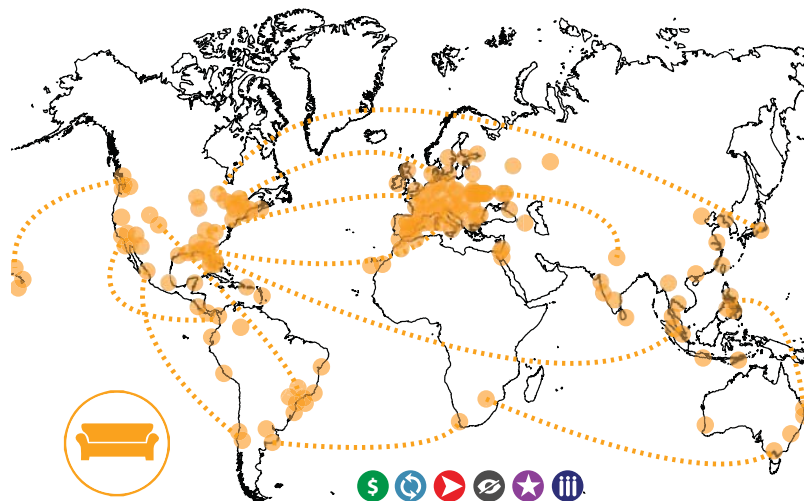


Fig. 100 (upper)
Fig. 101 (lower)

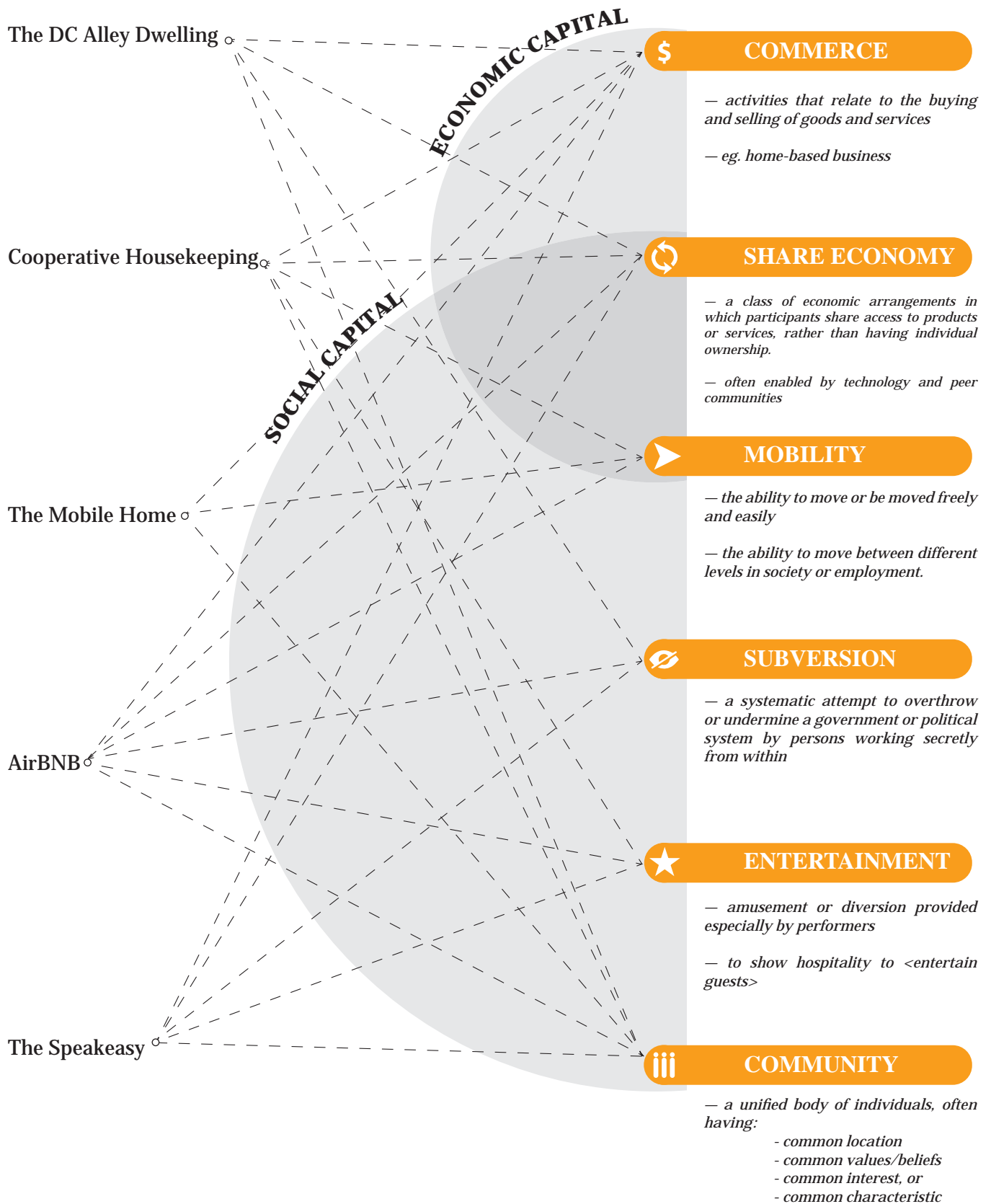


Fig. 102