

Real Mixed Use

Combining Living and Production
on Underused Historic Industrial Sites
to Resist Gentrification

by

Brianna Aerin Elise Cartwright

A thesis
presented to the University of Waterloo
in fulfilment of the
thesis requirement for the degree of
Master of Architecture

Waterloo, Ontario, Canada, 2018

© Brianna Aerin Elise Cartwright 2018

Author's Declaration

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

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

Abstract

Changing economic conditions and production requirements have caused manufacturing and other secondary industries to move away from the urban core of mid-sized cities in Southern Ontario, such as London, Hamilton, and Windsor. As industry relocates to the periphery of these cities or out of the city altogether, it leaves behind pockets of vacant industrial land that are not being used to their full potential. The hollowing out of industrial areas in the urban core is especially interesting because it corresponds with a devaluation of the surrounding residential neighbourhoods, which have become in the past few decades the lowest income areas of these cities, as economic polarization increases. There is also declining population trend in these inner-city areas, in favour of new suburban residential development on the periphery. While these vacant areas often can be seen negatively because of the uncertainty and loss that they represent, eventually due to the seesaw of uneven development these sites reach a state of underdevelopment such that they become appealing and profitable to redevelop often resulting in gentrification and the displacement of the existing residents.

This thesis aims to highlight these sites as spaces of possibility in a period of transition that have the propensity to be transformed through re-investment. This propensity will be guided by proposing an alternative to the seemingly inevitable gentrification that often occurs when devalued industrial sites are redeveloped. Typical redevelopment involves transitioning an area away from industrial uses in favour of purely residential and commercial uses. Instead, more intense mixing of traditionally conflicting uses is explored as a strategy for resisting gentrification when redeveloping. The goal is for this to be accomplished by confronting industry rather than erasing it in three main ways.

1. retaining the industrial nature of the site as much as possible and creating productive adjacencies between residential and industrial land rather than completely separating land uses,
2. remediating the land using phytotechnologies that allow people to engage with the process of remediation, and
3. supporting the existing working class population by focusing on the affordability of new residential units, and addressing the needs of the existing community rather than appealing only to market forces.

This idea is explored through the design of a campus of live-work housing and facilities that support small scale food production in a historically industrial neighbourhood east of downtown London, Ontario

Acknowledgements

I would like to thank Adrian Blackwell, my supervisor, for his guidance and support over the past two years. Thank you also to Jane Hutton for her thoughtful feedback on my work, to Marie-Paule Macdonald and Martine August for participating in my committee, and to Ali Fard and Val Rynnimeri for helping to focus my initial ideas at the beginning of the process.

The conversations I had with London planners and key figures in the Old East Village enriched my understanding of the area. Thank you all for taking the time to speak with me and share your knowledge and experiences. Thank you especially to John Fleming and Sarah Merritt.

I could not have done this without the encouragement, motivation, and support of my family and friends. Thank you for always being there for me when I needed you, for talking to me, and for hosting me when I visited London.

Table of Contents

Author's Declaration	ii
Abstract	iii
Table of Contents	vi
List of Figures	viii
Introduction	1

Section 1: Analysis

Polarization and Periphery

<i>1.1 Defining the Problem</i>	5
The Rust Belt	6
Decentralization	8
Cycles of Development	16
Gentrification	17
Sense of Place	20
Endnotes for Section 1.1	22

East of Old East Village

<i>1.2 Examining the Context</i>	29
Industrial History	29
Previous Studies	37
Current Occupation	44
Green Space Network	45
Endnotes for Section 1.2	47

Section 2: Design Proposal

Strengthening Community Through Economy

<i>2.1 Redevelopment Strategy of Directed Propensities</i>	49
Programmatic Propensities	49
<i>Mix of Uses</i>	51
<i>Small Scale Production with a Focus on Food</i>	55
<i>Whole Economy</i>	57
Open Space and Built Form Propensities	58
<i>Open Space Network through Remediation of Vacant Land</i>	59
<i>Heritage Buildings as a Resource</i>	67
Leverage Multiple Funding Sources	67
Endnotes for Section 2.1	69

A Community Food Production Hub

<i>2.2 Design Proposal</i>	73
Conclusion	108
Endnotes for Section 2.2	112
Bibliography	114
Other Works Consulted	118

List of Figures

1.1 Defining the Problem

- Figure 1* 7
Industry statistics for select Ontario cities showing general decline in manufacturing as a share of total industry and absolute number of jobs.
Data from: Statistics Canada 1991 Census, 2011 Census, 2016 Census. Illustrated by author.
- Figure 2* 7
Graph of the Canadian economy from 1990-2015 showing the relationship between manufacturing exports, unemployment, and GDP per capita.
Data from: World Bank World Development Indicators. Illustrated by author.
- Figure 3* 8
Burgess concentric circles model.
Ernest W. Burgess, *The City*, 55.
- Figure 4* 9
Maps of London, Hamilton and Windsor showing population change from 2006-2016 relative to areas of industry shown in blue.
Data from: Statistics Canada 2006 Census, 2011 Census, 2016 Census, Cartographic Boundary Files, and DMTI Spatial Inc. Land Use. Mapped by author using ArcMap.
- Figure 5* 10
Theoretical Pattern of Distribution of Rent Areas in 30 American Cities, Homer Hoyt Sector Theory.
Homer Hoyt, *According to Hoyt; fifty years of Homer Hoyt; articles on law, real estate cycle, economic base, sector theory, shopping centers, urban growth*, 587.
- Figure 6* 11
Maps of London Hamilton and Windsor showing travel time to freeway.
Data from: Statistics Canada 2006 Census, 2011 Census Cartographic Boundary Files, Ontario Ministry of Natural Resources Ontario Road Network Segment With Address, and DMTI Spatial Inc. Land Use. Mapped by author using ArcMap.
- Figure 7* 12
Maps of Windsor showing location and number of employees by industry sector.
Data from Windsor Essex Economic Development (<http://choosewindsorsex.com/companies>), DMTI Spatial Inc. Businesses, Statistics Canada Cartographic Boundary Files, and Ontario Ministry of Natural Resources Ontario Road Network and Ontario Railway Network. Mapped by author using ArcMap.

<i>Figure 8</i>	<p>Maps of London showing location and number of employees by industry sector.</p> <p>Data from London Economic Development Corporation (https://www.ledc.com/resources/business-directory), Statistics Canada Cartographic Boundary Files, and Ontario Ministry of Natural Resources Ontario Road Network and Ontario Railway Network. Mapped by author using ArcMap.</p>	13
<i>Figure 9</i>	<p>Maps of Hamilton showing location and number of employees by industry sector.</p> <p>Data from Hamilton Economic Development (https://www.breken.com/y/m/y/m/y/m_home.aspx?f=hamiltoncity), Statistics Canada Cartographic Boundary Files, and Ontario Ministry of Natural Resources Ontario Road Network and Ontario Railway Network. Mapped by author using ArcMap.</p>	13
<i>Figure 10</i>	<p>Maps of Windsor, London, and Hamilton showing census tract average household income compared to Census Metropolitan Area average.</p> <p>Data from: Statistics Canada 1971 Census, 1991 Census, 2001 Census, 2011 Census, Cartographic Boundary Files, DMTI Spatial Inc. Land Use, City of Windsor Planning Area Department of Planning and Urban Renewal Existing Land Use 1965, The City of London Planning Department Existing Land Use 1972, Existing Land Use 1991, and Hamilton-Wentworth Planning Area Board Existing Land Use 1967. Mapped by author using ArcMap.</p>	14
<i>Figure 11</i>	<p>Photos of vacant historic industrial buildings seen in London and Hamilton.</p> <p>By Author</p>	19
<i>Figure 12</i>	<p>Toronto Lithography Co. Bird's Eye Image of London in 1893.</p> <p>Map and Data Centre, Western University.</p>	26
<i>Figure 13</i>	<p>Map of industrial land in 1893, 1972, and 2011.</p> <p>Data from: Toronto Lithography Co. City of London 1893, The City of London Planning Department Existing Land Use 1972, DMTI Spatial Inc. Land Use 2011, and Ontario Ministry of Natural Resources Ontario Railway Network. Mapped by author using ArcMap.</p>	27
<i>Figure 14</i>	<p>Maps of industrial land in 1893, 1972, and 2011 relative to the edge of the city at the time.</p> <p>Data from: Toronto Lithography Co. City of London 1893, The City of London Planning Department Existing Land Use 1972, DMTI Spatial Inc. Land Use 2011, London Annexations 1826-1980, and Statistics Canada Cartographic Boundary File. Mapped by author using ArcMap.</p>	28

1.2 Examining the Context

- Figure 15* 29
Vacant land on EMCO site as seen from residential houses on Burbrook Pl in 2018.
By Author.
- Figure 16* 30
Building footprints in East of Old East Village from 1922, 1958, 2012, and present with new buildings shown in red.
Data from: 1922 Fire Insurance Plan of London, 1958 Fire Insurance Plan of London, City of London London Building Outlines. Illustrated by author.
- Figure 17* 32
Photo of exterior of soon to be developed Kelloggs site as seen from Dundas St. in 2017.
By Author.
- Figure 19* 32
Photo of employees outside the McCormick factory showing the original condition of the exterior, Western Archives, Western University.
H.G. Hines, 1916, In *A Trip Through the Palace of Sweets*. London: The McCormick Manufacturing Company.
- Figure 18* 32
Photo of recently renovated rear of Kelloggs site in 2018. The indoor adventure park is just the first part of a larger development plan for the site.
By Author.
- Figure 20* 34
Photo of of the current condition of the exterior of the McCormick factory in 2017.
By Author.
- Figure 21* 34
Historic photo of the exterior of the Empire Mfg. Co.
Retrieved from: <http://emcocareers.com/so-who-is-emco/company-background.aspx>.
- Figure 22* 34
Photo of the exterior of EMCO in 2017.
By Author.
- Figure 23* 35
Photo from ca. 1941 showing Kelvinator of Canada (formerly Ruggles Motor Truck Company) and McCormick Manufacturing Company, Ivey Family London Room, London Public Library.
Retrieved from: <http://images.ourontario.ca/london/2416630/data>.

<i>Figure 24</i>	Photo of Dundas Auto Sales (formerly Ruggles Motor Truck Company) in 2017. By Author.	35
<i>Figure 25</i>	Map of Planners Action Team 2003 Study Area. Planners Action Team, Re-establishing Value: a Plan for the Old East Village, 2.	36
<i>Figure 26</i>	While the quality of commercial storefronts closer to Adelaide St. has improved recently, the quality was observed in 2018 to decrease generally further east towards Burbrook Pl. By Author.	38
<i>Figure 27</i>	Demographic statistics for London and East London. Data from Statistics Canada. Graphic representation by author.	39
<i>Figure 28</i>	Community Structure Plan McCormick Area Secondary Plan, 2015.	40
<i>Figure 29</i>	Developer plan for McCormick site. GSP Group Preliminary Concept Plan, 2015.	41
<i>Figure 30</i>	Diagram of types of programs currently operating nearby include those related to manufacturing, social services, arts, and food. By Author.	42
<i>Figure 31</i>	Existing green space along railway corridor between industrial sites north of Dundas St. By Author.	45
<i>Figure 32</i>	Map of the green space network that forms a series of rough rings around London. Data from: City of London. Illustrated by author.	46
 <i>2.1 Redevelopment Strategy of Directed Propensities</i>		
<i>Figure 33</i>	Map showing the proximity of the East of Old East Village site to local educational institutions. By Author.	50

<i>Figure 34</i>		53
	Photos of typical small scale housing in surrounding area in 2017. By Author.	
<i>Figure 35</i>		58
	Map showing the green space network in London. Background image from: Google Earth. Data from: City of London. Illustrated by author.	
<i>Figure 36</i>		59
	Map showing the green space network in around the East of Old East Village site. Background image from: Google Earth. Data from: City of London. Illustrated by author.	
<i>Figure 37</i>		60
	Potential contaminants based on the 1922 Fire Insurance Plan By Author	
<i>Figure 38</i>		61
	Contaminant Groupings and Typical Sources of Pollutants Kate Kennan and Niall Kirkwood, <i>Phyto: Principles and resources for site remediation and landscape design</i> , 64.	
<i>Figure 39</i>		61
	Sheet 53, London Fire Insurance Plan 1912 Rev. 1922, Western Archives, Western University. Retrieved from: https://www.lib.uwo.ca/madgic/projects/fips/london_fip_1922/index.html	
<i>Figure 40</i>		62
	Potential contaminants based on the 1958 Fire Insurance Plan. By Author	
<i>Figure 41</i>		63
	Sheet 233, London Fire Insurance Plan 1958. Source: Western Archives, Western University.	
<i>Figure 42</i>		64
	Diagram showing location of remediation techniques. By Author	
<i>Figure 43</i>		66
	Highlighted historic industrial buildings. By Author	
<i>Figure 44</i>		72
	Ground Floor plan with industrial business incubator (A), food hub (B), live-work units (C), and shared courtyard (D). By Author	

2.2 Design Proposal

<i>Figure 45</i>	Perspective showing people working and recreating on the north side of the building next to the remediation fields. By Author	74
<i>Figure 46</i>	Site axonometric showing the massing of different programs on the site and the connection from McCormick park to the north through the series of parks through the site. By Author	77
<i>Figure 47</i>	Site plan showing proposed locations of industry by class. By Author	79
<i>Figure 48</i>	Ground floor plan of live-work units - 1:300 By Author	80
<i>Figure 49</i>	Second floor plan of live-work units - 1:300 By Author	82
<i>Figure 50</i>	Third floor plan of live-work units - 1:300 By Author	84
<i>Figure 51</i>	Building sections showing double height units, winter gardens and balconies. By Author	86
<i>Figure 52</i>	Floor plan of fourth and fifth floor residential units with winter gardens - 1:300 By Author	87
<i>Figure 53</i>	Floor plan of sixth through ninth floor residential units - 1:300 By Author	88
<i>Figure 54</i>	Ground floor plan of industrial incubator - 1:300 By Author	90
<i>Figure 55</i>	Second floor plan of industrial incubator - 1:300 By Author	91

<i>Figure 56</i>	Ground floor plan of former EMCO building with food programming - 1:300. By Author	92
<i>Figure 57</i>	Perspective showing view from Dundas St. looking west towards downtown. By Author	94
<i>Figure 58</i>	Site plan. By Author	96
<i>Figure 59</i>	Perspective showing the courtyard hosting a market, outdoor work space, and parking. By Author	98
<i>Figure 60</i>	Remediation site section. By Author	100
<i>Figure 61</i>	Site sections through sloping remediation field. By Author.	101
<i>Figure 62</i>	Perspective showing recreation field, community garden, and poplar stand looking south towards live-work building. By Author	103
<i>Figure 63</i>	Site plans showing phasing of design in 2020, 2025, and 2030. By Author	104
<i>Figure 64</i>	Exploded axonometric to show structure and unit types. By Author	107
<i>Figure 65</i>	Community Structure Plan from McCormick Area Secondary Plan McCormick Area Secondary Plan, 2015.	108
<i>Figure 66</i>	Proposed Community Structure Plan By Author.	109

<i>Figure 67</i>	Proposed view of park and residences looking west from McCormick Blvd. By Author	110
<i>Figure 68</i>	Existing view looking west from McCormick Blvd. By Author	110

Introduction

This thesis examines the redevelopment potential of underused historic industrial sites and how redevelopment can be guided to resist rather than enable gentrification.. This is explored through a design proposal for a food production live-work community in the transitioning industrial area East of Old East Village in London, Ontario.

The first section is comprised of two parts and provides the analytical background.

Section 1.1 outlines the broader problem of manufacturing decline, industrial relocation and vacancy in Ontario, the impacts of infrastructure, and the public perception of these neighbourhoods through the theoretical lenses of historical models of urban land use, the social geography of uneven development and cycles of gentrification. Changing economic conditions and production requirements have caused manufacturing and other secondary industries to move away from the urban core of mid-sized cities in Southern Ontario. Areas that were once manufacturing sites on the edge of the city have been surrounded by residential neighbourhoods as the city grows, making them constricted in space, and as the value of this land close to the urban core has risen, industry has moved to greenfield sites on the new edge of the city with more opportunities for expansion and closer to access to transportation through highways and airports. As industry relocates to the periphery of the city or out of the city altogether, it leaves behind pockets of vacant industrial land that are not being used to their full potential. The hollowing out of industrial areas in the urban core is especially interesting because it corresponds with a devaluation of the surrounding residential neighbourhoods, which have become in the past few decades the lowest income areas of the city, as economic polarization increases. There is also declining population trend in these inner-city areas, in favour of new suburban residential development on the periphery. While these vacant areas often can be seen negatively because of the uncertainty and loss that they represent, eventually due to the seesaw of uneven development (Smith, 197) these sites reach a state of underdevelopment such that they become appealing and profitable to redevelop.

Section 1.2 examines the context of a specific neighbourhood in London that is currently undergoing major changes as a result of recent factory closures by looking at the historic narrative of industry in the area, documenting the current conditions, and highlighting some key studies conducted and initiatives started in recent years. An understanding of the past and present conditions in the area will be used to inform the plan for the future.

The next section contains a proposition in two parts.

Section 2.1 describes a redevelopment strategy through the theory of directed propensities and states the objectives for the design proposal illustrated in chapter four. This thesis aims to highlight these sites as spaces of possibility in a period of transition that have the propensity to be transformed through re-investment, but guide this propensity by proposing an alternative to the seemingly inevitable gentrification that often occurs when devalued industrial sites are redeveloped. The goal is for this to be accomplished by confronting industry rather than erasing it, by 1. retaining the industrial nature of the site as much as possible and creating productive adjacencies between residential and industrial land rather than completely separating land uses, 2. remediating the land using phytotechnologies that allow people to engage with the process of remediation, and 3. supporting the existing working class population by focusing on the affordability of new residential units, and addressing the needs of the existing community rather than appealing only to market forces.

Section 2.2 proposes a community food and production hub through a variety of scales, including a master plan for the area, a site plan for the former EMCO site on Dundas St. and building plans for the food production incubator, community kitchen, and live-work housing. The ideas outlined in 2.1 are tested in this speculative design proposal.

Section 1: Analysis

Polarization and Periphery

1.1 Defining the Problem

As cities grow, industrial operations locate themselves on the current periphery of the city, and historic industrial sites closer to the core become less viable for traditional industrial operations. This cycle has occurred before over a hundred years ago as noxious factories once at the heart of the city were relocated to the edge to reduce contamination and environmental issues, and allow for the expansion of the scale of industry in areas with lower land values. The recent shift of industry resulting in inner city underdevelopment is itself not an entirely new issue. The location of industry can be explained through models of cities such as those by Ernest Burgess¹ and Homer Hoyt,² and theories of social geography such as uneven development as described by Neil Smith.³ Patterns of deindustrialization and redevelopment have been occurring for decades across the Western developed world, but this issue is still contemporary and there are still many underused historic industrial sites that have not been addressed, especially in industrial cities in Canada such as Hamilton, London, and Windsor, where deindustrialization occurred later than in many north-eastern U.S. cities, and is still gradually occurring even until today. These changing economic conditions are part of larger economic forces of capitalism on a global scale, but the effects are felt acutely at a local scale within individual neighbourhoods that are undergoing a process of increasing unemployment and population decline. While in some cases there continues to be substantial growth in the suburban areas of the city, these inner city areas have not yet undergone concentration and densification to accommodate the overall increase in population. The challenge in these areas is to find a strategy for redevelopment of underdeveloped areas of the inner city without displacing the working-class population, instead providing a new source of employment and production for the existing population.

The Rust Belt

The current conditions of vacant industrial land and unemployment in the manufacturing sector need to be understood within the historical framework of industrialization and subsequent effects deindustrialization has had on the region throughout the last century. Steven High looks at the history of the Great Lakes basin region in the period between 1969 and 1984 through a comparison of the similarities and differences in the effects of deindustrialization across the Canada-United States border. Through a methodology of analyzing historical publications on industry that documented conditions as they happened, as well as conducting interviews with workers about the past he finds that despite similar economic conditions, the experiences in Canada and the U.S. were felt very differently. He argues that the American media contributed to the stigma of the “Rust Belt” term in the U.S. leading to a greater sense of “helplessness and disillusionment”,⁴ as opposed to the more positive image of Ontario in the media, partially by being able to blame America for plant shutdowns, and partially because the economic conditions were not as bleak at this time, and the regional identity of Ontario was not solely defined by the economy. He generally devotes more attention to analysis of the United States and only makes reference to Canada as a point of comparison, often using broadly generalizing statements. His work also treats these economic conditions as history rather than something that is still happening. While High makes brief mention of the wave of plant closings and layoffs in the 1990s in Canada, his analysis is mostly confined to the earlier era of deindustrialization which was felt more drastically in the U.S. The effects of policy differences in response to the global restructuring of manufacturing on the economic differences between Ontario and the U.S. are analyzed from a more contemporary economic perspective by Murphy, Emes, Clemens, and Veldhuis. Murphy et al. use data from 1999-2013 to show that in this more recent period, Ontario experienced the sharpest decline of manufacturing output as a share of GDP compared to nearby “Rust Belt” states.⁵ They argue that despite having a stronger economy and higher population growth in than U.S. “Rust Belt” states, Ontario has a much higher level of debt and worse financial performance. This study provides a strong analysis of numbers and data, but does not address issues in a spatial or social context.

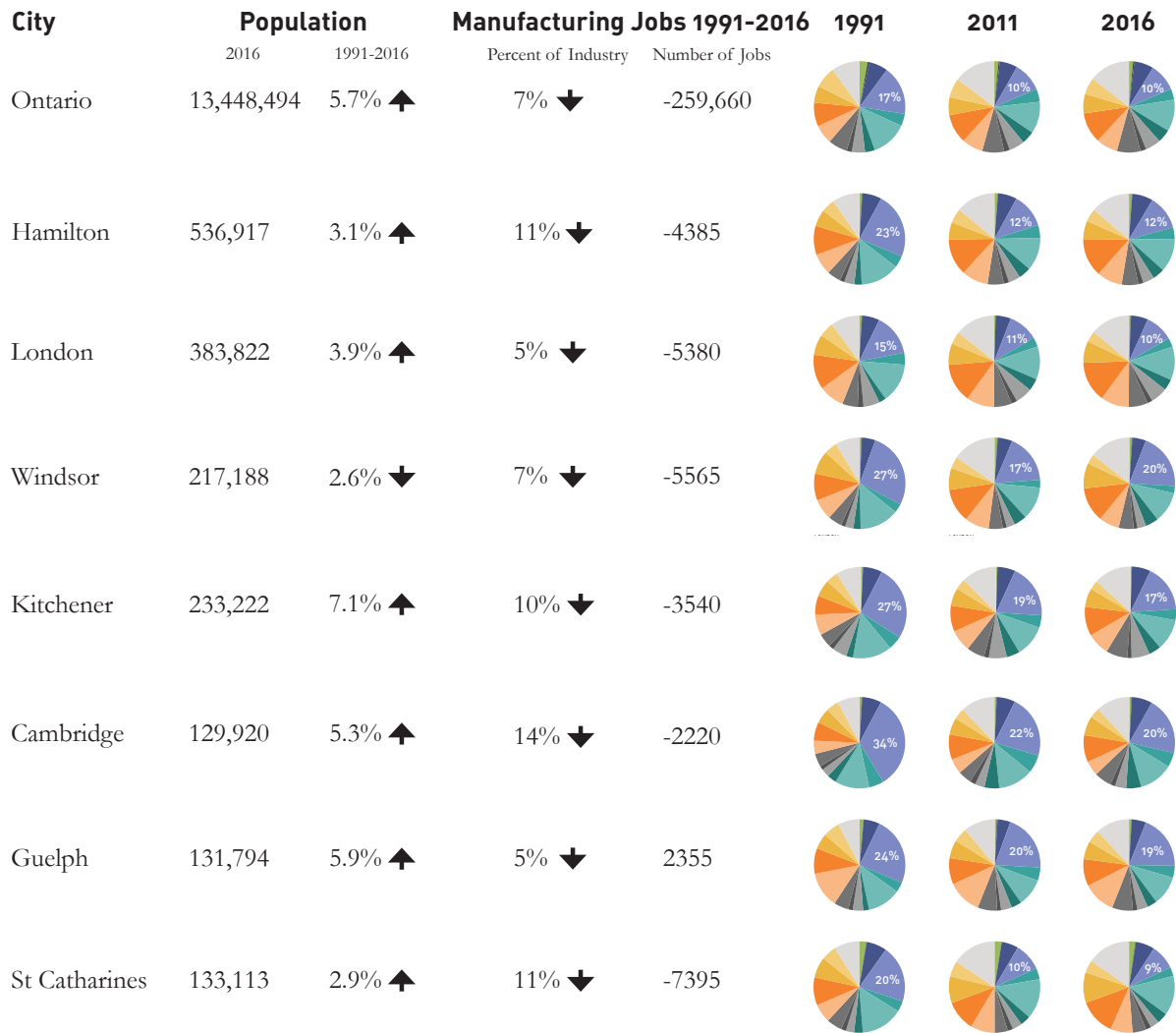
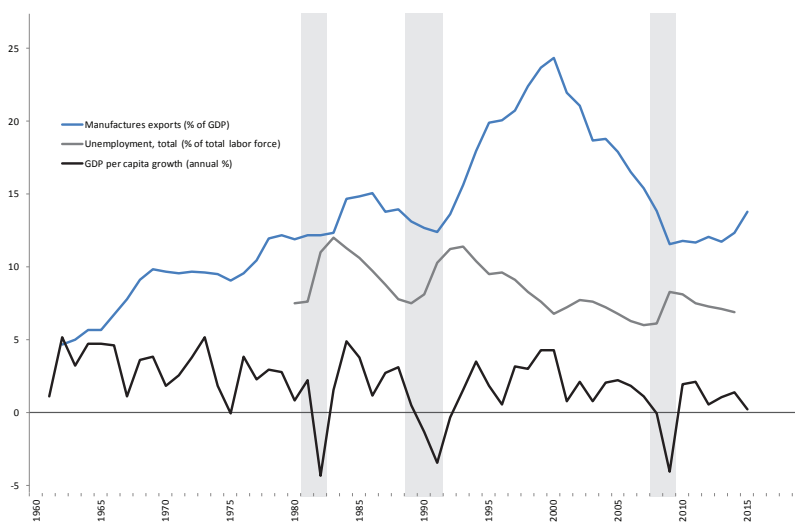


Figure 1 Industry statistics for select Ontario cities showing general decline in manufacturing as a share of total industry and absolute number of jobs.

Canadian Economy



Employment by Industry (NAICS)

- Agriculture, forestry, fishing and hunting
- Mining, quarrying, and oil and gas extraction
- Construction
- Manufacturing
- Wholesale trade
- Retail trade
- Transportation and warehousing
- Finance and insurance
- Real estate, rental and leasing
- Business, professional, scientific and technical
- Educational services
- Health care and social assistance
- Accommodation and food services
- Public administration
- Other services

Figure 2 Graph of the Canadian economy from 1990-2015 showing the relationship between manufacturing exports, unemployment, and GDP per capita.

Decentralization

Although the story of the Rust Belt describes an overall decline in manufacturing in the entire region, at a smaller scale though some industry still remains in the region the location of industry within the city has shifted from where it once was in the 20th century. Models of cities such as Ernest Burgess' concentric circles or Homer Hoyt's sectors and wedges attempt to explain the process of decentralization that occurs as cities develop. Burgess illustrates the flow of people moving outwards to more desirable areas, and the expansion of zones outwards, and increasing differentiation within the city due to the division of labor.⁶ London, Hamilton, and Windsor illustrate this shift to the periphery. Although the population of these cities is slowly growing, all growth is happening on the periphery of the city and the inner city is declining. This shrinking population is not unique to the areas surrounding industry, but the quantity does seem to be larger in these areas. The peripheral growth is in line with the Burgess model.

Hoyt illustrates the distribution of high and low rent areas as wedges rather than concentric circles. He explains that while the inner circle is predomi-

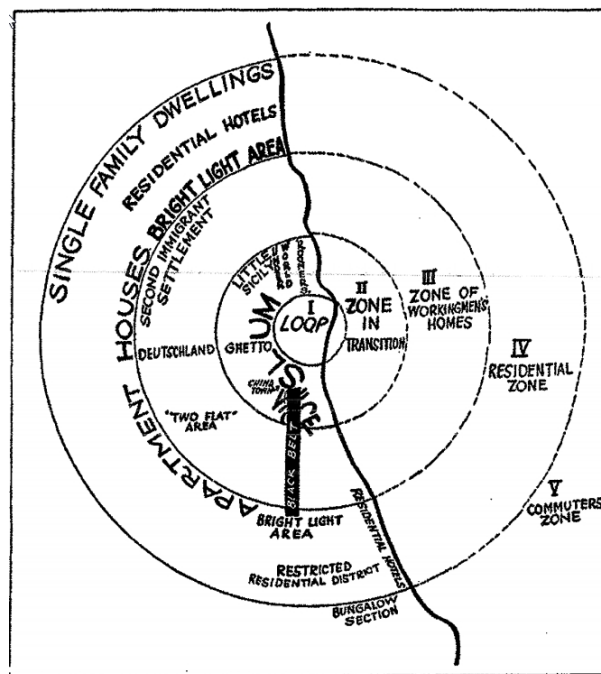
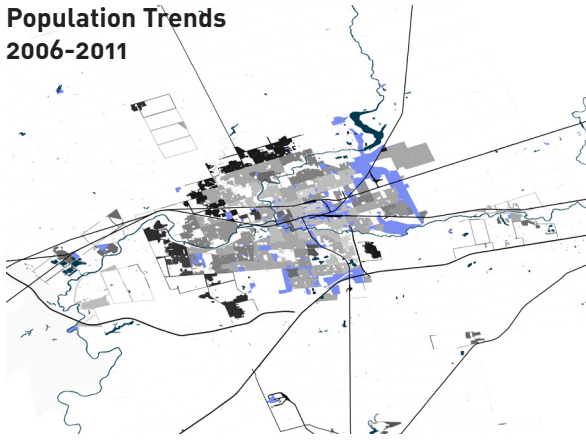


Figure 3
Burgess concentric circles model.

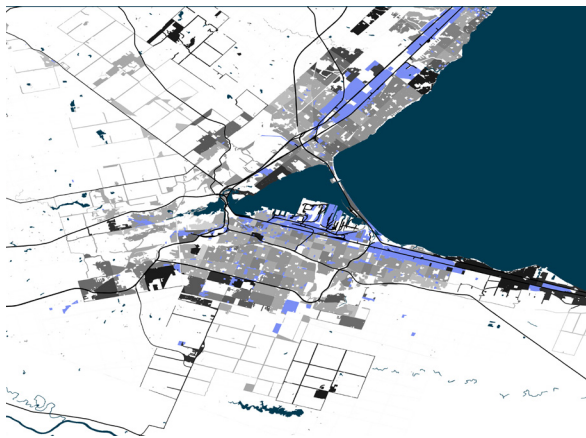
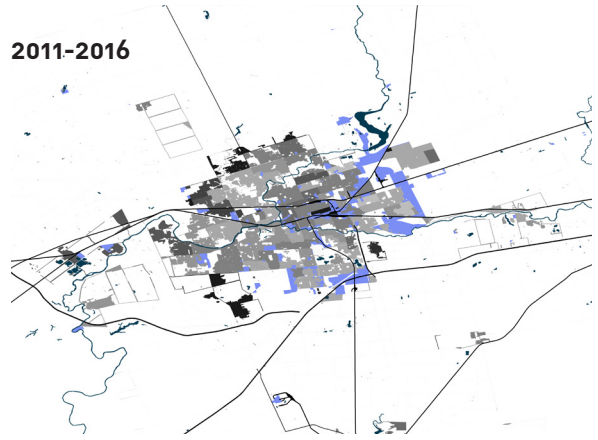
CHART II. Urban Areas

**Population Trends
2006-2011**

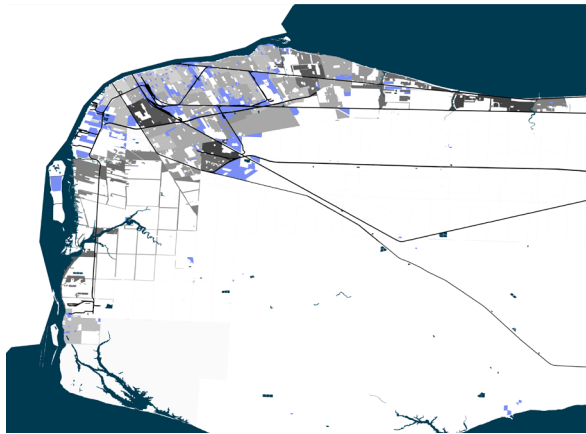
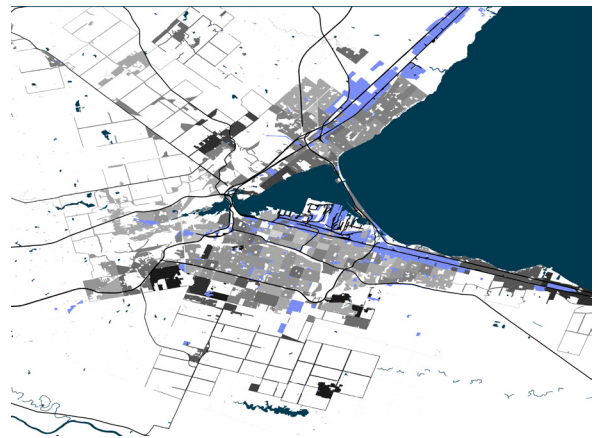


London

2011-2016



Hamilton



Windsor

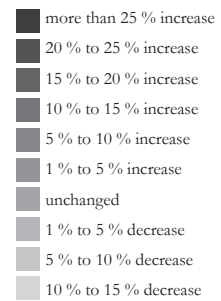
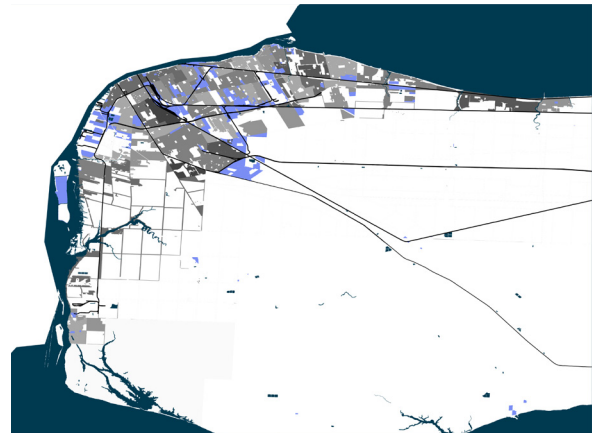


Figure 4
Maps of London, Hamilton and Windsor showing population change from 2006-2016 relative to areas of industry shown in blue.

nantly low rent, these low rent areas extend from the centre to the periphery in one or more sectors, and the high rent areas also form wedges rather than the whole periphery.⁷ This model describes more accurately the actual conditions in the city, which are not perfect rings, but rather zones that start in the center of the city and reach outwards, such as in the case of London where this zone extends eastward from the core. The Hybrid Land Use Model described by Walter Isard is perhaps even more accurate as it combines the concentric and sectoral models but is less concerned with spatial contiguity, showing other nuclei of industry forming discretely from the centre which are surrounded by residential uses on all sides, as can be seen in some cases in the historic industrial sites studied for this thesis.

Hoyt also describes the effect of transportation on the location of factories, as the automobile allows factories to move to more suburban sites. Expressways become the preferred mode of transportation for high value and lower weight goods, so preferred industrial locations are between highways and expressways.⁸ It is interesting to note that in Hamilton growing residential areas are correlated with close access to the highway for commuting, but in London the opposite seems to be true. This could be in part because Hamilton has a greater number of residents commuting in and out of the city for work

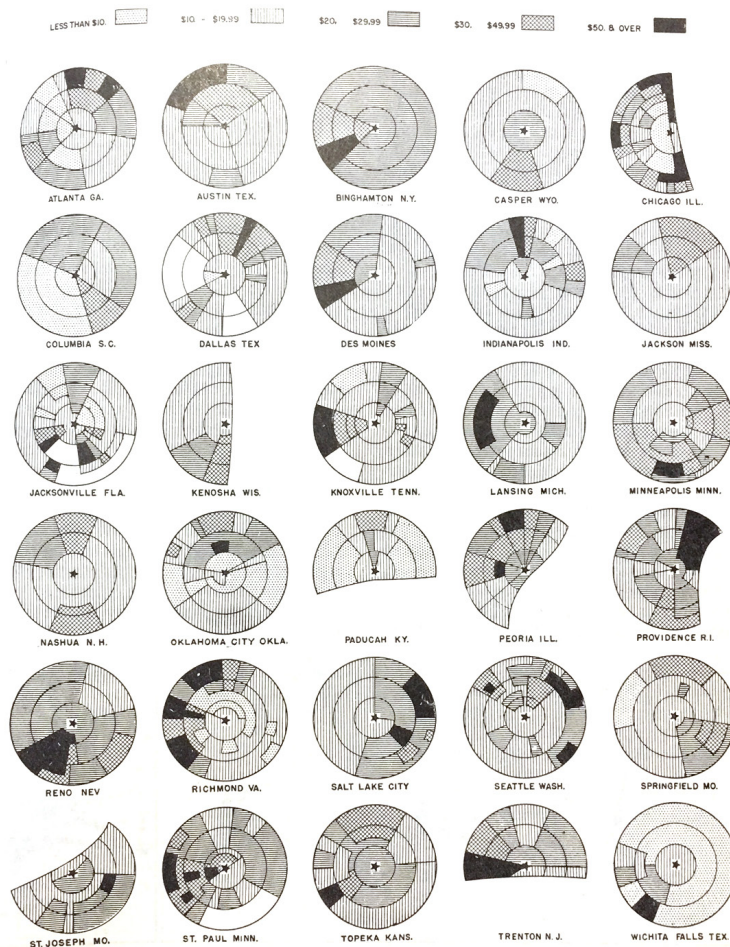
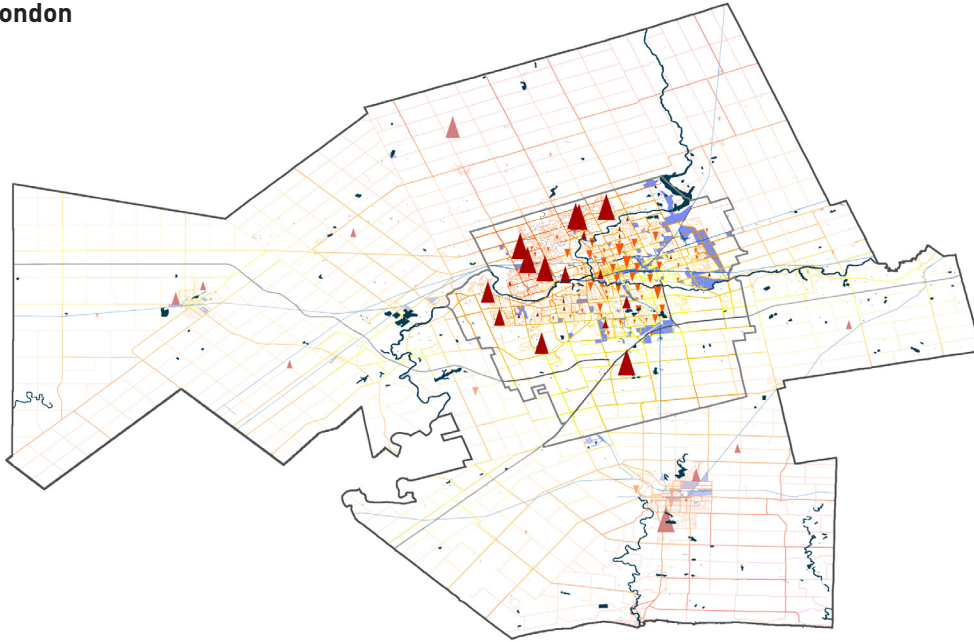


Figure 5
Theoretical Pattern of
Distribution of Rent
Areas in 30 American
Cities, Homer Hoyt
Sector Theory.

London



Travel Time to Freeway

- 0-2 min
- 2-5 min
- 5-10 min
- 10-15 min
- 15-20 min
- >20 min

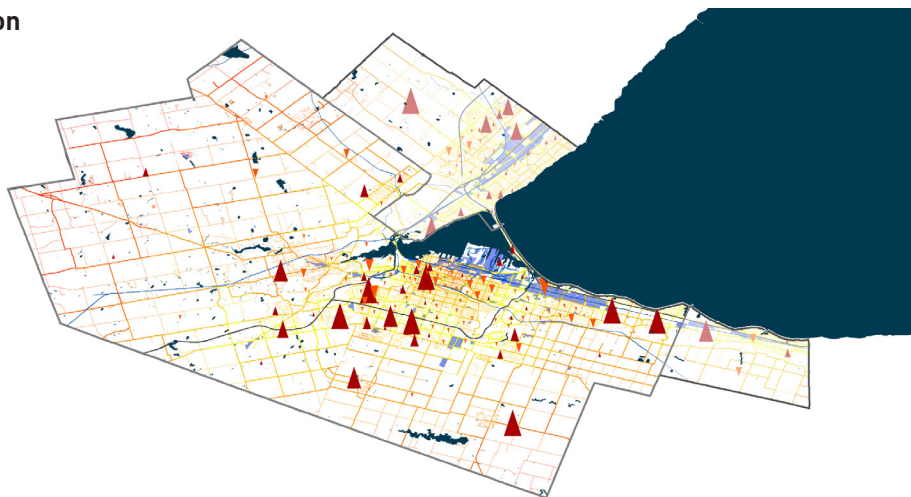
— municipal boundary

▲ population increase

▼ population decrease

■ industrial land use

Hamilton



Windsor

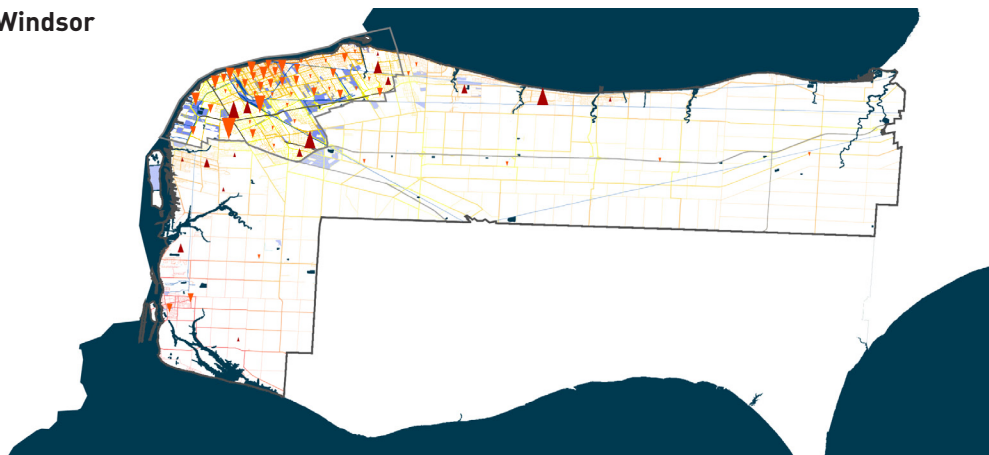


Figure 6
Maps of London Hamilton and Windsor showing travel time to freeway.

each day. In both cities however, the historic industrial areas exist at the confluence of many railway lines, but for new industrial areas access to the highway or airport appears to be more important, as new business and industrial parks have been recently developed near the highways in both cities. While the downtown core has the highest density of employment such as health-care, financial, business, and technical services, the industrial manufacturing, transportation, and warehousing areas are the next most significant employment areas. Although the peripheral industrial areas employ more people, and the core industrial areas appear somewhat vacant, they still contain significant employment concentrations.

Employees by Industry Sector

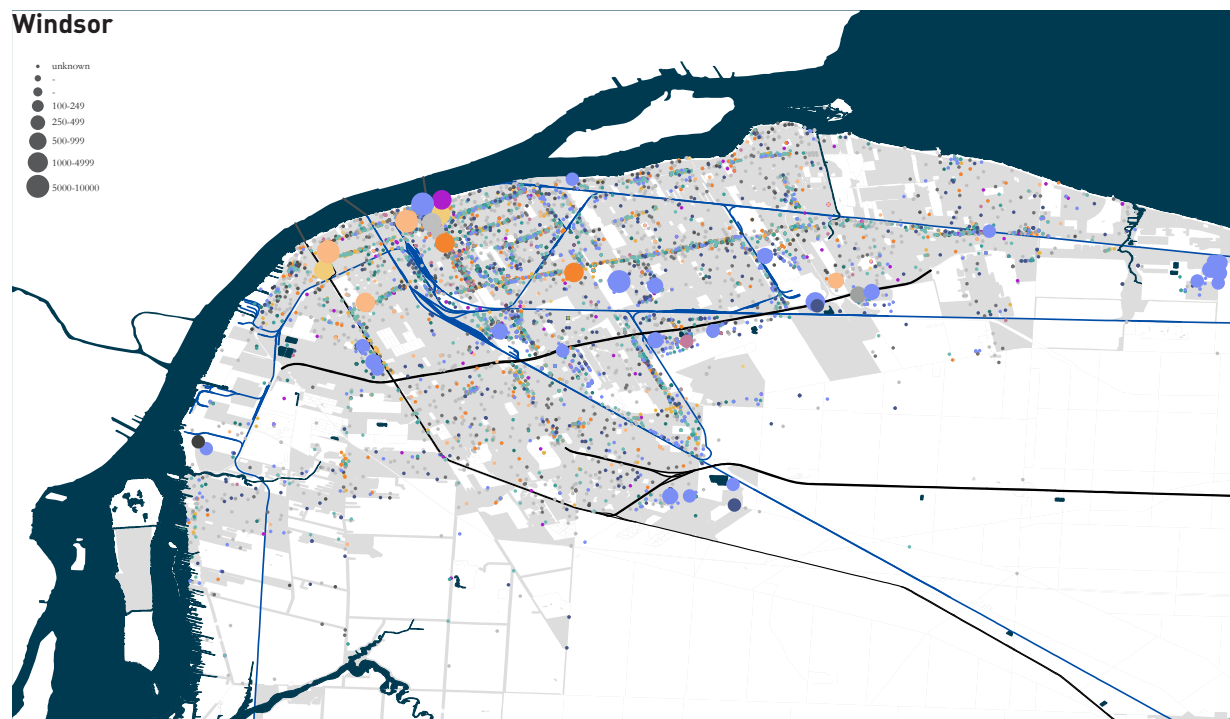
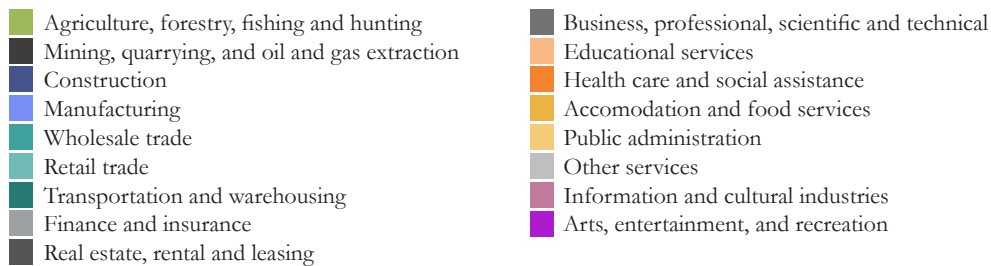


Figure 7
Maps of Windsor showing location and number of employees by industry sector.

London

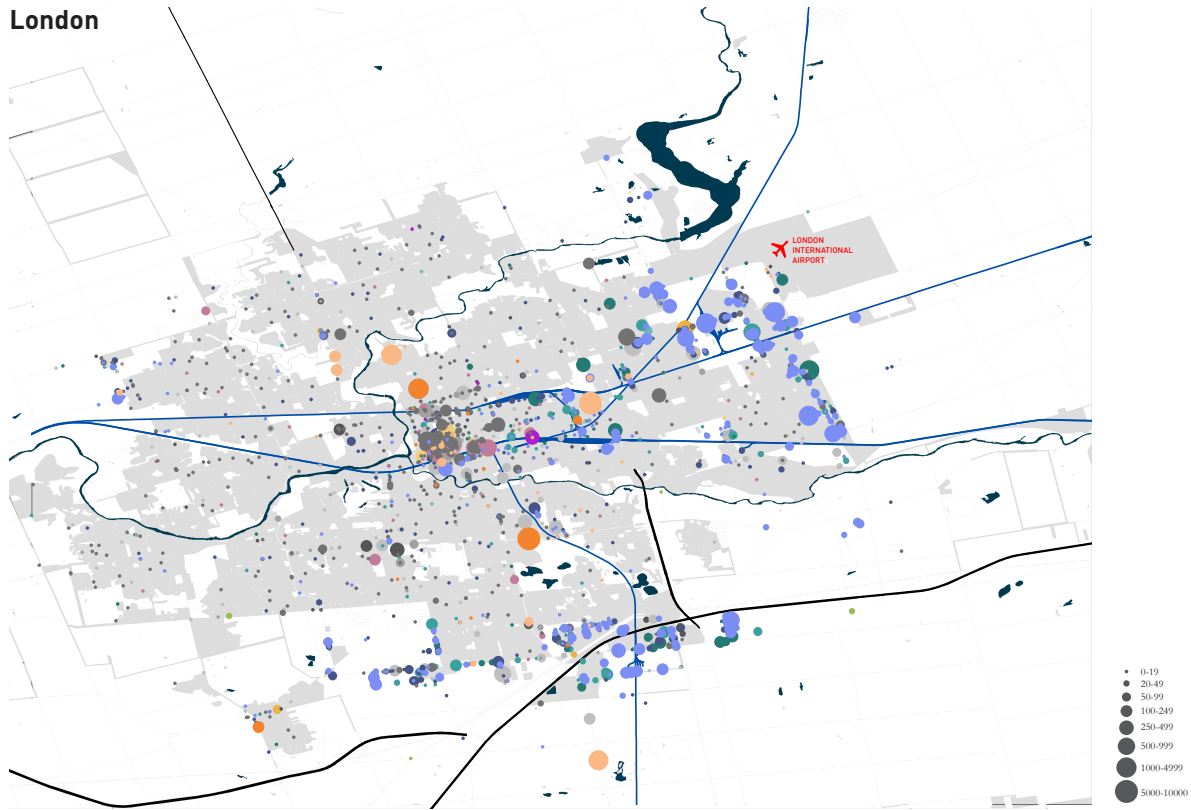


Figure 8
Maps of London showing location and number of employees by industry sector.

Hamilton

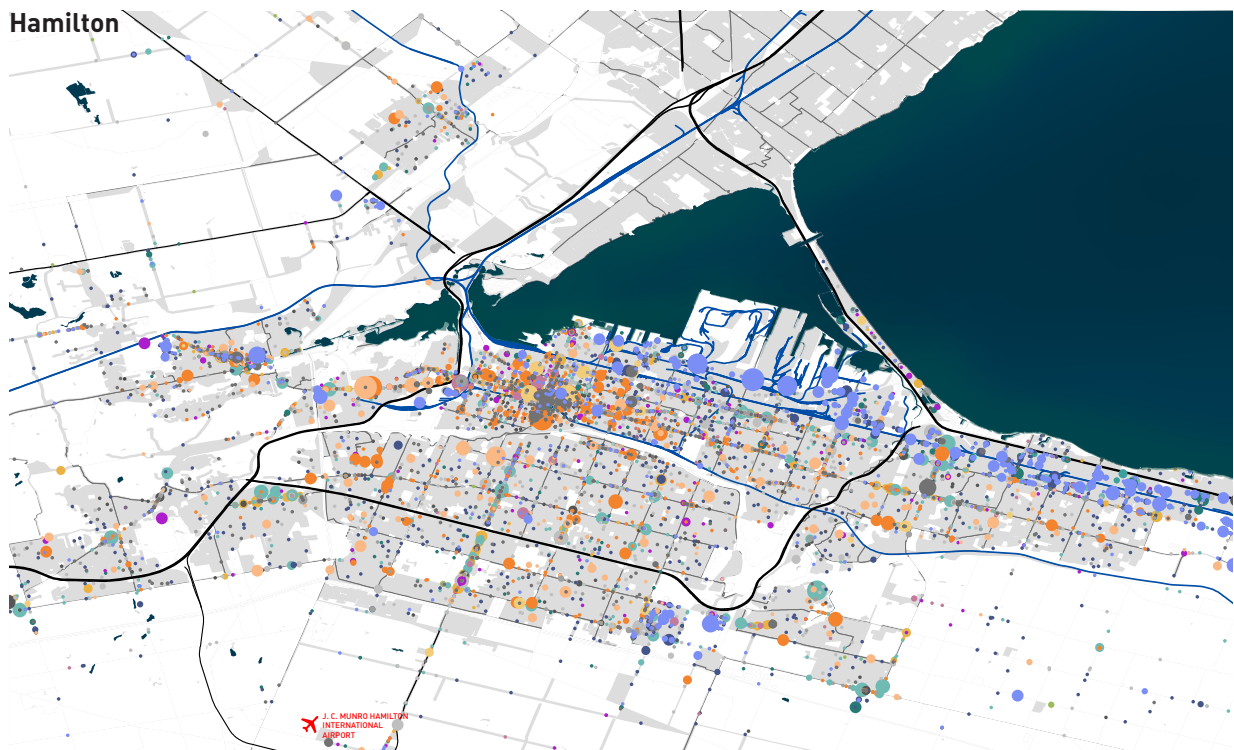
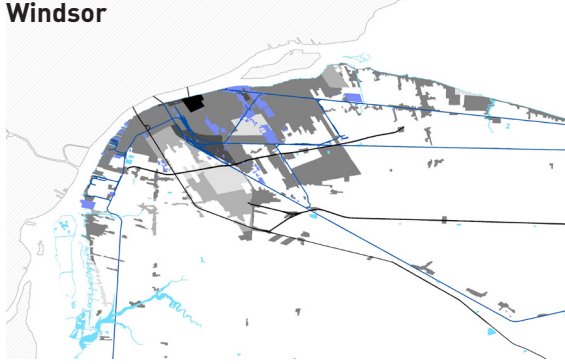
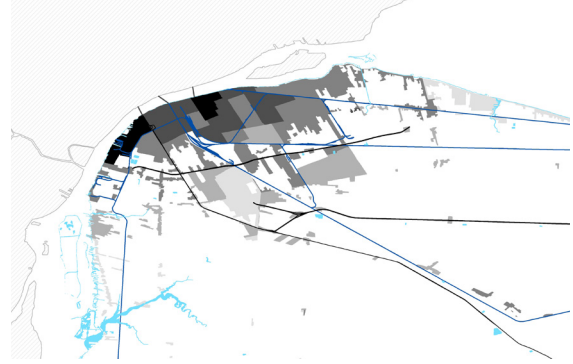


Figure 9
Maps of Hamilton showing location and number of employees by industry sector.

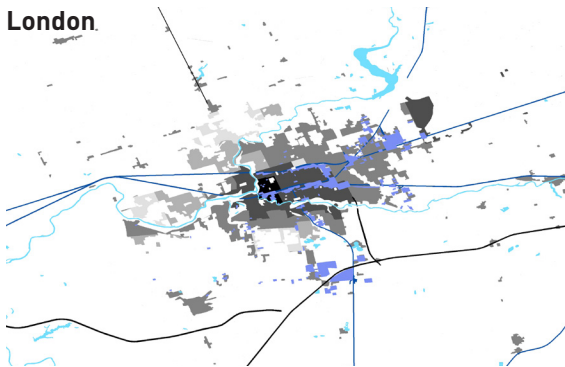
1971
Windsor



1991



London



Hamilton

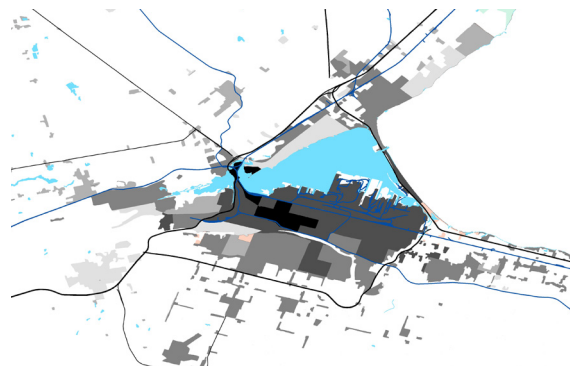
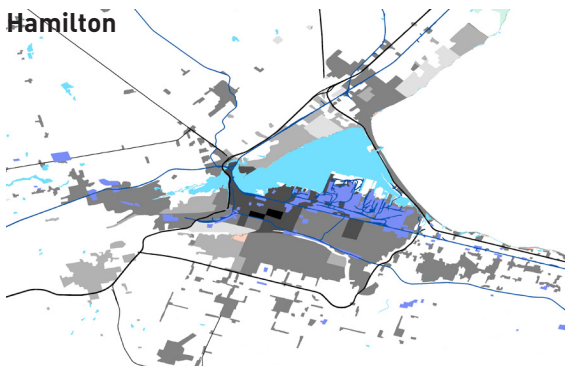
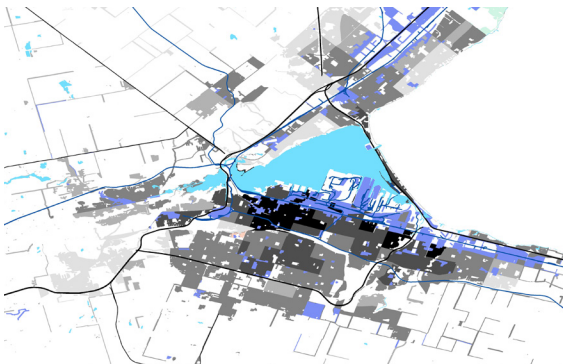
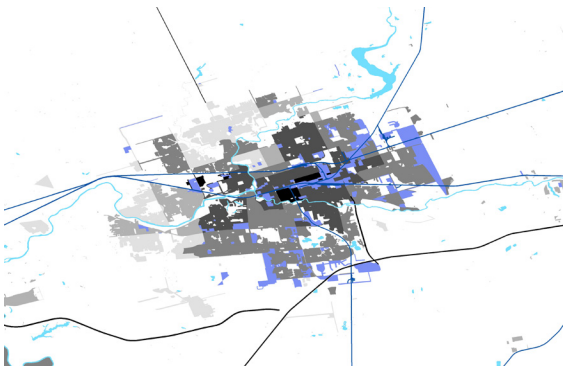
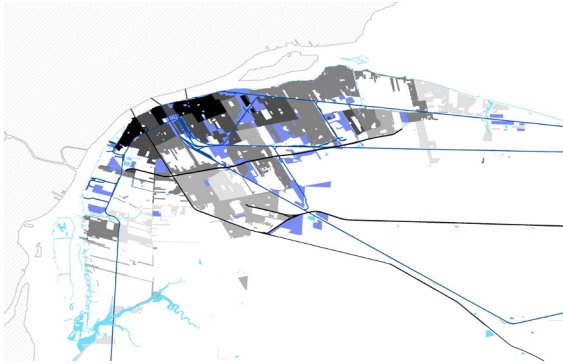
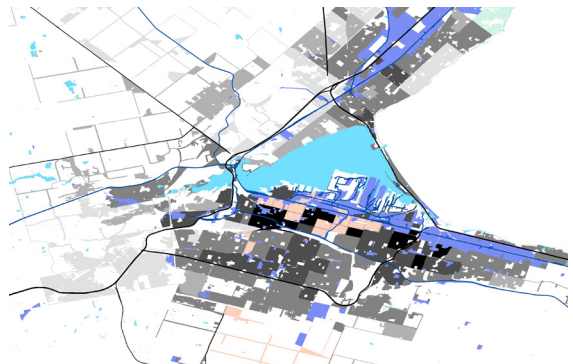
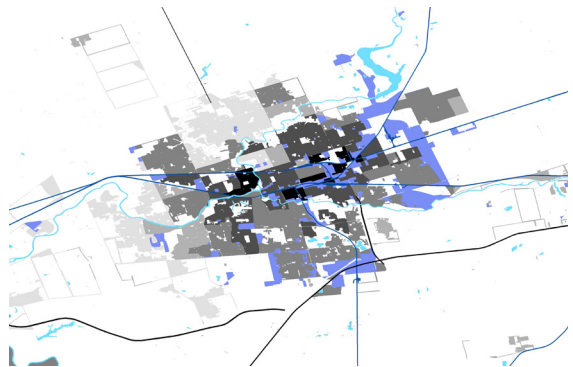
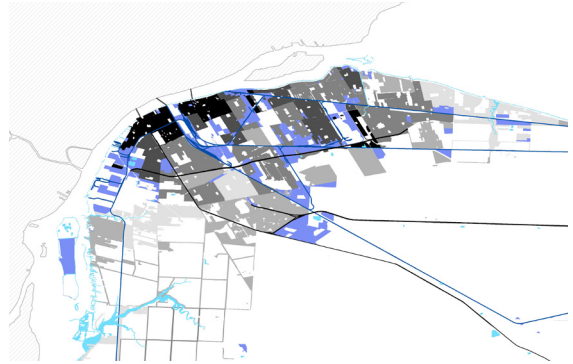


Figure 10
Maps of Windsor, London, and Hamilton showing census tract average household income compared to Census Metropolitan Area average.






2001



2011



Household Income

-  more than 40 % below
-  20 % to 40 % below
-  20 % below to 20 % above
-  20 % to 40 % above
-  more than 40 % above

Cycles of Development

These models begin to explain the shift of industry from the inner city industrial sites to the periphery of the city, but they do not fully capture the cyclical nature of the development changes that occur on these sites over a long period of time. To anticipate the future of these sites after this period of disinvestment, a different theory must be considered. The theory of uneven development outlined by Neil Smith says that capital moves to where the rate of profit is the highest, and this mobility of capital results in cycles of development and under-development of sites.⁹ These cycles occur at different scales. The global scale explains the decline of industry in the entire region, but in the case of historic inner city neighbourhoods it is useful to look at these cycles at the urban scale.

The capitalist city systematically differentiates between place of work and place of residence, and urban scale is determined by the labour market and the daily commute that results from this separation. Capital moves to exploit underdeveloped areas where the rate of profit is high. Smith describes how the development of an area by capital results in lower unemployment, which results in an increasing wage rate, increased ground-rent, and ultimately an over accumulation of fixed capital that in time reduces the rate of profit that made the area attractive in the first place. When the rate of profit falls it becomes more advantageous for development to relocate to somewhere less developed. This can result in absolute urban expansion to new sites and increased separations and commute, but can also be accomplished through the intensification of space that was once developed and has become underdeveloped. Capital uses mobility as a spatial fix for the contradictions of over-accumulation of capital occurring in one place while over-accumulation of labour occurs in another. The seesaw from developed to underdeveloped space is the “geographical expression of the constant necessary movement from fixed to circulating capital and back to fixed”.¹⁰

There are several barriers in under-developed industrial sites that have prevented re-development from occurring quickly after de-industrialization, including cost, liability, and zoning restrictions. Redeveloping these sites can be costly due to several factors. This could include the additional cost of remediating contamination on a brownfield site, or sensitively restoring a designated heritage building. Due to contamination on site from former industrial

activities, owners of property could be held liable for problems that arise in the future if the site is not adequately remediated. Hayek, Arku and Gilliland found that because of this future liability, owners of property in London often have more incentive to hold onto a property rather than clean it up and sell it.¹¹ Incentives are provided to developers, and not to the owners of contaminated properties who just want to clean them for sale. Finally, although only a temporary issue, narrow allowable uses under zoning can make it more difficult to develop a site for new and unrelated occupations. The process of re-zoning the site takes political will and time.

Disinvestment is only one moment in time in the history of these sites however. Smith goes further to explain how eventually the underdevelopment of these areas progresses to a point such that it leads to exactly the conditions that make an area profitable for rapid development, so capital returns to areas that it once abandoned. All of the issues mentioned above can be overcome if the rate of profit is seen to be high enough. These industrial sites across Ontario are at a point in this cycle where the unemployment rates are high and the ground-rent is low, so development is beginning to return to these areas in recent years. Brownfield redevelopment policies that provide financial incentives and allow for changes in use are part of municipal strategies to encourage redevelopment of these underdeveloped sites. While allowing for changes in use may make development more appealing, we should be critical of the effects these changes in use can have on the neighbourhood and be careful not to lose valuable inner city industrial employment areas.

Gentrification

Smith also studies the effects of urban restructuring and disinvestment through the lens of gentrification, showing that the cycle of shifts in consumption and production that eventually creates the ideal conditions for gentrification. Although Smith speaks in general about conditions that occur in many different locations, the issues he addresses are relevant to several cities across Southern Ontario. He states that high risk and low rates of return in inner city leads to period of deterioration and decreasing value until the rent gap widens enough for redevelopment to be profitable¹² leading to gentrification and displacement when this redevelopment occurs. Smith links multiple scales of development in this context through the idea that gentrification is spatial restructuring at urban scale, while deindustrialization is an aspect of

spatial restructuring at the global scale.¹³ He also argues that both the economic restructuring seen through plant closures, and the spatial restructuring seen through gentrification are to the detriment of the working-class. In my own analysis of London, Hamilton, and Windsor comparing 1971, 1991, 2001, and 2011, I found that income distribution has both become more polarized, but also shifted so lowest incomes are concentrated in core industrial areas. These industrial neighbourhoods were not always low income, the data shows that as recently as 1971 they were middle income working class and the lowest income areas of the city were concentrated in the downtown core. Now as new industry has shifted to the periphery, and new residential development also occurs on the periphery, there are more areas with a household income of greater than 40% above the average in these suburban neighbourhoods, and the area of greater than 40% below the average household income has grown to include historic industrial areas. It is these people who are at risk of displacement unless their needs are supported as growth and investment returns to the area.

Alison Goebel examines the negative effects on the working-class as a result of deindustrialization, decaying built environment and subsequent redevelopment in the specific case of Mansfield, Ohio. She highlights the increasing race and class tensions caused by an influx of highly educated, well-paid, white-collar “outsiders”, as healthcare replaced manufacturing as the main employer.¹⁴ Her work warns against the dangers of taking advantage of marginalized groups in the process of redevelopment through practices like tracking economically disadvantaged students in the school system towards low-waged job paths. Although her research focuses mostly on the negative effects of the healthcare industry specifically, the method Goebel employs, as an outsider, of participant observation, interviews, and census data analysis in order to understand specific issues in Mansfield and identify resonances with more general conditions in other small cities in North America, is a model on which I attempted to base my own method of research by analyzing census data for the broader region and a subset of cities, visiting several sites in person and walking around to observe the current conditions, and conducting interviews with planners and community organizers in London once I ultimately chose a particular neighbourhood for my design proposal.



Former Kellogg's Plant

- cereal production
- constructed 1913,
- renovated and expanded 1885, closed 2014
- purchased by E&E McLaughlin late 2016
- proposed conversion to office / warehousing



Former McCormick Factory

- biscuit and confectionary manufacturing
- constructed 1914, closed 2008
- land purchased by Sierra Construction
- proposed conversion to residential / commercial



Former Studebaker Plant

- automobile manufacturing
- constructed 1941, closed 1990s
- partially demolished 2013
- proposed development to industrial park



Former Westinghouse Head Office

- automobile manufacturing
- constructed 1917

Figure 11
Photos of vacant historic industrial buildings seen in London and Hamilton.

While redevelopment of disinvested sites is on the one hand seen as a positive change, the negative effects on the existing population must be addressed and mitigated. Although the theoretical framework of gentrification is well established, and the process seems inevitable, Alan Walks and Martine August propose strategies to resist gentrification such as provision of affordable housing and the maintenance of significant industrial employment lands.¹⁵ This moment just before development returns is the ideal time to intervene in the process to guide the re-investment in the area to benefit the working class. These strategies will be explored further in section 2.1.

Sense of Place

Beyond the regional effects of deindustrialization and the global flows of capitalism that have caused it, the third aspect of these transitional sites that needs consideration is the local sense of place. Vacant buildings and sites where there once was job opportunities can be disheartening, but redevelopment of these sites provides an opportunity to build on the unique identity of the community. In his essay *The Social Value of Transformation*, Angelus Eisinger makes a case for the use of existing building stock as a resource for developing the future city. He points to examples where an empathetic approach to history can provide opportunities for the integration of the community into previously closed zones of industrial production and create social benefits.¹⁶ While the examples given are concrete, not much elaboration is given on what exactly the social benefits are, other than reframing space and allowing people to connect with spaces they had previously not been able to connect with, and a qualitative sense of improving the quality of everyday life. Although a connection to the past can be an aspect that contributes to a sense of place it is also possible to consider that sometimes the best approach to an area is to start fresh by removing all traces of former industry. Janet R. Daly Bednarek examines the changing role of the downtown in America by looking at the downtown riverfront of Omaha. She tracks the changing conceptions of the downtown through the past several decades which ultimately led to the stripping of historic warehouses, industry, and railways from the downtown riverfront in favour of reconceptualising a new image for the city of the waterfront as a place for recreation, leisure, and

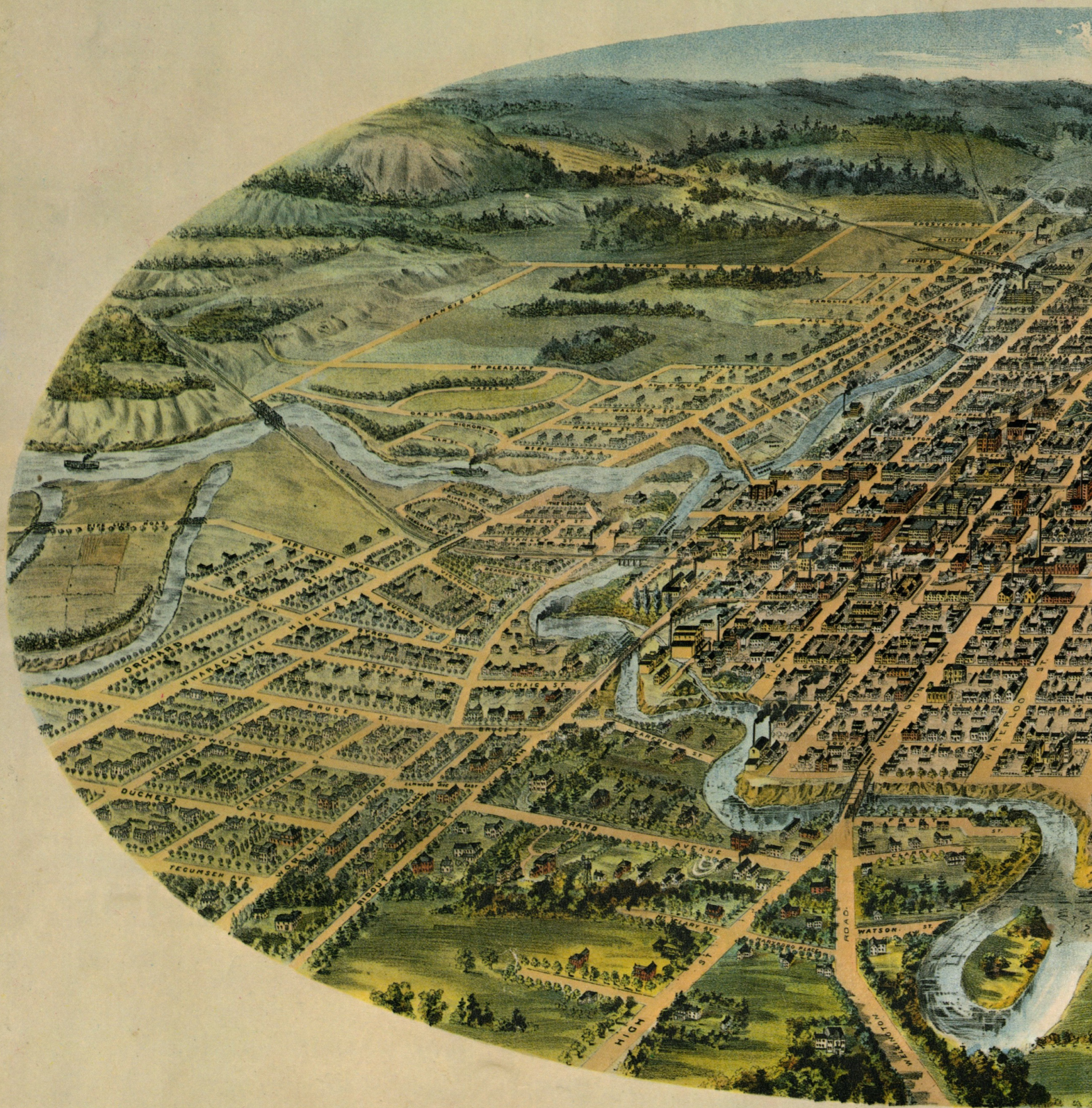
open-space, without a sentimental attachment to former industrial activities.¹⁷ This kind of redevelopment however seems to consider only attracting new occupants to the site, and while it may seem appealing, erases the traces of industry that connect existing occupants to their history on the site, instead of confronting the changing nature of the site and revealing its layers.

Ideally an approach to redevelopment will consider the possibility of reconnection to history without fetishizing history. Doreen Massey addresses the idea of defining a sense of place in a global capitalist context of the space-time-compression. She raises the issue of the uncertainty inherent in definitions of place and our relationship to place in a time of increasing internationalism, and also acknowledges the inequality of mobility and control over mobility between different groups of people, which effects their relationship to a place. While Massey posits that an attachment to the meaning of a place might be a result of a desire for security in a world of “movement and change”, she cautions that there are problems with ideas like “reactionary nationalism”, “competitive localism” and “obsessions with ‘heritage’”¹⁸ and proposes that we need to find a way to create a progressive sense of place with geographical uniqueness without being reactionary and only looking inward to history. Somehow a balance needs to be struck between honouring the history of the site, but allowing it to still change and evolve. Also, less heritage industrial buildings remain than I initially expected because many have been demolished already, and only a few significant examples remain standing and vacant because they have been deemed important but they would be costly to renovate, so heritage cannot be the primary driver of a sense of place. A large part of the sense of place is made up of the people who live there and their interests and values. The efforts that each community chooses to focus on reveal the character of the neighbourhood beyond merely its buildings or history. This is why it is so important to look and listen to what the existing occupants are already doing instead of imposing entirely new values on the site. Each city will have unique attributes that can be amplified in the creation of a sense of place for new development, such as the identity of agriculture and food production in London which will be explored further in section 1.2.

Endnotes for Section 1.1

- 1 Ernest W. Burgess, "The Growth of the City," In *The City*, ed. Robert E. Park, Ernest W. Burgess, and Roderick D. McKenzie, 47-62. (Chicago and London: The University of Chicago Press, 1967).
- 2 Homer Hoyt, "Theoretical Pattern of Distribution of Rent Areas in 30 American Cities," In *According to Hoyt; fifty years of Homer Hoyt; articles on law, real estate cycle, economic base, sector theory, shopping centers, urban growth*, 585-587. (Washington: Homer Hoyt Institute, 1966).
- 3 Neil Smith, *Uneven Development: Nature, Capital, and the Production of Space*, (Athens: University of Georgia Press, 2008).
- 4 Steven High, *Industrial Sunset: The Making of North America's Rust Belt, 1969-1984*, (Toronto, ON: University of Toronto Press, 2003), 73.
- 5 Murphy, Robert P., Jason Clemens, Joel Emes, and Niels Veldhuis. *Ontario vs. the US Rust Belt: Coping With a Changing Economic World*, (Fraser Institute, 2015), 3.
- 6 Robert E. Park, Ernest W. Burgess and Roderick D. McKenzie, *The City*, 50.
- 7 Homer Hoyt, "Theoretical Pattern", 587.
- 8 Homer Hoyt, "Changing Concepts of Industrial Location," In *According to Hoyt; fifty years of Homer Hoyt; articles on law, real estate cycle, economic base, sector theory, shopping centers, urban growth*, (Washington: Homer Hoyt Institute, 1966), 237.
- 9 Neil Smith, *Uneven Development*, 197.
- 10 Neil Smith, *Uneven Development*, 199.
- 11 Michael Hayek, Godwin Arku and Jason Gilliland, "Assessing London, Ontario's brownfield redevelopment effort to promote urban intensification," *Local Environment* 15, no. 4 (April 2010): 389-402.
- 12 Neil Smith, *The New Urban Frontier: Gentrification and the Revanchist City*, (London: Routledge, 1996), 66.
- 13 Smith, *The New Urban Frontier: Gentrification and the Revanchist City*, 84.

- 14 Alison D. Goebel, "Curing the Rust Belt?: Neoliberal Health Care, Class, and Race in Mansfield, Ohio," In *After the Factory: Reinventing America's Industrial Small Cities*, ed. by James J. Connolly, (Lanham: Lexington Books, 2010), 141-168.
- 15 Alan Walks and Martine August, "The Factors Inhibiting Gentrification in Areas with Little Non-market Housing: Policy Lessons from the Toronto Experience," *Urban Studies* 45, no 12. (2008), https://journals-scholarsportal-info.proxy.lib.uwaterloo.ca/pdf/00420980/v45i0012/2594_tfigiaplftte.xml.
- 16 Angelus Eisinger, "The Social Value of Transformation," In *City as Loft: Adaptive Reuse as a Resource for Sustainable Urban Development*, ed. Martina Baum and Kees Christiaanse, (Zurich, Switzerland: gta Verlag, 2012), 69.
- 17 Janet R. Daly Bednarek, "Creating an "Image Center": Reimagining Omaha's Downtown and Riverfront, 1986-2003," In *After the Factory: Reinventing America's Industrial Small Cities*, ed. James J. Connolly, (Lanham: Lexington Books, 2010), 105.
- 18 Doreen Massey, "A Global Sense Of Place," *Marxism Today*, June (1991), 26.



CITY OF LONDON



Geo. H. Knapton & Co.

By TORONTO LITHOGRAPHIC CO. Printed in the Office of the Minister of Agriculture

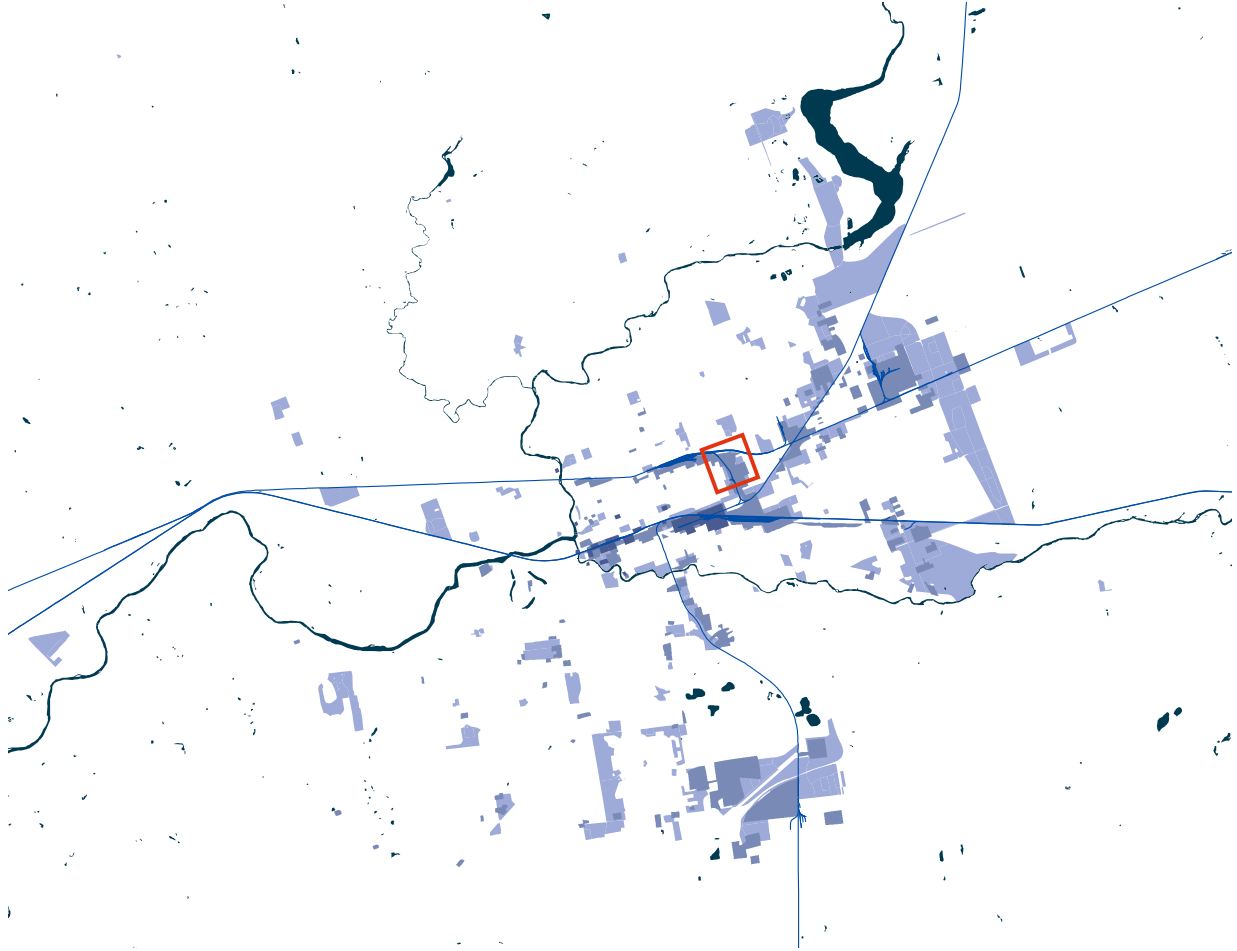
LONDON, CANADA.

East of Old East Village

Examining the Context

Figure 12

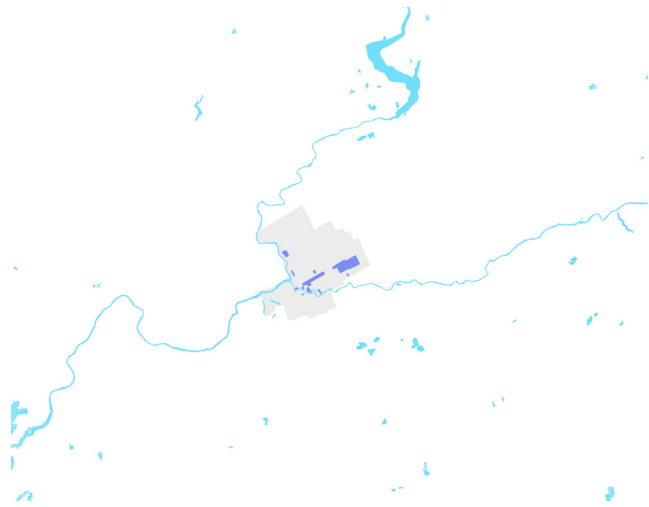
Toronto Lithography Co. Bird's Eye Image of London in 1893.



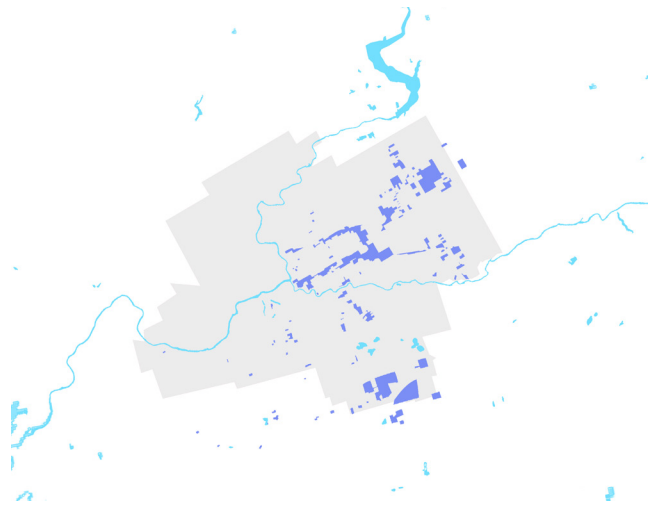
Progression of Industry

Figure 13

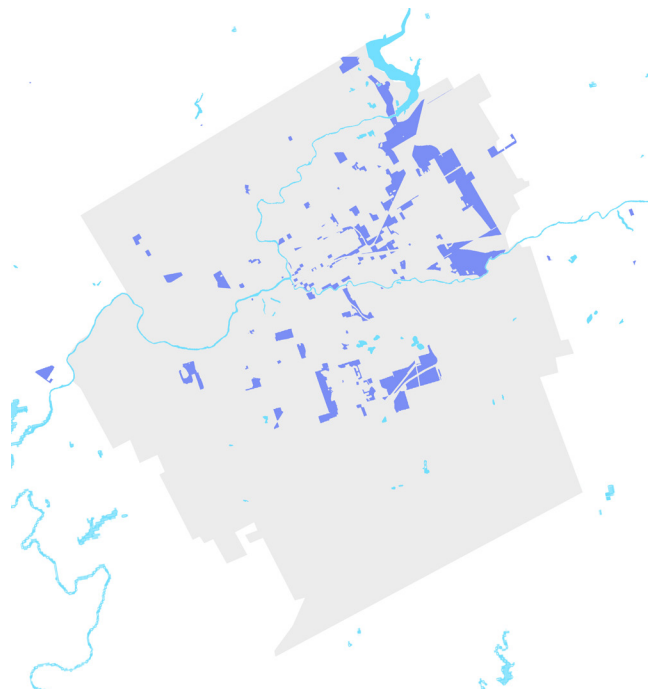
Map of industrial land in 1893, 1972, and 2011.



1890 Boundary
1893 Industry



1980 Boundary
1972 Industry



2011 Boundary
2011 Industry

Figure 14
Maps of industrial land in 1893, 1972, and 2011 relative to the edge of the city at the time.

East of Old East Village

1.2 Examining the Context

Industrial History

Throughout its history since the introduction of rail transportation London has had a very diverse industrial base.¹ This has included various types of manufacturing facilities, including food production due to its position in a prominent agricultural region. Before the 20th century early industrial production was concentrated around the river, and centred around Richmond St. near Dundas St. in downtown London, and also some just east of Adelaide St. N. around Hamilton Rd. At that time, East of Egerton St. and Quebec St. was still largely undeveloped, occupied only by a small number of residential buildings at the edge of the city. That soon changed as the city annexed the area east of the city in 1912 and encouraged industry to move east of the former village of London East. Eventually the city grew in population, and residences began to surround the pocket of industrial land that was once at the edge of the city. The building footprints of the residential fabric in these neighbourhoods have not changed much since the early 1900s, and the area devoted to industrial then remains industrial now, but the footprint of industrial buildings has gotten larger. The development of industry on the site can be seen by examining the built form as shown in the fire insurance maps of the area from 1922 and 1958 in comparison the GIS information available from 2012. After 2012 the effects of de-industrialization can be seen in the footprints of the site as some large industrial buildings are demolished leaving vacant holes in the fabric.



Figure 15

Vacant land on EMCO site as seen from residential houses on Burbrook Pl in 2018.



Figure 16
Building footprints in East of Old East Village from 1922, 1958, 2012, and present with new buildings shown in red.

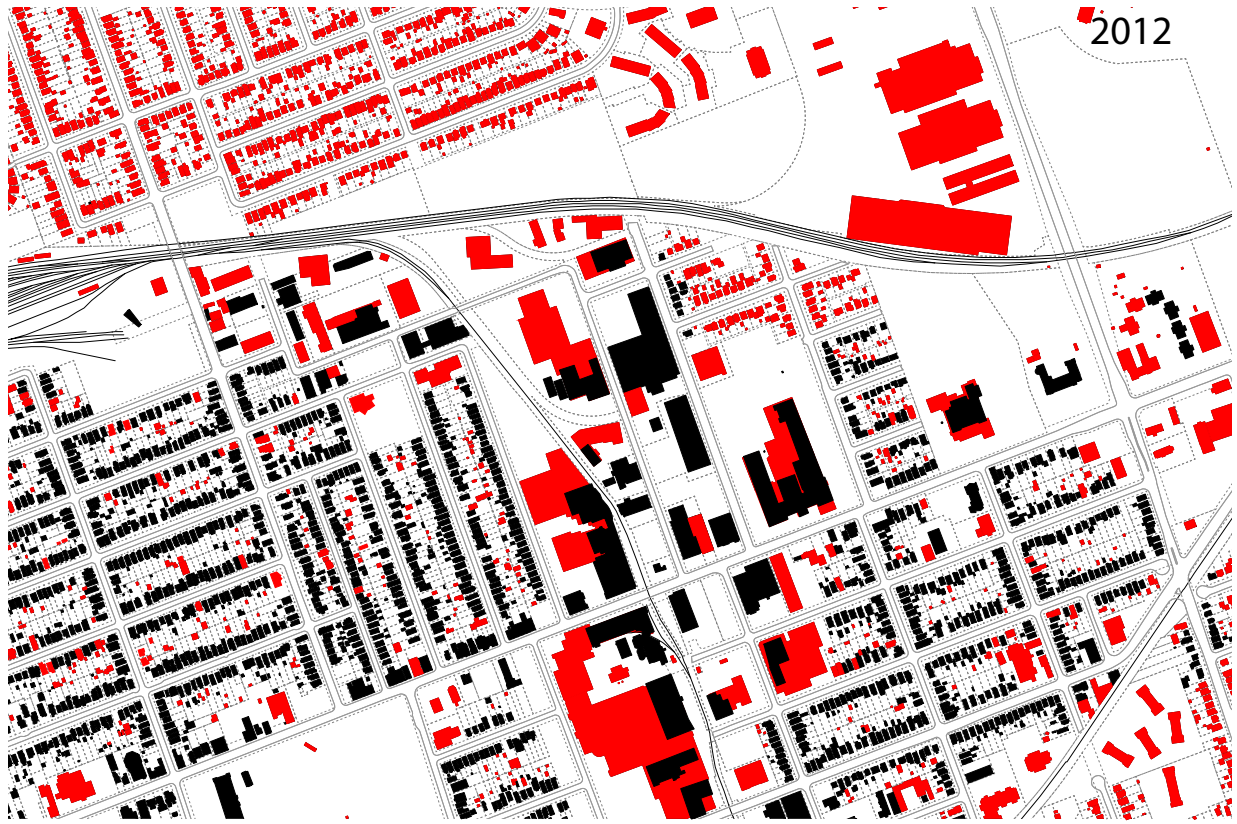




Figure 17
 Photo of exterior of soon to be developed Kelloggs site as seen from Dundas St. in 2017.



Figure 18
 Photo of recently renovated rear of Kelloggs site in 2018. The indoor adventure park is just the first part of a larger development plan for the site.



Figure 19
 Photo of employees outside the McCormick factory showing the original condition of the exterior, Western Archives, Western University.

Notable buildings from this time that still remain standing in the area include the former McCormick factory, the former Kelloggs plant, the former Ruggles Truck Manufacturing building, the former The Empire Manufacturing Co. Brass Foundry (EMCO). While a development proposal is currently well under way for the Kelloggs factory south of Dundas St., there still remains opportunity to include the McCormick's factory and the EMCO building in development north of Dundas St.

McCormick's Company was founded in 1854 as a cookie and candy factory and was originally located downtown, but moved to 1156 Dundas St in 1914. The McCormick site is both representational of the food production industry in the region, and also has noteworthy architecture for the time, sometimes referred to as the "Sunshine Palace". The site once employed 1000 people, but after changing ownership a few times, was closed in 2008. Under O. Reg. 9/06 it meets several of the criteria for determining cultural heritage value. The building, designed by Watt and Blackwell, has design value for its reinforced concrete construction which is similar in style and method to Albert Kahn style factories from the early 20th century and white enameled terra cotta cladding which was and is a unique feature of the design. The site has historical value as defined by O. Reg. 9/06 because it yields "information that contributes to an understanding of a community"² and has associative value based on the importance of Thomas McCormick in the economic and cultural development of London. Some might also say that the site has contextual value as a landmark due to the distinctive cladding. In the case of McCormick, the majority of the machinery has been removed, so this calls in to question what historical/associative value these sites still hold. As of 2013 some evidence of equipment remained in some areas of the building, but much of it had been either intentionally removed or remaining metal scavenged by scrappers.

In 2009 in an attempt to protect it from demolition, the London Advisory Committee on Heritage asked council to designate the factory, but this was postponed in fear it would affect the sale of the site.³ Opinions in a reader poll on a London Free Press article from 2012 after a fire damaged part of the site were split 53% for redeveloping the site to 47% for tearing it down. Some see it as an eyesore because it has been vacant for so long and has begun to deteriorate, but others see the potential for the re-use of the site to spur development in the area. In 2014 the site was finally designated under



Figure 20
Photo of of the current condition of the exterior of the McCormick factory in 2017.



Figure 21
Historic photo of the exterior of the Empire Mfg. Co.



Figure 22
Photo of the exterior of EMCO in 2017.

the Ontario Heritage Act.⁴ The heritage attributes listed in the designation include the massing of the original factory, the pattern of the white cladding even if the material is substituted, the window openings on the Dundas St. facade, and the main entrance canopy. Mention of interior elements was not made, but this could be because at this time significant interior elements no longer remained. Adaptive re-use proposals for the site include conversion to office and residential units along with a seniors living component, and demolition of the newer additions at the rear to allow for new construction on the site.

Empire Manufacturing Company Limited opened as a small plumbing store in London in 1906. While the majority of the plant was demolished in 2012, the oldest portion of the building fronting Dundas St. still remains as the companies head office, although they are in the process of constructing a new office elsewhere in London and once they move the site will likely be vacant. In 2017 despite objection by the property owner⁵, the property was listed as heritage⁶. Heritage listing however is not as restrictive as heritage designation, and does not forbid demolishing, but does give city council 60 days to decide on heritage designation status if there is a proposal to demolish the building. Even if the EMCO facade is no longer in the original condition, the structure of the building itself could still be worthwhile to reuse, to more quickly animate Dundas St while more intensive development progresses further back in the block, and the original facade still exists underneath the stucco that was added at a later date, so the facade could be restored.



Figure 23
Photo from ca. 1941 showing Kelvinator of Canada (formerly Ruggles Motor Truck Company) and McCormick Manufacturing Company, Ivey Family London Room, London Public Library.



Figure 24
Photo of Dundas Auto Sales (formerly Ruggles Motor Truck Company) in 2017.



Figure 25
Map of Planners Action Team 2003 Study Area.

Previous Studies

Previous studies and organized efforts have focused on commercial corridors or on industrial sites, or on residential neighbourhoods, but it is important to consider how these regions function as one complex neighbourhood system. East of Adelaide on Dundas in London, like other historically industrial neighbourhoods in other cities, has lower rates of home ownership, lower levels of education, and higher levels of unemployment than the rest of the city.

One study that influenced many of my initial impressions of the area and gave insight into the condition of the site before any other interest returned was the Re-establishing Value - A Plan for the Old East Village from the Planners Action Team released in 2003. The focus area of this study was along Dundas St. from Adelaide St. N. to Burbrook Pl., ending just west of my focus area. Although it focuses on the commercial core, the attention it brought to the area and goals it provided were crucial to prompting re-investment in the commercial corridor, without which re-development of the industrial area would probably seem unlikely.

To address the big picture problems and establish an achievable vision, the Plan outlines a five prong strategy to be employed.⁷

1. Improve the desirability of the surrounding neighbourhood.
2. Strengthen the connection of the neighbourhood to the corridor
3. Create a Village Core and concentrate revitalization efforts there (focus & priority)
4. Support the transition of the remainder of the corridor
5. Develop entertainment, recreation and arts opportunities

Each point is developed in further detail in the plan. These strategies are also supported by several findings outlined earlier in the report, including that both the residential neighbourhood and commercial corridor had lost value and were no longer connected with each other, the commercial corridor contained uses not valuable to the surrounding residents and was too large to be supported by the immediate surrounding population, and the quality of buildings in the commercial corridor varied significantly along the length. Since the population in this area has not increased in the time since this report my plan does not prioritize extension of the commercial corridor through the addition of similar retail frontages on Dundas St. East of Burbrook Pl. Other findings from 2003 were that there was an over concentration of social services, the Western Fair Grounds were not well connected to the community and corridor, there was adequate parking but poor linkages, and traffic management was poor. Many of these points have been addressed since 2003. Finally they found that there were “ingredients” for an arts, entertainment, and recreation node were present but these were not developed, and it is in these areas that the community has focused its recent efforts on nurturing as a way of re-branding. The preliminary analysis from 2002 included at the end of the plan also outlines demographic and economic data for the area available at that time. By looking at more recent census data I have found that while specific numbers may have changed the general characteristics of the neighbourhood remain similar.



Figure 26
While the quality of commercial storefronts closer to Adelaide St. has improved recently, the quality was observed in 2018 to decrease generally further east towards Burbrook Pl.

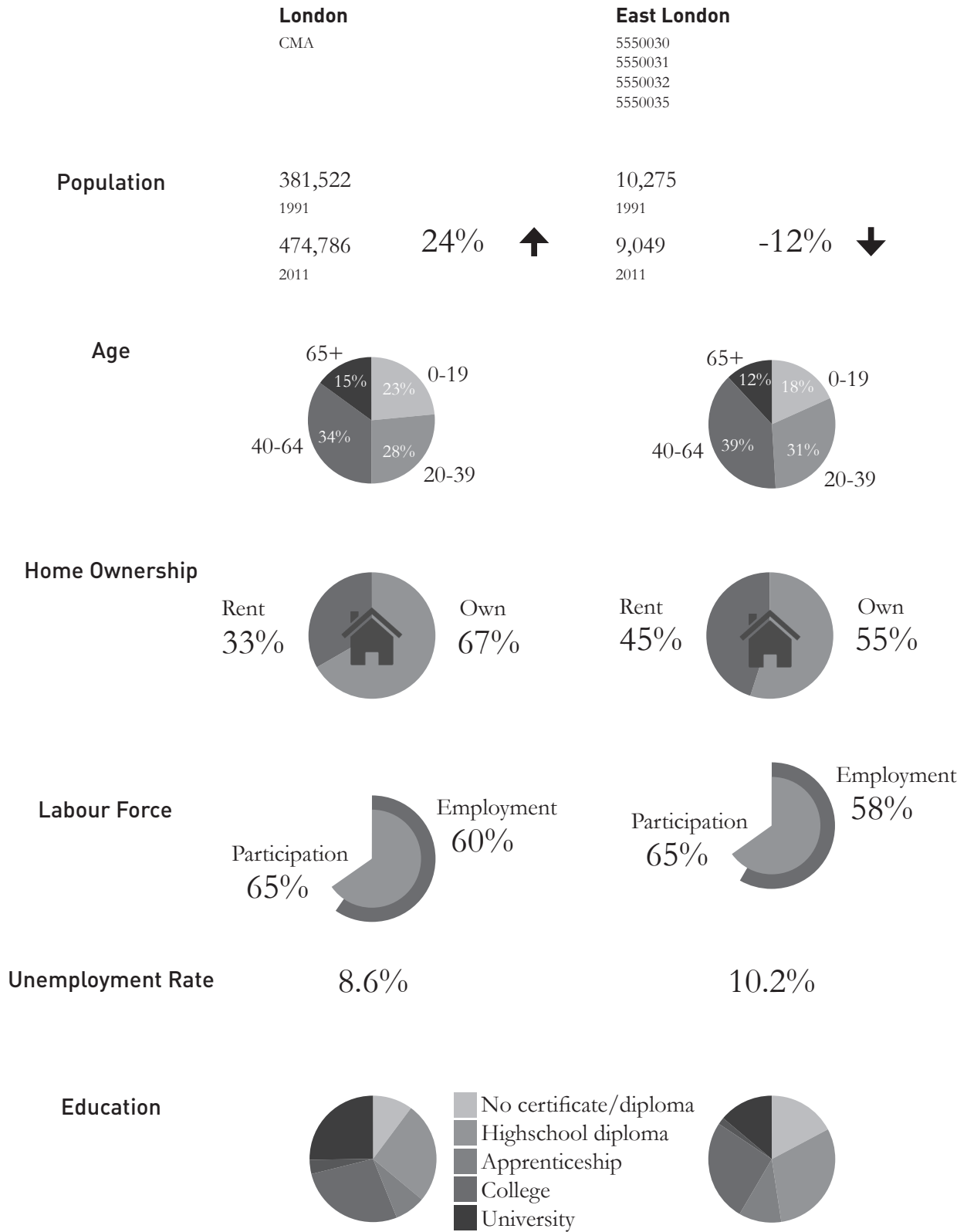


Figure 27
Demographic statistics for London and East London.

A later study of the McCormick Area was conducted by the city of London starting in 2010, resulting in the McCormick Area Secondary Plan, was adopted by council on December 8, 2015, and amended May 30, 2017⁸. This plan gives policy framework to guide the area in the transition from industrial to mixed use. The vision and strategies outlined are quite broad, but they have informed some of the decisions made in this design proposal. It raises the objectives of connection to the open space system, integration with adjacent neighbourhoods, support local businesses, redefine Dundas St., cultural heritage conservation, and green and growing area. It also broadly defines areas recommended for residential development, industrial/commercial development, and mixed-use development. Industrial uses are separated from residential, and the mixed-use and transit oriented portions of the site allow for residential, commercial, service, among other uses, but notably not industrial uses of any kind. In the mixed-use area, non-residential uses are confined to the ground floor and specified to be uses which serve the residents. Residential buildings are specified to not exceed five storeys without density bonuses, but my proposal argues that increased density would benefit the area. The goal of the commercial industrial portion of the plan to the north of the site

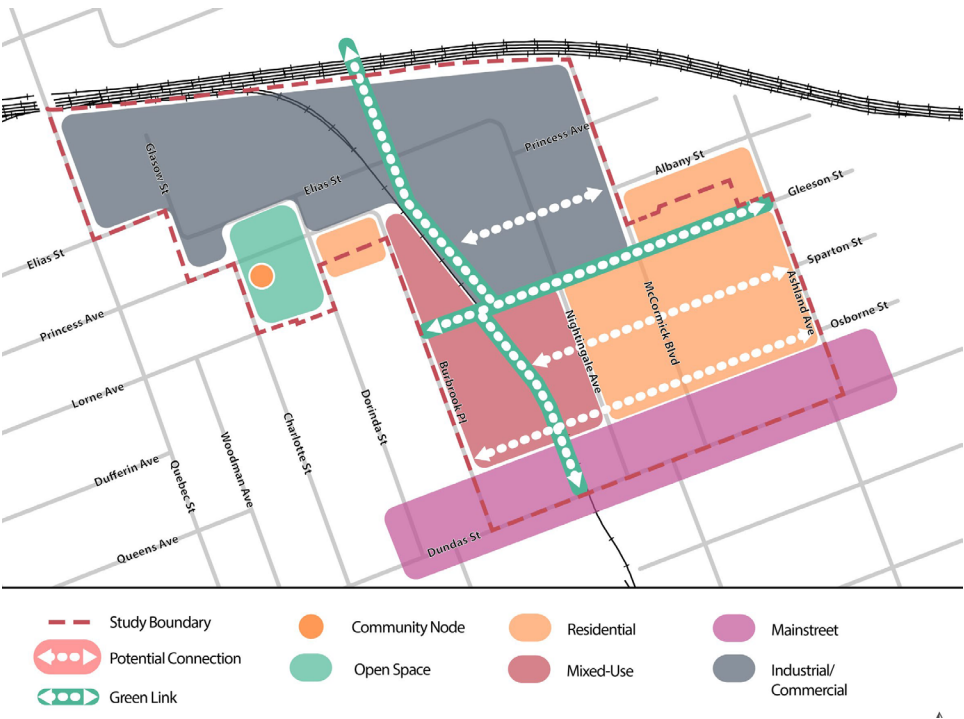


Figure 28
Community Structure Plan

is to allow existing businesses to remain, but ultimately eventually phase out heavy industry in favour of commercial uses and light industry, with restrictions placed on introducing assembling, fabricating, manufacturing and repair activities to reduce potential conflicts with sensitive uses. Although my proposal takes these guidelines into consideration, the mixing and close proximity of residential and manufacturing activities is an important aspect of the proposal. The secondary plan mentions support of artisanal production and small businesses that manufacture and sell on site, and live-work units where appropriate, which my proposal also supports.



Figure 29
Developer plan for McCormick site.

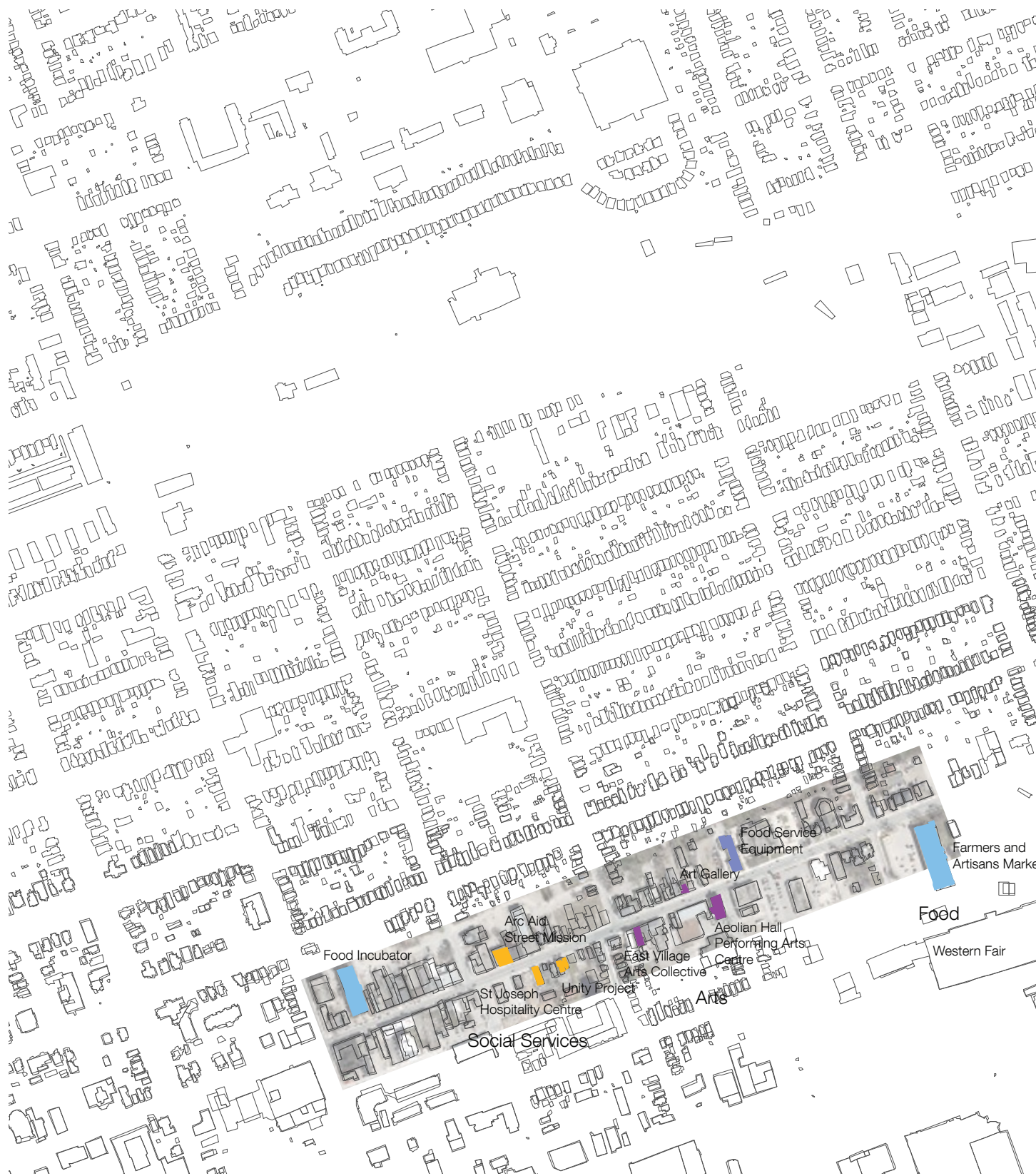


Figure 30

Diagram of types of programs currently operating nearby include those related to manufacturing, social services, arts, and food.



McCormick Park

Electrical and Electronic Supply

Brewing Co-operative

Manufacturing

Nova Craft Canoe

Metal Fabricator

Furniture Manufacturer

Current Occupation

Community members have already taken initiative to reintroduce industry to the area by encouraging small and local business such as craft breweries and food production, but these are not effective revitalization strategies alone.

While there are some vacant sites in the area due to closed factories, many businesses are still in operation. These include occupations in several categories that should be supported moving forwards that include retail near Dundas St. such as:

- auto sales
- party supplies

industry in the centre of the site such as:

- auto repair
- metal fabrication
- electrical supply
- breweries

recreation facilities towards the north end such as:

- a climbing centre
- a cheerleading gym
- Boyle Memorial Community Centre Park

The occupation of Dundas St. within the commercial corridor of the Old East Village is also significant. Although the commercial corridor faced a period of disinvestment and low reputation, much work has been done in recent years to attract new activity along Dundas St between Adelaide St. N. and Egerton St. The 2003 Re-establishing Value report laid out a vision for the commercial corridor that has been gradually implemented over the last decade. This increased vitality could be leveraged in new development east of Egerton St, and successful programmatic themes could be carried further east. This includes

food related programs such as:

- the London Food Incubator
- Western Fair Farmers and Artisans Market
- several small cafes and restaurants

art venues such as:

- Aeolian Hall Performing Arts Centre
- Palace Theatre Performing Arts Centre
- Cultural Rising London Art Gallery
- East Village Arts Collective

social services such as:

- Arc Aid Street Mission
- St Joseph Hospitality Centre
- Unity Project



Figure 31

Existing green space along railway corridor between industrial sites north of Dundas St.

Green Space Network

The city of London has a rich network of green space such as parks and trails, most of which are concentrated around the Thames river. The focus neighbourhood however has a very limited amount of outdoor recreational space. There is a decent park north of the railway corridor, but access is limited to residents south of the railway by a long travel distance to streets with bridges further to the east and west. Vacancy and infrastructure such as the railway corridor provides opportunities to connect to a larger green network and create pedestrian connections through the site and towards other areas of the city by taking advantage of existing accidental parks. Prioritizing green space will create a framework that will help define the rest of the development.

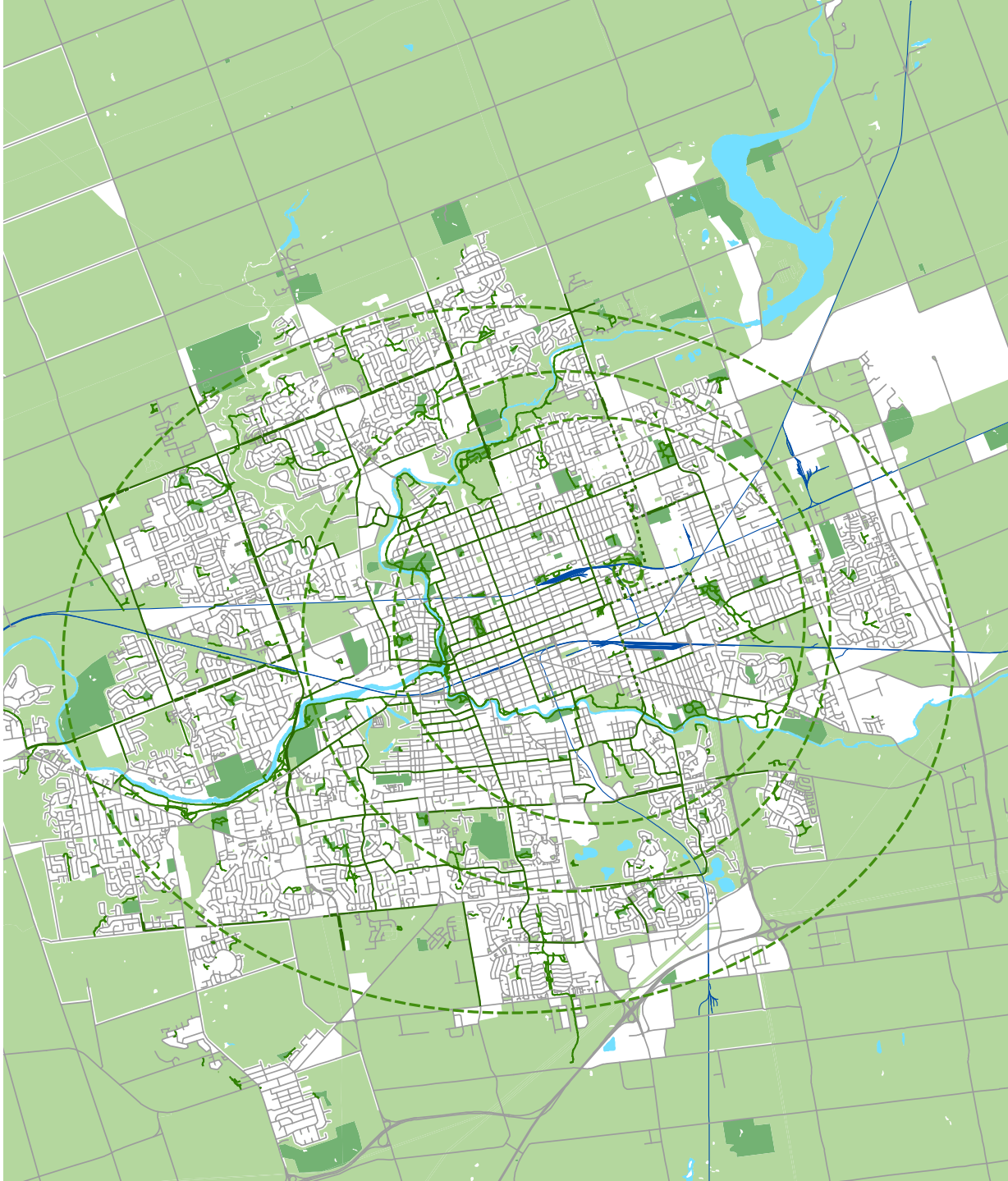


Figure 32
Map of the green space network that forms a series of rough rings around London.

Endnotes for Section 1.2

- 1 Christopher Andreae, *The Industrial Heritage of London & Area*, (London: Ontario Society for Industrial Archaeology, 1984)
- 2 O. Reg. 9/06: Criteria for Determining Cultural Heritage Value or Interest under *Ontario Heritage Act*, R.S.O. 1990, c. O.18. <https://www.ontario.ca/laws/regulation/060009>
- 3 “Heritage status an issue for potential McCormick investors?” *CTV London*, June 3, 2013, <http://london.ctvnews.ca/heritage-status-an-issue-for-potential-mccormick-investors-1.1309330>.
- 4 Golder Associates, *Heritage Impact Statement McCormicks Factory*, (London: The City of London, 2015)
- 5 Siskinds, “Re: EMCO Corporation Building - 1108 Dundas Street, London, Ontario Inventory of Heritage Resources.” (London, 2017). <https://pub-london.escribemeetings.com/filestream.ashx?DocumentId=33798>.
- 6 Sarah Henderson, “Cultural Heritage Screening Report,” (London: City of London, 2018), 47. https://d3n8a8pro7vhmx.cloudfront.net/shiftlondon/pages/217/attachments/original/1523632101/Appendix_K_Cultural_Heritage_Screening_Report.pdf?1523632101.
- 7 Planners Action Team, *Re-establishing Value: a Plan for the Old East Village*, (London: 2003)
- 8 City of London, “McCormick Area Secondary Plan 20.8.” (London: City of London, 2017). <http://www.london.ca/business/Planning-Development/secondary-plans/Documents/McCormick-Area-Secondary-Plan-Amended-May-30-2017-web.pdf>.

-  Open Area
-  Parks and Recreation
-  Multi-use Paths
-  On Street Bicycle Routes

Section 2: Design Proposal

Strengthening Community Through Economy

2.1 Redevelopment Strategy of Directed Propensities

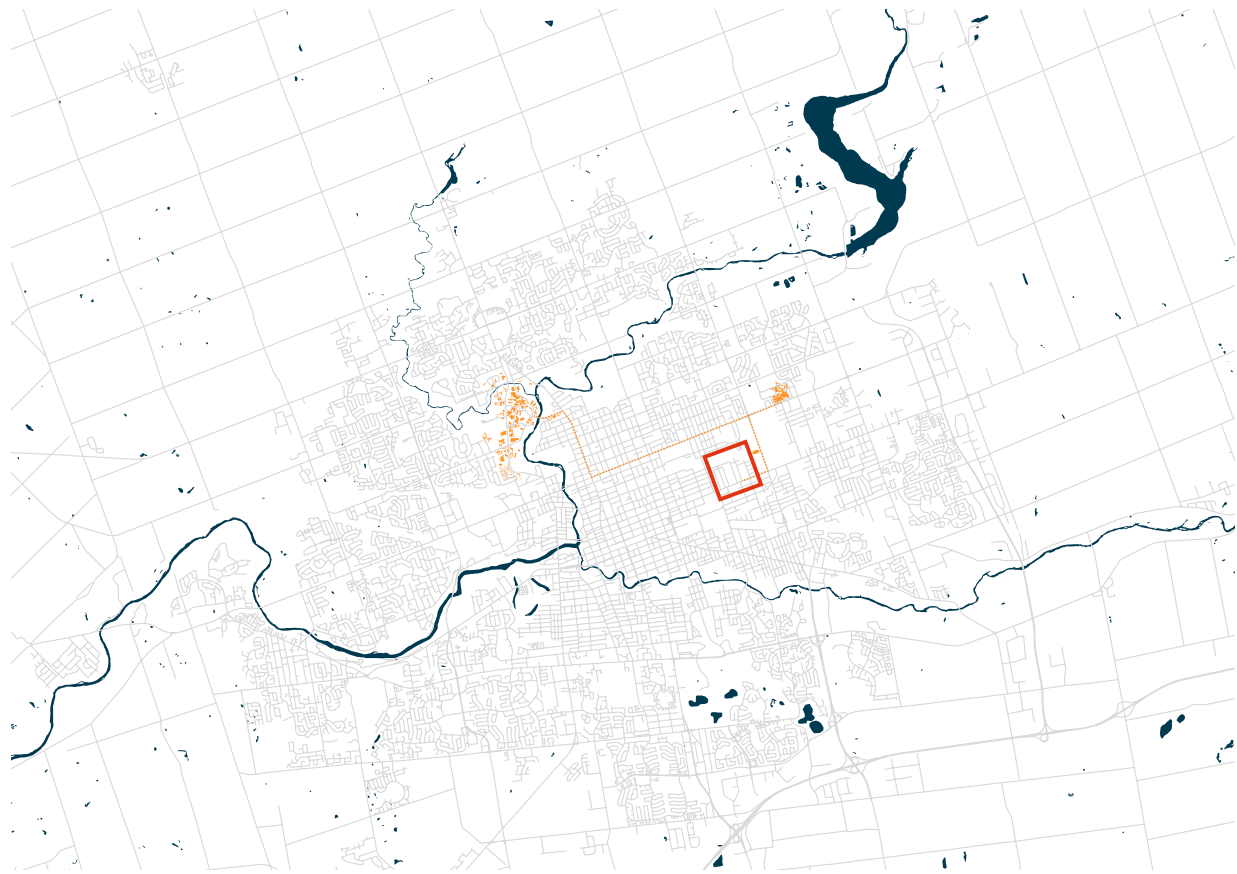
The Propensity of Things is a theory outlined by Francois Julien as a way to rely on the potential inherent in the situation rather than imposing our plan on the world. Shi as described by Julien is defined as “potential born of disposition”.¹ The forces present in the site created by circumstances can be harnessed like kinetic energy.

“*Shi* is not only the internal energy from which that form has form has proceeded; it is also the effect of the tension this energy produces. The “form” is seized on in all its *propensity*, which means it should be seen not merely as “form” but also as a continuing process.”²

It is with this theory in mind that a design strategy will be developed that exploits the propensities of the site from what proceeds it such as built form, open space, and program, but controls the direction of the development of propensities in the process to resist gentrification. There is a lot of energy in the site related to the industrial past that can be leveraged instead of attempting to return the site to a tabula rasa. By confronting industry and the complexities that result the development will be more rich and interesting. The two main categories I will describe are programmatic propensities and built form and open space propensities.

Programmatic Propensities

The current and past industrial uses of the area, the surrounding residential fabric, the nearby educational institutions, and the agricultural identity of the city are all considered important propensities of the area that inform the program of the new development. Contrary to the goals of planners to separate industry from residential uses to avoid conflict between these different land uses, my proposal seeks to keep industry in the area and confront these differing uses by creating productive adjacencies between industrial and residential land uses. This serves multiple purposes. On the one hand as globalization and agglomeration separate society from the processes of



Proximity to Educational Institutions



Figure 33
Map showing the proximity of the East of Old East Village site to local educational institutions.

production that facilitate our lifestyle, this proposal seeks to bring back the connection between production and consumption to encourage more mindful consumption. Perhaps more importantly though, this proposal seeks to use the continued support of industry in this neighbourhood as a strategy to resist gentrification.

Mix of Uses

Social mix has a long history of support from many proponents over the past several decades, including Jane Jacobs assertion that social and programmatic mix at medium to high densities without demolition of existing neighbourhoods promotes a lively community. The mixing of different should be encouraged in this area as it transitions away from heavy industrial uses. The commercial corridor of Dundas St. should be intensified through this area and become more pedestrian friendly, while acknowledging that this is not the historic commercial core so it will not have the same character as closer to Adelaide and should not try to compete to the detriment of the Old East Village to the west. Vehicle access will continue to be important on this site. Industrial operations along this commercial corridor would be less suitable, so instead development there could include components of the food production hub that engage the broader public, such as a marketplace to sell goods produced, or educational facilities that can be used by both producers and members of the general community to exchange knowledge and skills. The campus can leverage the opportunities provided by nearby educational institutions to create educational outreach opportunities or satellite campus related to the food production hub. Spaces for both formal and informal education are important. This could include a community kitchen, classrooms, exhibition space, or a library. Once they are engaged by the more public programs along Dundas St., interest in the related production facilities could draw people further into the site from the commercial corridor.

While the policy of social mix sounds very appealing, critics of social mix policies, such as Martine August warn that what starts as well intentioned social mix can easily turn into gentrification that displaces existing low income residents.³ August also warns against the Creative Cities focus on the “image of diversity” lead by economic goals that promotes social exclusion by removing undesirables and encourage bringing middle-class residents into

a low-income community but rarely the other way around.⁴ Social mix can ultimately increase property values and lead to gentrification. This neighbourhood has already begun the process of gentrification due to rebranding of the commercial corridor in the attempt to attract more affluent consumers to the area as well as improving the conditions for the existing residents. Some of the same criticisms August raises with regards to the redevelopment of Regents Park in Toronto could be raised about the redevelopment of the Old East Village in London. This raises the question of how to achieve a socially and programmatically diverse neighbourhood without excluding those who the middle class deems as “unwanted participants”.

David Ley when describing the relationship between gentrification and increased employment in advanced services industries in the 1970s references studies which show the significance of attributes such as parks, views, waterfront access, attractive historic buildings, proximity to downtown and places of work, a nearby major university or hospital, and other “environmental or cultural amenity” towards gentrification.⁵ Ley also references studies that state that the presence of public housing or noxious industry deter gentrification. Kate Shaw describes how in de-industrialized cities where the increased tax base from urban regeneration could aid with things like building repairs, there may not be an immediate risk of gentrification, but if urban regeneration is successful it can become negative gentrification with the result of expensive housing and increased social inequality.⁶ Shaw outlines the qualities of neighbourhoods able to avoid gentrification.⁷ These include:

- a housing stock not conducive to gentrification; “small houses and apartments, inexpensive construction, avoidance of clearance and modest infill developments”⁸
- security of housing tenure “through home ownership, secure private rental, public or community housing”⁹
- an embedded local community with resolve to “increase the housing security of those without access to home-ownership, or keep property rates low, or simply resist the invasion of higher socio-economic groups”¹⁰
- local government which will intervene on the side of low-income communities

This neighbourhood while not particularly near the above noted universities and hospitals, waterfront and parks, is a highly accessible older neighbour-



Figure 34
Photos of typical small scale housing in surrounding area in 2017.

hood with older housing close to downtown, and the amount of amenity is due to increase in the area with a few new proposals, while the amount of heavy industry has declined and continues to decline. This makes it vulnerable to gentrification. It is possible that some of the small workers cottage type housing is not particularly conducive to gentrification if it can be protected, but some of historic houses in the old east village have already been bought by wealthier owners. The embedded local community which is highly invested in the community might help resist gentrification, but in their efforts to improve the quality of the neighbourhood might end up inviting gentrification. Making or keeping a neighbourhood undesirable however is a poor way to resist gentrification as it punishes the existing lower income residents. It is a tricky problem to both improve the conditions but not tailor it to newcomers only. The local government, while interested in the redevelopment of the area, does seem concerned with the welfare of low-income residents. Since increasing low-income housing early in the process of potential gentrification is shown to be effective in other cases at resisting displacement, the large majority of housing units added to this neighbourhood should be affordable, RGI, or otherwise non-market.

Along with creating affordable housing though, August presents compelling evidence that due to the “dialectic relationship between a city’s gentrification and the transformation of its urban and industrial form” protecting the industrial use at the core of the neighbourhood is important to resisting gentrification. August states that the residentialisation of employment lands is an example of new-build gentrification. August also mentions that city officials neglect towards nuisance uses and environmental externalities can keep gentrification at bay, but this highlights the inherent conflict between an area being undesirable to gentrification, but thus keeping the quality of life lower for existing residents, versus improving the quality of the neighbourhood and attracting gentrification. Ultimately it would require policy to control the cost of rent while improving the living conditions, but supporting industry in the area will hopefully also support the continued existence of working class populations in the area, using live-work units as a transition between potentially conflicting land uses.

Small Scale Production with a Focus on Food

Employment opportunities and innovation in the area can be facilitated through the support of small scale production entrepreneurs. If jobs are being lost as large companies leave to locations with less expensive labour, then cities need to provide something different. Rather than re-zoning the area to other uses, displacing industry completely to the periphery, this plan proposes to create a variety of different sized of spaces suited for multiple smaller businesses that allow them to grow and evolve in the voids left by departed businesses. Currently viable existing businesses will be encouraged to remain, but if they decide to relocate in the future, they will open up more space for expansion of the small scale production campus. Industrial production in the urban core is more suited to the small scale production of unique and individualized high quality products rather than economies of scale, and a concentrated community of separate producers innovating and collaborating in a creative environment.

The strong involvement of the community and initiatives already started show interest in small scale, local production, and food as a focus of the neighbourhood. When making a case for local economies, food production is compelling because it is intimately experienced by the public in their daily lives and can enable a direct connection between the consumer and the producer through forums such as farmers markets. Food is also consumed on a relatively short timescale so a relationship can be established over frequent contact. However other goods that people engage with every day in their homes such as furniture and clothing have the potential to enable people to feel more connection to the source of what they consume. Critics of the local food movement such as Pierre Desrochers and Hiroko Shimizu in *The Locavore's Dilemma* argue that the globalization of food supplies happened for good reasons such as food security against unpredictable climate conditions and affordability and safety due to economies of scale¹¹. While this is true to some extent, this argument goes to extremes in the opposite direction against the extreme condition of eating only local food. There is room for a balance of both supporting local food production when it makes sense while also supplementing the local food supply with imported food that is not easy or efficient to produce locally. London is surrounded by agricultural land and contains many large production facilities that contribute to this global food network but also smaller family farms. L.B. DeLind argues that we need to be

more critical about what we hope to achieve through local food production movements, and look back to the movements roots in engagement, empowerment, and democracy rather than focusing only on individual consumption.¹² DeLind uses a case study in Detroit to illustrate how local food can be used as a place-making and community building strategy. The local food movement has already begun in this neighbourhood, and while it will probably never completely replace global sources of food, it has provided more access to fresh and healthy food within the community, and has been started from the ground up by entrepreneurial locals. Creating a hub in the industrial lands will allow for expansion of existing businesses that are still at a small scale but need more space. It will also allow for a concentration of new related enterprises in close proximity, to facilitate sharing of resources such as knowledge and common infrastructure. What is key is that the initiative needs to come from the community members and support their goals, rather than commodifying an idea of local as a marketing strategy.

Production need not be entirely limited to food, as long as other uses are compatible. Bringing many different businesses together could result in interesting opportunities for collaboration across disciplines. One example of this is Collective Arts Brewing in Hamilton, which features art by a local artist and music by a local musician paired with each craft beer to promote emerging talents. Camilla Cornell reports that the advantage of bringing multiple similar businesses together is that they can share knowledge about production, marketing, accounting and technology or food safety depending on the types of businesses.¹³ Examples of businesses that could benefit from inclusion in a manufacturing business incubator include those that combine technology and hardware, digital fabrication and customization, artisanal production. While having the design and production confined to a very local scale can ensure a high degree of control over the quality and customizability of products, digital platforms allow for distribution beyond the relatively small local consumer area. Researchers in Spain found that start-up firms in the manufacturing sector that use an incubator have a higher survival rate.¹⁴ The support and services that an incubator provides can help more businesses succeed. SB Friedman lists the services provided by manufacturing incubators as.¹⁵

- Collaboration between Entrepreneurs
- Business/Legal/Marketing Assistance

- Flexible Lease Structure
- Mentorship
- Customizable Space
- Shared Equipment
- Engineering/Design Assistance
- Funding/Financing
- Investor Introductions
- Employee Training
- Resources
- Supply Chain/Export Assistance
- Access to Latest Technology/Research

Certain types of equipment such as packaging machinery, laser cutters and 3D printers could be shared between many small businesses who may not have the capital to buy equipment outright, and workshops and courses could be held to support businesses as they grow. While a lot of startup businesses gather in Toronto because of access to funding and other resources and a greater connection to the global economy, smaller cities should aim to facilitate these types of startup production to retain the human capital of manufacturing workers and students trained in their local colleges and universities. Through statistical analysis of a limited survey Diana Reed found that incubators in smaller cities actually have a higher success rate than those in larger metropolitan cities, perhaps because of a higher level of engagement from the community.¹⁶

Whole Economy

The program of the site should also recognize whole economy not just capitalist enterprises. Space should be allowed for unpaid labour, alternative markets, and sharing/trading. This includes activities such as community gardening, childcare, and food bank programs such as volunteer based serving of hot meals and collection and redistribution of unsalable food.

Open Space and Built Form Propensities

Likewise, directing the propensities of built form and open space can be used to resist gentrification. Public parks and other green spaces should be used to shape high density new construction, while incorporating existing built form. Redevelopment of vacant land and open space can create a park system to improve the quality of life, while preserving some open space for productive industrial uses. Existing industrial and commercial buildings should be maintained as such, and the small fine grained neighbourhood of workers cottages that provide affordable home ownership need not be modified, only protected, but the morphology of small factories that grew to large factory complexes allows for the new construction of larger buildings to provide higher density affordable housing that fits within the context, where it would otherwise overshadow small scale residential units.

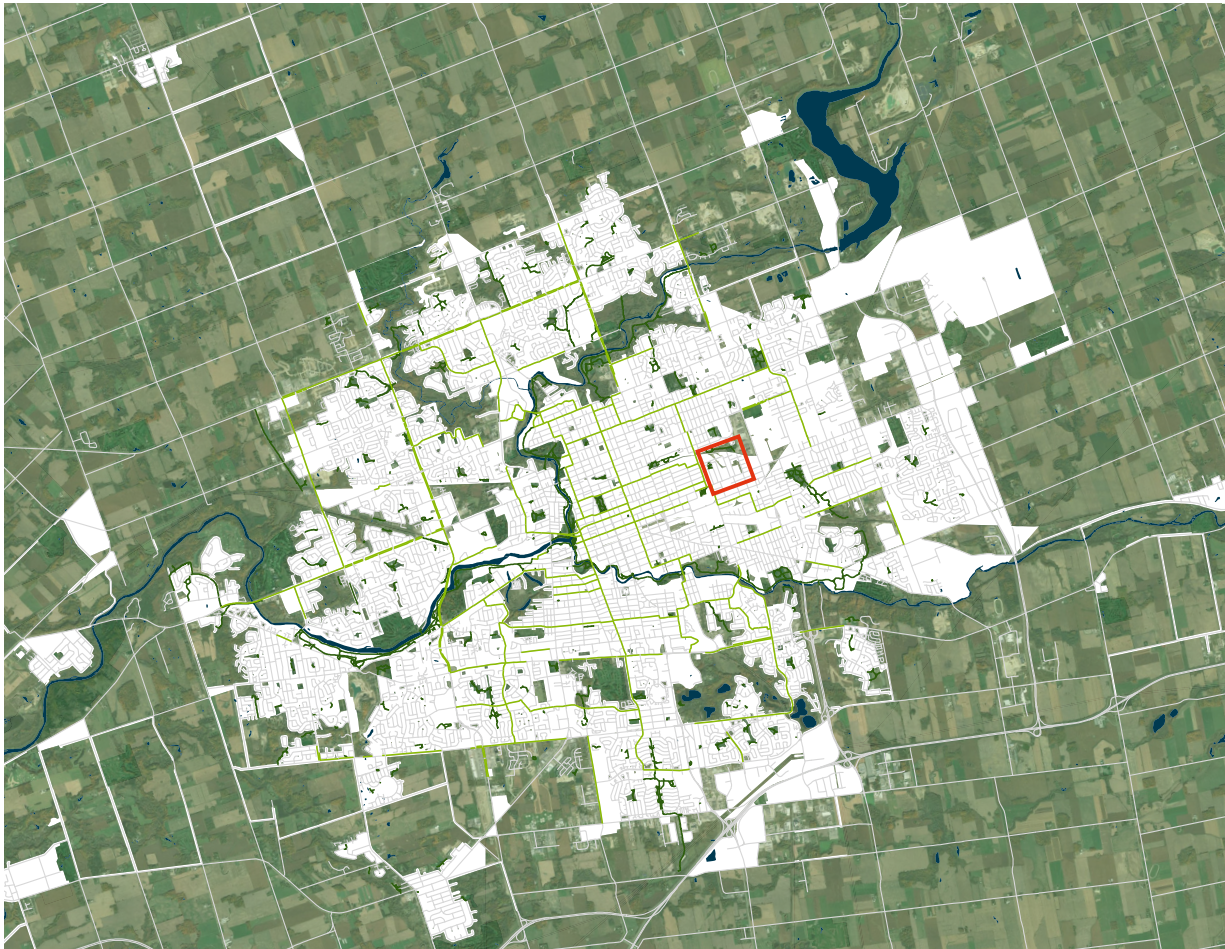


Figure 35
Map showing the green space network in London.



Open Space Network

Figure 36
Map showing the green space network in around the East of Old East Village site.

Open Space Network through Remediation of Vacant Land

Vacancy and infrastructure such as the railway corridor provides opportunities to connect to a larger green network and create pedestrian connections through the site and towards other areas of the city by taking advantage of existing accidental parks and formalizing them to improve access to recreational green space. Prioritizing green space will create a framework that will help define the rest of the development. The green corridor will not only link to the rest of the city, but also link the campus together. Land that is given to open space can be offset by increased density in the built form surrounding the park to make the development more financially viable.

Remediation of the brownfield conditions on the site also presents an opportunity to enhance the green space in the neighbourhood throughout the process of remediation through the application of phyto technologies. Traditional methods of soil remediation such as dig-and-haul and capping while faster and more predictable,¹⁷ can be expensive and environmentally disruptive.¹⁸ Several new phytotechnologies show promise to be a less expensive, more aesthetically pleasing way to remediate soil while also generating habitats. Phytoremediation involves the use of plants to degrade, volatilize, metabolize, extract, stabilize or filter harmful contaminants.¹⁹ While these methods are experimental and take many years to have an effect, using them as part of a mix of remediation strategies could optimize cost by allowing slow remediation of areas that can be enjoyed as green space in the meantime, while using traditional methods in areas where fast clean-up is required. This slow remediation also provides an educational opportunity for the community to engage with the process of remediation and get involved in the clean up to reclaim this space for communal uses in a community run park. Plants should be selected based on their effectiveness for removing or treating a potential contaminant on the site, and their ability to grow in USDA zone 6a-6b.

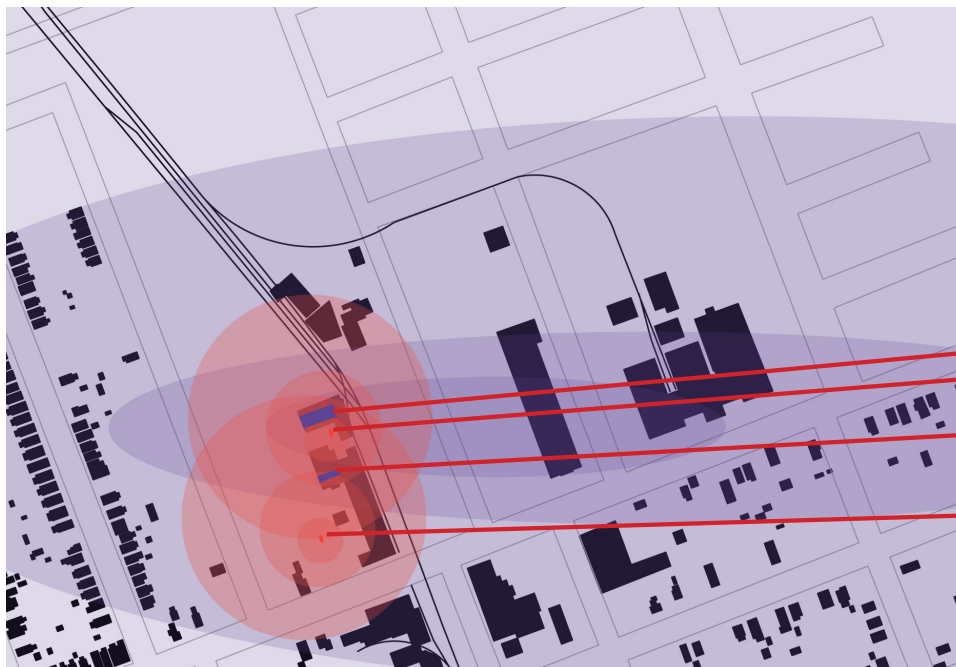


Figure 37
Potential contaminants based on the 1922 Fire Insurance Plan

Organic Pollutants	
Contaminant Group*	Typical Source of Pollutants in this Category
● Petroleum: Oil, Gasoline, Benzene, Toluene, PAHs and additives such as MTBE	Fuel spills, petroleum extraction, leaky storage tanks, industrial uses, railway corridors
● Chlorinated Solvents: TCE, PCE and organic compounds with a chlorine component	Dry cleaners, military activities, industrial uses
● Explosives: RDX, TNT, HMX	Military activities, munitions manufacturing and storage
● Pesticides: Herbicides, Insecticides and Fungicides	Agricultural and landscape applications, railway and transportation corridors, residential spraying for termites and pests
● Persistent Organic Pollutants (POPs): DDT, DDE, PCBs, Aldrin, Chlordane	Agricultural and landscape applications of historic pesticides, former industry, atmospheric deposition
● Other Organic Contaminants of Concern: Ethylene and Propylene Glycols, Formaldehyde, Pharmaceuticals	Aircraft de-icing fluids, embalming fluids, wastewater
Inorganic Pollutants	
Contaminant Group	Typical Source of Pollutants in this category
■ Plant Macronutrients: Nitrogen and Phosphorus	Wastewater, stormwater, agriculture and landscape applications, landfill leachate
■ Metals: Arsenic, Cadmium, Selenium, Nickel (to name a few)	Mining, industrial uses, agricultural applications, roadways, landfill leachate, pigments, lead paint, emissions
■ Salt: Sodium, Chloride, Magnesium, Calcium	Agricultural activities, roadways, mining, industrial uses
■ Radioactive Isotopes: Cesium 127 and Strontium 90	Military activities, energy production

Figure 38
Contaminant Groupings and Typical Sources of Pollutants

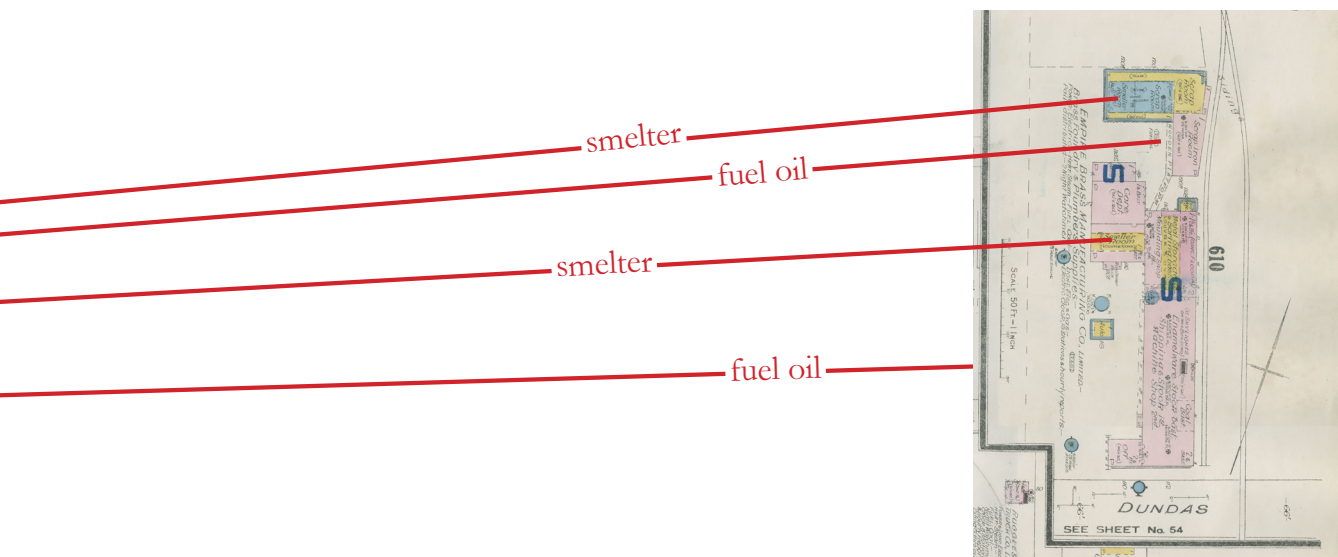


Figure 39
Sheet 53, London Fire Insurance Plan
1912 Rev. 1922, Western Archives, Western
University.

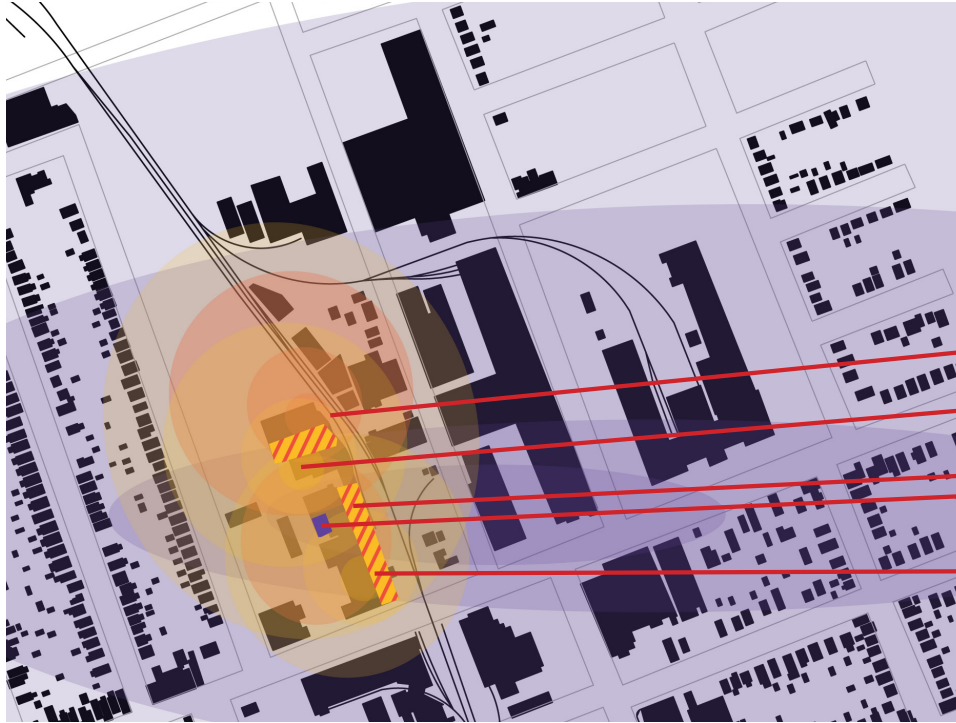
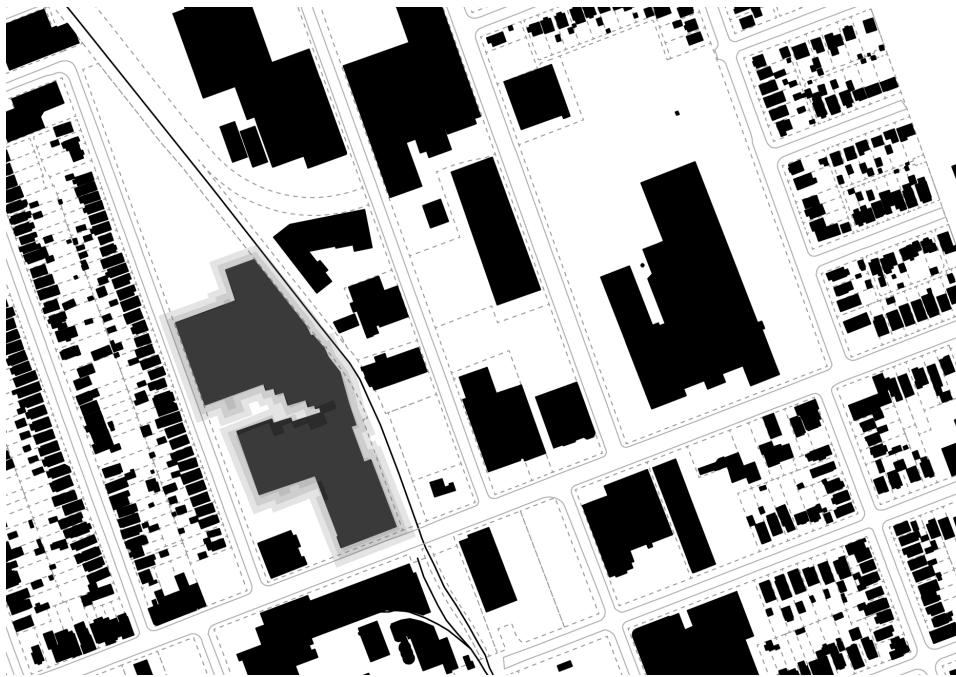


Figure 40
Potential contaminants
based on the 1958 Fire
Insurance Plan.



Empire Brass Manufacturing Co.
(1922 and 1958)

Potential Contaminants:²⁰

- copper
- zinc
- fuel oil
- PAHs (petroleum compounds)
- mineral oil
- chlorinated solvents

- compressor
- machine shop
- foundry
- smelter
- machine shop

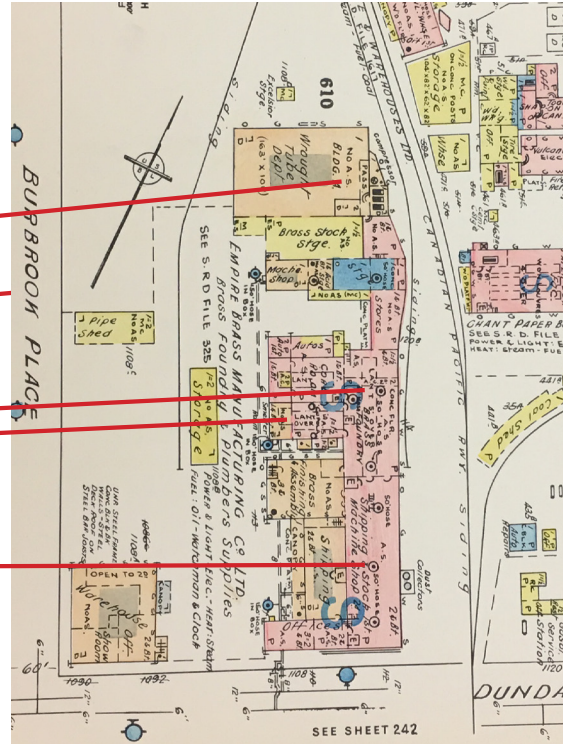


Figure 41
Sheet 233, London Fire Insurance Plan 1958.


EMCO Plumbing Distributor (2012)

- Demolished majority of facility
- Office building remaining
- unknown contaminants

The method used for determining contamination was to look at fire insurance plans for the site, a report from a similar industrial site, LDM brass in the Netherlands about contamination on their site,²¹ and a recent Phase II ESA for nearby 1156 Dundas St.²² This is not enough on its own to determine the extent of contamination but gives an approximation. Actual site conditions should be assessed by taking soil samples in a grid across the site. Metal contamination from smelters can spread several kilometers from the site through the air, and is affected by the prevailing wind direction.²³ The wind in London varies throughout the year but often comes more from the west.²⁴ While completely removing and replacing the soil is the most effective way to get rid of metal contamination, this can be difficult over a large area.²⁵ Extraction of metals using plants has not yet been shown to be very effective.²⁶ Adding amendments to the soil to make the metals less bioavailable, and using plants such as Red Fescue that stabilize the soil and hold it in place can be more effective. The fuel oil tanks that were once on the site are only



Figure 42
Diagram showing location
of remediation techniques.


 Multi-Mechanism Mat
includes:

Degradation Cover


- Goldenrod (Chlorinated Solvents)
- Big Bluestem (Petroleum)
- Switchgrass (Petroleum)

Stabilization Mat

- Red Fescue (Metal Exclusion)
- Evening Primrose (Metal Exclusion)

 Multi-Mechanism Buffer
includes:

- Poplar (Chlorinated Solvents and Petroleum)
- European White Birch (Chlorinated Solvents and Petroleum)
- Pine Oak (Chlorinated Solvents)
- Red Fescue (Metal Exclusion)

 Dig-and-haul
-removal of contaminated soil
-fill with clean material
-new construction

 Capping

a problem if they have leaked or were not properly removed. Over a long period of time the fuel oil could have spread through the soil or water table. The highest concentration is likely in the locations where the tanks were, so dig and haul is most appropriate for high levels of contamination. Further away where the concentrations are lower phytodegradation using grasses such as Big Bluestem or Switchgrass can break down any remaining Polycyclic Aromatic Hydrocarbons (PAH) from petroleum products in the soil.²⁷ Trees such as Poplar can reach down into the water table to degrade the hydrocarbon contaminants in the groundwater.²⁸ Chlorinated solvents are used in the metal industry as a degreaser and cleaner. These chemicals could occur anywhere where industrial activity was occurring on the site, but especially around the machine shops, and especially if they were improperly handled or disposed of and can spread through the soil and groundwater. The extent and types of contaminants present from the recently demolished facilities that were present on the site in 2012. Since it was a plumbing distributor the types of contaminants might be similar to those listed above. To approximate the extents of the contamination from this time I have used two consecutive 5 meter step-outs from the building footprint to account for activity around the building and the spread of contamination.

Possible strategies to be deployed in the remediation of this site:

Multi-Mechanism Mat

includes:

Degradation Cover

-Goldenrod (Chlorinated Solvents)

-Big Bluestem (Petroleum)

-Switchgrass (Petroleum)

Stabilization Mat

-Red Fescue (Metal Exclusion)

-Evening Primrose (Metal Exclusion)

Multi-Mechanism Buffer

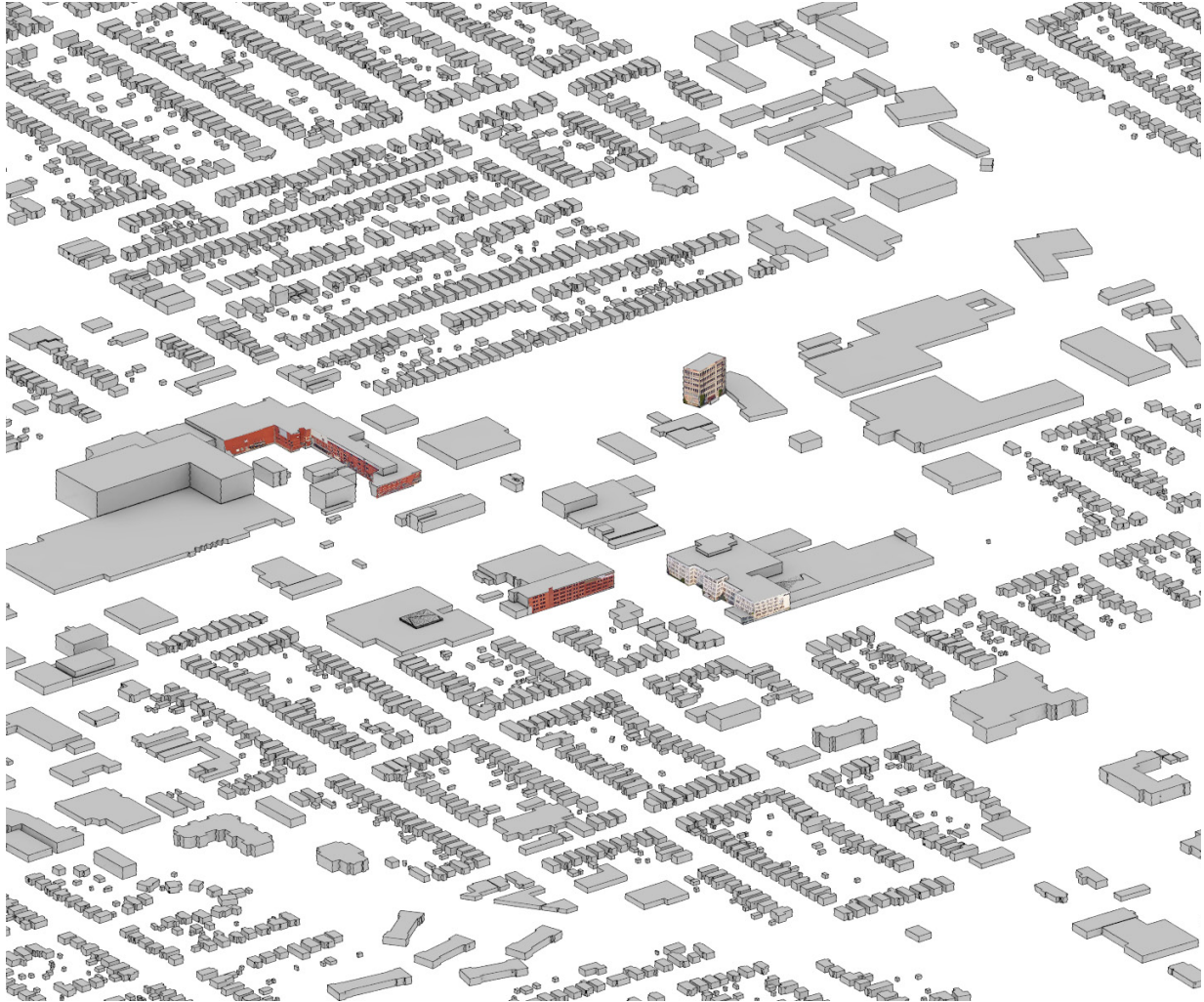
includes:

-Poplar (Chlorinated Solvents and Petroleum)

-European White Birch (Chlorinated Solvents and Petroleum)

-Pine Oak (Chlorinated Solvents)

-Red Fescue (Metal Exclusion)



Built Form Propensities

Figure 43
Highlighted historic industrial buildings.

Heritage Buildings as a Resource

Existing vacant building stock remains from early industrial uses that could be renovated to provide space for new forms of industry. Respecting both the cultural value of the built form and the previous uses of the site rather than starting from a blank slate will carry forward the industrial identity of the area.

The renovation of a former industrial building for new production uses is a way to honour the heritage of the area through preservation of a key historic building, but more importantly it is a space resource. Dividing larger single owner production facilities into open flexible space for many smaller enterprises will take advantage of the urban location of these vacant buildings, and the potential they have as a structural shell with high load bearing capacity. Change at a neighbourhood scale needs to be incremental and allow for agency of the community, not impose a one time solution from above. This is hard to achieve when renovation a large building that requires a lot of initial capital from an investor, but perhaps one building could be a catalyst in a larger innovation district development that would gradually expand through small additions over time as startups graduate from space within the incubator to the surrounding industrial land.

Leverage Multiple Funding Sources

To make a new development on this site more financially feasible, many different opportunities for funding should be considered. A mixed-use program that incorporates many aspects that the city or province has placed emphasis on can take advantage of these many sources.

The main funding that should be applied for is affordable housing grants. The Canada Mortgage and Housing Corporation's (CMHC) Seed Funding provides interest-free loans and non repayable contributions for new and existing low-income housing projects²⁹ and the Ontario Investment in Affordable Housing Program provides grants for the creation and repair of affordable housing units in Ontario.³⁰ Additionally the Housing Development Corporation of London supports the creation of affordable housing in the city through a central point of contact with the city, and involvement in the design, financing, and construction management of housing including affordable housing.^{31 32}

Brownfield remediation assistance from multiple levels of government could also make the redevelopment of the site more attainable. The Federation of Canadian Municipalities Green Municipal Fund provides loans and grants to municipalities and projects to create sustainable neighbourhood action plans, community brownfield action plans, risk assessments and field tests, and site remediation. The City of London operates a series of programs including providing grants for the environmental studies associated with brownfield remediation, Property Tax Assistance “through the cancellation of 25% of current property taxes for up to three (3) years (or a longer period of time as may be specified in the site-specific enabling by-law) during which rehabilitation and development activity is taking place” and a rebate “for eligible remediation costs on up to 50% of the Development Charges”³³ in addition to applying for funding through the Green Municipal Fund. The Ontario Ministry of Affairs and Housing also has a brownfields financial tax incentive program (BFITIP) matches municipal property tax assistance for cleanup of eligible brownfield properties through provincial education property tax assistance.³⁴

Green Design Incentives such as the High Performance New Construction Initiative³⁵ and municipal incentives that are under consideration by the City of London³⁶ could also provide additional funding. Small business development initiatives could be used to support the creation of the industrial business incubator. Employment and Social Development Canada provides grants and incentives to support job training and social development. Finally market rate sale and leasing of units will provide additional financial feasibility to the project.

Endnotes for Section 2.1

- 1 Francois Julien, *The Propensity of Things*, (New York: Zone Books, 1995), 27.
- 2 Ibid. 78.
- 3 Martine August, “Social Mix and Canadian Public Housing Redevelopment: Experiences in Toronto,” *Canadian Journal of Urban Research* 17, no. 1 (2008): 82-100, <https://www.jstor.org/stable/26193206>.
- 4 August, “Social Mix,” 91.
- 5 David Ley, “GENTRIFICATION IN RECESSION: SOCIAL CHANGE IN SIX CANADIAN INNER CITIES, 1981-1986,” *Urban Geography* 13, no. 3 (1992): 237-238, <https://doi.org/10.2747/0272-3638.13.3.230>.
- 6 Kate Shaw, “Local limits to gentrification: Implications for a new urban policy,” in *Gentrification in a Global Context*, ed. Rowland Atkinson and Gary Bridge (London: Routledge, 2004), 174.
- 7 Ibid. 176-177.
- 8 Ibid. 179.
- 9 Ibid. 181.
- 10 Ibid. 183.
- 11 Pierre Desrochers and Hiroko Shimizu, *The Locavore’s Dilemma*, (New York: Public Affairs, 2012).
- 12 Laura B. DeLind, “Are local food and the local food movement taking us where we want to go? Or are we hitching our wagons to the wrong stars?” *Agriculture and Human Values* 28, no. 2, (June 2011): 273-283, <https://doi.org/10.1007/s10460-010-9263-0>.
- 13 Camilla Cornell, “Micro-manufacturing movement takes hold in Toronto,” *Globe and Mail*, October 25, 2016, <https://www.theglobeandmail.com/report-on-business/small-business/sb-growth/micro-manufacturing-movement-takes-hold-in-toronto/article32438376/>.

- 14 Francisco Mas-Verdú, Domingo Ribeiro-Soriano and Norat Roig-Tierno, “Firm survival: The role of incubators and business characteristics,” *Journal of Business Research* 68, (2015): 793–796, <http://dx.doi.org/10.1016/j.jbusres.2014.11.030>.
- 15 SB Friedman Development Advisors, “CITY OF CHICAGO: Manufacturing Incubator Feasibility,” (Chicago, 2014): https://www.cityofchicago.org/content/dam/city/depts/zlup/Planning_and_Policy/Publications/Chicago%20Industrial%20Corridors/Incubatory_Study_2014.pdf.
- 16 Diana Reed, “Incubator Program: Factors in a Profile of Success,” *Journal of Business & Entrepreneurship* 3, no.1 (March 1991): 61-71, ABI/INFORM Global.
- 17 Steven Rock, “Phytoremediation: integrating art and engineering through planting,” in *Manufactured Sites*, ed. Niall Kirkwood, (London and New York: Spon Press Taylor & Francis, 2001), 52-58.
- 18 Lucinda Jackson, “Beyond clean-up of manufactured sites: remediation, restoration and renewal of habitat,” in *Manufactured Sites*, ed. Niall Kirkwood, (London and New York: Spon Press Taylor & Francis, 2001), 35-40.
- 19 Kate Kennan and Niall Kirkwood, *Phyto: Principles and resources for site remediation and landscape design*, (London and New York: Routledge, 2015), 36-41.
- 20 potential contaminants estimated based on report from LDM brass in the Netherlands about contamination on their site in similar industry, (<http://www.ldmbrass.com/en/news/2-0-0/13/news.htm>) and a recent Phase II ESA for nearby 1156 Dundas St, (<https://www.london.ca/newsroom/Documents/1156DundasStreet.pdf>)
- 21 “Phased soil clean-up until 2036,” About LDM, LDM Brass, published 2008, <http://www.ldmbrass.com/en/news/2-0-0/13/news.htm>
- 22 Graham Bailey, APPLICATION FOR BROWNFIELD INCENTIVES: BY: MCCORMICK VILLAGES INC.: 1156 DUNDAS STREET: MEETING ON APRIL 24, 2017, <https://www.london.ca/newsroom/Documents/1156DundasStreet.pdf>.
- 23 Vojtěch Ettler, “Soil contamination near non-ferrous metal smelters: A review,” *Applied Geochemistry* 64, (2016): 56-74, <https://doi.org/10.1016/j.apgeochem.2015.09.020>.
- 24 “Wind & weather statistics: London Airport,” Windfinder, accessed September 5, 2018, https://www.windfinder.com/windstatistics/london_airport.
- 25 Ettler, “Soil contamination,” 68.
- 26 Ibid. 68, Kennan, *Phyto*, 55.

- 27 Kennan, *Phyto*, 74.
- 28 Kennan, *Phyto*, 81.
- 29 “Seed Funding,” Canada Mortgage and Housing Corporation, accessed September 5, 2018, <https://www.cmhc-schl.gc.ca/en/developing-and-renovating/funding-opportunities/seed-funding>.
- 30 “Investment in Affordable Housing for Ontario (2014 Extension) Program Guidelines,” Ministry of Municipal Affairs and Housing, accessed September 5, 2018, <http://www.mah.gov.on.ca/AssetFactory.aspx?did=12338>.
- 31 “Developing New Affordable Housing: HDC London,” City of London, accessed September 5, 2018, <https://www.london.ca/residents/Housing/Housing-Programs/Pages/ProposedHousingDevelopmentCorporationInitiative.aspx>.
- 32 “Housing Development Corporation London,” Home, HDC London, accessed September 5, 2018, <https://www.hdclondon.ca/#welcome>.
- 33 “CITY OF LONDON COMMUNITY IMPROVEMENT PLAN FOR BROWNFIELD INCENTIVES,” City of London, adopted by council February 20, 2006, <https://www.london.ca/business/Planning-Development/fees-incentives/Documents/Brownfield-CIP.pdf>.
- 34 “Financing a brownfield project,” Ministry of Municipal Affairs and Housing, accessed September 5, 2018, <http://www.mah.gov.on.ca/Page223.aspx>.
- 35 “High Performance New Construction Initiative Overview,” Save on Energy, accessed September 5, 2018, <https://saveonenergy.ca/Business/Program-Overviews/New-Construction.aspx>.
- 36 “London Green Incentives final report,” City of London, February 27, 2012, https://www.london.ca/business/Planning-Development/current-topics/Documents/GreenMunicipalIncentives_feb27_12.pdf.

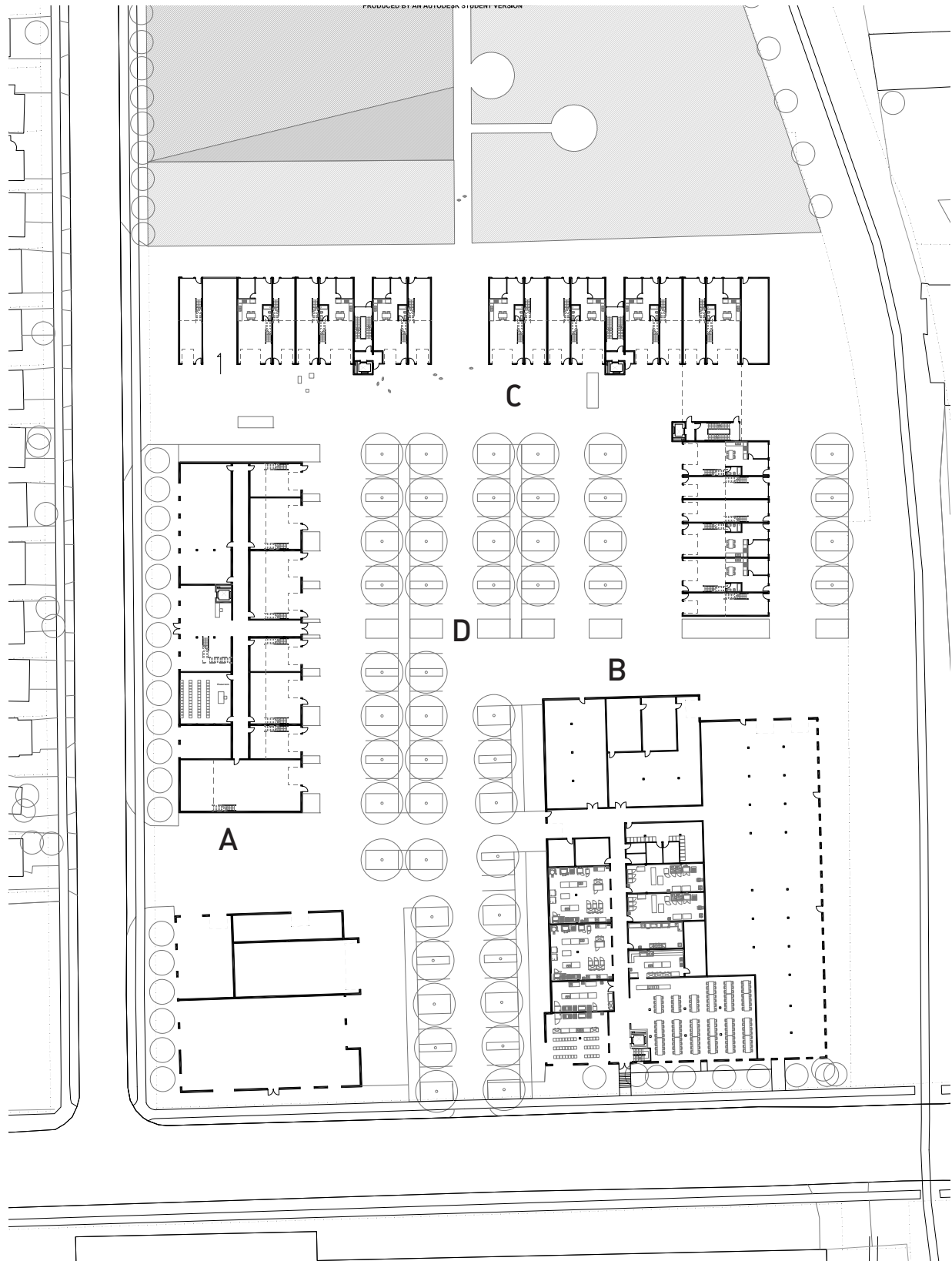


Figure 44
Ground Floor plan with industrial business incubator (A), food hub (B), live-work units (C), and shared courtyard (D).

A Community Food Production Hub

2.2 Design Proposal

The design seeks to propose an alternative to the gentrification that often occurs when devalued industrial sites are redeveloped into purely residential and commercial uses. Instead, more intense mixing of traditionally conflicting uses is proposed, to confront industry rather than erasing it.

The main design principles are:

1. to retain the industrial nature of the site as much as possible and create productive adjacencies between residential and industrial land rather than completely separating land uses
2. remediate the land using phytotechnologies that allow people to engage with the process of remediation and connect the site with an abundant green space network
3. prioritize public and shared space alongside affordable new residential units



Figure 45
Perspective showing people working and recreating on the north side of the building next to the remediation fields.





The overall site plan prioritizes providing generous green space through a large public park that runs through the site, and structures the form of new development. In order to dedicate this much land to park while still having a feasible density of units on the site, the allowable height should be increased from the 5 storeys specified in the secondary plan to 9 storeys. This will not be unprecedented, as there is currently already taller buildings in the area. The nova craft canoe building is 29m tall and part of the former Kelloggs plant is 33m tall. Just across the railway to the north there are also several 11 storey residential buildings. The proposed 9-storey residential portions will reach a height of 30m, but in order to be sensitive to the surrounding low density residential neighbourhood, the buildings will step down to only 3 storeys when bordering the existing houses. These higher density tall buildings will border the park, framing the edge of the park and providing park views for each unit.

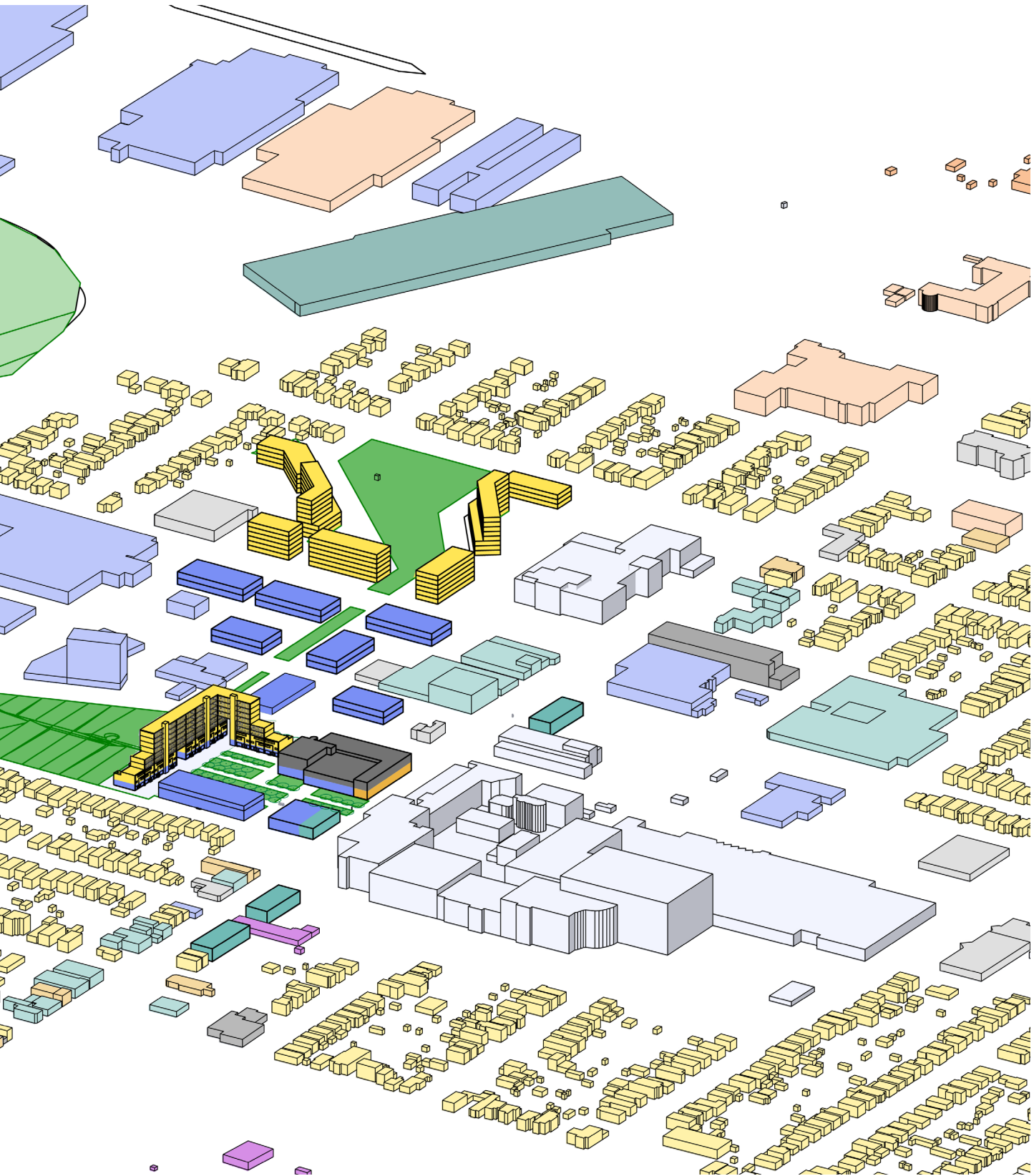


Figure 46
Site axonometric showing the massing of different programs on the site and the connection from McCormick park to the north through the series of parks through the site.

Since the presence of industry can reduce the progression of gentrification, and the mixing of uses creates more vibrant neighbourhoods, commercial and industrial uses should be mixed with residential uses, and manufacturing should be encouraged on the site. This is provided through live-work units on the ground level of the residential building, and an industrial start-up incubator framing a shared outdoor courtyard. A design proposal like this that combines residential and industrial programs on the same site in an urban setting is unique. There is currently a proposal for a new mid-rise residential development at 440 Dufferin St. in Toronto that includes light-industrial spaces at street level.¹ Unfortunately this development comes at the cost of displacing a previously existing vibrant community of artists and fabricators in the low rise industrial buildings on site.² The Dufferin St. proposal is a compromise that is better than complete elimination of industry on the site but unfortunate for the former tenants. In London this industrial site has vacant sites for redevelopment without evicting current businesses. Redevelopment will focus first on these vacant sites.

Live-work units and very small scale light industry will be used as a transition zone from the residential to the east and west of the site into more intensive light-industry to the centre and north end of the site. These transitional industrial facilities should be Class I, defined by the D-6 Guidelines as:

“A place of business for a small scale, self contained plant or building which produces/stores a product which is contained in a package and has low probability of fugitive emissions. Outputs are infrequent, and could be point source or fugitive emissions for any of the following: noise, odour, dust and/or vibration. There are daytime operations only, with infrequent movement of products and/or heavy trucks and no outside storage.”³

Examples given of Class I include; electronics manufacturing and repair, furniture repair and refinishing, beverages bottling, auto parts supply, packaging and crafting services. Businesses that start in the incubator on Burbrook Pl. can eventually graduate to slightly larger facilities on either side of Nightingale Ave. and on the west side of McCormick Blvd. Larger facilities which could include Class II facilities such as magazine printing, paint spray booths, metal command, electrical production manufacturing, manufacturing of dairy products⁴ for example or existing Class III facilities such as metal manufacturing or small breweries⁵ will remain concentrated in the north end towards the railway with the maximum possible separation from residential uses. While minimum separation distances for these classes are taken into consideration in the design, the guidelines recognize that “in some cases of urban redevelopment, infilling, or transition to mixed use these recommended minimums may not be possible to achieve”.⁶

Guidelines for Location of Industry by Class

- Class I Industry permitted
- Class I or Class II Industry permitted
- Class I or Class II Industry permitted, existing Class III industry permitted to remain
- Class I or Class II or Class III Industry permitted

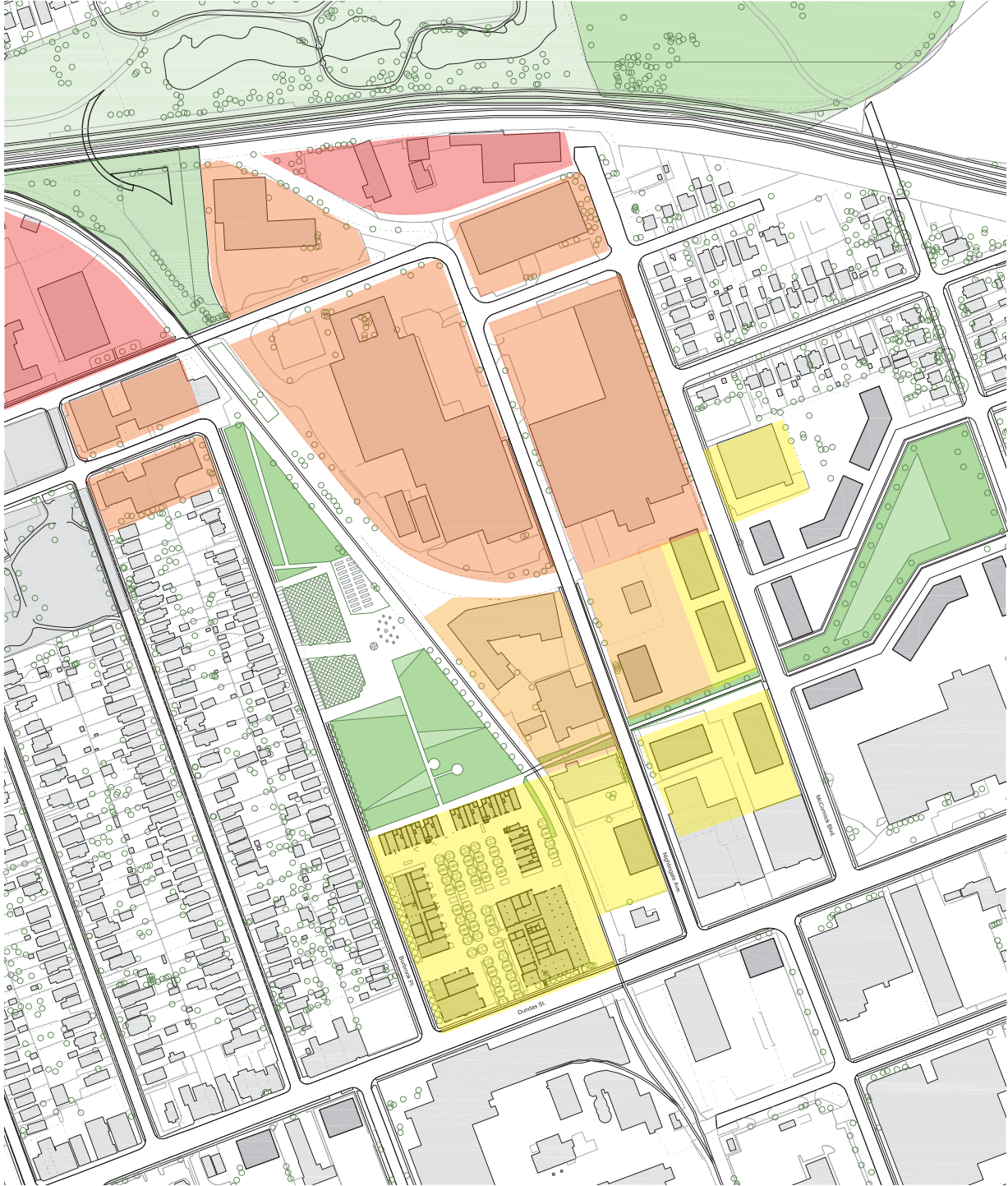
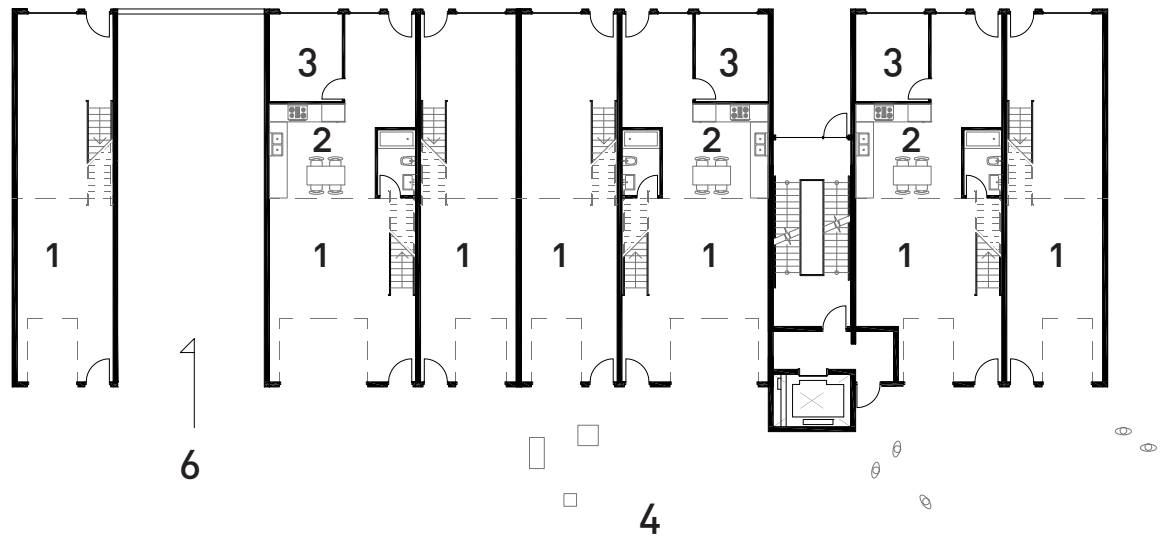


Figure 47
Site plan showing proposed locations of industry by class.



The design of the live-work building aims to provide many opportunities for interaction between residents. This is accommodated by providing generous communal spaces for both residential and commercial purposes, reducing the need for large individual units, and prioritizing access to units from street-like condition rather than typical high-rise corridors. The live-work units all have their main entry facing to the courtyard and a secondary ground floor entry facing to the park at the north. Each work space can be opened up to the communal outdoor space as an extension of the unit. Each unit opens to this courtyard with a large garage door to facilitate this connection and make the ground floor of each unit similar to a small scale industrial unit.

- 1 Work Space
- 2 Kitchen
- 3 Office
- 4 Shared Use Paving
 - Vehicle Access
 - Pedestrian Access
 - Outdoor Work Space
 - Loading
 - Parking
- 5 Bicycle Storage
- 6 Underground Parking

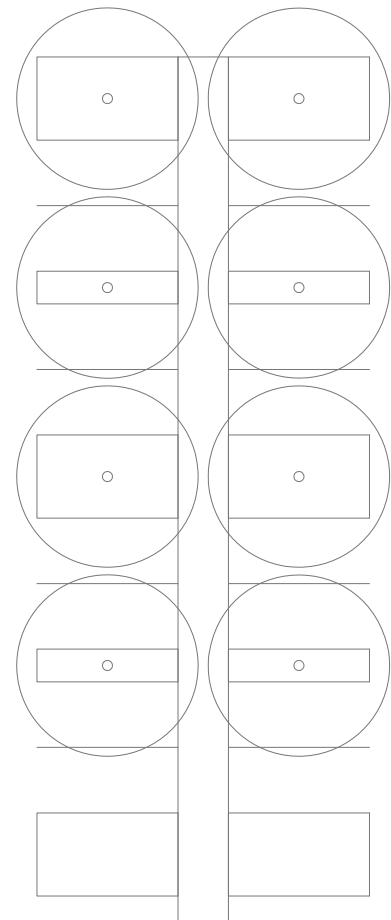
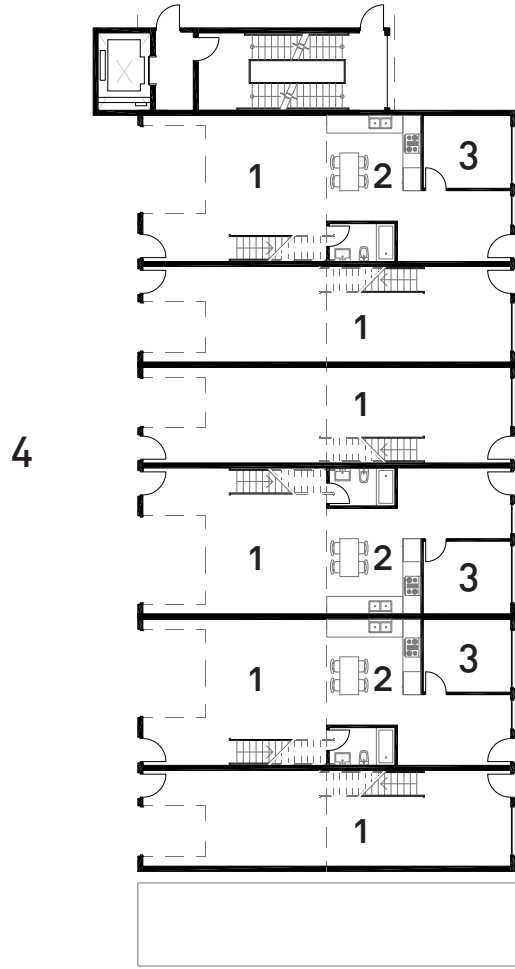
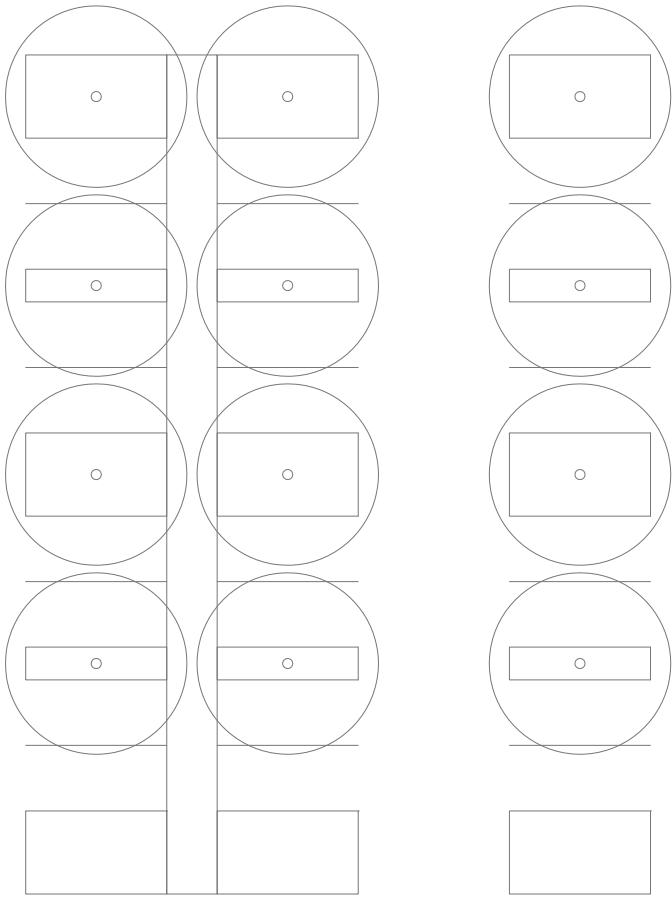
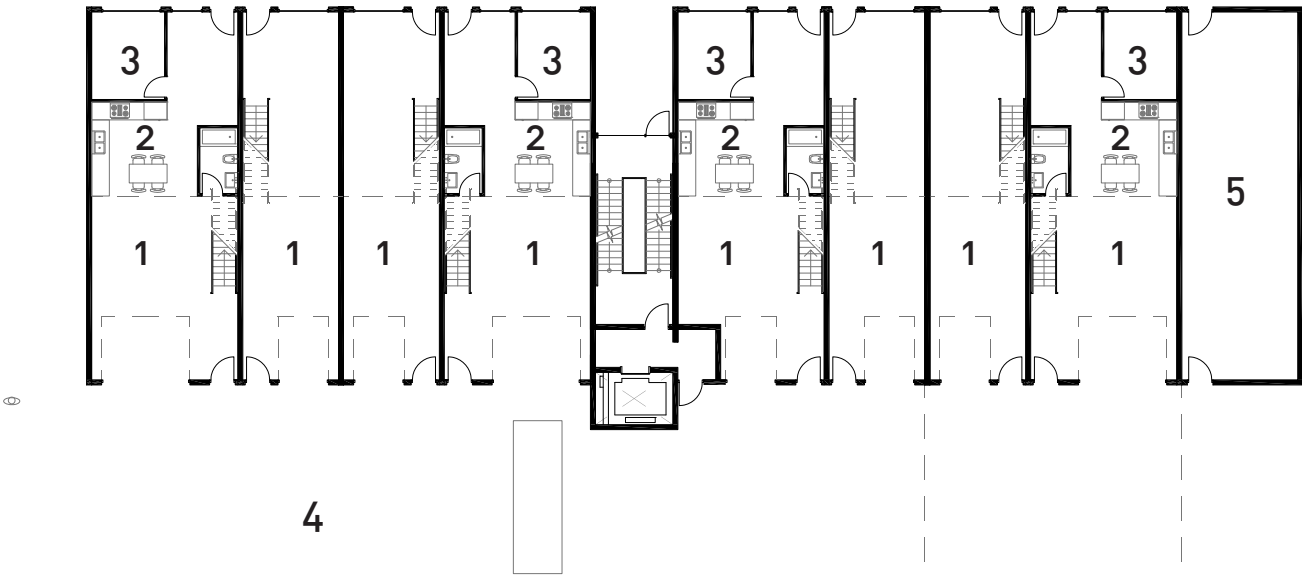
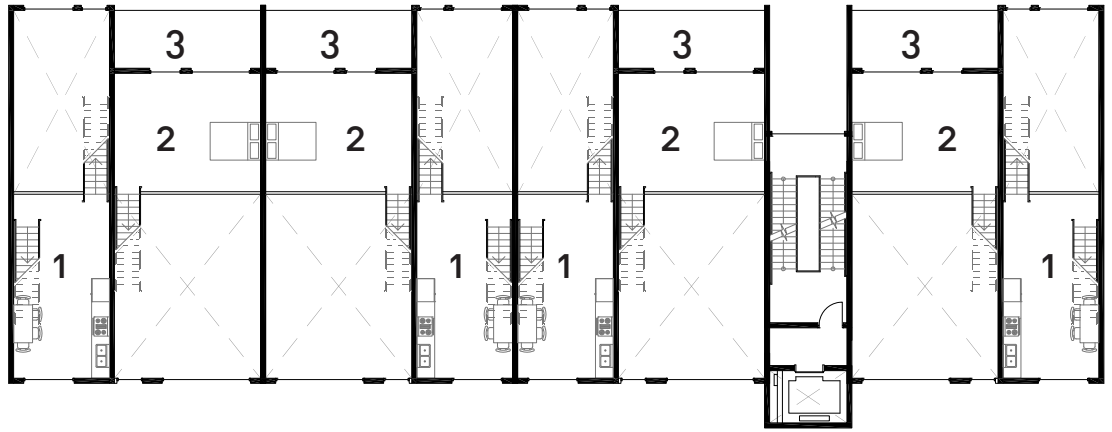


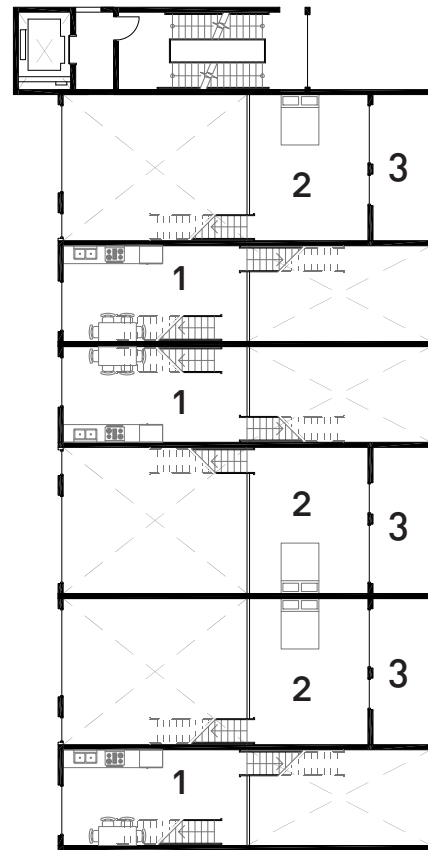
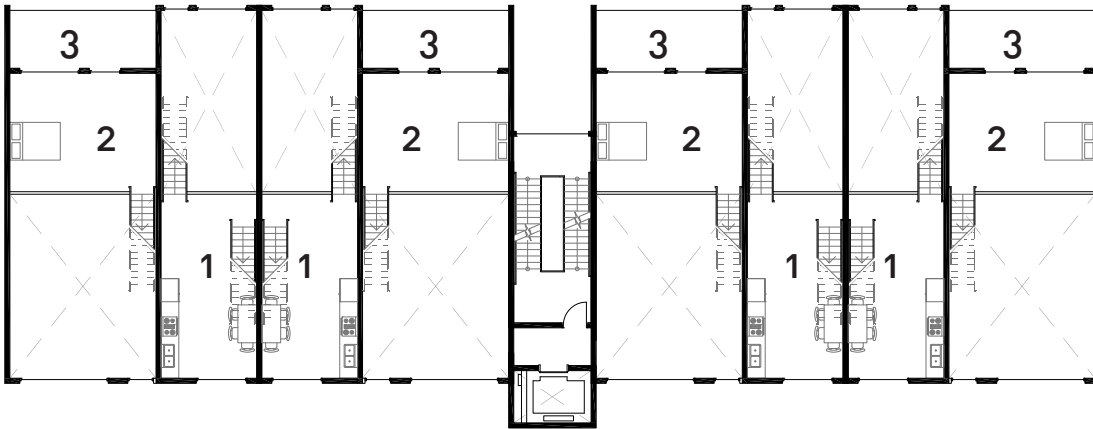
Figure 48
Ground floor plan of live-work units - 1:300





The units are interlocking two and three storeys that provide variation in size. Bedrooms are situated on the north side of the building towards the park, and living spaces are situated to the south facing into the courtyard.

Figure 49
Second floor plan of live-work units - 1:300



- 1 Kitchen
- 2 Bedroom
- 3 Terrace

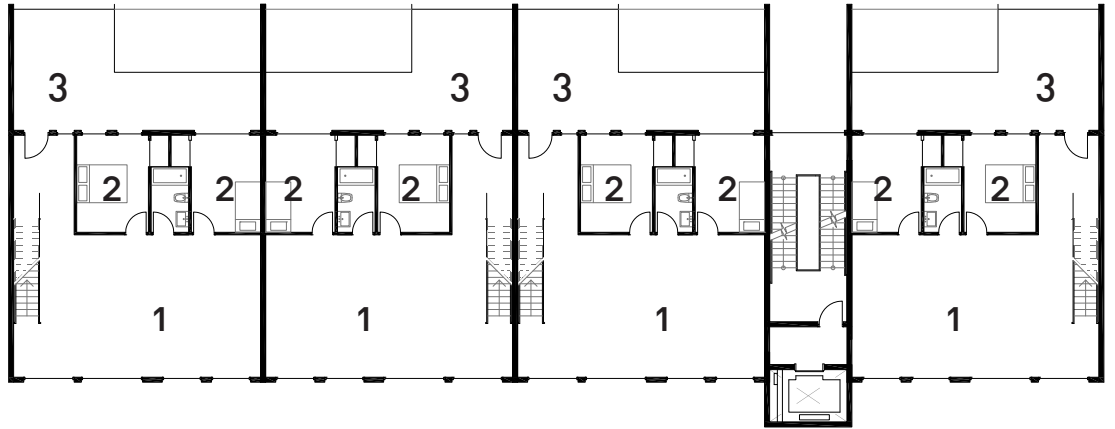
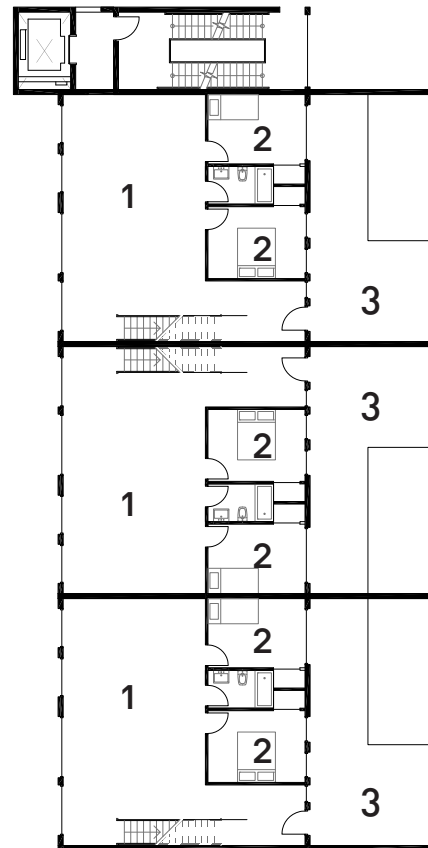
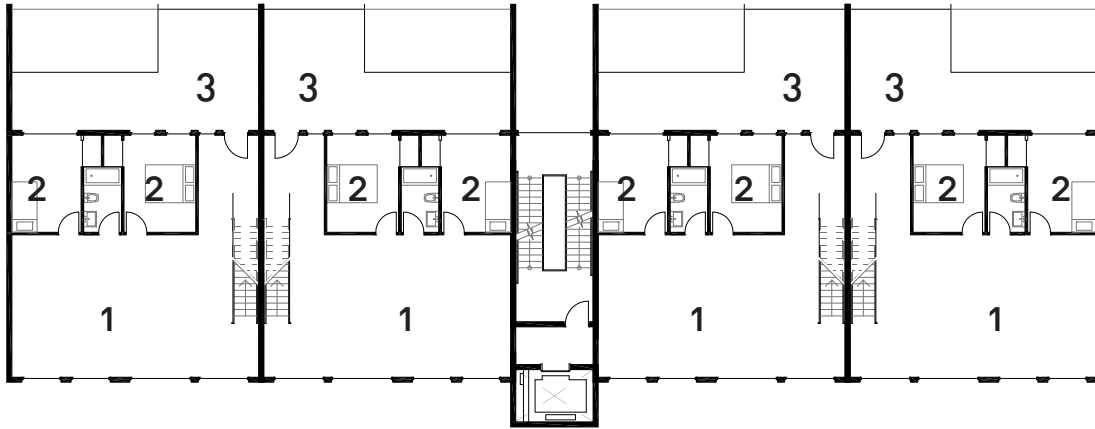
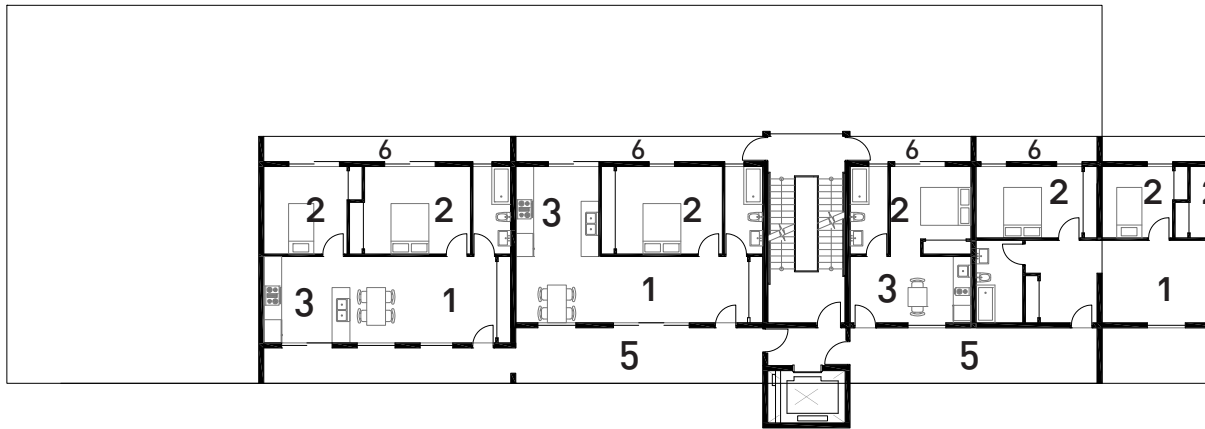


Figure 50
Third floor plan of live-work units - 1:300



- 1 Living Room
- 2 Bedroom
- 3 Terrace



Above this are two levels of one two and three bedroom units that are clustered in pairs accessed from the circulation cores through wide winter gardens that are shared between two units and function as a front porch that can be opened to create a sheltered threshold between the interior and exterior. These front porch areas are intended to create a greater sense of community between adjacent residents. The exterior balconies are located on the north side of the building and are private to each residence.

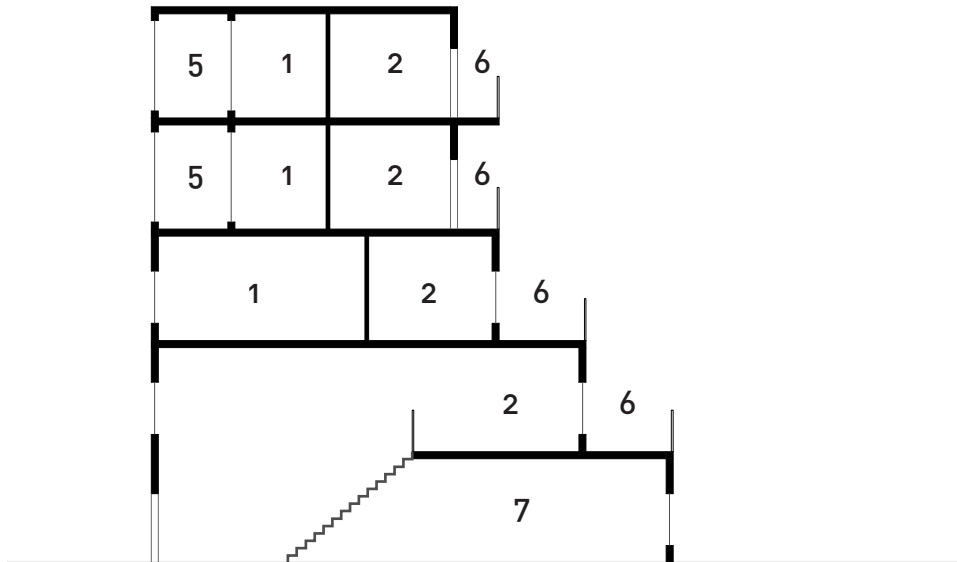
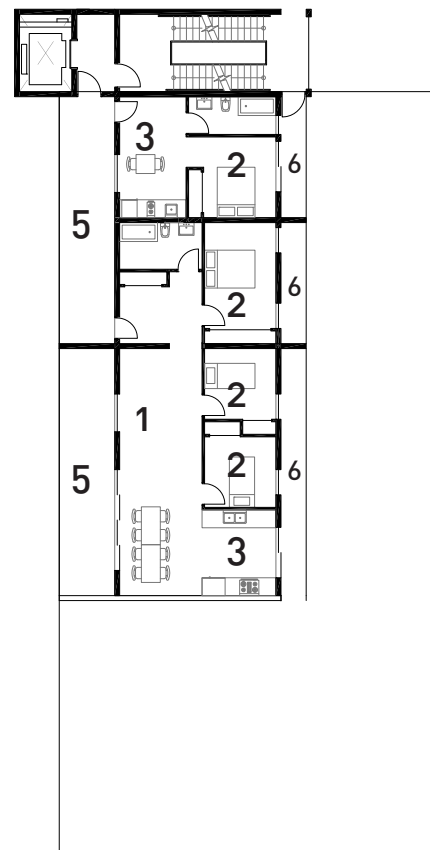
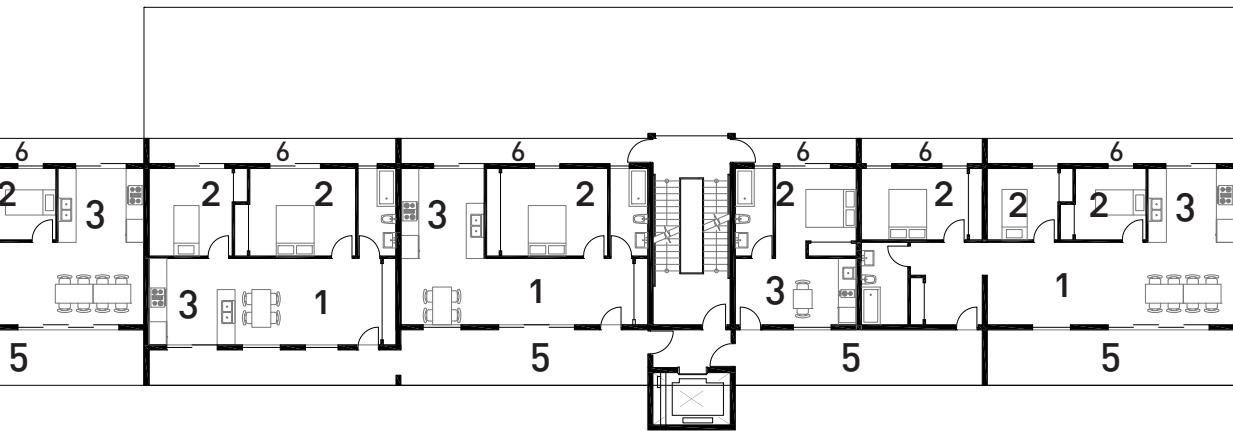
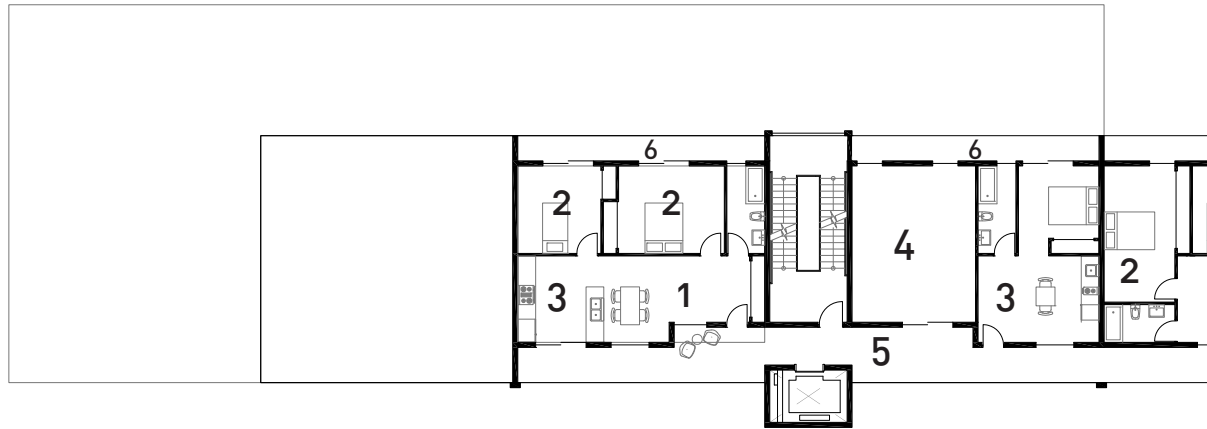


Figure 51
Building sections showing double height units, winter gardens and balconies.



- 1 Living Room
- 2 Bedroom
- 3 Kitchen
- 4 Office
- 5 Winter Garden
- 6 Balcony
- 7 Work Space

Figure 52
 Floor plan of fourth and fifth floor residential units with winter gardens - 1:300

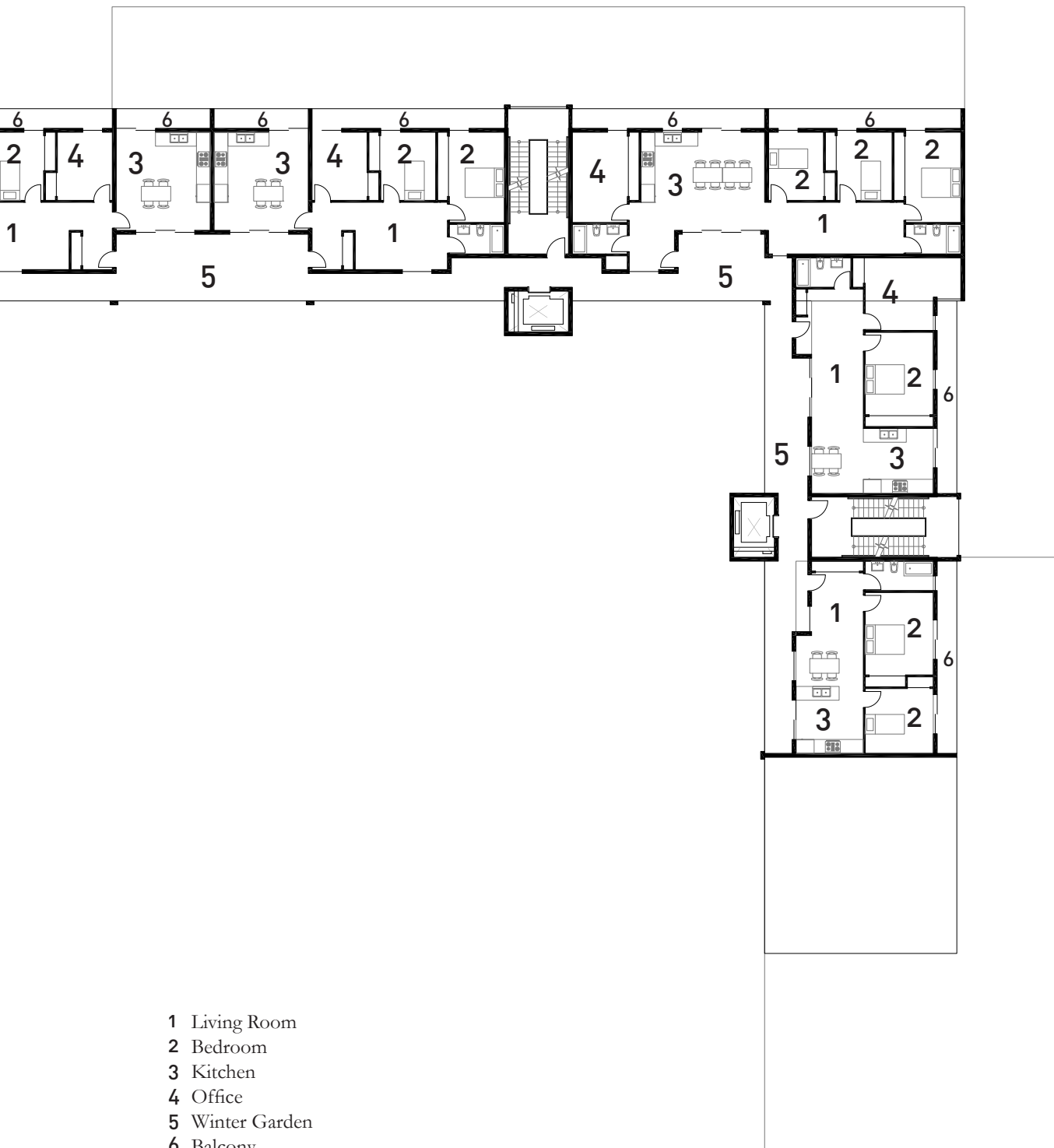


Floors six through nine are accessed from a single loaded corridor on the south side of the building that becomes wider in some places and behaves similarly to the winter gardens. Windows from each unit open onto these common circulation spaces. Each unit also has a private balcony on the north side facade facing the park.

According to the Guidelines for New Development in Proximity to Railway Operations A railway spur line typically consists of “unscheduled traffic on demand basis only”, “slower speeds limited to 24 km/h”, and “short trains of light weight”.⁷ The standard recommended building setback for new residential development in proximity to a spur line is 15m “measured from the mutual property line to the building face”.⁸ The noise influence area in this case would typically be 75m. There is no berm typically required as a safety barrier in the case of spur lines.⁹ The residential building between Burbrook Pl. and the railway spur respects these setback requirements.

Beyond providing private outdoor space for each residential unit, and communal space, the balconies and winter gardens are also part of the noise mitigation strategy as they provide a buffer zone to block and diffuse noise that may be occurring due to production activity below or the infrequent use of the railway spur line. The types of manufacturing allowed will also have to be regulated to ensure that they do not pose a safety risk to the residents.

Figure 53
Floor plan of sixth through ninth floor residential units - 1:300



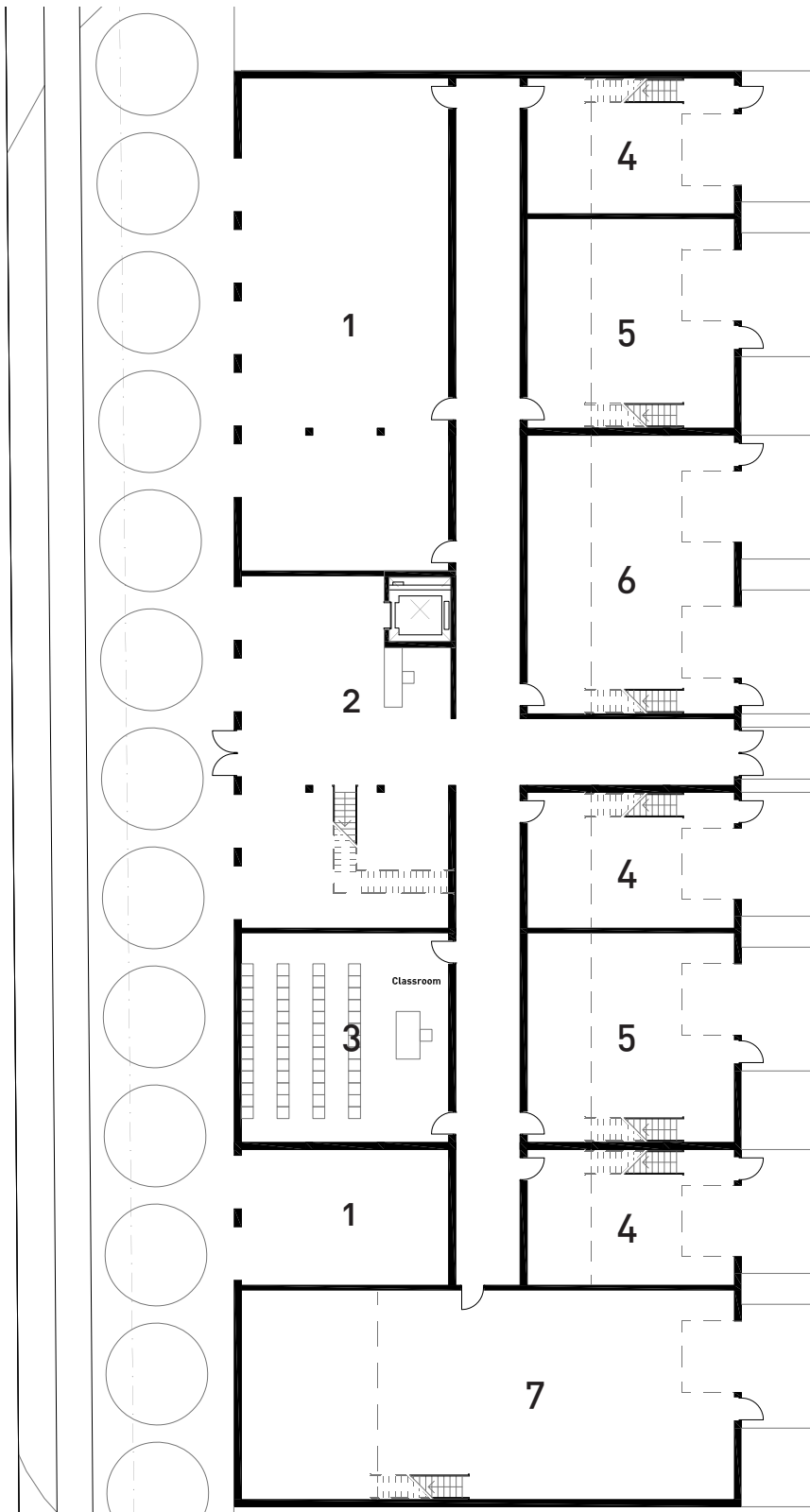
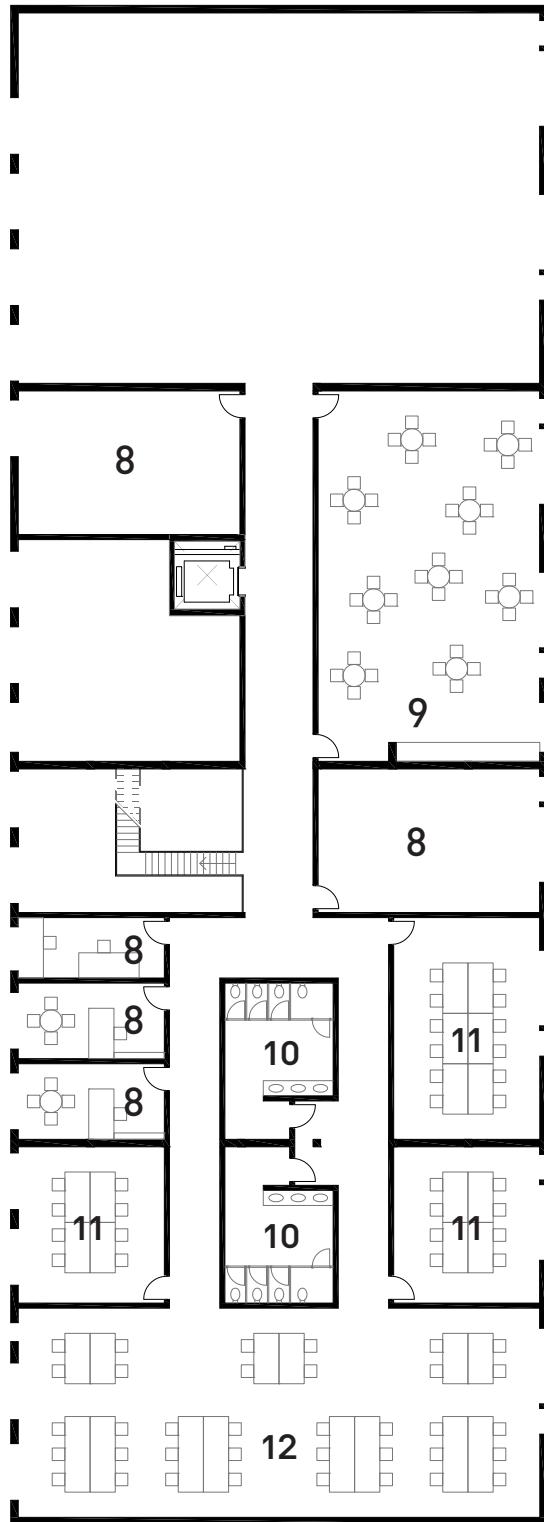


Figure 54
Ground floor plan of industrial incubator - 1:300



- 1 Community Workshop
- 2 Lobby
- 3 Classroom
- 4 X-Small Industrial Module
- 5 Small Industrial Module
- 6 Medium Industrial Module
- 7 Large Industrial Module
- 8 Office
- 9 Kitchen
- 10 WC
- 11 Meeting Room
- 12 Co-Working Space

The incubator building is two stories high and feature a variety of small scale industrial units that can be rented by industrial start-up companies. There are also common facilities such as offices, workshops, and classrooms. Each unit is a shell that can be configured according to the needs of the tenant.

Figure 55
Second floor plan of industrial incubator - 1:300

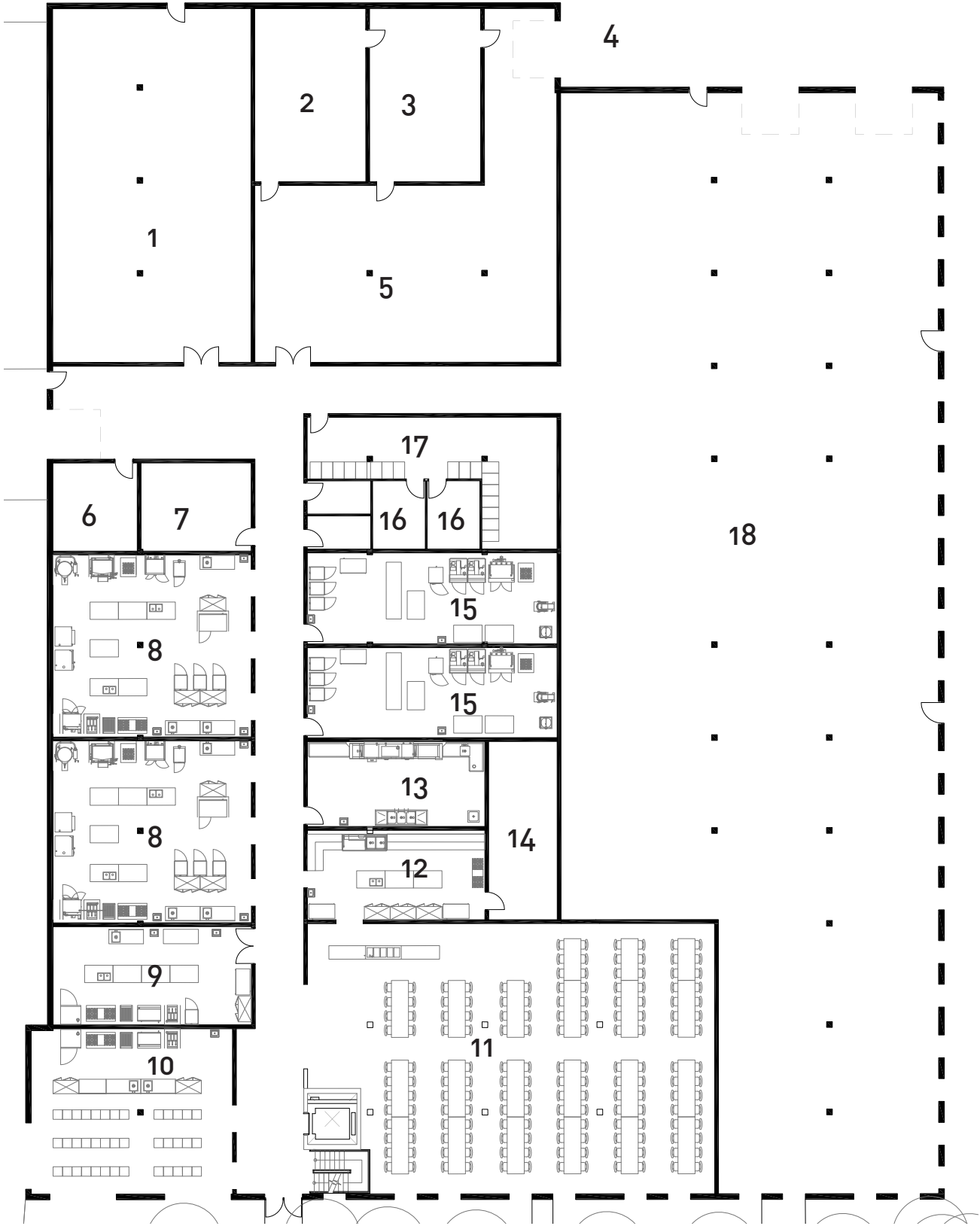


Figure 56
Ground floor plan of former EMCO building with food programming - 1:300.

While this portion of Dundas St. is not part of the main concentration of the commercial corridor of Old East Village near Adelaide St so will not sustain the same density of pedestrian activity, it is still important to improve the pedestrian experience for those accessing the site without a car. The existing buildings on the EMCO site will be adaptively re-used to contain these commercial spaces. The eastern building will be dedicated to food related programs, with rentable commercial kitchens, a community kitchen and dining hall for events and serving hot meals related to the food bank, and a food sorting centre for the food bank.

The western building will contain a few additional industrial units related to the incubator along with commercial storefronts. Commercial storefronts and community spaces such as the dining hall associated with the communal kitchen will be oriented to Dundas St. and landscaping will be used to encourage walking.

- 1 Communal Packaging Facilities
- 2 Freezer
- 3 Cooler
- 4 Loading
- 5 Dry Storage
- 6 Mechanical
- 7 Management Office
- 8 Communal Commercial Kitchen
- 9 Gluten Free Commercial Kitchen
- 10 Training Kitchen
- 11 Community Dining Hall
- 12 Community Kitchen
- 13 Dish Room
- 14 Storage
- 15 Baking Kitchen
- 16 WC
- 17 Locker Room
- 18 Food Waste Sorting and Distributing Centre

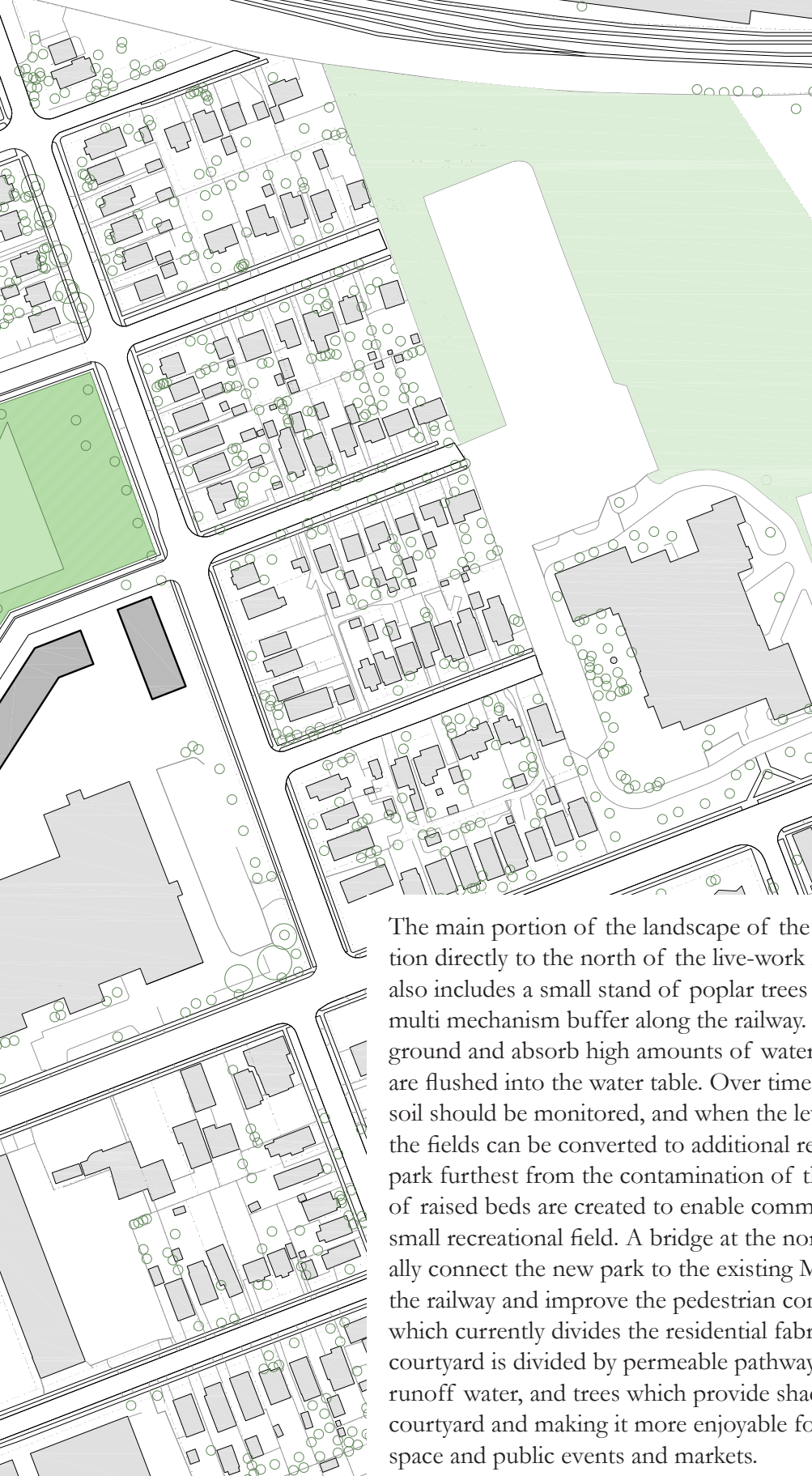


Figure 57
Perspective showing view from Dundas St. looking west towards downtown.





Figure 58
Site plan.



- 1 Phytoremediation Field
- 2 Poplar Stand
- 3 Multi Mechanism Buffer
- 4 Community Garden
- 5 Recreation Field
- 6 Bridge
- 7 Courtyard

The main portion of the landscape of the site is a field of phyto remediation directly to the north of the live-work residential building. The landscape also includes a small stand of poplar trees to the north of this field and a multi mechanism buffer along the railway. These trees reach deeper into the ground and absorb high amounts of water to remediate contaminants that are flushed into the water table. Over time the contamination levels in the soil should be monitored, and when the levels are determined to be safe the fields can be converted to additional recreation space. In the area of the park furthest from the contamination of the former EMCO factory, a series of raised beds are created to enable community gardening of food, and a small recreational field. A bridge at the north end of the park will eventually connect the new park to the existing McCormick Park to the north of the railway and improve the pedestrian connection across the railway track which currently divides the residential fabric. The grade level parking in the courtyard is divided by permeable pathways, beds of grasses which remediate runoff water, and trees which provide shading, improving the climate of the courtyard and making it more enjoyable for other uses such as outdoor work space and public events and markets.



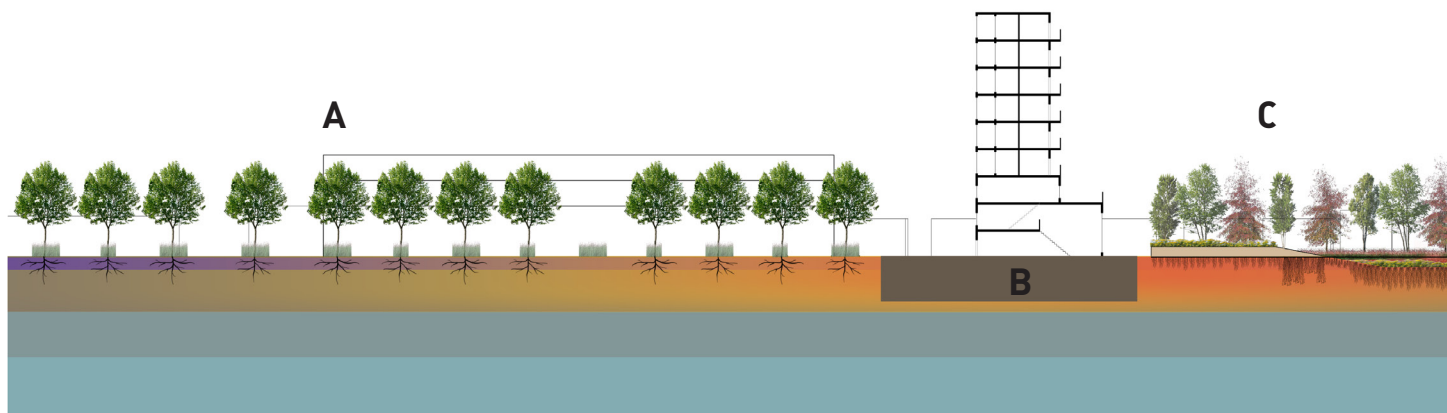
Figure 59
Perspective showing the courtyard hosting a market, outdoor work space, and parking.



The landscaping strategy uses colour and height differentiation to both create visual interest and signal inaccessible areas due to phytoremediation. Gradual slopes are formed on either side of the level axial pedestrian pathway. The result is that as you progress through the site at moments the ground level is just below eye level, and you can observe the plants from below, and at other moments you are on a raised platform looking down across the expansive field. The majority of the contamination is likely in the top 2 m of the soil, and can be degraded or volatilized using a mix of herbaceous plants in a multi-mechanism mat. Plants with the capacity for remediation as well as colorful foliage or flowers such as Big Bluestem “Red October” or goldenrod signal that this is not a typical recreational field, but rather an active landscape. The water table lies 7 m - 12 m below the ground level.^{10 11} To reach the deeper contamination in the soil and the groundwater below, deep rooting trees will be planted around the edge of the site, and several Poplar trees with root systems that can reach 6 m - 9 m into the ground will be planted in a cluster to the north of the field and provide evening shade to the seating area above ground.



- A** Wide root system trees such as maples and tall grasses filter runoff from parking lot and work areas.
- B** Soil immediately surrounding and below new construction replaced with clean fill.
- C** A variety of tree species planted along Burbrook Pl. as a buffer between the street and the remediation field.
- D** Remediation field includes Fescue (D1), Goldenrod (D2), and Big Bluestem (D3) to degrade petroleum and chlorinated solvent contaminants and stabilize metal contaminants within the top 30 cm - 2 m of the soil surface.
- E** Stand of Poplar trees with deep taproots filter contaminants from water table.
- F** Water table is 7 m -12 m below the ground surface.



- Petroleum
- Chlorinated Solvents
- Metals

Figure 60
Remediation site section.

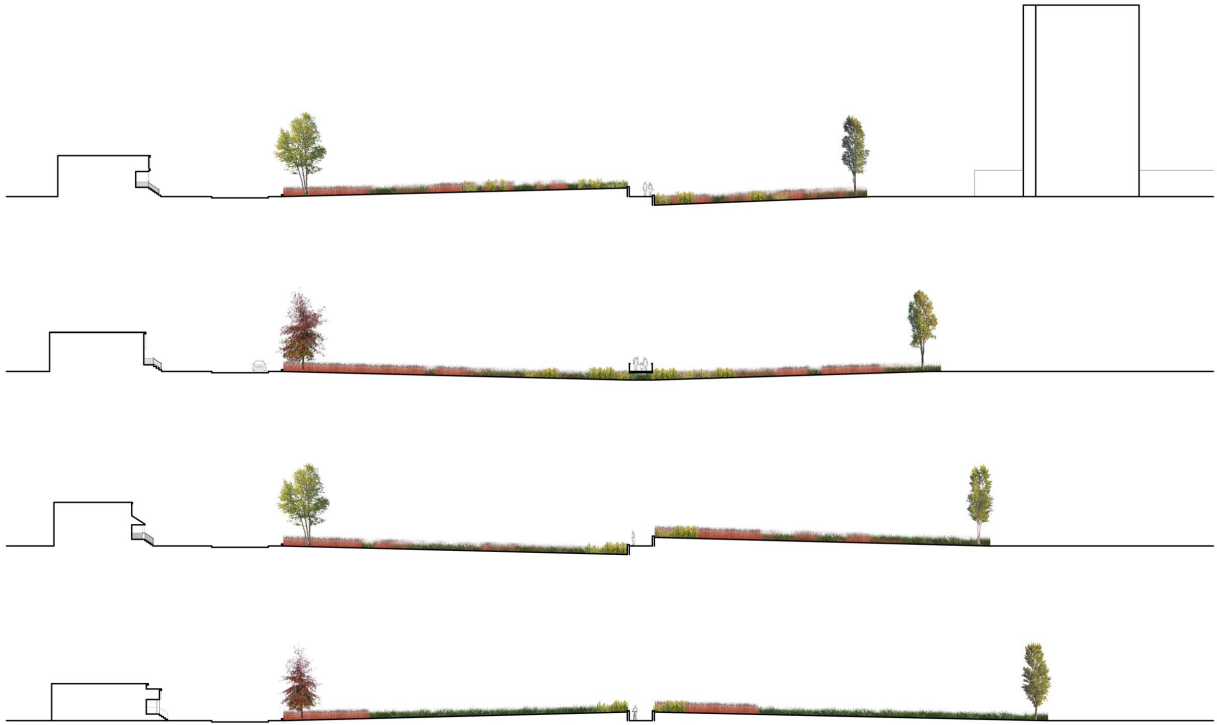


Figure 61
Site sections through sloping remediation field.

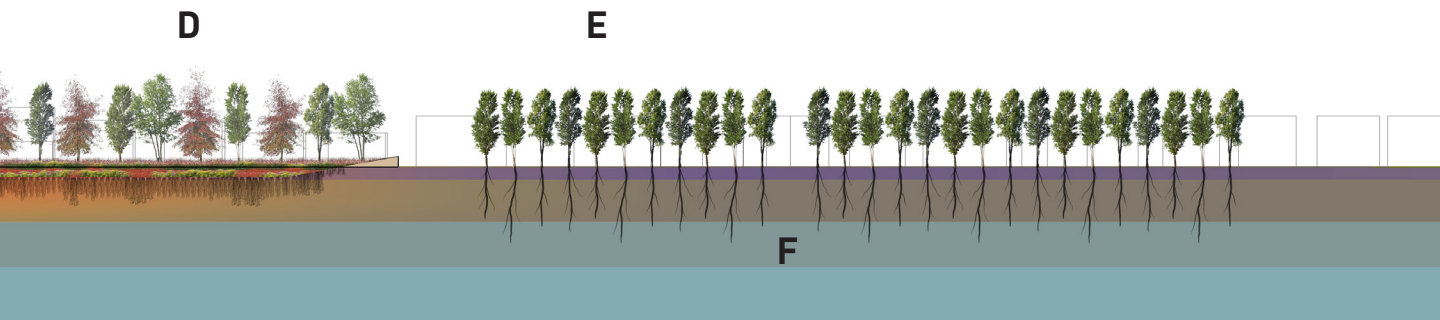






Figure 62
Perspective showing recreation field, community garden, and poplar stand looking south towards live-work building.

The phasing of the site calls for creating the framework of the park running through the site, filling in the vacant sites closest to Dundas St. initially, while establishing temporary phytoremediation of the vacant land north of the linear portion of the park. As space requirements for the small businesses increase, additional small industrial buildings can be built north of the park in the centre of the site and a second phase of residential buildings can be constructed to the north of the park on the east side. Finally, once the remediation of the least contaminated parts of the park on the west side is sufficient, low rise residential can be added along Burbrook Pl. and the residential east of McCormick can be further densified.



Figure 63
Site plans showing phasing of design in 2020, 2025, and 2030.



2025



2030

The main structure of the buildings will be poured concrete because of its durability. The use of concrete also reflects the heritage industrial buildings in the area that have lasted for over a century without imitating them stylistically. For the industrial incubator the structural system will be concrete columns at 3m spacing with a longer span of 15m in the longitudinal direction, with light steel framing as infill to create the individual rental units that can be easily modified and reconfigured as necessary to accommodate the space requirements of industrial tenants. The residential structure is comprised of vertical concrete circulation shafts and shear walls at 10m spacing and concrete floor slabs, and lighter structure to divide individual units using wood framing. The wood framing is chosen because of sustainability, and ease of construction and ability for future tenants to renovate and adapt units to suit their needs as families change. The industrial programs including the incubator and the live-work units are more massive construction with punched windows, and the residential floors above are expressed as light layers as you look through the winter gardens and balconies to the second facade behind.

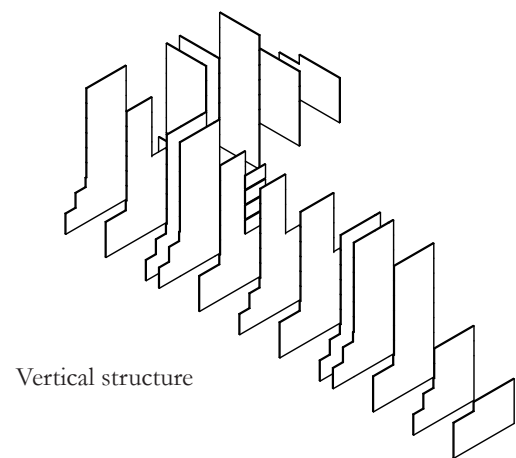
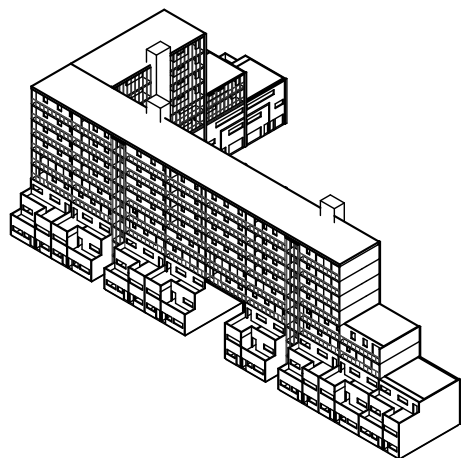
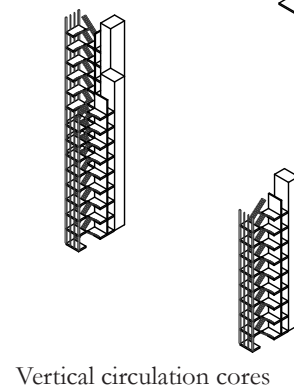
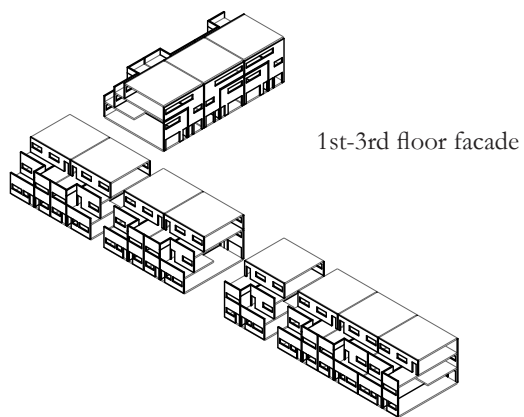
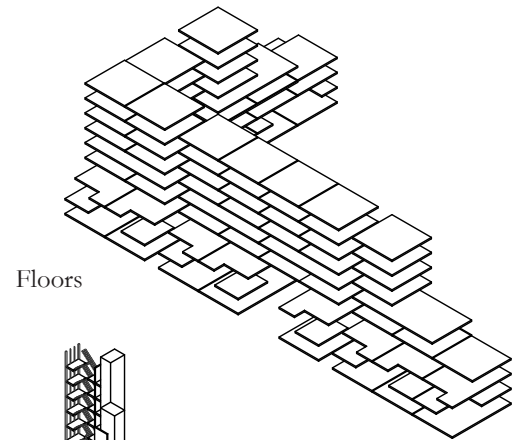
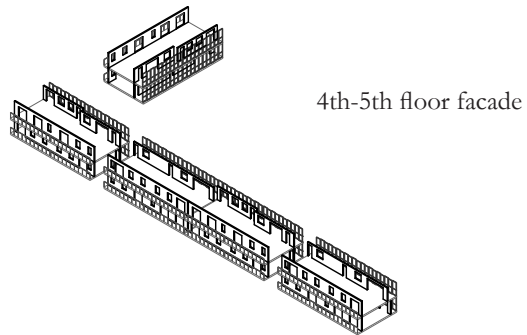
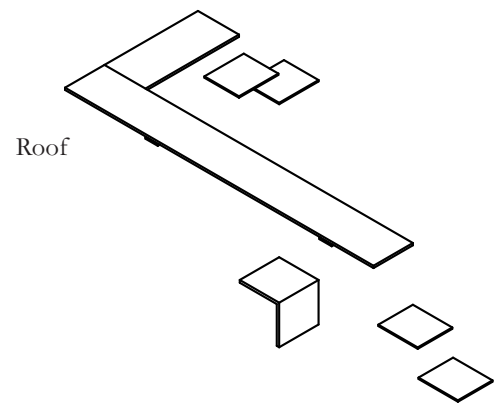
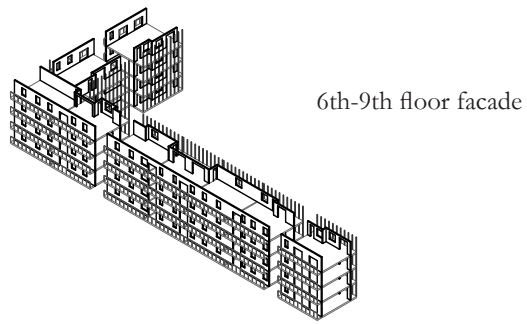


Figure 64
Exploded axonometric to show structure and unit types.

Conclusion

The overall structure of the design strategy works in layers from the main commercial corridor, in this case Dundas St. There are broad similarities with the community structure plan proposed in the McCormick Secondary Plan, but a few key differences. Firstly, along with the plan being structured around Dundas St., an equally important structural element is the park, which informs the rest of the layout of the site. Placing priority on the park ensures that it will be robust and continuous, rather than prioritizing built development and only adding minimal green space and connections at the end. Secondly, emphasis is placed on the mixing of industrial uses with residential areas and traditionally defined mixed-use areas. More area is also maintained for industrial uses. This emphasis on industrial uses featuring prominently in the site, even if different in nature to the former industrial uses, is a critical part of the strategy to resist gentrification, and the park is an important component of making this mix of uses viable.

Preserving as much as possible of the existing street frontages and filling in gaps to increase density along the main street is the first layer. Next, before filling in the site with new buildings, the “accidental parks” left by existing vacant land are shaped into an intentional park for both remediation and recreation purposes. Creating the park first as an armature allows for a second

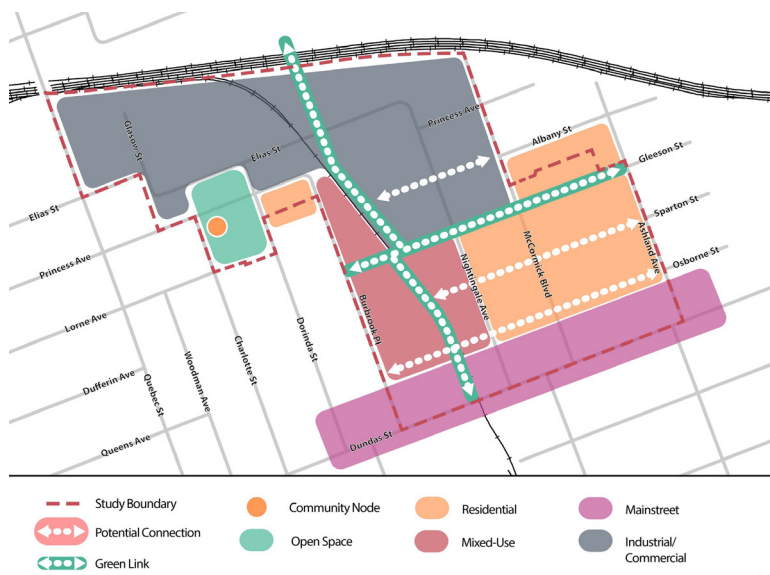


Figure 65
Community Structure Plan from McCormick Area Secondary Plan

Land Uses

- Main Street
- Mixed Use
- Residential
- Industrial/Commercial
- Park



Figure 66
Proposed Community Structure Plan



Figure 67
Proposed view of park and residences looking west from McCormick Blvd.



Figure 68
Existing view looking west from McCormick Blvd.

linear layer that faces the park and the completes the blocks on the back side of the existing street-facing layer. This second layer is a mixed-use/ industrial/ residential zone consisting of transitional uses such as small-scale light industry and live-work. This mixed-use layer along with the third layer of the park create a buffer zone between the main street condition to the south and more intense industrial uses further into the site.

General conditions may be similar across many historic industrial neighbourhoods in Ontario, and some of the same strategies can be applied. It is however most important to understand the unique conditions of each individual site and the needs and goals of the community of people who live and work in the surrounding neighbourhood. Just as the particular contaminants found in the soil once a more detailed assessment is conducted will drive the precise selection of plants in an effective remediation strategy, so too will the particular community characteristics and ambitions of individual entrepreneurs drive the most effective specific programs to ensure a productive future that resists gentrification. This thesis proposes ideas to be developed further. A sensitive approach is needed that considers both the theoretical positions outlined and empathetic community consultation before any design can be applied onto the site.

Endnotes for Section 2.2

1 “440 Dufferin Street Condos,” VIP Condos Toronto, <http://www.440dufferincondos.ca/>.

2 Jesse Winter, “Dufferin development threatens to scatter artist community,” *Globe and Mail*, December 13, 2017, <https://www.theglobeandmail.com/news/toronto/toronto-development-threatens-to-scatter-artistcommunity/article37323583/>

3 D-6 Compatibility between Industrial Facilities under *Environmental Protection Act, RSO 1990, Section 14, Environmental Assessment Act, RSO 1990, Section 5(3), Planning Act, RSO 1990, Sections 2 (a) (b) (c) (f) (g) (h), 17(9), 22(3), 41(4) and 51(3), Condominium Act, RSO 1990, Section 50(3), Niagara Escarpment Planning & Development Act, RSO 1990, Section 9*. <https://www.ontario.ca/page/d-6-compatibility-between-industrial-facilities>.

4 Ibid.

Note: D-6 guidelines defines Class II facilities as “A place of business for medium scale processing and manufacturing with outdoor storage of wastes or materials (i.e. it has an open process) and/or there are periodic outputs of minor annoyance. There are occasional outputs of either point source or fugitive emissions for any of the following: noise, odour, dust and/or vibration, and low probability of fugitive emissions. Shift operations are permitted and there is frequent movement of products and/or heavy trucks during daytime hours.”

5 Ibid.

Note: D-6 guidelines defines Class III facilities as “A place of business for large scale manufacturing or processing, characterized by: large physical size, outside storage of raw and finished products, large production volumes and continuous movement of products and employees during daily shift operations. It has frequent outputs of major annoyance and there is high probability of fugitive emissions.”

6 Ibid.

7 Cynthia Lulham, “Guidelines for New Development in Proximity to Railway Operations,” *The Federation of Canadian Municipalities and the Railway Association of Canada*, (Ottawa, May 2013): 77, https://www.proximityissues.ca/wp-content/uploads/2017/09/2013_05_29_Guidelines_NewDevelopment_E.pdf.

8 Ibid. 27.

9 Ibid. 38.

10 Dillon Consulting and Golder Associates, "Middlesex-Elgin Groundwater Study: Water Table," (2004), http://thamesriver.on.ca/wp-content/uploads/Groundwater/Middlesex-Elgin/Map_4_3.pdf.

11 Stamen Design, "Topographic map: London," <http://en-ca.topographic-map.com/places/London-423948/>.

Bibliography

- Andreae, Christopher. *The Industrial Heritage of London & Area*. London: Ontario Society for Industrial Archaeology, 1984.
- August, Martine. "Social Mix and Canadian Public Housing Redevelopment: Experiences in Toronto." *Canadian Journal of Urban Research* 17, no. 1 (2008): 82-100. <https://www.jstor.org/stable/26193206>.
- Bailey, Graham. "APPLICATION FOR BROWNFIELD INCENTIVES: BY: MCCORMICK VILLAGES INC.: 1156 DUNDAS STREET: MEETING ON APRIL 24, 2017." <https://www.london.ca/newsroom/Documents/1156DundasStreet.pdf>.
- Bednarek, Janet R. Daly. "Creating an "Image Center": Reimagining Omaha's Downtown and Riverfront, 1986-2003." In *After the Factory: Reinventing America's Industrial Small Cities*, edited by James J. Connolly, 87-114. Lanham: Lexington Books, 2010.
- Burgess, Ernest W., "The Growth of the City." In *The City*, edited by Robert E. Park, Ernest W. Burgess, and Roderick D. McKenzie, 47-62. Chicago and London: The University of Chicago Press, 1967.
- Canada Mortgage and Housing Corporation. "Seed Funding." Accessed September 5, 2018. <https://www.cmhc-schl.gc.ca/en/developing-and-renovating/funding-opportunities/seed-funding>.
- City of London. "CITY OF LONDON COMMUNITY IMPROVEMENT PLAN FOR BROWNFIELD INCENTIVES." Adopted by council February 20, 2006. <https://www.london.ca/business/Planning-Development/fees-incentives/Documents/Brownfield-CIP.pdf>.
- City of London. "Developing New Affordable Housing: HDC London." Accessed September 5, 2018. <https://www.london.ca/residents/Housing/Housing-Programs/Pages/ProposedHousingDevelopmentCorporationInitiative.aspx>.
- City of London. "London Green Incentives final report." February 27, 2012. https://www.london.ca/business/Planning-Development/current-topics/Documents/GreenMunicipalIncentives_feb27_12.pdf.
- City of London. "McCormick Area Secondary Plan 20.8." May 2017. <http://www.london.ca/business/Planning-Development/secondary-plans/Documents/McCormick-Area-Secondary-Plan-Amended-May-30-2017-web.pdf>.
- Cornell, Camilla. "Micro-manufacturing movement takes hold in Toronto." *Globe and Mail*, October 25, 2016. <https://www.theglobeandmail.com/report-on-business/small-business/sb-growth/micro-manufacturing-movement-takes-hold-in-toronto/article32438376/>.
- CTV London. "Heritage status an issue for potential McCormick investors?" *CTV London*, June 3, 2013. <http://london.ctvnews.ca/heritage-status-an-issue-for-potential-mccormick-investors-1.1309330>.

- D-6 Compatibility between Industrial Facilities under *Environmental Protection Act, RSO 1990, Section 14, Environmental Assessment Act, RSO 1990, Section 5(3), Planning Act, RSO 1990, Sections 2 (a) (b) (c) (f) (g) (h), 17(9), 22(3), 41(4) and 51(3), Condominium Act, RSO 1990, Section 50(3), Niagara Escarpment Planning & Development Act, RSO 1990, Section 9*. <https://www.ontario.ca/page/d-6-compatibility-between-industrial-facilities>.
- DeLind, Laura B. “Are local food and the local food movement taking us where we want to go? Or are we hitching our wagons to the wrong stars?” *Agriculture and Human Values* 28, no. 2, (June 2011): 273-283. <https://doi.org/10.1007/s10460-010-9263-0>.
- Desrochers, Pierre, and Hiroko Shimizu. *The Locavore’s Dilemma*. New York: Public Affairs, 2012.
- Eisinger, Angelus. “The Social Value of Transformation.” In *City as Loft: Adaptive Reuse as a Resource for Sustainable Urban Development*, edited by Martina Baum and Kees Christiaanse, 67-72. Zurich, Switzerland: gta Verlag, 2012.
- Ettler, Vojtěch. “Soil contamination near non-ferrous metal smelters: A review.” *Applied Geochemistry* 64, (2016): 56-74. <https://doi.org/10.1016/j.apgeochem.2015.09.020>.
- Goebel, Alison D., “Curing the Rust Belt?: Neoliberal Health Care, Class, and Race in Mansfield, Ohio.” In *After the Factory: Reinventing America’s Industrial Small Cities*, edited by James J. Connolly, 141-168. Lanham: Lexington Books, 2010.
- Golder Associates. *Heritage Impact Statement McCormicks Factory*. London: The City of London, 2015.
- Hayek, Michael, Godwin Arku, and Jason Gilliland. “Assessing London, Ontario’s brownfield redevelopment effort to promote urban intensification.” *Local Environment* 15, no. 4 (April 2010): 389-402.
- High, Steven. *Industrial Sunset: The Making of North America’s Rust Belt, 1969-1984*. Toronto, ON: University of Toronto Press, 2003.
- Housing Development Corporation London. “Home.” Accessed September 5, 2018. <https://www.hdclondon.ca/#welcome>.
- Hoyt, Homer. “Changing Concepts of Industrial Location.” In *According to Hoyt; fifty years of Homer Hoyt; articles on law, real estate cycle, economic base, sector theory, shopping centers, urban growth*. 236-239. Washington: Homer Hoyt Institute, 1966.
- Hoyt, Homer. “Theoretical Pattern of Distribution of Rent Areas in 30 American Cities.” In *According to Hoyt; fifty years of Homer Hoyt; articles on law, real estate cycle, economic base, sector theory, shopping centers, urban growth*. 585-587. Washington: Homer Hoyt Institute, 1966.
- Jackson, Lucinda. “Beyond clean-up of manufactured sites: remediation, restoration and renewal of habitat.” In *Manufactured Sites*, edited by Niall Kirkwood, 35-40. London and New York: Spon Press Taylor & Francis, 2001.

- Julien, Francois. *The Propensity of Things*. New York: Zone Books, 1995.
- Kennan, Kate, and Niall Kirkwood. *Phyto: Principles and resources for site remediation and landscape design*. London and New York: Routledge, 2015.
- LDM Brass. "Phased soil clean-up until 2036." About LDM. published 2008. <http://www.ldmbrass.com/en/news/2-0-0/13/news.htm>.
- Ley, David. "GENTRIFICATION IN RECESSION: SOCIAL CHANGE IN SIX CANADIAN INNER CITIES, 1981-1986." *Urban Geography* 13, no. 3 (1992): 237-238. <https://doi.org/10.2747/0272-3638.13.3.230>.
- Lulham, Cynthia. "Guidelines for New Development in Proximity to Railway Operations." *The Federation of Canadian Municipalities and the Railway Association of Canada*. (Ottawa, May 2013): 77. https://www.proximityissues.ca/wp-content/uploads/2017/09/2013_05_29_Guidelines_NewDevelopment_E.pdf.
- Mas-Verdú, Francisco, Domingo Ribeiro-Soriano, and Norat Roig-Tierno. "Firm survival: The role of incubators and business characteristics." *Journal of Business Research* 68 (2015): 793–796. <http://dx.doi.org/10.1016/j.jbusres.2014.11.030>.
- Massey, Doreen. "A Global Sense Of Place." *Marxism Today*, June (1991), 24-29.
- Ministry of Municipal Affairs and Housing. "Financing a brownfield project." Accessed September 5, 2018. <http://www.mah.gov.on.ca/Page223.aspx>.
- Ministry of Municipal Affairs and Housing. "Investment in Affordable Housing for Ontario (2014 Extension) Program Guidelines." Accessed September 5, 2018. <http://www.mah.gov.on.ca/AssetFactory.aspx?did=12338>.
- Murphy, Robert P., Jason Clemens, Joel Emes, and Niels Veldhuis. *Ontario vs. the US Rust Belt: Coping With a Changing Economic World*. Fraser Institute, 2015.
- O. Reg. 9/06: Criteria for Determining Cultural Heritage Value or Interest under *Ontario Heritage Act*. R.S.O. 1990, c. O.18. <https://www.ontario.ca/laws/regulation/060009>.
- Planners Action Team. *Re-establishing Value: a Plan for the Old East Village*. London: 2003.
- Reed, Diana. "Incubator Program: Factors in a Profile of Success." *Journal of Business & Entrepreneurship* 3, no.1 (March 1991): 61-71. ABI/INFORM Global.
- Rock, Steven. "Phytoremediation: integrating art and engineering through planting." In *Manufactured Sites*, edited by Niall Kirkwood, 52-58. London and New York: Spon Press Taylor & Francis, 2001.
- Save on Energy. "High Performance New Construction Initiative Overview." Accessed September 5, 2018. <https://saveonenergy.ca/Business/Program-Overviews/New-Construction.aspx>.

- SB Friedman Development Advisors. "CITY OF CHICAGO: Manufacturing Incubator Feasibility." (Chicago, 2014): https://www.cityofchicago.org/content/dam/city/depts/zlup/Planning_and_Policy/Publications/Chicago%20Industrial%20Corridors/Incubatory_Study_2014.pdf.
- Shaw, Kate. "Local limits to gentrification: Implications for a new urban policy." In *Gentrification in a Global Context*, edited by Rowland Atkinson and Gary Bridge, 172-188. London: Routledge, 2004.
- Smith, Neil. *The New Urban Frontier: Gentrification and the Revanchist City*. London: Routledge, 1996.
- Smith, Neil. *Uneven Development: Nature, Capital, and the Production of Space*. Athens: University of Georgia Press, 2008.
- Statistics Canada. 1971 Canadian Census Tables, Canadian Census Analyser @ CHASS. Accessed February 2, 2017. <http://dc2.chass.utoronto.ca.proxy.lib.uwaterloo.ca/census/>.
- Statistics Canada. 1991 Census of Canada Profile of Census Tracts - Part B, 1991 Census. Catalogue number 98F0172X in Statistics Canada [database online]. Ottawa, Ont., 1993. Accessed January 20, 2017. <https://www12.statcan.gc.ca/English/census91/data/profiles/Rp-eng.cfm?LANG=E&APATH=1&DETAIL=0&DIM=0&FL=A&FREE=0&GC=0&GID=0&GK=0&GRP=1&PID=234&PRID=0&PTYPE=56079&S=0&SHOWALL=0&SUB=0&Temporal=1991&THEME=113&VID=0&VNAMEE=&VNAMEF=>.
- Statistics Canada. 2011 Census of Canada Census Profile, 2011. Catalogue number 98-316-X2011001 in Statistics Canada [database online]. Ottawa, Ont., 2012. Accessed January 14, 2017. <https://www12.statcan.gc.ca/census-recensement/2011/dp-pd/prof/index.cfm?Lang=E>.
- Statistics Canada. 2016 Census of Canada Profile, 2016. Catalogue number 98-316-X2016001 in Statistics Canada [database online]. Ottawa, Ont., 2017. Accessed August 20, 2018]. <https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/index.cfm?Lang=E>.
- VIP Condos Toronto. "440 Dufferin Street Condos." <http://www.440dufferincondos.ca/>.
- Walks, Alan, and Martine August. "The Factors Inhibiting Gentrification in Areas with Little Non-market Housing: Policy Lessons from the Toronto Experience." *Urban Studies* 45, no 12. (2008), https://journals-scholarsportal-info.proxy.lib.uwaterloo.ca/pdf/00420980/v45i0012/2594_tfigiaplfite.xml.
- Western Archives, Western University, Ontario Fire Insurance Plan Collection, London Fire Insurance Plan 1912 Rev. 1922, https://www.lib.uwo.ca/madgic/projects/fips/london_fip_1922/index.html.
- Western Archives, Western University, Ontario Fire Insurance Plan Collection, London Fire Insurance Plan 1958, https://www.lib.uwo.ca/madgic/projects/fips/london_fip_1922/index.html.
- Windfinder. "Wind & weather statistics: London Airport." Accessed September 5, 2018, https://www.windfinder.com/windstatistics/london_airport.

Winter, Jesse. "Dufferin development threatens to scatter artist community." *Globe and Mail*, December 13, 2017. <https://www.theglobeandmail.com/news/toronto/toronto-development-threatens-to-scatter-artistcommunity/article37323583/>.

World Bank. World Development Indicators, Canada. Washington, DC. Accessed February 4, 2017. <https://data.worldbank.org/country/canada>.

Other Works Consulted

Banham, Reyner. *A Concrete Atlantis: U.S. Industrial Building and European Modern Architecture*. Cambridge, Massachusetts: MIT Press, 1986.

Bowles, Jonathan. "Zones of Contention." *City Limits* 25, no. 9 (2000): 21-25.

City of London and Evergreen. "London Urban Agriculture Strategy." November 2017. <https://www.london.ca/business/Planning-Development/current-topics/Documents/2017-Nov-UAS-Final.pdf>.

Dolan, Thomas. *Live-work Planning and Design Zero-commute Housing*. Hoboken: J. Wiley, 2012.

Douet, James, ed. *Industrial Heritage Re-tooled The TICCIH guide to Industrial Heritage Conservation*, Lancaster: Carnegie Publishing Ltd, 2012.

Frost, Greta. "Brownfield Impacts on Surrounding Property Values and Overall Economic Health of Cities." *neo Development and Finance Authority*, August 17, 2016. Accessed December 20, 2016. <http://neodfa.org/news/2016/08/17/economic-developmentwrpa-makes-case-brownfield-cleanup-funds/>.

Gibson-Graham, J.K, Jenny Cameron, and Stephen Healy. *Take Back the Economy: An Ethical Guide for Transforming Our Communities*. Minneapolis: University of Minnesota Press, 2013.

Glendinning, Miles. *The Conservation Movement: A History of Architectural Preservation: Antiquity to Modernity*. New York: Routledge, 2013.

Hollander, Justin B., Niall Kirkwood, and Julia L. Gold. *Principles of Brownfield Regeneration: Cleanup, Design, and Reuse of Derelict Land*. Washington: Island Press, 2010.

Holliss, Francis. *Beyond Live/Work: The architecture of home based work*. New York: Routledge, 2015.

International Council on Monuments and Sites (ICOMOS). "Joint ICOMOS–TICCIH Principles for the Conservation of Industrial Heritage Sites, Structures, Areas and Landscapes. The Dublin Principles." 2011. http://ticcih.org/wp-content/uploads/2013/10/GA2011_ICOMOS_TICCIH_joint_principles_EN_FR_final_20120110.pdf

Kirkwood, Niall. *Manufactured Sites: Rethinking the Post-industrial Landscape*. London: Taylor and Francis, 2011.

Morrison, Hunter. "Lessons Learned From a Shrinking City: Youngstown 2010 and Beyond." In *Formerly Urban: Projecting Rust Belt Futures*, edited by Julia Czerniak, 70-89. New York, New York: Princeton Architectural Press, 2013.

- Nassauer, Joan Iverson. "Messy Ecosystems, Orderly Frames." *Landscape Journal* 14, no. 2 (1995): 161-70. doi:10.3368/lj.14.2.161.
- Productive Fabric Service of the Local Economic Development Area of Barcelona Provincial Council. "Vivarivm: Criteria for the Planning, Programming, Design and Construction of Business Incubators, Business Centres and Executive Suites." Barcelona: 2015. <http://www1.diba.cat/llibreria/pdf/55501.pdf>.
- Slater, Tom. "Gentrification in Canada's Cities: From Social Mix to 'Social Tectonics'." In *Gentrification in a Global Context: The New Urban Colonialism*, edited by Atkinson, Rowland and Gary Bridge, 40-57. New York, New York: Routledge, 2005.
- Smart Growth America. "Made in Place: Small scale manufacturing and neighbourhood revitalization." 2017. <https://smartgrowthamerica.org/resources/made-in-place/>.
- Stubbs, John H. *Time Honored: A Global View of Architectural Conservation*. Hoboken, New Jersey: John Wiley & Sons, 2009.
- The International Committee for the Conservation of the Industrial Heritage (TICCIH). "The Nizhny Tagil Charter for the Industrial Heritage." 2003. <http://ticcih.org/about/charter>.
- Viñas, Salvador Muñoz. *Contemporary Theory of Conservation*. Oxford: Elsevier Butterworth-Heinemann, 2005.
- Wang, Jun. "Preserving Social Capital in Urban Regeneration." In *City as Loft: Adaptive Reuse as a Resource for Sustainable Urban Development*, edited by Martina Baum and Kees Christiaanse, 73-78, Zurich, Switzerland: gta Verlag, 2012.
- Wolf-Powers, Laura. "Twilight zoning." *City Limits* 28, no. 10 (2003): 39-40.
- Wolf-Powers, Laura. "Up-Zoning New York City's Mixed-Use Neighbourhoods: Property-Led Economic Development and the Anatomy of a Planning Dilemma." *Journal of Planning Education and Research* 24, (2005): 379-393.

