**MANUFACTURING ‘HOME’:
SUSTAINABILITY DISCOURSES IN SUBURBAN OTTAWA**

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**A dissertation submitted to the Faculty of Graduate and Postdoctoral
Affairs in partial fulfillment of the requirements
for the degree of
Doctor of Philosophy**

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ABSTRACT

The research explores the suburban tract development industry and sustainability over time in the City of Ottawa, Canada. After establishing the historical, economic, spatial and environmental context of suburban development in Ottawa, the focus shifts to City officials involved with sustainability efforts and several residential developers deemed to be 'green' or progressive. The research used public documents, interviews and a case study to compile and compare discourses about sustainable urban development. The interview portion of the research mainly involved asking City officials and development industry officials how they defined 'sustainable development' and 'green building', and what they thought were barriers to those processes. The main assumption underlying the research was that a common discourse is necessary for public and private bodies to work together towards curtailing low-density suburban development.

The research found that two terms, "green building" and "sustainable development," are employed differently by public and private interests on the outskirts of Ottawa. The research demonstrated that a powerful development lobby in the Ottawa region resists attempts to regulate suburban development with a discourse that is devoid of reference to environmental issues. The dissertation argues that the growth lobby in Ottawa is integrated into a global growth regime that does not account for the full environmental consequences of current production and consumption practices. A conceptual tool, *homeology*, is found to be useful for exploring the full range of impacts of residential development.

In the case study of Minto Communities Inc., the research found that despite questionable claims, Minto as a company is in fact progressive with regards to certain green building initiatives. However, Minto also operates within an industry that is strongly resistant to both change and government regulation. At the same time that Minto publicly offers a simplified sustainability discourse, the company actively lobbies for low density ex-urban residential development. The dissertation concludes that suburban development is embedded in neoliberal political economy in Canada and abroad. The tract or production residential development industry depends on cheap labour and land, and discursively separates homes from global ecology, to continue unsustainable practices.

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Finally, acquiring a Ph.D is a long, arduous process. It has also been arduous for those closest to my heart. This dissertation is for you, Irene, because every day you teach me home.

The two most important words in the English language are "I'm staying".

- David Suzuki

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LIST OF ACRONYMS

CHBA	Canadian Home Builders' Association
CMHC	Canada Mortgage and Housing Corporation
GHG	Greenhouse gas
GOHBA	Greater Ottawa Home Builders' Association
IAQ	Indoor air quality
LDSRD	Low density suburban residential development
LEED H	Leadership in Energy and Environmental Design for Homes
LEED ND	Leadership in Energy and Environmental Design for Neighborhood Design
NCC	National Capital Commission
NRCan	Natural Resources Canada
NRC	National Research Council
OHBA	Ontario Home Builders' Association

INTRODUCTION TO THE DISSERTATION

This dissertation examines the suburban residential tract development industry and sustainability in the City of Ottawa, Canada. A large number of significant socioecological moments and processes combined during the project to make it relevant. The main moment was, as a City policymaker in the research interviews called it, “the collision of private and public interests” as exemplified in debates about global warming. In 2008, a Conservative government was elected in Canada, and global attention soon became focused on subsequent Canadian environmental and energy policies which increasingly de-emphasized environmental protection and privileged the fossil fuel industry (and especially the Alberta tar sands). Simultaneously, a series of oil spills punctuated numerous warnings from the international earth sciences community that climate change linked to the burning of fossil fuels was endangering human life. Scientific warnings were compelling a global movement by cities towards green urbanism. But at the start of the study, Ottawa was well behind most other major Canadian cities, and well behind most of Europe and Scandinavia, in terms of limiting carbon production and preparing for climate change. Further, at the start of the study in 2008, an economic downturn spurred mainly by flawed economic policies in the United States, which had been based on high-risk residential mortgages, apparently refocused North American public attention away from environmental issues and towards short-term economic salvage. Impacts of the American mortgage finance crisis spilled into every region of the globe.

In Ottawa during the four years of this study, global concerns about environmental issues were reflected in a municipal planning exercise called *Choosing*

Our Future which was intended to provide the City with a comprehensive, 100-year sustainability plan. *Choosing Our Future* extended the horizons and deepened commitments to sustainability planning in other City of Ottawa policy documents. Regardless, sustainability planning was applied in Ottawa in patchwork fashion, especially with regards to low density suburban residential development (LDSRD) which is the focus of this dissertation. At the start of the research, Ottawa had elected a new mayor, ex-Minister of Municipal Affairs for Ontario Jim Watson, who immediately waded into the urban boundary debate, publicly demanding that developers refrain from pushing development into the farmland outside of Ottawa's greenbelt. Watson's main argument was that the Municipality could no longer afford to service new LDSRD. Watson was presumably also informed by research which demonstrated the significant environmental costs of car commuting, but this rarely came up in the public discourse, and *Choosing Our Future* was released quietly to Council with no dollar or staff resources for implementation.

At the same time that three levels of government in Canada were sending out inconsistent messages about environmental stewardship, numerous for-profit corporations were publicizing their "corporate social responsibility", which often included various commitments to environmental issues. Minto Communities Inc., one of the largest mass-production housing builders in Ottawa, publicly claimed to have been a "green builder for 50 years" while simultaneously building conventional detached houses on large lots by the thousands in suburban Ottawa over that half-century. Minto was the only tract developer that marketed their products with "green" terminology and imagery throughout the period of this research. They were an obvious subject for a case study. All of the

above moments in late western capitalism comprise the context into which the research in this dissertation was situated.

My interest in the topic arose during many years in the residential construction industry. I started a summer job as a landscape labourer for a tract builder in the mid-1980s and ended in 2008 after 10 years as a residential contractor in the Ottawa region. During that period, in between two university degrees, I studied green building extensively and grew increasingly concerned with climate change along with more immediate concerns of waste in the industry and the pace at which houses were built. As a renovation contractor, I eventually grew intensely disillusioned and confused by construction mistakes and the resulting damage that I was repeatedly called upon to fix. I returned to school to better understand why Canadian builders construct houses as we do. However, after comments from my committee on my research proposal, my initial interest in the local building industry eventually morphed into a larger-scale study of the capitalist political economy that drives the industry. Throughout the process of establishing a research plan, my guiding assumption was that we could be building much more environmentally benign houses in Canada.

The dissertation is structured as follows. The first chapter establishes the detailed temporal and spatial context of the residential development industry in Ottawa, tracing in particular the rise of production builders shortly after World War II and the shift from small-scale craft builders to the Fordist model of land development and mass-production of housing on ex-urban farmland. Chapter 1 closes with a discussion of housing ecology and impacts of now-conventional low-density suburban residential development.

Chapter 2 identifies the conceptual framework constructed to guide the research. The chapter begins with marxist and neomarxist theories of the interactions of capitalist social form and the non-human world, outlines elements of discourse analysis and critical human geography, and ends with a description of *homecology*, a conceptual tool for exploring houses and homes within global metabolism.

Chapter 3 identifies the methodology used in the research. After establishing the researcher's positionality, the chapter identifies means by which residential development and developers were investigated. The research used public documents, interviews and a case study to compile and compare discourses about sustainable urban development. The interview portion of the research mainly involved City officials and development industry officials who were deemed progressive in terms of their stances on sustainability. The interviews asked these actors how they defined 'sustainable development' and 'green building', and what they thought were barriers to those processes. The main assumption underlying the research was that a common discourse is necessary for public and private bodies to work together towards curtailing the negative environmental impacts of low-density suburban development. Another assumption was that discourses might be compared with actual material outcomes (e.g. construction practices) to illuminate the veracity of those discourses.

Chapter 4 of the dissertation presents the results of the investigation beginning with detailed presentation and analysis of the interviews. The interview analysis is organized according to the themes around which standardized questions had been constructed, namely definitions of and barriers to sustainability and green building, and drivers of change in residential development in Ottawa. The chapter then offers a case

study of a residential development in Manotick, one of the villages within the amalgamated City of Ottawa. The case study provides some history of Minto Communities Inc., and describes how they maneuvered local and provincial regulations to double the size of the village, in part by marketing various representations of nature and green building. The chapter closes with a detailed summary of issues raised in the interviews and case study as they pertain to planning for current environmental realities in Ottawa.

Chapter 5 of the dissertation reflects on theoretical tensions in the previous chapters and discusses the methodological advantages of combining structuralist and post-structuralist critical geographical approaches to the study of urban form. Chapter 6 concludes the dissertation with policy implications, directions for future research and the overall contributions of the work to the discipline of urban geography.

CHAPTER 1. CONTEXT OF THE RESEARCH: SUBURBAN DEVELOPMENT IN OTTAWA, ONTARIO

1.1: Introduction

Chapter 1 of this doctoral dissertation establishes the general and specific contexts for the research by examining the social, spatial and temporal context of the residential development industry in Ottawa, Ontario. Chapter 1 explores the growth of Ottawa in relation to residential development in other industrialized countries during the same period to establish precedents for the current form of periurban development in the National Capital Region. Section 1.1 examines Garden City planning and its influence on urban form on both sides of the Atlantic after the rapid acceleration of suburban development starting around 1900, when a massive fire swept large parts of Ottawa off the map and led to rapid rebuilding, especially in Ottawa's core. Section 1.2 describes conditions in Ottawa before and during the Second World War, and the plan for the National Capital Region written by French architect Jacques Gréber, focusing especially on the impacts of transportation technology on Ottawa's urban form. Section 1.3 introduces the influences of urban reformers and planners on urban form in Canada, and, in particular, the writing and efforts of Humphrey Carver and the Canada Mortgage and Housing Corporation in the late 1940s and 1950s. The section on reformers is followed by Sections 1.4 and 1.5 which describe changes in the way periurban housing developments were built after the Second World War, first in North America generally, and then in Ottawa specifically. Section 1.6 introduces the ecological implications of urban form especially with regards to development on the edges of cities. Section 1.7

further narrows the discussion to sustainable development public policy debates which involve both the City of Ottawa and regional developers.

The purposes of Chapter 1 are first, to indicate many of the complex factors that led to what is now often referred to as “urban sprawl”, and second, to explore the political ecology of Ottawa’s suburban development up to and including current debates about fiscal and ecological challenges presented by suburbs in an amalgamated Ottawa.

Periurban development in Ottawa is not simply a result of “misguided planning” but, rather, more than 100 years of various influences including conditions created by rapid global industrialization, urban reform movements in the United Kingdom and elsewhere, the introduction of streetcars and then automobiles, mortgage lending practices, the profits to be made from land speculation, the physical geography of the Ottawa Valley, and the impacts of regulations from three levels of government. But debates about development on the outskirts of Ottawa seem to be growing more rancorous as the City tries to reign in new greenfield building and promote intensification inside the inner border of the Greenbelt. Beginning in Section 1.2, historical analysis provides clues as to why developers and suburban housing consumers either ignore or actively resist the City’s attempts to slow periurban expansion.

1.2: Garden Cities and commuting in England and North America

The social and physical geography of Ottawa’s suburbs can be traced directly to changes in urban form wrought globally by industrialization, advances in transportation, and various normative visions of what cities “should” look like. The following genealogy of Ottawa periurban development begins in England with Garden Cities and then discusses the evolution of garden suburbs, streetcar suburbs and auto suburbs as cities quickly

expanded after the Second World War. Hayden (2003) points out that houses built outside of cities on garden-like lots actually date back to the early 19th Century, but this discussion arbitrarily begins around the time of Ottawa's Great Fire of 1900.

In the latter half of the nineteenth century many cities in both England and North America were crumbling and congested, the result of decades of rapid and poorly planned industrial growth. Decaying buildings, outdated infrastructure, and urban in-migration resulted in squalid living conditions for the new working class that often consisted of overcrowded, cramped living and sleeping quarters and insufficient sanitation, often in urban areas that social critics had derogatorily labeled "slums" (Fishman, 1982, Hall, 2002). At the turn of the twentieth century in England, urban reformer Ebenezer Howard proposed the Garden City and urban growth into the sacrosanct English countryside as a solution to urban decay and poverty. Garden City planning originated in satellite towns that were linked by railroad to industrial centres like London and Birmingham. Howard's Garden Cities were to involve social planning as well as urban planning: in Howard's vision, the new small cities would mix middle class families and poor families subsidized by private donor-investors. The families would live in a self-supporting community that included dwellings, parks, commerce, industry and farming. Howard's Garden City was novel for another important reason: as the town was built and property values increased, growing real (as in real estate) equity was to be re-invested into a common pool that supported everyone in the community (Howard, 2003). Howard promoted a carefully, intentionally planned antidote to industrial cities, a utopian society independent from but linked by rail to the city. The vision appealed to middle class urbanites who wanted out of decaying cities, to urban politicians (especially in London) who sought solutions to the

rapid growth and concentration of poverty, to social reformers who complained of disease and ‘immorality’ in the inner city industrial workers’ ‘slums’, and to industrialist philanthropists (including chocolatiers Cadbury and Rowntree, and the soap-maker Lever) who saw the business and social benefits of rural company towns for their employees (Fishman, 1982).

The extent of social engineering in Howard’s planning is illustrated by the design for Letchworth Garden City, a community near London, England planned by architects Barry Parker and Raymond Unwin around 1904 (see **Map 1.1: Plan of Letchworth Garden City** below). Fishman (1982:74) notes that the Letchworth plan was “...pragmatic, democratic, [and] responsive to the needs of the people it served” and that “...there was a real sense of individual well-being and community solidarity” and “organic unity.” Such assets resulted in part from striving for social equity, and in part from spatial design: the community was designed to be compact and mixed use, with walkable residential, employment and shopping development planned into Letchworth from the outset, and the city was surrounded by a green belt to set firm boundaries and provide food. But Fishman (1982) also asserts that three things doomed the Garden City as an alternative social movement: the magnitude of inequality at the time; the relentless growth of cities; and the fact that there were not enough private (industrialist and/or philanthropist) backers for affordable working class housing. Howard was attempting to create an innovative spatial and social solution to substandard living conditions and poverty that were a direct result of industrialization. But few industrialists could be enticed to alter the spaces of poverty in cities. Regardless, the spatial model of the garden city – an ex-urban, self-contained settlement linked by rail and road to a major urban

centre - has been used repeatedly in England over the past century as an antidote to urban sprawl. The settlements are more commonly known as “new towns”.

Other solutions to growth were implemented for better or worse. An off-shoot of the Garden City soon followed Letchworth: Hampstead Garden Suburb (see **Map 1.2: Hampstead Garden Suburb, London** below), also planned by Parker and Unwin, was a periurban development designed to mix social classes in a quiet, clean, low-density and park-like setting, but without mixed uses. Hampstead was also designed to be accessed by automobile as well as by rail. In other words, Hampstead Garden Suburb was not designed to be self-supporting like garden cities, and it was built on the urban fringe.

Garden City and garden suburb planning continued to influence urban planning in both the United Kingdom and North America. However, rail, and then electric rail, along with new opportunities for developers, altered the vision. Howard intended to link Garden Cities to London by steam railways which were being expanded by private railway companies in the latter half of the nineteenth century. Railways created havoc in city centres (Hall, 2002) but, once linked to the existing London subway system, rail gave commuters easy access to inner city jobs from new suburbs on the periphery of the city. Until this time rail lines had been primarily patronized by the upper classes venturing from satellite cities to London on business, shopping or cultural excursions, but at the end of the 19th century they were increasingly frequented by white and blue collar workers lured by subsidized fares and reasonable rents in the railway suburbs. In England, this was significant because it began a clear demarcation between work and home for many people, and it was the start of an exodus to the suburbs by both working and middle classes. But the trains had drawbacks: they disrupted city centre traffic; they spewed

choking clouds of coal-fired soot (especially in the subway); and they took a long time to stop to let passengers on and off. New technology was, once again, about to change the way cities grew.

Tracks and horse-drawn trams were built in the nineteenth century in response to city centre traffic woes. Near the turn of the century electric trams began replacing horse-drawn trams in both the United Kingdom and North America. Early in the twentieth century American investors saw an enticing solution to congestion in this technology: the new electric trams facilitated more stops and more flexible commuting (Hall, 2002). Developers capitalized on the technology by purchasing farmland on the outskirts of many cities, building electric trams, or streetcar lines, then selling property along the lines to speculative builders (Elliot, 1991; Hayden, 2003). Cities were quick to service these new *streetcar suburbs* in attempts to alleviate urban congestion and increase the tax base. Urban professionals in England and America fled the inner city in streetcars. The American middle class followed suit, and suburbs began to spread. Howard's Garden City planning evolved into more flexible and concentrated transit-based development on the periphery (Hall, 2002).

It is noteworthy to contrast streetcar suburbs with garden suburbs such as Hampstead Garden that preceded them. All were intended as solutions to awful conditions in inner cities around 1900 but were influenced by completely different visions. Hampstead had been planned for social heterogeneity and natural green spaces and gardens where residents of various classes could mingle. Garden suburbs eventually lost the social engineering elements of Garden City planning but retained central park areas, traffic flow designs that restricted traffic to residents, houses close to the street for

an appealing streetscape, and mixed single-family and multi-family dwellings that encouraged diversity. Although lacking the rural elements and the deliberate social engineering of Garden Cities, garden suburbs were built using similar serpentine street plans and park allocations, and respect for natural features like landscape contours and watercourses, but on the edge of the city. In comparison, streetcar suburbs were also built extending from the outskirts, but they were built on a pragmatic grid: streetcar tracks were laid out usually along straight lines that were determined by how far people could be expected to walk to and from their houses on the perpendicular side streets (see **Table 1.1: Comparison of structure and characteristics of garden cities, streetcar suburbs and garden suburbs** for a comparison of garden city, garden suburb and streetcar suburb archetypes). Until the end of the war suburban expansion was accommodated mainly by private developers who used the streetcar to carry house buyers to new developments just beyond the city. The vision for a carefully planned city intended to reconstruct society at the same time that it reconstructed space had vanished in the rush to meet demand for housing as working and middle class urbanites rode trams to new houses on spacious lots in cleaner, safer and quieter suburbs¹.

Transit and then automobiles had enormous impacts on urban form in North America in the second half of the twentieth century (Hayden, 2003). The following section focuses more closely on Canadian urban form and, in particular, the development of Ottawa after World War II.

¹ While patterns of growth in American and Canadian cities were similar, Goldberg and Mercer (1986) remark that in the Twentieth Century Canadians lived in denser cities, lived closer to work, and relied on cars less and public transit more than American city dwellers. They also note that Canadian inner cities did not suffer the same social and physical declines as American cities during economic globalization.

Table 1.1: Comparison of structure and characteristics of garden cities, streetcar suburbs and garden suburbs

	LOCATION/ PROXIMITY TO CITY	SOCIAL CHARACTERISTICS	URBAN FORM	TRANSIT FORM
Garden Cities	Completely separated	Mixed SES	Walkable, compact, mixed use	Train to & from city and walking
Streetcar suburbs	Periurban transitional	Working class trending to middle class	Compact Perpendicular Grid Mixed use	Streetcar and walking
Garden suburbs	Periurban	Middle class	Single use residential	Dependent upon automobile travel

Map 1.1: Plan of Letchworth Garden City

Source: [Urban Design Theory Seminar Web Page, University of Texas.](http://www.lib.umd.edu/NTL/gardencities.html)
<http://www.lib.umd.edu/NTL/gardencities.html>
 (no longer accessible – March 2013)

Map 1.2: Hampstead Garden Suburb, London (1911 Plan by Parker and Unwin)

Source: downloaded October 13, 2011, at <http://www.hgstrust.org/maps/1911map.html>

1.3: Ottawa, Jacques Gréber and the City Beautiful

Through the first half of the 20th century, Ottawa was similar to other industrialized western cities: the core of the city was a mix of heavy industry, lumber mills, office buildings, the Rideau Canal (which at the time was flanked by industry and train tracks), and train yards, all mixed with housing for industrial workers and public servants. Planners and reformers alike described much of the downtown area as “blight”. The situation in Ottawa was compounded by the fact that the core had been leveled in a massive fire in 1900, and subsequent re-building was haphazard. The influx of bureaucrats necessitated by World War II, many of them housed in quickly built wooden office structures, further complicated the organization of the core (Gordon, 2001). Shortly after World War II, then Prime Minister Mackenzie King, who reportedly favored an approach to city planning that incorporated social planning (Gordon, 2002)², hired prominent French architect Jacques Gréber to create a plan of Ottawa that reflected Mackenzie King’s (re)vision of the Canadian capital city and devise the first comprehensive regional plan for the larger national capital region (subsequently referred to as the “Gréber Plan”). In his 1950 final report, Gréber was very critical of the lack of foresight that led to the proximity of industrial and residential developments, and to the havoc wreaked by railroads that had been built mainly to service the lumber industry. Gréber (1950) wrote that no fewer than six railway companies had built tracks into industries in downtown Ottawa with no thought given to sharing tracks, and that there existed more than 150 level crossings and 100 streets which came to dead ends at

² Gordon (2002: 99-100) states that Mackenzie King was also a supporter of Garden City and garden suburb planning, and spoke very favourably of Hampstead Garden Suburb after a 1908 visit.

railways. Gréber stated that, in 1948, the railways (rather than planning) were dictating both housing and industrial development in the city (Gréber, 1950). Photos in Gréber's report (see Figures 1.1 through 1.4, below³) illustrated both conditions in Ottawa's core as well as Gréber's definition of 'blight', which included:

...crowded households, low rentals, doubled-up families and dwelling accommodations of subnormal standards and conveniences. Further, such conditions invariably occur within areas of low land and building values, traceable in almost every instance to such factors as the proximity of railroad lines and yards, industry and certain types of commercial nuisance, and to the development of lands initially unsuited for housing (ibid. p. 68).

Regardless of the conditions that resulted in the predominance of substandard dwellings in Ottawa's core (such as negligent industrial development) and regardless that the dwellings were in established neighborhoods, Gréber wrote that 'blight' was unbecoming for a capital city. His solution was City Beautiful planning, which was intended to simultaneously solve a number of persistent, large scale urban planning problems: large building projects enabled infrastructure renewal; railways reconstructed their right-of-ways to improve traffic flows; cities created new green spaces; and the new plan was widely considered a dramatic functional and visual improvement over the poorly planned city that it replaced. Gréber pulled a number of resources together for the Ottawa plan including previous plans, Mackenzie King's vision, and his own experiences which included 'urban renewal' projects for Vichy France (Picton, 2010). Gréber's first task was to anticipate the area required by the future population, draw borders for the National Capital Region, and fix those borders with a Greenbelt like that surrounding Howard's Garden City. Next, Gréber recommended moving most of the rail lines and terminals out

³ **Figures 1 through 4** downloaded October 13, 2011 from various sections of the Gréber Plan on line at <https://qshare.queensu.ca/Users01/gordond/planningcanadascapital/greber1950/housing.htm>

of the core, pushing both out to suburban areas and clearing space for office buildings, monuments and vistas, parks and parkways. Gréber then recommended that ‘blighted’ areas be razed after the industries were moved into areas zoned for them, and after neighborhoods were re-located into garden suburbs in periurban areas and garden cities in exurban areas (Gréber, 1950)⁴. Main recommendations in the Gréber Plan are included as

Table 1.2. Major recommendations in the 1950 Gréber Plan (below).

Table 1.2. Major recommendations in the 1950 Gréber Plan (Adapted from Gréber, 1950 and Gordon, 2001)

1	Re-define and plan the National Capital as an integrated region (rather than just a city);
2	Identify transportation corridors and promote both transit and automobile use;
3	Decentralize government offices;
4	Define scenic parkways and then clear industry and rail from the areas;
5	Promote recreation uses for a restored waterfront;
6	Design parts of the Capital to reflect and/or reinforce the values of Canadians mainly through monuments and monumental architecture;
7	Define the Greenbelt and identify its purposes, namely halting sprawl, providing land for large government office campuses and preserving natural spaces around the city; and,
8	Expand Gatineau Park through expropriation and promote as a natural heritage and recreation space

The Gréber Plan incorporated elements of City Beautiful and Corbusier’s towers in the park, both of which coincided with and contributed to modernist architectural and planning movements around the world at the same time. Gréber’s enthusiasm for dispersion and transit is evident in his plans for highways and also in his evaluation of private streetcar service in Ottawa in 1948:

⁴ As in numerous ‘urban renewal’ projects in North America at the time, many poor and working class families were forced from their homes by expropriation. The story of le Breton Flats exemplifies the influence of monumental city planning on urban social fabric. See Jenkins (2008) for a poignant history of “the Flats”.

There are, today, no less than twelve individual transportation companies serving the National Capital Region (This survey was completed in 1948). In addition, there is one railway company serving commuters from the western Gatineau River front... These companies enjoy a thriving existence due to the construction of groups of homes and industrial establishments. The prodigious growth of public transportation is indicated by the fact that thirty years ago the cities of Ottawa and Hull were served by but one electric railway (Gréber, 1950: 86).

As transit became more affordable, commuting became more appealing, especially for blue collar and government workers afflicted by air, water and noise pollution downtown. By mid-century streetcars, trolleys and buses enabled commuting to downtown jobs from growing suburbs in the Glebe, Hintonburg, Westboro, Britannia, New Edinburgh, Rockcliffe, and Aylmer (see **Figure 1.5: Distribution of street cars and buses, Ottawa, 1948** below). Automobiles also figured prominently in the Gréber Plan: Gréber replaced railways with “parkways” and “driveways” along the Ottawa River and the Rideau Canal, and he planned new bridges and highways to carry a dramatic increase in new automobiles on Ottawa roads.

Officials at the City of Ottawa expressed mixed views about the Gréber Plan. While the Plan was intended to accomplish the City’s transition from an industrial and lumber town to a national capital, it required extensive expropriations, especially for the Green belt, which were in many cases contested. There has been a unique and sometimes tense relationship between national, provincial and civic interests in land planning in Ottawa. In 1949 and 1950, at the same time that the Gréber Plan was released, Ottawa Mayor E.A. Bourque was apparently publicly in favour of Gréber’s work with the Federal District Commission (predecessor to the National Capital Commission) to beautify Ottawa as long as the full costs were not borne by Ottawa taxpayers. At the same time, Bourque annexed thousands of acres of land in Nepean and Gloucester for the City.

The annexation was accomplished with the blessing of the Ministry of Municipal Affairs, the provincial body mandated with regulating municipal planning, but the two municipalities were by no means uniformly in favour and argued the annexation loudly and publicly (Elliot, 1991). Bourque was followed by Mayor Charlotte Whitton, who then sympathized and assisted with the new federal plans for the national capital by expediting the annexation that Bourque had started, and by arguing for ‘slum clearance’ (Mullington, 2011: 230). However, relations between the City and the federal government in Ottawa at times grew acrimonious as well. For example, in 1964 Mayor Whitton was apparently very critical of a perceived effort by the NCC and Canada Mortgage and Housing Corporation to influence a provincial planning study of development beyond Ottawa’s greenbelt (Citizen, 1964). The issues mentioned were, and continue to be, complicated by the fact that the federal government is the single largest property owner in the National Capital Region. It seems that federal, provincial and City governments do not always share the same priorities, especially when those priorities involve erasing history to create a modernist national capital, and managing urban growth in an amalgamated city that is now bisected by the NCC Greenbelt.

Figures 1.1 and 1.2: Illustrations 59 and 60 of the Gréber Plan entitled “Railway and industrial installations within the central area of the capital, between Wellington and Somerset streets: Views taken from Somerset Street Viaduct”

Figures 1.3 and 1.4: Illustrations 43 and 44 from the Gréber Plan entitled “Blighted houses, these regrettable conditions do not arise from poverty, but from lack of foresight and regulation resulting in blight and misuse in the development of land”

Figure 1.5: Distribution of street cars and buses, Ottawa, 1948, Plate XIV of the Gréber Plan

Shortly after Gréber submitted his 1950 final report, the federal government began creative destruction in earnest in Ottawa, leveling areas deemed to be ‘blighted’, removing railway tracks from the core and building the Colonel By and Queen Elizabeth Driveways, erasing the neighborhood of le Breton Flats, and clearing numerous buildings that ‘interfered’ with views of monuments or Parliament Hill, all with the intention of creating an orderly and less noxious core. With regards to the Greenbelt, the Ottawa Valley had largely been cleared for lumber and farming in the 19th century, making

expropriation of large farm properties fairly straightforward as federal government lawyers dealt summarily with relatively few and relatively powerless farmers (Elliot, 1991). In the 1950s new subdivisions quickly spread to the new urban boundary created by the Greenbelt on expropriated farmland that was flat, cleared, drained, and devalued. Many of the new suburban developments were accessible by buses and streetcars, and all were easily accessible in new automobiles, another industry that spurred the post-war economy, on new highways, such as Highways 15, 16 and 17 in or near Ottawa. The City quickly approved corporate developments on the outskirts, making them appealing to investors. Many peripheral municipalities welcomed the infrastructure improvements and services, as well as the increased tax base that followed development. The Gréber Plan clearly reflected broader trends in North America as cities bolstered post-war economies with orderly modernist urban developments featuring towers and monuments in parks à la le Courbusier.

Rapid suburban growth soon required intervention by the state. Many of the regulatory changes that affected urban form after the war were the result of conditions in Canadian city cores as well as an emerging state policy rationale that favored controlled growth of orderly cities. Social reformers also had a marked impact by creating a discourse about urban development that incorporated Canadian identity and the needs of Canadian workers and their families within a burgeoning, consumer-driven market economy (see next section). Reformers sought to mitigate perceived urban social ills, often by arguing for new development completely removed from industrialized or 'blighted' areas of the city. As it turns out, reformers worked in concert with the relatively new (in Canada) profession of urban planning, and many of the reformers were

in fact architects who re-established urban planning as a profession in Canada after World War II. The following section details the arguments of one influential reformer, Humphrey Carver, in attempts to solve the Canadian housing crisis. Eloquently articulated concerns about the qualities and purposes of Canadian homes played a key role in creating the suburbs as they now exist in Canada.

1.4: Social reform and housing for “Mr. Canada”

As in England and the United States, the Garden City and garden suburb movements had significant impacts on urban form in Canada, and streetcars also played a role in determining residential development in most Canadian cities. Starting in the mid-1930s, other social, economic and political processes impacted the structure of Canadian cities. The 1934 Bruce Report on the state of housing in Toronto (Bruce, 1934) echoed concerns that social critics had levied against industrial cities since the end of the nineteenth century on both sides of the Atlantic. Bruce argued that overcrowding could only be cured through relocation of the poor, and then through massive ‘slum clearance’ and private house-building projects employing welfare recipients (Bruce, 1934). But building had ceased during the Great Depression and little changed during the war years as Canadian industrial workers flocked to the cities to supply Allied war efforts.

Early in the 20th century, many working-class Canadians built their own houses – often with the help of friends, family and neighbours – on the outskirts of cities where there were fewer taxes and building regulations (Harris, 1996, Sewell, 2009). But property taxes inevitably rose as the new houses became engulfed by urban growth, and taxes often became more than these self-builders could afford as cities brought services and transit into the new neighborhoods (Harris, 1996). The new suburban homeowners

met rising costs by taking on lodgers. This alarmed the reformers who argued that crowding undermined the foundations of society (Carver, 1948).

Soloman (2007) notes that vocal social critics consistently contributed to sustained public attention on chronic overcrowding. Reformers demanded spacious, planned modern neighborhoods of single-family homes in distinct suburbs – separated from industrial zones – as a remedy for what they considered the unruly chaos spreading from the city. Inspired by Garden Cities and garden suburbs, reformers pushed for larger lots and larger homes, and they also protested unregulated and largely self-built small houses on the periphery. Both actions raised the price of housing: do-it-yourself builders built houses on small lots for a fraction of the cost charged by tract builders. Soloman (2007) notes that, in 1918, the City of Toronto demanded from the Province of Ontario regional planning legislation which eventually dictated that new subdivisions within five miles of a city first acquire public approval (see also Elliot, 1991: 205). The federal government stepped in with conservation and health regulations intended to protect the environment and the poor respectively. The new laws were a boon for developers: they also discouraged self-built houses. These actions by reformers and three levels of government exemplified the increasing state control of development on the urban fringe, and may be the origins of corporate suburban planning in Canada.

Perhaps the best-known Canadian urban reformers were Humphrey Carver and his colleagues in the social work and architecture departments at the University of Toronto⁵ who pointed to falling birth rates, alcoholism, prostitution, juvenile

⁵ Carver is the best known of a group of socialist housing critics at the University of Toronto, who, at this time, would have included Eric Arthur, Anthony Adamson, Harry Cassidy and Albert Rose. See Carver

delinquency, disease and a host of other social ills bred in cramped city cores (see Fliess, 1947; Elliot, 1991). Demand for housing peaked after World War II. The post-war reformers' messages were persistent echoes of old warnings: crowding and poverty were detrimental to Canadians' public interest.

Before the period in question, architects, engineers and politicians mapped infrastructure and neighborhoods. But until 1946 in Canada, there existed few professionals called 'municipal planners'. In the *Journal of the Royal Architectural Institute of Canada*, in November of 1946, the Federal Minister of Reconstruction and Supply for Canada wrote: "Community planning, as I understand it, is the science which deals with the proper use of land on a regional or community basis. Its purpose is to assure Canadian families, individually and collectively, of the full benefits from natural resources and technological progress." In the same article he revealed:

In 1943 a survey was made to determine the extent of community planning in Canada. Only 100 replies were received to 400 questionnaires that were sent to cities and towns and these replies showed that *not one city or town had adopted an official community plan*. Only a few were doing much about it (C.D. Howe, 1946, italics added).

This was despite Part IV of the *Final Report of the Advisory Committee on Reconstruction* which advocated community planning initiatives at all three levels of government (Advisory Committee on Reconstruction, 1944). In response Howe added the promotion of community planning to the new Central Mortgage and Housing Corporation (soon to be renamed Canada Mortgage and Housing Corporation, or CMHC) mandate, along with research and education on housing.

(1975) chapters 6 and 7 for discussion of activism inside and outside this institution during and immediately following the war.

The University of Toronto (U. of T.) added lecture courses in Town and Regional Planning to their undergraduate program in Architecture in 1933 (University of Toronto, 2011)⁶, and Duff (2003) found a first reference to a lecture course on housing in 1943-44 with lectures devoted to “low-income housing”. Duff also notes that during and after the Second World War there were some visionaries at the U. of T. who had studied the utopians Le Corbusier and Frank Lloyd Wright, but they were particularly influenced by Ebenezer Howard, Clarence Perry and Clarence Stein, the housing activist Catherine Bauer, and the ex-patriot British Garden City advocate Thomas Adams who headed the Town Planning Institute of Canada. They were disconcerted by decay in the big cities and shared a passion for debating alternatives to urban blight and poor planning. Architecture and planning courses at the U. of T. apparently placed a great deal of emphasis on low income housing, and also ‘neighborhood unit’ planning and ‘superblocks’. Humphrey Carver (1975) argues that this was the explicit acknowledgement of the social responsibilities strongly endorsed by the School of Architecture in the 1940s.

Carver and the U. of T. planning reformers were part of a larger movement influenced by city and social planners in the United Kingdom. Carver was extremely influential for Canadian urban planning at the U. of T. and for decades afterwards as Director of Research and Education at the CMHC. He taught courses in both the Architecture and Social Work schools, two streams which apparently coincided in the post-war years. *The Canadian Encyclopedia* online entry on Humphrey Carver claims that he “was at the centre of virtually all institutional developments in community planning and housing in Canada after 1940” (see Perks, 2011).

⁶ In the wider world both construction and planning were essentially dormant during the Great Depression.

Carver was a tireless crusader for housing reform and more humane community planning. In 1948, he published *Houses for Canadians*, a study commissioned by the Toronto Civic Advisory Committee on chronic housing problems. Carver's carefully articulated humanist ideology pervades the document:

The severity of the housing shortage must be measured in terms of human distress. Children and adults crowded into small quarters cannot escape from the frictions and frustrations occasioned by too close and too constant proximity. The humiliations, squalor, ugliness and functional inadequacy of obsolete and temporary housing leave their permanent mark upon the occupants (Carver, 1948: 122).

The book was a result of research Carver had conducted while at U. of T. in which he developed the philosophy that adequate housing is a right in a democratic society. He relates C.D. Howe's 1946 announcement in parliament that it was official government policy to directly stimulate house construction, and especially rentals for lower income groups. But Carver pointed out that policy does not directly translate into dollars because the federal government "avoids financial commitment", leaving it to the provinces and municipalities to deal with a fundamental Canadian civil right. The legislative changes amounted to shunting of financial responsibility for substandard housing and crowding from Canada to the provinces, which profoundly irked Carver, who argued that Toronto slums were the result of a national housing shortage and then asked: "Are we not concerned here with the very basis of our national life, the provision of adequate housing in which to raise the crop of healthy young Canadians on whose mental and physical health the vigor of the nation depends?" (ibid., 17). In essence, Carver made housing a concern of "national health, social justice, and community welfare" (ibid, 17). On the following page, Carver defined healthy housing as secure against weather, disease and

intrusion by others, open to the air and sunshine, and with room enough to grow a family. Then, with another nod to capitalist social reproduction presumably aimed at C.D. Howe's industrialist supporters, he wrote: "...we have come to regard this responsibility as a measure of material self-protection; in order that we should reproduce ourselves and work together effectively as an economic unit we must see that all members of our society are properly fed and decently housed..." (ibid., 18). For Carver, housing was a human right *and* a federal economic imperative. With such adroit turns of phrase, *Houses For Canadians* proved to be an effective plea for federal policy and dollars.

Carver dwelled on what he called 'blight' and decay in city cores too, but his reference to the unplanned suburbs growing on the outskirts of Toronto is of more concern for this discussion: "...there is a centrifugal force that continually urges home-builders to build outside the serviced areas of the metropolis; under the pressure of high costs, families of modest income are tempted to seek refuge in undeveloped areas where taxes are lower and building regulations are less strict." Carver reasonably pointed out that unplanned developments are always more expensive to service, hence the aforementioned Ontario Planning Act of 1946 which specified that subdivisions must be approved by the province, and local planning boards created by the province, ensuring some kind of forethought to infrastructure (ibid., 38).

Houses for Canadians was written at a time when the housing industry had been dormant for a decade. Material and labour were scarce and innovators sought technological solutions. Carver, the social reformer, was also a product of the modern era. For example, in *Houses for Canadians*, construction of housing is about construction of communities, but the sequencing is critical: Carver thought one community should be

finished before another was started just like building an automobile where “component parts...are delivered to the assembly line in a rational sequence so that the finished products can be brought to completion as economically and rapidly as possible” (ibid., 39). He then extended the analogy to house-building: “It has not been possible to apply to residential construction the assembly line system with tasks broken down into simple and comparatively unskilled operations; in residential building the assembly line is fixed and the workers move.” (ibid., 64) Carver pointed to efforts by researchers in Canada to mechanize house building. Apparently the National Research Council (NRC) was exploring prefabrication of house components and simplified designs, and the CMHC was also experimenting with an “integrated housing scheme” and economies of scale. In this discussion Carver might have been aware of the first Levittown which would have been in the planning stage when *Housing for Canadians* was written. The Levitt Brothers learned mass production methods from building war-worker dwellings in the early 1940s (Hall, 2002), and built the first large-scale housing development in North America after the war in Long Island, New York using the new production methods. Canadians had a parallel experience in publicly owned Wartime Housing Limited (see Section 1.5). Carver was convinced adequate housing could only be produced by large-scale projects supported by the federal government, as conventional builders just did not believe their methods could be improved.

Carver (1948) repeatedly implored municipalities to plan carefully on the outskirts of cities. In 1943 the City of Toronto released a draft Master Plan for Toronto. Bocking (2006) highlights significant planning elements in the document that reflect the popular trends at the time: future developments were to cut densities and take the form of

distinct neighborhoods with unassailable parkland and greenbelts, and zoning would separate neighborhoods from each other and from industry. Bocking claims that the document was heavily influenced by British New Town planning, as well as Howard's Garden City ideal and Stein's Radburn, another periurban offshoot of Garden City planning. The 1943 Master Plan for Toronto was not implemented, but it is clear that trends evident in the document found their way into other urban plans like those for the City of Ottawa.

In *Houses for Canadians* Carver also argued that the housing industry must improve the *quality* of new houses and produce appealing designs in contrast with the "uniformly drab and uninspired character" (126) of most post-war residential construction. While his efforts at the CMHC focused primarily on low income housing, he also claimed: "Little has been done to create well-planned estates containing small, efficient houses of sophisticated design, grouped in a pleasant landscape setting, and selling at prices from \$8,000 to \$15,000; housing of this character would attract economically stable families who are at present not at all interested in the crude products of the speculative builder." CMHC responded with a small homes competition (Brown, 1947). This competition was marketed with inserts in the *Journal of the Royal Architectural Institute of Canada* (RAIC) that read, in part:

Mr. Canada, an average Canadian in his middle 30's, has needed a house since the end of the war. He, his wife, his daughter aged five, and a son of two years, are now living in overcrowded accommodation. They need a house immediately. They are interested in contemporary ideas of utility and livability...but do not want "gadgets"...A no-basement house appeals to them...They want a well-lighted and healthful interior and are interested in the trend to larger glass areas. Since their budget is carefully planned, heating and maintenance costs should be at a minimum. The problem for the architect is the development of a design which will utilize materials, construction and planning methods in such a way as to provide Mr. Canada with a solution to his requirements at the minimum cost

compatible with acceptability under the Minimum Standards of the National Housing Act, 1944 (CMHC, 1946).

While the specifications for the competition appeared loosely defined, the underlying message was that “the average Mr. Canada”, probably a veteran or war-worker, had an average family and an average income but could afford a new house if it was built without a basement and to minimum acceptable standards. Also, demand was such that CMHC hinted at “a design”- one model that could be replicated with production-built processes that “merchant builders” (Rybczynski, 2003) were adopting in the United States. Shortly after, CMHC published *67 Homes for Canadians*, a book of simple house designs, selling over 29,000 copies by the end of the year (see **Appendix 1.1: History — CMHC Milestones**). The CMHC efforts were appeals to builders to cater to the market (or, more specifically, the male side of the market) through a “renaissance of domestic architecture and community planning” (Carver, 1948: 127), and the culmination of Carver’s vision for better-planned houses and communities. Carver hoped that the Canadians would see such a renaissance as an exciting national dream.

“Mr. Canada” had a wife and family, and changing gender roles within families also began to influence urban development after World War II. Despite the set of post-war cultural relations that made “work” a man’s public space and “home” a women’s private, domestic space (Hayden, 2003; Knox et al., 2010: 478), women entered the labour force during the war to help supply Allied efforts. One historian estimates that, in Ottawa in 1951, one third of the workforce was women (Mullington, 2010: 233). Women were drawn to clerical jobs in the Capital by the increase in bureaucracy during and after the war, however, Hayden (2003) also notes that women exited wartime workplaces en-

masse into the new suburbs in the early 1950s. Hayden (2003) suggests that advances in household appliances freed women from some household tasks and enabled working for pay outside the home. At the same time, the extra money was quickly spent on new consumer goods which proliferated in the post-war North American market. Soon, two incomes were necessary to pay for clothes washers, televisions, cars and mortgages on suburban homes (Hayden, 2003). Hayden also asserts that women remained (and still are) primary “home makers”, essentially returning home to a “second shift”, raising children and managing households in order to reproduce Canadian workers who were, and are, bred to (re) produce and consume.

To summarize, Mackenzie King, Gréber, Carver, Whitton and others across North America created arguments for spatial and social changes that made perfect sense to Canadian taxpayers after World War II. Suburban developments with mass-produced single- family houses on large lots accommodated both urban growth and urban social reform. Suburbs grew quickly as developers and builders realized large profits in expedited subdivision approvals and fordism construction in a long-lasting seller’s market.

Planning and state regulations designed to modernize cities and rationalize urban growth altered social landscapes too in Canada, as exemplified by the aforementioned restrictions on self-building of houses and changing family roles in consumer society, two historical processes coincident with neoliberal mercantile capitalism. Industry and the state directly implemented regulatory changes that enabled rapid growth in both the suburban development industry and the exponential growth in consumer goods for homes. State legislation paired with revamped mortgage lending soon decided who could, and could not, afford a house in the suburbs, effectively reinforcing and making more

conspicuous the split between middle and lower socioeconomic groups in Canada. The next section discusses the new residential development industry and how it met the challenges to house “Mr. Canada” and his family after World War II.

1.5: North American housing production post World War II⁷

North American developers, in concert with the residential building industry and the state, have produced millions of single-family houses since World War II. Production builders became the predominant force in the construction industry in North America when large-scale, fordist manufacturing techniques, specifically production housebuilding using contract piecework, merged with public and private investments in real capital after World War II to address urban decay and a severe housing shortage (Miron, 1988). New production processes, a new mortgage finance industry, abundant natural resources, swaths of cheap land on the urban periphery, and affordable automobiles lured a growing middle-class into the new commuter suburbs.

The Canadian government played a direct role in the creation of a new housing industry. During the war, the government built rental housing through a Crown corporation, Wartime Housing Limited (WHL), to accommodate war workers and, after the war, returning veterans. This federal agency reportedly built more than 14,000 units in 1945, 1946 and 1947 (Carver, 1948:8). Lorimer (1978) details “the very wide range of programs to support, encourage, finance and subsidize the building industry” in the 1940s and 1950s. He notes new investment capital that became available for mortgages for both house buyers and developers, effectively generating both supply and demand. He then

⁷ The vast majority of housing in North American suburbs since WWII have been built by businesses known in the United States as “tract” or “merchant” builders. In Canada, suburban builders are typically called “production” builders. I will use the terms interchangeably in this dissertation.

notes the federal tax shelters for the new developers that enabled them to grow rapidly⁸. After the war, the Canadian government designated the building sector as one of the private industries that would aid in the transition from a war- to peace-time economy in Canada, simultaneously creating housing and providing jobs for veterans (Carver, 1975). Post-war changes in mortgage lending were essential to the construction of suburbs in all Canadian cities including Ottawa. In 1946, the federal government created the Central Mortgage and Housing Corporation [later named Canadian Mortgage and Housing Corporation (CMHC)] and put Humphrey Carver at the helm with a mandate to spur house construction and purchases with direct loans and mortgage guarantees. But even the insurance companies hesitated to invest in mortgages until the Canadian government passed the National Housing Act of 1954 and revised the Bank Act, which brought banks into the mortgage business and provided investment capital for new developments in Canadian cities (Harris, 2003)⁹. This Act also provided joint government-lender loans for homes with the federal government supplying a quarter of 80% of the lending value (CMHC, 2006). The changes in lending were politically astute in another way: home ownership would provide working- and middle-class Canadians with equity, thus reducing future demands on the federal pension system (Gianni, 2009). Real estate capital gains are still the main way that Canadians build financial equity.

⁸ Lorimer (1978) is critical of an industry he claims is still dependent on government support such as infrastructure subsidies, and he notes that developers rather than builders have profited from the arrangement, but he acknowledges that the measures were originally put in place to meet demand.

⁹ Harris (2003) writes that legislative changes were not enough. Lenders “redlined” certain low-income urban neighborhoods and self-builders on the fringe until the CMHC contributed mortgage insurance to the equation. My years in the industry indicate that self-builders’ mortgages are still far more difficult to negotiate in Canada.

In addition to federal initiatives, the aforementioned perception of unacceptable conditions in Canadian cities also led to new legislation during and just after World War II by provinces and municipalities. Provincial and municipal regulations and zoning, such as that which separated industry from dwellings, were changed to be more amenable to suburban building, and municipalities embraced streetcar, bus and automobile infrastructure which enabled commuters to put distance between central business districts and homes. All of the above were factors that combined to make low density suburban residential development (LDSRD) imperative in many North American cities, including Ottawa (Soloman, 2007; CMHC, 2006; Rybczinski, 2003; Sewell, 1993; and Carver, 1948).

The above social, economic and political changes led to new challenges and opportunities for construction businesses. House building was forced to evolve. During and after the war builders such as the Levitts and Eichlers in the United States and WHL in Canada divided construction into discrete stages (foundation, framing, wiring, plumbing, drywall, painting, siding, etc.) to build simple, small houses quickly and efficiently for war workers and, after the war, for veterans. Builders in the U.S. and Canada also began using slab-on-grade foundations and pre-fabricated walls, windows, stairs and roof trusses. New power tools like backhoe excavators, pneumatic nailers and portable electric circular saws increased output dramatically (Denhez, 1994). Materials manufacturers started mass-producing plywood, cement board and aluminum siding products, asphalt shingles and factory-built aluminum windows (Denhez, 1994). The effect of the new tools and materials was to speed up house building and cut per-unit costs to the consumer, while at the same time reducing waste and improving profit

margins for housing producers (Harris and Buzzelli, 2005). These practices also kept costs down by requiring little training and hence comparatively low wages for the men building the houses (Sewell, 1993)¹⁰. According to Lorimer, the Levitts actually ignored protests by trades unions in their first New York State project and refused to hire expensive unionized labour: most of their housing was built by sub-contracted piece-workers, another fordist invention that persists today (Lorimer, 1978). Housing developments began to (and continue to) resemble assembly lines where, just as Carver predicted, the workers and machinery move instead of the product.

Production building was revolutionary but it required a constant source of houses to make it viable for the trades involved. Economies of scale demanded that this new breed of merchant builders expand their projects to hundreds of houses per year. Builders holding on to the small-scale, craft-building old ways could not compete with production builders (Eichler, 1982). Harris & Buzzelli (2005) point out the remarkably diffuse, decentralized and fluid structure of the house building industry as it has evolved since the mid-1940s. The majority of houses in North America are built by small, mobile teams of trade subcontractors who remain in one region and travel from job to job as required by developers or by general contractors working for developers. Furthermore, the relationships between builders and subcontractors are fluid as well: for instance, a 'sub' on one job may become the general contractor on the next¹¹. Piecework, revised industrial relations between manufacturers and labour, and new tools and materials

¹⁰ Women historically comprise less than 4% of people employed in construction trades (Construction Sector Council, 2010). The statistics are not divided into residential and commercial/institutional construction.

¹¹ These boundaries may be even more fluid where foreign nationals are employed to make up for labour shortfalls in the Canadian building industry.

enabled the industrial production of houses to consistently increase over the next several decades.

As well, innovative developers created new strategies to improve the efficiency of periurban land development and boost profits, such as lobbying governments at all levels for tax concessions, zoning amendments, expedited approvals and reduced subdivision charges, all of which were favourable to the housing industry (Sewell, 1993). Banks provided easily maintained mortgages with, after 1954, government guarantees, and builders provided quickly and cheaply built houses to satisfy consistent demand from consumers. This model of suburban expansion was repeated on the outskirts of cities all over North America¹².

Post-war housing starts illustrate the scale of the transition. Eichler (1982) claims that in the U.S between 1930 and 1939 there were 2.1 million single-family housing starts compared to almost 13 million between 1950 and 1959. Prior to World War II, a ‘large’ builder might have erected 20 houses a year. In contrast, Levitt and Sons, built 17,000 houses between 1947 and 1952 (Hall, 2002; Rybczynski, 2003). Canadians were less ambitious, but Sewell (1993) reports that E. P. Taylor’s crews built around 3,500 houses in Don Mills between 1953 and 1963, and Statistics Canada data (see **Table 1.3. Dwelling starts by type, 1944 to 1950** below) indicate that Canadian residential housing starts rose markedly after 1947.

¹² For historical notes on the rise of production house building, see: CMHC, 2006; Harris and Buzzelli, 2005; Rybczynski, 2003; Sewell, 1993; and Carver, 1948.

Table 1.3. Dwelling starts by type, 1944 to 1950 (thousands of units)

YEAR	DWELLINGS IN 1 TO 3		TOTAL
	UNIT BUILDINGS	OTHER	
1950	91.6	15.2	106.8
1949	87.0	11.5	98.6
1948	86.4	9.3	95.7
1947	59.4	8.3	67.7
1946	60.5	6.4	66.9
1945	64.6	6.8	71.5
1944	42.2	7.6	49.8

Source: Adapted from Statistics Canada, Dwelling starts by type, 1921 to 1950. http://www.statcan.gc.ca/pub/11-516-x/sections/S198_202-eng.csv

Despite setbacks related to the Cold War, the Korean War, material shortages, recessions and so on, Canadian housing starts have trended upwards since 1947. More recently, CMHC (2008) reported a peak of 228,000 starts in Canada in 2007¹³. Ottawa has developed much the same as other Canadian municipalities, growing rapidly in the past decades and prospering from a strong local economy sheltered to a degree by the stability of civil service employment. Section 1.5 to follow relates North American suburban trends to Ottawa development in the decades after World War II, beginning with an examination of transit-led development in the Ottawa vicinity.

1.6: Post-war suburban development in Ottawa

Historians have noted that, prior to 1900, railways linked Ottawa with numerous towns and villages including Carp, Prescott, and Manotick in Ontario, and Aylmer and

¹³ CMHC (2008:37) reports: "With a contribution of nearly \$300 billion to the Canadian economy in 2007, housing related spending accounted for just under one-fifth of total economic activity in Canada." Housing sales, of course, have plummeted since January of 2008. In that month the United States and most of the world economy was plunged into a recession as a result of a stock market crash that was precipitated by sub-prime mortgage lending practices in the U.S.

Maniwaki on the Québec side of the Ottawa River. Early in the 20th century, railways stopped in Arnprior, Britannia, Stittsville, Perth, Smiths Falls, Carleton Place, and Renfrew (Churcher, 2011). As previously mentioned, railways and the industries they served created havoc in downtown Ottawa until the mid-1950s. Like numerous urban reformers' plans at the time, the Gréber Report insisted that downtown Ottawa was a physically (and morally) unhealthy place to live, so it was seen as imperative to shift housing out from the core to improve the lives of Ottawa families. Mullington (2010: 238) writes that, in 1951, Ottawa Mayor Charlotte Whitton was concerned about 4,000 Ottawa families housed in slum conditions. Whitton, another social reformer like Humphrey Carver, argued for suburban solutions. Transit was already in place for suburban growth: an extensive streetcar network built before World War II led developers and housing consumers escaping from the city's core to the south and west. There were also clear financial benefits for do-it-yourself builders and house buyers from moving to periurban properties: Elliot (1991) remarks that "The suburbs beyond the city limits were especially attractive to the working class because the absence of services and comparative lack of regulations made land cheap...Services were few and taxes low, and the residents liked it that way" (Elliot, 1991:1). One could build as one pleased outside the municipal boundaries. Rural areas across Canada remain attractive for the same reasons.

With regards to previous comments about private streetcars as tools for speculative periurban real estate ventures, the Gréber Plan implies that transit in Ottawa after World War II was at best adequate (see Gréber, 1950: pages 86-90). Elliot's (1991) research indicates that Ottawa transit may have been inadequate because speculators who

owned both the streetcars and development properties along the new streetcar tracks could not keep up with demand. At least one streetcar company, the Ottawa Electric Railway (OER), linked land speculation with transit. Elliot (1991) explains that early twentieth century commuters:

...were of two classes, and the OER's promoters aimed to profit from them both. As shareholders in the Ottawa Land Association they [the developers] planned to sell building lots at Hintonburg and Mechanicsville to working families lured out of the city by cheaper land and lower taxes. As shareholders in the Ottawa Electric Railway Company they stood to reap a second profit from the fares the suburbanites paid to commute to work. These profits would be supplemented by predominantly middle-class fares bound for the park at Britannia-on-the-Bay (Elliot, 1991: 190).

In other words, according to Elliot, land speculation in Hintonburg, Mechanicsville, Britannia and Bell's Corners by a privately owned transportation company (owned by the Chaudière electric power interests which were apparently tied to lumber mill interests) substituted in part for urban planning. Elliot (1991) states that land syndicates like the Ottawa Land Association in the early twentieth century pooled capital for large land purchases and building projects, thus concentrating profits from a speculation boom early in the century into a smaller number of hands. Developers were simultaneously developing land and dictating growth in a hegemonic, if somewhat haphazard, fashion. Ottawa grew to the south, east and west into transit hubs and then car suburbs until downtown congestion, government financial incentives to builders and purchasers, and an aggressive housing industry markedly accelerated suburban building after the Second World War. Elliot (1991: 204) remarks on what was a constant tension in the growing city of Ottawa: as population pressures pushed city limits out into the farms surrounding the city, subdivisions developed largely without forethought: food was an issue because

speculators were keeping farmland idle for future development; and services were a concern because tax-paying voters and their township councilors were not prepared to fund police, water, sewers, garbage collection and fire departments on the outskirts.

Questions about, and regulation of, urban and suburban land use grew in the period from the Great Depression to the end of WWII in Ottawa. Land use concerns culminated in the Gréber Report in 1950. Starting in the mid-1950s, the federal government marked out the Greenbelt and expropriated more than 200 square kilometers of farmland to decentralize federal government offices and control exurban development¹⁴. But following the institutionalization of the Greenbelt, changes in Ottawa's urban form quickly began resembling those in other Canadian cities: subdivisions of rapidly built single-family houses proliferated inside the Greenbelt until developers, motivated by rising land prices, started to buy speculative land beyond the outer borders of the Greenbelt (Elliot, 1991). In addition, land beyond the Greenbelt was also bought by developers for private office campuses and industrial parks like Kanata North, Rideau Heights and March Highlands (Andrew, Ray & Chiasson, 2010: 231). Andrew et al. also note that at times the federal government located jobs in the suburbs for what Andrew et al. deem "...functional, symbolic, and political reasons" (ibid., 233), in effect contributing to periurban and exurban residential development to satisfy bureaucratic mandates, a process that continues today.

In a section entitled "Growth without planning," Elliot (1991) provides a carefully researched and detailed examination of the rise of suburban developers in Nepean Township (now a part of the amalgamated Ottawa) and their interaction with municipal

¹⁴ The era was marked by the threat of atomic bombs. One of the political reasons that government offices were dispersed was to lessen damage to government capacity in the event of an attack.

officials (see especially, Chapters 8 and 9). Elliot remarks that there was little regulation of the development industry in the late 1940s and early 1950s, and some confusion about whether provincial or municipal bureaucracies were responsible. Also, developers impatient with approval processes moved just beyond the “urban control area” into rural areas to test and take advantage of nascent patchwork regulation. Under the post-war *Planning and Development Act*, all subdivision plans were to be reviewed in Toronto by the Ontario Department of Planning and Development, but rural developers, including many farmers who recognized a speculation bonanza, apparently had little understanding of, or sympathy for, provincial planning regulations. The federal government soon stepped in to regulate planning.

As mentioned, in 1954 CMHC began insuring mortgages (see **Appendix 1.1: History — CMHC Milestones**). Two years later, CMHC made developers responsible for much larger up-front capital commitments when the federal department demanded that projects of more than 100 houses be supplied with potable water in order to apply for insured mortgages. The water regulation was soon followed by regulations for sewers and sewage treatment facilities, and late in the decade the servicing infrastructure requirements were formalized in the Ontario Planning Act, ending a decade of resistance by developers (Skaburskis and Tomalty, 2000). Elliot (1991: 275) writes that these new costs of development stalled residential building in Nepean until late in 1958 when Mervin Greenberg, a lawyer working for a large developer, Westmore Investments, negotiated a deal between a consortium of developers who owned thousands of acres in the Township of Nepean: the developers would pay the City in advance for sanitary sewers and a sewage treatment plant, and then impose lot levies (now called development

charges) on their clients. In 1961 the development charges were increased to cover road engineering and paving as well as storm sewers and culverts (*ibid.*, 275 and 306). In 1964, developers became responsible for the costs associated with street lighting, and buried hydro and phone cables (*ibid.*, 306). Regardless, house buyers did not complain when developers passed these fees along, and building permits soared, but Elliot claims that mandated up-front infrastructure costs were the reason small builders and farmer/subdividers were muscled out of the development business and large, well-capitalized, integrated tract developers and builders like William Teron and the Mercury Homes, which became Minto Construction, took control of the industry. Elliot elaborates:

Council's desire to shift the costs of this servicing onto the developers in turn imposed large capital requirements which could not be met by most of the small contractors who had dominated the housing industry in the early fifties. Within a few years most left the business but the strongest among them evolved into integrated development companies producing large subdivisions of tract housing (Elliot, 1991: 273).

Development charges hastened a transition welcomed by the state. Elliot (1991) claims that in 1956 the majority of housing was built by small speculative builders, but by 1961 two-thirds of the new houses in Nepean were built by Minto and Teron, corporations which embraced the new technologies of building and were able to quickly accommodate housing demand in the Ottawa area. Apparently, in 1971, almost three-quarters of Nepean's new houses were built and sold by Minto alone (*ibid.*, 279). Minto was also the first in the Ottawa region to push through large-scale rental housing in their large Bayshore development, started in 1963, that included townhouses, apartment blocks and a shopping complex, all of which were new to Nepean (*ibid.*, 284). Minto continued to grow and is currently one of the largest construction and property management

companies in Ottawa. Since their start in 1955, the Greenberg family and Minto claim to have built more than 67,000 new homes. In addition, Minto manages 15,000 residential rentals, and carries a massive commercial portfolio as well (Minto, 2011a). The Greenberg family is currently one of Ottawa's richest families, worth over 1.1 billion dollars (OBJ Staff, 2011). The transition from the small craft builder to the tract or production builder proved extremely lucrative for a select group of Ottawa entrepreneurs. Assembly-line houses, where the labour and tools moved instead of the product, began filling farmland both inside of and beyond Gréber's Greenbelt.

A federally-owned Greenbelt and hectares of federal properties in other areas of the City make urban planning in Ottawa distinct in Canada. As a national capital, the City of Ottawa must negotiate with the federal government regarding roads and services that transect both federal and municipal properties, and the NCC has on occasion been unsympathetic to municipal input (see for example Kempster, 2003). As mentioned previously, the NCC, a federal commission, also interfered with municipal planning when it expropriated parts of the greenbelt from farmers who had intended to subdivide and profit from their land, upsetting farmers, developers and municipal officials (Elliot, 1991; Mullington, 2010). At another level of governance, under federal mandate, the Province of Ontario guides municipal planning through the Ontario Municipal Act, municipal Official Plan Amendments and the Provincial Policy Statement regarding municipalities, all of which are interpreted through the Ontario Municipal Board (OMB). The OMB is also accused of being unsympathetic to City planning, apparently siding with developers who contest municipal zoning and, in fact, recently ruling against the City in a drawn out

and expensive debate about a development in Manotick, well outside of the City's preferred growth zones (see for example Brady, 2009b).

The NCC Greenbelt now divides urban and suburban areas of Ottawa. In addition, the incorporation of large swaths of farmland and numerous villages into the Amalgamated City of Ottawa in 2001 significantly enlarged the city's borders, which complicated approaches to limiting suburban growth and challenged the City's mandate, especially with regard to funding municipal services in regions of the new city that now lie beyond the Greenbelt¹⁵. Developers including Minto argue that the Greenbelt should be open for development because it has resulted in leap-frog development, but both the City and the federal NCC argue that it is untouchable (see City of Ottawa, 2008, for a summary of both sides of this debate). Further, Ontario's Provincial Policy Statement, *Places to Grow* (Province of Ontario, 2005) dictates more concentrated urban development, albeit in legislation that applies only to the greater Toronto area and northern Ontario. Hence, Ottawa developers are often confronted with, are confused by, or are anticipating, three levels of government regulation in their subdivision planning, an example of how scale is increasingly an important consideration in urban planning.

Most of the reasons people continue to buy houses in periurban and exurban developments are the same as they were six decades ago: farmland is still flat, drained and undervalued; development is still lucrative for investors with the capital to buy, subdivide and service land; and periurban subdivisions are still regulated and taxed less than properties on the urban side of the Greenbelt, resulting in cheaper housing.

Consumers apparently still want houses in the suburbs, developers want to continue

¹⁵ Amalgamation was forced by provincial legislation during Premier Mike Harris' 'Common Sense Revolution' in order to reduce duplication of services and increase service provision efficiency.

generating huge profits from greenfield development, and various government bodies contribute to the status quo (Blais, 2010; Hayden, 2003). But cities are in planning flux: certain types of urban growth have global environmental implications that housing producers in Ottawa seem to be unwilling to fully acknowledge. The next section explores the environmental implications for speculative building, suburbs and growing cities.

1.7: A political ecology of scale and periurban development

Since the 1970s, North American municipalities, planners and architects have been actively seeking to reduce building-related energy costs. This trend has been accelerated by recent warnings about the threats to humanity posed by building-related greenhouse gases (GHG s) and other pollutants.

Yudelson (2008a: 2-3) lists major historical events that influenced the current interest in sustainable architecture. These events included:

1. the Montreal Protocol in the 1980s which targeted chlorinated fluorocarbons (CFCs),
2. the 1987 Brundtland Commission (UN World Commission on Environment and Development) and its first attempts at defining sustainability;
3. the American Institute of Architects' Committee on the Environment, also in the 1980s;
4. the first Earth Day in 1990;
5. the 1992 Earth Summit in Rio de Janeiro, Brazil (UN Conference on Environment and Development); and
6. Kyoto Protocol in 1997 which was an amendment to the U.N. Framework Convention on Climate Change and a first try at limiting global GHG emissions.

Ferrara and Visser (2008) add the 1972 publication of the Club of Rome document, *Limits to Growth*, which drew widespread attention to resource depletion and pollution. The OPEC oil embargo of 1974 was another event that focused attention on sustainable construction practices in Canada. Boake (2008) claims this was motivation for research

that led to the R2000 program, a first nation-wide attempt to reduce the energy consumption of Canadian housing. Rising oil prices during this period also led to research into alternative energy sources. Boake posits that research and innovation during the 1970s and 1980s also focused on passive solar heating, advanced window technology, increased insulation, better sealing of building envelopes, and ventilation of these sealed buildings. But Boake claims that most of this work was related to residential construction, and that larger buildings did not receive the same attention until after 1987 when the World Commission on Environment and Development published *The Brundtland Report* (WCED, 1987). In 1997, the same year as the Kyoto Accord, the Canadian government established Model National Energy Codes for both houses and larger buildings.

More recently, there has been a broad range of activity, particularly in response to climate change. Major initiatives include the 2030 Challenge in the U.S. and its goal of achieving carbon-neutral buildings by 2030. This challenge was recognized in 2005 by the Royal Architectural Institute of Canada, the Canada Green Building Council, the American Institute of Architects, the U.S. Council of Mayors, 650 U.S. cities and hundreds of architectural and engineering firms around the world (Architecture2030, 2011; CEC, 2008:37). The Canadian federal government is also directly involved with programs run by Natural Resources Canada (NRCan), Industry Canada, Sustainable Development Technology Canada (SDTC), and the National Research Council (NRC), among others. In the last decade, the Canadian government launched the joint NRCan/CMHC EQUilibrium™ initiative, a well-publicized national competition to educate the public and design “housing that is healthy, affordable, sustainable and highly

energy-efficient” (CMHC, 2008b), an initiative they have most recently extended to Equilibrium Communities (CMHC, 2011).

In the latter initiative, the federal government clearly recognizes the scalar elements of sustainability. Buildings contribute to environmental degradation by their spatial arrangement in addition to the specific technologies they employ. The *triple bottom line* (the 1987 *Brundtland Report*’s environmental, economic and social goals) is an invitation to plan across the three interrelated dimensions and at a range of scales (i.e. from individual buildings to communities to regions). A fourth dimension, time, is included in life-cycle analysis. It is no longer deemed ecologically practical to plan buildings or communities without mapping the broad links between social behaviour, architecture and ecology across both time and space, which is why urban planners in particular are concerned with servicing neighborhoods. As discussed in Section 1.1, around 1900 Ebenezer Howard proposed the Garden City, and English “New Towns” became the norm for tightly controlled ex-urban expansion in the U.K. In the U.S.

Clarence Perry planned a response to sprawl based on the “neighborhood unit” in 1929:

Its size would be set by the catchment area of the local elementary school, and so would depend on population density; its central features would be this local school and an associated playground, reachable on foot within half a mile; local shops, which, by being placed at the corners of several neighborhoods, could be within a quarter-mile; and a central point or common place for the encouragement of community institutions (Hall, 2002:130).

Like Howard before him, Perry was convinced that urban planning best served city dwellers by creating communities with clear boundaries. Perry hoped that cars and roads would facilitate the definition of these neighborhoods. But urban planners were soon dealing with the mass marketing of cars and single-family dwellings on the outskirts of

cities. Ironically, the cars that Perry anticipated in his ideal neighborhood are now the bane of suburban tracts where North Americans build most of their 1.2 million new houses per year (CMHC, 2007; NAHB, 2009)¹⁶.

Recent federal-level policy documents reflect a growing awareness of the ecological impacts of the spatial configuration of urban and suburban neighborhoods. One example is a document produced by a blue-ribbon panel of planners and architecture consultants for the Commission for Environmental Cooperation (CEC) which states:

Buildings...affect our quality of life, infrastructure development and transportation systems. Beyond individual buildings, poor site development often leads to inefficient land use, resulting in greater energy consumption and travel time, loss of productivity, polluted runoff to surface water and wastewater treatment systems, loss of agricultural lands, fragmented habitats, and fiscal stress to local communities (CEC, 2008: 4).

The authors of this document repeat an often-heard warning about the links between buildings, community design and environmental degradation. A report issued by a joint panel of The National Round Table on the Environment and Economy and Sustainable Development Technology Canada (NRTEE-SDTC, 2009) offers a more optimistic prediction:

...future communities will have greater emphasis on achieving efficiency for systems as a whole, and on creating systems that are more adaptable and resilient. Energy efficiency will be maximized and smaller-scale urban energy systems located closer to and within buildings will be used. Clustered, higher density, self-reliant, mixed-use developments will help to achieve a more efficient, accessible, and affordable use of energy. Building performance will be high, and occupants will enjoy better quality air and work spaces (ibid., p.i).

¹⁶ This is probably a conservative figure. The U.S. National Association of Home Builders (NAHB) reports a high of 2 million housing starts in 2005, falling to 900,000 in the U.S. in 2008. CMHC reports 228,000 starts in 2007 and 211,000 starts in 2008 (CMHC, 2009a). The industry has slowed considerably during a prolonged recession.

On June 1, 2009, NRCan and CMHC announced The Equilibrium™ Communities Initiative. The press release reads:

Our Government is investing in more than just clusters of energy-efficient homes – we’re creating cost-efficient, sustainable neighborhoods. Building communities that use new, clean-energy technologies will create high-quality jobs for Canadians... These communities will integrate sustainable housing, infrastructure and land-use planning to help Canadians balance their housing needs with those of the natural environment (CMHC, 2009).

There are similar elements in the three quotes that are relatively recent additions to philosophy at the federal level. First, all of the authors recognize that planning that is intended to reduce negative environmental impacts of buildings must extend beyond buildings to take wider geographic and social contexts into account. Second, there is an underlying assumption that sustainability must be *designed* in order to rectify the unintended consequences of rapid urban growth, and that this is necessary at the level of the community rather than the city, region or nation. Thus, sustainability is becoming a federal as well as a municipal issue. However, none of these statements should be conflated with federal leadership or legislation, including the announcement from CMHC-NRCan. The Equilibrium™ initiative duplicates work already done by the United States and Canada Green Building Councils which had already registered hundreds of volunteer communities in private initiatives also intended to guide sustainable neighborhood planning, but through a competitive rating system called Leadership in Energy and Environmental Design for Neighborhood Development (LEED-ND) which is growing in popularity across North America (see USGBC, 2011). In the Equilibrium Communities announcement, and in stark contrast with the other two

passages cited, it is important to note that energy efficiency, cost efficiency, technology and jobs appear in the statement before the environment.

Canadian cities generally acknowledge that the pattern of fordist house production in growing suburbs has severe environmental, fiscal and social drawbacks such as: (1) inefficiencies in the production of road, sewer and water infrastructure for low-density developments; (2) inefficiencies in the energy required to process, transport and assemble materials into functioning detached houses, including furnishings, appliances and decoration; (3) inefficiencies in supplying energy for buildings, most of which is for heating and cooling; (4) energy and material waste associated with the demolition, transport and disposal of buildings at the end of too-short functional lives; (5) the toxins and carbon that are released into the built environment and the wider environment during the three interrelated life-cycle phases (i.e. construction, habitation and deconstruction); inefficiencies associated with increasing gridlock and commute times; and (6) fossil fuel consumption and greenhouse gas (GHG) production from the transportation of occupants *after they move in*. Architecture2030, a prominent American green architecture group, claims buildings result in almost half of all energy consumption and GHG emissions in the United States, and that “buildings are the single largest contributor to global warming” (Architecture2030, 2009). Similarly, Natural Resources Canada (NRCan, 2007) reports that the commercial building sector in Canada was responsible for 60.4 megatonnes of carbon emissions in 2006. Almost half of that total is allocated to the production of electricity. Less information is available about housing specifically, but CMHC estimates that the Canadian housing sector will generate 5,500 megatonnes of GHG s between 2004 and 2025. These emissions are primarily from electricity

production and transportation, and result in 15.2 per cent of Canada's total GHG output (CMHC, 2007: 11). CMHC also reports that dwellings account for 60 per cent of all water use in Canada, and much of this water is released back into the environment with various contaminants. In addition, there are longstanding concerns about the enormous quantities of waste generated by the construction industry as well as the potentially negative health impacts of building products and practices on the inhabitants of houses. There is also growing evidence that single-family housing contributes to so much environmental degradation because of the way they are designed and built, and because of the way they are laid out – most often in large, low-density periurban or exurban developments.

There is general consensus that architecture must become more “sustainable.” In the literature, the most-often mentioned goals of sustainable construction are the same environmental, social and economic benefits of sustainable development proposed in *Our Common Future* (WCED, 1987). Translated, these goals are that housing is economically and environmentally viable for both producers and consumers¹⁷. Typically, beyond the statement “for future generations”, no time periods are specified.

Environmental impacts from houses depend upon where and how carefully houses are assembled. Residential energy consumption, the most pressing concern in the context of global climate change, can be greatly reduced with advanced urban planning, energy-efficient house design, and carefully selected building materials and appliances (Canada Green Building Council, 2009; NRCan, 2007). Smart planning and design are also

¹⁷ I will develop definitions for the terms ‘sustainable’, ‘sustainability’ or ‘sustainable development’, ‘sustainable homes’ and ‘green building’ throughout the dissertation. I will discuss definitions in detail in Chapter 2: Theory and in my final chapter. I have chosen to use these terms without quotation marks in the rest of this section while fully recognizing the contested nature of the terms.

healthier for inhabitants of houses and communities. This begs the question: How are Canadian housing producers responding to these challenges, opportunities and responsibilities?

There is no straightforward answer to the above question. It is crucial to point out that current patterns of Canadian housing are the result of 6 decades of rapid suburban growth. It is also crucial to note that standards, regulations, codes, approval processes, municipal inspections, trades certification, business associations and consumer watchdogs ensure relatively high quality housing in comparison with much of the world. The Canadian Home Builders' Association (CHBA, 2008) asserts that builders are continually getting better, and claims that Canadian builders are actually exceeding Kyoto targets for energy efficiency. Developer/builders have also tentatively begun marketing "green" features of their projects. Industry critics, however, suggest that new North American houses and communities are no longer sustainable because they are built with flaws that compromise durability, energy efficiency, transportation efficiency, occupant health and the environment in general (Benson, 2006; Blais, 2010, 2011; City of Ottawa, 2009; City of Ottawa, 2011; Commission for Environmental Cooperation, 2008; CMHC, 2007; CMHC-Marbek, 2008; Farr, 2008; Hawken, Lovins & Lovins, 1999; Kilbert, 2008; Miller, 2009).

At the risk of belaboring an oft-repeated argument, urban transportation deserves special mention. Newman and Kenworthy's (1989; 1999) studies implicate automobiles squarely into the debate about transportation, urban form, energy consumption and interrelated impacts on the global environment. **Figure 1.6: Urban Density and Transport-Related Energy Consumption** (see below) is adapted from the 1989 study

and graphically illustrates the direct inverse relationship between urban form measured strictly as inhabitants per hectare plotted against average per capita energy consumption for transportation; **Figure 1.7 Energy Use Per Capita in Private Passenger Travel vs Urban Density in Global Cities 1990** is included because in the latter study Newman and Kenworthy included Ottawa (marked by the red arrow). The studies indicate that holding other variables constant, urban densities are the single largest predictor of energy consumption for travel. Assuming that most of that travel is propelled by fossil fuels, low density suburban development is often linked to GHG production and climate change in urban research (e.g. Blais, 2011; CaGBC, 2011; Farr, 2008; Sewell, 2009; Soloman, 2007).

Figure 1.6: Urban density and transport-related energy consumption

Source: Newman and Kenworthy, (1989).

Figure 1.7: Energy use per capita in private passenger travel versus urban density in global cities, 1990

Source: Newman and Kenworthy (1999).

The United States Environmental Protection Agency (EPA) released a report in 2011 demonstrating that transportation efficiency is more important than building energy efficiency (defined as an Energy Star-rated house) for reducing energy consumption and GHG production overall. The EPA states "...a conventional home in a transit-oriented neighborhood saves considerably more energy - and money - than an Energy Star home in a conventional suburban development" (Melton, 2011; see EPA, 2011 for full report). The study offers the argument that the cost of energy for commuting to and from a house

in an average American suburb *can equal or exceed the cost of the house*, depending on how much people drive to and from that house, and depending on the price of gas.

In an innovative study by Marbek Consultants, researchers created an analytic scenario that compared resource use and pollutants associated with urban, inner suburban and outer suburban residential development over a 20-year period, beginning 2004. Data used to create the scenario were taken from dominant residential development and transportation patterns around 2008. Their scenario indicated that:

Compared with other neighbourhood types, outer suburb dwellings would have significantly higher life-cycle environmental impacts, per dwelling... This is due to lower density dwelling types... and increased transportation (linked to neighbourhood type, not dwelling type) in outer suburbs... [T]he aggregate result is that outer suburbs would require five times the life-cycle resource use and produce five times the life-cycle emissions and pollutants over the study period as inner suburbs and inner city neighbourhoods *combined* [bolded text and italics in original] (CMHC-Marbek, 2008).

There is no longer any question that current patterns of ex-urban development and car use are unsustainable. I included the above studies to reinforce the idea that both cars and buildings are essential foci in debates about energy consumption and GHG production in Canada.

Current models of urban development in Canada result in six major sources of tension between conventional housing production and sustainability imperatives. First, municipal planners and private producers (developers and builders) continue to plan and build large, single-family houses in greenfield auto suburbs despite criticisms about commuter gridlock, the rising costs of carbon-based energy, the spiraling costs of servicing low density suburbs, and the large portion of urban dwellers who cannot afford to live in those suburbs. Second, paradoxically, municipal development policies (such as

large minimum lot sizes) seem to impede the adoption of sustainability initiatives in most Canadian cities regardless of widespread green planning discourse (Blais, 2010; Dale, 2007; Farr, 2008). Construction codes, standards and regulations in many municipalities may actually prohibit green building practices such as the use of non-standard materials (Farr, 2008). Third, from an industry perspective, although the situation is changing radically in recent years, many builders insist that green building is more expensive than conventional building regardless of demonstrated life-cycle social, financial and environmental advantages of sustainable houses (Hoffman and Henn, 2008). Fourth, housing consumers appear to be ambivalent about green building, which may be partly out of ignorance and/or partly out of misinformation about lifecycle costs and cost recovery horizons, and this may hinder the adoption of sustainable practices by both the building industry and municipalities. A related issue is consumer wariness of greenwashing. Fifth, developers' marketing discourses rarely link sustainability with housing equity issues, which is at odds with most urban planning philosophy. The drivers for equitable sustainable houses and communities have had mixed impacts on the building industry: the "business as usual" model for the residential construction industry apparently persists.

The sixth major source of tension and contradiction in urban development can be found in writing on neoliberal political economy which argues that many of the economic and environmental costs of mass, fordist suburbanization are borne, ultimately, by all of society (Harvey, 1996; Smith, 2008; Pellow, 2006). In addition to the widespread impacts on the global environment caused by suburbanites' cars and other consumer goods, suburbs require huge infrastructure investments financed in part by development charges

that are eventually paid for by consumers, and in part by urban dwellers' property taxes. Ottawa suburbanites, and consumers in general, were gradually becoming aware of both the dollar and environmental costs of suburbs, but at the time of this research, consumers were not compelling real market transition, and neither the state nor the developers' lobby were trying to educate housing consumers or convince them to change their buying patterns.

Adapting Logan and Molotch (1987) and their research on urban "growth machines", Oden (2010) neatly summarizes the relationships that exist between government officials and the housing industry (i.e. developers, builders, infrastructure contractors and material suppliers) in North America. In Oden's work the "growth regime", comprised of multi-level state, business and industry coalitions in many cities, functions to ensure that developers maintain (a) high rates of return with low risk, and (b) the freedom to operate with minimal government (and public) intervention. The housing industry apparently has a privileged voice in city affairs, and environmental and social justice groups are often silenced or limited to formal, bureaucratic avenues to express concerns. Oden points out that developers make marginal concessions "around the edges" of sustainable urban planning to exploit the market for green fashions while simultaneously evading responsibility for social and environmental sustainability (see also Keil & Graham, 1998).

Within the industry itself, the relationship between developers and subcontractors has also evolved to confer distinct advantages to developers of North American suburbs who, for half a century, have externalized real costs of their production capacity and capital investments by using equity capital that is created in the process of subdividing

land to pay small, expendable teams of subcontractors to build houses at piecework rates. Developers and builders have typically recruited or down-scaled subcontractors in response to a market demand, a flexible strategy which significantly cut labour costs, and provided cheap housing for a wide range of Canadians¹⁸. Like capitalists the world over, developers and others in Canadian growth lobbies meet demand and maximize profits by cutting input costs including labour, and by adjusting those inputs depending on market conditions. In the broader context of neoliberal economics, the Canadian housing development industry has grown by streamlining operations to the point where taxpayers, consumers and labour assume a major portion of real costs, *and risks*, of doing business. Developers and builders have also consumed copious natural capital and externalized ecological costs, increasing the tensions between business-as-usual new urban planning paradigms. Chapter 4 describes and discusses the growth regime (or what I will call the “growth lobby”) in the Ottawa region, and compares the rhetoric used by the City of Ottawa and by the growth lobby about the “external” costs of what is now conventional suburban residential construction in Canada.

1.8: Conclusion to Chapter 1

Chapter 1 of this dissertation has established a genealogy of Ottawa suburban residential development. The chapter described how Ottawa grew in a similar fashion to other cities in England and North America in the early twentieth century as industrialization led to influxes of both industries and workers. Crowding and poverty led urban social reformers to demand changes in planning that eventually eliminated trains and industry from Ottawa’s core. But the changes took time and often resulted in parks, monuments and

¹⁸ I am indebted to Michael Buzzelli (via an e-mail conversation) for this insight.

government buildings but no housing. Many people moved out of the core to escape crowding and pollution and commuted back in to their jobs from new houses in streetcar suburbs in periurban areas. The developers who built suburbs at Ottawa's edge profited from sharp increases in demand-driven land speculation after the World War II as the Gréber Plan began a decade of dramatic social and spatial alterations to the city. Municipal and township officials welcomed the suburban solution to planning challenges along with increased taxes. Paradoxically, Gréber's Greenbelt around Ottawa served to drive land values upwards as suburbs spread to the Greenbelt's constraining inner boundary, spurred by a thriving economy and insured mortgages. In the 1960s and beyond, housing consumers, equipped now with cars, drove to their downtown jobs, or jobs that were relocated by the federal government into the Greenbelt and into exurban campuses, from new subdivisions beyond the Greenbelt in Kanata, Barrhaven, Manotick and Orléans. Cheap fossil fuels, cheap cars, cheap land and perhaps a lack of foresight have made continuous periurban development in the National Capital Region inevitable. However, at the time of this study, it appeared that, aided by a relatively new (for Ottawa) planning paradigm evident in *Choosing Our Future* (see City of Ottawa, 2012a), the City of Ottawa was balking at the costs of servicing new suburbs, and was acknowledging the role of cities in alterations to the global environment especially with regards to fossil fuels and transportation. I anticipated increasing debates about the nature of suburban development in the National Capital Region. The power and momentum that the housebuilding industry had gained over the past century made it both a potent agent for change and a formidable adversary for municipal green policies.

Critical geographers, and, in particular, geographers who operate within the urban political ecology (UPE) conceptual framework, offer perhaps the most promising theoretical approach to examine the contests and changing state of planning and development in Ottawa. I suggest an adaptation of UPE to my project in Chapter Two of this dissertation.

CHAPTER 2: CONCEPTUAL FRAMEWORK: TOWARDS A POLITICAL ECOLOGY OF HOMES

“Do the necessities of shedding costs and declining margins impinge on the decision-making of even well-intentioned manufacturers and investors, with implications for either consumers or workers? Does the industry meet or instead create demand?” (Robbins, 2007: 71).

2.1: Introduction

In keeping with the themes in my research, Chapter 2 uses critical political economy and conceptions of nature from the original theory of Karl Marx through to contemporary political ecologists. Section 2.2 briefly provides the aims of the chapter. Section 2.3 identifies early contributions to a social geography of nature in the writing of marxists David Harvey, Neil Smith and others. Section 2.4 details debates about ‘natural limits’. Section 2.5 offers a short critique of marxist political economy which serves as a transition to Section 2.6 that in turn explores the challenges of defining “nature”. Section 2.6 also introduces theorist Noel Castree and the concept of *social nature*. Section 2.7 addresses the assertion that cities are ‘natural’, drawing on *urban metabolism* theory. Section 2.8 discusses the role of discourses on nature over recent centuries, especially as they pertain to the production of urban space. Section 2.9 presents Paul Robbins from the University of Arizona and his pragmatic application of political ecology to urban nature. Section 2.10 offers a syndissertation of the above theoretical streams to elaborate an ecology of homes which better specifies the organic character of homes than conventional sustainability discourse. The chapter develops a conceptual framework from which I will analyze sustainability discourses and practices in Ottawa residential development in the balance of the dissertation. Within the framework, the research will

focus mainly on discursive constructions of “sustainability” offered by various actors and local to global social, political and environmental influences on suburban residential development.

2.2: Theoretical confluence

A significant transition occurs when people move into new houses and turn them into homes. Space and place are critical conceptual tools for examining urban sustainability and, especially, the impacts of houses and homes on the global environment. In this chapter, I will argue that the *place-ness* and the social *moments* of a home, in both fiction and fact, in the manner that critical geographers such as David Harvey (1991; 1996; 2000) and Doreen Massey (1993) use the terms, are directly linked with consumer behaviour and a host of environmental interactions and, as such, are important elements for the study of urban sustainability. I will demonstrate that the ways in which humans conceive and use homes may have more ecological significance than *how*, or perhaps even *where*, houses are built. The dissertation does not ignore issues around resource consumption and greenhouse gas production associated with building construction and transportation. The dissertation will suggest instead that inefficient construction methods and transportation-related GHG production – especially GHG s associated with commuting to and from work – must be examined concurrently with myriad other variables associated with low density ex-urban tract building, and that the complex political ecology of tract housing may in fact be obscured by an oversimplified focus on common measures of green building such as heat loss through poorly sealed building envelopes.

The research is guided by an amalgamation of two theoretical streams – political ecology, and place construction – a promising approach that apparently few critical geographers have attempted (Hay, 2002). A space/place – house/home dialectic underpins how I will frame the political ecology of residential construction”¹⁹. By combining these two theoretical streams, I hope to accomplish a number of broad theory-building tasks. The tasks include:

1. to problematize and then create a practical distinction between *houses* and *homes* in order to identify a range of observable, measurable, significant socionatural interactions centred around *homes*²⁰;
2. to investigate the ecological consequences of greenfield suburban single-family housing using the direct correspondence between houses, homes, capital accumulation and a range of actions associated with sustainability;
3. following Robbins (2007), to incorporate place-based moments into structuralist critiques of urbanization (e.g. Harvey, 1996; and Smith, 1991) and urban metabolism literature (e.g. Heynan, 2006; Swyngedouw and Heynan, 2010);
4. to create a conceptual continuum that bypasses the ambiguity and abuses of the terms “sustainability” and “green building” by replacing these terms with social nature, or the political ecology of homes, which I will abbreviate to the neologism *homecology*; and
5. to construct a comprehensive, spatially and temporally specified definition of homecology that I will then compare with definitions of sustainability offered by my interviewees.

My approach is intended to add nuance to marxist theory as I examine residential development in Ottawa. More specifically, I incorporate *suburban culture* (see definition in Section 2.6), a mid-range social psychological variable favoured by critical geographer Paul Robbins and marxist social theorist Paul Lipietz, among others, in my theorizing about space and place in the suburbs. First, however, I will draw primarily from various incarnations of critical structuralist theory, beginning with Marxian political economy,

¹⁹ Following the lead of social nature theory, but to distinguish structuralist theory from my own, I will occasionally deem the interaction of homes with the world as *homecology*. I will also use human ecology as a synonym for *social nature* as in the work of Castree (2001; 2003; 2005), Castree & Braun, eds. (2001), Harvey (1996) and Smith (1991).

²⁰ For the remainder of this dissertation, I will not italicize the words “house” and “home”. However, they will obviously remain key theoretical concepts.

and then summarizing early political ecology as described by David Harvey and Neil Smith. Marx (perhaps indirectly) began discussion of the links between capital accumulation and the non-human environment, links upon which later critical theorists elaborated as environmental degradation assumed prominence as a topic in academic research. The following discussion briefly reviews selected elements of marxist political economy as a tool for examining the residential development industry.

2.3: Marxists and the production of urban space

Karl Marx (1818-1883) is known primarily for his broad critique of capitalism. Marx's philosophical starting point is the concept of *materialism* through which humans transform raw materials in non-human nature into goods that we need to survive. Marx borrowed another essential concept from philosophy, *dialectics*, which is the cyclical process of change inherent in both discourse and nature. More recently, dialectics in geography typically describe the "...ongoing, complex and interdependent relationship between social and biophysical processes" (Henderson and Sheppard, 2006: 58). For marxists, dialectics help identify human interactions with each other and with the natural world. In this conception everything is related, and even solid-seeming entities are illusory, as Marx pointed to the heterogeneity and change inherent in life (see Johnston, 1997: 218; cf. Harvey, 1996: 49). Dialectics is an especially suitable theoretical tool with which to examine suburban housing because they indicate the iterative, continually evolving connections between people, built form and non-human nature.

In contrast with classical economics, marxists argue that economic behaviour is not "natural" or "rational" but rather socially constructed and necessarily unequal (Kanth and Hunt, 1991: xvii; Smith, 2000). Further, marxists directly equate capitalism with

inequality. One of the main indicators of equality in a given society is the adequacy of housing for all segments of that society. Profound housing inequalities are evident in most capitalist economies (Harvey, 2010b; Oden, 2010). Moore and Skaburskis (2004) report that in Canada "...the estimated number of households paying more than half of before-tax income on shelter increased by 59 per cent from 560,000 to 891,000 between 1992 and 1999" (ibid. 399). The same study reports consistent data in the United States: in 1999 more than 14 million households were spending more than half of their income on shelter. The numbers reflect "...a larger and longer trend toward increasing income inequality in Canadian society" (ibid. 395). Income inequality is a class-based phenomenon.

Marx divided society into several classes: capitalists (business owners) buy the *means of production* (the land, factories, machines, materials and labour needed to produce commodities); the proletariat (workers) sell their labour for wages; and the bourgeoisie are managers or bureaucrats. Marx predicted the constant struggles between workers and manufacturers over distribution of *surplus value*. Surplus value is the difference between the total cost of producing a commodity (such as a house) and the selling price of that commodity on the market – profit, in other words, which is the *raison d'être* for capitalists. Marxists call it exploitation when a worker is paid less for his or her labour than the manufacturer (Fine, 1989).

Costs for *fixed capital* production inputs (such as tools, office space, storage and production facilities) and *circulating capital* (such as building materials) do not vary much between competing producers, and producers in the same region face the same state regulations and costs, so the main ways that producers reduce production costs and boost

profits are by technological innovation and reducing the costs of labour. Developers reduce land costs by building on periurban or exurban farmland²¹. Developer-builders lower labour costs by various incentives or punishments. For example, one developer may use piecework sub-contracts and bonuses to reward efficient production, while another developer may penalize flawed work by withholding payment.

Marx pointed out that capital accumulation occurs as an investment cycles through product development, production, sales and re-investment of surplus value. A competitive system and growth-driven economic models require that capitalists constantly re-invest profit. Accumulation and reinvestment are imperative but neither will increase profits for long because with increased production a concurrent increase in labour is required and the spiral repeats itself (Fine, 1989: 33). As mentioned above, capitalists can put profit to work by investing in machines which reduce labour, but this strategy is limited because, paradoxically, unemployed workers do not buy commodities. According to Marx, capitalism is marked by such paradoxes and contradictions that lead to repeated crises such as the current global economic situation. One crisis is the tendency for profits to shrink in a competitive system. If sales for a manufacturer do not continually grow, production must slow, and this leads to negative ripple effects on suppliers, workers and ultimately consumers.

Perelman (1987) points to speculative investments in real estate. In the housing industry, profits can be diminished or cancelled by market contractions or, conversely, by a housing boom which leads to labour shortages, higher wages and escalating production

²¹ Land speculation is also a means of generating profit through fixed capital. See discussion on next page.

costs. Despite the risks, real estate is frequently used to both absorb and generate surplus capital (Harvey, 2010b).

Perelman (1987) suggests that crises are inevitable and repeated. However, the current situation in the United States (and to a lesser extent Canada) involves a variation of a crisis of fixed capital. In the current crisis a lot of speculative capital was tied up in real estate when a stock market crash was precipitated by flawed investments and investment regulation on Wall Street in addition to unsupportable consumer debt. In a unique twist, the current recession was linked to mortgage-backed securities. Consumers were no longer able to pay for mortgages, and the housing market slumped. In the United States particularly, real estate speculation and hyper-competitive sub-prime mortgage lending contributed to an economic collapse in the west unparalleled since the Great Depression. As capitalism becomes more globally integrated and complex, crises have larger consequences (Fine, 1989). And as Neil Smith (2008) points out, global capitalism is changing into new forms of multi-state/capitalist institutional arrangements²².

David Harvey (2000: 7) asserts: "...the future of most of humanity now lies, for the first time in history, in urbanizing areas. The qualities of urban living in the twenty-first century will define the qualities of civilization itself." Cities increasingly display/mirror the pathologies of a distressed ecosystem. Neil Smith claims that cities epitomize all that is wrong with global capitalism: industrialization and deindustrialization continuously alter space in cities most often to the detriment of workers; social dysfunctions and homelessness are increasing; in many cities both decaying neighborhoods and suburbs are growing; and the scale of urban development is

²² Indeed, Noam Chomsky (2011) asks how an economic system can still be called 'capitalism' if taxpayers are forced to prop up failed banks.

invariably determined by economic imperatives rather than social needs. Smith (2008) argues that the mobility of capital and labour and negligent urban planning in the 1980s have created a situation in which widely varying land values make it too expensive for workers to live close to work in the core so they have no choice but to commute. But deficient public transit and sprawl in most large cities make commuting difficult, which is leading to a trend in many cities to re-develop, or gentrify, city centres.

David Harvey shares Neil Smith's critique of the capitalist city and essentially assigns responsibility for urban decay, social marginalization and tensions to the same processes illuminated by Smith. In his *Megacities* lecture, Harvey (2000) provides a litany of social and environmental ills occurring simultaneously with the growth of urban areas in the world. He notes that mobile corporations shuffle their operations following depressed wages from city to city, subsidized by sympathetic urban zoning departments, and enmeshed with developers and speculators, an arrangement Oden (2010) calls a "growth regime"²³. Harvey claims that "mobile capital" exploits more and more workers around the world "...but it is geographically differentiated...as well as dispersed across a variety of massive urban concentrations... (Harvey, 2000: 35-36). Cities become "sinks" for surplus capital, just as young forests are called "sinks" for carbon. As mentioned earlier, accumulated capital is often put to work through geographic expansion and investment in fixed capital including real estate. Harvey (1996: 88) calls this the "spatial fix" which requires that "vast quantities of productive capital be immobilized for relatively long periods in the form of factories, machinery, transport routes, warehouses...", and, presumably, housing developments. Harvey (cited in Smith, 1991:

²³ "Growth regime" is an adaptation of Logan's (1976) "growth machine".

125) noted that a crisis of accumulation was typically preceded by a flood of speculative investment in fixed capital – facilitated by banks and municipal planners. Crises can arise when speculative investment is locked into real estate during market contractions as is currently the case in the United States²⁴.

Capitalists produce space by making it necessary to orient labour, materials, transport, finance and markets in such a way as to maximize surplus value (profit), and according to Harvey (2000), cities exist to keep these things close because transportation costs time and money. But capitalists also keep space mobile (or relative) by shifting capital and production around the world as the profit margin shifts for a given commodity. Space is not a fixed entity in capitalism; it is fluid and dynamic. Smith writes: “We do not live, act and work ‘in’ space so much as by living, acting and working we produce space” (Smith, 1991: 85), by which Smith encapsulates the theory that the political economy of global capitalism involves constant alterations in spatial relations primarily between people and the *built environment* (see Cidell, 2009). Further, money now moves around the globe as if space doesn’t exist: as one stock market closes another opens, and computer mediated transfers create instantaneous profits or losses. But rather than making space irrelevant to capitalism, Smith (ibid.) points out that money has to originate somewhere and arrive somewhere: those ‘somewheres’ are increasingly concentrated and shifting. This is another contradiction in the spatiality of capitalism: Harvey’s “spatial fix” requires that capital must be both fluid *and* fixed. Smith asserts

²⁴ Severe economic shifts often result in the absolute retreat of capital. Some large deindustrialized and decaying zones, such as in U.S. cities around the Great Lakes, illustrate how capitalists move to where labour is cheaper despite the consequences. In the process, they allow both local economies and physical plants to decay along with all embodied labour and materials.

that this contradiction manifests itself most directly and visibly as uneven development for families, cities and regions towards which capitalists have historically seemed unsympathetic.

Marx was remarkably thorough in his specifications of capitalist crises and inequality. Recently, marxist geographers have tied Marx's insights into political economy with ecology to critique an economic system predicated on continuous growth. Marxist ecologists provide the subject of the next section.

2.4: Capitalism and nature

For the purposes of this discussion, one of the most important contradictions in capitalism is that current production practices deplete and degrade the resources required for production (including 'variable capital', or humans). The discussion now turns to capitalism/nature interactions, as elaborated by marxist geographers. The following discussion revolves around two seminal theoretical texts about the ecological, social and spatial implications of capitalist political economy: Neil Smith's 1991 *Uneven Development*; and David Harvey's 1996 *Justice, Nature and the Geography of Difference*.

Smith and Harvey have written extensively on the dialectical relationship between social, economic and environmental processes, and both are for the most part urban theorists. Both Smith and Harvey argue that capitalism could not exist *without* unequal and exploitive class relations, especially in cities, nor could it exist without unequal exploitation of space, again, especially in cities. Both authors understand space as something that is simultaneously a cause and an effect of social activity, and both have incorporated in-depth critiques of human-environment interaction while clearly

recognizing that nature *includes* cities and society. The following section explores various marxist interpretations of urban ecology.

Most marxist ecologists concur that resource values and resource scarcity are functions of economic *and* social *and* environmental interaction (see Smith, 1991: 16-28, and Smith, 2000:488). Perelman (1987: 32) states that “...any attempt to analyze natural resources outside the context of social relations, such as was the case with classical political economy, will prove to be vacuous.” According to Perelman, Marx claimed that negligent resource management would lead to the demise of capitalism: raw material shortages and pollution reflect the inability of capital to control the environment when such control is essential to capitalist enterprise. For example, fossil fuels are essential to current industrial processes and goods transportation but as they become harder to access, the prices for fossil fuels continually increase. At the same time, global demand for goods is growing exponentially, and centuries of wasteful production practices have led to pollution from carbon-based energy consumption which has been associated with potentially catastrophic global climate change. Resource management is inexorably dialectically linked to capital circuits and accumulation.

Theorists and philosophers have long debated about the place of humans in nature. Enlightenment philosophers apparently asserted that humans were to master nature for human use (Harvey, 1996). Harvey claims that certain Enlightenment texts are the origin of the distinction between human and non-human worlds²⁵. Harvey points out that the ‘two worlds’ – human and non-human – were a way for Enlightenment philosophy to justify mastery of nature as essential to human fulfillment. Harvey states

²⁵ Elliot (2006) is an excellent resource for the study of the history of nature/society split as explored through communication and semeiotics theory.

that a human-nature split still guides world capitalism, but that nature is now a tool and a commodity for market exchange. Harvey suggests that the philosophy never promoted over-use of resources or intentional damage to the environment, and that such abuses actually resulted more specifically from agrarian and industrial capitalism. Harvey has no doubt that "...it has been capital circulation that has made the environment what it is" (ibid., 131). About resource scarcity, Harvey claims that Malthusian theories on population and economics are still governing rich countries and influencing how they deal with peripheral countries, including the social Darwinism implicit in 'natural' entrepreneurial competition. Harvey states unequivocally that "...all debate about ecoscarcity, natural limits, overpopulation, and sustainability is a debate about the preservation of a particular social order rather than a debate about the preservation of nature *per se*" (ibid., 148). Again, the implication is that poverty and resource scarcity are in fact *necessary to capitalism*, an assertion echoed by Neil Smith.

Smith studied at Johns Hopkins University under David Harvey. In the first part of *Uneven Development*, Smith (1987; 1991; 2008) very deliberately bridges Marxism, geography, history and ecology by describing the socially created ideology of nature over time. Smith flatly dismisses the society-nature split. He states "...nature is nothing if it is not social...What must be done is to show that concrete relationship by which nature is invested with this social priority" (ibid., 30). Smith also claims that such a split was antithetical to Marx:

Marx...begins with the relation with nature as a unity and derives as a simultaneously historical and logical result whatever separation between them exists. In this way the social priority of nature is not something that must be infused from the outside, but something that already exists in the social relation with nature. Instead of the domination of nature, therefore, we must consider the

much more complex process of the *production of nature* (ibid., 30-31, italics in original).

Nature, for Smith, has no existence apart from society and vice versa²⁶. Smith argues that Marx used nature in a variety of ways, all of them social. But the interaction is more complex because humans fabricate necessities from nature with physical and mental labour, and, in the process, produce consciousness of higher order needs and the means to satisfy those as well (e.g. science, religion). In this way, Smith claims that Marx assigned to both nature and labour a vital role for humans: in producing goods to satisfy our needs *we create ourselves and consciousness of ourselves* (ibid., 37). In this process humans are, directly or indirectly, connected to nature in the work we do. This is especially apt in a dissertation about housing.

Next, Smith elaborates how both types of roles – material and non-material – are exploited by the capitalist mode of production. Throughout history humans have generated surplus goods (mostly food until recently) as insurance against shortages that were due primarily to uncertainties in nature. Only in recent history has this surplus been commodified and appropriated by a class of people removed from the original relationship to surplus, which is significant because it leads to the first capitalist contradiction: surplus frees society to some extent from uncertainties in nature, but has become subject to exploitation that thrusts certain segments of society back into uncertainty.

²⁶ Elliot (2006) dissents, claiming certain natural phenomena like earthquakes and volcanic eruptions are social only in their effects. Smith and Elliot exemplify two sides of an on-going debate in the socionature literature about the extent to which humans are in reality able to influence nature over longer (i.e. epochal) time frames. Elliot argues that writers who claim humans are dramatically altering the planet do so from a purely human conceit about our power “over” the nonhuman world, essentially reinforcing a nature-human split.

Smith continues with historical political economy. As populations grew, *use values* (the value of a product to the end user) were transformed into commodities. Smith claims the transformation is the seed of modern capitalism. Labour became divided further into agriculture and commerce through social institutions, and a market arose for the exchange of commodities. This led to merchant economies and further divisions of labour into classes (i.e. blue collar and white collar). As with a conventional marxist analysis, Smith suggests that the state evolved to manage class divisions *and property* in the interests of the ruling class. As the state grew so did the bourgeoisie, which assumed control of production processes and distribution. Apparently the shift was accompanied by significant alienation from nature: in the new relations of production, human relations with nature are completely socially mediated:

Capitalist production (and the appropriation of nature) is accomplished not for the fulfillment of needs in general, but for the fulfillment of one particular need: profit. In search of profit, capital stalks the whole earth. It attaches a price tag to everything it sees and from then on it is this price tag which determines the fate of nature (Smith, 1991: 54).

Throughout *Uneven Development*, Smith describes the broad spatial patterns that he says define all of capitalism, relations with nature and inequality. According to Smith (1991), Marx asserted that the means of production including labour, use values, exchange values, and financial arrangements such as credit, must all be spatially integrated. Marx apparently also pointed out that commodities had to be exchanged across multiple spatial scales for profitable industries to expand. Real estate is a key example of how an apparently spatially fixed commodity moves: equity is used to lever construction costs wherever mobile speculative investors and developers find opportunities for growth. But at the same time, Smith claims that both spatial and social relations determine use-values

of commodities – in other words “the object’s usefulness [is] in relation to other objects, events and activities” (ibid., 83). As an example, he points out that “the use-value of a house is determined not only by its dimensions in feet and inches but also by its internal design, its proximity to transport routes, sewage lines, work, services and so on” (ibid., 83). Smith is using purely instrumental spatial values in the example, and housing is apt because it is the locus of the reproduction of labour as well as an easily commodified ‘product’ in capitalist economics.

In response to the ideological insistence that the system and the market are ‘naturally’ occurring entities and the most ‘natural’ way to organize society, Smith concurs with Harvey: “...the identification of natural laws inevitably involves a clear knowledge of the limit of these laws, and thus the distinction between laws which are in reality natural and those which under a specific form of society are made to appear natural” (Smith, 1991: 59). In capitalist logic of supply and demand, limits must be creatively surpassed because they increase production costs. However, by ignoring natural limits, capitalism often produces resource scarcity and degradation, pollution, job hazards and diseases, all of which, paradoxically, create shortages in raw materials, labour, and profits. Ceaseless growth of commodity production and consumption in a finite system must inevitably correlate with diminishing quality and quantity of inputs as production and accumulation reach ecosystem limits. For better or worse, global capitalism produces both nature and scarcity.

2.5: The evolution of marxist theory

Harvey and Smith have been vital for advancing geographic theories on politics, economics and environment. Nevertheless, their approach to urban geography has been

criticized because it seems to be "...founded upon this zero-sum situation...[in which] Winners live in central districts of collective symbolic value or leafy suburbs with green trees and clean air [whereas] losers live in slums" (Zukin, 2006: 103). Zukin insists that cities assume nuanced distinctions from the constant creative forces of human growth and learning that are not represented in structuralist marxist geography. Gibson-Graham (1996) spotlights the discursive nature of capitalism – the rich cultural interplay of images that accompany the marketing of consumer products – along with subversive political possibilities and strategies that may be missed in conventional political economy. Again, the issue seems to be a lack of nuance in marxist theory. Similarly, Katz (2006) calls Harvey's Marxism a "totalizing theory" (ibid. 234). She insists he is "...eschewing the messy in favour of the elegant and systematic; the totality over the partial or contingent" (ibid. 235). Despite Harvey's more recent attempts to incorporate gender, race and ethnicity into his expostulations against capitalism, like Smith he consistently subsumes these variables as functions of the class system (e.g., see Harvey, 1996: 228).

These criticisms may be unfair. Smith hypothesizes that the world is full of unevenness and diversity. Harvey is also clearly sensitive to multiple interpretations of place at various scales and the many meanings humans assign to places. Both theorists are recognized for their astute analyses of broad patterns of economics and urbanization. However, I must question the persistent attribution of uneven development to a monolithic capitalism in the work of both authors. While marxist theory helps to explain much of the injustice in the world, perhaps smaller scale analyses can add nuance and explanatory power to structuralist theory. Recently, marxist urban theorists (including

Harvey and Smith) drew attention to the impacts of global capitalism on urban natures, and proponents of urban sustainability have also acknowledged sustainability at smaller scales, from the sustainability of regions and neighborhoods, to the durability of specific houses, to the intimate meanings and functions of homes. This theory chapter will now turn to recent strands of critical human geography from a mid-range theoretical approach²⁷ that combines political economy tempered with close attention to language, meaning, and ecology, and that is more amenable than marxist meta-theory to exploring the dialectical influences of various social actors at multiple levels.

2.6: Natures and social nature

In marxist theory, nature becomes an issue for capitalists when it interferes with economic growth. But what is nature? The discussion thus far has only briefly introduced the debate among geographers and others about the word nature, and the word has been used simply to denote that part of the physical world that is not human, but this definition must be qualified with reference to a wide range of possible conceptions. Hay (2002: 22-23) combines ecology and culture into dialectically influential processes: “To focus on the notion of ‘process’ as the key site-designator for the terms ‘culture’ and nature thus rescues nature in an important way.” Humans may in part determine how we interact with the non-human world, but for Hay, *the situation and the process* are foremost (cf. Perelman, 1987). Hay’s definition is consistent with recent theoretical innovations that combine the human and non-human world in a carefully and deliberately thought-out set of material, emotive, creative and philosophical contingencies: defining nature is challenging precisely because one must decide if and where human activity ends and

²⁷ See entry for ‘mid-range theory’ in Glossary.

nature begins. Demeritt (2002) asserts that nature is first a set of *social concepts*, and second the *material construction of the physical environment* (see also Castree, cited in Johnston et al. 2000: 539). The problem with this definition is that one could use it to argue that houses are nature, certainly a problematic assertion (although the suggestion that “homes are nature” might, for me, be more defensible). Hay (2002) concurs that without nature as a distinct but linked material reality that environmentalists can target for protection, there is little hope of addressing environmental damage. Hay claims that nature must be kept separate from society, *if only in discourse about nature and society*, to discover how humans fit into it and impact upon nature.

Marxist scholar Noel Castree has written extensively about rectifying the human/nature split in order that critical geographers may more easily understand human environmental interaction (see Castree, 2001, 2003a, 2003b, 2005). In Castree’s social nature theory there is no nature outside of our individual or political definitions or, in other words, outside of culture. At the start of an article on “culture/nature”, Castree (2003) struggles with definitions, suggesting that ‘culture’ and ‘nature’ are “semantically promiscuous”, but, regardless, Castree offers a lucid critique of marxism that helps to translate political economy into the Anthropocene era. Castree (2003a: 179) posits: “...culture was figured by Marx as an ontological poor relation....It was...a domain of ideas that could have no existence if nature and economy did not together materially undergird it.” Marx’s approach was:

... implausible in other key ways. First, the ontological hierarchy installed between economy and culture – and by implication nature and culture – these days looks decidedly shaky. Quite how one can claim that culture is somehow ‘less material’ than other moments of socio-environmental life is difficult to fathom. Moreover, the attempt to deny culture and real autonomy outside the

marionette movements dictated by the economic base (itself erected upon natural foundations) seems today to be theoretically crude (ibid., 170).

Marxist social scientists after Marx, including Castree, have engaged with nature and culture in various ways (e.g. the Frankfurt School). Castree summarizes a number of theoretical orientations from which marxists have studied nature and culture, but in all of them a key question remains: how can we separate different effects to identify nature? In proper dialectical fashion, Castree claims the answer is in the questions: "...which natures matter, how, and with what consequences?" There is no single answer since "...natures are materialized in historico-geographically contingent and variant ways" (ibid., 179). In this socially constructed approach to nature, Castree, much like Hay, Harvey and Smith, recommends focusing the argument on capitalism and justice instead of capitalism and nature to avoid semantic logjams.

Culture, like nature, is another "slippery" term. Regarding 'culture,' political ecologist Lipietz (1999: 45) offers an appealingly simple conceptualization: he defines culture as behavior regulated by norms, rules, meanings and institutions in order to induce people to do what is expected of them. It varies from place to place and it is what is considered legitimate behaviour and problem-solving. Lipietz' main point is that "...culture is both an outcome and a precondition for the reproduction of society...the bridge between past and future, the unconscious continuity of society...Culture is a general capacity to accommodate the new [and]...the incorporated form of social regulation." For Lipietz, culture, then is similar to nature in that it is historically and geographically specific. In the context of this research, Lipietz's conceptualization of culture is particularly suitable because homes are perhaps *the* primary locus of

reproduction of society. Culture in this sense can also be directly linked to environmental interactions and outcomes as it dictates consumption of goods, energy and waste. In the current research, I draw in part from the interactionist tradition in sociology, and in particular, the identification of cultural factors that influence economic decisions like house purchases (see Bourdieu, 2005). For example, as environmentally responsible behaviour becomes more fashionable, “green culture” may be associated with sales of more energy-efficient housing, more bicycle commuting, and so on. But such an analysis benefits further from using discourses to compare cultural archetypes and identities as they pertain to ‘nature’ and the way certain actors may utilize cultural values around ‘nature’ to achieve certain ends.

Castree (2001) points to precedents for social nature theory that run through Marx and Harvey and Smith. He argues that there are only plural ways of knowing nature, and none of them are neutral. ‘Knowledges’ of, and discourses about, nature often reflect gender, class, race and colonial biases. Castree claims that social struggle and the politics of power dictate which discourses are accepted as valid, and then discourses become so entrenched that they appear ‘natural.’ What is more, societies always interact with nature and always have. The relationship is irreducibly dialectical and economically and politically charged. Castree illustrates with hazards and famine research which both demonstrate that poor people are much more likely to suffer and die in ‘natural disasters.’ He also highlights how western agriculture has negatively impacted on traditional practices in developing nations, and the link between locations of toxic industries and dumps in poor communities (Ibid., 13-14). Castree then illustrates how societies ‘manufacture’ nature. For example, modern agriculture is a huge multinational business

that uses science and technology to alter plants, animals and the landscape for the mass production of food. Unintended and uncontrolled byproducts of western capitalist production are associated with negative environmental impacts throughout the world. Again, Castree asks what natures have been created, for whom and with what social and ecological consequences?

According to Demeritt (2001), critics have charged Castree with claiming that ‘humans create nature’, or that all that exists of nature is what we believe about nature, but Castree asserts that this “hyperconstructionist” view is far more extreme than the theory to which social nature geographers adhere. He argues instead that we are obligated to simply be aware of politics, values, moral and ethical statements about nature as we venture some judgments about right and wrong. Like Hay (2002), Demeritt suggests that definitions are key: nature is first a set of *social concepts*, and second the *material construction of the physical environment*. The two must be clearly distinguished, again to avoid semantic logjams. Regardless, Castree has introduced a provocative contribution to critical geography that has altered the way geographers explore urban ecology.

A clarification is in order. In this dissertation, nature and society are theorized as inseparable in the global environment, but for the purposes of this research an important distinction must be made. I will not assume research participants will understand terms as they are used in the literature or in this dissertation. As an attempt to bridge discourses, I will assume that *nature is the world rhetorically prior to humans, the non-human material elements of the physical world in a simple, vernacular sense*. It is assumed in the following sections of this paper that actors referring to nature will not be referring to humans, unless explicitly stated. This nature is also *not* houses, so it can be invoked to

distinguish between houses and homes. However, nature is not an absolute category: a more 'natural' area would be an area that reflects less human impact. In other words, although nature is evident across the globe, there is an inverse relationship between human activity and a natural state. Hence, a neighborhood may be more or less natural. In contrast to nature, in future references 'the environment' is typically used to refer to the much broader, interconnected natural and human world that supports (for now) life on Earth. I need to emphasize that I am creating rhetorical or semantic distinctions as a research aid and heuristic device, and that I acknowledge with Castree, Hay and Demeritt that nature is social, and cities (including the built environment) are nature.

Having defined a key concept, nature, this chapter will now move on to discuss recent approaches to critical geography. The following section discusses social nature and political ecology as tools that build on the work of earlier green marxists to explore nested political, economic and environmental relationships in more detail, and which offer theoretical rubrics well-suited to research on housing development. The section then describes how social nature has informed another marxist offshoot, political ecology, and introduces Paul Robbins' version of political ecology as a powerful analytical lens through which to examine urban nature and suburban development.

2.7: Urban natures

If nature is, indeed, social, then cities are very suitable spaces to critically investigate the social construction of nature, an idea that forms the core of *political ecology*, a suitable theoretical tool for examining urban development. For example, Swyngedouw and Heynen (2003; see also Heynen, Kaika and Swyngedouw, eds., 2006) generate a wide-ranging and inclusive analysis in which they hold that cities are nature (it is at best

misleading to insert even a semantic separation between the two), cities are social (built, lived in and fought over) and cities are rife with profound inequalities for both nature and people. Theory in this vein offers the possibility that cities can be analyzed like any other organism, investigating causes and effects of injury at various scales and examining power relations as nuanced elements in global processes of change.

Swyngedouw and Heynen (2003) offer a radical critique of the impact of capitalism on the city-as-organism, occupying one end of a continuum of analytical devices adopted by political ecologists. Since it was coined in the 1970s, the term political ecology has come to represent what Watts (2009: 547) calls a “polyglot landscape” of theoretical approaches that originated in marxist studies of agriculture and natural resource management in developing countries, and has expanded to every corner of the globe in concert with warnings about dire human impacts on global ecology. Paul Robbins (2007) offers another especially appealing application of *urban political ecology* (UPE) in his studies of urban natures, and a unique translation of marxist theory into research. Like Castree, Robbins’ main assumption is that nature is social. In Robbins’ (2003, 2004, 2007) study of the suburban American lawn, he found that suburbanites’ consumption patterns and their resulting environmental impacts reflect a complex array of influences including: individual commitments to suburban culture, or the privileged middle class “political places” in which suburban dwellers reside; links between standardized family and neighborhood values in consumers and in the marketing of consumer products; the erasure of social and environmental responsibility from chemical manufacturers’ lobbying and marketing efforts; the impact of generalized economic conditions on industrial competition; and, ultimately, the narrative of western capitalism

(i.e., that free markets eventually provide the best quality of life for the greatest number of people).

Robbins' work is very compatible with marxist meta-theory. The free market narrative is closely aligned with global neoliberalism, growth economics and narratives of human control of nature – all of which, deliberately or inadvertently, serve capital accumulation. The next section investigates the theoretical implications of nature discourses for the current research.

2.8: Nature discourses and politics

The previous section described social nature and political ecology as analytical tools. Thus far, previous chapters have briefly alluded to the discursive constructions of nature in marxist writing on ecology. This section details how nature is framed in political discourses.

Escobar (1996: 326) states unequivocally: “Discourse is the process through which social reality inevitably comes into being.” Research cited in Chapter 1 lent credence to the theory that suburbanites occupy “certain political places” (Robbins, 2007) and their consumption patterns reflect suburban culture and the narratives of western capitalism, which is essentially a process of transformation and commodification of nature (Harvey, 1996; Smith, 1991). These transformations, including the transformation of urban environments, occur unevenly because “...the material production of environments is necessarily impregnated by the mobilization of particular discourses and understandings (if not ideologies) of and about nature and the environment” (Swyngedouw and Heynen, 2003: 903). Domination becomes normalized through control of the nature narrative. In addition, Forsyth (2003) writes: “...discourse may be

structured in order to portray different actors to undertake particular roles of (for example) victim, villain, and savior to enhance the power of the narrative as an explanatory tool, or as a device to enact political implications.” Narratives serve to impose order on social actors to control political uncertainty (ibid., 97-98).

In the first chapter of *Uneven Development*, Neil Smith (1991) describes how, during the Industrial Revolution, portrayals of nature as ‘wild and hostile’ shifted to what Smith describes as a ‘simple and virtuous christianized naturalism’. Smith argues that the latter imaginary could not be reconciled with the environmental carnage of the Industrial Revolution: discursively, a ‘virtuous nature’ evolved into a ‘garden’ which was to be cultivated and made to human scale.

The ‘tame-able garden’ metaphor persists with some modifications. Smith expands on the current western, industrialized narrative: a) nature has been tamed and is no longer hostile except when it is necessary to justify exploitation; and b) nature is universal, and hence, capitalist economics, racism, war, competition, private property, inequality, injustice, poverty and so on are “natural”. Narrative threads in this ideology apparently include the suggestion that to fight exploitation is to fight ‘nature’. Smith culminates his argument (in 1991) with the observation that nature narratives in the current capitalist system also incorporate a nature that is feminine, fertile and reproductive – to be dominated and exploited either because it is dangerous or because humans know best (see also Harraway, 1991; Shiva, 1998). Smith theorizes that western physical sciences have completed the discursive separation of nature from humans/culture/society that began in the 19th century. Willems-Braun (1997: 5) writes that nature has become a “...discrete and separate object of aesthetic reflection, scientific

inquiry, and economic and political calculation.” However, like Noel Castree and Neil Smith, Willems-Braun disputes this separation, suggesting that it is misguided to assert that humans are anything *but* nature in light of our widespread alteration of the Earth’s ecosystem (see also Castree and Braun, 2001; Castree, 2005; Demeritt, 2002; Keil & Graham, 1998; Moffat & Kohler, 2008; Swyngedouw & Heynan, 2003).

Similar to Neil Smith’s first chapter in *Uneven Development*, Hay points to the different directions environmental discourse has taken since the 1960s (see in particular, Chapter 2 in Hay, 2002) most of which require a separate material reality for nature. Of these discourses, the one that is most important for this discussion is that of *sustainability*. Neil Smith argues that the newer discourse (with a generalized threat and crisis in the background) has been appropriated by capitalists into what Smith (1991) calls “establishment environmentalism” (ibid. 279). This shade of “green” discourse often incorporates greenhouse gas emissions and global warming which are assumed to be unsustainable, and proponents insist the existing capitalist economic system is the best way to deal with these ‘environmental threats.’

Urban development reflects inequality in various ways, or “difference” as Harvey calls it, an essential component of western capitalism (Harvey, 1996). Difference is a result of the transformation of urban environments which occur unevenly because “...the material production of environments is necessarily impregnated by the mobilization of particular discourses and understandings...of and about nature and the environment” (Swyngedouw and Heynen, 2003: 903). Meaning and discourse are key ingredients of culture, and also important focal processes for UPE.

The following paraphrases Harvey (1996: 373-389) and summarizes some of the dominant discourses about environment limits from the position of critical political economy: First, Harvey talks about **The Standard View** whereby environmental problems are seen as the result of a failure of the market to control resource exploitation. This is best fixed by state/expert intervention. This discourse in no way challenges capitalism and directly contributes to unsustainable exploitation of limited resources. Next Harvey looks at **Ecological Modernization** which combines large-scale social and ecological planning to minimize the harm caused by economic activity and preserve the environment for future generations. This discourse, best exemplified by the *1987 Brundtland Report*, also attempts to work within current political-economic regimes by: a) pointing to profits to be made from “green” industries; b) defining the dollar costs of pollution and resource depletion; and c) by indicating the need for coordination of policy between nations to foster the change from “growth” to “development”. This discourse does not challenge the dominant paradigm, so it has been taken up by middle class interests and populist politics. Harvey criticizes the tendency of proponents to drop this discourse during tough times and focus on overcoming limits to growth. The third paradigm Harvey discusses is **Wise Use** which reflects an extreme libertarian and laissez-faire perspective. Proponents argue that property owners are the best to decide on the appropriate use of their property. ‘Wise Use’ apparently regularly appears in right wing political platforms in the U.S. It is also used by big business to claim “stewardship” of resources so that they can be used “sustainably.”

Finally, Harvey summarizes **Environmental Justice** which he claims is *not* managed state or corporate interests. The discourse a) places social inequality (class)

front and centre with environmental and human health issues; b) subverts scientific experts who have denied or questioned the links between poverty and environmental hazards c) prioritizes poor folks rather than “nature” in all discourse on the environment; d) makes discourse personal by incorporating the voices of those who face environmental injustice e) and ensures that discourse is specific, radical and morally outraged.

Harvey (1996) is most amenable to the last option because it is appropriate for a marxist critique of political economy: environmental justice explicitly recognizes inequality and incorporates praxis, and it speaks to a core issue: sustainability must be equitable or it cannot be just. Harvey delves into place construction/destruction in his wider theoretical ruminations about the annihilation, reconstruction and commodification of space in worldwide capitalism. In his more recent work, Harvey (2010a; 2010b) writes specifically on the impact of the housing industry and housing financing on world economics during the last century to explain the most recent crisis of capitalism, making this stream especially pertinent for contextualizing production housing in Ottawa. As a ubiquitous indicator of the economic health of developed nations, Harvey is certain that house production is inexorably linked to global capital circulation and accumulation. And in an economic downturn, low-income people lose their homes first.

Political discourse is constructed at various levels. For example, Canadian federal government discourse is choreographed depending on the requirements of the current regime. In 2005, 2006 and especially 2007, *The Canadian Housing Observer*, an annual broad summary of housing trends and research published by the CMHC, included sections on housing and the environment, including serious concerns about climate change, reducing greenhouse gasses, brownfield and infill construction, the Kyoto

protocol, resiliency in the face of climate change and pollution. In contrast, in the first year of a federal Conservative minority government, in the 2008 version of the *Canadian Housing Observer*, the global environment had virtually disappeared from the document. Natural Resources Canada (NRCan) is another government department with a significant influence on housing mainly through the ‘ecoEnergy’ renewable energy initiatives. But the federal NRCan Minister’s bottom line appears to be that:

The largest source of untapped energy is the energy we waste. By investing in real action to increase energy efficiency, increasing our supply of cleaner energy and developing the technologies that will allow us to become cleaner producers and users of conventional energy, we are making real progress toward the results Canadians want; reduced energy costs, cleaner air and a healthier environment for all (Raitt, 2009).

From this passage it seems that individuals are responsible for “the energy we waste” and it appears Canadians want to pay less and be healthier. There is absolutely no indication of a review of federal policies that favour a fossil fuel-based economy, nor is there any indication of federal leadership in national climate change policy. Placing the onus of responsibility on the individual is consistent with a neoliberal approach to a global problem.

Invocations of science are integral to environmental narratives (Forsyth, 2003; Stott & Sullivan, 2000). There has recently been a dramatic proliferation of green building ‘experts’ with a growing associated discourse which includes ‘carbon footprints,’ ‘net-zero homes,’ ‘solar gain,’ ‘life cycle evaluation’ and so on. Ottawa house builders and home owners are also faced with numerous sources of ‘expert’ information. For example, Natural Resources Canada administers Energy Star, EcoEnergy, EnerGuide, BuiltGreen and the R2000 programs; the National Research Council (NRC),

Natural Resources Canada (NRCan) and CMHC have programs targeting both builders and consumers; the federally-endorsed Canada Green Building Council offers the Leadership in Energy and Environmental Design (LEED) certification scheme; the Province of Ontario has implemented the recently established *Green Energy Act* and municipal planning guidelines called *Places to Grow*; and most municipalities have sustainability initiatives. These are a sample of dozens of programs serving Canadian builders and home owners as the construction industry and consumers both become more educated about building issues. There are also now countless private businesses advertising in popular media that are capitalizing on the green discourse. It is the consumer's responsibility to sift the information. However, few homeowners have the time or knowledge to screen multiple information sources to make decisions that will reduce the ecological impacts of their houses, nor do they seem concerned with urban planning fashions such as New Urbanism or Smart Growth. Regardless, the current Canadian political-economic system screens the science and uses a carefully framed nature narrative and *laissez-faire* policies to assign at least partial responsibility for discerning the best choices to housing consumers.²⁸

Discursive contests at the local level must be understood as products of local politics. Oden (2010) writes about citizen-developer contests from *urban growth regime theory*. According to Oden, a "growth regime":

... stresses bonds of association and interest among privileged groups in urban regions which tend to align values and norms within and between group

²⁸ Arguably, the science is increasingly within the purview of large tract builders too, who have the resources to study, understand and filter the rapidly growing and complex information on green building products, technology and practices. The filtering process is problematic: consumers by default depend on builders to be informed about best practices, but best building practices sometimes conflict with best business practices.

members... More traditional regimes are dominated by real estate interests and what might be called local fixed capital – firms whose investments are spatially sticky. These would include utilities, road builders, and other public and private contractors whose investment returns are shaped by local economic performance. Private sector players in the growth regime use highly unequal access to economic resources to shape distributive outcomes in the political realm...and excluding or limiting influence of “outside” groups. Financial resources are used to build individual ties to local political decision-makers (political contributions, revolving door relationships, and social relationships) and private interests can exert structural leverage because city officials depend on a sales and property tax base influenced by regime investment decisions. (ibid., 41-42)

In the above passage, Oden concisely summarizes the relationships that are reported to exist between municipal officials and developers and the building industry in general as one form of social capital that serves the regime (Doucet, 2007; see also Molotch, 1976; Logan and Molotch, 1987). According to Oden, developers have a privileged voice in city affairs, and environmentalists and social justice proponents are often silenced or limited to formal, bureaucratic avenues to express concerns. In Oden’s article the growth regime functions to ensure for developers (a) high rates of return with low risk, and (b) the freedom to operate with minimal government interference. Oden points out that developers make marginal concessions “around the edges” of sustainable urbanism such as planting token trees (ibid., 43). Oden also suggests that political exclusion undermines civic involvement and democratic debate about all kinds of urban issues including sustainability.

Discourse, power and politics are inextricably intertwined with the creation of built environments and the production of nature more generally, but not all actors possess the same transformative potential. Power is constantly contested: narratives serve to impose order on social actors to control political uncertainty. The discourses offered by developers and the building industry, especially through lobbyists in various political

forums, encompass, describe and guide both suburban production and consumption to varying degrees. Simultaneously, the public engages in resistance, mainly in the form of interference with urban development which is often labeled NIMBY-ism (not in my back yard), a derogatory name for citizen action aimed at interrupting “growth” which is often equated with “progress”, two more acrimoniously contested terms.

Paul Robbins (2007) makes clear that an understanding of narratives and marketing is a key to understanding the business of suburban residential development and sustainability. Discourses around suburban, periurban and exurban development are particularly illustrative of controversy over urban ecologies as will become evident in later chapters of this dissertation. The next section highlights pertinent links between theory and research in Robbins’ recent work on the North American suburbs.

2.9: Urban political ecology and Paul Robbins

Robbins (2003; 2007) uses a UPE approach to understand why Americans continue to carpet suburbia with turf grass despite clear ecological costs, and despite their (growing) comprehension of these costs. The approach is cross-disciplinary, multi-method, multi-scalar, theory-based and policy-relevant, with an accent on cultural and ecological variables. Analysis across scales is a powerful feature of UPE as a framework for a research methodology as it demands the identification of multiple actors and processes over time. Robbins’ UPE is at times complex: the *Lawn People* research is a thorough engagement with social geography variables at different scales including individual, family and community, identity, culture, economics, politics and the environment, as well as the chemistry and biology of lawn chemicals. For example, Robbins’ approach highlights the political economy through which urban environments are produced and

altered, showing the deeply entrenched economic structure that underpins the suburbs: certain people can afford to buy large houses on large lots, and they bring with them certain historical patterns of consumption. The approach also enables Robbins adds a social-psychological dimension to his multi-scalar approach when he explores the social psychology of suburban homeowners, overlaid on class, culture and identity, which dictates a certain narrow range of culturally legitimated mores (see also Rybczynski, 2007). Robbins surveys for individual motivations and behaviour among his research subjects, and remarks that: "...the environmental realities of the twenty first century...are as much the work of individuals as states or firms" (Robbins, 2007: xv). Thus, multi-scalar, political, economic, ecological, cultural and social-psychological variables are essential considerations in Robbins' UPE approach to urban development.

Robbins (2007) points out that knowledge about a global problem does not necessarily translate into local action: in Robbins' research, the people with the clearest understanding of the effects of lawn chemicals were also the people most likely to use those lawn chemicals. In Canadian suburbs, house buyers are increasingly faced with a growing barrage of complex information about house energy rating systems (Energy Star in particular) and government incentives for energy efficiency upgrades which are the direct result of concerns about climate change. Suburban housing consumers are also increasingly aware of the growing costs of commuting, including ecological costs. But knowledge does not always lead to local action, especially when fossil fuels remain 'affordable' and when it is still far cheaper for consumers and more profitable for developer-builders to subdivide and build in farmland outside of urban areas than to intensify within established urban areas. There is a causal chain which adds up to

“...countless unintended but logical outcomes of larger forces, consolidations, and negotiations of global industries in early twenty-first century capitalism” (Robbins, 2007:94). By “logical” outcomes, I interpret Robbins to mean “understandable” outcomes, such as millions of hectares of monoculture lawns or the continued construction of carbon-intensive housing.

Robbins is especially interested in the impacts of marketing on sales and the constraints of the larger economic and political climates on the industry in question. He asks: “Do the necessities of shedding costs and declining margins impinge on the decision-making of even well-intentioned manufacturers and investors, with implications for either consumers or workers? Does the industry meet or instead create demand?” (ibid., 71). I think the preceding question is absolutely crucial, and reflects Robbins’ reluctance to attribute causal relations to the behaviour in question. Robbins notes that the chemical industry creates a need for lawn chemicals in the public eye through specific images of the ideal (American) middle-class family and neighborhood – a “...directly marketed aesthetic tied to a way of being a ‘good person’ through ecological community values: family, nature, and collective good” (Ibid., 92).

Suburban lawns and houses are fashionable, and despite the growing clamor about ecological and infrastructure costs for expanding suburbs, consumers continue to demand housing on urban fringes, and largely because suburban neighborhoods are still more affordable than urban neighborhoods. Chapter 1 of the dissertation described how suburban development has historically been replete with complex push and pull factors. Urban political ecology is ideal for delving into these factors and for the study of what Heynan et al. (2006) describe as the perpetual remaking of nature in cities by human

labour and life. In Robbins' research, urban material structures result from a complex, multi-layered, multi-actor reciprocal process.

On the other hand, Robbins' struggle to understand the American lawn, a ubiquitous phenomenon composed of nature, culture and chemicals, is a model of a pragmatic translation of a critical theoretical approach to an effective research methodology. The research attempts to capture the dynamic way that "... meso and macro scale political and economic forces set the context for local environmental action and interaction, most commonly amongst primary producers" (Robbins, 2003:643). Robbins' form of UPE is especially appropriate for research about an industry in transition as it is forced to accommodate new environmental regulations, and material changes in the *built environment*.

Robbins' work is directed at the environmental impacts of one element of the suburbs, millions of hectares of turf grass, and one industry, the turfgrass chemical industry, in an attempt to provide a critique of suburban culture and industrial economics. But *Lawn People* is also an innovative acknowledgement that humans are subjects of our world at the same time that we attempt to master our world: urban natures are human natures. Following Robbins, the next chapter attempts to spell out the *homeecology* of houses and homes in a way that more carefully and thoroughly specifies the range of relationships and impacts of both as they are combined.

2.10: Houses and homes

The transition of houses into homes and the dialectics between the two are important research subjects for numerous reasons. In developing a working definition of residential sustainability for the purposes of this research, I draw the distinction between a house and

a home to distinguish between a material structure on the one hand, and a network of social, material and environmental relationships on the other. The spatial materiality of a *house* becomes a socionatural hybrid called *a home* once it is occupied by people. The concept of hybridity in geography has evolved from Harraway (1991), Harvey (1996), and Massey (1993), through social nature theorists such as Castree and Braun (2001), to urban political ecologists such as Swyngedouw and Heynan (2004), Kaika, et al. (2006) and Cidel (2009).

Cidell (2009) and Moffat & Kohler (2008) introduce a unique way to look at the *built environment*, challenging us to link the terms rather than assume a social-nature duality. Buildings serve many purposes, most of which involve interaction with people. Cidell's critique of the Leadership in Engineering and Environmental Design – Neighborhood Development (LEED-ND) rating system explicitly introduces non-human nature into the equation. Cidell asks if it is suitable to plan only the physical structure of a new neighborhood, as in the LEED design options, while essentially ignoring the socionatural totality of a new neighborhood. Moffat & Kohler (2008) point out that ecological models, in other words, models of the interaction between humans, the non-human environment, and buildings *over time*, can potentially help planners understand policy implications much more clearly than current practices. The result is the difference between developments and communities.

People inhabit houses and turn them into homes over time with layers of meaning, history, desires and patterns of social and material relationships and interaction²⁹. Smith (2000: 346) acknowledges that houses are much more than commodities and the means

²⁹ "Material interactions" can be anything from urban planning to thermostat adjustments.

by which people in North America build financial equity: “Housing is [also] a form of shelter, a refuge, a welfare service... and a gateway to jobs, services and social support”. Homes are also ideologically and emotionally charged places, and our main spaces of personal security, enculturation and identity formation (see Massey, 2011; Porteous and Smith, 2001; Relph, 1976; Rybczynski, 1984; Tuan, 1974). Clearly, in both vernacular discourse and theoretical debate in the English language, a house cannot be equated with a home. Why is the difference important?

In addition to its economic and simple shelter functions, a home is a site of energy exchanges, a sanctuary from the rest of society, a key place for the transmission of culture, a place for nurturing and fulfilling biological needs, a locus for meaning and memory, and a more or less stable base for material and social interactions outside of that home. This must be qualified with the clear understanding that homes can also be toxic for various social and material reasons: homes in Canada and elsewhere are too often sites of social dysfunction, gender inequality and abuse, and they may also physically poison inhabitants (e.g., through off-gassing of formaldehyde in cabinetry, asbestos in drywall, flame retardants in fabrics, etc.) and the world beyond. Further, one must consider issues of housing equity: although around two-thirds of Canadians own their own homes (Statistics Canada, 2011), many people in Canada cannot afford to buy a house in the suburbs or anywhere else, and the raw ownership number does not speak to the increasing percentage of home owners who are spending more than half of before tax earnings on mortgages and house maintenance (Moore and Skaburskis, 2004), not to mention insurance, taxes, and commuting.

On the other hand, the statistics in the previous paragraph mask the fact that housing is an essential component of labour reproduction in a capitalist society. And a focus on the intimate or affective components of the concept of a home may also mask the simple fact that, especially in the era of home computers and other media, homes are a primary means for producers of consumer products to access consumers. Nonetheless, the politics of housing equity and affordability within capitalist functionality are essential elements of any discussion of urban sustainability, accentuating the symbolic/discursive, emotional, metaphysical, cultural, economic and bio-physical significance of homes.

Chapter 1 of the dissertation described the many material ways houses and the housing industry impact upon the global environment. Shifting to the scale of the neighborhood and adding variables increases this complexity, and not only with regard to energy consumption and GHGs. Individual buildings are created from elements of the “natural” world, processed, transported and reconfigured by humans. Then buildings are combined in various groupings causing spiraling effects on the environment. Buildings are then inhabited and linked to community social networks and the wider political economic system. Dale (2005; 2012) insists that social networks are a crucial but often ignored variable in planning for neighborhood sustainability. Social networks in Dale’s writing include links in a given neighborhood between various formal and informal supports. In direct reference to indicators of resiliency, one might consider social networks to include sources of food, care for the young, aged, or mentally or physically incapacitated, involvement in community decision-making, planning the spatial configuration of the community for future changes and so on. Given the full range of social, energy and waste exchanges associated with homes that are not reflected in the

concept “house” as I am using it, house building is but one moment in the process of home building.

2.11: Summary of Chapter 2

Sections 2.2 through 2.6 of this chapter offered a brief synopsis of select critical geographic theory about nature and culture. Sections 2.7 and 2.8 considered discourses of nature, especially as they pertain to the production of urban space. Section 2.9 introduced a version of political ecology favoured by Paul Robbins, most of which will serve as a model for the doctoral research in this dissertation. Section 2.10 briefly combined elements of the theoretical streams to distinguish between houses and homes, and to more carefully specify the spiraling cumulative impacts of homes as distinct from houses. I repeat that the distinction is semantic and heuristic: the palimpsest of embedded and dialectical natures of houses, homes and communities cannot be separated in any real material, cultural or ecological sense without losing sight of their mutual influences and effects over time. This last element, time, is a critical variable in an analysis of residential sustainability because only by examining homes over time can we be sure they will persist.

This chapter has provided a conceptual framework that I will use, and a complex conceptualization of residential sustainability, to choose and analyze textual and interview material as I investigate discourses about ‘sustainability’ in Ottawa. The next chapter describes the methodological approach in general, and methods employed in particular, to investigate discourses about, and barriers to, ‘sustainability’.

CHAPTER 3: METHODOLOGICAL APPROACH

3.1: Introduction

The following chapter is divided into two parts; Sections 3.1 through 3.5 detail the methodological framework used to guide this research and include descriptions of the researcher's position on the topic of the study, broad and basic assumptions behind the research, research objectives, and comments on language and representations of urban sustainability. Sections 3.6 through 3.10 of this chapter discuss the methods employed to study suburban residential sustainability and resilience in Ottawa, define major variables in the study, identify and justify resources used, describe how, why and for whom the interview questions were created, point out ethical issues and, finally, identify limits to the approach.

3.2: Positionality and reflexivity

Gomez and Jones (2010) observe that, in the process of conducting human geography research, "No one sits outside their history, sociality, or geography" (446). Social research usually begins with an implicit or explicit set of judgements by the researcher about some social problem the researcher wishes to study in order to affect change. The researcher then, by default, begins the research process with a bias which must be acknowledged from the start (Dowling, 2000). In this section I make explicit the personal and academic history behind my research interests, and then offer my stance on the residential construction and development industry in Canada. My history, biases and viewpoint are part of what comprises my positionality. My research is, as Herod and Parker (2010, 63) put it, "partisan", in the sense that my intention for my research is to change practices in the development industry.

In the summer of 1986 in Guelph, Ontario, I started working for a mid-sized builder, Verdone Homes, on the landscaping crew. After the summer, the company placed me on “site prep” with one of the site managers where I cleared trees from building lots, performed remedial carpentry and concrete work, monitored final grading, and helped with site and foundation quality control. From “site prep” and small carpentry tasks, I moved into marketing and graphic design. Verdone’s owners seemed fairly progressive: as I moved up, the company paid me to explore environmental issues around residential building and participate in the Guelph Round Table on Environment and Economy. As I researched green building, I also grew more sensitive to the razing of the landscape in new subdivisions and the haste with which single-family production houses were built. Unfortunately, Verdone’s owners were unwilling to implement most of the recommendations that I proposed. For example, Verdone sold lots in a development called ‘Sugarbush Estates’, charging many buyers a \$10,000 to \$15,000 premium on lots where mature maple trees were to be preserved. However, forest ecology had been ruptured by residential development in the area, and the remaining trees were never protected: the soil around the trees was compacted by machines, foot traffic and stored materials; excavators and bulldozers routinely knocked bark and branches off; and then city engineers demanded that Verdone raise the grade around many of these trees by four feet or more so that the lots would drain to the road in heavy rains. I argued that trampling roots and raising the grade more than a few inches a year would kill the trees. My direct supervisor bluntly silenced my protests. Within 10 years, as the literature on tree health and preservation predicted, most of the large maples I struggled to save in ‘Sugarbush Estates’ were dead and gone. The preservation of trees was one of many

arguments I lost with the company about ‘green’ measures such as waste, materials off-gassing, new insulation products and so on. The owners were simply too conservative and profit-driven to seriously consider more sustainable practices.

In 1989, I returned to university but kept working in construction on a part-time basis, and I continued to keep abreast of green building trends. Several of my undergraduate university courses deepened my knowledge of global environmental issues. After completing undergraduate and Masters degrees at Guelph, I started a renovation and contracting business, working constantly towards smarter, more sustainable practices on a small scale. Over the next 15 years, I repeatedly repaired damage in peoples’ homes that resulted from hasty or flawed construction, work that I felt should not have been necessary. One winter week I entered the attics of three houses to investigate roof ice damming and found the same causes in all three houses. In the third house, my own, I stared in angry amazement at an upstairs bathroom vent that directed warm wet air into my attic rather than outside. At that moment I committed to finding out why such building errors were so common and how we as builders could do better.

I came to Carleton in 2008 with the goal of identifying causes of construction flaws and influencing how houses are built by creating an argument for better training for building trades and for “greener” practices. That goal changed in my doctoral studies when I was inspired in part by feedback from my committee, and in part by a new and unique (to me) theoretical relationship between houses, homes and the ecological impacts of capitalist accumulation. Changes in my research direction were a function of *reflexivity*, whereby the research process influences both the researcher and those (s)he

researches in various ways (Harraway, 1991; England, 1994; Rose, 1997). While the feminist researchers cited generally refer to sensitivity to power relationships between the researcher and researched, and to awareness of how personal biases may influence interpretation of field research results, my concern is more with how my thinking about urban sustainability dramatically changed over the course of my studies as I developed a more nuanced understanding of the complex political ecology of Ottawa's suburbs. My interview respondents also added depth and nuance to the subject as I reviewed interview transcripts, subsequently modifying the simplistic notion with which I started of a monolithic capitalism destroying the environment. However, it is impossible to ignore broader political and economic functions in urban development.

In my reconceptualization of a home as a hybrid social and material structure, 'homes' are imbued with much more significance than 'houses' in terms of variables that range from the phenomenology of place construction to late western market capitalism and global ecology. A large body of research on energy consumption and GHG production (See for example CanmetENERGY/NRCan, 2006; EPA, 2011; see also UN-HABITAT) indicates that what happens after a given suburban house is built has more significant environmental impacts than the house itself. In other words, houses are empty whereas homes are inhabited by users of various resources and producers of wastes – consumers with complex attachments and patterns of behaviour, *and especially patterns of mobility*, associated with the concept "home". When I added the conceptual distinction between houses and homes to my new understanding of urban political ecology and my experiential knowledge of how at least some tract builders operate, it changed that way I theorized housing and capital accumulation. Observation and critical geography literature

on the politics and economics of urban ecologies led to the position from which my basic assumptions about the phenomenon in question were derived, and the lens through which I studied that phenomenon.

With regards to this doctoral research, the residential development industry has a surfeit of best practices and “greener” materials from which to choose, and certainly some builders are attempting to apply smarter practices, but it appears as if the vast majority in the building and development industry chooses business-as-usual. One of the assumptions behind the current research is that the main barrier to improvement is Molotch’s (1976; see also Logan and Molotch, 1987; Logan and Molotch, 2007) “growth machine”, and what looks like a persistent drive by for-profit businesses for limitless growth and capital accumulation via commodified urban ecologies. The urban growth machine (also called a lobby, regime or coalition) includes any body involved in the production of housing: local media; lobby groups like the Greater Ottawa Home Builders’ Association; developers; developer-backed municipal politicians; building material suppliers; trade contractors; mortgage suppliers; and so on.

My personal experience in the building industry and studies of political economy and urban form after I entered Carleton determined how I sorted through this particular social problem: common practices in suburban tract building were unsustainable to varying degrees and for various reasons. My standpoint led to several general research objectives, statements and questions which are discussed in the next sections.

3.3: Research objectives

With regard to research objectives, at the broadest level this research attempted to shed light on the residential development industry – an industry that was largely ignored in academic literature (see Harris and Buzzelli, 2005), a fact that seemed remarkable considering the size of the industry in Canada. The research accomplished this goal through three more modest, overlapping objectives. First, Chapter 1 of this dissertation broadly explored the historical and contemporary drivers, including market and state influences, of green residential building in Ottawa, along with attempts by specific leaders in the industry to transition towards more ‘sustainable’ practices. Guided by urban political ecology as a conceptual framework and using Robbins (2007) and Logan and Molotch (2007, 1987) in particular as inspiration, this research investigated how the politics and economics of residential development in Ottawa and North America in general enabled or hindered a transition to more sustainable urban form. I developed my conceptual framework in Chapter 2 of the dissertation. While dated, Logan and Molotch’s *growth machine* is still apparently influential in Ottawa (e.g. see Doucet, 2007; Gray, 2011). Second, in Chapter 4 the dissertation analyzes abiding discourses between developers and state policymakers as the City of Ottawa ostensibly changed planning rules in a direction that might have interfered with the trajectory of the Ottawa suburban development industry. The larger assumption behind this line of inquiry was that if producers and regulators were using the same terms of reference with regard to sustainable urbanism, they were more likely to achieve more sustainable material outcomes (i.e. a more sustainable Ottawa).

Discourse analysis has a long history in the social sciences (see for example Foucault, 2003). Political/discursive contests are a promising place to focus critical attention for a number of reasons. Lester (2010) emphasizes how symbols and images are used to both influence and shape environmental knowledge. It seems actors involved with urban planning and house building in Ottawa continually struggle to reconcile diverging visions of appropriate urban development. Discursive contests were central to this dissertation because they contained within them specific definitions of urban sustainability which prescribed certain actions and precluded others. This research in part compared various actors' definitions of "sustainable development" with standardized definitions from urban planning literature. This research was also designed to compare how closely the newly built environment in suburban Ottawa matched various definitions of urban sustainability. In other words, it sought to compare the discursive and material constructions of suburban development. In addition, when this project was undertaken, contests were becoming more apparent as, at least in public documents and the broad sustainability policy exercise called *Choosing Our Future* (City of Ottawa, 2012a), the City of Ottawa recognized localized responsibility for the various social, environmental and fiscal costs of pollution and climate change (see Chapter 1), a pattern which stood in direct contrast with inaction by the federal Conservative government at the time. Discrepancies between the discourses illuminated spaces of conflict right up to the global scale, as the Canadian government was criticized by the international community for promoting a carbon-based economy in the face of mounting concern about climate change. In terms of the housing market, while discourses seem to compete, they are also designed to influence voters and housing consumers while reflecting deeper values. In the

politics of development, certain discourses resonate with consumers and voters while others do not. Consumers buy housing and voters, especially property tax-paying voters, have significant influence on urban development policies. Conversely, both are directly affected by City policies

Another objective guiding this research was to move beyond contemporary definitions of urban ‘green building’ or ‘residential sustainability’ to explore and refine the concept *homeecology*, adapting the work of certain political ecologists and urban theorists (e.g. Cidell, 2009; Moffat and Kohler, 2008), to provide a conceptual tool to more completely specify urban ecologies of dwellings, and to contribute to theoretical scholarship on urban planning and development.

Briefly, and to make my reasons clear, I conducted research on the residential development industry to understand why suburban housing was still constructed as it had been for decades in Canada when mounting evidence indicated that low-density, automobile-dependent suburbs were no longer appropriate given current ecological and fiscal costs. The timing of this project was significant: it appeared during the research that the City of Ottawa was actively attempting a transition towards smarter practices, a transition that met a lot of resistance from the development industry. I predicted growing antipathy between public policy makers and greenfield developers, a tempest one interview respondent referred to as “the collision of public and private interests”. My predictions were not so easily borne out, but the general objectives of the research were to determine where the current political economy of new Ottawa residential development fit into progressive sustainable urban development schemes, to catalogue discourses offered by various Ottawa-based actors, and to infer how they might guide or hinder

residential sustainability. I also hoped to suggest how competing discourses indicated sources of future political and planning contests in Ottawa given changing definitions of urban sustainability.

Having specified basic research objectives, the chapter now proceeds to outline research questions that link theory with the Ottawa context.

3.4: Theoretical statements and research questions

In designing the research project I turned assumptions I had derived from my observations and from the literature into questions about the political ecology of the residential development industry. This section is intended to link pragmatic applications of urban development practices to theoretical concepts.

Broad social and economic forces compel current construction practices – logic that coincided with critical political economy literature, especially that of David Harvey and Neil Smith (see Chapter 2) as well as critiques of urban land use planning regulation and the residential development growth lobby (Blais, 2010; Molotch, op. cit: and Logan & Molotch, 2007). As I gained a broader understanding, I developed three theoretical statements intended to guide data collection in two directions. The first statement or assumption, derived primarily from experiences prior to entering the doctoral program, was inductive and normative, focusing on residential building industry practices:

Housing producers must improve suburban residential construction to mitigate negative human and environmental impacts.

The second guiding statement, derived from debates within the scholarly literature, was mainly deductive and theoretical:

In contrast with their marketing discourses, for-profit interests commodify homes, leading to various detrimental outcomes on people and the global environment.

The third guiding statement was informed by theories of the political economy of global capitalism and the role of real estate in international circuits of capital:

Housing regulators, producers and consumers all function in an entrenched and highly prescriptive global political economic system whereby unsustainable practices and outcomes are justified by rhetoric about market demand and economic growth.

The three theoretical statements or assertions are linked via urban political ecology. The research methods described in subsequent parts of Chapter 3 were designed to explore these three broad assertions.

This research explored barriers to change in suburban residential development in Ottawa, and stemmed from an examination of public documents created by both housing producers and the state at three levels. For research purposes, several observations from public discourses in various media and personal experience proved relevant. First, the public discursive constructions of ‘sustainability’ invoked by Ottawa developers and builders seemed to be very different from those invoked by city planners (and more generally, by urban planners in the broader literature). Also, as described in Chapter 1, a long history of interaction between markets, government and industry has led to the current state of residential development in Ottawa and elsewhere, but the relationship between industry and government, at least as that relationship is portrayed in news media, seemed to be strained by increasingly diverging goals which were reflected in their respective discourses about sustainability. At the time of the study, Ottawa municipal land use planners apparently intended to halt suburban expansion while developers apparently intended to build houses wherever consumers would buy them, including on large periurban and ex-urban lots. Lastly, personal experiences in new house construction indicated that piecework (i.e. fordist) production methods result in flawed structures that I

would argue are not ‘sustainable’ by any definition. Once again, the confounding issue was that my personal experiences were limited, and, at the time, little impartial research existed about development and house building industries in Canada, or tied them together as moments in the production of a sustainable built environment, however one might define that term. This research in part addressed this lacuna in the literature by turning the above observations into the following research questions which reflect the holistic approach developed in the theory section of the dissertation.

First, as detailed in Chapter 1 of this dissertation, there appear to be increasingly prescriptive state discourses at the municipal and provincial levels about the fiscal and environmental costs of current suburban development practices, and these discourses have been echoed in popular media and seemed to be finding their way into urban land development policy. However, housing producers (including private planners, materials suppliers, realtors, developers, builders, and union representatives), seem to be actively resisting sweeping government policy changes, enlisting arguments about jobs, taxes and sustainable growth in the regional economy, and insisting that a free market will adjust to environmental imperatives. Developers continue to push new housing developments into farmland outside of the Ottawa greenbelt. Is there in fact a “growth machine” in Ottawa that is resisting changes in urban planning designed to encourage more sustainable residential development practices?

Next, and congruent with the preceding question, there were a select few tract housing producers in the study area who seemed to be leaders in the industry by marketing and/or apparently building ‘green’. But it is also clear that the terms ‘green’ and ‘sustainable’ have been appropriated by businesses that define the term much less

stringently or comprehensively than the state, and especially the municipal government.

How do housing producers define ‘green building’ and ‘sustainable residential development’, and how do these definitions compare with the City of Ottawa’s definitions? Further, how do the definitions fit into broader discursive patterns as elaborated by governments and the building industry at various scales?

A third and final question guiding the research is that equity is integral to virtually all *global* (i.e. generalized, international) definitions of sustainable development.

Sustainability must be for everyone. Given the shortage of affordable housing in Ottawa (ONPHA, 2012), and given the consistent and widespread ambivalence of most developers towards providing truly affordable dwellings (rather than housing that is affordable for people who can afford market rates), it seems that there is a constant tension between suburban expansion governed by sustained growth in profit margins and social or environmental responsibility. In addition to questions about the environmental costs of suburban development, what happens to low-income people who seek housing in a competitive housing market?

Having specified the general questions that focus and guide this research, the following section turns to using discourse analysis as a means of problematizing ‘sustainability’ and ‘green building’.

3.5: Discourse and representation

At least in their marketing and public discourse in 2007 and 2008, a select few builders in the Ottawa area appeared to be trying a different approach to residential tract building³⁰. I could not simply dismiss these suburban builders as “greenwashers”³¹. One way to approach this puzzle was to evaluate public discourses about housing by both developers and the City of Ottawa while remaining sensitive to current economic and environmental contexts.

Campbell (2009: 166-167) summarizes qualities that comprise discourse as a concept in human geography. First, Campbell proposes that discourses are *performative* in that they create the objects to which they refer (cf. Foucault, 1972). Second, Campbell writes that discourses are *heterogeneous*. In other words discourses have multiple authors, travel through diverse domains and are assigned multiple meanings and effects. Third, Campbell suggests that despite frequent heterogeneity, discourses are *systematic and coherent*, and they retain meanings over time. Further, discourses are *regulatory*, by which Campbell means discourses define boundaries between belonging and otherness, or between belonging to the ‘right’ group or not. The fourth quality to which Campbell alludes is that discourses are *embedded* in social institutions and subject-positions, so that they are typically taken for granted and not questioned. Campbell’s final point is that discourses are situated within power and knowledge structures and are thus subject to contestation (cf. Escobar, 1996). This definition suggests that people translate discourse into actions that reflect power relationships and result in materially manifested outcomes.

³⁰ There were numerous custom house builders in the Ottawa region building smarter houses but the reader is reminded that custom house construction, like large building construction, is a completely different process and much more amenable to green construction methods than tract or production building.

³¹ Green-wash is defined as “the act of misleading consumers regarding the environmental practices of a company or the environmental benefits of a product or service”. See www.sinsofGreenwashing.org.

One of Harvey's foundational arguments in *Justice, Nature and the Geography of Difference* (1996) is that spatial and political place-making are dialectically related to discourse. Similar to Campbell's observation about the performativity of discourse, Harvey argues that discourses create, rationalize and reflect adjustments to urban form. Harvey theorizes that the material construction of places coincides with the discursive construction of places, and that both are essential to the "creative destruction" and replacement of real assets in processes of capital accumulation. Cresswell (2004) remarks that people who have the power to re-create space often re-write history in the process. Private developers create carefully contrived visions of desirable neighborhoods, sanitized and depending heavily on the cultural mythology of spacious homes surrounded by lawns on quiet streets in the suburbs. Swyngedouw and Heynan (2003: 915) point out that it is important to ask who ultimately has "...the capacity to produce socially the physical and social environments in which one dwells?" The reference to dwelling is especially appropriate. Home places are material, social and economic constructs intimately tied to their philosophical/phenomenological meanings and characteristics. Groups with the power to do so assign identities to places like homes and neighborhoods through cultural, historical, political and economic discourses. Those discourses may or may not align with meanings assigned to homes by the people living in them. Harvey (1996) describes the uneven economic fortunes of places at various scales, simultaneously raising questions about equity and justice within capitalist political ecology. But Harvey (1996) also portrays places as imbued with social connections, infused with meaning, and vital for human stability in the increasingly frantic fluxes and flows of globalization.

Discourse is an essential element of political ecology and this dissertation research specifically. The research attempted to illuminate discourses about sustainability offered by various actors in person, via assorted media, and in development and building industry marketing. Interviews were essential to understand participants' interpretations of urban development issues, as well as "...basic assumptions about the nature of reality and a multilayered concept of 'truth'" (Hesse-Biber, 2008: 359) about climate change, consumer preferences and so on. Harvey (1996) argues that discourses and the material impacts of capitalism are dialectically co-constitutive but Secor (2010) cautions that "...the way we know and talk about our lives is always creative. Experience is...a discursive product of contingent processes" (195). I based my research partly on assumptions about the effects of capitalist political economy, but I tried to be aware that there are different ways that people represent themselves. This becomes a creative tension in the dissertation as assumptions from structuralist social theory are continually modified by post-structural methods of inquiry. The tension is exemplified by Secor (2010) who adds nuance to Harvey's theoretical statement by noting that interviewees might contribute to discourses on sustainable urban development depending on, for example breadth and depth of knowledge of the issues, or how they choose to reveal – or to de-emphasize – specific knowledge about urban development. There is no one "... 'truthful' account of the world, but rather many different accounts, often in conflict with each other and constantly undergoing change" (Dixon, 2010: 400). One must be aware of how interviewees might represent themselves and how those representations may change over time and in different social situations.

Socially desirable responses are one consideration, and not just in interviews: Public discourses depend on emphasizing certain things while de-emphasizing others. Forbes (2000) talks about silences and what is missing from discourse: “By ignoring some things, yet elevating and situating others, a sense of what is perceived as natural and normal is created. Drawing out absences...challenges these assumptions of the natural” (128). Secor (2010) notes that discourse analysis must “pay attention to the silences, paradoxes, and unspoken assumptions that bound and underlay these conversations” (202). For example, in urban development debates, producers often exclude discussion of many of the long-term impacts and costs of low-density suburban tract development and, instead, emphasize immediate consumer demand and a narrow definition of ‘affordability’.

Forbes (2000) points to the importance of metaphor, the “naturalizing role of symbols in the landscape” (138). Dixon (2010) writes that “Words, images, and practices...are all capable of being what are termed *signifiers*; that is, they can communicate information” (ibid. 393, emphasis in original). But information is not synonymous with meaning: the latter is a process of engagement with the receiver and involves emotions like expectations, desire and fear that go beyond intellectual acknowledgement. Meaning is not simply exposure; it “...is something that is made through this very process of engagement”, a process which is shaped by the medium in which signifiers are conveyed (ibid. 393). For example, various media, like those originating in academic institutions or professional lobby groups, are considered more legitimate than those from individuals or individual businesses.

Dixon (2010) provides a concise description of key elements and considerations for discourse analysis. Dixon begins by defining a critical approach to texts which begins with the assumption that language is "...embedded in the broader social realm [and] bound up with all kinds of power relations" (398). Critical discourse analysis must account for social structures, which Dixon defines as routinized behaviours with formal and informal rules, norms and expectations. She uses the example of commodification of land parcels in capitalist system which necessitates structures that dictate power relations in society as well as who is and is not allowed access to resources such as land. Social structures depend to a large degree on discursive events which illuminate systems of communication and learning and remembering. Dixon (2010) then describes the mechanisms through which social structures are made real – the laws and resource distribution created by certain parties to legitimize social structures (e.g. labour and property regulations and laws in a capitalist system of property ownership and land rent). Specific events then illustrate how mechanisms operate (e.g. the legal and economic formalities of land planning and real estate exchanges).

Dixon (2010) points to important questions in critical discourse analysis. First, who was responsible and how was a given object produced in a specific way? What resources were available to the producer? Second, how was the object communicated? What was the medium and how was it placed in time and space, and what metaphors or rhetoric are used? Third, at whom is the communication aimed? How do they gain access to the information and how is it intended to affect the viewer? The larger questions are about who gains from particular pervasive discourses, and how power is imparted or excluded by senders and receivers of discourses. Visser and Jones (2010) write that in

each discourse, there is a sender, a medium, and a receiver or “addressee”. These authors also detail pertinent questions for researchers who are interpreting various texts and/or images: Who made the representation and why? To whom was it directed? What are the sender’s knowledge base and sympathies towards the message and addressee? How is the medium related to the above? What are the wider social or political connotations of the portrayals? What is excluded? Is the representation coherent? Does it fit together or is something added to jar the addressee and alter their thinking? And finally, “What is the social-cultural-political-economic-geographic ‘distance’ between [the researcher] and the addressor? How do these distances influence a researcher’s interpretation of the intentions of the addressor and the message?” (ibid., 57). The last point in the above list again repeats the caution that the research must be aware and critical of personal and theoretical biases when conducting discourse analysis.

To answer the above questions, a rigorous critical discourse analysis requires background information on the originator of the message, the medium (in both time and space in terms of the broader market for the medium) and on the specific potential receiver of the message. In addition to the face values and implicit values in a developer’s newspaper advertisement, I might question where the builder advertises and when? To whom is the ad directed? Who might be drawn to the ad and by what “hooks”? And what are the motivations for producing and reading the advertisement? Dixon cautions that in this process, the researcher must be aware that the signifiers are usually chosen based on the researcher’s theoretical lens and assumptions, and the researcher must constantly evaluate and acknowledge bias.

Following Jacques Derrida, Dixon discusses a method of enquiry called deconstruction which asks how meaning is created through taken-for-granted “pervasive discourses”, the “worldviews” that guide our daily words and actions (ibid., 400). Forbes (2000) uses deconstruction to get inside discourses to “reveal multiple meanings, ideologies and interpretations” (123). Forbes argues that deconstruction is especially suitable for studying symbolism and cities because “...representation of human society and the built environment...is inevitably simplified and subjective and capable of multiple interpretations...” (124). Reading landscapes as texts involves focusing on all objects in a landscape including the vernacular and ordinary, but the researcher must also understand history, geography, “biophysical environment” – and always assume there can be more than one valid reading of a landscape (ibid., 126). For Forbes (2000), discourse analysis and deconstruction of texts are about uncovering “multiple layers of meaning” (127) and seeking power structures (and hegemony) in the way words and images are used, and where.

Dixon talks about common oppositional binaries that limit how we perceive the world. Her many examples of common binaries include rich vs. poor, free vs. fettered market, and investment vs. welfare, rural vs. urban, individual vs. society, nature vs. culture, danger vs. safety, feminine vs. masculine, public vs. private, and chaotic vs. orderly (ibid., 402). In addition to Dixon’s binaries, in my explorations of suburban development, I examined home buyers vs. renters, eligible for a mortgage or not, tidy suburbs vs. unsustainable suburbs, ‘normal’ families vs. all other family forms, detached single family vs. all other options, and so on. Following Derrida, Dixon notes that these binaries are always in tension, and only by disconnecting them and making them

discursively equal can we see how they operate within society. The assumption underlying the study of binaries is that they are used to simplify and fortify arguments but have little in common with social, economic or environmental systems.

Binaries are an interesting element of content analysis which involves looking for patterns in, for examples, marketing texts in print and on-line, and in interview transcripts. Content analysis examines *signifier* words or images, which are of interest for the frequency with which they appear and also for the ways they are tied to other signifiers in a “relational system of meanings” (Dixon, 2010: 394). But despite the complexities and pitfalls of the process, discourse analysis is a key social science method because, as Visser and Jones (2010: 55) note, “...we live in a world of interpretation, and how we engage meanings has an impact on how we organize the world, live and move through it, and alter it, for better or worse”. This observation guides the research methods as described in part 2 of the chapter, to follow.

In part, this dissertation is an attempt to push definitions of urban residential resiliency and durability beyond now-conventional definitions found in urban geography literature towards a more durable organic model. The language and representations of ‘sustainability’, especially in popular discourses, are fraught with a decidedly non-organic tendency to examine discrete relational elements, with time only implied. Visual representations of ‘sustainability’ (see for example Mann, 2009) tend to divide earth systems for the purposes of illustration into computer-generated geometric shapes, all of which, I feel, reinforce discrete Cartesian categorical divisions when there is only one Earth, organic and whole, hosting embedded dialectical processes over aeons. Many of the visual representations are imperfect attempts to illustrate connections between social,

economic and environmental justice, health, durability and so on. But lines and discrete categories of any kind in a two-dimensional diagram lacking time mask the complexity of earth systems. Further, representations of sustainability still seem to depend to a large degree on The Brundtland Report's (WCED, 1987) delineation of "sustainable development" as "three pillars" or "three legs of the stool" – all of which distract from the simple fact that socio-natural systems are multi-faceted and inexorably integrated. Thus, one of my challenges was to describe dialectical metabolic relationships in general and houses and homes in particular (see Chapter 2). Inspired by Cidell's revision of the term *built environment*, the neologism *homecolog*" resulted from the above shortcomings of language.

The above concerns are directly related to methodological concerns and perhaps reasons for this doctoral research. Very simply, if producers and regulators used the same discourses when planning "sustainable homes" and neighborhoods, they might find it easier to work together towards that aim. But discourses about sustainability rarely incorporate complex dialectical social and ecological interrelationships and equity, perhaps to make them comprehensible to the public.

While attempting to compare discursive constructions of 'urban sustainability', despite varying levels of complexity, none of the available indices seemed comprehensive or organic enough. In an innovative article akin to Cidell's (2009) work which talks about the "built environment" as a socionatural hybrid that occurs over time almost despite human intent, Moffatt and Kohler (2008) assert that: "...existing theory seems incapable of fully integrating spatial and physical relationships, and is especially challenged when dealing with concepts of time" (248). The issue is not just theoretical:

urban planners and ‘sustainability’ policy makers rarely mention timeframes unless in reference to the urgency of ‘housing shortages’ or environmental challenges. Further, over the past three decades, and especially within manufacturing industries, definitions of “sustainability” have become perversions of the original intent of the term “sustainable development” as specified in 1987 by the Brundtland Commission, and “green” has become a common and most often baseless marketing tool.

Moffatt and Kohler (2008) argue for a reconfiguration of criteria for a “resilient built environment”, distinguishing between “sustainability” and “resilience” to denote recent attempts to re-define building ecology and other human ecological interactions. Resilience implies adapting to climate change in addition to mitigating or reducing environmental impacts from various products and behaviours. However, the changing of language of sustainability to include concepts like resilience, mitigation and adaptation in both popular and academic literature adds some complexity to the task of identifying or qualifying discourses of sustainability by various actors and groups. Over time definitions become complicated by changing usage: ‘sustainability’ has become popular in discourses offered by a wide range of actors for a much different purposes than intended by the 1987 Brundtland Commission as will become apparent in Chapters 5 and 6. ‘Resiliency’ and ‘mitigation’ seem reserved for more educated debaters in policy circles who have advanced understanding of the potential impacts of climate change.

The first part of Chapter 3, above, described the motivations and methodological framework that guided this research. It identified personal reasons for conducting the study, broad and basic assumptions behind the research and the objectives and questions behind the research. The first part also included some comments on language and

representations of urban sustainability. The research methods employed to study housing producers and regulators are described in Section 3.6.

3.6: Rationale and overview of the methods employed

The current study relies on qualitative and to a much lesser degree quantitative research methods which consist mainly of references to data on urban environments. As VanderStoep and Johnson (2009) note, qualitative approaches are best suited to projects that explore processes and meanings rather than outcomes or causation of social phenomena – how people define, describe and make sense of their experiences (165). According to these authors, qualitative methods assume the “social construction of reality”, rather than a reality that is “out there to be discovered” as in quantitative research (ibid. 166). The epistemological distinction is important: while observations and reading led to some tentative predictions (the assumptions detailed in Section 3.1), the research was mainly intended to illuminate an inadequately understood phenomena, vis-à-vis factors that were preventing the development industry from planning and building more sustainable (or resilient) communities.

Paulson, Gezon, and Watts (2003) suggest several social research methods appropriate to political ecology approaches in general, including: participant observation, case studies, discourse analysis of texts and legislation, examination of historical-archival material, and sociological analysis of institutions across multiple scales from local to global, all of which are founded in qualitative (versus quantitative) approaches to social research. My project was primarily structured around qualitative, interview-based

research supplemented with evaluations of various text-based resources and complemented by observations from years in the building industry³².

Paul Robbins (2007; 2003; 2001) provides part of the research model for this dissertation project. In a study of suburban lawn chemical use and the chemical industry, Robbins used a variety of methods, including surveys and interviews with home owners, aerial land cover surveys, marketing analysis, historical analysis and an economic evaluation of global and local influences on industry practices. Robbins' political ecology offers a suitable model for both theory and methods because it is multi-faceted and Robbins designed his research to "triangulate" (or overlap) multiple information sources for a comprehensive picture of the phenomenon in question (see also Hay, 2000). Political ecology also approaches political, economic and ecological variables from a critical stance rooted in marxism and recent versions of green marxism (see Chapter 2). Robbins is especially relevant to the current study because his work is, in part, a study of how the culture of suburbia, suburban landforms, and industries which cater to the two (e.g. lawn chemical companies) are more or less simultaneously co-created. In other words, despite the critical standpoint, the social phenomena in the researchers' purview are treated as a dialectical relationship. Suburbs still draw housing consumers in part because suburban houses and habits are deeply embedded in a North American suburban cultural imaginary (Rybczynski, 2007; Kunstler, 1993). In the current project, while my standpoint is similarly critical, my focus is on the dialectical co-creation of (residential)

³² I initially intended to predict energy consumption and GHG production from buildings and commuting for several new developments, but the task proved unmanageable because the software is complex and I was unable to acquire building details from the producers in the study.

urban form, as consumers, producers and the state interact outside of the Greenbelt in Ottawa.

To answer questions about residential development and sustainability, this project approached the topic from a number of different directions suggested by the above researchers. First, the context chapter (Chapter 1) created a profile of the suburban residential development industry and its environmental impacts, along with examples of the interaction between the industry and the state, mainly by reviewing various public government, industry and media documents, and in so doing, teasing out the discursive strategies employed by significant business and government representatives. Next, this research identified leading regulators and producers in Ottawa who, in their material practices and/or public rhetoric and/or marketing literature, seem to play important roles in moving development towards more sustainable practices. I then collected data on discourses employed by these actors and on the products of their labour in order to compare their discourses with urban planning exercises. The process, however, operates in both directions. A simple example is recent increases in residential density zoning in Ottawa, a state-driven regulatory effort, which results in more profit for developers, but developers regularly contest density limits by seeking variances and/or challenging regulations through the OMB appeals process, both of which can and do result in controversial outcomes for city residents. The result is a dialectical (trialectical?) tension between producers, regulators and consumers.

Qualitative methods were useful for understanding actors' definitions and for tracking the actual housing manufacturing processes from planning and discourse to housing construction. Certain discourses, especially those asserting "green" or

“sustainable” practices, were prioritized and followed to the production phase because a main assumption of the research is that discourses and definitions vary, and variation makes it difficult to achieve desired outcomes for all concerned in urban development.

3.7: Clarification of key terms in the study

For the purposes of this project, developers-builders are referred to as “housing producers,” while legislators who govern land use are referred to as “regulators.” Various regulators functioned at three overlapping scales. The Government of Canada indirectly influences Ottawa housing development through various regulatory and standard-setting bodies including: the National Capital Commission (NCC) (e.g. greenspace land management); Canada Mortgage and Housing Corporation (CMHC) (national mortgage lending and mortgage insurance rules); and Industry Canada, the National Research Council and Natural Resources Canada (NRCan) (Model Canada Building Code, Model National Energy Code and related standards). The Province of Ontario governs general urban planning policy and building regulation through the Ontario Ministry of Municipal Affairs and Housing and the adapted national building code respectively. The City of Ottawa asserts control over urban land use through City policies and guidelines and through the municipal bureaucracy. Jurisdictions also overlap, such as when City and NCC land use planners, at both ends of the regulatory scale, work together on shared urban infrastructure, or when the City of Ottawa and the City of Gatineau must coordinate transit across a provincial boundary (see Chapter 1). In this study, people who bought houses in the suburbs are referred to as “housing consumers.”³³

³³ I thank doctoral committee member Jill Wigle for suggesting the categorization of producers, regulators and consumers.

“Suburbs” included subdivisions and developments beyond the NCC Greenbelt that surrounds Ottawa’s urban areas. While the City refers to some areas outside the Greenbelt as “urban”, the Greenbelt provides what I think is a very clear demarcation between urban and ex-urban development areas. Almost all new development beyond the outer border of the Greenbelt is in farmland, hence discussions of all development beyond the Greenbelt will subsequently be referred to as “ex-urban”. The research was primarily concerned with single-family, detached, semi-detached and low-rise (3 floors or less) construction. Another important note is that the research was focused primarily on tract housing built by piecemeal contract production crews as distinct from custom house builders. The latter distinctions may seem to limit the focus considerably but, in fact, tract-building in North America accounts for a million or more housing starts per year even in a recession economy – over 200,000 in Canada (CHBA, 2012; CMHC, 2012) and over 800,000 in the United States (U.S. Department of Commerce, 2012).

Distinctions between producers and regulators blurred occasionally, such as when City planners joined private planning firms and vice versa, when City and private planners worked together on subdivision plans, or when unregistered development industry lobbyists entered City Hall. In addition, regulators and producers all worked within the same complex regulatory framework and were influenced by the same broad and local political pushes and pulls. The research instrumentally and arbitrarily divided the focus between producers and regulators because at the start of the research, at least in local media, there appeared to be a rift growing between the two in Ottawa, and it seemed to be around ‘sustainable development’, or, more precisely for this research, *discourses*

about sustainable development and the way those discourses reflected and guided urban development.

3.8: Development companies and other resources in the study

With regard to producers, resources for the study included employees of several Ottawa-based development companies as well as private planners who work for developers. I chose the companies to fit a general analytical scheme after monitoring local media and checking their marketing on their Internet websites over a period of a year. My *purposive sample* (Singleton, et al., 1993) included development companies that buy, subdivide and service land, and then pay trade contractors to build single-family dwellings in suburban Ottawa which the developers then sell as packages (i.e. land and dwelling). In early 2008 all of the developers in this study marketed their products as “green” either overtly or more quietly. At the beginning of the study (late 2008), no other tract builders in Ottawa used the words ‘green building’ in their marketing, or made claims about the environmental sustainability of their products. The companies were apparently industry leaders in this regard. The main difference between the companies is in housing form: one company’s dwellings were only in low-rise townhouse configuration compared with the mixed dwellings (single detached, duplexes, low-rise) offered by the other developers.

I set out to explore the experiences of developers who at least appeared to be spurring innovation in tract building. The urban political ecology literature, and especially the work of Paul Robbins, suggested that numerous material, spatial and temporal inputs drove specific directions in the lawn chemical industry. I was curious whether the same model could be applied to tract building. What are specific drivers for

business-as-usual, and what challenges would innovators face? I also suspected that the growth lobby in Ottawa had a large role to play in the push to open more farmland for development beyond the greenbelt. All of the companies were initially chosen primarily on the basis of well-developed websites and newspaper marketing that portrayed each company's green building features. Analysis of their green marketing provided important background for interviews with company representatives.

Minto Communities Inc. is one of the largest residential developers in Ottawa, and Minto intermittently advertises that their developments are 'green' or 'sustainable'. I did not interview Minto employees, but the research incorporated a case study of Minto's Mahogany development in Manotick, a town in the southern extremity of the amalgamated City of Ottawa, that had been embroiled for years in controversy as the town tried to stop Minto from building on farmland the company owned. The case study was an analysis of the discourses around sustainability used by a company which I consider to be a leader in green building. The dissertation used Minto Mahogany because it illustrates contradictory messages and because it best exemplifies growing contests between Canadian producers and regulators.

Table 3.1: Variables in the study lists the main research foci in the study. As mentioned previously, housing consumers are not included in the table because they fell beyond the scope of this research. The rest of the variables in the table are self-explanatory. Two of the main variables in the study, namely definitions of 'sustainable development' and 'green building', appear in **Table 3.1** as "discursive constructions of sustainable development" which is located as an intervening variable in the table. Such a location is misleading but unavoidable in a two-dimensional visual representation. A key

assumption was that definitions would vary and that definitions and discourse about sustainability would influence both actors and outcomes in various ways, especially with regards to conflict over appropriate land use planning in the suburbs.

As tempting as it is to suggest that, for example, global capitalism “leads to” unsustainable urban development, the theoretical framework for the study explicitly assumes dialectical relationships between variables.

Table 3.1: Variables in the study

INPUT OR INDEPENDENT VARIABLES	INTERVENING OR MEDIATING VARIABLES	OUTCOME OR DEPENDENT VARIABLES
← Local to global ecology →		
Association (Private Producers or State Regulators)	discursive constructions of sustainable development Residential development history and practices Global economics Housing and land use regulation Consumer (market) trends & tendencies	The “built environment” in the suburbs Local to global ecology

Several other sources were mined for this project. As detailed previously, in addition to interviews, resources for the study included conference presentations, reports from various online and print news media, online and print government planning, policy and regulatory documents at three levels, building industry and industry lobby documents, and, finally, informal discussions with builders, trades, industry officials, and various experts in the green building field. I captured a lot of these latter interactions in a series of field research notebooks during the duration of the study, along with ruminations on the research process. Interview material and the other resources helped with construction of discourses about sustainable residential development, triangulating sources to create comprehensive stories about sustainability from two groups of actors. All provided data for this dissertation.

In addition to site visits, the *Mahogany* case study included content analysis of current marketing both online and in print. The case study combined methods to optimize

data collection and enrich the analysis, to enable a comparison of discursive claims with actual material practices in buildings, and to identify incongruities with current and future City land use planning regulation.

The previous section defined research resources and attempted to identify a model of variables in the research. The next section turns to the interviews used to study producers, regulators and ‘urban sustainability.’

3.8: Interview rationale, participants, questions and variables in the study

Interviews were used to explore discourses and potential disagreement between various actors who are influential in urban residential development. Definitions are critical foci as they are essentially representations of reality for each individual. Interviews were also used to explore actors’ knowledge about urban ecologies, intentions to change to more sustainable practices in the future, and barriers to change. Finally, interviews contributed to discursive constructions of sustainability which were then evaluated against material constructions. **Table 3.4.: Links between research questions and interview questions** (below) graphically links broad research questions based on theory in Chapter 2 to the questions posed to interviewees to illustrate operationalization of the concepts.

I sent each interviewee an introductory package (see **Appendix 3.1: Introductory Package for Interviewees**) in advance of meetings, including the aims of the study and the questions I would ask. The package was designed to be innocuous so as to get me in the door (at which it succeeded) and to make responses complete and comparable. Providing these background materials also ensured there were few gaps in the responses because interviewees were prepared. I assume that people found the

questions easy and felt relaxed. For the most part, interviewees proved to be enthusiastic participants – forthcoming with experiences and opinions.

As mentioned, interviewees for the project on the producer side included spokespeople for developer/builders and private land use planners (who bridge private and municipal concerns and often migrate back and forth). Regulators in the study mainly consisted of municipal planning officials and municipal politicians and policy-makers. While interviews mainly queried regulators and producers, serendipitous encounters enabled interviews and discussions with senior researchers and policymakers, too a technique known as convenience or snowball sampling (Singleton, et al., 1993). I have entitled participants who answered a standardized list of questions *interviewees* or *interview participants*.

I resorted to a standardized list of questions (see **Appendix 3.1: Introductory Package for Interviewees**), which is not the best tool for exploratory research, but I often allowed respondents to pursue tangents as they saw fit. I was also dissuaded from establishing focus groups because I was assured both producers and regulators would be unlikely to agree to meet in groups for research. They are all far too busy and few of them make time for academic inquiries. For the same reason, I dropped plans to interview trades people: I know from experience that, because they are usually paid by the job and not by the hour, they would have been reluctant to take time out from work. The developers with whom I spoke also denied my request for access to their trade contractors. The issue became moot when I abandoned trades from the study. Regardless of the above limitations, interviews resulted in a wealth of impressions of suburban residential development in Ottawa in 2010 and 2011. The complete list of interviewees

and their positions in their respective organizations is included below as **Appendix 3.2: Interview participants in the study**. As specified in the ethics application (see **Appendix 3.3: Carleton University Research Ethics Board Ethics Clearance**), all research participants were disguised in the dissertation to accommodate assurances of confidentiality.

Many of the interviews with developers and municipal officials overlapped with simultaneous study of ongoing sustainability planning by the City. Interview questions were standardized between producers and regulators in the interviews. This research investigated, in part, changes in thinking, culture and practices – phenomena that would typically be studied longitudinally. However, in the context of a doctoral degree, this is not possible, so interviews included some “proxy measures” about change, or probes about *intentions* to alter planning or building practices in the future.

As with developers’ interviews, I used the City’s public marketing of green development and planning as background for interviews. Overlapping interviews enabled immediate comparisons between the two sets of actors, as well as congruence with broader, recognized urban sustainability goals. My post-interview notes proved invaluable for cross-referencing terms and concepts expressed by interview participants as well as capturing the general mood during the interviews.

I am aware that participants may have responded in socially desirable ways. ‘Green’ is becoming fashionable, and the simple fact that I was studying green building may have biased responses. I hope that I limited socially desirable responses by exclusively and privately interviewing individual participants and by requiring that they used their own terms (which, hopefully, also revealed their knowledge, or lack thereof,

about the concepts in question). My instructions to respondents emphasized that there were no “wrong” or “right” answers. I tried to embrace the tendency for the research process to influence both myself and the research participants. I was involved in the process to learn. I believe I was viewed neither as an “insider” nor as a threat to participants.

Table 3.4: Links between research questions and interview questions

GENERAL QUESTION	RESEARCH QUESTION	INTERVIEW QUESTIONS
1. What are the discursive and material manifestations of green residential building in Canada in general and Ottawa specifically?		
	1a. How and why are residential planning discourses and development in Ottawa changing as a result of environmental concerns?	<p>Do you think environmental concerns will affect how you build houses in the future? How?</p> <p>Do you think government regulations will affect how you build houses in the future? Which level of government (i.e. Ottawa/Ontario/Canadian)? How?</p>
	1b. How and why do actors construct discourses of ‘sustainable residential development’ and ‘sustainable residential construction’?	<p>How do you define “green building” or “sustainable housing” (or “sustainable neighborhoods” for planners)?</p> <p>Do you think there will be a market for green house building in the future? When?</p> <p>Do you think the building industry has a role to play in educating consumers about green building?</p> <p>Do you think Canadian (choose one: planners, developers or builders) are building the most sustainable housing possible? Why or why not?</p>

GENERAL QUESTION	RESEARCH QUESTION	INTERVIEW QUESTIONS
		<p>Do you think your company/organization is building the most sustainable housing possible? Why or why not?</p> <p>What kinds of green features do you offer in your housing? What kinds of green features do consumers want? What kinds of green features would you like to offer?</p>
2. How do definitions of sustainability (Question 1b) differ, and how do they influence the regulation and production of urban natures?		
	<p>2a. Do actors in this study express intent to change to more sustainable practices?</p>	<p>Do you currently offer (or plan to offer) green features in your housing? What kinds?</p> <p>Are you planning to offer (more) green features in your housing in the future? If so, what kinds?</p> <p>What do you know about Ottawa's master plan "Choosing Our Future"?</p> <p>Do you think the City of Ottawa Master Plan will influence how you (plan and) build houses in the future? How? (Prompt with social, economic and environmental provisions in the emerging plan.)</p> <p>Do you think the NCC will influence how you (plan and) build houses in the future? How?</p> <p>Do you think consumers will demand more green features in new housing in the future? What green features specifically?</p>
	<p>2b. What do actors identify or describe as barriers to the production of sustainable housing in Ottawa?</p>	<p>What gets in the way of planning and building green housing in Ottawa?</p>

GENERAL QUESTION	RESEARCH QUESTION	INTERVIEW QUESTIONS
	2c. What are the social, economic and material consequences of diverging discourses on sustainable residential construction?	This will be a final analysis and summary of all the data and observations of the study

3.9: Ethical considerations, anonymity and confidentiality

As stated in the first section of this chapter, life experience and four years of urban studies inform my opinions and standpoint as a researcher. The research proposal included concerns that developers especially would be reluctant to participate in the study if they were aware of the researcher's left-leaning politics. As I stated in the first section of this chapter, I had a bias: my opinion was that conventional builders could and should be building much better dwellings. The tension remained in the dissertation: while I learned to respect many of my interviewees and believe they were doing what they thought was right, I used building and planning research and certain interviewee sampling procedures – for the purposes of triangulation, to try to represent a concrete measures of outcomes.

In hindsight, I now realize that my concerns about concealing my standpoint were unfounded. Many respondents echoed my (private) concerns about urban development and then proceeded to add nuance to my understanding of local politics and business practices. Most of the interviewees were also very willing to share their knowledge, which may have been a result of the way that I introduced myself in person to interviewees as an ex-contractor. I also assured respondents that I would keep names and

companies confidential, an extra step that was unnecessary in most cases, as I asked for official policy and/or as much opinion as they were comfortable offering. I am not sure that offering confidentiality made much of a difference in the end.

This research involved fairly close contact with a number of parties who claim to be striving for more ‘sustainable’ urban development. From the start this project mixed research and praxis. In other words, the process was interactive and dialectical.

Interviewees acted as educators, informing and, indeed, changing my opinions along the way. Conversely, interview questions were intended, in part, to be thought-provoking, and part of my commitment to my interview subjects was to supply carefully selected resources on urban planning debates after the interviews – a form of research reciprocity.

While this project was an attempt to push theories of urban residential ‘sustainability’ to another level, the research was also intended to be informative for both the development industry and housing policymakers at a time when the terms ‘green building’ and ‘sustainability’ had become so ubiquitous that even innovators hesitated to use them.

Further, as a condition of the research ethics application, I agreed to share palatable results with participants in the study (see Carleton University Ethics Application, **Appendix 3.3**), including a more comprehensively specified definition of residential sustainability. Hopefully, the research continued to be thought-provoking afterwards.

3.10: Limitations of the approach

I began this project with the intention of studying trades contractors, but unfortunately, their voices remain absent. It proved too difficult to gain access to this group partly because the developers in the study were very reluctant to give me access. Future research must accommodate these people for several reasons: they do most of the

physical work in one of the largest industries in Canada, and little academic research includes them; their awareness of the issues, their attitudes and trades training in Canada are crucial elements of innovation in the residential construction industry; and finally, from my theoretical approach I argue that piecework contracting devalues such an important task as creating the material structures that will house peoples' homes.

However, the focus of the research changed part way through the process as it became apparent that I may have been affording builders' trades more control over their jobs than they actually possess. I am far more sympathetic now to the carpenters with whom I worked over the years, and to the trades working today, who are forced to work faster than is comfortable or safe by an economic system based on continuously increasing productivity rather than craft. Their story though, like that of housing consumers, became peripheral to the current study.

Another limitation is that the proposal specified that I would conduct focus groups, a potentially productive method in qualitative research, but my interviewees were from such disparate factions that focus groups proved impractical. The aim was to gather organizational policy and personal opinions, and then check them against results of their efforts on the ground. Focus groups would have informed my questions, but I could see no simple way to collect a group of producers and regulators together at one time.

Regarding the interviews, it turned out that the questions could have been collapsed. For example, developer spokespersons often suggested that government and market impediments to green building were symptoms of the same processes that impede expedient business practices. In other words, producers blamed regulators and the market for getting in the way of 'green' innovation (as they defined that term). This latter

comment appeared in answers to questions 2, 3, 5, 6 and 12 of the interviews (See Appendix 3.2). While the overlaps on occasion caused some impatience in the interviewees, they acted as prompts and brought out additional insights and more in-depth responses.

Regarding power and the interview process, I approached participants as a student (and, unofficially, a carpenter) gathering official (vs. personal) definitions of and barriers to ‘sustainable development’ and ‘green building’. Developers wield considerable political power and reportedly conduct business largely in private, which might help to explain the lack of research on the industry. Surprisingly, it proved easier than expected to gain access to most of the individuals – including developers’ planning staff - in the study, and most seemed forthcoming in presenting their ideas. However, questions remain about what they were not saying. Evidently, urban development changes rapidly and, according to much of the theory and research behind the current study, the politics of suburbanization are largely conducted outside of public purview. My interviewees suggested that some of the bigger players in both camps (i.e. producers and regulators) are increasing their knowledge of and commitment to urban sustainability. How much were these opinions the result of “experts” telling a much less powerful graduate student “how things are done in Ottawa”? It was beyond the scope of the dissertation to evaluate such suspicions. Regardless, I asked for “official policy”, and the study was about *discursive* constructions of sustainability and green building, alongside comparisons between discursive practices and material results. Respondents gave me a lot of information with which to evaluate claims and actions. I am confident that power relationships did not interfere with gathering the data or analyzing the resulting variables.

Finally, the complexity of topic made it difficult to account for multiple influences on the opinions and phenomena in question. It would have been much simpler to focus on Ottawa alone and ignore multi-scalar environmental issues. But such an approach would have neglected critical sources of ecological degradation especially when regulators are aware, and developers seem not to want to hear, that municipalities face most of the fiscal and social risks and responsibility for mitigating the effects of global climate change on urban infrastructure, and dwellings where half of the world now lives. I am convinced that, rather than simplify relationships, future research on resilience must embrace and find new ways to represent complexity. Regarding representation, I also constantly struggled with language, or rather, the inadequacies of English to express the complexities of dialectics and the biological/ecological model I attempted to develop in the theory section, and against which I eventually compared ‘sustainable development’ and ‘green building’. I am not sure any language can fully describe socionature. I leave it for the reader to determine how adequately I performed my task.

I am more concerned about how my preconceptions and expectations may have led to a loss of important commentary during the interviews. I approached the interviews with the perspective that suburban developments were unsustainable for various reasons, which, I realized upon reading interview transcripts, led me to ignore certain directions in the conversations and focus on others. I saw numerous points in my interviews where I re-directed interviewees back to my standardized questions and cut off potentially illuminating tangents. This was in part a function of keeping people “on track” in the interests of efficiency, but I may also have subconsciously been steering people towards confirming my own leftist politics and biases. I quietly sought evidence that developers

ignore, as Ann Dale calls it, “the soft structure of sustainability” and I may have found what I expected to. In other words, “big bad developers” were spreading housing into the suburbs without considering a broader vision of a sustainable city. Despite my biases, my interviewees bore no relation to the “big bad developer” stereotype. On the contrary, I was surprised by the generosity and enthusiasm with which my interviewees as a whole treated my research project. I also believe that my main informants were knowledgeable about urban sustainability and convinced they were doing the right thing in spite of various impediments both inside and outside of their respective organizations. I can only apologize if my biases interfered with my understanding of their standpoints on the issues.

On a broader level, I felt a constant tension between two epistemologies: How does one study a topic using both political economy and post-structuralist methods? Are they incompatible or is there a middle ground? The critical political economy/political ecology methods to which I have been exposed almost determined findings from the outset: profit-driven developers slam suburban homes together despite environmental imperatives. Interviews suggested that developers’ employees were more probably leaders from within their respective companies, with far more knowledge about sustainable urbanism and green building than I originally expected. Structuralist analysis leaves no room for non-totalizing arguments, while a post-structural or humanist approach – the “micro” or “mid-range” approaches, focusing on discourse especially – forces one to ask “Which developer is important, where, and when? And which elements of which definition(s) of ‘sustainability’ guide our conversations? The answers, as Noel Castree often points out, depend on the questions.

CHAPTER 4: INTERVIEW HIGHLIGHTS AND CASE STUDY

4.1: Introduction and notes on producers and regulators

This findings chapter is divided into two parts. The first two parts are intended to explore and contrast private and public sector sustainability discourses in Ottawa. The third part ties interviews with theory from Chapter 2.

Sections 4.2 through 4.5 review actors' definitions of sustainability, along with their thoughts on change drivers and barriers to sustainability. Sections 4.6 and 4.7 present a summary and discussion of the interview findings. Sections 4.8 and 4.9 extend the discursive constructions of sustainability into the public realm by examining sustainability marketing by the City of Ottawa, by the growth lobby, and by one of the largest developer-builders in Ottawa. Section 4.10 portrays one developer's marketing of 'green building' and 'sustainability' and how imagery and text were used by Minto Communities Inc. to create a sustainability narrative around a rural development. Section 4.11 analyzes the sustainability claims in the case study.

I used a qualitative research software tool called NVivo to explore my interview transcripts. NVivo was helpful for comparing how interview respondents defined green building and sustainability and, by extension, their knowledge of these issues in urban planning. NVivo was also useful for assembling and sorting statements about barriers to sustainable residential development, for simple categorizations, for visualizing interview responses, and for model-building.

Some of the interview questions (see **Appendix 3.1: Introductory Package for Interviewees**) were devised to explore a range of proximal indicators for knowledge about, and intentions to work towards, more sustainable residential development. The

indicators are proximal in the sense that expressed opinions are not necessarily internalized beliefs, and they do not necessarily guide action. Rather, responses to questions about definitions served as components of actors' discourses on sustainability: the interviews were supplemented with other data such as maps and physical examination of houses and developments, assorted on-line and newspaper reportage and comparisons with alternate discourses on sustainability. Subsequent analysis was intended to compare discourses with material outcomes. I chose to interview people who were apparently striving to create a more sustainable Ottawa.

I divided selected respondents into two groups depending on their potential to influence regulation or production of homes and housing into more sustainable forms, then set out to determine if there were differences in opinions about sustainability between these Ottawa producers and regulators. The producers group consisted of representatives from companies that were involved with residential land development. Further, I selected specific producers for their public engagement with green building and/or sustainability, mainly in newspaper marketing and in their websites. For the producers group, I chose Fred (small producer); Tim (manager of a mid-sized producer); Art (trade supervisor for a large producer); Alice (residential planner for a large producer); Margaret (residential planner for a private planning firm); and Geoff (residential manager for a large producer). For the regulators group I chose Gwen (senior City official); Gail (politician); Tom, (senior city bureaucrat); Sally (City plan reviewer); and Peter (senior City planner).

4.2: Defining green building and sustainability

My first and main question for interviewees was to “define green building and/or sustainable development”. One of my assumptions from the start was that producers and regulators had different opinions about sustainable development in Ottawa because their public discourses were very different. As it turned out, my interviewees were not so clearly divided. I also expected there would be considerable overlap in the responses concerning definitions of sustainable development and green building because in my reading of political ecology and social nature the two would be inseparable components of urban ecology. The latter assumption was quickly dispelled by my first interviewees who argued that, although they are related, sustainable development and green building are not the same things. I began subsequent interviews by asking people if green building and sustainability should be separated or left together. **Appendix 4.1 Green building and sustainability definitions by producers and regulators**, shows representative definitions filtered for overlap and repetition, and split into the groups as defined in the introduction.

Interviewees pointed out early on that they perceived the terms *green building* and *sustainable development* or *sustainability* to be problematic, which fit my assumption that the terms are overused and abused. Tim, manager for a large production builder, claimed he rarely uses the terms any more:

...they are such vague terms – both ‘green’ and ‘sustainable’, and they get used in so many circumstances for so many different reasons, I think it says more about the person using those terms than about the project or development itself. When I am talking about [name of company]...I’m usually very careful to describe it in terms of energy efficiency, or high-performing housing...I am very reluctant to call [name of company] a green builder. I would never put out an ad touting us as a green builder because people load that term with so much of their own meaning. And sustainability can mean so many different things...to use that in a marketing

sense or a branding sense, it doesn't have any meaning other than to the person that's using it... It's not that I don't think that it's important. It's just that I want to be clear about the message, and the green label is really not clear. To make things worse, the green label has been co-opted by marketing departments everywhere, and it's gone from trend to fad.

Other interviewees reflected a similar confusion and ambivalence. Senior City of Ottawa planner Peter joked that there were so many definitions of 'green' that "... it's like a thousand monkeys on the typewriter". Upon reading my project description and request for participation, another of my City informants, Gwen, a city official who guided sustainability planning at a high level, stated bluntly: "In my opinion, this is not a Ph.D. topic. By now most people know what sustainable development is." However, during my interview with her, she directly contradicted herself by pointing out that:

When we started this [municipal sustainability policy] project...we ran a number of workshops just to make sure that everybody who works on this project speaks the same language because *sustainability is a different thing to everybody*...what developers or our department of economic development feels is sustainable, it's not the same" (emphasis added).

Gwen's comment responds to my main questions about definitions, and again, to my concern that not everyone is using the same terms of reference when talking about sustainability. The suggested difference between the department of economic development and developer definitions is significant because it fits my hypothetical discursive distinctions between regulators and producers. From the latter perspective, Geoff, manager of construction for a large development company was quite clear about green building:

Once you reduce your energy demand with a very effective shell and some passive solar approaches and better products – you've got a great shell that needs very little to produce light, heat, cooling. Once you've got that then you need minimal systems to give you what you need. And then you couple those systems with some renewables, and voilà, you're there with your approach.

But Geoff's comprehensive technical specifications contrast with Alice's opinion. Alice, a planner who, like Geoff, works for a large developer, pointed out:

We use both of those terms [green and sustainable] – we use green – which I find is a bit of a difficult term sometimes. It can mean anything... [But] the terms are convenient. Green is short. The consumer seems to at least sort of understand what the term means, like in one word. Otherwise you have to talk about... more technical terms...

In other words, in this quote the term green might be clear to a builder, but seems to be ambiguous to non-builders, although at the same time it serves as a signpost for consumers. Again, opinions about the terms seem to change depending on the user. Like the others, Alice was quite clear about green building when she stated:

I think ideally when talking about building, something should be energy efficient, water efficient and healthy, like in air quality, and healthy in terms of the materials that are used, *and how someone is going to live in the home* (emphasis added).

Alice's definition of green building is clearly consistent with Geoff's, which is to be expected as they work for companies in which the discourse on the topics is remarkably consistent: employees used the same terms that the companies used in "in-house" and public communications. However, occupant behaviour is something that no other respondent specifically alluded to, an observation to which I will return in the Analysis section of Chapter 4.

Despite the initial reluctance by some respondents to use the terms, and despite claims that sustainability was a very ambiguous concept, they all were able to talk about both green building and sustainable development for the full hour (and sometimes longer) of the interview, and it is evident from the responses to the questions that there is

somewhat more consensus about defining green building than sustainable development, a consensus apparently shared by consumers. For both groups, green building was about individual structures such as houses, and energy efficiency was the facet of green building most often mentioned. Again with regard to variation in responses and ambivalence about the terms, and also with regard to comments that they should be separated, it is noteworthy that the first of the developers in the interviews, Fred, had difficulty separating the terms and chose instead to think about the same material practices and processes at different scales for buildings and developments, stating: “I’m going to lump green building and residential development into one and call it built space.” Gwen, the City official, initially refused to separate the terms, arguing instead that “...basic sustainability principles...apply to buildings or apply to the whole community or apply to the whole city.”

However, due perhaps to the general concurrence about a definition of green building, while some people implied that the terms were too closely related to discuss separately, my respondents, without my prompting, immediately switched to talking about green building as construction methods that reduce energy consumption for heating and cooling in residences. According to both of the groups, green building is also, to a lesser extent, intended to improve indoor air quality or improve durability, and was related to the production and transportation of construction material. In other words, it appears as though, at least to these two groups of building and planning professionals, green building is about the material configuration of, in this case, houses. Further, many of my respondents in both groups felt that the Leadership in Energy and Environmental Design (LEED) specifications for green building made sense to them as guides for urban

development. LEED for Homes and LEED for Neighbourhood Development, the two LEED rating categories related to housing, give credit only for the “hard structure” of housing and infrastructure, and LEED does not alter the relationships between the people who build houses and the people who live in them.

Keeping in mind that the current discussion is restricted to producers and regulators, and while it may not be meaningful beyond these groups, sustainability and/or sustainable development produced much more variable definitions than green building. For example, there was agreement that sustainable development operates at scales beyond the individual building, and that sustainability involved reduced car use. There was also agreement that sustainable development is a much more complex task than green building. However, from the quotes in **Appendix 4.1: Green building and sustainability definitions by producers and regulators**, it appears that regulators were more concerned than producers with urban form especially with regards to commuting. Producers’ definitions of sustainability were primarily concerned with material structures, perhaps in a more localized conception. Urban form was clearly important to interviewees, but variations in the scale of sustainability were evident. Tom, a regulator, claimed:

You can’t compensate for not pursuing sustainable development in terms of overall growth management strategies at the neighborhood level simply by making buildings greener, because a lot of issues around the environment really relate to the broader development context.

Clearly, Tom’s opinion is that green building alone does not lead to a more sustainable city. Developer Fred concurred when he stated: “...you can’t build a green house in an

unsustainable development...”, again acknowledging the importance of looking beyond individual buildings to the broader context in which they are situated.

Similarly, Alice, a planner for a large developer, distinguished between the two terms: “They are two different things, but you can do both in one project for sure”, a statement that indicates different scales for the terms. Alice elaborated scale in her definition as follows:

...a lot of the work that we’ve been doing for the last 10 years around energy reduction and reducing operating and maintenance costs and the impacts on the environment of doing that. We’re increasingly aware of where we build and what form of residential building that we do as being significant also.

In her discussion, Alice reiterated the emphasis on energy reduction, but also stated the significance of location (“where we build”) and the “form of residential building” – in other words, high- versus low-density development like in the company’s townhouse and low-rise condominium developments. Adding another nuance, Margaret, a private planner who works for producers, alluded to opinions about green building and sustainability that would vary depending on whether a person was a planner or a builder:

I don’t think one equals the other, and if you asked a builder and an architect they definitely would think of green building as very much how you build a building, [and] if you asked them about sustainable housing they might also think about how you build a building, whereas a planner will look at that and say no, sustainable housing is how it fits in the community... it’s the transportation, it’s the housing perhaps, even as far as that’s considered, you know, sustainable housing is more of a general term.

While the above quote supports the notion that green building and sustainable development are distinct concepts, it also seems to suggest that people situated at different stages of the process of planning and building housing might hold different opinions, depending on their area of expertise.

In closing this brief discussion of definitions among interview respondents, one point stands out because of what is missing from the interviews. It seems from Appendix 4.1 that producers tended to define sustainability with somewhat ambiguous and non-specific concepts. Geoff, Alice and Margaret repeated vague interpretations of the Brundtland Commission's (WCED, 1987) definition of sustainable development as exemplified by this passage from Margaret's interview:

You're looking at a much broader geographic area plus sustainable – the classic definition is you don't jeopardize the future generations by what you are doing today, and it has economic, social and cultural, and environmental components, it's like the four pillars...it's long-term planning...It brings in economics. Because it's so broad it's very hard to define. You have to build the terms around it loosely, and it could be as simple to some people [as]... sustainable housing is something that's affordable and economically viable and lasts into the future.

Informants within the producers group stressed economic and environmental aspects of sustainability over social aspects. Conversely, the regulators group appeared to be somewhat more concerned with how the city as a whole is planned. Regarding social sustainability, a consistent response across the respondents was that housing affordability was important for sustainability. However, like 'social' or 'cultural sustainability', housing affordability was never clearly defined. Sally claimed that the City zoning favours mixed use in developments now, including townhouses and apartments, which may indirectly address affordability. Others in the sample (developers Fred and Tim, for example) stated that green building was more expensive, and this impacted on affordability. None of the references to affordability in 500 pages of transcriptions were elaborated. Is this lack of concrete specifications for "affordability" significant?

While many respondents showed some familiarity with the Brundtland definition of sustainable development, some respondents were more familiar than others with broad

definitions and tangible specifications. On the producer side, the relatively narrow focus on the business side of residential building economics and the detachment of green building from broader urban development processes are significant findings for this project. Given the emphasis on commodification of nature in the marxist literature, it follows that developers would consider the Brundtland model of sustainability to be beyond their purview and responsibility. And despite the unanimous opinion that everyone is responsible for change, I have to question whether the general awkwardness around sustainability concepts bodes well for cutting the impacts of urban development on the planet. Although City policy staff and the senior private planner in the study were well-versed in the language of sustainability, there seemed to be a lot of ambiguous and almost cliché definitions offered by interviewees. Given the current pace of environmental change and the clear linkages and exchanges signified by Cidell's (2009) *built environment* and Moffat and Kohler's (2008) *building metabolisms*, the discursive detachment of buildings from ecology is not informed or realistic. The absence of engagement with affordability in any meaningful way by the producers was also troubling but predictable as the producers in the interviews were all working in for-profit enterprises, and economic viability is each organization's first priority. Even in a sample purposely chosen for innovative approaches to housing, affordability seems to mean affordability for people who can afford to buy houses.

The section that follows explores another key aspect of sustainability discourse, namely, how interview respondents felt forces external to their organizations propelled changes to residential planning and building – green building drivers.

4.3: Change drivers in Ottawa residential development.

Interview questions probed respondents' knowledge of the global to local impetus for more sustainable urban development. I asked respondents if they thought changing market demands, government regulations and environmental issues might be motivating change in their practices. Much of the following analysis was divided by whether respondents worked as *regulators* or *producers* respectively. The following findings regarding motivators for sustainable residential development will also contribute to the discursive constructions of sustainability in the analysis section to follow.

My questions elicited both a breadth and depth of knowledge of sustainable urban development from people in my sample. In fact, their responses, and the knowledge embodied within them, exceeded my expectations. Most of the respondents proved to be not only well-informed, but also concerned about issues such as global climate change (and our dependence on cars) – both of which increasingly drive more sustainable urban regulation and planning. Representative responses to questions about drivers behind sustainable urban planning are included in **Appendix 4.2: Drivers for green building and sustainability by producers and regulators**. Once again, the responses were split into producer and regulator groups, and selected to be representative and screened to reduce overlap. Appendix 4.2 was simplified into several themes, which are included in **Appendix 4.3: Themes in drivers for green building and sustainability by producers and regulators**. It is clear from **Appendix 4.3** that the drivers identified by both groups overlap. I have broken them into categories to examine opinions in greater depth.

I tested opinions about market demand in the interviews by asking interviewees if they thought the market was growing for green building or sustainable development.

Reviewing Appendix 4.3, it is noteworthy that consumer demand was almost never mentioned as a driver of change or innovation in the housing industry. Several respondents mentioned that green was becoming fashionable but only if it did not increase the cost of a house. In fact, Minto was the only company actively promoting green building, and essentially single-handedly attempting to drive market change at a time when environmental issues had been bumped from the fore of public consciousness by a stagnating economy. As mentioned earlier, the other two developers in the study refused to advertise that they were ‘green builders’. Hence, market forces were considered moot for the analysis of drivers of change in this section. Consumer preferences and ignorance were instead considered more as barriers to change, and thus are discussed in Section 4.1.3 on Barriers to follow. The analysis section now turns to the themes identified in the interviews as the main drivers for change in residential development, namely energy prices and the spatial aspects of new developments, changing codes and regulations, and specific environmental issues that interviewees felt were impacting on their practices.

Energy prices & location

Regulators and producers as they have been divided for this part of the findings section were aware of how urban planning can mitigate greenhouse gas production, and the themes of development location and transportation came up frequently in the criteria assigned to sustainable residential development.

Among the respondents, Art’s job placed him closest to residential construction sites. One of Art’s main tasks was ensuring that trades were careful about air-sealing

building envelopes. Art's responses indicated that he was very aware of the influence of gas prices on both how and where his company was building homes. He stated:

...everything gets trucked, everything gets shipped. That all takes fuel. Guys using chainsaws at work are going to want to get paid more. People driving to work [i.e. contractors for the developer] are going to get caught [by gas prices] – it's going to be a lot more, every one's going to want more money. So the homeowner will be the one that'll have to pay for it...

Compared to other interviews, Art's was the most focused on the hands-on, day-to-day challenges of increasing energy efficiency in residential construction as is evident in the comment about chainsaws and gas prices. Art also had a comprehensive understanding of how various on-site innovations can impact on costs for housing consumers.

At the municipal policy level, Tom's comments are worth quoting at length as he integrated a number of influential factors in the following passage about how municipal responsibilities are complicated by the political economy of energy as the City attempts to factor carbon into municipal planning:

If you ask the development industry, they say that people still want granite counter tops rather than upgraded insulation. So how do you change that? I'm not sure. Maybe energy prices will do it. Maybe eventually... senior levels of government will bring in more environmental pricing tools such as carbon taxes or congestion charges. It does come down to [the] pocket book frequently. One municipality can't put in a carbon tax while the next municipality doesn't [laughs]. So people will see the impact of fluctuating energy prices and eventually – however you debate the timing and so on – oil prices and reliability, and natural gas prices and reliability – and they will drive the necessity of change in terms of some of the ways we grow and develop. [Long pause, then quietly] I think that at the provincial and municipal level it's a political thing where you look at your constituency and balancing those interests, whether it's intensification, or people in outlying areas continuing to argue for improved road transportation so they can drive into the downtown. Those are drivers. You can go through and tweak this zoning bylaw and look at that regulation, but the bigger picture comes back to what are people willing to do in terms of lifestyle and their pocketbook.

Remarkably, the comment about granite countertops came up repeatedly over the course of the interviews: each of the developers' representatives in the study were cognizant of the "carbon footprint" (the greenhouse gases produced by transporting goods) from shipping stone long distances for new Ottawa kitchens, but felt obligated to offer this option in their houses or lose sales, and expressed frustration that most consumers choose such design options over energy-saving options for their homes. Margaret offered a similar speculation: "I'm sure [developers] will say that give the average homebuyer a choice between the fancy entranceway and staircase or R2000 and heat pumps, they'll take the fancy". Furthermore, Tom indicated in the last quote that the City would not try to influence consumer behaviour, a limitation that came up several times in Tom's interview. From this quote it also appears that Tom, in a moment that sounded like despair, hinted at just how hard it was to accommodate all environmental, political and consumer priorities in his policy position with the City. Senior City official, Peter, reiterated this challenge when he cautioned: "...with all the environmental stuff that you read, everything is the most pressing concern...and what it causes is paralysis, because...if everything becomes a priority, then nothing's a priority." But Peter was also quite aware of the relevance of energy costs – especially the vagaries of gas prices – to urban planning.

Tom's quote refers to energy in both building efficiency and broader urban planning. Tom was one of several respondents who echoed the importance of fuel price signals as a driver for change in residential development. Tim stated unequivocally that "...the main driver [for green building]...is fuel costs. Fuel costs is [sic] what drives interest in energy efficiency, not greenhouse gas emissions." Margaret concurred, noting

the element of denial that she thought might influence consumer choices: "...with the cost of energy going up and the cost of fossil fuels, people are going to start to pay attention... We all know that's coming. Most people don't want to think about it, but it is." Although during the four-year period of this study fuel costs reflected parity with a stagnating economy, there was a common assumption among my interviewees that fuel costs would gradually increase.

Curiously, few of the respondents in the producers' category directly linked energy costs with transportation and associated carbon production. For example, Alice, a private planner for the producers, stated:

I think it's also what types of housing we build *and where we build* is probably one of the things that is an environmental issue, and how people get to work and where they work and all that kind of thing. I think that's something...we're going to change in the next 10 to 20 years [emphasis added].

Sally, a planner for the City, agreed that the locations and connectivity of new development and alternate modes of transportation were important. Sally commented:

We [in the City planning office] look at that very seriously now – to try to get people out of their cars and walking or biking. That's really key. Instead of making subdivisions that are isolated and do not connect except by the streets. It's unsafe for a mother to go with her stroller. So that's important, right? For the community to become less car-dependent. And then that's so key with our whole transit system, right?

Alice's and Sally's two quotes are revealing, as are many other ambiguous comments about cars in the interview transcripts. Alice did not directly refer to the environmental impacts of car commuting and she seemed to feel no urgency about changes to urban form related to single-passenger vehicles. Sally mixed connectivity and safety with cutting car use, again bypassing the link between car suburbs, gas prices and carbon production. Developer Fred noted other 'costs' of commuting when he asked:

If you are spending 25 minutes on a bus are you using your brain to its optimum level? If you are commuting for an hour are you feeling productive? I've noticed mental health is becoming more of an issue for people and I can't help but feel it's connected – in our urbanizing world.

In this quote, Fred added an interesting variation but again, in the interviews, representatives from the development companies did not directly link cars and carbon emissions. In this sub-sample, and also in my total sample of respondents, energy costs and locations of new developments were consistently mentioned as principal drivers for change, but the developers' representatives seemed to skirt the fact that gas prices were becoming more expensive, and that suburban cars were main emitters of carbon, and thus contributors to climate change. Producers, however, were also adamant that the market would drive change, and that developers had limited influence on consumer behaviour. I have to assume that for some of the respondents, the absence of references to cars in the interviews was a result of ubiquitous references to cars and carbon in planning literature. In other words, they might have assumed I was aware of the issue. I also did not probe respondents about cars specifically. But none of the developers' representatives gave a clear impression that they understood and/or wanted to talk about one of the main reasons why the City of Ottawa wished to reign in development outside the Greenbelt – namely, the fiscal and environmental costs associated with low density suburban residential development.

On the other hand, regulators made many more references than producers to cars and planning for cars, usually in concert with rising energy costs and carbon emissions. An Nvivo word query (screened for misfits) produced a simple count of the number of times the words *gas*, *cars*, *transit*, *auto*, *walkable* or *transportation* appeared in the

interviews. Producers mentioned any of the words 29 times compared with 81 for the regulators, lending support for the finding that regulators were considerably more concerned with transit modes.

Whether or not developers wish to talk about ex-urban development from the perspective of cutting car-related carbon emissions and energy consumption, the City strives to limit such environmental impacts through building codes and development regulations – both of which will be explored in the next sub-section.

Codes and regulations

In the interviews, references to state influence on residential development focused mainly on building and zoning law. There were several references to changes to the building code³⁴ in the interviews, and this was expected as the federal government was in the process of revising the Model National Energy Code during the time that the interviews took place. In a personal conversation Corey Peabody at NRCan, who helped devise and implement the new code, claimed that the federal government had provided ample warning to residential builders' associations across Canada that codes would become more prescriptive with regards to tightening up building envelopes and with regard to heating and cooling appliance efficiency³⁵. Municipal zoning and permitting came up often too, as the City was moving towards official promotion of densification. The urban boundary debate is a separate issue, however, from residential building code which is imposed by the province, and with which the City and builders must both work.

³⁴ The building code is the *Canada Building Code* which is translated by the provinces into regionally specific building regulations which are then applied in planning and enforced on building sites by municipalities.

³⁵ The revised Model Energy Code was appended to the National Building Code and came into force in January of 2012. The new MEC standards were modified to require building envelopes to be much less permeable to air exchange between inside and outside.

In the interviews, Art referred to pending code changes, and ventured that the City would be responsible for implementing the new energy code: “The building code will change. I’ve heard that it’s going to be changed. I know that there are rumours that the City may be doing more and more inspections on the building envelope.” Art was not concerned about the increasing standards because his company had begun pre-emptively transitioning to the new standards in all of their residential building well before the deadline.

Regarding the new energy-saving requirements in building codes, Tim was aware that the 2012 code was the start of a federal government strategy to quickly upgrade to much more stringent energy standards:

...it’s certainly a trend that building codes are starting to incorporate energy measures. And...they’re being quite clear that this is the thin edge of the wedge. This is their mechanism that they’re going to start to wield as strongly as the market can keep up.

Again, Corey at NRCan corroborated this, indicating that the federal government would be implementing much stricter building standards over time starting in 2012.

Interestingly, increasing standards were cited as negatively influencing affordability by the developers’ representatives in the study.

Developers are very aware of trends at City. Alice mentioned the pressure on developers to increase densities for residential development:

The developers mainly build single family [houses]. So we’re constantly ensuring that we get a variety of...multiple attached and apartments... And that’s not only because it’s more units and less land: it’s better for our aging population, because I’m not always going to want to look after a single family home. That makes better, more efficient use of our land. If we’re going to spend all this money and resources to get our services out there let’s get some more density. All that comes from our Official Plan and zoning.

Recall that Alice, a planner who dealt with subdivisions outside of the Greenbelt, implied that developers still push for detached housing on large lots. In this quote, Alice also indicates how she must accommodate multiple priorities when planning a new subdivision, including demanding dwelling diversity and density from developers, accommodating changing demographics and the costs of servicing development beyond the Greenbelt. According to Peter, increasing densities were a contentious issue between the City and the Greater Ottawa Home Builders' Association (GOHBA); the latter argued that increased density was not what the market demanded, and that it reduced profits for the building sector. But the City was assisted in its efforts by the province. According to Peter:

The provincial policy statement has been getting more and more prescriptive in terms of how things are to be done. And that's being implemented at the municipal level. There's an evolution: the official plan deals with a lot more things like natural environment, energy and all those types of things. It comes from the provincial policy statement. Which makes sense because I think that what you want to do is try to have the same basics for all communities in Ontario.

At the time of the interviews, three levels of government were adding impetus to green building through both regulation and incentives to developers to innovate and federal energy-saving codes. But incentives apparently came from other sources as well. Several respondents suggested that there were increasing tendencies by both consumers and urban planners to 'be green', or to favour products and processes that had been labeled as environmentally friendly, and that 'green fashion' operated at both the municipal and individual home buyer scales.

'Green' planning and building is in fashion

Speaking from the municipal policy level, Gwen stated that urban sustainability:

...was something that everybody recognized that needed to be done, but they had other priorities and they were also afraid of being ridiculed. It was not “in”. But now it’s so “in” it’s on the front page of every financial journal. Everybody’s into sustainability. We are not innovators any more. ...Every municipality is doing it.

Gwen echoed the research for this dissertation: Especially in a period of fiscal constraint in neoliberal economies, municipalities are tasked simultaneously to reduce both dollar costs and environmental costs, locally and beyond. In the literature, it appears that out of pragmatic necessity, some cities in Canada like Vancouver have become leaders in sustainable development. But there is also apparently an incipient market for environmentally benign housing, and one sector seems to reinforce the other. On the level of housing consumers, Alice offered:

I think first-time homebuyers also care about the “cool factor” of being green... if you have two houses at the same price but one has green stuff in it – people will go for the green house. Not necessarily for the right reasons, [but] because it’s becoming fashionable to be green.

But note that the cost factor is significant: several producers noted that ‘green’ is desirable unless it costs more. Also remember that the other developers in the study deliberately avoided the term ‘green building’ because they felt it was too ambiguous and they thought consumers were over-exposed to, and suspicious of, the term. The case study in the second part of this chapter will analyze this contradiction in marketing strategies.

Green products and design in their various forms are in fashion among consumers because environmental issues have been featured in popular media for decades. The same environmental issues influenced opinions about sustainable development in the interviews for this project as described in the next section.

Environmental literacy

I asked interviewees *if* and *how* environmental issues would affect peoples' future actions because it was a way to evaluate both knowledge of the issues and future expectations of accommodations to future environmental change and regulation within their organizations. There were varying levels of understanding and discussion of environmental drivers of change in residential development that depended on where the interviewee could be situated within in the development process. For example, Alice, a planner employed by a large developer, was of the opinion that the environment: "...already has impacted us a lot over the last ten years...There's an expectation now by everybody that it is a consideration in planning and design." Alice then elaborated on pragmatic applications:

If something is as large as global warming, it can impact on how we design, build or plan developments. I can foresee that being something in the future that will impact on provincial and municipal policies, for example, how we design for a storm event.

City of Ottawa planner, Sally, interpreted "the environment" somewhat differently:

In the past, our parks planners wanted a nice clean site for soccer fields and everything. But now they're saying we need those trees – we want that shade – it's an oasis. And the community are [sic] starting to say how can we move out to these [subdivisions]? There's not one tree, or we get one little tree per lot. Can't you do anything more to retain what's there?

And Sally's City planning counterpart, Peter, reflected:

Oh yeah...it's become a way of doing things. Now we do an environmental management plan for any major development ...like fish habitats, and terrestrial plants and animals and trying to make the best choices around these qualities. And now we require a tree preservation plan and planting plan...

Tim, the manager of a mid-sized development company, took a broader view and offered a brief glimpse into his skepticism about market transition:

Climate change is an environmental issue. It's something that... I haven't ... I keep hoping that I'll get proven wrong, but I haven't seen a lot of individual action in terms of, you know, paying extra for products specifically for the purpose of slowing climate change, but we are seeing it more and more on a regulative or legislative level, whether it's through incentives and subsidies or through building codes. And that's going to continue.

Note that Tim was at least in part assigning responsibility to the consumer's "individual action" for climate change and, like Tom, did not see consumer behaviour changing to rectify the environmental impacts of residential development. The issues of scale and onus of responsibility seem important in these quotes, as respondents shift back and forth between consumer choices and state actions at three levels.

I left it up to interviewees to define "environmental issues" and although there was alignment with broad goals in the urban planning literature, there was little discussion of the specific processes through which cities contribute to global climate change. This may have been a result of assumptions about my knowledge: respondents may have assumed I would understand shorthand references, having introduced myself as a graduate student of geography and environmental studies. Again, responses varied by peoples' levels of responsibility, with the higher-level policy people – Tim, Tom, Gwen and Margaret – better able to link urban form with energy efficiency and carbon emissions.

There were numerous references to the goal of getting people out of cars and promoting walking and cycling by both groups as they were divided for this part of the interview analysis. Reasons cited can be divided into two categories: reduction of

greenhouse gas (GHG) emissions, and public health. All three development companies marketed their housing as healthy, a basic strategy that would have wide salience among a public increasingly concerned about contaminants in their environment. Interviewees on the regulator side seemed somewhat less aware of indoor air quality (IAQ) issues and proved more focused on the exercise aspects of alternative modes of transportation. Again, responses seemed compartmentalized depending on the position of the interviewee in the process of producing or regulating suburban development, but this may have been due to any number of situational factors apart from knowledge or intentions. However, it seems like only the higher-level policy people were cognizant of the environmental costs of cars and commuter suburbs.

4.4: Analysis of perceptions of change drivers

When asked about what might be spurring green building or sustainable development in Ottawa, respondents talked mainly about energy costs, and especially gas prices. But the cost of gas then turned into a barrier to denser development because, as interviewees agreed, low gas prices mean people can afford to commute. Despite dire warnings about the effects of human activity on the planet, according to most of my respondents, neither they nor commuters seem pressured to re-think where suburban housing is built in Ottawa. Housing consumers are apparently not concerned enough about the environment to alter their general behavior or consumption patterns.

While everyone agreed that responsibility for education and behaviour change in consumers must be shared equally among the public, public officials and industry, several respondents from both producer and regulator groups insinuated that public or consumer ignorance was a major barrier to change. Individual responsibility is a familiar refrain in

classical liberal economics, where market forces governed by ‘rational humans’ are believed to lead to optimal economic outcomes, and where an educated consumer will make better choices, which will, in turn regulate what producers (of housing for example) will produce. The suggestion of a ‘free market’ has long been discarded by marxist political economists as a fiction created by capitalists to deflect responsibility for irresponsible behavior (Fine, 1989; Harvey, 2010a; Kanth and Hunt, 1991).

The situation in Ottawa is more complex than this basic marxist theoretical assumption. Consumers face a growing barrage of information about the environment, and about products and processes, which they must evaluate to make decisions about purchases (Robbins, 2007). The producers in this study all made it a priority to educate consumers, at the very least about personal financial and health benefits of green building for the inhabitants of houses. Consumers also face uncertainty when evaluating, for example, where they might buy a house. It seems clear that history, politics, culture and gas prices are tied together in these decisions (Robbins, 2007). Robbins also asks an important question: does the industry respond to or create demand? It would seem from new house marketing that consumers desire granite countertops because they are offered in every new development. However, few developer-builders offer green upgrades in their advertising, and the ones who do – including the developers in my study – do so without dwelling on environmental benefits. It is clear that consumers do not request options that are not advertised.

Increasing government regulation was mentioned as impetus for change in two specific spheres: the City’s emphasis on densification and the federal revamp of the National Energy Code. Tom made a good point that the City cannot influence consumer

behavior but is obliged (by the province) to bill taxpayers for extending services to suburbs. As well, the City must deal with multiple priorities and “political noise” from inside and outside City Hall. But once I asked about government, respondents again switched the topic around to talk about government as a barrier to smarter practices as respondents agreed there was not enough leadership from senior levels of government. And while changes to national building codes are an important step, more stringent building codes are only a partial solution and do not deal with the much larger issue of a fossil fuel based economy. Forcing builders to reduce heat loss from buildings does not alter urban form, which is more of a provincial mandate in Canada. And there are disjunctions in federal and provincial jurisdictions that prevent the federal government from influencing changes to urban form. For example, a condition placed on municipalities for federal gas tax transfers was a requirement for integrated community sustainability plans, but there was no legal mechanism for ensuing implementation (Dale, 2013). The various jurisdictions in Canada, the lack of informed consumers, and the variations in different respondents’ engagement with issues around climate change and cars - all suggest knowledge silos: the public is apparently ignorant about green building and sustainable development; regulators are more aware than producers of general environmental issues; there are clear disjunctions between various levels of government and policy implementations; and the municipal officials seemed to be the only ones concerned with low density suburban residential development. It was also apparent that despite some reluctance to talk about transit and GHGs, these producers were all acting on environmental concerns whereas the industry in general actively resists change. As

Dale (2012) insists, knowledge and action are siloed and there is no common (i.e. national) vision that steers action on urban sustainability (see also Telfer, 2009).

In the next section, interviewees were asked to expand on barriers they started talking about in discussions of drivers for green building and sustainable urbanism.

4.5: Barriers to sustainable residential development as identified in the interviews

Interviewees were asked for their opinions about impediments to green building and sustainable development in Ottawa. Quotes relating to barriers to green building are included in **Appendix 4.4: Barriers to green building by producers and regulators**. Respondents' descriptions of barriers to sustainable development are included in **Appendix 4.5: Barriers to sustainable development by producers and regulators**.

Appendices 4.4 and 4.5 are compiled from representative responses to open-ended questions about barriers to “sustainable residential development” and “green building”. The question included both terms, and responses were divided into sustainable development and green building according to definitions as summarized earlier in this chapter. Appendix 4.4, *Barriers to green building by producers and regulators*, contains raw or unsorted responses, while in **Appendix 4.5, Barriers to sustainable development by producers and regulators**, I have attempted to pair similar responses made by producers and consumers. If responses clearly fit into two categories, they listed in both.

Several themes emerged from responses to the question about barriers, namely *definitions, economics and affordability, the lack of market demand, education, governance, and the growth regime*. Themes most often overlapped, and are divided as follows only to simplify the portrayal of responses. Each theme is described in turn as it emerged from the transcripts. The first theme, definitions, was extrapolated from the

earlier discussion, and is offered here because it proved central to speculation in the dissertation research proposal.

Definitions

From the previous discussion of definitions offered by various respondents, it is possible to extract some barriers to sustainable development and green building. It is important to note first that, as with most of the categories created for the findings and analysis section of the dissertation, there was considerable overlap. For example, respondents often suggested that inadequate education about sustainable development leads to inadequate definitions of the term. It seems artificial to discuss terms separately in this section of the dissertation, but that that is how they appeared in the interview transcripts.

Both the producer and regulator groups alluded to the ambiguity inherent in the terms sustainable development, and, to a lesser extent, green building. Respondents referred to other signifiers for the terms such as ‘affordability’ and ‘not impacting on future generations’ without adequately defining these components: for instance, no respondent suggested for how long, or for whom, a building or a development should be sustainable. Further, affordability for the producers apparently (and implicitly) meant affordable to people who can afford to buy a house. These ambiguities will be discussed in detail in the analysis section to follow findings.

Other absences in respondents’ descriptive fabrications of green building and sustainable development were illustrative. For example, only Bill, a senior federal built form researcher, brought up the process whereby consumer products are marketed with dubious or false claims about environmental benefits. As Bill stated: “...greenwashing is a big barrier because after a while people don’t believe you anyway.” Tim and Fred both

remarked that the terms sustainable and green are over-used to the point that they no longer proved to be effective marketing tools, but none of the other respondents directly linked the strategy with consumer ambivalence. The terms were apparently abused in the housing industry to the point where Bill's federal agency reported numerous false claims to another federal agency, the Competition Bureau of Canada, for investigation. With regards to how definitions might act as barriers to better practices, it appeared that only the new energy code and private rating schemes provided specific enough definitions to guide improvements in building performance. However, when respondents talked about both green building and sustainability, green building (i.e. building performance) was considered one aspect of sustainability, which was defined much more broadly (and much less succinctly). In light of ubiquitous but for the most part ambiguous and often misleading definitions, and in a market where no other tract builder used the terms, Minto's use of both 'green building' and 'sustainability' in marketing for suburban developments remained enigmatic.

Economics & affordability

Economics came up repeatedly in the discussions and in some ways elucidated completely different perspectives between producers and regulators. Gwen, the senior City official, asserted that the main barrier to smarter urban development was the "clash between public and private interests." This comment reveals her frank assessment of the constant tension between regulators, producers and consumers, and between environmental and economic outcomes. Few of my respondents spoke freely about this tension, although it was a consistent background narrative that ran through the interviews, and a main theme in the critical urban geography literature. The following are quotes

selected to represent various ways economic considerations were identified as impediments to sustainable urban development in the interviews.

The economics of tract building are evident in the following quote from Tim, manager of a mid-sized development company, who reveals one of the main obstacles to green building. It is worth noting that the speaker is a leader in the industry for a number of reasons, and in the quote he pinpoints perhaps the main paradox of a market-based approach to production housing:

And even just caring – trades caring about their work, but that’s a whole element to itself. They have to have a motivation to care if you reach that [energy consumption] target or not. It’s not that it’s rocket science and so difficult – it’s that if you’re a pieceworker, [or] you’re getting paid by the hour, it doesn’t matter what type of quality you throw in with some builders. They’re not watching over your shoulder: it’s what little can you get away with. We try to avoid that as much as possible, but *it’s a part of the reality of our industry* (emphasis added).

In this quote, it appears that Tim assumes workers on his job sites tend to not care about quality construction, but he claimed that he contracted trades to build houses to a standard higher than code which required more stringent on-site supervision and quality control. Tim made it clear that his ‘products’ were more expensive than standard housing and that he served a “niche market”. Tom, a sustainability policy person, applauded builders who were striving for higher quality, but hinted that housing consumers in general were not prepared to take bigger steps towards a more sustainable Ottawa:

I’d like them all to be deep green developers, I suppose, but it’s driven by the market. They’re selling products. They are certainly embracing the low-hanging fruit with Energy Star and R2000 – that kind of thing. It’s driven by the market perception... Obviously it’s easier for them to continue to build in some of those ways. Creative sustainable urban development is a new way of thinking maybe – and just like anybody else, change is difficult.

In this passage, Tom suggests that higher standards of building may actually represent “low-hanging fruit”. In other words, Energy Star (which became the standard in the 2012 National Building Code) and R2000 are relatively easy to achieve compared to “sustainable urban development” about which he was (perhaps diplomatically) not specific in this passage. The reference to housing as “products” is also noteworthy: references to homes as ‘products’ or ‘units’ were common in the producers’ interviews, and highlight the role of housing as commodities in a competitive market. Tom again linked housing with market forces and summarized the tension between regulations and consumer preferences when he commented: “You can go through and tweak this zoning bylaw and look at that regulation, but the bigger picture comes back to what are people willing to do in terms of lifestyle and their pocketbook.” In this latter statement, Tom refers, perhaps somewhat obliquely, to how consumer choices influence urban development outside of Ottawa’s Greenbelt. Tom’s statements are especially disconcerting because it looks very much like few tract builders in Ottawa are concerned with green building, and that the vast majority of housing in Ottawa (and North America) is built to minimum code standards.

Both producers and regulators referred to consumer preferences when probed for barriers to more sustainable residential development. Interestingly, Peter offered his thoughts on the tensions between planning and consumer behaviour when he talked about planning at the community scale, but in this passage Peter refers specifically to providing local retail:

If your regulations are successful, you’re going to build complete neighborhoods... so you don’t have to commute or drive to the store. Those are very difficult things to achieve, especially when you’re competing against the WalMarts of the world... it’s very difficult to keep a store going when people

drive by Super C or Loblaws on the way home and they shop there. People say they want these things [i.e., local retail], but then they don't support them... So on the one hand we're trying to define self-sufficient neighborhoods, but on the other hand what the public are supporting – it's very difficult to make a go of it in these communities.

Peter had a strong sense for how wider socio-economic patterns influenced planning in Ottawa. For example, Peter described how it often requires two incomes to pay for a mortgage, but "...with two people working and child care – it's very difficult because people don't work in the same parts of the city. People have one person working downtown, and one in Kanata and the daycare is somewhere in between." Parents are thus forced to drive, so retailers build big box stores on or near arterial commuter roads, again taking trade away from retail closer to the homes of commuters. Peter also pointed out that, in many suburban developments, retail follows housing, sometimes years later, as the new neighbourhood mature. The time lag also results in more driving to retail, at least until gas prices rise sufficiently to alter driving patterns.

In fact, energy price signals entered the conversations regularly: developers most often talked about rising natural gas and electricity prices, while state officials most often talked about auto fuel prices. Tom was an exception, suggesting:

[...] it's price signals eventually that may assist with that as well but you look at the political landscape at the provincial level – hydro issues and how much you pay for your electricity – it's a hot button issue, right? You're not going to see any time soon a provincial government getting elected on raising energy costs so people conserve more. It's not a political – fabric – that's occurring. It's not a political dynamic that occurs.

I asked Gwen if she viewed low gas prices as a barrier to sustainable development to which she responded that both consumers and developers see low fuel costs as an invitation to build and buy in the suburbs. Tom speculated that rising energy costs would

at some point be accompanied by carbon pricing tools (i.e. carbon taxes on products that produce greenhouse gases), but did not sound convinced that “senior levels of government” were prepared yet to take that step. However, as in discussion about drivers for sustainable urbanism, fuel pricing represents an unknown variable: virtually all of my respondents understood the impact of energy prices on urban form, but no one would speculate about when they thought prices would rise enough to influence the market for suburban housing.

There were numerous comments about market demand in the interviews, and they were often linked to lack of knowledge or difficulties getting buy-in for green housing from consumers. In the next section, respondents speculate about the role of consumers in processes of sustainable development.

Consumer education & the market demand for ‘green’

Regarding market-driven innovation, at the time of the interviews there was wide agreement that consumers were not demanding green housing for a number of reasons. Private planner Alice stated: “Not everybody likes green stuff – some people think that it’s complicated and they don’t want systems in their house that they don’t know how to use.” Alice would have been aware of market research on demand for green building, and she was one of several respondents who thought consumers needed to be educated to dispel misconceptions about green building, one of which is that green building necessarily involves complicated controls. Alice shared thoughts on how third-party ratings would help turn the market by providing independent opinions about the benefits of, in particular, green building:

We have responsibility for educating people on why it's worth more ...to have these [energy-saving] features... [but] The more we can cite statistics that come from somewhere else, I think that's better. Government – yes – it could come from municipalities... ...but it's also...somebody like Enbridge can take a little leadership... People might see it as a little bit more believable than a private developer or private home builder.

Alice mentioned Enbridge, a private natural gas provider, as another option for third party ratings. Geoff pointed out that Energy Star ratings for appliances and housing are, in part, a means of educating consumers. LEED, administered by the non-profit Canada Green Building Council (CaGBC), was considered by many to be another appropriate third party rating and an important source of education for builders, governments and the public.

Education, or rather its lack, appeared as a barrier to better practices in other ways. City planner Sally echoed others who recognized that builders would satisfy consumer demand but builders were not the only parties responsible for consumer education:

We [City planners] could be more knowledgeable – so we could influence [developers] in more ways to be more green. And better education for us who are right on the front lines of these developments would be good...[Consumers are] not demanding developers to build a house where I can recycle my water or forcing them to put in dual flush toilets or all that kind of stuff. So education – consumer and developer and us – that's one of the barriers.

Apart from the very limited references to components of green building, Sally recognized knowledge gaps at all levels. Tom acknowledged that the City of Ottawa played a role, but he qualified it in several ways and noted limitations:

We have a green portal on our website that promotes Energy Star and R2000 houses – that kind of thing. We're not out there trying to change the marketplace because of our municipal role, but certainly we're promoting choices and behaviours that support the City's objectives – we do that as much as we can – promoting the green bins and things like that, and generally promotion in the past

was focused purely on city services – you know, we need people to get on buses. Broader lifestyle?...I don't know [if] Council is going to be out there telling people [lowers voice to sound authoritarian] “forego your comforts, son” [laughs]. So, generally focused on city services, but those are not inconsequential. That is, the form of development and that kind of thing.

The City has online resources and also actively promotes certain aspects of sustainable urbanism through City services, but stops short of suggesting directly that consumers alter their lifestyles. Gwen claimed the City was unwilling to devote resources to education: “Yes – we are thinking about it but ...A lot of things boil down to money. We have lots of great ideas but to make it into a program, it requires resources.” During this research, high-level sustainability policy rarely found its way to the front lines of urban planning for exactly this reason.

Private planner Margaret reiterated the reluctance of all three levels of government to educate consumers about both green building and sustainable development: “There has to be a general responsibility to educate the consumer and obviously the governments would ideally be the ones to do it, but I don't think that they belong, or that they have the money, or in some cases the willingness to do it.” Peter was more convinced about which level of government would best coordinate education: “I'm a little bit skeptical about municipal government getting involved in too many things. It's like a thousand monkeys trying to type a novel on a typewriter... in terms of the municipality being the leader in communication I think it should be more a senior level of government so it's comprehensive across the problems.”

All respondents felt that both governments and the housing industry were responsible for educating the public about benefits of sustainability, but, again, opinions varied by producers and regulators. Producers generally referred to educating consumers

about the advantages of reduced energy costs and improved indoor air quality, while regulators were more concerned that housing consumers should learn about (and participate in) better community planning. Tim felt the government could be doing more consumer education about green building: “If we had an educated consumer going to different builders and saying ‘I want to buy a house, but I want it to meet these criteria’, builders would respond.” Alice similarly claimed: “If everybody was looking for a LEED [-certified] condo downtown to walk to work then that’s all the industry would be building.”

Tim acknowledged that his company essentially enlarged its market by including consumer education directly in its advertising:

We do educate our consumers, but it’s pulling the market towards our product. We have what we consider a niche product in the sense that you’re paying a bit of a premium, but you’re getting something that’s more energy efficient. So why is that a good thing? What are the technologies that make it work? How is this not just a marketing claim? How do we back it up with evidence? So we do have a significant amount of our marketing directed towards education – educating as we market it. That’s a bit out of necessity; if consumers were better educated on these issues, they would come looking for us.

While Tim acknowledged that it was necessary for his company to turn the market towards demanding green building if they wanted to increase sales, his remarks indicated that he felt the same way as Peter and Margaret in that governments are already responsible for public education, and the leadership needed to come from the top.

With the exception of Tom and Gwen at the highest municipal policy level, my respondents in the producer and regulator categories did not talk about scales beyond the regional, nor did they indicate that current consumer lifestyles fed by global consumer product markets were problematic. One surprisingly consistent and somewhat myopic

assertion was that green building “costs more” than standard practice. Further, in-depth discussion of climate change and potential impacts on communities and community infrastructure was notably absent in the interviews. There seemed to be compartmentalized knowledge and an absence of consideration for broader patterns of unsustainable consumer behaviour over time – a disjunction that Gwen called “inconsistent logic.” Respondents apparently either did not understand global to local implications of climate change, or had compartmentalized their knowledge so that they could perform their jobs. Knowledge silos are common in organizations, and were evident in the interviews. The following discussion of governance includes silos as a sub-theme.

Governance

For the purposes of this analysis, governance includes three levels of government, as well as public and private interest groups. In the latter category, I included: community groups; the development lobby; as well as the Canada Green Building Council and other proponents of LEED.

References to the LEED rating system are included under the “governance” heading as both the City of Ottawa and builders adopted LEED as a high standard for construction in the region during the period of this study. Both producers and regulators in the interviews mentioned LEED for homes (LEED H), and planners were all familiar with LEED for Neighborhood Development [LEED ND]. Around 2007, the City of Ottawa adopted LEED as a green building standard for municipal buildings, and the City

began offering incentives to builders to use the same guidelines³⁶. LEED is a convenient option for governments, an example of how the private sector increasingly influences urban governance.

But despite the City's official adoption of LEED for municipal buildings, it seems there were challenges for builders trying to adopt sustainable or green practices. Tim, Geoff and Fred all complained about hurdles they faced in the zoning and permitting departments at City Hall. When I suggested to Fred that perhaps the public needed to pressure public officials to acknowledge creative approaches to building more sustainable communities, he responded:

No, it's more [very deliberately] the public officials being given the tools necessary to go beyond what the code tells them... So that's where the barriers come in, because Ottawa is such a bureaucratic town by nature it's difficult for them to think about how to take responsibility for moving beyond what the code dictates.

Fred was quite clear over several meetings that he felt City planning, engineering and permitting departments were impeding changes that could preserve the environment and save the taxpayer money, mainly, so he claimed, because of liability issues, siloed responsibilities and a lack of coordination between policy and practice:

It's really time-consuming the way I [plan a development]. I do it all with the planning guys and then I have to re-hash it all with building permit guys... and that's where the regulatory bodies need to have the balls to say this meets what we want as a condition in our community. So then... they need to have the tools to stand up to the political interference – [they need] the policy statements to allow them to promote incentives for builders and developers to be more green... all [the City] guys have to be at the table at the same time that [we] make [our] proposal. When everyone starts reviewing the design, everyone isn't doing it from the beginning, so you can minimize the time spent and the dialogue spent on this...

³⁶ Two of the companies in the study had projects certified under LEED, and one company advertised that the company "used the LEED ND checklist" for a development, although the development could not meet main LEED ND criteria for transit and proximity to jobs.

Geoff and Tim echoed this same frustration, characterizing City of Ottawa staff as risk-averse and conservative, and according to Geoff: “the industry is going faster than the cities are...and policies are lacking on green building.” Alice, also from the producers’ side but closer to the implementation level, agreed with the assertion that policies are often disconnected from application at the planning approvals level:

...there’s a huge disconnect between the high level policy...and then just getting approvals for things that need to get approved by the operations and maintenance department of the City. You know, a lot of people talk about [how] cities are designed by snowplows and garbage trucks and that kind of thing. Definitely on a day by day basis this is very true...I think there’s also a big disconnect between City policies on things like intensification and green building and actually how a real project, when it’s in front of people, how it gets perceived.

At the time of the interviews, Ottawa was transitioning to more prescriptive, and ostensibly more sustainable, approaches to land-use planning. Much of Ottawa’s *Official Plan* was written with reference to the Ontario’s *Provincial Policy Statement* on land use planning which, as a result of changes implemented by the McGuinty Liberal government after 2005, included policies intended to cut both sprawl and carbon emissions by cities. But Ontario’s new planning directives reflected the ambiguities and increasingly fragmented patchwork of Canadian state environmental legislation in general. In the interview, Tom suggested: “From a planning perspective, there’s certainly a stronger provincial planning framework in Toronto, for example, than there is in Ottawa – *Places to Grow* legislation. I don’t know if I can speculate on whether that is a more directive planning approach.” In fact, the *Places to Grow* legislative framework named specific regulations only for the Greater Golden Horseshoe (Toronto and environs) and certain northern communities, and left the rest of Ontario to interpret the document as individual

municipalities saw fit. The City of Ottawa incorporated, for example, smart growth principles into its *Official Plan*, but under constant pressure from the development lobby in general to expand development land beyond the Greenbelt and to continue building conventional housing (see following section on the Growth Regime, and the Analysis section). Policy transitions apparently also led to internal challenges for City departments such as Peter described:

...the sustainability group is also responsible for doing neighborhood plans. And that's been a huge irritant to me because...they want to inform us how to do proper planning and sustainable creation...We do that all the time in the community design plan, but they never read the plan...look at the [name of subdivision] neighborhood plan, it wasn't written by planners. It's a wish list of 59 things. Some of them are not implementable. Some of them are probably not even legal, and there's no money for it, and then they sort of walk away. Now they're looking at how to implement this. And...we go back and talk to the community and the community is saying, well, we've got a neighbourhood plan. And it was done by the sustainability group that has no expertise in planning. It's one thing to do a plan, but you don't have a plan unless you have an implementation plan.

The above passage reflects another viewpoint on disconnection between high level policies and planning “on the ground” about which Alice and Fred spoke in the previous passages. Much of Peter’ interview related decades of challenges dealing with, as he termed it, “the political noise” that interfered with his application of City planning policies in various parts of the city.

Three levels of government are responsible for environmental planning in cities.

When asked if “government regulations would affect how the City planned residential developments in the future”, Gwen responded:

Absolutely. Especially the ones related to transit because transit cannot be built by cities from tax money. The federal and provincial governments have to support public transit because it just costs too much money. But of course the decision of which way to go has to be a municipal decision – to spend more on roads or

transit. And also the building of the roads – a lot of roads are built by the provincial government and they make decisions to build roads and then people will develop subdivisions around the roads. That's a government decision.

Chapter 1 described how transit led development in Ottawa suburbs historically. Gwen's quote reinforces the fact that roads and transit continue to determine suburban development. Other government decisions apparently have dramatic impacts on development in the City of Ottawa, and Peter commented frequently on the challenges of planning in the Nation's capital. For example, when discussing government jobs, Peter stated: "a lot of the federal employment is not transit-friendly. They just bought Nortel. How's that going to work? Like, don't build any roads across the Greenbelt, but then you put your federal employment in areas that you need a car to get to." According to Peter, transit was often not a consideration when the federal government located office space, which directly confounded city planners who had been tasked with designing a transit-friendly city. The Harper federal Conservatives (in power during the time of this research) displayed scant concern for both cities and the environment. When I asked Alice if she thought "global warming was impacting on regulations now in Canada", she responded "...from the perspective of building residential developments, I would say no... not in any tangible way that I can point to." When I asked Margaret if the Harper government had a responsibility for educating Canadians about urban sustainability, she scoffed: "the government is backing out of the role. I mean, just look at the federal government's lackadaisical attitude towards climate change." It seems from these comments that governance of urban sustainability in Ottawa was being left largely to the City.

In the interviews there were some emphatic comments about another form of governance, actions by community groups commonly known as NIMBYism, that producers and consumers alike claimed created impediments to sustainable development in Ottawa.

NIMBYism

When a neighbor or neighborhood group reacts against a given development, the phenomenon is deemed NIMBY, an acronym for “Not In My Back Yard”. According to respondents, NIMBY is less likely in new greenfield subdivisions because there are no near neighbors to be upset by new building, perhaps one reason developers concentrate their efforts in peri- and ex-urban areas. Objections were more likely within urban areas, and may have been increasing as the provincial government and the City of Ottawa attempted to impose densification. About densification and NIMBY, private planner Margaret complained:

If one of the things that defines sustainable development is to contain sprawl and have people have easy access to transit for example, you’re not going to get there if you’re forever objecting to every little infill building and apartment building in your neighborhood. Because if it’s not going to go there, it’s got to go in the other area, where there is the same objection from the people living there. So community associations – this fear of change...it’s a barrier.

In this quote, Margaret seems to be suggesting that community objections to infill development, which she, like Peter, deemed “noise”, are driven by fear. City plan reviewer Sally is very familiar with community objections to densification: “...we really try to involve the public when we do these community design plans [but] some people [complain] ‘oh my god, apartment buildings are, just, like, the worst’”. Public opposition is not new, but at the time of this research the City had only recently adopted the

community design plan strategy, where public input was invited and City planning officials explained policies and zoning very clearly, essentially to democratize residential development and expedite densification and major developments. And, Sally's planning counterpart Peter stated that he was embroiled many times in disputes between community groups and developers:

...you get into some of these residential neighborhoods and some people wanting to build a house and the community gets all upset. And I don't know what the solution is to that but in terms of whether we're producing the most sustainable residential neighborhoods possible, I think in terms of neighborhoods it's very difficult because of all the political noise that goes along with that.

In Peter's opinion, "political noise" included public opposition to sustainable residential development.

Tim offered another perspective on community opposition, but this example is with regards to a new subdivision for which his company had just put shovels into the ground, and he clearly struggled with his conscience and priorities as he faced opposition from the surrounding community:

Again, being a developer, we have another wrinkle on this: we cut down trees to make homes. There's a lot of conflict going on in [the name of development]. Basically the protesters are saying they don't want us to build there because we have to cut down a forest to build homes there. So is there a conflict in being a green developer when we knowingly do things that have negative effects on the environment. My own opinion on it is... I've... [pauses] I've come to the conclusion I don't think there's a problem. We need adequate housing supply in this city that comes from smart urban planning in the areas in question, and...they've been zoned as urban for the last 30 years, you know. They are part of the city core that just happens to have forest on it. Well, if we have to tear down forest to build housing, let's do it the best way we can. Let's make those homes as energy-efficient as possible. So, again, I'm careful not to brand us as green because other people with, I want to say, a different valuation of interests, will say "how can you be green? You're tearing down a forest". Well our main focus is on energy efficiency. That's where we're really getting pumped.

The above passage is packed with information about challenges Tim faces as a developer attempting to re-direct (and adapt to) a continually changing industry. To clarify, Tim managed construction on one side of a company that also developed land, and claimed he had little influence on *where* his tradespeople built houses. The development alluded to in this passage was actually located outside of the Greenbelt. However, the above comments indicate difficult choices made by a recognized leader within the industry, and another (illuminating) justification for avoiding the term “green”. First, he called the company that he worked for a ‘green developer’ and then asked himself: “how it could be green if the company cuts down a forest to build houses”? He clearly struggled with the issue and finally rationalized the project by determining to build high-performing houses. And he further justifies development with the fact that the property was zoned for residential development decades ago. About the same development, Peter commented on the same dilemmas as Tim, but from the City’s perspective:

Right, like every tree’s important, and again, and you have to make choices... [People argued that] the City should buy it, the City should preserve it... well the City would have to buy it – this development land, and what’s the cost? Would we be better off to buy 1,000 acres in Carp at rural land values, or this one woodlot for this specific community that’s [pauses here and chooses his words carefully] not environmentally significant? It’s a nice woodlot, there’s no doubt about that, but where’s this going to go? It’s very difficult to do any development because everything – priorities protect everything. So in terms of intensification, NIMBYism, well, neighborhoods don’t want additional development or roads or traffic. In greenfield development, don’t touch the agricultural lands, don’t touch the trees. So it gets very difficult to make those decisions.

For Peter and Tim, questions about where to locate new development were often complicated by political “noise” and trade-offs (such as forests zoned for development). In the context of such public resistance, Peter complained that citizens’ groups often submitted planning recommendations based on imperfect research, and that City

politicians gave these recommendations weight equal to staff research: “Politics and noise and ideology and never mind the facts...I had to deal with all kinds of this stuff.” As a senior planning expert, Peter had obviously faced major interference from interest groups who may not have understood planning, zoning and permitting regulation. I was surprised, however, by the consistently negative appraisals by my respondents of community resistance to some types of residential development. Apparently only Gail, a municipal politician, understood NIMBY as anything more than fear of change or attempts to preserve privilege. She in fact sided with constituents on complaints about questionable development practices.

Justified or not, developers often draw distrust and antipathy from the public, in part because of reactions to new construction and in part because developers have in the past occasionally been insensitive to the communities in which they generate profits. Several of my respondents spoke in detail about the methods and motivation of some of the developers in the Ottawa area, and the political economy of development. The next section highlights this crucial aspect of barriers to sustainability.

The growth lobby in Ottawa

[Developers] have a lot invested in land and... they bought it a long time ago...they want those lands to be developed, and they will find any...way...to make that happen; the City has this logic of how much land should be developed and the developers' logic is just not consistent (Gwen).

This section of the findings chapter adds contributions by two respondents who were excluded until this point because they did not fit clearly into producer or regulator categories. The additions are Gus, an ex-policy director at a large development company,

and Todd, an ex-municipal political aid who was a partner in a land development company.

The quote with which this section begins is a blunt evaluation by Gwen of what she termed the “clash between public and private interests”: developers stand to generate huge profits from subdividing and developing land holdings beyond the Greenbelt. It is common knowledge that developers own property, but it is less obvious how they get it and how long they might hold it as they wait for values to rise before developing. Art described how developers acquire property:

I know that [name of developer] owns so much land... They'll go into a farmer – he's about ready to retire or whatever – and they'll go up and they'll tell him, 'we'll buy your farm and we'll pay you half now, and you can live on your farm for the next ten years, and after that we'll pay you the other half' – it means though, that that farmer, he's still paying the taxes [laughs]...and he's still managing the farm and it's not going to scrub brush and [developers] do that often...the farmer he's just happy he's got money finally, you know. Those farmers are poor.

Well-capitalized developers buy and stockpile land and leave farmers tending it which ensures a clear development canvas until land values and demand dictate development. In the following passage, Todd describes the political economy of land development beyond the Greenbelt in Ottawa, a process that is similar in numerous North American cities:

In a suburban greenfield... There's no community involvement often; there's less stringent overview [by the municipality]; this is...artificial creation of value. You're taking a big plot of land that was a farm, you're then doing a subdivision. In reality, it's a couple of nice sketches, a nice site plan, you pay some lawyers a couple hundred thousand, a planning firm etc., and suddenly that land that you bought for a million dollars is now selling for \$200,000 per lot... And again you haven't created anything as of yet – it's just figurative land value. You're creating significant profit margins just in the [subdivision] development.

As Todd said, profit jumps “at the wave of a wand.” Like Gwen, Todd pinpointed the profits to be made from suburban subdivision as the largest challenge to reigning in urban development:

...that’s where you start to get that disconnect between good city planning that as a government and as a society you would want to see – and then there’s the dollars and cents of developers... There’s actually a significant disconnect between the two of them. So this is where you start to become unsustainable in my opinion... [but] If I was in a similar situation – dealing with a thousand-house subdivision – if you were in that position you would do the same thing. It’s a cold, calculating business decision. It would be foolhardy, if not reckless, to do anything else. You can’t fault them for acting in a manner in which they were raised.

According to Todd’s somewhat cynical evaluation, developers’ profits invariably override attempts to plan Ottawa’s sustainability, but Gwen noted that consumers demand peri- and ex-urban housing: “...there are all these people who want to live out there [in ex-urban suburbs], so the developers always want to fuel that market. As long as they can sell single family houses there, they will do it.” But contradictions and conflicts around servicing new suburbs were escalating at the time of the interviews. Gus, a former senior manager for a large developer, was one of the more frank interviewees and, while cautiously optimistic about the direction of his previous employer, he was quite clear about the implications of pushing development further into farmland outside of the city:

There are a lot of people who believe that you cannot build a highly energy efficient – like a passive house – located in some area where you will have to commute 150 km in a day. I don’t care if it’s a passive house – it’s not a sustainable location. If a passive house is located in a terrible location it may be the most un-environmental thing ever.

Gus’s comment clearly highlights the shortcomings of defining ex-urban development as ‘green’ without regard for location. In Gus’s opinion, the distance one commutes is a more important indicator of how ‘green’ or ‘sustainable’ one’s home might be the

building technologies used. The developers' representatives in the interviews were not nearly as direct as Gus about cars, costs and greenhouse gases.

The historical roots of what Gwen called "inconsistent logic" lie in the post-war years when developers began buying large parcels of farmland and building urgently needed houses outside of the Greenbelt. Until recently, gas prices were not important. As Gus noted, "...if I bought a piece of land 20 years ago, this land was purchased when gas prices were 20 or 30 cents a liter. Commute times weren't even an issue, or gas prices weren't even a thought." When cars made economic sense and their environmental impacts were yet to be determined, suburbs made sense too. While gas prices are increasingly included in debates about sprawl, developers continue to buy property and build beyond the Greenbelt. Could there be a transition coming?

Gwen repeated that everyone is aware that "...people are not going to go out there forever because gas is going to get more expensive and people will have to re-think how many cars they have and how much they have to travel." One clear pattern in the interviews was that producers skirted larger issues of gas prices and commuting in discussions about sustainable urban planning. Gas prices and cars were considered market forces that would dictate change when necessary. However, it is tempting to assume developers were aware of the pressures of rising fuel costs and the urgency of pushing housing into stockpiled farmland before gas prices diminished the value of that farmland to developers. It is noteworthy that retirees and young single professionals had begun to migrate to urban condominiums in Ottawa during this research, and that all the major developers were building condominiums close to downtown.

At the scale of the Ottawa growth lobby, fuel price signals could well explain why the urban boundary debate was so acrimonious during the study. Developers and the development lobby maintained constant pressure on the City to open up more development land beyond the Greenbelt (i.e., into land they already owned). The following was an exchange with Peter, indicating a common strategy employed by developers in proposals for everything from single buildings to subdivisions. The passage makes reference to the 2009 Official Plan Review, when the development lobby pushed for 2,200 hectares for new low-density development land beyond the Greenbelt:

Peter: “That recommendation was for 800 hectares. Council said ‘no, we don’t want to expand the boundary’, so they didn’t go with the staff recommendation – they went with 230 hectares to make it defensible in terms of the numbers and projected housing demand and they had to change the time horizon...”

Gary: “Which doesn’t mesh with the developers’ time horizons...”

Peter: “No – what the developers are saying is that they didn’t agree with the City’s projection of housing demand. They needed 2,200 hectares.”

Gary: “So how do you knock it down by 90% and then defend that?”

Peter: “Well homebuilders, what they’ll a lot of times do is, they’ll ask for 2200 hectares and then take 1000.”

During the altercation in question, the development lobby, including expert private planning consultants and real estate lawyers, challenged the City’s growth projection at the OMB, which overruled the City’s claim and dictated an 800-acre expansion consistent with staff recommendation. However, staff came under fire too because there were some politicians who felt there was sufficient development land inside the Greenbelt, an assertion that added fuel to the debate. Gail, City councilor, operating under a clearly different understanding of urban development and the costs of sprawl, pointed out: “That was my argument with staff at the time – you have an 18-year window

of sustainable development in the core, why expand the boundary? Why would you make that recommendation? Why do staff do that?” It is not clear from where Gail arrived at the “18-year window”: Margaret, a well-informed private planner, assured me “...we’re not going to put the future population inside the Greenbelt by any means. I don’t think Canadians are yet willing to move from a single-family [house] to an apartment.”

The two opinions neatly book-end the debate about densification in Ottawa that persisted throughout my study, and antagonism was apparently complicated by relationships between the City and the development lobby. In fact, ties between the development industry and planning managers were strong. Peter pointed out that: “...the director of planning [for the City]... sits on a group with GOHBA [Greater Ottawa Home Builders’ Association] that tries to coordinate the approvals process to eliminate red tape or difficulties.” As should be expected, developers and the City work together closely on planning residential development. Gwen noted: “...until now our councilors and the municipality were more complacent. And we always had a big respect for developers and business. All the mayors and councilors – even our planners tried to work with the development industry. And they still do.” Gail, however, was critical of the relationship.

Regarding the 2009 Official Plan Review, Gail remarked:

...planners did not show strength. To me, they should be arms-length from the developers. And when you put together a policy document such as an OP, and when you’re planning for the growth of the city, and for the best outcomes for the city, what I find is that there is too much undue influence by the developers to the point where city planners no longer have a vision. It’s coloured by the developers demands and issues.

Gail argued that as a direct result of developer influence: “The language [of the Official Plan] is broad – ‘You may’ or ‘you could’ as opposed to ‘you should’. Definitive words

were all extracted and replaced with very loosey-goosey language.” Ambiguous wording and planning *guidance* rather than *legislation* made amendments (to zoning, for example) relatively simple for developers and confounded both infill and suburban development.

Gail was convinced:

When you have people who have crafted this Official Plan or parts of it – whose sole purpose is working for the developers,...[h]ow objective are they [i.e. staff]? They’re no longer independent, and they’re self-serving and serving the development community. So there’s no longer that objectivity from a good planning perspective. It’s good planning for them, but it’s not necessarily good planning.

Gail claimed intensification targets were determined in consultation with developers. The politics of development became even further confused, at least in public exchanges between the mayor and the development lobby, over the urban boundary and development land. Todd insisted that greenfield development is far simpler and more lucrative than infill or brownfield development. Also note that during every official plan review the development lobby argued that there is a constant land shortage in Ottawa – a problem, they claim, is created by both the City of Ottawa and the NCC. The producers in the study all felt the NCC Greenbelt was an impediment to proper urban development, the development industry and the local economy. When asked about the NCC, Geoff argued:

...if we are restricted in how we will grow as a builder, if we don’t have access to land it will have a big influence. Everybody wants to look at densification and city growth, but there’s just so much infill that you can work with. That’s why our approach is different: we believe that you have to let the [existing] community develop, and to make it more sustainable you’re going to have to live in a suburb and travel downtown to work. We mix it all. We are looking for infill wherever we can... but if we strictly did that as a builder we couldn’t grow. We’d be very restricted. If you’re outside of the Greenbelt you’re cut off. If you want green land, tough. Which I can understand on some levels, but from an economic

perspective it's very harmful to the economy. People need homes and new developments.

This quote is odd because it comes from a producer whose company had a large stockpile of suburban farmland, but it is not clear if he was referring to his company or other builders. Geoff also seemingly endorsed suburban development, claiming that development beyond the Greenbelt could be 'sustainable' if mixed with other urban forms (i.e. infill). Geoff also apparently conflated sustainable development with sustainable growth for his company, but perhaps this passage may also acknowledge that ex-urban communities are growing and need to be sustainable too? Todd added nuance to the debate when he discussed how the growth lobby contests City growth projections every four years during Official Plan reviews:

Even a percentage of the growth figure equals thousands of extra houses...which adds a significant...profit margin. They [developers] have a very strong vested interest in making sure these population estimates are as high as possible. It's the tool with which they will develop land they bought pennies on the dollar and sat on for 20 years. And it's ironic that that's a write-off for them too. Undeveloped land taxes are 100% write-off. There's an actual incentive to sit on this land.

According to Todd, large-scale land development then becomes in part a concentrated public relations manipulation of policies, projections and staff input. In these debates, Gail insisted that: "...the most political people are bureaucrats – the ones who are behind the scenes. There's a whole level of politics that goes on. And it's very much 'you scratch my back and I'll scratch yours'" – suggesting collusion to benefit both sides. Todd mentioned the "cozy links" between City of Ottawa and private planners, and the revolving door that allowed them back and forth between public and private domains, usually with no oversight. Gail and Todd were both adamant that the 2010 election campaigns were heavily influenced by developer contributions. Vociferous accusations

that the development lobby operated secretly to influence City policy in its favour resulted in a lobbyist registry at City Hall, implemented by the Mayor in 2012, in the interests of transparency and accountability.

I suggested to Gail that she made it sound like there was no border between lobbyists and politicians. She responded that “none have been put up” which she claimed was complicated by the fact that much of the lobbying was not public:

[A city councilor] does an annual golf tournament to raise money and every one s/he invites is a developer. And you’ve got \$40,000 coming in. S/he’d want something to happen [such as a developer’s support for a cause. Then Gail assumes a smooth whisper and quotes the developer] ‘well, we’ll do that for you, but we have something coming down that I want to talk to you about’. I don’t care what anybody says. There’s a certain obligation – even the hockey tickets – going to a box at a hockey game. Oh well, it doesn’t mean anything. But it does – it really does. Because there’s that underlying tone that you know exists.

Charity fund raisers are one place where such exchanges might be more quietly conducted. Developers’ agents apparently exercise both direct and indirect persuasion inside City Hall as well, and not just in city councilors’ offices. Sally mentioned the constant pressure to expedite development applications: “Our job is to get these applications approved – like, move them along – it’s pressure. So your Mintos and Mattamys get out there and build, which brings in revenues and taxes.” Sally also suggested that some of the developers push her in person for small and large concessions when preliminary subdivision plans are on the table at City Hall. Persuasion, it appears, is constant and comes from multiple sources.

Despite the claims from certain of my respondents that the growth regime in Ottawa has undue influence on City planning and policies, Peter was adamant that he had never felt pressure from developers over a long career with the City. Peter actually stated:

“if you had the community and the developers mad at you, you had done a good job”, although he acknowledged that developers do pressure city managers:

In terms of political decisions about where things will go, I don't believe staff were influenced. When we did the Official Plan and consulted with the developers about where development was going, [it] was very much an academic exercise – like where is the servicing – it's a very transparent criteria or evaluation list. It wasn't about [a developer] putting pressure on us. But having said that, you don't see the behind-the-scene stuff, lobbying that goes on with the councilors and John Moser and Ken Fitzpatrick and the mayor and senior management. I've never in 35 years had senior management come down and say 'A developer wants this or that'. Never. There's a political process – Minto is a political player – and whoever makes the most noise right?

In other words, Peter thought lobbyists attempted to influence politicians and senior management rather than staff, and that city development is essentially *about* politics and economics. One would expect that, to be effective, the City would have to cooperate with major development industry players in matters so significant to Ottawa's urban form and budget. But given that residential development is a main form of capital circulation and accumulation, and assuming that the City is officially attempting to halt sprawl, there would inevitably be tension between cooperation and lobbying. From the interviews described in the latter part of the chapter, residential developers and the City cooperate until developers feel that regulations, including environmentally and fiscally sound regulations, threaten to impinge on profits: Then they turn to lobbying. The logic, as Gwen stated, was inconsistent.

4.6: Analysis of barriers

Participants in this research were quite vocal about barriers to better practices in urban development, and, as expected, the responses to my probes about barriers illuminate both sides of an increasingly vociferous debate between producers and regulators at various scales.

Definitions were key to the dissertation both for theory and for how they influence actual development on the ground. I assumed from the start that producers and consumers would have different definitions of “sustainable development”. In this study both producers and regulators stated that “sustainable development” is defined ambiguously and inadequately, and that people in general do not understand the concepts. Tentatively, I conclude from this finding that, not only are there differences between the somewhat savvy producers in my study and public officials, there was general agreement that sustainability is overused, complicated and difficult to apply. “Green building” was much more clearly defined in the interviews, although greenwashing apparently confounds even that term for the public. The fact that two of the developers’ representatives absolutely refused to use the words “green” or “sustainable” in their dealings with the public is an indicator of consumer weariness with the terms and wariness of marketing that includes them. That the terms are overused and ambiguous, and now suspect, cannot be helping to gain public support for urban sustainability issues.

For most of my interviewees, green building meant making buildings more energy efficient and improving indoor air quality. Few respondents mentioned ecologically sound sourcing of materials, or life-cycle impacts of house building, and only two participants – Gwen and Fred - directly linked houses with their environs, although as

mentioned both of them quickly separated the terms in subsequent conversation. As well, there were notable absences in the discourse. Remarkably, no one mentioned the issue of durability, or for how long a dwelling should last. Nor was there discussion of what happens when houses wear out, or for whom green building should be built. Response to broad, open-ended questions, seemed to depend a lot on participants' compartmentalized knowledges. In other words, higher level policy people required and offered much more comprehensive opinions than people closer to the actual process of constructing housing.

Each issue also seemed to depend to a large degree on the underlying assumptions about suburban housing which Robbins found in the *Lawn People* research. The physical environment acts on individuals to shape identity and behaviour, and at the same time we have an ideology of what is right and good and what makes a good citizen embedded in our consciousness. In the suburbs we also have patterns of production and consumption internalized to the point where we do not question them. Embedded beliefs and ideology – the culture of the suburbs – leads us to equate proper citizenship with certain types of consumption which are reflections of “property, citizenship and proper consumer behaviour” (Robbins, 2007: 15). Robbins (2007: 32) argues that “lawns are a strategy...both for capital accumulation and for making docile and responsible citizens.” I might argue the same about suburban housing. The purely economic issues around climate change were never mentioned by the private producers, nor were direct linkages between buildings, their immediate surroundings, and their linkages with the rest of the globe. It was as if green building had become a compartmentalized process detached from local to global ecology.

A comprehensive understanding of affordability was a notable void in the conversations, and Gwen's comment about "the clash between public and private interests" – the constant contests between public versus for-profit priorities – is another significant finding, and dovetails especially well with theory development for this dissertation. Postmodern geographers tend to dismiss structuralist interpretations as essentializing, over simplified and deterministic (Ballamingie, 2006), and while this dismissal is rare in urban geography, in this research, economic issues arose repeatedly as key drivers of business-as-usual and a main impediments to urban sustainability. Public servants rather cynically attributed expanding suburbs around Ottawa purely to business imperatives: developers own ex-urban farmland and are compelled to subdivide and build on it according to the potent logics of capital accumulation. As Tom stated, and I tend to agree, Energy Star and R2000 are "low hanging fruit" and much easier to achieve than sustainable urban development. While they are essential elements of any strategies to limit urban environmental impacts, Energy Star and R2000 do not challenge established patterns of suburban development. Building rating schemes in general, including LEED H and even LEED ND do not alter general patterns of commodification of nature and the contradictions inherent in treating homes as "products".

Energy price signals and low gas prices repeatedly arose as impediments to more sustainable residential development but, as mentioned in the discussion about sustainable development drivers, the producers in the study did not feel imminent change driven by gas prices. Again, as in Robbins' research, consumers are more governed by day-to-day concerns about fitting into communities with manicured lawns in quiet suburban homes take precedence. Also, as Tom pointed out, no consumer will vote for higher energy

costs, and with both the federal government and a powerful oil industry lobby advocating for a fossil fuel-based economy, GHGs and climate change do not seem to be motivating suburban housing consumers as they are certain municipal policymakers. I fear that the public in general are lacking or avoiding basic facts about how their behavior is linked to climate change. Regarding ignorant consumers and consumer education, these few progressive builders who do acknowledge some responsibility are educating their clients, not about responsibility to the planet but, rather, about how their houses will not off-gas and about how they will save on energy costs over the year. Education costs money and cuts profits, but the developers in this study sell their products at a premium which is perhaps one reason why they claimed green building “costs more”. Again, the statement that green building costs more ignores the costs over longer time frames and wider geographical scales, a fact that producers constantly seem to neglect and that the City emphasized, at least publicly.

Another barrier identified by both producers, and surprisingly, some regulators, was NIMBY or the not in my back yard protests by communities in which development is planned. While in-depth analysis of NIMBY is beyond the scope of the dissertation, it is important to note the growing complexity of planning decisions and the trade-offs required to accommodate increasingly organized and strident demands from various factions. Producers in the study were adamant that any innovation was met by siloed City responses and conservatism and fears about public liabilities. Conversely, Peter, the City planner, was adamant that the public makes often unreasonable demands on the City regarding urban development, especially with regards to both urban densities and sprawl. Ottawa is apparently a very tough city on innovators and this is confounded by a weak

link between provincial and municipal mandates in Ottawa, and by weak links between City planning, permitting, engineering and building departments. Most of my interviewees agreed that one of the largest barriers to urban sustainability was a lack of strong political leadership at all levels.

As it turns out, many of the factors and factions pushing for changes in residential development are also impediments to the development industry. The industry in Ottawa has responded by pooling resources in the GOHBA and the Alliance to Build a Better Ottawa (see Section 4.2.1 for discussion of these organizations) to lobby City Hall for more pro-development policies. Several of my interviewees talked at length about the growth lobby in Ottawa, alerting me to congruence between a theme in the critical urban development literature and the situation in Ottawa (see Logan and Molotch, 1987; Logan and Molotch 2007; Oden, 2010) . There is, indeed a powerful lobby group in Ottawa, as in most urban centres I suspect, which influences certain policy directions and development decisions in various ways (Doucet, 2007). I will discuss the discourse offered by the Ottawa growth lobby in the case study below, but several comments summarized from the interviews are important to note. First, as in numerous cities across North America, Ottawa developers have been buying flat, cleared, drained and devalued farmland outside the city for 100 years (Harris, 1996; Hayden, 2003; Sewell). Apparently farmers are allowed to remain on the land, keeping it clear until property values rise enough to spur development. Several interviewees referred to the argument over the urban boundary which they suggest has been amplified in recent years because developers will fight tooth and nail to build on large tracts of land that they already own. The efforts of the growth lobby are confounded by the fact that housing consumers are

still buying into exurban developments, lending credence to the lobby's insistence that consumers and "the market" are driving demand for exurban housing. It also appears that, as long as gas prices do not rise significantly, people will continue to commute. Two very interesting questions arose from the interviews: Do builders respond to or create demand (Robbins, 2007)? And what power does the City have over consumer preferences?

There was some indication that the Ottawa growth lobby and City councilors are perhaps a bit too "cosy", and this might be corroborated by the mayor's new (in 2012-2013) lobby registry. Lobby-government relations in the city are problematic for this dissertation for one main reason: The growth lobby discourse prioritizes economics over the environment in virtually every public statement, and apparently it resonates with the public because, according to Todd and Gail, a mainly pro-growth city council (reportedly funded by the growth lobby) was elected in the most recent municipal election. From a critical geographical perspective it is very difficult to argue that anything but economic self-interest propels the growth lobby and perhaps some city councilors. The dissertation will contrast public and growth lobby discourses in the case study to follow.

4.7: Evaluation of interviews and some observations on the process

Both producers and regulators were very knowledgeable about urban sustainability issues and only the references to cars and the growth lobby at City Hall separated producers and regulators in this sub-analysis. In retrospect, the similarities between the two groups are understandable because both groups were chosen for their leadership in the residential sector: they seemed to have similar general knowledge of the issues, and were probably honestly aiming for the same goals – better housing for Ottawa residents that has less negative impact on urban and global environments. From the start, it seemed that all of

my interviewees struggled with the same dilemmas and contradictions inherent in current regulatory structures and market demands, albeit from different positions. I recruited people working for seemingly “green” development companies, and targeted state officials with seemingly similar discourses.

There was a great deal of crossover in respondents’ profiles. Todd, for example, proved knowledgeable about the politics and mechanics of development in Ottawa, claimed to work in both roles, claimed to use one to inform the other “depending on which hat he wore”, and was extremely knowledgeable about sustainable residential development. Sally was an urban planner for the City, while Margaret was an urban planner in a firm that employs one of the architects of Ottawa’s Official Plan, and planners regularly shuttle back and forth between public and private practice. Intimate knowledge of City regulations enable senior private planners to very effectively defend developers’ cases at the OMB, often against relatively poorly prepared City officials. Margaret was another producer with broad and deep knowledge of urban sustainability and politics. Developer Fred was one of only three respondents who linked green building and residential sustainability (Gus and Gwen were the others). Further, Sally works under the same regulatory regime and restrictions as Margaret – a path-dependent regime imposed by history and bureaucracy, and both are obliged to work in the interests of developers (according to my interviews). Peter was one of the City staff who told the City that legally they were obligated to allow Minto to build 1400 houses in Manotick, effectively siding with the developer against the City. Gus, who had left Ottawa to work for a larger multinational planning outfit in Toronto, was perhaps the most informed of my interviewees. Although he worked in the private sector and technically represented a

“producer”, Gus was the only producer who insisted that energy pricing, and especially petroleum prices, would be the main determinant of urban form in the future. Bill worked for one of several federal bodies which inform but do not regulate the residential building industry, although Bill insisted that “regulation is better than no regulation.” Tim, who worked for a large developer, was another very informed respondent and, according to other producers, a real leader in the industry.

The classification of producers and regulators may work in a larger and more heterogeneous survey sample, and especially one which included more typical producers (the vast majority, in other words), but for the small sample in this study it proved to be of limited utility. I might speculate that overlapping roles and responsibilities support the growth regime dissertation: at least in Ottawa there seems to be significant crossover of personnel and roles – thus making clear categorizations difficult. Producers and regulators work together quite intimately to create urban form and there was as much discursive variation within producer and regulator categories as there was between. There was a clear undercurrent of cynicism about just how educable Ottawa citizens and consumers could be, and respondents in both groups thought energy prices, and especially gas prices, were far more likely to affect change in consumer preferences and behaviour than environmental concerns.

Another similarity between the two groups was that respondents at the policy level used the language of *Our Common Future* (WCED, 1987) in their definitions of sustainable development. For example, private planner Margaret stated: “...you don’t jeopardize the future generations by what you are doing today, and it has economic, social and cultural, and environmental components...” While the language of

sustainability was familiar, it was also ambiguous. The links between behaviour (i.e. building practices) today and human well-being over time were never clear in the interviews. It could well be that respondents expected a certain level of understanding on my behalf because I introduced myself as an environmental studies student, but terms like “affordability” and “social components” were left undefined. City of Ottawa documents, the *Ottawa Official Plan* and background papers in particular, were much more detailed about the social aspects of sustainability than were any of the interviewees, including City employees.

It is also noteworthy that, when discussing sustainable development, apparently some of the producers chose to talk about ‘development’ – as in housing developments that they plan every day at work. For instance, when I asked Alice if planners and builders could be doing better, she responded: “Yes definitely. They are definitely not producing the most sustainable residential developments possible. (laughs) My short answer would be that consumers have to want it.” Geoff suggested that: “...from a builder’s perspective we believe that sustainability and development go together, because that’s what we we’re all about now.... From our perspective, our development has to be sustainable to certain limits.” When I prompted: “Sustainability and development go together...?” he continued: “It does go together. From our perspective our development has to be sustainable to certain limits. As I said, the goal is always there, not that we do perfect development. For instance we are working towards zero-energy buildings...” It appeared as if he had conflated the terms sustainability and development. The distinction may be important: perhaps Geoff did not recognize the dual meaning of the words ‘sustainable development’ and I suspect that the suburban ‘developments’ producers were

planning may also have been confused with the Brundtland Commission definition of ‘development’. In other words, planners and builders may have confused ‘sustainable development’ with continuing to produce ‘*developments*’, a mix-up that posed an interesting question: Were producers actually talking about sustainable *growth*, an increasingly common oxymoron, rather than sustainable *development*?

Housing affordability came up regularly in the interviews but it was never clearly defined. Producers all stated that green building was “more expensive” – a shortsighted and outdated opinion that I chose not to probe. Further, when defining sustainable development, no producer mentioned social sustainability, or the human right to secure dwelling space. Was this oversight? Was it misleading on my part to not probe social sustainability as I did materials, building technology and urban planning practices? And despite my emphasis on sustainability broadly defined, I was in fact researching residential development, so I must question whether this directed respondents towards house building, a for-profit industry. I am left with the strong impression that both ‘sustainability’ and ‘green building’ are for people who can afford to buy ‘green’ houses.

There were also important differences between regulators’ and producers’ discourses: regulators were more focused in the interviews on broad-scale urban planning issues and much more likely to talk about private automobiles, the costs of servicing suburbs and transit. On the other hand, while they acknowledged the importance of urban form and transit modes, producers were much more likely to talk about how government interference impedes innovation in the housing industry. And while both groups talked about economics, the producers focused more on the business case for green building and market limitations, while regulators focused on public or municipal fiscal responsibility

and resistance from developers. With regards to the growth regime, except for Art's comments about how developers stockpile farmland beyond the Greenbelt, producers made no direct references to the sometimes-questionable ways an extremely powerful development lobby influences urban form in Ottawa. Conversely, Tom, Gwen, Gail, Sally and Peter all expressed concerns about how developers influenced planning and growth in Ottawa. The pattern makes sense: Producers by default are more concerned with buildings and consumers; state representatives (one would hope) would be more concerned with best use of taxes.

The barriers to smarter urban planning fell into several categories. This dissertation argues that inconsistent definitions inhibit appropriate action to reduce the climate impacts of urban development. In fact, the interviews indicated that definitions were fairly concise for green building but much more ambiguous for sustainable development, in part supporting my hypodissertation. The interviews also supported my assertion that capitalism interferes with innovative planning: there was a constant struggle over the economics of suburban development during the study, and interviewees' reflections on those struggles depended on the timeframes within which they evaluated costs of low-density suburban development. In other words, the business people used business timeframes – often 4 or 5 years - for returns on investment, whereas the public servants evaluated costs over much longer terms. This simple fact points to compartmentalized or siloed knowledge, both within interviewees and in Ottawa more generally.

Green building and sustainable development were most often considered separately, but, as Gus said, if you build a net zero house in the wilderness and have to

drive everywhere, you may be putting more carbon into the atmosphere through auto-related emissions than any leaky old house in the urban core, and this simple but striking fact is gaining traction in urban sustainability research. Townhouse builder Fred stated bluntly that, out of the various configurations of dwellings, a suburban single-family detached house automatically consumes the most energy. But the options involve thinking beyond single-family dwellings to more effective uses of resources at the neighbourhood level and beyond, combining building efficiencies and linkages with the rest of the city. In my interviews, both planners and builders tended to compartmentalize or artificially divide individual buildings and the neighborhoods into which they fit at the same time that they complained about silos in city departments that hindered innovation.

Within the City's administration, there were also inconsistent policies and procedures across departments that impeded change. It was apparent that the provincial government was also not providing consistent guidance for municipalities, and my respondents all agreed that at the federal level there was no consistent leadership on urban sustainability. The absence of a consistent, over-riding narrative in Canada about environmental issues, and the lack of strong leadership, seemed to cloud many of the interview responses.

With regard to nuances in responses, Tim's reference to economic arrangements between piecework contractors and developers (see p. 168), and Gail's descriptions of self-serving and inappropriate relationships between developers and City officials (see Section 4.5 around p. 188) were notable additional insights into urban development complexity and deserve more attention by researchers. Two other comments, both by

developers' employees, are worth highlighting. The first quote is from Geoff, and the second is from Alice:

I certainly believe that the building itself is not the greatest impact on the environment, on greenhouse gases emissions. We all know that people – *how they inhabit buildings* has the greatest impact. I think maybe we [builders] are a 30% portion of the whole 100% issue of greenhouse gases emissions (italics added).

I think ideally when talking about building, something should be energy efficient, water efficient and healthy, like in air quality, and healthy in terms of the materials that are used, *and how someone is going to live in the home* (italics added).

Both comments about green building include enticing hints about a new direction in developers' discourses. It is fascinating that no other respondent apart from these two specifically mentioned occupant behaviour as important in the discussion about green building. Geoff's offering almost sounds defensive: he clearly understands the global impacts of the residential building industry, but he prefaces his numbers for GHG emissions with the comment: "We all know that...how [people] inhabit buildings has the greatest impact." The comment reflects new (at the time) research on urban energy and carbon, and contradicts "hard structure only" and "bolt-on" approaches to urban sustainability like LEED, which does not incorporate occupant education or behaviour in its rating schemes. Even LEED ND provides only two credits out of 106 for "community outreach and involvement" despite unanimous agreement that public education was essential (See USGBC and CaGBC websites for LEED criteria). Further, LEED ND has a loose definition of "mixed housing" that is left up to developer discretion. Just one project of 23 in the Canadian LEED ND pilot, the WATERFRONToronto project, had an affordable housing component (Robinson, 2012). One might argue that the Canada Green

Building Council is largely an education organization, but one must ask who are they educating, about what, and to what effect?

Todd brought up a final issue that offers a contrast between sustainable urban planning discourse and actual development, and drew the conversation away from the innovators in my study and towards the majority of residential development in the Ottawa region. Todd contrasted *community planning* with *subdivision planning*, which he claimed was the biggest problem with suburbs. He argued that Ottawa was losing opportunities to build more humane communities because they might not be as profitable for developers. Developers have been rewarded for doing things the same way for decades, resulting in little to no incentive to change. Further, Todd claimed that developers do not care about the importance of “community” beyond the value of the term for marketing, as low-density commuter suburbs keep growing as far away as Rockland and Embrun to the east, Carleton Place to the west, and Manotick to the south of Ottawa.

Todd was convinced developers will find loopholes every time the City tries to enact change. He then talked about zoning amendments and the struggle between one of the region’s largest builders and the City over plans to build 1400 houses in Manotick (in the south end of the amalgamated City of Ottawa), effectively doubling the size of a rural town. Like me, Todd was fascinated by Minto Communities Inc., and he flipped back and forth between accolades for Minto’s green leadership and criticism for Minto’s forcing of a large development in Manotick:

How do you balance these competing interests? There’s no right answer. If nothing is right or wrong, then everything’s right. In reality, the whole system is wrong... Minto, being a leader of the things that we want to see, are still the worst perpetrators at the same time...

Is Minto doing what they are supposed to do [in Manotick]? Do they have approval? Is the City going to let them go ahead? Yes. But if you take the long term view of urban planning, it's the worst thing that happened to Ottawa urban planning in decades. It's going to cost Ottawa taxpayers a fortune in transportation costs. Urbandale and Walton [a multinational land development corporation] bought everything in the middle [between Barrhaven and Manotick]—so that's next, no matter what you think about Minto's actual development in Manotick.

At the time of this study, Minto's *Mahogany* development in Manotick was an excellent example of how discourses of urban sustainability increasingly abraded against each other as the City attempted to assume control over development during a prolonged recession. Energy costs, environmental concerns, consumer preferences, corporate social responsibility, fights at the OMB, continued purchase of farm properties outside the Greenbelt and a very aggressive pro-capitalist spin by the growth lobby came to a nexus in one development, compelling both producers and regulators into new discursive constructions of "residential sustainability". When one steps back from my interviews to look more broadly at the residential development industry in Ottawa, the differences between producer and regulator discourses becomes much more pronounced, especially when one examines outcomes on the ground with regards to large-scale suburban development with conventional construction methods. Again, this is because I chose to study leadership in an industry that was resisting change in Ottawa. Minto was another company that seemed to be innovative and one of the few at least offering consumers choices about their houses that few other builders offered. But Minto is also embedded in the growth lobby in Ottawa³⁷. Manotick is a fascinating example of contradictions - the growing contest between City of Ottawa fiscal and environmental priorities and the

³⁷ Minto's Vice-President of land development, Jack Stirling, and Steven Martin, Minto vice president of commercial property development play(ed) a major role in the dialogue between the Alliance for Building a Better Ottawa and City councilors and staff. See Alliance for Building a Better Ottawa (2011).

development lobby's economic priorities. The second part of the Analysis chapter examines Minto's *Mahogany* development to illustrate two distinct public discourses and their outcomes.

CASE STUDY: THE ENIGMA OF MINTO *MAHOGANY* AND 'GREEN HOMES'

4.8: Case study background

Given the predictions about climate change and gas prices, why did Minto Communities Inc. buy a section of land in the town of Manotick, just within the boundaries of the amalgamated City of Ottawa, poorly serviced by both roads and transit, and 27 kilometers (or 40 kms by highway) from downtown Ottawa? Why did Minto fight the City and NIMBY for years to get approval to double the size of a town of 1,400 dwellings? And why is Minto marketing the Manotick development as 'green' when consumers are at best wary of the term? A review of Ottawa history from Chapter 1 will provide background for the story of Minto *Mahogany*.

Starting in the mid-1950s with Gréber's Greenbelt, developers filled urban spaces outside of the core with subdivisions of single-family houses. They then bought speculative land beyond the Greenbelt (Elliot, 1991). Elliot (1991) remarks that there was little regulation of the development industry in the late 1940s and early 1950s, especially on city fringes. Rural developers, including many farmers, had little understanding of, or sympathy for, the patchwork of nascent provincial planning regulations at the time.

In 1954, CMHC began insuring mortgages, thereby gaining some federal control over city development, and in 1956, CMHC started making developers responsible for supplying potable water and sewage treatment facilities. Elliot (ibid: 275) writes that

these new costs of development stalled residential building in Nepean until late in 1958 when Mervin Greenberg, uncle of Roger Greenberg, current (in 2012) CEO of Minto, negotiated a deal with developers who owned thousands of acres in the Township of Nepean: the developers would pay the City in advance for sanitary sewers and a sewage treatment plant, and then impose lot levies on their clients to recoup these costs. In the 1960s, the development charges were increased to cover road engineering, paving, storm sewers, street lighting, and buried hydro and phone cables (*ibid.*, 275 and 306). Elliot claims development charges were the reason small builders and farmer/sub-dividers were muscled out of the development business and large, well-capitalized, integrated tract developer/builders like Mercury Homes, which became Minto Construction, took control of the industry. Elliot (1991) claims that in 1956 the majority of housing was built by small speculative builders, but by 1961, two-thirds of the new houses in Nepean were built by Minto and Teron, corporations that embraced the new technologies of building and were able to quickly accommodate housing demand in the Ottawa area. Apparently, in 1971, almost three-quarters of Nepean's new houses were built and sold by Minto alone (*ibid.*, 279). Since their start in 1955, the Greenberg family and Minto claim to have built more than 67,000 new homes in Ottawa. In addition, Minto manages 17,000 residential rentals, and carries a massive commercial portfolio as well (Minto, 2011a). In 2011, the Greenbergs were apparently one of Ottawa's richest families, worth over 1.1 billion dollars (OBJ Staff, 2011). The transition from the small craft builder to the tract or production builder proved extremely lucrative for Minto.

City councilors and developers are uneasy partners. Once again going back in history, an arms-length approach to municipal planning and zoning apparently began

when developers changed the rules governing municipal involvement by assuming the responsibility for installing services in developments in the 1950s. As Sewell (1993) explains: “Since the municipality bore little risk, it had little reason not to permit the developer to do exactly as he saw fit.” Sewell refers to Don Mills, but Nepean also illustrates early neoliberalism in Canada where governments at all levels became distanced from the affairs of developers, supposedly in the interest of a self-regulating market and privatization of municipal services. There is growing criticism of the “streamlined mode of regulating... local planning and development” (Keil & Graham 1998), the arms-length approach and lack of planning that has led to low density suburban residential development in many cities across Canada.

There is no question that powerful interests act through both formal and informal means to influence where residential development occurs in Ottawa. One example is the federally-owned Greenbelt which divides Ottawa and must be traversed by commuters, road and services. In addition, amalgamation in 2001 significantly enlarged the city’s borders, which challenged the City’s mandate with regard to funding and overseeing municipal services in outlying areas. Developers, including Minto, continuously argued that the Greenbelt should be opened for development because it resulted in “leap-frog” development, but both municipal and provincial policies favoured more concentrated urban development and the NCC had no intention of reducing the hectares in the Greenbelt. However, in 2013, there was still a market for low density suburban housing for the same reasons it existed in 1970: development was still lucrative for investors and cheaper for consumers, single-family houses on large ex-urban lots were still fashionable, and various government bodies contributed to the status quo (Blais, 2010; Hayden, 2003).

In the decade after amalgamation, on paper at least, the City of Ottawa tried to change the status quo through various means to encourage denser and more mixed use suburban development.

Stott and Sullivan (2000) write: “People...are not passively subject to either the forces of their biophysical environment, or the political power infusing consensual views of environment and development. In contrast...people actively manage what are socially and culturally constructed landscapes.” (33) Voters are increasingly versed in ‘nature,’ NIMBY and planning narratives. And the state and consumers are two of many groups who influence development in Ottawa. The next section discusses the competing discourses offered by the City of Ottawa and the growth lobby.

4.9: Public policy, the growth lobby, and marketing green building in Ottawa

The City of Ottawa incorporated a detailed sustainable planning philosophy into a document called the *City Housing Strategy, 2007 to 2012* (see City of Ottawa, 2007a and b). Background for the policy document included a White Paper on *Climate Change and the Official Plan Review* (Miller, 2007) which summarized potential environmental challenges for the City. One challenge was the “building sector” which produced an estimated 58% of Ottawa’s total greenhouse gases. This report noted the City’s “...lack of direct municipal control over such variables as building code standards...” (Ibid., 2), but the report also identified opportunities for the City such as zoning to reduce sprawl and car use, elements which reflected an evolving vision of a sustainable city. The documents also highlighted existing and potential place-based sites of contestation with developers like Minto.

The stated aim of the *City Housing Strategy* was to provide direction rather than regulations. Section 2 of the document (see City of Ottawa, 2007a) detailed the City's broad vision of sustainable housing. The first paragraph of the context document (see City of Ottawa, 2007b) stated: "...social, economic and health outcomes are interdependent in people's lives and the communities in which they live." The document then detailed how these three outcomes impacted upon Ottawa as a community. The document is quoted here at length because it builds a humanist discourse of a sustainable community:

Secure housing is essential to supporting social relationships in our communities. The place we call home is a significant characteristic of how we identify our place in society... Given this social dimension of housing, housing conditions are frequently used as an indicator for measuring the level of 'social exclusion' in a society... Housing is a basic element of community and social infrastructure and is more than just shelter. Our homes support our ability to participate in society. Housing combined with support services is an important way to help individuals forge or maintain connections to their communities... The way housing is physically situated in the broader community is also important to supporting social engagement. Housing with ready access to a complete neighbourhood infrastructure – including schools, employment opportunities, recreation, health and social services and essential retail – supports the development of socially vibrant communities. Without those amenities nearby or easily accessible, people can live in isolation and exclusion from society (City of Ottawa, 2007b).

The above passage clearly harkens back to trends in urban planning in the twentieth century and before, and reflects themes that were common in the writing of activists such as Ebenezer Howard, Humphrey Carver and Jane Jacobs. The passage distinguishes between social place and material buildings: the use of the word "housing" refers to *both* but is perhaps more conducive to "home" as described in Chapter 2 of this dissertation ("Housing...is more than just shelter."). The author then remarks on the social dimension of community and how intelligent spatial configuration of houses can aid in community

engagement and limit exclusiveness. The reference to “The place we call home” reflects the cultural importance of homes in Canadian society: in this passage home is not an isolated place. Later in the document (after the passage cited above) the author(s) suggest accessible housing will make Ottawa more attractive to new Canadians, and that the housing shortage in Ottawa results in sprawl as people new to Ottawa seek less expensive housing in the suburbs. The City of Ottawa (2007b) acknowledges that sprawl potentially contributes to global warming and social dysfunction. In other words, housing is a local and global issue. The author(s) then refer to research that demonstrates the social and economic costs of substandard housing and the lack of affordable housing on the health of people in Ottawa. Aspects of economic, environmental and social health are given equal priority by the City.

The *Overview of the City Housing Strategy* (City of Ottawa, 2007b) provided “directions” for the development of neighbourhoods within Ottawa. Over all, the City planned to promote smarter architecture and urban design (including densification inside the Greenbelt), supportive neighborhoods, and community health over time using all of the available networks of social capital. The language was perhaps imprecise and dated: for example, the City chose to use the 1987 *Brundtland Report* definition of sustainable development. Regardless, the City’s planning discourse was carefully crafted to *re-place* Ottawa as a smart, diverse, caring, accessible, integrated, environmentally responsible, equitable and forward-thinking city.

Ottawa had been explicitly incorporating environmental, social and economic goals in planning policy documents since amalgamation in 2001 and subsequent sustainability planning in the Official Plan that followed (see City of Ottawa, 2003). The

authors of the Ottawa planning documents acknowledged that sprawl potentially contributes to global warming and unequal social divisions, and clearly advocated densification within the Greenbelt. In other words, within this discursive construction, housing is understood as both a local *and* a global issue. Again, economic, environmental and social health were equally prioritized by the City. Around 2008, coincident with a scheduled 5-year review of the Official Plan, the City of Ottawa in concert with the NCC and the City of Gatineau embarked on the next stage of sustainability and resiliency planning with *Choosing our Future* which was intended to create long-range regional goals. Two of the goals carried over from the earlier documents included: rationalized transportation to get people out of cars; and sustainable housing, which is defined as green building for *all* citizens of Ottawa (see City of Ottawa, 2011).

However, without dedicating resources for implementation and unequivocal policies to regulate development, sustainability planning is almost impossible to enforce. The Ottawa growth lobby appeared to be actively resisting the City's new planning discourse. A long, expensive and very public debate over a proposed development by Minto Homes in the town of Manotick (close to the city's southern boundary) illustrated the growing disparity between the future envisioned by City planners and the future envisioned by some Ottawa developers (see Martin, 2009, 2010). The Ontario Municipal Board (OMB) ruled in favour of the developer and against the City in a dispute over a large development far from Ottawa's downtown. The City appealed the OMB decision, and an Ontario divisional court also ruled in favour of the developer, both rulings in essence denying the City of Ottawa and the Village of Manotick the right to govern its own growth. The dispute illustrated the various scales of governance that influence

municipal decision-making and the complex relationships between developers, municipalities and the provincial government. Over decades, developers and the real estate industry appear to have had powerful influences on urban planning in Ontario and much of the rest of North America (Blais, 2010; Hayden, 2003; Lorimer, 1978; Oden, 2010; Weiss, 1987). Despite the Provincial Policy Statement, the OMB typically rules in favour of developers because, as real estate lawyer Michael Polowin notes, neither private citizens nor municipalities have the same resources to fight protracted battles over, for example, zoning amendments, as do large regional developers (Polowin, in Carlson, 2010)³⁸. Further, zoning is generally intended to guide rather than dictate planning, and is rarely interpreted as legally binding. Critics claimed that OMB decisions essentially enabled developers to guide city planning (Doucet, 2007; Wellar, 2010).

Minto Homes was one of few regional developers that sporadically marketed 'green' or 'sustainable' features in their new housing, but it is unclear how Minto *defined* the terms, or if they recognized the role of neighborhood locations on energy consumption and GHG production. The discourse was intriguing for the discord it illustrated between, for example, corporate, municipal and community actors. As controversy escalated over Manotick, certain Ottawa developers including Minto started a campaign to sway the opinions of the public and buff an apparently tarnished reputation. Brady (2009a) described the birth of a new lobby of powerful construction associations created by the Greater Ottawa Home Builders' Association (GOHBA). This new lobby group, which called itself the Alliance to Build a Better Ottawa, began to

³⁸ Polowin regularly acts for developers and the growth lobby. Michael's brother is Jeff Polowin, vice-president of the Hill & Knowlton public relations firm, who is also retained by the growth lobby to promote the lobby's interests inside City Hall.

spread the word that: “We are not all big, bad developers. We want to change that image because it is not true. We do a lot of good for the city” (Graham, cited in Brady, 2009a:I2). The group hired a professional lobbyist to gain and hasten approval for new developments, and in so doing, intensified the contest. Despite Ontario’s official policy of promoting urban densification³⁹, and despite Ottawa’s intent through its ongoing revision of its official plan to encourage densification inside the Greenbelt, the lobby argued that the City had an obligation to approve development in and beyond the Greenbelt in order to keep housing “affordable”. In reference to struggles to maintain farmland in the Greenbelt, building material supplier and GOHBA president Robert Merkely claimed: “The City still doesn’t get that housing is the engine of the local economy’ (in Brady, 2009b:I4: see **Appendix 4.6: The residential construction industry is the engine that drives Ottawa’s economy**). Merkely made this claim at the same time that the lobby asserted that it wished “to work toward building sustainable residential and employment communities that meet public demand and expectations” (Brady, 2009a:I2). The statement seems simple but is in fact convoluted and loaded: it seems that ‘sustainable’ is used to mean sustainable growth in the development industry, but again, the word is used in such an ambiguous fashion that interpretation is left almost entirely up to the reader. Also, with the “engine of the local economy” comment, the lobby neglects to give credit to the federal government, the largest employer in the region, denies the value of local farming, and bypasses the global rationale for controlling sprawl, which GOHBA decries as “political correctness” on its website. In these

³⁹ See Province of Ontario (2005), Places to Grow Provincial Policy Statement (2005), especially Part V, Section 1.1 at <http://www.mah.gov.on.ca/Page1485.aspx> . It is important to note that the policy does not govern Ottawa, but rather the Greater Toronto Area and certain regions in North Ontario.

examples, omissions from the messages are important. The lobby and the City were clearly not using the same terms of reference in their respective discourses about sustainability.

The Greater Ottawa Home Builders' Association, established in 1951, has since that time been at odds with municipal government. John Herbert, the pugnacious executive director of the association, was a regular and outspoken critic of government regulation during the period of this doctoral research. When asked about the biggest issues facing builders since 1951, Herbert stated that in addition to material shortages during the post-war housing boom, "There was also concern with increasing government intervention through the introduction of municipal planners". With regards to more recent issues, Herbert claimed:

Today, the minutes from a typical GOHBA meeting deal almost exclusively with artificially induced government-driven land shortages. Only 10 years ago what was described as "controlled growth" or "well-planned suburban growth" is now described by opponents as 'sprawl' even though Ottawa's suburban densities are among the highest in North America. By restricting the land supply, municipal government is attempting to make single-family housing unaffordable to the vast majority of residents (Scare quotes and full quotes in original. Herbert, in *Build*, 2011: 46).

In another article printed in the Ottawa Sun newspaper and on-line, Herbert reiterates that the municipal government is responsible for a housing shortage and subsequently more expensive housing in Ottawa. In an odd interpretation of the Ontario Policy Statement on urban development, Herbert then stated that by restricting suburban development "the left wing anti-growth faction" on Ottawa's city council directly caused "...much higher new home prices, traffic congestion, significantly reduced housing choice, exacerbated urban sprawl and environmental degradation". (Herbert, 2010). Herbert's argument is that

rising housing costs in Ottawa force both smaller builders and, one would assume, young families, to outlying towns where development charges and taxes are lower. Then, when describing options for urban growth management and densification in the core, Herbert remarks that, due to city policies, everyone will be forced “with a gun to the head” to live in high rises. Certainly, to some extent Herbert’s argument holds a grain of truth, as Ottawa’s nearby municipalities – Rockland, Embrun, Carleton Place and so on - compete for growth and commuter tax dollars, and this fact was echoed by the developers in my interviews. But Herbert’s blatant advocacy of erasure of the urban boundary, and what appears to be an hallucinatory vision of appropriate urban development, is remarkable for its neoliberal, pro-growth stance⁴⁰.

The GOHBA also contributes a weekly column to the Saturday Homes & Condos section of the Ottawa Citizen. In an article entitled “Sustainable Ottawa” (see GOHBA, 2011a), GOHBA chose to focus very narrowly on budget and City approvals issues, creating a somewhat petulant diatribe against City Hall. For example, GOHBA complains that “Past strategies [for economic development] were often directed solely by representatives of publically funded institutions and failed to include leaders of private sector engines of growth”. In other words, GOHBA wants to input into economic development in the city, especially in how the City plans economic growth and, presumably, residential growth in Ottawa because GOHBA is a house builders’ lobby. The next complaint in the column is about inefficiencies in the planning department

⁴⁰ Herbert, a main spokesman for the growth lobby in Ottawa, is also remarkable for almost clownish views on other issues. An opinion piece written by Herbert for the Homes section of the Ottawa Sun on March 2, 2013 (originally September 15, 2012) begins “Most urban dwellers would agree that cities were created for the benefit of man...”. The article then ridicules efforts to protect endangered species within Ottawa’s boundaries, arguing that it is a waste of money because “99.999 per cent of Ontario...is rural”, and that the efforts are solely a tactic to enlarge government.

which lead to lengthy delays in development approvals. About the issue GOHBA writes “Any other business would simply fire such a service provider and find someone who could do the job properly but in the approval business, government holds a complete monopoly. All business owners [in this case, developers and builders] can do is lay off staff and incur additional costs to try and compensate.” The message in this passage is that government inefficiencies cost jobs and money, but there is no mention of ‘normal’ business cycles such as the currently slowed housing market. To the Mayor’s demand that developers pay for infrastructure to new suburban development, the GOHBA countered that “...the development industry already pays 100% of the infrastructure costs which the province calculates to be its rightful share...”, an assertion which is quite misleading because in fact taxpayers and housing consumers eventually pay 100% of development charges, plus a significant profit margin, to developer-builders. Further, development charges in the suburbs rarely cover the full costs of providing services to those suburbs, nor do they incorporate any consideration of the environmental costs of low density suburban residential development (Blais. 2010 and 2011; Sustainable Prosperity, 2012). The article then goes on to argue that fees and taxes from 3 levels of government add up to 25% of the cost of a new ‘home’, taking money out of the hands of “young families who are just getting started in life”, a comment intended to directly appeal to emotional sympathies for a vulnerable population. Right at the end of the article, the GOHBA applauds the Mayor’s promise to expedite approvals for ‘green’ projects because “Anything that will speed up the approval process is a welcome addition for Ottawa’s development industry”. Despite the title of the article, “Sustainable Ottawa”, the article discusses only government interference in the business of generating profit.

The economic liberalism evident in this article is typical of GOHBA's consistently anti-regulation public relations "spin". GOHBA's total discourse on 'sustainability' (and/or green building, surprisingly) consists of several one or two-page, unattributed and unreferenced papers on their website that offer the briefest information on "bolt on" green building. At no point in any of the growth lobby's spin is there any acknowledgement that low density suburban residential development is linked to climate change that endangers human life.

At the time of this dissertation research, it was commonplace for industries to appropriate sustainability discourse. Like GOHBA, the Canadian Home Builders' Association (CHBA) was trying to clean up their public image, but with tactics that differed from the Ottawa industry lobby group. According to CHBA spokesman David Foster, a study commissioned by the Association "...represents our industry's story, and needed to be told. The typical characterization of our industry in the media, or from our critics, bears little connection to what has actually taken place" (Foster, 2008). An article in *The Citizen* reporting the findings of the study quoted Foster repeating: "Politicians and the media had been painting the residential market as a problem in energy consumption and greenhouse gasses..." (in Langston, 2008:I12). However, the report demonstrated that "...at the end of 2005, the residential sector's reportable GHG emissions under the terms of the Kyoto treaty were 8.5% below their 1990 level, outperforming virtually all other sectors and industries" (CHBA, 2008). Foster claimed that house builders had "...just about reached the limits of energy efficiency" (in Langston, 2008:I12). Foster's comments illustrated how the organization used an environmental and scientific authority in marketing designed to improve their public

image. Scientific authority has a long history as a tool of persuasion. However, Foster's claim that builders are doing the best they can suggests there is no impetus for improvement, and ignores 100 years of construction and urban planning research and best practices. A simple example dispels Foster's claim: if Canadian builders turned houses and glazing to the sun rather than to roads, new housing would consume 25% less energy for heat across the board. According to Fred, the main barrier to this simple strategy is the fact that a builder might not get as many units (and hence profit) out of a parcel of land.

Escobar (1996) has noted that 'sustainable development' may be more about 'sustainable growth,' a crucial shift that has been criticized for being contradictory and dangerous in a finite ecological system (Daly, 1996). Without defining either "sustainable" or "development" an ambiguous but fashionable term entered the discourse as developers tried to gain public and political favour. But the City was challenging what Keil & Graham (1998:111) call the "streamlined mode of regulating spatial practices in local planning and development"—Logan's and Molotch's (1987) "growth machine" approach to private housing construction that seemed to abrade against the discourses and practices of an ecologically and democratically informed planning paradigm. Did these contests mark a change in the way the City of Ottawa did business with developers? The mayor's 2012 implementation of a lobby registry would suggest yes. But two of my interviewees claimed that the municipal council elected in 2010 was developer and development-friendly as a result of concerted effort by the growth lobby to eliminate the growth-averse council elected in 2006. The growth lobby has a history of such concerted efforts to sway City councilors (see Ecology Ottawa, 2010). Regarding municipal elections, MacDermid (2009: 9) writes that, at least in the Greater Toronto area, "The

development industry is by far the most important financier of the majority of winning candidates' campaigns". MacDermid also states:

Developers want councils that are favourable to rapid development and to their own development proposals and they spend accordingly. Unsustainable urban sprawl, high transportation costs, environmental degradation, and a weak sense of community that undermines political organization and representation, are all traceable to pro-development councils and the provincial regulatory framework for urban development.

It seems that as the growth lobby demands less government interference, it also constantly infiltrates City Halls to sway opinions towards growth-friendly policies and decisions.

For the purposes of this dissertation, three observations from the above discussion and one observation from my own experience are important. First, various actors invoked the terms 'sustainability' and 'green' in discourses about housing in Ottawa – most likely due to growing awareness about the negative impacts of the built environment. Some developers use the terms to sell or justify their products, while regulators use them to regulate those same products. Second, the discursive constructions of sustainability marketed by the few Ottawa developers and builders who used them (and the lobbies that supported them) seemed to be very different from those marketed by regulators such as city planners (and by urban planners in the broader literature). Third, a century of interaction between markets, government and industry led to the current state of residential development in Ottawa and elsewhere, but the complex relationship between private and public interests was being tested by increasingly diverging goals that were reflected in their respective discourses about sustainability. City of Ottawa planners apparently intended to increase density and humanize the city – to simultaneously cut

costs, pollution and social dysfunction – while developers apparently intended to build houses wherever consumers would pay for them, including on ex-urban farmland that developers own and are obliged to develop. Fourth, from my own observations of house building, fordist production methods certainly increased building industry outputs and may have improved production quality of single-family housing in some ways, but the economic and spatial configuration of the suburban house building industry (i.e. piecemeal contracts to build code houses in commuter suburbs) was not conducive to the City of Ottawa’s emerging discourse on durable and resilient homes and neighbourhoods. My own opinion at the outset of this study was that the frantic pace of the industry and flawed structures were not sustainable by any definition. But the picture is clouded by a powerful growth lobby that used public media to influence housing consumers and voters in part with a questionable green discourse.

Green discourse was also mobilized in public media marketing by one of Ottawa’s largest residential developers, Minto Communities. The following case study illustrates how one of Ottawa’s largest regional tract builders is offering an innovative marketing strategy in an industry that actively resists change.

4.10: Minto Communities Inc. and selling ‘green’

Builders looking to promote their Energy Star homes to the buying public will want to avoid the ‘G’ word at all costs. Rather than piquing the interest of a potential buyer, using ‘green’ as part of a marketing campaign will most certainly elicit a barrage of eye rolling, possibly followed by (or in conjunction with) an audible ‘blah, blah, blah.’ (Hanes, 2012a).

The quote above is from the Ontario Home Builders’ Association e-magazine. ‘Green’ is now “the G word” meaning it is a “bad word.” Few tract developers build housing in

Ottawa above-code, and none besides Minto marketed ‘green’ housing for the full 4 years of this study.

Although the Minto website suggests that the company has been ‘green’ since they started out as Mercury Homes in 1955⁴¹, Minto actually began focusing on energy consumption during the energy crisis of the mid-1970s, when they created their ‘Energy-Wise’ standard for new homes. It is unclear how many houses the company built to the Energy-Wise standard, but since then they have built three ‘green’ demonstration homes and claim to be “...the largest production builder of R2000 homes” (Minto, 2009b)⁴².

The company was also in the business of building award-winning LEED-certified office and condominium towers⁴³. Minto had its own dedicated ‘Green Team’ that researched industry best practices, recycled what they could on building sites and in their offices, and had clearly woven a coherent ‘sustainability’ narrative into all public marketing.

They were by all accounts at the forefront of smarter construction practices in the Ottawa residential building industry and by far the most committed to consumer education and industry innovation. Minto was clearly and without question a leader among the large majority of builders in Ottawa who predominantly build to code and make no claims to ‘green’ building or ‘sustainability’.

⁴¹ Actually, Minto implies that the company has been “...demonstrating how innovative design can contribute to a healthier planet...” since 1955. Such ambiguity is typical in Minto marketing. See Figure 4.3 below.

⁴² The wording is significant: Minto is without question a large builder, but the copy does not indicate how many R2000 houses Minto has built or for whom. Minto no longer offers to build to R2000 standards, and I could not find the number of R2000 homes that Minto built.

⁴³ Large building construction is a very different process than tract house building. In contrast with the housing market, LEED is now a branding device that adds a real estate premium to certified buildings in a growing market for advanced office and condominium products. In addition, as a general contractor for office and condominium towers, Minto has much more control over the site, commissioning, trades, suppliers and overall quality than they do on a single-family residential site. The two processes are not comparable.

Minto was presented with a number of awards for sustainable building. In 2012, the company was recognized as *Ontario's Green Builder of the Year* from the Ontario Home Builders' Association for the third time in four years (Hanes, 2012b). Minto was also recognized for building a LEED platinum certified house – “the greenest home in Canada” in partnership with CMHC (Brady, 2009c; Minto 2009a). The ‘Inspiration Ecohome’ incorporated every technological feature available on the growing green construction market and followed a Minto tradition of periodically building energy-efficient demonstration homes that contrasted starkly with the thousands of standard stick-framed suburban single-family detached houses that Minto contractors built over the past 50 years. Their choice of a site is significant: according to a company press release: “Minto chose to build Inspiration on the site of the future *Mahogany* community in the South Ottawa village of Manotick. *Mahogany* will be one of the largest green housing communities in Canada, blending environmentally responsible building technology with the character and charm of Manotick” (see Minto, 2009a). The ‘Inspiration Ecohome’ drew a lot of public and industry attention through government marketing on CMHC and NRCan web pages, in the regional media, and on Minto’s web pages.

The Ecohome also led to my first contact with Minto when I was planning my research. In the summer of 2008, I sent an e-mail inquiry to Minto about studying the company’s sustainability initiatives for a doctoral dissertation, rather naively hoping for financial assistance. I soon received a phone call and had a conversation with Bruce (a pseudonym), a department manager, who requested to meet with me. During that meeting, Bruce complained bitterly about trying to find trades to build a one-off

demonstration house, and then struggling with trades to get them to build a much tighter and more energy efficient structure using unfamiliar methods and mechanical systems. The Ecohome discussion led to a general lament about careless piecework trades who built all of the company's housing during a period when Minto was attempting to improve quality, especially in their building envelopes, in anticipation of rising energy costs and federally-imposed energy standards. At one point Bruce, clearly frustrated, asked me how to deal with "Chainsaw Jacques", an extremely derogatory reference to the gas-powered chainsaw, a popular tool in the tract building industry, and the French-Canadians who predominated on his job sites⁴⁴. "Chainsaw Jacques" was apparently incapable of the careful detail work required for the construction of an energy-efficient house. He then offered me a job as a site supervisor (I declined, explaining that I was returning to school). The exchange reinforced my own experiences in new construction, and my determination to identify routes to better practices. "Chainsaw Jacques" is a typical Canadian piecework tradesman who is paid for production rather than high quality work. In my experience, "Jacques" is not happy with the arrangement, and would much rather take his time and do a good job.

The "greenest home in Canada" claim was absurd. Rather than strengthening Minto's credibility, the association of the Ecohome with Mahogany calls it into question. The Ecohome was apparently an extremely challenging and expensive one-time project with a very steep learning curve, and it was a detached single-family house located in a rural hay field a long way from downtown Ottawa. The house was built to demonstrate

⁴⁴ Chainsaws are often the only power tool available, especially as framing gets under way on fresh foundations. They are also favored for quick work as they do not require electricity and extension cords. There were several times when I worked on residential jobsites where competition for a live electrical plug resulted in fisticuffs.

(to whom is not clear) that new technology and practices could result in a house that produced as much energy as it used over the course of a year, and at this task, according to Minto, the Ecohome was successful. However, in the Spring of 2012 the Inspiration Ecohome (in which no one had ever lived lived) was lifted from its temporary foundation and moved out of the way (twice, apparently) of production house building in the *Mahogany* development. Almost a year later, the Ecohome remained on the house movers' rig (see **Figure 4.1: The Minto Ecohome in March of 2013**).

A Minto representative in the Mahogany sales office informed me that the house did not “fit” in the new development because the brick and stucco cladding did not match Mahogany designs. It could not be moved off site because the attic was finished so the roof could not be removed as per standard practice. Apparently, the \$800,000 house was for sale for \$200,000 to anyone who could figure out what to do with it. The Minto representative made it clear that the Ecohome had served its purpose and was in the way.

Figure 4.1: The Minto Ecohome in March of 2013

Source: Author photo.

Minto Developments has invested extensively in sustainability as a marketing tool for residential housing. In contrast with other developers, Minto integrates obvious green marketing into all divisions. Minto's green marketing starts with their logos (see Figures 4.1 and 4.2, respectively).

Figure 4.2: The Minto Logo

Source: Main Minto web page.

Figure 4.3: The Minto apple logo

Thinking Green... Living Greener.

Source: 2008 Minto Annual Report, p. 34

Figure 4.3: Royal Bank logo

Source: RBC website.

The Minto logo in Figure 4. 2 is very familiar to Ottawa residents, since Minto owns thousands of private rental units and millions of square metres of commercial property in the city.

The tree is a powerful symbol in most cultures, "...representing anything that can "flourish" or "bear fruit" (Ferber, 2007: 219). This particular image appears to be an idealized apple tree, which might symbolize the tree of life, or the tree of knowledge, and

more significantly, nature (Jones and Cloke, 2002). The placement of the word “minto” between the roots and the branches, so that the branches appear to grow from the word, suggests that Minto is an intermediary in the qualities symbolized by the tree. The “m” in minto is not capitalized, implying humility and informality. The colours of the logo in Figure 4.1 are very conservative and were likely chosen for their associations with gold and material wealth, as in the logo for the Royal Bank (**Figure 4.3**). The phrase “be inspired” is relatively new branding for Minto, and inhabits most of Minto’s marketing: inspiration is the beginning of the creative process and the spark of innovation. The slogan is distinctive and would help clients distinguish between developers in a business where one product is much like another. The word “Minto” appears alone (i.e. without copy) so that it can be associated with Minto’s various enterprises – residential development, house building, residential rentals, condominium development and commercial property development, in both Canada and the United States. The apple is another culturally significant symbol for health, vitality, simplicity and green nature, and produces the fruit from the tree of knowledge (ibid.: 13). These logos, and association with LEED, afford legitimacy to Minto’s claim that they are able to build green homes and communities.

Minto’s marketing over the past several years has been intended to target, or more probably to enlarge, the green building market. In 2009, their main web page for the housing division stated:

Can a better place inspire life? Can a better space do the same? Minto says yes and our Minto homes reflect that belief with passion. That’s because at Minto we’re dedicated to creating exceptional new homes and communities through continuous improvement in design, quality and customer experience. And as leaders in the green building revolution, Minto is committed to producing new

communities that promote health, material conservation, energy efficiency, and a high quality of life... (Minto, 2009c).

The distinction between “place” and “space” in this passage is consistent with definitions developed in the theory chapter of this dissertation. Place is the “inspiration” for life, and space is a material construct that can be transformed by Minto to facilitate this creative spark. The fact that the concepts are linked through the use of paired questions suggests a thorough understanding of both. Minto also builds “homes” rather than “houses.” ‘Green building’ in this advertisement is equated with “health, material conservation, energy efficiency, and a high quality of life” rather than preserving air and water, slowing climate change, promoting species diversity, ensuring social equity, or other common criteria associated with sustainability. And finally, Minto claims to build “communities” instead of developments. Like the word “home”, “community” is a powerful word in English, an archetypal signifier for social support and social capital that ensures that members survive and thrive.

Figure 4.5: Part of the “Minto Green” web page

Source: Accessed January 8, 2013 at
<http://www.minto.com/minto-green/index.html>

Minto's *Mahogany* marketing was a departure from the conventional marketing for which the company was known. The 2009 ad campaign transitioned into an approach with more emphasis on the marketing of 'Inspiration' (see **Figure 4.5: Part of the "Minto Green" web page**). The new campaign coincided with the "Inspiration Ecohome" house and marketing that was prominently incorporated into the *Mahogany* marketing and prominently included in the comprehensive FoTenn *Mahogany* concept plan (see FoTenn, 2008)⁴⁵. The ad includes several statements that can be interpreted a number of ways. The copy does not claim that Minto has been building 'green' housing, but, rather, suggests that Minto has demonstrated innovative designs that are somehow associated with client and planetary health. This is not exactly a fabrication: Minto has built three energy efficient demonstration houses and a number of LEED-certified large buildings, and they offer housing clients energy-saving options in their single-family 'products' for a premium. However, the copy could be interpreted to imply that Minto has been an environmental leader for 55 years when the vast majority of the 70,000 dwellings built by Minto, or, rather, by Minto piecework contractors, have been production houses built to minimum (federally-regulated) standards, most of which require major repairs and renovations after 20 years like virtually all other stick-framed production houses in Canada. The ad depends heavily on a consumer understanding of the term 'green', a term that is both ambiguous and ubiquitous. The word "inspiring" in the header is also ambiguous, and can mean 'Minto inspires green communities' or

⁴⁵ Developers often contract private planners to create concept plans for proposed communities. A concept plan demonstrates to both the City and neighbors that the developer. In a large, complex development such as Mahogany, it is unlikely that the concept plan would be closely adhered to or monitored, although it does demonstrate progressive urban planning especially with regard to natural ecosystems and community linkages.

‘Minto developments are inspiring to housing consumers’ or perhaps even ‘green communities are inspiring’. The copy then includes the words “inspire” and “inspired” to ensure the root of the concept is embedded in the viewer’s mind. It is conceivable that the word was intended to work for French-speaking consumers too: “inspiration” has the same meaning in French and English.

In 2009, Minto boasted: “*Mahogany* will be one of the largest green housing communities in Canada, blending environmentally responsible building technology with the character and charm of Manotick” (Minto, 2009a). Minto will be “...using the LEED checklist for Neighbourhood Development as a guideline for community design” (Minto, 2009c) although, notably, Minto cannot certify *Mahogany* under the LEED ND system because the development is too far from jobs, and because transit is inadequate. Minto’s list of ‘green’ or ‘sustainable’ features for the proposed *Mahogany* development show the influence of New Urbanism or neo-traditional development, such as large front porches closer to the road than usual. *Mahogany* is intended to tie in with, and benefit from, the “picturesque,” “charming” and “historic” Village of Manotick. As in the “re-placement” of Westboro Village, Minto is attempting to capitalize on the archetype of the small town in popular culture (Rybczinski, 2007) despite the simple fact that *Mahogany* will eventually double the size of the village. *Mahogany* is a carefully contrived fiction, a discourse of the “place-ness” of a comfortable, small community that has an appealing mix of modern “green” features, rural charm and history.

Mahogany marketing in late 2012 featured the following images:

Figure 4.6: Frontspiece and logo, Minto *Mahogany*

Source: Minto. Information regarding Mahogany development sent to author's personal e-mail account on October 9, 2012.

Also in late 2012, the following advertising copy appeared in email messages to people who had signed up for updates on Mahogany, as in the first passage below, and on the excerpts from the dedicated Mahogany website that follow:

Springing from the beauty of Manotick's natural landscape, Mahogany is a place where the hectic pace of the city recedes, and an inspired life truly begins. It is a place both new and historic, surrounded by the mature trees and creeks that have existed here for centuries. All homes in this community represent Minto's highest standards of quality excellence, and have been specifically designed for this very special neighbourhood. Mahogany is a place unlike any other, and a place you feel naturally at home (*Source: Minto. Information regarding Mahogany development sent to author's personal e-mail account on October 9, 2012*).

Beyond the city is a place we call Mahogany. It is where open fields and waterways are just steps from your front door. Where a frog, perched on its lily pad, serenades the coming dusk. It is a place where the city ceases to exist and where Manotick begins. It is Minto's newest signature community, a collection of homes in Manotick that we call Mahogany.

...all homes in Mahogany will target Leadership in Energy and Environmental Design (LEED) certification.

Located just 5 km from Ottawa, Mahogany will spring from the beauty of the Manotick landscape. This new community will represent the highest standards of quality excellence that Minto has to offer, surrounded by the topography that has been here for eons. This unprecedented combination of craftsmanship and land stewardship means Mahogany will be a place unlike any other, and a place you feel you naturally belong (*Source: Excerpts from Minto Mahogany main web page. Accessed at: <http://www.minto.com/buy-a-home-in-ottawa/Mahogany/main.html> on January 8, 2013*)

Figure 4.7: Aerial view, Minto Mahogany property in Manotick, early 2012

Source: Google Maps. Red arrow points to the Inspiration EcoHome which was moved out of the way when construction started on Mahogany model houses in mid-2012.

The first Minto logo on the *Mahogany* website was the tree and the word “minto” superimposed on an apple (see **Figure 4: The Minto apple logo**). The 2010-2011 OMB appeal involving the City of Ottawa created a hiatus in the marketing campaign. After Minto won its appeal against the village of Manotick and the City of Ottawa, the apple was replaced with new advertising featuring the bright red ‘wax seal’ image and an image created to resemble a black and white woodcut (see **Figure 4.6: Fontspiece and Logo, Minto Mahogany**). Wax seals were historically placed on important documents to ensure they were confidential and/or to signify authenticity. The *Mahogany* seal seems to signify the latter, distinguishing the development from other similar developments such as the one that *Mahogany* borders upon. The seal features a boat on a river with a tree in the foreground and a building resembling Watson’s Mill, Manotick’s easily recognized historical center, in the background. The composition cleverly ties distinction and history together with nature and recreation, all framing the letter M, left ambiguous to stand for Manotick, Minto and *Mahogany* (and perhaps money, according to Trish). The woodcut image is also distinctive – a completely unique direction in marketing for the company and the industry in Ottawa, heralded by the copy header that reads: “A place like no other”, a statement that works with the wax seal motif. The image is of a serene, secluded lily pond surrounded by nothing but mature trees. The lighting indicates that it is dusk, and this intention is reinforced by the text reference to aquatic life, stating: “a frog...serenades the coming dusk.” The image is of pristine, idealized nature – (implicitly) tamed and waiting for Minto clients to enjoy. Newspaper advertisements for *Mahogany* feature other woodcut-type imagery.

The copy that accompanies the imagery contains other innovative advertising strategies: *Mahogany* will “spring from the natural landscape” implying that Minto houses will originate in ‘nature’ and belong in that location like the centuries-old trees, trees and creeks that have existed for “eons”; *Mahogany* will be a sanctuary from the “hectic” city, albeit just “5 km from Ottawa”, and will “feel like” a “natural” home where you “naturally belong”, thanks to Minto’s “unprecedented...land stewardship.” The associations with both LEED and ‘nature’ are remarkable because they were so rare in Ottawa housing marketing in 2012-2013. The combination of imagery and text create a truly distinctive narrative in a region where one suburban house is very much like another.

Given the assumptions behind the imagery and text in *Mahogany* marketing, perhaps some clarifications are in order. With regards to context, in late 2012 when these advertisements appeared, the development, was hay fields and a small second-growth woodlot, bordered on the north by another large development comprised of large houses on large lots (see **Figure 4.7: Aerial view of Minto Mahogany property in Manotick, early 2012**). From my study of the community concept plan produced by FoTenn Planners in 2008 (see City of Ottawa, 2010a), ‘green’ planning in *Mahogany* will include an admirable array of community and ecological amenities consistent with LEED ND standards (although, as I mentioned, the development cannot be certified as LEED ND), including enhanced stream corridor protection and preservation of a woodlot on the site. In addition, according to a source at Minto, all housing in Manotick will be built to LEED for Homes standards. It should be noted, however, that a design plan is not binding in any way, and while created to be consistent with City zoning bylaws, those by-laws and the

plan are malleable because the City has yet to make most sustainability initiatives legally enforceable. And while LEED is a step above code, the most vocal critics of LEED H argue that a large home in an isolated location should not be certified. House size and location are two of the most significant variables in the ecology of a home.

The ‘natural landscape’ from which *Mahogany* will ‘spring’ was cleared, leveled and drained a century ago, and has been farmed since. The secluded lily pond will be surrounded by second- or third-growth trees traumatized by construction activity and new foot traffic. It will be generations before the trees and the two small streams on the site adjust to the new *built environment*, and they will hardly be ‘natural’, although that perniciously ambiguous concept underlies the entire strategy (see **Figure 4.8: Feel naturally at home**).

Figure 4.8: Feel naturally at home. Art installation in Minto Mahogany Sales Centre, March 2013

Source: Author photo.

The claim that *Mahogany* is located just 5 kilometers from Ottawa is misleading on a number of levels: the development is actually inside the amalgamated City of Ottawa that is apparently attempting to limit sprawl within its boundaries; the 5 kilometer figure refers to the southern edge of another low-density suburb, Barrhaven, which was also designed for cars; to get to the ‘Ottawa’ that is 5 kilometers away, *Mahogany* residents will need to drive through an already congested Manotick main street; and there are only service-sector and farming jobs within 5 kilometers of *Mahogany*. In fact, *Mahogany* residents who work downtown will be 27 kilometers via city roads or 40 kilometers by gridlocked highways from their jobs.

Minto’s “unprecedented...land stewardship” remains to be seen. Despite a carefully constructed discourse in the marketing and FoTenn plan about preserving ‘nature’, my experience of new tract residential construction is that it homogenizes the landscape (and eliminates species intentionally and inadvertently) to simplify house installation. Mahogany in March of 2013 matched the initial phase of most suburban tract construction sites in Ottawa when the land is scoured, topsoil is stockpiled and roads are built (see **Figure 4.9: The *Mahogany* building site, March, 2013**). But with prices “from \$489,900 to the mid \$800,000’s” (see buzzbuzzhome, 2013), at least Minto Communities Inc. is not claiming that *Mahogany* will be ‘affordable’.

Figure 4.9: The *Mahogany* building site, March, 2013

Source: Author photo.

Regardless of the ‘green’ marketing put forward by Minto, some residents in the Village of Manotick rebelled. Seemingly well-organized, savvy and articulate, The Manotick Community Association tried to stop Minto and challenged the builder at the Ontario Municipal Board. They were determined to maintain a place that is separate and distinct from suburban Barrhaven and the rest of Ottawa. Stott & Sullivan (2000) refer to the power relationships within narratives in terms of who creates and controls the narratives. The Manotick Community Association had a well-organized website, a lawyer and numerous articulate and informed representatives to argue their case in scheduled meetings. Minto, on the other hand, had regular full-colour, full-page advertisements in *The Citizen* about the ‘homes’ and ‘communities’ they build; a sophisticated, interactive, multi-linked website; broad coverage via billboards and signage on dozens of building lots and rental apartments; and a lot of community exposure from decades of involvement

in charity, cultural, and educational endowments and initiatives (see <http://www.minto.com/>). Minto is a long-established, well-recognized corporate entity in Ottawa that had a clear advantage in terms of the resources to tie positive public perceptions to suburban development narratives, most recently using a sustainability spin. Minto used expert private planners and real estate lawyers to rebuff the community's and City's challenge in an Ontario divisional court. Although the original plans were scaled back, likely as Minto planned from the start, the developer eventually won the right to build 1,400 houses in the *Mahogany* development.

4.11: Discussion

Writing from the perspective of a tract builder, Eichler (1982) acknowledged the challenges of mass-producing houses:

All manufacturers of consumer products must cope with defects and customer service. The problem is especially vexing in merchant building for a number of reasons: (1) a house is built on ground which may shift, expand, or contract; (2) it is exposed to the weather and is built largely of organic, unstable materials (usually wood); (3) it is built under conditions that do not facilitate precision; (4) there are several government agencies to whom dissatisfied customers can appeal; (5) purchasers live next to each other, compare complaints, and can easily band together to exert pressure; (6) people are especially emotional about their home; (7) the product cannot be brought to a central place for repair; and (8) defects are often hidden and difficult either to locate or repair. For these and other reasons one could predict with great certainty that within thirty minutes after a group of builders started talking, service would become the prime topic (101)⁴⁶.

Eichler (1982) claims that the after-sale customer service call "...has plagued builders with increasing intensity..." (102). Housebuilding has not changed much since 1982. It

⁴⁶ This passage is remarkable for the way it encapsulates my experiences of both house construction and production builders' attitudes. The first three items can all be remedied by quality control. However, Eichler seems to suggest that it is the fault of the earth, the material and the weather that the house has defects. In the next three items, he apparently blames the victims. Seven and eight are, again, quality control issues. I venture that little has changed since this was written.

may well be impossible to erect flawless houses, especially outdoors in Canadian weather, but to what extent did the industry bring this so-called 'plague' upon itself? This passage seems to contradict assertions that new efficiencies improved the quality of houses (*Build*, 2011; CHBA, 2008; CHBA, 2011 CHBA, 2012; Eichler, 1982). At the risk of oversimplifying a complex process and product, Fordism and demand have led to an emphasis on *quantity* versus *quality*. This could be why buyers continue to complain, and why the renovation industry in Canada is huge⁴⁷. On building sites many trades people do their jobs at a phenomenal pace in the struggle to be competitive. This may be a contradiction in the industry and in the capitalist/fordist method of producing houses. There are perpetual concerns about quality of construction in an industry where subcontractors are paid most often by piecework. This often translates into tensions between house builders and consumers, especially in rapidly growing suburbs. The Vice-President of Minto's "green team", Andrew Pride, was quoted saying "Building a code home today is building obsolescence into a home" (in Starr, 2010). Minto has built close to 70,000 code houses in Ottawa alone. Pride may have been revealing more than he intended with this observation, and it is worth evaluating Pride's comment in light of the fact that few other tract builders build above code.

I can add to Eichler's lament from my experience. Canadian houses are built outside in all kinds of weather. They are built quickly, and in the framing stage, in the rush to close houses in, the tool of choice for many carpenters is a chainsaw. Once the house is closed in, the remainder of the sub-contracted trades compete for space and time

⁴⁷ It is noteworthy that housing consumers have one main body to whom they can address complaints: Tarion, which is an industry watchdog created by the industry. Tarion did not respond to my requests for data on complaints about construction flaws. The CMHC (2008:39) reports that Canadians spent \$12.5 billion on "repairs" to their homes in 2007.

to jam wiring, plumbing, ducts and insulation all into the same walls (and often at the same time), then drywallers and painters and trimmers cover it all up. Apart from electricians and some plumbers, trades in Canada are mostly self-taught and unregulated, and possess widely varying levels of skill. Schedules almost never mesh and changes and mistakes are inevitable. Wasted time and material are endemic. Kent Larson of Massachusetts Institute of Technology says: “Building homes entirely on site now makes as much sense as building a car in your driveway” (quoted in Benson, 2006:10). Most North American houses are, in fact, compromised by outdated materials and processes the day they are finished. Worse still, and despite industry claims to the contrary, typical stick-framing construction practices do not produce energy efficient structures or sustainable communities. That particular method of building served its purpose and now there are much better ways to ensure that structures are durable and keep the heat in. This dissertation is not concerned with alternative methods and materials for residential construction, which are legion, but is instead concerned with social forces that keep builders from building more efficient housing. And the latter issue may be insignificant if transportation to and from low-density suburbs is as harmful to the environment as the houses themselves. Low density suburban housing as a piecework-contracted, fordist *product* is, however, still extremely lucrative for developers.

The same conditions exist now that first led to suburbs in the 1950s. First, Ottawa, like cities everywhere, is growing, so demand for new housing is still strong and suburbs are still popular for the same reasons that they were 60 years ago (i.e., people desire space, quiet, safety, and cleanliness). Farmland is still relatively cheap beyond the Greenbelt, and development costs are still lower. There is still profit to be generated in

mass-producing stick-framed houses built on site. Municipalities wish to increase the tax base to pay for the rising costs of services, so zoning on the outskirts remains malleable. Further, CMHC still insures mortgages, and houses are still an important generator of equity for the middle class. Finally, the federal government avoids debates about sprawl (such as in cases like Manotick), and steers clear of concerted action on the environmental impacts of housing, as would be expected with a right-leaning government in a neoliberal economy where housing-related spending accounts for “just under one fifth of total economic activity in Canada” (CMHC, 2007:37). It would be unusual for a conservative government to interfere in a booming market where a thriving culture of consumption fuels the demand for houses and “durables” regardless of the clamor from environmental critics. Suburbs remain an inevitable component of the Canadian built urban environment.

A Minto representative at the ‘Inspiration Ecohome’ told a colleague that she “could not afford it” – the \$800,000 home was simply not commercially viable. This story invites several observations: First, the ‘Inspiration Ecohome’ is unique. It cannot be mass produced at this time, but economies of scale and improved production might bring prices down on all of the cutting-edge technology and methods of construction, just like they did in the suburbs following World War II. But the upgrades must be components of a much broader plan, which leads to the second observation; Energy Star, and even R-2000 and LEED standards, are limited technological fixes to chronic challenges in North American housing and society. The LEED-H system used to judge the ‘Inspiration Ecohome,’ does not address communities, consumption, or the archaic construction *and locations* of most North American houses, and LEED ND will have negligible impact if it

does not alter consumption patterns or inequality in North America. Both systems, LEED H and LEED ND, simply download the cost of sustainability from corporations onto overloaded consumers trapped in destructive patterns; they do not adequately address systematic education of consumers or trades; they ignore centuries of innovation and better practices in urban design in other parts of the world; they have mixed effects on repeated attempts by planners to increase densities in urban areas; they will never substitute for, or function as quickly as, state regulation; and, like the ‘Inspiration Ecohome’, they divert discourse from quality, care, craftsmanship and community to gadgets and a very localized ‘green’ rhetoric. For all the green spin, *Mahogany* reflects the usual ontological separation of development from ‘nature,’ the unnatural excision described by Neil Smith in *Uneven Development* 23 years ago, and a trade-off of the equitable distribution of housing for real estate equity.

There is an array of information available from the federal government and the construction industry, but it is almost impossible to decipher. It is also tough to determine if and how green policies, programs and marketing are attracting consumers. Are suburbanites becoming aware of the environmental impacts of suburban culture? Are Canadians shopping for sustainable houses? From my interviews, sadly, it appears not. The power of words and images is woven through Part 2 of this chapter, but it largely skirts consumer responses, which seem to be favourable to green building and/or sustainability only until they “cost more” than business as usual. Minto’s very public sustainability discourse in their corporate marketing and Minto’s “stretched” definitions of ‘sustainability’ in low-rise developments is confusing. Why has Minto maintained a consistent, albeit questionable, sustainability spin when no other tract builders in early

2013 advertised anything resembling ‘green building’. Is it possible for the same organization to simultaneously greenwash and honestly strive to effect change?

Finally, there is an over-riding dissertation question: If Minto is a ‘green building leader’, and their marketing and products are not consistent with comprehensive definitions of urban sustainability, what does it say about the rest of the tract builders in Ottawa?

CHAPTER 5: THEORETICAL CONTRIBUTION

5.1: Introduction

Throughout the dissertation, there has been tension between structuralist and post-structuralist interpretations of sustainable residential development that paralleled the tensions within the actual phenomenon being studied – houses as commodities versus homes as socionatural hybrids. Houses and homes are dialectically linked through the material and social interaction but they are not the same; just as space, place and time are linked despite the tendency to examine them separately (see Massey, 2011). A similar tension arose in my research methodology: an assumption from the start has been that capitalism was implicated in certain types of urban form to the detriment of the environment, but because the research used interviews in part to explore broader discourses about sustainability, interview analysis was necessarily sensitive to interviewees' interpretations of the terms in the study – sustainability and green building. Another assumption was that meanings would in some ways coincide with action, or point to discrepancies between actions and discourses as well as constraints under which actors functioned. Conversely, the meanings assigned to the phenomenon called 'home' are critical for understanding how homes function within neoliberal capitalist economies. An advantage of political ecology is that it enables the researcher to examine the broader political, economic and ecological implications of the actions of the interviewees. But how can structuralist ontology be reconciled with post-structuralist epistemologies which include discourse analysis? These tensions are illuminated and reconciled in the following sections.

Chapter 5 links findings from Chapter 4 with the conceptual framework outlined in Chapter 2. Section 5.2 discusses the political economy of the suburbs in Ottawa. Section 5.3 links discursive constructions of sustainability as offered by various producers and regulators in Chapter 4 with a political ecology of development in Ottawa's suburbs, but incorporating suburban consumer identities and behaviour patterns into a more normative explanation of suburban form. The section is an attempt to bridge structuralist and humanist theory. Section 5.4 returns to the concept *homeecology* to advance sustainability theory and offer a comprehensive vision of urban sustainability that is less constrained by structuralist emphasis on the physical construction of space. Chapter 5 as a whole should be read as a critique or commentary on current residential production practices in Ottawa suburbs that employs several perspectives within human geography to contribute to debates about urban sustainability.

5.2: Structuralism and the economics of low-density suburban residential development (LDSRD)

At the scale of the workers on a residential job site, personal experience suggests that chainsaws, shortcuts and low pay result in unsustainable outcomes. When tradesmen are working under piecework contracts (i.e. when a concrete contractor, carpenter, insulator or electrician are paid a per-house flat rate for time and materials), they sometimes take “shortcuts” – banes of tradespeople, management and housing durability too. Recall that my first contact with a Minto employee was marked by his angry reference to the use of chainsaws on residential construction sites, a tool and strategy that I argue is dictated by short production deadlines. In my experience as a carpenter on suburban new building sites, I was repeatedly forced to search for, and compete for, access to “live” electrical

plugs which always seemed to be in short supply in new housing as electricians would not do their work until framers were finished. Also, corded tools are far less convenient than cordless tools including chainsaws, especially for rough work. Despite the proficiency with which some carpenters use chainsaws, they are used too often for work that requires tighter joinery. To a site supervisor, it may seem that workers “do not care”, but in my experience chainsaws are mandatory if one wants to meet developer and personal production quotas.

Similarly, I was rarely paid what I thought was fair in piecework contracts, and colleagues in the trades often resented the competitive contract process which forced them to lower their standards. In piecework contracts, there is a perennial and stressful tension between the need to finish and the need to produce quality work. There were regular complaints from trades about “the guys before me”. For example, framers often struggled to correct errors in concrete foundations, window installers often complained about framing errors, and trimmers often complained about window installations. In fact, a foundation error could become amplified throughout the house, but the workers who made the errors might never meet the workers who must correct the error to complete their discrete part of the construction process. Accountability is complicated by the need to hire cheap labour to help with contract work: workers are often not trained properly and rarely understand the impacts of sub-standard work.

At the scale of individual buildings and groups of buildings, and at a time when building codes are becoming increasingly demanding with regards to energy efficiency, these anecdotes reference a fundamental barrier to better building practices—namely, the devaluing of labour in a competitive market. More generally, the anecdotes support the

claim that developers build complicated products as cheaply and quickly as they can for the sole purpose of generating profit. In a capitalist economy, producers maintain or increase profit margins by sticking to an obsolete production model, and by controlling inputs however they can to gain an edge in a competitive housing market. But when the 'product' is evaluated with a life-cycle approach (see Chapter 1 and Section 5.4 below) it becomes obvious that by controlling labour expenses via piecework contracts actually results in sub-standard production and premature obsolescence.

Cheap labour costs are one side of profitable residential development. Cheap land on the outskirts is the other input over which developers have control. The for-profit model can then be translated up to the community, regional and global scales. There were numerous comments in the interviews that pointed to the straightforward economic equations associated with low density suburban residential development. Even the progressive producers in my interviews stated that there would be no innovation if there was no 'business case'. In other words, there had to be profit over relatively short business cycles. Development companies hold large parcels of farmland outside of the Greenbelt in Ottawa. Surplus capital parked in real estate has historically returned large profits in Ottawa, and according to both producers and regulators in the interviews, the growth lobby will resist any government attempt to dictate if or how they develop that farmland. Housing in Ottawa is shifting to denser urban form: Art, the construction manager for a large developer, stated that his company's 'products' are now evenly split between detached and attached dwellings (i.e. separated single family houses versus townhouses, row houses and duplexes). Regardless, between 2001 (when Ottawa was

amalgamated) and 2011, producers built over 32,000 detached single family dwellings outside of the Greenbelt in Ottawa (City of Ottawa, 2012b).

Beyond the community scale, there is compelling evidence that LDSRD directly contributes to global warming (Blais, 2010; CMHC-Marbek, 2008; Farr, 2008; Newman and Kenworthy, 1989 and 1999; Sewell, 2009; Soloman, 2007). The city of Ottawa is, on paper, aware of widespread concerns about links between urban form and greenhouse gasses (City of Ottawa, 2009; City of Ottawa, 2011). Regardless, in public discourse on urban development in Ottawa, the lobby deliberately subverts the City's discourse, eliminates climate change and gas prices from public proclamations, and refuses to meaningfully define 'affordability'. The Greater Ottawa Home Builders' Association (GOHBA), as the voice of a powerful Ottawa lobby comprised of numerous private businesses that profit from suburban development, predictably counters municipal attempts to promote denser, transit supportive urban form by claiming that "government-induced land shortages" negatively impact on 'housing choice and affordability'. The Ottawa growth lobby uses multiple tools including lobbyists in City Hall, campaign contributions and political manipulation, public media, and the Ontario Municipal Board, to deflect criticism and continue to buy ex-urban land, build LDSRD, and sell it to consumers. The lobby expends considerable resources on a carefully contrived discourse to justify and continue to generate large profits from production or tract building on the outskirts of Ottawa. In the public discourse, the GOHBA insists the public is driving the industry, when in fact the industry plans well in advance, buying farmland and holding it until rising property values in the city drive more buyers into the suburbs where choice is in fact limited to a narrow range of housing options. The City's growth lobby is, if not

supported, at least abetted by the neoliberal state at the Ontario Municipal Board (Tandon, 2011), and by a federal government that actively promotes the petroleum and auto industries.

As described in Chapter 1, the current model of production or merchant house building in North America evolved in response to a variety of conditions including the concurrent need to quickly transition manufacturing to a post-war economy after World War II and to generate large numbers of low-cost houses. Harvey (2010b) claims it also served the need for capitalists to safely put to work large amounts of surplus capital during growth years in the twentieth century. After the war the federal government stepped in with mortgage insurance, increasing consumer demand, and then the state required producers to supply water and sewers, which are large infrastructure investments that only large, well-capitalized firms or consortia could provide. The demand for services effectively bumped small producers out of the field, and the craft production model that had predominated in the industry for centuries gave way to tract building in cities across North America including Ottawa.

Housing was a very lucrative investment for those businesses that adapted new methods of financing and mass-production. Profit margins grew with demand as the model of mass house building adopted early in the century facilitated the development of large suburban tracts in every city in North America, which proved convenient both for house buyers and real property investors as efficiencies in manufacturing reduced the need for skilled labour, cutting costs and again improving profitability. Mass production of housing also coincided with the mass-production of consumer goods, including cars,

furnishings, electronics and sporting goods (Hayden, 2003), facilitating capital circulation, and necessitating more spatial sinks for surplus capital in growing suburbs.

As household incomes fell in the latter half of the century, Harvey (2010b) argues that finance companies created a credit industry, including the mortgage industry, to enable further increases in consumption and capital accumulation. Harvey (2010b) notes that perhaps the largest crisis in the history of capitalism has occurred as burgeoning consumer debt has led to millions of mortgage defaults in the United States, the flattening housing market, the collapse of mortgage-backed investments, a stagnating global economy, and the abrupt re-concentration of wealth among global élites. Tighter mortgage regulations in Canada have limited the impact of this particular capitalist crisis, but Canadians are following the same patterns of growing debt as their southern neighbors, albeit more slowly and less dramatically (Marrotte, 2013). Today the most important is the perpetual push for capital accumulation over time that is programmed into a capitalist socio-economic system.

Time is an essential component of Harvey's spatial analyses (see Harvey, 1989), and a theme that runs through this dissertation. For example, both Chapters 1 and 2 have mentioned the haste with which houses and developments are built. Housing subdivision manufacturers must limit or accommodate time delays due to political uncertainty, such as the public conflict over Minto Mahogany as the City and the village of Manotick contested the development. Such delays, assigned the now-pejorative term "not in my backyard" (NIMBY) because of the inconvenience they create for both the growth lobby and city staff (who actually sided with the developer in the Mahogany case), impede the generation of surplus and capital circulation and require significant municipal staff time

for community consultations. Further, time constraints are also implicated in production quotas and tight schedules that potentially lead to detrimental impacts on quality and in turn, housing durability – another variable that is both temporal and spatial. In addition, time is another element of sustainable development that the growth lobby discourse neglects with hidden global to local consequences. Housing as it is mass-produced now in Ottawa suburbs will require major upgrades in a few decades, generating billions of dollars in business for the renovation industry, requiring tons of new material, sending tons of embodied energy to landfills and tons of GHGs into the atmosphere. All of the above fits a critical political economy interpretation of suburban development.

A critical or Marxist interpretation illustrates other contradictions and paradoxes of capitalist political economy and housing. Capitalists produce space by making it necessary to orient labour, materials, transport, finance and markets in such a way as to maximize surplus value (profit), and according to Harvey (2000), cities exist to locate these things within close proximity because transportation costs time and money. Costs for fixed capital production inputs (such as tools, office space, storage and production facilities) and circulating capital (such as building materials) do not vary much between competing builder-developers, and all developers in one region face the same development fees, so the main ways that house builders reduce production costs and boost profits are by reducing the costs of land and labour. Developers reduce land costs by building on periurban or exurban farmland. Then taxpayers across the city fund the construction of services to new developments (Blais, 2010). Developer-builders lower labour costs through competitive piecework contracts, a mechanism by which the developer offloads costs and risks involved with owning the means of production to

small, local, flexible, self-equipped *and expendable* trades crews in whom developers have little investment (Harris and Buzzelli, 2005). At the scale of the individual builder, labour is constantly devalued in competitions for contracts in tract housing that, in turn, may lead to less than optimal work. Tim, manager for a large development company, intimated that competitive sub-contracts are “the reality of the industry”. That particular reality often forces fast work, sometimes by inexperienced and poorly trained (and thus lower paid) workers whose mistakes may compromise the durability of houses.

Several authors have likened house building to assembly-line fordism (Carver, 1948; Harris & Buzzelli, 2005). Again, scale is important, and as one moves away from the individual jobsite, it is apparent that house building no longer fits a fordist production model. Henry Ford deliberately made products affordable for the people on the assembly lines by controlling inputs, owning the factory and tools, simplifying production and paying wages that enabled the purchase of Ford cars. Production of tract housing is somewhat different. Developers own the land on which their contractors build houses, but as mentioned the developers do not own the other means of production. That particular tactic reduces risk for developers and leaves capital free to invest elsewhere. Developers profit first from subdividing land and second from a surcharge added onto houses built on that land. The surcharge is profit from labour.

House building in Ottawa involves a unique combination of fordist and post-fordist, small-batch, just-in-time production. While house building is like an assembly line where the workers move instead of the product, Buzzelli (2011) pointed out that developers easily shed contracted workers during the inevitable downturns, and this is exactly what Minto did in their Florida operations during the housing market crash of

2008. At the same time that Minto was insisting on doubling the size of the village of Manotick, the Minto Annual Report section on Florida operations from 2008 stated:

... as the market continued to deteriorate throughout the year, we were unable to achieve the aggressive goals we had set for 2008. Therefore, we were again forced to resize our valued workforce in line with business volume (Minto, 2008: 28).

Minto Florida was clearly struggling during the 2007-2008 housing “meltdown” in the United States. The euphemism “valued workforce” is informative because it also has a dual meaning: labour value is the input in the production chain over which capitalist producers typically have the most control. Since its inception in 1955, Minto has become adept at both buying ex-urban property for development and cutting the cost of labour to maximize profits from both sides of the residential development equation – land and housing. Producers continually argue that they create jobs and drive the local economy (see for examples CHBA, 2010 and Brady, 2009b) but if jobs are so quickly shed, can developers argue they are creating jobs as a social good? In addition, it is unlikely that the tradespeople who built *Mahogany* would ever live there because the houses would likely be priced beyond their means. That few of the workers building houses for Minto would be able to afford to buy those houses is another element of the equation that might be described as post-fordist. Buzzelli (2001:122) states: “In effect, builders [developers] are, and have long been, management companies, skimming from the value-added activities of their subcontractors...”. Labour in house building is simply another commodified input of a purely economic equation.

The concepts of space, time and scale are again implicated in the actual ‘products’ of standard residential development – the million or so houses built by developer-builders in North America yearly. At the societal scale, mass-produced housing requires major

repair or outright replacement within a few decades [as indicated by CMHC (2008) statistics on dollars spent on “repairs”, and confirmed by my years in the residential contracting business]. The lifespan for most of North America’s housing stock perhaps serves the interests of investors in real property by ensuring a constant demand for housing renovation and replacement, very similar to product lifespans in the auto industry. Further, fordist producers employing arguably obsolete practices to build housing are able to continue business-as-usual due to weak regulation by the state: building codes set only minimum standards, energy performance codes are in their infancy, and the unanimous opinion among interviewees was that consumers are neither educated nor adequately driven by energy costs to demand more efficient houses in more efficient urban forms.

One of the findings from the interviews was that there was no consensus between producers and regulators about “sustainability” because the term is too slippery and complex. Also, there was little concern by Ottawa producers in the interviews that existing patterns of low-density suburban development are implicated in environmental degradation and climate change mainly because of suburban transportation modes. In other words, existing discursive constructions of both suburban and sustainable development align perfectly with the interest of capital, and, in general, the City of Ottawa has limited impact on how and where residential developers install their products.

The CHBA (2008) insists that Canadian housing code reflects progressive ‘green’ housing by global standards, though this begs the question: which standards? When compared with progressive cities in Scandinavia or western Europe – Stockholm, Sweden or Frieberg, West Germany for examples (see Sangster, 2006), Ottawa falls short. And

while certainly progressive, building houses above code, even to LEED standards, does not alter relationships between labour and production, and does not markedly alter the relationships between housing and consumption patterns or housing and environmental degradation.

Developers argue that they cannot be expected to assume all responsibility for the purchasing tendencies of their clients. Several of the producers in the interviews stated that they were frustrated that granite counter tops were more popular upgrades than added insulation. The choice of a luxury item over energy efficiency perhaps points to another structural issue – consumer education and environmental literacy – over which the provincial and federal governments maintain a large amount of control. Canadians seem complacent about both climate change and greenwashing, which is a tendency with clear consequences in consumer choices.

To perhaps add balance to the above critique, there is another side to low-density development worth noting: suburbs evolve. For example, I was born in Downsview when it was a brand new peri-urban suburb of north Toronto. My neighbourhood is now completely surrounded by urban jobs and commerce. Work and travel patterns change over time as cities evolve. Like Kunstler (1997), several of my interviewees contend that fossil fuel price signals are the most reliable predictor of car use and, subsequently, urban form. But it might be argued from a broader perspective that car use, like many other suburban variables, is temporally and spatially contingent, and will undoubtedly change over time as fuel costs rise and older commuter suburbs change form, which they inevitably must. Fuel price signals are certainly important elements of this process, but are by no means the only variable. Plans are already afoot to revamp existing car suburbs

to make them denser, more mixed use, more walkable and more humane (e.g. Dunham-Jones and Williamson, 2009; Greenberg, 2011; Tachieva, 2010). Minto's Ampersand development, a mid-rise residential development in Barrhaven, an exurban suburb of Ottawa, built with research funding from the federal government, is an example of denser and more walkable suburban development that can be contrasted with LDSRD.

Further, car use will change in the future. For example, the City of Ottawa is building a light rail transit system and is actively promoting transit-oriented development around stations. Housing densities in the city have also been increasing in suburbs in recent decades (City of Ottawa, 2010b), in part due to City policies and in part due to changing demographics and economics in Ottawa, patterns which, when combined, may change transit modes. Third, the City is also planning infrastructure changes that facilitate walking and cycling. Finally, increasing numbers of people work from home at least part of the week, and entertainment is more accessible within the home. Technology in particular is changing both work and leisure. All of the above are social and planning processes that may change how people view and use the suburbs.

However, such changes are slowed by concerted resistance from developers who challenge any City initiative that might impact on profits. Developers' resistance usually takes the form of very public tirades against regulations which they claim "reduce affordability and choice for Ottawa families". The debate is one-sided: unlike the GOHBA, the City has far less money for marketing and rarely buys advertising space in the Ottawa newspapers to argue for sustainable residential development⁴⁸.

⁴⁸ To be fair, in recent years the Ottawa Citizen has published numerous articles on green building, and has begun carrying articles on sustainable urbanism along with limited reporting on climate change in general.

By solving one problem, a housing shortage, with a new model of production tied to capital accumulation, the mass-production of suburbs is both lucrative and outdated. The relationship between North American housing and global finances, and the nature of mass production in the industry, exemplify contradictions in capitalist political economy, as well as capitalist dialectics, that Karl Marx detailed more than a century ago when he stated that the necessity for continued growth in capital accumulation is a purely social fiction that ignores natural limits (see Harvey, 2010a; Smith, 2008). By detaching green building from discourse about urban sustainability, most of my interviewees and the growth lobby detach homes from their surroundings, another artificial split with dire consequences.

Sustainability is by definition about time: if, for example, a house falls apart in 30 or 40 years, it cannot be described as sustainable. But longer time horizons do not mesh with business or political cycles. Investments must be fluid to accommodate product development, production, sales and re-investment of surplus value. In Oden's (2010) article, the growth regime functions to ensure for developers (a) high rates of return with low risk, and (b) the freedom to operate with minimal government interference. Oden points out that developers make marginal concessions "around the edges" of sustainable urbanism (such as planting token trees) (*ibid.*, 43). A growth-driven economic model is why the growth lobby complains about delays in residential permitting and approvals in Ottawa (see Alliance for Building a Better Ottawa, 2011). But the Alliance seems little concerned about the time and money that suburban commuters will expend on transportation over the terms of their mortgages – one of three main elements missing

However, regular columnists such as Randal Denley and Sheila Brady were clearly pro-developer during the period covered by this research, and my impression is that the paper is more generally pro-business.

from the growth lobby's public discourse. Another element missing is a comprehensive definition of housing affordability that extends beyond suburban consumers of new housing. Finally, the Alliance and the growth lobby display a remarkable, and almost belligerent, ignorance about urban sustainability in terms of social equity, material efficiencies, reducing waste, protection of habitat and species, use of local materials, building community social capital, and so on as defined in the climate change and urban planning literature. The absences in the discourse are at least as important as what is present. By eliminating certain elements of urban planning and sustainability from its discourse, the growth lobby in Ottawa has created its own version of 'sustainability' that in fact contradicts urban planning best practices. An abbreviated version of sustainable development enables the development industry to justify single family detached housing outside of the greenbelt. The alternative – equitable, transit-oriented, compact, mixed-use and walkable neighborhoods – would shrink the profit margins in conventional development on land that developers and investors bought for “pennies on the dollar” as one developer stated in the interviews. In other words, sustainable development in Ottawa would ‘cost too much’.

This research project began with a couple of hypotheses: First, purely economic valuations of housing interfere with fitting homes and neighborhoods into socio-material ecology. In this regard, 'sustainability' discourse by exurban developers and the growth lobby in Ottawa are oversimplified, underspecified and at best misleading for consumers, because developers' actual practices are harmful for global ecology. However, the City of Ottawa, at least in public discourse, seems to carefully situate urban sustainability within a complex range of social, economic and ecological variables. The two discourses are not

commensurable. For decades, critical urban theorists have debunked the nature-society split that is implicit in the growth lobby discourse and endorsed more nuanced criteria for sustainability such as those found in the City's discourse. The question is, which discourse seems to be actually guiding suburban development in Ottawa in early 2013?

5.3: Bridging structuralism and post-structuralism

Political ecology as I have argued in this research can act as a bridge between structuralist and humanist geography. Robbins (2003; 2007) argues that a deeply entrenched economic and cultural structure underpins the suburbs: certain people can afford to buy large houses on large lots, and they bring with them certain patterns of consumption that have a century-long history in North America. Robbins adds a social-psychological dimension to his multi-scalar approach when he explores the culture of suburban homeowners, overlaid on class, and identity, which dictates a certain narrow range of culturally legitimated mores and behaviors at the local level. For example, Robbins found that suburban cultural mores are embedded in marketing and rationalizations for purchasing lawn chemicals. Both the broader (i.e. continent-wide) political economy of the chemical industry, and individual discursive justifications for using the chemicals, are key in Robbins' research, as are the local to global impetus and impacts of the phenomena in question over time.

This doctoral research was framed in a similar fashion. Consumers make decisions about suburban house purchases based on complex information, including the economics of mortgages and commuting, opinions about suburban living (i.e. how they might fit with their neighbors, convenience of schools, parks, services, and so on), details of the house building process, builder's marketing, concerns about building quality and a

hundred years of marketing of certain types of residential development by housing producers, regulators and producers of consumer goods. Similarly, a residential housing producer may be governed by very specific, immediate business exigencies like market share competition, path-dependent local political processes (Brenner and Theodore, 2002) and green building trends and perceived costs. Likewise, municipal regulators may be influenced by three levels of legislation, varying degrees of progressiveness in planning tools (e.g. zoning and approvals) and different types of political pressure (e.g. lobbying at federal, provincial and municipal levels). All of the above serve to qualify structuralist interpretations of urban development.

The three components of the economic relationship: consumer, producer and regulator, are dialectically linked. For example, judging by the market in Ottawa, there remains a powerful consensus that the suburbs represent desirable places to live – a result of decades of cultural impetus tied to home ownership as an investment and as a symbol of ‘success’ (Hayden, 2007), along with specific pragmatic considerations: suburbs are still the first choice for many house-buyers because the houses are comparatively inexpensive as a result of neo-fordist mass-production, continuing infrastructure and service subsidies (Blais, 2010) and cheap petro-chemicals, and the neighborhoods are generally quiet, safe, and clean, which makes suburbs legitimately better places to raise, in particular, young families. The development industry has profited for decades from subsidized services, federal mortgage insurance and market preferences that the industry itself has influenced through marketing. Finally, (and despite the previously mentioned City of Ottawa official sustainability discourse) planning, zoning and permitting are driven by an established, inflexible model that favors large building lots in single-use

residential zoning, rules that, according to my interviewees, penalize innovation. City bureaucracies are apparently conservative, conventional and risk-averse (Farr, 2008), and subject to the conflicting demands of, for example, citizen activists and construction industry lobbyists (Doucet, 2007). Critical political ecology enables the incorporation of multiple scales, actors and impacts into a complex analysis of urban development that adds nuance to political economy.

The range of impacts associated with suburbs are only visible when one examines those impacts at scales beyond individual suburbs, and this larger perspective does not seem to be informing or motivating consumers or builders. In tight economic times, apparently 'green' is preferable only until it costs more⁴⁹, and my interviewees unanimously agreed that consumers require education, at least about how they will benefit personally from, for example, lower heating costs. In contrast, municipal planners must now act from an awareness of anthropogenic environmental changes resulting not only from the construction and operations of buildings in general, but also from where they are situated. As Ottawa planners and policymakers become aware that global climate change will impact upon city infrastructure, services and budgets, they increasingly attempt to exhibit leadership on such things as resiliency and controlling GHGs. Policy documents in Ottawa and the Province of Ontario clearly reflect the larger perspective (see City of Ottawa, 2011; Province of Ontario, 2005).

But the state writ large sends contradictory messages when zoning amendments and rulings by the OMB subvert state interventions at regional and provincial scales by allowing developers at the local scale to alter regulations to maximize profits. Scale is

⁴⁹ This consumer tendency was confirmed in my interviews with developers.

also important when examining consumer behavior, as negative impacts of, for example, global supply chains, are not well-understood by consumers, and this raises questions about state education. The globalization of consumption leads, theoretically, directly to homes, which are key sites of infiltration by marketers, and where consumers fill space with consumer goods. One might argue that state education is tied to homes and is designed to programme producers and consumers, but that speculation is beyond the scope of this research.

Robbins (2007) problematized the suburbs in a way that aided this study of Ottawa. North American car suburbs are marked by specific social patterns such as “fitting in” to community which for Robbins included adhering to culturally embedded and prescribed patterns of consumption, the rights of law-abiding citizens including private property rights, specific types of state-run education, the rules of the state, the appropriateness and ascendancy of market capitalism, and so on. A carefully crafted and reinforced archetype of a “correct” North American home was normalized and reinforced in popular media and advertising over decades and I would argue persists today – an archetype of a single-family house on a large lot which coincided with the spread of capital accumulation sourced in millions of consumer products sold to millions of single family households in the suburbs. The archetype reinforced certain dystopic phenomena, particularly the negative impacts on women such as stereotypes of women as unpaid ‘homemakers’ subservient to men, and unpaid child care workers. At a broad scale, gender-based stereotypes and media-based archetypal ‘homes’ served to delink and mask homes from the broader socionatural consequences of the American model of consumerism. As in Robbins’ research in American suburbs, one must account for both

global processes and individual propensities to gain understanding of consumer behaviour in Ottawa suburbs.

Interviews with people working for developers indicate that they have varying degrees of understanding about social and non-human ecologies. Interestingly, it seems the higher up they were in the ‘state/capitalist’ hierarchy, the more interviewees were aware of the need for change. City policy staff and senior corporate officials were both grappling with the same scale dialectics that I have been struggling with since first becoming enamoured with David Harvey’s (1996) *Justice, Nature & the Geography of Difference*. How does one accommodate individual rationality *and agency* within marxism? How does one hold ‘capitalists’ to account, or, more importantly, argue for change with non-academic individuals enmeshed in a political and economic paradigm perched on an imaginary manufactured in corporate and media boardrooms? Where are the leverage points for change, and how can the necessity for change be communicated effectively in public and policy debates? Part of the answer lies within discourses, and in particular, definitions of sustainability.

The theoretical, methodological and ultimately ontological tensions in this dissertation lie between structuralist explanations of suburban development and humanist descriptions of culturally embedded, archetypal “homes” and “communities”. Hayden (2003) refers to the suburban “triple dream” which she defines as home ownership in a sociable neighborhood close to ‘nature’. Hayden then argues that women have always sought “house plus land plus community” (ibid., 8) and this is the dream that suburban developers have promoted for more than a century. Although I did not conduct phenomenological research, place-making and spatial configurations of suburban tract

houses are inevitably simultaneously dialectically aligned with both political ecology and humanistic social theory through discourse in this dissertation.

Phenomenological aspects are very important elements in discourses about 'home' that are used in housing marketing, in choosing where housing is located, and in marketing all of the consumer products that are considered in western culture to be essential accoutrements in homes. The archetypal or stereotypical representation of home - as a space configured (usually by women) as a sanctuary from the world, as a space to be filled with consumer goods, as a locus for family roots and history, and as tied to community and commerce in various ways - is inseparably tied to material ecology in Ottawa and beyond (see Chapter 2). In Gregory et. al (2009) Pickles states:

...phenomenology is concerned with... the ways in which phenomena are constituted as intentional objects through complex historical and social processes ... that constitute meaning-making in its many forms. Phenomenologists are, therefore, always interested in the constitution of the specific objects, with their relational nature as objects of consciousness, intention or meaning, and with the lifeworld context...that is the precondition for any ... thematization (529).

Homes are hybrids of "objects of consciousness", or the abstract, non-material socio-cultural meaning of home, attached to specific *built environments* called houses. Of particular interest for this dissertation is the manner in which that process occurs in housing marketing and discourse, and the consequences for global ecology that includes humans. The history, construction and meaning of the concept 'home', and the intention with which it is used in advertising for suburban developments, is a theme that pervades this research. The tension in the dissertation is actually the beginnings of a conceptual bridge between home/place and house/space – between humanist, emotive, deep-seated (and I would argue universal) human desires and needs associated with an

archetypal conception of “home”, and structuralist explanations of suburban housing production – “*manufactured homes*” – the increasingly contentious spatial configuration of suburbia and the creative infusion of accumulated capital into land and houses to generate profit. It’s also dialectic between sustainable urban form on a macro scale as defined in the literature, and millions of existing and planned consumerist, energy- and GHG-intensive suburban households. It is certainly clear that there are also links between unsustainable urban development at the local level and the combined environmental impacts of millions of existing *and planned* single family houses, facts that are absolutely excluded from growth lobby discourse.

One of the advantages of studying urban development from a variety of scales and perspectives is that it is possible to accommodate the dialectics of place-based, human needs and social patterns of behavior in order to understand broader patterns. Such micro-scaled social patterns include, for example, the reportedly universal human needs for shelter, security, community, sustenance and nurturing that Tuan (1974) and Relph (1976) explored decades ago, along with the problematization of the same phenomena as in Blunt and Dowling (2006) and Hayden (2002). When combined with a political economy/ecology framework, it becomes possible to examine the widespread practice of marketing exurban development with those same human values and needs associated with ‘homes’. Indeed, there is not a single residential developer in Ottawa who claims that they build houses: in their marketing they are all “home builders” (although some of the producers in my interviews referred to their “products” and “units”). This ubiquitous and unquestioned claim is the main example of the use of culturally loaded and

emotionally charged symbolism in developers' marketing. Simply and bluntly however, a home is something that happens *after* the developer and builders are gone.

Of course, suburban greenfield developments do in fact become homes for millions of people – homes as described by humanist social science, with the complex mix of negative and positive qualities associated. As mentioned earlier, I grew up in a blue collar, post-war suburb of Toronto. It was not idyllic: my home was one house away from a dangerous industrial development and a major highway that dusted the neighbourhood's inhabitants with lead on a daily basis. But I was also a fifteen-minute walk from a large forested area in which I played as a child. At the time, I considered that part of Downsview to be part of my home. Despite a century of convincing Marxist theory, there are parts of homes that cannot be made into commodities. To repeat Castree's critique of the absence of agency in Marx's treatment of nature, "...the attempt to deny culture and real autonomy outside the marionette movements dictated by the economic base (itself erected upon natural foundations) seems today to be theoretically crude" (Castree, 2003a: 170). Despite capitalist attempts to create and control culture, people resist in myriad ways.

Structuralist ontology and epistemology, which tend towards (typically pessimistic) *descriptions* of unequal social and economic patterns, cannot *explain* how individual suburban housing producers and consumers at local scales inhabit the complex matrices of capitalist politics, economics and social nature. I do not suggest that political economy is irrelevant: in a global economy slipping towards or in a recession, marxism is perhaps more relevant to understanding urban development now than in the previous century. Both marxist and post-structuralist lenses are necessary. But is it possible to

combine humanist ontology with some variant of eco-marxism? Robbins' *Lawn People* research appealed to me because it appeared to mix ontologies to comprehensively describe how consumer behavior, the culture of the suburbs and industrial competition were implicated in urban form.

Adding to Robbins' version of political ecology, Castree's (2001; 2003a; 2005) *social nature* might serve as a heuristic device to conceptualize hybrids of people and buildings as organisms in an ecosystem, rather than as rigidly defined shelters that separate and 'protect' us from the world. The clearest way to understand the difference between houses and homes in Ottawa, and to understand why the distinction is important, is through an analysis of discourses on residential development as described in the next section. Other theorists have approached urban development with similar perspectives. The following develops Castree's *social nature* paying special attention to the work of Julie Cidell on buildings and ecology, Ann Dale on social capital and sustainability, Paul Robbins on political ecology, and Eric Swyngeouw and Nik Heynan on urban organicism. The next section is a speculative assembly of theoretical streams intended to be read as a counter-narrative to growth lobby discourse on residential development in Ottawa.

5.4: Homeecology – a brief return

This dissertation adopts a non-linear theoretical approach to the study of reciprocal human-environment impacts and feedback that is appropriate for the study of the *built environment* – “hybrids of material objects and human practices” (Cidell, 2009: 621). In the built environment, houses and communities are, in relative terms, inanimate until inhabited. People make buildings into homes and communities after the builders are gone

(again, the time horizons are especially important in any discussions of sustainability). Each community develops (or at least has the potential to develop) an identifiable and unique character over time – complex socio-material patterns of subsistence, procreation, creativity, support, construction, migration, inheritance, livelihoods, recreation, renovation, waste generation, adaptive re-use, densification, displacement, consumption and so on. All of these interlocking components combine with spatial configuration to determine how the physical structures in the neighborhood (including houses) will be used, and if they will be durable, equitable and environmentally benign over generations. One building and one inhabitant isolated in time and space cannot be considered sustainable⁵⁰. The duration or lifespan of a particular neighborhood is a function of much more than the spatial configuration of buildings, parks and roads: the durability of a neighborhood (as a space-place hybrid) also depends upon the development of sustainable *social* capital – the equitable exchange of knowledge, the advantageous cultural norms, and the critical communication networks through which communities share power and resources with the explicit intent to persist over generations (Dale, 2005). A comprehensive definition of ‘sustainability’ must recognize the inseparable, dialectical interactions between people, the built environment and non-human nature over time and across scales if it is to adequately aid urban planning and if such a definition accommodates an evolutionary vision of humanity.

Once a building is inhabited, a transition occurs. Each home will display distinct patterns of use and react to habitation in direct response to the quality and quantity of that habitation. Over time, people and houses interact to become homes with layers of past

⁵⁰ The cult of individual responsibility and rewards in North America culture absolutely obscures urban interconnections of all kinds.

and future and webs of social and material interaction in the neighborhood and beyond. Buildings and people and nature – Cidell’s (2009) *built environment* – interact over time to become communities.

Recently, urban theorists and planners have started referring to *resilience*, which encompasses conventional sustainability criteria but better links with strategies communities might employ to diminish and mitigate risk from climate change impacts. Municipal planning for sustainability and preparing for climate change both depend at least as much on social and place-based variables – culture and human knowledge and patterns of behavior over time – as they do on the physical configuration of space. However, developers’ public discourse indicates that they are oblivious to climate change. Representations of the social aspects of sustainability, including the interactions between people, the *built environment* and the rest of the world, are carefully managed in growth lobby discourse in Ottawa to deflect criticism so that developers and investors can continue to profit from environmentally unsustainable practices.

The term ‘sustainable development’ has stimulated copious debate since the Brundtland Commission (WCED, 1987): it is now contentious, contested, and appropriated by environmentalists and capitalists alike to the point where now it means everything from sustainable growth of the suburban housing industry to the persistence of life as we know it on Earth. “Sustainable housing” is especially problematic. To be clear, house building has distinct environmental impacts that vary by how and with what they are built, by how they occupy space (e.g. houses with small footprints are easier to heat), and by their spatial relationships with each other (e.g. certain locations and groupings make houses easier to supply with services). Even identical models will vary (i.e. each

will be built somewhat differently depending on, for example, the weather at certain stages in the process), will respond to the sun and weather differently, and will require different inputs (e.g., maintenance, heating, renovation), all other variables held constant. To the extent that developers and builders are conscientious in their choices of materials and practices (and there seems to be no independent data on construction ‘quality’ in the Canadian housing industry), the *construction process* may be described as more or less benign to the builders, the Earth and the inhabitants of the housing. The fact is that few tract builders in Ottawa produce housing that exceeds building code standards⁵¹, and growth lobby definitions of both ‘green building’ and ‘sustainability’ are woefully underspecified when they appear at all. Granted that improving energy efficiency is critical, but to claim that a suburban single-family detached house is ‘green’ or ‘sustainable’ because of the materials or techniques used during construction de-emphasizes the many social and environmental impacts of tract-built suburban housing detailed in Chapter 1, and this chapter, which occur *after the builder is gone*. Negative intergenerational implications of current practices are conspicuously absent from growth lobby discourse. Moffat and Kohler (2008) state bluntly:

With few exceptions, the building industry as a whole has no ability to develop forecasting and backcasting scenarios for different investment options, or to consider the likely impacts of key external forces such as technological development, climate change, demographics, resource scarcities, natural disasters, and globalization. *It appears that simplistic concepts of time are the single greatest obstacle at present to developing an effective conceptualization of the built environment* (266, italics added).

⁵¹ An extensive scan of the websites for the major tract builders in Ottawa in early February 2013 found few references to ‘green building’ apart from Energy Star specifications, which, at the time, were building code standards.

Despite the growth lobby propaganda about ‘progress in the homebuilding industry’ (see CHBA, 2008; Build, 2011), most greenfield residential builders in Canada build products which can be scrutinized like any other commodity which is advertised as ‘green’ or ‘sustainable’. A ‘cradle to cradle’ analysis (McDonough & Braungart, 2002) is especially revealing when investigating any specific industry and/or product. The housing industry clearly falls short when one chooses to examine the lifecycle of a typical tract-built house or development in Canada.

To start with, tract builders strip all existing structures and flora and fauna from the landscape, erasing history and species (and the ability of the land to produce food) over multiple hectares in order to simplify construction. Although various levels of the state try to preserve some natural features on construction sites, trees are considered a nuisance and water is either drained or tamed (i.e., streams are directed into culverts, marshes are filled, etc.). Roads and lots are most often designed to maximize units per hectare rather than solar gain in peoples’ homes.

With regard to production, tract house construction can be dehumanizing for workers. From my own experience of new house construction, construction processes include: hazardous practices that often result in injury; physically demanding work that prematurely ages workers; deficient on-site training for many of the trades; a machine-like organization and pace of the work; the detachment of labor from the finished product and profit; a transient workforce; the absence of craft pride; the meddling of unions and organized crime (especially in Québec); backwards municipal regulations; and persistent attempts by developers to de-value labour by pitting contractor against contractor in bidding contests. A final aspect of current practices clearly distinguishes tract building

from smaller scale craft or custom building and is perhaps one of the most negative aspects of current practices: most of the men who build a million or more suburban houses in North America every year will almost never meet the people who will live in those houses⁵². This last observation represents the complete transformation of home into commodity.

The detachment of labour, the separation of tasks, and the materials used mean that mass-produced housing is not built to be durable and requires major repair or replacement every 30 to 50 years (see, for example, Benson, 2006; Lewis, 2011)⁵³. At the end of its life, a house is most often knocked down into a heap and trucked to a landfill site taking with it all of the embodied energy and resources in an inseparable mix of materials. As for construction materials, even recycled content in new materials is rare: re-purposed renovation waste is rarer still. Builders invariably opt for new materials with all the embodied energy involved. Further, GHGs associated with production and transportation of materials are a largely hidden concern with regard to house building. Finally, building materials are sourced wherever in the world they are cheapest, another problematic element of a life cycle analysis of conventional suburban development. The life cycle of a standard, stick-framed suburban single family house is short and wasteful regardless of the low-flush toilets and other bolt-on ‘green’ features offered as options by builders (and as installed in the Minto *Ecohome*).

The other much more obvious main concern, one that increasingly preoccupies urban politicians and planners, is the municipal fiscal and climate impacts associated with

⁵² Developers typically forbid house buyers access to jobsites ostensibly over “safety” and insurance liability concerns.

⁵³The CMHC (2008:39) reports that Canadians spent \$12.5 billion on “repairs” to their homes in 2007.

low-density car-based development. If ‘sustainability’ is determined strictly by fossil fuel consumption and atmospheric carbon production, it could be argued that transportation – to jobs, shopping, recreation and so on – is the single most significant determinant of the ‘sustainability’ of a new development. Transportation is the key factor in most arguments against exurban low-density residential development. Again, one must look beyond individual suburbs to understand the full effects of urban form on planetary ecology. Spatial scale is another element of urban sustainability conspicuously missing from myopic growth lobby discourses because, similar to references to time scales, to acknowledge the global impacts of development practices would be to acknowledge the need for change. It is far easier and more lucrative to keep consumers focused on a carefully managed, commercial version of ‘home’.

Transportation – especially current patterns of commuting to and from work – is but one of many negative social and ecological implications of low-density single family residential development. Other implications of suburban development include “big box” retail developments which draw shoppers by car from both core and suburbs, additions to electronics, the assault on community cooperation induced by the myth of private property⁵⁴ and increasing mobility, landscape uniformity and so on (Blais, 2010; Hayden, 2007; Robbins, 2007; Sewell, 2009). Car use, and hence controversies linked to the spatial configuration of suburban developments, cannot be examined apart from shifting western values that are symptomatic of a complex malaise gripping industrialized countries (i.e., the contradictions between growth in consumption and a prolonged contraction of the global economy coincident with declining ecological systems).

⁵⁴ Suburban commodification dictates that each house has at least one car, a lawnmower, a snow blower, a television and so on. These items are rarely shared between households.

A similar comment can be made about the prevailing focus on building envelope energy efficiency: they are necessary but by no means sufficient sustainability strategies and, like the emphasis on car use, may obscure more substantive urban planning solutions. The location of a home and its physical make-up are but two variables in a complex ecological arrangement. By demanding tighter building envelopes and renewable materials, and by promoting denser, mixed use development, regulators are becoming more progressive, but are still not embracing the organic whole of a home and all its exchanges and flows within a complex local-to-global ecological system over time. By focusing on the material structure of houses and neighborhoods, regulators and producers stagnate in fashionable planning jargon and ignore the messier and much more time-consuming task of facilitating materially and socially integrated communities, and, ultimately, educating citizens about responsible consumption patterns. As I have argued, there are multi-scalar levels of complexity to sustainability about which Canadian suburban housing consumers may or may not be cognizant, and on which they may or may not act. How many consumers of new suburban Ottawa housing question the security of their food, let alone the underlying societal premises and consequences of current Canadian patterns of consumption? Given the sales of new single detached housing outside the greenbelt in Ottawa and comments from the interviews in this study, Ottawa consumers are driven almost completely by dollar cost.

At the time this dissertation was written, despite official statements by development industry lobbyists about improved energy efficiency, residential development was rarely if ever connected in any comprehensive way with global environmental impacts by producers. Potential climate change impacts *on* housing were

likewise considered outside of normal industry purview. In fact, Canadian Home Builders' Association representatives participating in a National Round Table on Economy and Environment panel discussion about climate change stated: "Preparing for impacts of a changing climate is (generally) not a priority business issue" (CHBA, 2011). This evasion is, I posit, negligence by producers and the state.

The closing date for a new house (or a move-in date for any rental dwelling) marks a crucial moment in the political ecology of a dwelling in which it transitions from the material embodiment of human labour, possessing the simple exchange value of a commodity (as per Harvey, 2010a) to a complex socionatural hybrid – a home – imbued with use values and embedded with other homes in the organic metabolism of the city (Heynan et al. 2005; Heynan, 2006; Swyngeouw and Heynan, 2003). Homes consist of constantly evolving patterns of complex biophysical and social interrelations, some of which are directly implicated with climate change, and which cannot be examined independently from one another (or from global ecology). The organic metaphor is intentional: if homes are integral to a larger organism called a neighborhood, and if nature is truly social and society is embedded in nature, it is profoundly detrimental to social nature if producers plan and build commodities for exchange instead of organically integrated homes and neighborhoods.

Production or tract housing varies little in North America: suburban houses are designed and built as shelters to protect and/or isolate certain specific people from certain other people and the physical environment, and to fill with consumer products. Groups of houses are called developments. But, one might argue that housing is a *process* (Wigle, 2008), and homes can be better conceptualized as cells with permeable membranes

through which people, messages, goods, energy, nutrients and wastes are exchanged, cells which join to create more complex socionatural processes – neighborhoods (versus ‘developments’) – over time. People and houses combine to become homes and neighborhoods and cities (depending on the scale at which they are conceptualized). Patterns of interaction between people, between people and materials, and between people, the *built environment* and the world beyond, determine the health and durability – the ‘sustainability’ – of a community and the social and physical structures in it over time (Castree, 2001; Cidell, 2009; Martin, 2009). Evidence of climate changes associated with residential development make it even more important to consider homes as organically integrated into the rest of the world

From this perspective it is misleading for typical residential developers to suggest that their practices are ‘green’ (leaving Minto, one of the leaders, aside for the moment). Typical production builders *and their customers* have very limited knowledge of the full array of current and potential political, economic and ecological variables associated with homes, which is why granite countertops continually out-sell heat pumps and extra insulation as upgrades, and why, in Canada, carbon production is still considered an individual choice and responsibility of consumers in a competitive market. Current ex-urban mass-production practices in Ottawa seem to be tied to an aggressively growth-driven, underspecified and myopic political economic model, a model that increasingly contradicts urban planning best practices around the world and seems designed to detach people from ecological systems. The term “home builder”, as used by tract developers, is a marketing fiction that has been in use for so long that it is embedded in both economy and culture. Tract builders build ‘products’ or ‘units’ for sale and are implicated in

ecosystem degradation like myriad other manufacturers around the world who shunt risks and costs onto the public and the commons.

There exists a stark contradiction in Canadian political ecology: while current planning best practices clearly acknowledge that conventional suburban development has large municipal, fiscal and environmental costs, certain large industries – namely housing, cars, fossil fuels and banking - generate enormous profits from suburban development. Is it coincidental that, within a globalized neoliberal market economy, millions of Canadians believe that a consumer lifestyle, including a heavily mortgaged house in the suburbs and two cars bought on credit, is not only a socially expected ‘norm’ but also a democratic right?

The growth lobby emphasis on the economics of urban development that it bears no resemblance to any comprehensive definition of ‘urban sustainability’. In growth lobby discourses the “elephant-in-the-room” issue of housing affordability is so disconnected from the original Brundtland Commission conception of sustainable development and so blatantly enmeshed with the generation of surplus capital, that it in fact highlights the major contradiction of capitalism more than anything else: to generate equity, capitalists must necessarily generate inequality (Harvey, 1996, 2010a). Despite the growth lobby’s constant references to ‘affordability’, they never define an ambiguous, contentious, slippery and nearly useless word, nor do they specify which housing should be ‘affordable’, for whom, or for how long. The simple fact that a third of Canadians will never be able to afford to buy a house (Statistics Canada, 2011), regardless of how that particular social value has been normalized, never enters the growth lobby discourse on ‘affordability’. Again, the discourse depends to a large extent on individual

interpretations of an ambiguous word and the emotive association attached, as well as what is left out. Who would argue that housing should not be ‘affordable’? The strategy serves to deflect criticism and debate about inequality, and bypasses the fact that suburban development is extremely profitable, especially for the largest corporations involved. Again, an abbreviated discourse rationalizes surplus accumulation and bypasses costs to the commons. In contrast, the concept of *homeecology*, the examination of multiple scales, and focusing on the phenomenological aspects of homes in marketing are effective antidotes to standard neoliberal discourse.

The Ottawa development growth lobby discourse fits neatly into a larger entrenched, global, anti-government, neoliberal economic discourse that prioritizes economic growth at all costs. In terms of a comprehensive conception of the sustainability of humans on this planet that specifies equitable and responsible sharing of resources including shelter, mass-produced low-density suburban residential development in Ottawa is a function of the practice of treating homes as products rather than processes, treating inhabitants as consumers rather than households and families, and prioritizing exchange values over use values. The commodification of homes, a pattern embedded in North American politics, economics and culture for at least a century, may be more intractable than suburban tract building itself. As in Robbins’ (2007) research, the question remains: Does the industry meet or create demand? The answer is both, as the Minto case study demonstrates.

5.5: On Minto in Manotick: Leaders *and* greenwashers? ⁵⁵

Environmental discourses in this study and in Canada more generally during the past four years were notable for their inconsistency and lack of commitment. This research followed Minto closely over four years along with other companies whose employees were interviewed. During that time, Minto's public discourses in popular media varied considerably. Minto was easy to analyze because Minto has an extensive public discourse – far more than the developers whose employees were interviewed. But Minto's discourse about sustainability and green building proved both inconsistent and confusing. Minto's newspaper advertising mentioned 'green' features in some of their products for two or three issues of the weekend *Ottawa Citizen*, but then marketing allusions to 'green' would disappear for a month. Advertising for developments intended to be LEED-certified (e.g. Chapman Mills and Quarry Glen) mentioned nothing about 'green' one week, then featured it the next. Minto experimented with a variety of strategies for marketing *Mahogany* before, during and after their case was before the OMB. A recent feature article on Mahogany in the *Ottawa Citizen* (see Murray, 2013) includes a very brief mention of LEED certification in the last sentence but then claims "it is not clear which level [i.e. LEED H or LEED ND] the development will seek" (Murray, 2013: 19).

The Murray article (above) is remarkable for its very positive portrayal of the *Mahogany* development, and the *Citizen* at times seemed to be a Minto marketing medium, promoting the company and their products in numerous feature articles⁵⁶. Sheila

⁵⁵ Minto is now called Minto Communities Inc. From the perspective of *homeology*, Minto's new name is a revealing juxtaposition of words and concepts which points to the commodification of community, a basic human need.

⁵⁶ The 11-page March 2, 2013 *Ottawa Citizen* Homes section carried two full-colour full-page ads, one half-page ad, and one quarter-page ad for Minto developments, in addition to a two-page feature article on the Mahogany development by the Homes editor, Anita Murray.

Brady, a regular Homes section feature writer, frequently showered the company with unabashed praise, occasionally interspersed with brief mention of the controversies that involved the company. Brady often appeared as an apologist for the growth lobby in Ottawa, defending the development industry (see Brady 2009a). Another opinion piece writer for the *Citizen*, Randall Denley, was featured on another developer's website promoting an extremely controversial development in west end Ottawa (see Denley, 2010). Over the same time period, the few developers who had been advertising green features in the *Ottawa Citizen* removed that part of the discourse from their marketing. The inconsistencies in marketing and public rhetoric represented tentative steps towards green marketing by developers in Ottawa that disappeared by early 2013.

Certain behaviors by Minto officials were also puzzling. The reader will recall that my first contact with Minto was a discussion with a senior sustainability manager who was clearly distressed by the challenges of convincing piecework contractors to build the Eco Home. The Eco Home was intended as a research project to test certain energy-saving and energy-producing technologies. In fairness, given the novelty of this endeavor, it is not surprising that the project did not proceed smoothly, and that there were lessons learnt along the way. But Minto masked the challenges and portrayed the project as a pioneering accomplishment. A Minto tour guide informed a colleague that "she could not afford the house" and that it was not feasible from a production builder's perspective because it was mostly experimental. But then Minto claimed that this experimental, uninhabited single detached house on the outskirts of Manotick was the "greenest home in Canada" at a time when there were numerous houses in the Outaouais

region and beyond that were far more environmentally benign. Minto's claim was strictly for marketing and had little relation to the challenges of the project..

Then, as I watched the *Mahogany* story unfold in Manotick, I was struck by numerous contradictions within the company's discourse and public interactions: Minto fought the City and the village at the OMB and then at a provincial court to build a large, low-density development in an outlying suburban area while claiming in public documents and marketing that the company "inspires communities to contribute to a healthier planet" and offers "features and programs that promote a sustainable environment" on their website (see Minto Green, no date). It became increasingly difficult to reconcile Minto's public rhetoric and Minto's actions in Ottawa.

Over the four years of this study there were numerous contradictions between Minto's aggressive business tactics and their rhetoric about sustainability. The most contradictory element of the story was that Minto was not simply capitalizing on green fashion. The company clearly greenwashed in some of their discourse, but in an industry that is rife with questionable claims and environmentally unconscionable practices, Minto had more earth-friendly initiatives than any other builder in Ottawa. Minto had a full-time dedicated "green team" studying building technology; Minto reduced construction waste dramatically on its jobsites; Minto marketed (their version of) green building to an ambivalent and/or ignorant consumer, educating them in the process; and the company produced low-rise, mid-rise and high-rise developments that generated far less havoc on the environment than standard practices. Minto's energy efficient housing was certainly a step up from the poorly performing planned obsolescence in the suburbs that the growth lobby insists it has a moral obligation to promote. Minto had embarked on a mid-rise

development in Barrhaven, *Ampersand*, that is a radical departure from LDSRD; and Minto donates millions of dollars to charities every year (granted, receiving large tax write-offs in return). When asked about leaders in sustainable residential development in Ottawa, most of my interviewees pointed to Minto, probably because the company was involved in high-profile ‘green building’ public-private partnerships like the *Ecohome* and *Ampersand*, and probably because the company was the only firm that carefully and overtly marketed ‘green building’ in Ottawa at the time. And at a time when the public seemed to be suspicious of ‘green’ marketing, and was simultaneously growing concerned about climate change, Minto seemed to be creating a green spin *and actions* that coincided closely with other industries that were showing apparent corporate responsibility around environmental sustainability. But in seeming direct opposition to apparent sustainability initiatives, Minto vice-presidents also lead the growth lobby in its efforts to reduce government ‘interference’ in the development business (see Alliance for Building a Better Ottawa, 2011).

Neoliberal politics are woven tightly into residential development in Ottawa. It appears that, as a private corporation, Minto has more latitude than the City when it comes to implementing plans, as exemplified by, for example, *Mahogany* on one hand and *Choosing our Future* on the other. With the help of public relations, planning and legal professionals Minto convinced the OMB, then a divisional court (when the City appealed the OMB decision), and then the town of Manotick, that *Mahogany* was appropriate. In contrast, the City did not have comparable resources to promote *Choosing our Future*, nor was the current City council politically inclined to implement such a bold vision, perhaps because it would have seriously curtailed LDSRD. This simple

comparison makes it clear that certain actors in Ottawa control the discourse more than others. The City's sustainability discourse is restricted to the official website and planning guidelines and zoning that is regularly amended. The growth lobby's discourse is covered by regular articles in Ottawa popular media as well as online.

Time and timing are important for developers and especially for Minto's discourse. During a hiatus in concerns about the environment, as public attention is directed towards economic concerns, and as consumers become saturated with greenwashing, Minto's strategy is apparently to both re-define the terms 'sustainability' and 'green building', and then use the terms to re-brand themselves as experts in order to guide residential development in Ottawa. The branding also serves to distinguish Minto from other developers who build nearly identical products in the Ottawa region.

That a private, for-profit corporation has assumed the task of defining sustainability for Ottawa is troubling because Minto's forays into 'green building' solve at best half of the challenges of residential sustainability. Most of Minto's developments are not sustainable as defined in urban planning literature (e.g. Grant, 2008, Chapter 10). In addition, similar to the GOHBA, Minto claims that they strive to make houses 'affordable' but they never define the term, and there are 10,000 families waiting for "affordable housing" in Ottawa (ONPHA, 2012). Finally, like all other residential tract builders Minto claims to build 'homes' and 'communities' when such claims give builders god-like powers.

Despite Minto's elaborate public discourse that implies that they have been 'green' since 1955, Minto has code-built close to 70,000 houses in Ottawa over the past half-century, and has apparently only been building to above-code standards for premium

prices within certain developments within the past 5 years. While the step up in standards is welcome, Minto's discourse masks the sheer quantity of minimum-code products they have mass-produced since the company was founded, and the massive profits accumulated by the Greenberg family mostly in Ottawa. The discourse also masks that the company is making changes "around the edges of sustainability (Oden, 2010).

While Minto continues to build standard tract housing in some developments, Minto is also doing more to drive improvements than most tract builders in Ottawa (who build to minimum standards). But at the same time that Minto and a select few other tract developers assume leadership roles in a relative industry leadership vacuum, Minto's innovation remains firmly entrenched in a century-old political economy of suburban development. *Mahogany* is close to shopping, and the housing *may* be more energy efficient than code standard (in March of 2013 the company was still debating whether it would be LEED H certified), but Minto's "signature" 'community' will be another low-density suburban residential development – this time with high-end houses. Minto has not significantly altered urban form and *Mahogany* residents will still be dependent on their cars. One can only conclude that Minto's innovation in Manotick is in its marketing campaign alone.

Again, however, an apparent contradiction surfaces: despite how they twist the rhetoric around sustainability, Minto finds resources for, and devotes resources to, at the least, a more efficient 'product' than what is built in 90 percent of suburban residential development 'products' in Ottawa. Minto is perhaps, the best of a hyper-competitive, growth driven lot.

5.6: Summary and discussion of Chapter 5

Chapter 5 assembled elements of several theoretical streams from Chapter 2 in order to reclaim homes from neoliberal growth lobby discourse and redefine them as socionatural hybrids and organisms embedded in other organic entities – cities, regions and global ecology. The particular configuration of theory in the dissertation is intended to enable another perspective for urban researchers to use to explore how capitalism infiltrates homes to influence and expand the culture of consumerism in suburban Ottawa. Homecology also offers a counter-narrative to sustainability discourse as offered by Minto Communities Inc.

This dissertation is a critical examination of the residential development industry in Ottawa, and I have targeted Minto, one of the largest developers in the region. It is perhaps easy to target an apparent front runner, especially a company that is so much in the news, and offers so much discourse to dissect. At this point, I wish to state that, although the dissertation points out contradictions and inconsistencies in Minto's marketing and actions in Chapters 4 and 5, and despite the reluctance of Minto employees to be interviewed, I understand that there are people working in Minto, and from inside other companies in a change-resistant industry, to alter practices for the better. The results of a post-structuralist inquiry simultaneously confound and complement a structuralist analysis of the residential development industry. If they are similar to the other innovators in the interviews, Minto employees are also probably trying to alter entrenched practices in the building industry – albeit without altering patterns of capital circulation. This last point highlights a dilemma for urban planning on a large scale: despite well-meaning employees, for-profit building industries operate

under economic logic that contradicts environmental logic. Will the latter form of logic at some point subsume the former? This question requires one to again step back to look at the larger scale.

CHAPTER 6: SUBSTANTIVE CONCLUSIONS AND POLICY IMPLICATIONS DRAWN FROM THE RESEARCH

6.1 Introduction to the final chapter

The last chapter of the dissertation consists of closing comments. Section 6.2 offers conclusions and policy implications from the research. Section 6.3 suggests limitations and directions for future research. Section 6.4 posits some contributions to geography literature from the dissertation.

6.2: General conclusions and policy implications

To deflect some criticism from an easy target, Minto, the dissertation now draws attention to other complications in urban development in Ottawa and Canada more generally. As mentioned, the growth lobby in Ottawa resists change. The latter group is another target for criticism, because strategic elisions in public marketing (a) hide the full costs of housing to consumers because they omit rising costs of commuting, and (b) they absolutely bypass environmental sustainability. “Business-as-usual” developers, material suppliers, real estate and legal professionals and so on sometimes actively and overtly fight change to protect profits, and in the process, actively fight sustainable urbanism. The City of Ottawa and consumers are implicated because politicians typically plan until the next election, and consumers have been conditioned to be unrealistic about consumption patterns and ignorant about the impacts of consumer lifestyles on planetary ecosystems. This latter issue – ignorant consumers – is especially troublesome. In my opinion the lack of leadership and coordination on environmental education is a symptom of a larger issue, the global control of discourse by for-profit corporations. Changes to a market-based approach to essential goods and services and preserving the environment

require democratic input by an informed public. A public that is not globally informed will not question the status quo and will not transition towards more sustainable behaviours.

Conclusions from the research can be organized by scale. First, the most common method of tract building in Ottawa (i.e. site-building by piecework contracts) is not conducive to erecting durable structures or to (re)conceptualizing labour as a set of interactions between non-human materials and workers. In other words, competitive piecework contracts artificially separate workers from *homeology*. Construction managers who assume trades “do not care,” and the generalized antipathy between trade contractors and site supervisors, are symptomatic of the alienation of labour from the outcomes (and products) of their labour. I can attest from years in new construction that there is an ethos of haste and compartmentalization of tasks that isolates workers from the multi-faceted and tightly integrated functions of homes.

The above conclusion bridges theory and practice: until homes are acknowledged for their full range of interactions with and impacts on the world, those impacts cannot be fully specified, studied and mitigated. Relatedly, house builders who claim to build ‘homes’ and ‘communities’ are at best following long practice in the industry, and at worst manipulating deep-seated human needs to sell a consumer product. Currently, piecework tract contractors build commodities for exchange to generate profit for residential developers. Homes and communities are what happen after developers and contractors leave. By ignoring the spatial links between homes and the rest of the planet, producers can then compartmentalize and ignore the negative impacts of their practices, assigning responsibility to consumers and the state for the larger issue. Producers bypass

responsibility by claiming they are “building to code”. Developers and development must be regulated by all levels of the state acting in concert to derail business-as-usual. There is no time to wait for “the market” to lead change.

The house-home, development-neighborhood distinctions are also useful for examining the growth lobby discourse. The growth lobby in Ottawa, which includes senior Minto employees, does not talk about the environmental impacts of low-density suburban residential development. Although both the market and the state are influencing denser construction in the suburbs, in this research, the lobby’s obsessive fight against anything that interferes with capital accumulation, thinly disguised as a concern for “choice and affordability for consumers”, appears to be a significant barrier to sustainable development in Ottawa. The lobby’s influence emerged in the interviews when producers and regulators both stated that there had to be a business case for sustainability or developers would not buy into it. The logic of such a philosophy is both predictable and dangerous.

As mentioned in the previous section, the federal government of Canada stands directly in the way of urban sustainability by refusing to display leadership on climate change even in the simplest terms of reducing greenhouse gasses. The leadership vacuum is itself a function of an economic re-distribution of wealth in the world that has clawed income from many to increase the wealth of a few. Canada seems to be trending towards fiscal conservatism, neoliberal retrenchment and substituting informed dialogue about the global environment with propaganda about exploiting Canada’s primary resource riches. In March of 2013 during CBC hockey broadcasts, advertising by the Canadian Association of Oil Producers was paired with Government of Canada advertising for the

Economic Action Plan that includes imagery very favourable to the oil industry. The current Canadian government is focused on purely short-term (rather than intergenerational) political-economic (rather than social) prosperity, and seems pathologically obsessed with fossil fuel extraction over all other sources of energy (Simpson et al., 2007). The Canadian government offers a patchwork of environmental policies and programs to Canadians but lacks a coherent, comprehensive climate change strategy because it would interfere with accumulation of surplus capital by large corporations including the growth lobby. The federal government, in fact, purportedly treats 'sustainable growth' as a sign of a healthy society rather than an oxymoron and an impossible system of exchange in a finite ecological system. To wit, there are no federally coordinated efforts to educate consumers about societal changes necessary to reduce climate change. Perhaps such efforts would lead educated Canadian voters to be less favourable to Conservative Party policies on resource extraction and the promotion of a carbon-intensive economy.

My interviewees agreed both the state and industry are responsible for educating consumers about green building. It appears that short term economic consumer thinking apparently trumps green upgrades that would save dollars and the environment over the long term. The issue of environmental literacy might be linked to the point above about the lack of leadership from senior levels of government. One might assume that if the federal government prioritized conservation over resource exploitation, worked more closely with the provinces to reduce GHG emissions through coordinated regulation, and mandated education about global environmental issues, more progress might be made to cut Canada's impacts on the environment. As one of my federal government interviewees

stated, “regulation is better than no regulation.” These suggestions seem daunting and idealistic especially during a protracted global crisis of late western capitalism during which the Canadian government promotes a fossil fuel-based economy. Environmental literacy and action could be seen as a major impediment to current federal strategy.

My research absolutely contradicts the assertion that a ‘free market’ that somehow operates apart from Earth’s ecosystem will solve human-induced ecosystem degradation in Ottawa. The “free market” in Ottawa’s suburbs has few options, all of which are set by corporations intent on generating growth in surplus capital from the commodification of homes, aided by a state apparatus that is mired in a growth-based economic rationality. Environmental leadership, and regulation of industries like residential development and building, are not forthcoming from the current federal government, certainly not at the pace or stringency required to slow changes to planetary ecosystems. Leadership would require clear agreement by both the state and the residential development industry about the problems associated with carbon-intensive urban form. Leaders on both public and private sides of the debate must first agree on a discourse about urban sustainability.

6.3: Limitations and future research

The attempt to jump scales and ontologies by combining structuralist with post-structuralist theory was awkward from the start. After comments from a committee member at my proposal defense I tried to jettison phenomenology, but the more I pondered the difference between a house and a home, the more I became convinced that understanding internalized affective attachments, akin to Bordieu’s (1990) *habitus*, was essential to understanding how developers and builders use specific archetypal

conceptions of home to sell houses and low density suburban residential development. In other words, capitalists commodify and expropriate an archetype and a deep-seated human need in order to sell a commodity. The tactic is exactly the same as any marketing that appeals to the need for family, love and/or community that guides most appeals to consumers (Steinberg, 2007), and it is also very similar to using an archetypal “nature” in marketing. Again in the spirit of Bourdieu, there were other reasons for linking structuralist and post-structuralist theory and methods in addition to deconstructing marketing: if linked to an urban ecology model, a critical geography of homes enabled multi-scalar observation of very localized consumption patterns in a relatively affluent city during late western capitalism as they spiraled out to global ecology. However, the dissertation might explore the organic simultaneity of houses and homes more sufficiently. Late in the research I stumbled across recent writing on critical geographies of home that would be very useful for future research (see Blunt and Dowling, 2006), especially with regards to North American cultural values, gendered spaces, and the links between nationalism, capitalism and suburban landscapes.

Throughout, the dissertation makes assumptions about the phenomenological aspects of home and the differences between houses as consumer commodities and homes as socionatural hybrids. The assumptions are based on readings about the concept of home (Nozick, 1992; Relph, 1976; Tuan, 1977) that follow from my own positionality and conception of home. Early in 2012, I had the opportunity to examine the cross-cultural comparability of definitions when I participated in two workshops on “sustainability at home” in Udaipur, India. Participants’ comments about personal responsibility for sustainability in the global environment indicated that homes were

sacred places enmeshed in complex webs of social and material exchanges, very similar to what I theorized in Chapter 2. Did I get what I expected from these interactions in India? Given the cultural differences, including the fact that the sessions were simultaneously translated into Hindi, I tend to assume the concept home is endowed with similar qualities in both Canada and Udaipur. I also took note of the increasing commodification of homes in India during a generalized urban real estate boom, the transition from the traditional Indian “joint family” which typically included three or more generations in one household, to a more western-styled single-generation household, and the effects of a relatively recent introduction of mass consumer goods to one of the most populous countries on Earth. In addition, I noticed that discourse on “green building” paralleled that abbreviated version I encountered in the Ottawa development industry. However, that particular bit of peripheral research hardly constitutes a rigorous cross-cultural examination of *homeology*, nor do experiences during a brief visit to India portend a capitalist onslaught on homes in that country, nor does this dissertation provide exhaustive research on homes as universal archetypes. I took more modest information from the Udaipur workshops: these particular Indians had the same general understanding of the concept of home, and the same general understanding of the relationships between homes and the world, as was developed in this dissertation. As it turned out our conceptions and affective responses to the concept were very similar. Given the increasing global reach of capitalism and the potential havoc it will wreak on the environment, another potential research aim might be to determine if and how marketers infiltrate and use homes in other cultures, and especially in rapidly expanding economies like India, and if and how this process coincides with changing

patterns of consumption. Cross cultural exploration between cultures and countries may prove fruitful.

My discussion of the growth lobby may have been disproportionate to the impact I suspect the lobby has on local governance. In other words, the growth lobby in Ottawa has a lot of influence and demands more attention. As mentioned, the growth lobby is a useful concept for examining local application of broader political economy, especially when coupled with (the absence of) sustainability discourses. The research also bypassed a large body of literature on regime theory that might have been useful for comparing with sustainability discourses and outcomes. The emphasis on *governance* (i.e. the roles of state, industry and community actors in urban development – see Leffers and Ballamingie, 2012; Peck, et al., 2009) in regime theory seems especially pertinent given claims about behind-the-scenes political maneuvering in some of the interviews, as well as support for developers in the *Ottawa Citizen* newspaper, and in references in the interviews to organized community resistance to residential development in both urban and ex-urban areas. NIMBY itself is an especially intriguing phenomenon that increasingly influences (developers and city planners might say “interferes with”) urban development both inside the core and outside the core. In fact, one of my interviewees stated that NIMBY inside the core partly drives development into the suburbs. Are NIMBY reactions just self-interested individuals arguing against change, or are they neighbourhoods struggling to take some control over change, or some combination of the two? NIMBY might be seen as an exercise of power and voice, and as discourse that disrupts growth-equals-prosperity narratives. As such, NIMBY must be included in future studies of urban governance.

At the start of this research project, I intended to conduct energy analyses similar to the CanmetENERGY/Natural Resources Canada (2006) Urban Archetypes Project. Time did not permit this step, and as I learned more about the environmental impacts of various urban forms, such an analysis assumed less importance. There is sufficient evidence that car-dependent suburbs are not sustainable (CanmetENERGY/Natural Resources Canada, 2006; EPA, 2011; CMHC/Marbek, 2008). In addition, I became more fascinated by developer (and especially growth lobby) discourse over the course of the study, rather than comparing the discourse with measurement of outcomes on the ground via energy analysis. The social analysis took precedence because the energy analyses now clearly demonstrate the energy and GHG loads of exurban development. I wanted to understand resistance to change. In other words, I chose to look at what I considered to be the more difficult and less well understood side of the problem.

Finally, given my fascination with discourses, the study would have benefited from more emphasis on conventional discourse theorists like Foucault, Bordieu and perhaps Chomsky. I chose instead to analyze discourses using geography methods literature. A Foucauldian discourse analysis, perhaps combined with applied linguistics and cultural theory (see for example Lemke, 1995), might be appropriate methods for further study of urban sustainability discourses.

Despite these limitations, the dissertation contributes to the geography theory literature in ways that are summarized in the next section.

6.4: Contributions to the geography literature

This dissertation began as an empirical study, but eventually morphed into more of an exploration of theory. In contrast with the superficial usage of the term ‘green building’,

homecology is a start for a theoretical exploration of how both houses and homes are manipulated by state capitalism to drive economic growth and capital accumulation. Homes are crucial focal points in the discursive and material capitalization of nature: Especially via electronic media in the early twenty-first century, homes are key sites of infiltration and propaganda by state capitalism and thus key sites of manipulation of consumers and voters. In fact, this dissertation is an uneasy dialogue between two value systems – money value versus ecological value, and this points to another ontological tension: just as homes are not commensurate with houses, my research supports the assertion that money values are not commensurate with ecological values, observations that complement recent research on the neoliberalization of nature, which are critiques of attempts to assign dollar values to ecology and “ecosystem services”. I tend to agree with Paterson (2010: abstract) who suggests, “...capitalism and sustainability are inimical” (see also Bakker, 2010; Castree, 2003a; Castree, 2008). A system of exchange predicated on continuous growth of production and consumption in a finite ecosystem will not persist.

The advance to theory I hope I have contributed is that urban planners and regulators *and developers* might adopt a more organic conceptualization of the city in order to better understand cities as organisms that must benignly fit into global ecology if humans are to persist. This dissertation offers *homecology* (i.e. the dialectics of houses and homes, and the hybrid natures of homes) as a unique addition to urban planning and sustainability research, as a challenge to urban theorists to explore homes as cells in an urban metabolism, and as an invitation to planners and developers to acknowledge the full range of interactions between homes and global ecology rather than treating homes as

commodities in a value system that prioritizes economic exchange over environmental health. My research also distinguished between houses and homes to highlight how developers use specific archetypal imagery and emotive responses to deep-seated universal human needs to sell houses. I would also hope *homecology* would bring earth into the picture by acknowledging how marketers who do not have our best interests at heart infiltrate our homes and use our deepest and most sanctified values and desires to make us buy things that may not help us persist on this planet. At the scale of individual homes, I offer *homecology* as a foil by which theorists might contrast current residential consumption practices with a conceptualization of homes as organisms dialectically embedded in global ecology. *Homecology* is an extension of social nature and urban metabolisms research (Castree, 2005; Heynan, Kaika and Swyngedouw, 2006) tied to political economy and political ecology.

But I am over-complicating things. The dissertation was, in fact, an attempt to link homes to urban ecology. Of course, such conceptualizations directly challenge the commodification of human desires in twenty-first century capitalism. I think it is time to make that particular challenge more conspicuous.

APPENDICES

APPENDIX 1.1: HISTORY — CMHC MILESTONES

Source: http://www.cmhc-schl.gc.ca/en/corp/about/hi/hi_001.cfm
downloaded October 20, 2011

- 1946 Central Mortgage and Housing Corporation is established to house returning war veterans and to lead the nation's housing programs
- 1946 CMHC builds the Benny Farm in Montréal - one of the first subsidized housing developments in Canada
- 1947 Wartime Housing Limited transfers 30,000 houses ("wartimes") to CMHC to provide affordable housing for returning veterans
- 1947 CMHC begins monthly tracking of construction starts and completions
- 1948 CMHC publication, 67 Homes for Canadians, is among the most influential house plan books of the post-war years - selling over 29,000 copies by the end of the year, and shaping house design for the next two decades
- 1948 CMHC transforms an abandoned munitions factory complex in Ajax into Canada's first fully planned, self-sustaining industrial community
- 1950 Newfoundland and CMHC sign the first federal/provincial social housing project to offer rents geared to income
- 1952 CMHC leaves temporary wartime offices for new national headquarters in Ottawa
- 1954 National Housing Act amendments introduce Mortgage Loan Insurance to make home ownership accessible to more Canadians and make CMHC responsible for reviewing loan applications
- 1957 The Mark series of homes is the agency's first demonstration project - soundly built, affordable homes for Canadians
- 1960 In response to rapid urban growth, the Municipal Infrastructure Program offers loans to cities for sewage treatment and urban renewal projects
- 1966 CMHC builds the first cooperative housing project in Canada in Willow Park, Winnipeg
- 1967 Wood frame construction is exported abroad with CMHC's first international project to construct 137 homes in Harlow, England
- 1967 CMHC funds the design and development costs of Habitat at Expo 67, which demonstrates higher density housing
- 1969 The Strathcona Rehabilitation Project engages the public in community planning and forms the model for the RRAP program

- 1971 The Assisted Home Ownership Program offers reduced interest loans to help first-time buyers and help stimulate the housing market
- 1971 CMHC introduces Winter Warmth, its first assistance program directed to Aboriginal people, to help make urgent repairs to housing in rural and remote areas
- 1973 CMHC transforms reclaimed industrial land on Granville Island into a thriving centre for culture, recreation and tourism
- 1973 Neighbourhood Improvement Program provides funding to help municipalities restore the urban core
- 1974 Lebreton Flats project demonstrates high-density, innovative urban living concepts
- 1974 CMHC introduces the Residential Rehabilitation Assistance Program (RRAP) to help homeowners and landlords restore substandard and deteriorated buildings
- 1974 The Rural and Native Housing Program funds the construction or acquisition of housing units for low-income people in rural areas
- 1975 Mill Woods demonstration project in Edmonton tests site planning criteria for small lots and proves the feasibility of medium density housing
- 1977 CMHC administers the Canadian Home Insulation Program (CHIP) to encourage
– 81 energy-saving retrofits
- 1978 The Non-profit Housing Program is delivered for the first time on-reserve
- 1978 The Vieux Port project in Montréal demonstrates the successful combination of commercial and residential urban development
- 1979 Canadian Housing Information Centre (CHIC), Canada's largest housing library, becomes a focal point for transferring knowledge to the building industry, government and consumers
- 1979 CMHC changes its name to Canada Mortgage and Housing Corporation
- 1979 Milton Park area of Montreal is converted into one of Canada's most successful non-profit low-income projects
- 1983 CMHC is awarded the United Nations 1982 Peace Medal for promoting a better understanding among people of the ECE (Economic Commission for Europe) countries as host of a study tour on housing, building and planning
- 1986 Mortgage Backed Securities are introduced to ensure the long-term supply of low-cost mortgage funds in the marketplace
- 1987 The Market Analysis Centre (MAC) begins tracking local, provincial, regional and national housing markets
- 1988 National Housing Awards created to share innovations and best practices for housing in Canada

- 1991 The Partnership Centre is created to foster public/private cooperation on non-profit and affordable housing projects
- 1992 The Healthy Housing concept, which promotes innovation in occupant health, energy efficiency and economic viability, is introduced and demonstrated in Toronto
- 1992 The Barrier-free housing concept is showcased across Canada and forms the basis for FlexHousing TM
- 1995 CMHC's website is launched, providing Canadians and the industry with easy access to reliable, objective housing information
- 1996 Introduction of emili, an on-line automated mortgage insurance underwriting system, transforms approval times from days to seconds
- 1998 CMHC's Client Service Centre and 1-800 Call Centre open to provide housing information to consumers across Canada
- 1999 The Canadian Housing Export Centre (now known as CMHC International) is launched to share Canada's housing expertise with the world
- 1999 To mark Heritage Day, CMHC collaborates on a series of postage stamps to celebrate Canada's housing history
- 2000 CMHC keeps a former coal mining community in Tumbler Ridge, BC. alive through economic diversification
- 2001 Canada Mortgage Bonds help ensure supply of low-cost funding for residential mortgages
- 2002 Conference Board of Canada presents its Governance Award in the Public Sector to CMHC for innovation and leadership
- 2003 Canadian Housing Observer is launched to provide insight and information on the state of Canada's housing industry
- 2003 The Seabird Island Project is the first of its kind to demonstrate an affordable and sustainable planned community that honours Aboriginal cultural traditions
- 2003 Federal-Provincial affordable housing program begins, with \$1 billion in federal expenditure to improve affordable housing supply by an estimated 23,500 units.
- 2005 CMHC expands its renovation programs to provide for the creation of secondary and garden suites for low-income seniors and adults with disabilities.
- 2005 A 10 percent "green refund" is offered on Mortgage Loan Insurance premiums for homeowners who buy or build an energy-efficient home or make energy-saving renovations
- 2005 CMHC launches the first phase of Canadian Net Zero Energy Healthy Housing initiative to promote efficient use of energy for heating and electricity

- 2005 CMHC eliminates its mortgage insurance premiums on rental projects under the Affordable Housing Initiative and other projects with rents that are low enough to meet the needs of households who qualify for social housing. An additional 20 percent premium reduction is announced for affordable rental housing projects that meet the criteria for CMHC's partnership flexibilities.
- 2005 CMHC introduces the On-Reserve Homeownership Loan Insurance Pilot product without a Ministerial Loan Guarantee designed to increase market housing on-reserve, and signs the first trust agreement with British Columbia's Nak'azdli Band Council.
- 2006 CMHC launches the Energy Retrofit Program to help approximately 130,000 low-income Canadian households, including those on-reserve and in the North, to address the high costs of energy and help achieve better long-term energy efficiency.
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APPENDIX 3.1: INTRODUCTORY PACKAGE FOR INTERVIEWEES

Building Change: Research on Residential Sustainability in Ottawa.

Gary Martin, PhD Candidate, Dept of Geography and Environmental Studies, Carleton University
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My research has three purposes: (1) to identify drivers for green building in Ottawa, (2) to compare definitions of sustainable residential construction offered by City of Ottawa planners and residential builders, and (3) to identify barriers to green building and sustainable residential construction according to planners and builders. My research began with the observation that there are many different definitions of urban sustainability. The research is intended to explore whether varying definitions, or terms of reference with regard to sustainable housing, reflect different public and private priorities, and whether these differences may lead to increasing friction between two groups who must plan together to serve tax-paying housing consumers. The study will produce policy recommendations aimed at creating common terms of reference for both City planners and builders, reducing barriers, and facilitating the construction of more sustainable residential developments in Ottawa.

The study of urban development is also the study of economic and environmental impacts. The Canadian Home Builders' Association (CHBA) notes that housing is one of the largest industries in Canada, with over 200,000 starts and activity that comprised over 6.5% of Canada's Gross Domestic Product in 2008 (CHBA, 2009: 1). However, urban development is also accompanied by growing concerns about carbon production, water use, construction waste, indoor air quality and suburban sprawl (Canada Mortgage and Housing Corporation, 2007; Farr, 2008). But residential energy consumption, the most pressing concern in the context of global climate change, can be greatly reduced with advanced urban planning, house design, building materials and appliances. Industry observers suggest that, through the use of existing materials and best practices, mass-produced North American housing could be much more sustainable (Canada Green Building Council, 2009; Commission for Environmental Cooperation, 2008; Natural Resources Canada, 2007).

Builders and developers have begun to address the above concerns and the CHBA has well-developed policy on green building. But tensions exist between municipal urban planners reacting to environmental concerns, consumer preferences, and the profit-based goals of competitive house producers in a market economy. Ottawa, Ontario offers a good example of shifting municipal priorities, the interplay of multiple actors, different definitions of sustainability, and opportunities for green builders.

There is almost no academic research on the housing industry in Canada. I intend to research land planning and construction trends to identify the main drivers for change in Ottawa's urban development policies. Next, I will create case studies of several housing development companies in Ottawa in which I will explore definitions of green or

sustainable housing in interviews with representatives from the companies and their planners and trade contractors. I will also ask about policies and processes that interfere with sustainability planning and goals. I will then compare definitions and barriers across groups.

The research is structured to flow from a broad, literature-based look at urban planning right through to construction practices in Ottawa. The research will evaluate definitions of sustainability and the housing that results. How do Ottawa housing planners and builders define “sustainable residential construction”? How do definitions of sustainability diverge and converge, and how do they potentially guide the construction of housing? What gets in the way of sustainable urban development? This research is motivated by a desire to bring to the fore the voices of housing planners and producers whose perspectives are absent from research to date, and to expedite sustainable planning and building in Ottawa.

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Building Change: Research on Residential Sustainability in Ottawa

My name is Gary Martin and I am a doctoral student in Geography and Environmental Studies at Carleton University. My research is intended to explore definitions and applications of “green” or “sustainable” residential construction among planners, developers and builders. I hope that my research will help planners, developers and builders to develop common terms of reference about sustainability in Ottawa.

This interview will take up to 60 minutes and will be recorded. I will be asking only about official organizational policy and about your opinions about sustainable residential construction. There are no “wrong answers”, and my research will be much more useful if you are candid about official policies *and actual experiences* in residential development. I have included my standardized questions on the next page.

The information you provide will be kept private and confidential. I assure you that your name, or that of your organization, will not appear in my dissertation or any other publication without your written permission.

I will ask for your written consent to use your answers to my questions in my dissertation (see the form on page 3 below). However, you may refuse to answer any question you think is in any way uncomfortable or inappropriate. You may also request that your responses be deleted from my analysis and from the dissertation within two weeks of offering your response or opinion.

Any concerns about the questions themselves or the way I conduct my research can be directed to:

My Faculty Supervisor:

Professor Patricia Ballamingie, Dept. of Geography and Environmental Studies
Tel: 613-529-2600 Extension 8566 E-mail: patricia_ballamingie@carleton.ca .
or

Professor Antonio Gualtieri, Research Ethics Board Chair
Carleton University Research Office
Carleton University
1125 Colonel By Drive
Ottawa, Ontario K1S 5B6
Tel: 613-520-2517 E-mail: ethics@carleton.ca

To contact me (Gary Martin) at any time, phone 613-222-5432 or email
gmartin2@connect.carleton.ca

Building Change: Residential Sustainability in Ottawa Research Questions

1. How do you define “green building” or “sustainable residential development”?
2. Do you think environmental issues will affect how you plan and/or build residential developments in the future? How?
3. Do you think government regulations will affect how you plan and/or build residential developments in the future? Which level(s) of government (i.e. Ottawa/Ontario/Canadian)? How?
4. Do you think the private planning and/or building industries have a role to play in educating consumers about green building and/or sustainable planning? The government?
5. Do you think Canadian planners/developers and builders are producing the most sustainable residential developments possible? Why or why not?
6. Do you think your organization is planning/building the most sustainable developments possible? Why or why not?

7. Do you offer any green or sustainable features in your planning/housing? What kinds of green features would you like to offer?
8. What kinds of green features do you think consumers want in housing/developments? Do you think the market is growing for green features in new housing?
9. What do you know about the City of Ottawa's urban planning exercise called "Choosing Our Future"? (if negative, skip 10).
10. Do you think Choosing Our Future will influence how you plan and build houses and developments in the future? How?
11. Do you think the NCC will influence how you (plan and) build houses in the future? How?
12. What gets in the way of planning and building green housing in Ottawa? What are the barriers to sustainable development in Ottawa?
13. Who are the leaders in the Ottawa region in sustainable planning and/or house building?

Informed Consent Form for Participants in the Residential Sustainability in Ottawa Project

I have read and understand the purposes of the **Residential Sustainability Project** conducted by Gary Martin of the Carleton University Department of Geography and Environmental Studies. I understand that my responses to the questions will remain private and confidential and my name and the name of the organization I represent will not appear in Mr. Martin's dissertation or in any other report produced from this research without my written consent. I also understand that even if I sign this form I may refuse to answer any question in the interview, and I may retract any of my responses within two weeks of the date on this consent form.

Signed

Dated

APPENDIX 3.2: INTERVIEW PARTICIPANTS IN THE STUDY

	PSEUDONYM	POSITION AND DUTIES IN ORGANIZATION
1	Bill	Senior Federal government Sustainability Researcher,
2	Sally	Planner – City of Ottawa
3	Margaret	private Planning Consultant - Draws plans for major developers – represents developers at OMB hearings
4	Tim	Construction manager of development company
5	Gwen	Senior Policy Advisor, City of Ottawa
6	Fred	Owner, Small Development company. builds green without marketing green
7	Tom	Sustainability policy, City of Ottawa – recommended by both developers and other city officials
8	Cory	Policy Analyst – NRCan – involved in new National Model Energy Code
9	Todd	Political Aid and Developer Walks a fine line between politics and business - buying properties in Vanier
10	Jeff	Director of residential construction for large developer
11	Art	Site Foreman who deals directly with trades
12	Gail	municipal councillor
13	Alice	Greenfield Development Planner Balances company policy and municipal regulations in large developments
14	Gus	Ex-green building policy person for a developer
15	Peter	Senior Planner, City of Ottawa
16	Todd	Political Aid and Developer Buying and developing properties in Vanier
17	Bill	Senior Federal government Sustainability Researcher,

APPENDIX 3.3: CARLETON UNIVERSITY RESEARCH ETHICS BOARD, ETHICS CLEARANCE

Ethics Clearance Form

This is to certify that the Carleton University Research Ethics Board has examined the application for ethical clearance. The REB found the research project to meet appropriate ethical standards as outlined in the *Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans* and, the *Carleton University Policies and Procedures for the Ethical Conduct of Research*.

X New clearance

☐ **Renewal of original clearance**

15 October 2010

Original date of clearance: Date of clearance

Student researcher

Gary Martin

Status

Ph.D. student

Faculty supervisor

Professor Patricia Ballamingie

Department

Department of Geography and Environmental Studies

Funding status

Not funded

Title of project

Urban political ecology and transition in Canadian residential development

APPENDIX 4.1: GREEN BUILDING AND SUSTAINABILITY DEFINITIONS BY PRODUCERS AND REGULATORS

	PRODUCERS	REGULATORS
Green Building	<p>Building energy reduction and reducing operating and maintenance costs and the impacts on the environment;</p> <p>energy efficiency is important in how it relates to payback;</p> <p>green has to be above and beyond a certain percent of... normal, standard practice;</p> <p>green building is the building, the walls, the interior, maybe a little bit around the exterior, but generally it's the building;</p> <p>LEED;</p> <p>green building in my mind is the actual unit that is housing people;</p> <p>reducing waste;</p> <p>a green building is one that uses substantially less energy while taking into consideration the use of natural resources and indoor air quality;</p> <p>building products that have less impact;</p> <p>material life cycles, heat recovery ventilators, low VOC paints and carpets, formaldehyde-free cabinetry – all of that sits under the banner of indoor air quality.</p>	<p>you look at the building, it's uses, the function and so on – so the definition is built around that;</p> <p>basic sustainability principles from the Natural Step apply to buildings or apply to the whole community or apply to the whole city;</p> <p>Green building – I think of the whole movement with LEED;</p> <p>green building means to me energy efficient and affordable, uses the least amount of energy, and it's going to be the cheapest there is to operate and maintain... it [also] has to be durable in terms of long term maintenance;</p> <p>Super-insulated, south-facing windows, passive solar – this stuff is not new</p>

	PRODUCERS	REGULATORS
Sustainable Development	<p>A development is a group of units housing people;</p> <p>there is a healthier environment to live in – a healthier way to live;</p> <p>I define a sustainable built space as one that minimizes energy and resource use, uses appropriate material and considers material life cycles and uses environmentally aware methods of construction to minimize waste;</p> <p>integration of different uses within the same neighborhood;</p> <p>don't jeopardize the future generations by what you are doing today, and it has economic, social and cultural, and environmental components;</p> <p>LEED ND... it's a model we use for developing our communities;</p> <p>you focus more in less cars, more biking, more walking, closer to shopping, closer to work in that neighborhood</p>	<p>sustainable development is one that allows people to live their lives with a lower ecological footprint, a lower carbon footprint;</p> <p>reduce reliance on the single family automobile, reduce your impact on natural systems;</p> <p>sustainable development is a bigger picture – overall development like subdivisions and shopping centres, so it's not only the building but it's the roads and natural areas and walkways and transitways and our whole neighborhood planning;</p> <p>there's access to transit. Try and preserve the environment as much as you can so people have access to woodlots and stream corridors;</p> <p>as nice a place to live as possible and close to amenities so you don't have to get in the car and drive to the park or the school or whatever;</p> <p>get employment into these communities;</p> <p>collaborative community building and the community design plan process</p>

APPENDIX 4.2: DRIVERS FOR GREEN BUILDING AND SUSTAINABILITY BY PRODUCERS AND REGULATORS

	PRODUCERS	REGULATORS
Drivers for Green Building & Sustainable Urban Development	<p>as people in the industry we do have a responsibly to try to be at the forefront of what works;</p> <p>If you are commuting for an hour are you feeling productive?</p> <p>The building code will change, the City may be doing more and more inspections on the building envelope,</p> <p>people are buying smaller houses.</p> <p>Environmental issues? I think absolutely it [sic] will affect how we plan and build in the future...If something is as large as global warming it can impact on how we design-build or plan developments.., for example how we design for a storm event.</p> <p>what types of housing we build and where we build is probably one of the things that is an environmental issue, and how people get to work and where they work and all that kinda thing;</p> <p>...people who lived in those neighborhoods...t hey want to retire in those areas...I think first-time homebuyers also care about the “cool factor” of being green.</p> <p>Number one future change is</p>	<p>It was not “in”. But now it’s so “in” it’s on the front page of every financial journal. Every body’s into sustainability. Every municipality is doing it.</p> <p>Maybe eventually energy prices will get to the level or maybe eventually senior levels of government will bring in more environmental pricing tools such as carbon taxes or congestion charges....</p> <p>approaches that other municipalities have taken, whether it’s with the approvals process, or...trying to promote ...incentives that recognize reductions on municipal infrastructure.</p> <p>...in the past our parks planners wanted a nice clean site for soccer fields and everything. But now they’re saying we need those trees;</p> <p>the developers mainly build single family [houses]. So we’re constantly ensuring that we get a variety of ...multiple attached and apartments...</p> <p>We ...try to get people out of their cars and walking or biking. That’s really key. Instead of making subdivisions that are isolated...</p>

	PRODUCERS	REGULATORS
	<p>going to be related to code.</p> <p>And I would expect that health will be a big one that we're going to really jump in on. Indoor air quality.</p> <p>There's an awful lot of talk right now about gas prices. And that's directly related to urban planning issues with regard to the distances people need to travel and the amount of time we need to spend in cars.</p>	

APPENDIX 4.3: THEMES IN DRIVERS FOR GREEN BUILDING AND SUSTAINABILITY BY PRODUCERS AND REGULATORS

	PRODUCERS	REGULATORS
Drivers for Green Building & Sustainable Urban Development	Big houses are not selling ⁵⁷	Regulations demand more mixed development
	Green is becoming fashionable	Green is becoming fashionable
	Changes to municipal building codes and municipal and provincial policies	Changes to Provincial Policy Statement; changing municipal incentives, zoning and building codes;
	Rising energy prices, especially gas	Rising energy prices, especially gas
	Environmental issues, especially global warming	Environmental issues, especially climate change
	Health, especially indoor air quality ⁵⁸	Health as in community health
	Urban form and where houses are built (usually tied to transit)	Transit supportive urban form, density vs. sprawl

⁵⁷ This comment is from Art. It was supported by interviews with other Minto staff. Detached single-family housing at the time comprised 40 to 45% of Minto's new house sales.

⁵⁸ All three of the developers in the study emphasized the health benefits of better indoor air quality in their marketing of their products.

APPENDIX 4.4: BARRIERS TO GREEN BUILDING BY PRODUCERS AND REGULATORS

	PRODUCERS	REGULATORS
Barriers to Green Building	<p>those technologies [green energy] are at a premium;</p> <p>Profit margins are not as big for green building;</p> <p>cost and unknowns, like the risk of trying new technologies;</p> <p>A lot of our lumber comes from Alberta. You could get it around here. We get it cheaper from Alberta;</p> <p>[Drywall and vinyl siding are hard to recycle];</p> <p>[building inspectors] not understanding what you're doing;</p> <p>let's call it policies at different branches and different inspectors. So one inspector in the east end may approve a new product – someone in the west end may not;</p> <p>the industry is going faster than the cities are, and... policies are lacking on green building;</p> <p>people don't understand the terms, and they mix them up;</p> <p>With the green building...[the] integrated [planning] approach needs to happen even more - it's even more important;</p>	<p>If you ask the development industry they say that people still want granite counter tops rather than upgraded insulation;</p> <p>People want...marble countertops. And the reason for it is they saw their time horizon in that house is 5 years...and in terms of resale value, the granite countertop is more saleable than the energy conservation features.</p>

APPENDIX 4.5: BARRIERS TO SUSTAINABLE DEVELOPMENT BY PRODUCERS AND REGULATORS

	PRODUCERS	REGULATORS
Barriers to Sustainable Development	ECONOMICS	
	it's difficult to do anything that doesn't fit exactly within the typical engineering standards... the approvals process doesn't really allow for it – it's a major time issue;	We usually don't do a lot of education work because it costs money.
	the city has a vested interest in seeing green building and sustainable development happen. But so far they're not sharing a lot of the risk or the cost;	for them to get an efficient layout, [developers] don't want to have to be dealing with trees. It just makes it more complicated and it's not as efficient;
	there's a lot of pocket book mentality with a lot more of our customers;	the developers mainly build single family [houses];
	consumers have to want it...If everybody was looking for a LEED condo downtown to walk to work then that's all the industry would be building;	consumers think it's going to cost more so they don't want it – whether it does actually or not;
		the Achilles heel how do you get employment into these communities;
		[in] suburban developments... infrastructure always lags behind development. So it takes years before there's enough development there for commercial [i.e. retail and jobs];
		The federal and provincial governments have to support public transit because it just costs too much money;
		Maybe eventually energy prices will get to the level or maybe senior levels of government will bring in more environmental pricing tools such as carbon taxes or congestion charges.

	PRODUCERS	REGULATORS
	GOVERNANCE	
	The term sustainability...only recently has it been a part of our official plan in the City of Ottawa. They're only now thinking of how do you formally indoctrinate this;	Creative sustainable urban development is a new way of thinking maybe – and just like anybody else change is difficult;
	Ottawa is such a bureaucratic town...it's difficult for them to ...take responsibility for moving beyond what the code dictates;	we as a municipality have to put a lot more emphasis on design and investment in public spaces, landscaping, urban design so these places will look nice and people will want to live in these higher density neighborhoods;
	I am working with my architects and planners, as it stands right now, working with the planners in isolation, and then the building and permit people in isolation;	the sustainability group is not part of Planning & Growth Management any more and there's sort of a disconnect there;
	Doing anything different is always more difficult than just following the standards;	with all the environmental stuff that you read, if everything becomes a priority, then nothing's a priority;
	cities are designed [for] snowplows and garbage trucks;	the political noise of all the different priorities, and the NIMBYism where all the developments are;
	the Official Plan might say that intensification is encouraged but then you have to amend the zoning bylaw to build there, but the individual staff member might not want to support the bylaw being amended;	[Look at] where most of the federal employment is [in the Capital Region];
	it's difficult to do anything that doesn't fit exactly within the typical engineering standards... the approvals process doesn't really allow for it – it's a major time issue;	we also look at the orientation of the houses...for sun orientation. You still have streets that are going north and south. I don't do much with that [from a City development plan reviewer];
	The Canadian government has gotten out of planning for housing;	When push comes to shove they changed their minds and put the transit someplace else. The

		PRODUCERS	REGULATORS
			development had already started there (in the south end of the city). That was a huge planning mistake;
	the government is backing out of the [public education] role. I mean, just look at the federal government's lackadaisical attitude towards climate change;		The Manotick [development]...provides for a mix of housing units [but] the community...wanted everything to be all single-family mansions;
	The capital region does straddle two different provinces and two different cities. So there is an inherent level of complication;		the Achilles heel in that is the employment and how do you get employment into these communities;
	EDUCATION		
	Education of individual staff members is important...so that people have a common language and understanding;		sustainability is a different thing to everybody
	there is a definite misconception that sustainable green development costs money and it's being driven by the left wing tree huggers, and we [consumers] don't want anything to do with it.		We usually don't do a lot of education work because it costs money.
	I don't think it's clear out there – all the different aspects of green building, green development from the City's perspective, where they stand		the lack of education, lack of knowledge on behalf of the developers;
	single family homes are your least sustainable form of development;		education - consumer and developer and us [the city] – that's one of the barriers;

GLOSSARY

Please note that the following terms are adaptations of definitions found in the literature rather than verbatim dictionary entries.

capitalism

A political and economic system in which the production and distribution of goods for consumption depends upon investment of private capital and generation of profit – also a system that must produce inequality to maintain growth.

community

Short definition - A self-defined group of people who recognize and interact with each other over time. Community incorporates family, but is typically conceived of beyond family. A community's spatial boundaries are less defined than the "neighborhood." Community can be social, work, professional or special interest networks and can span the globe (esp. via the world wide web). Adjectives like "community development" or "community spirit" most often refer to a more clearly defined and located space.

Long definition - A contentious term referring to groups of people where group membership is defined by how members recognize and interact with each other via language, other symbolic interactions, and/or actions – community operates on various scales. Marxists have defined communities with regard to capitalist relations of production and consumption (either in contest with, as victims of, or aligned with capitalist accumulation) but I suspect that the Internet both accents and subverts capitalism, and in so doing, confuses spatial boundaries. I don't think a political economy of community adequately accounts for ecological or environmental interactions, nor does it take into account the effects of spatial relations such as physical structure of buildings, accretion and erosion (history), or the tendency for people to form various networks with close spatial proximity.

Neighborhoods have clearer place and spatial boundaries and the common element is that people live in neighborhoods and call them "home". Neighborhoods are generally considered larger than a family related by blood or marriage and smaller than a politically defined region. As in a community, interactions between people develop over time but the history of a neighborhood is more about dwelling/homes.

culture

Short definition – Culture is a shared (consensual) set of meanings that are used to guide every day material practices or behaviour (housing, clothing, food) and symbolic practices (language and literature, art, music).

Long definition- I prefer Harvey (1996): Culture is the potential for people to share values that occurs in specific places, so the first element is that culture is context- and/or place-related. Culture is also described as a way of life (how one acts from moment to moment and from day to day – how one structures one’s life). Then Harvey refers to culture as a “moment” or process (i.e., not static): culture constantly evolves, especially through art, literature, music, language (symbolic life), food and dress and spirituality. Meanings can include values, beliefs and practices around religion, family, gender or sexuality and other “main” identities. Culture is related to power structures via language and symbolism. The best example for my dissertation is suburban culture as defined by Paul Robbins (2007) which coincides with Harvey. Robbins demonstrates that people define group membership by landscape (e.g. the lawn) and patterned practices (e.g. public lawn maintenance) so that lawns are both product of, and symbolic of, suburban culture. Robbins then assigns agency to the suburban lawn by describing how lawns “behave” to influence homeowner responses. For example, turf grass cannot survive without water and chemical inputs from homeowners, so the suburban lawn dictates certain behaviours and inputs. Homes and communities are rich sources of similar analytical details.

discourse

Language and other symbols which are implicated with identity, culture, community and place, and which usually depend upon shared, common and taken-for-granted meanings. Discourse is a means of interpreting and creating reality, and is created by multiple authors over time. Discourse is relatively consistent, subjective, and reflects existing or emerging power structures which open it to analysis and contest.

Discourses manage information in certain ways to persuade various receiving audiences to act in certain ways or to create a favourable image in public audiences. I also contrast discourse with intercourse: discourse is one-way and relatively static whereas intercourse is more directly (at least) two-way and fluid.

environment

The definition depends almost entirely on the positionality of the person defining the term. Like “nature,” it is widely (by geographers at least) assumed to be at least partly a social creation, hence the term assumes potent political connotations. I will define it as “the earth” – rock, sky, water, and flora and fauna including humans. My personal politics enter into it when I add that I am certain of a spirit that courses through all of the elements of “the earth.”

fordism

Mass production, mass consumption and the state and industrial and distributive structures that support these phenomena

geographic imaginaries (as per Harvey)

Harvey's conceptualizations of space, place, and nature/environment that are derived largely from social (and literary) theory. Harvey assumes that representations of "reality" embedded in ideology are evident in both language/discourse/representation (in literature, art, culture for example) and action. An imaginary is akin to a worldview or ontology, but expressed geographically and set into the future. Harvey uses the word to indicate goals for certain types of political-economic actions: for example 19th century industrialists justified the domination of nature by insisting that increased exploitation of natural (and incidentally human) resources to increase production would free society and improve human welfare. Harvey's geographic imaginary would have workers rise up and claim the means of production from capitalists to improve human welfare.

green residential building

A growing number of builders are aware of the negative effects on inhabitants and the environment of the materials and practices they incorporate into new houses. These include composition materials (plywood, cabinetry, laminated structural members), carpets and floor finishes made with solvents or adhesives that release toxic gases into a house, poor envelope detailing that allows heat to escape and moisture to enter (causing mold and structural damage), and devices like taps and appliances that consume more water than is necessary. Builders are also becoming aware that houses facing the sun require less energy inputs, and that incorporating natural elements of the landscape can also diminish energy requirements and increase the durability of a house. Does this definition go far enough though? (See next entry)

Green building, sustainable residential development and *homeology*

In addition to small-scale environmental considerations of individual structures, urban theorists and planners now recognize the costs of sprawl, issues around transportation, and some of the social components of sustainable communities. These factors are increasingly combined with green building into a version of socially, economically and environmentally sustainable housing. This dissertation combines "green building an understanding of the multi-scaled and multi-dimensional implications of homes. For example, as suggested by Yi Fu Tuan, a home possesses and is assigned profound social-psychological affective meanings for inhabitants, and functions as a locus for social interaction both in and beyond that specific location; As indicated by Marxian-influenced political ecology, homes and houses function to reproduce labour and build equity and inequality in capitalist societies. In addition, housing and homes are associated with varying effects on the earth, air and water. These apparently disparate functions must be examined in concert to determine how a specific home and a specific group of homes is used by inhabitants, and the degree to which multi-scaled interactions as indicated in Chapter 2 will either contribute to or diminish the health of those inhabitants, their multiple communities, international suppliers of consumer goods, and/or the capacity for the planet to sustain human life. The analysis in Chapter 4 of the dissertation was founded upon the assumption that a comprehensive definition of green building requires

acknowledgement of dialectical (trialectical?) interactions of humans with the built environment and the non-human environment which are, in effect, one.

What, then, is “green residential building”? In light of the previous discussion, a green home can only be built by answering numerous questions. How is a house built and from what? Where? What are the biophysical relationships of that house to the non-human world near and far? How do those relationships change when people move into the house, and how do relationships beyond that home affect how people function with the house? But the main question, and the hardest to answer, is how a particular home impacts upon the ability of the earth to support human life (given a dialectical relationship between human life and all other life on earth). Any definition that restricts variables to a single built structure, without acknowledging how that structure will be used and how that use will mesh with other human and non-human structures in the community, is simplistic, misleading and potentially hazardous to humans. In other words, a definition of green building that ignores the multi-dimensional, multi-scaled, dialectical interactions between places will be deficient. Most of my interviewees separated the two terms, essentially discursively separating housing producers (i.e. the growth lobby) and housing consumers from their global environmental impacts (see entry on **socio-natural hybridity** below).

In this dissertation, I was careful not to set up existing development practices as a “straw man” to fell with my conceptualization of *homecology*. Instead, I have striven to offer the term as a complex organic metaphor and foil against which one might compare underspecified developer discourses about housing. In effect, I hope *homecology* is a counter-narrative to profoundly underspecified growth lobby discursive constructions of ‘home’, especially in public marketing.

It is my opinion that “green building” and “sustainability” must also be just and equitable, but this dissertation barely touches on equity issues in housing.

growth lobby

Also referred to as growth regime or growth coalition. In this dissertation I use the term to mean a group of people who associate to pool resources to market economic growth and counter all arguments for restraint. The lobby is a prominent component of neoliberal governance that fights against state regulation and for an unfettered market. An urban growth lobby will include any individual or organization that benefits from urban development including low density suburban residential development. The voices of the Ottawa growth lobby are the Greater Ottawa Home Builders’ Association and the Alliance for Building a Better Ottawa. Members include real estate professionals, real estate lawyers, private planners, builders, developers and their executives, material and equipment suppliers, trades contractors, infrastructure contractors and public relations professionals. The lobby is held together by political contributions, revolving door relationships, and social relationships.

home

Short definition - A socio-natural hybrid – an amalgamation of permanence (structures) and moments (durable social processes) which includes people, material structures conceived and assembled by people, and the non-human and human world beyond the spatio-temporal boundaries of a home that are socially and environmentally linked to that home.

Long definition - Housing becomes a home when people move in with their layers of identities, culture, habits and behaviour patterns and links with multiple communities (families, neighbors, agents of the state, economic relationships etc). People then begin constructing material and social (including discursive) histories that they associate with home. Home is also a locus of socio-political/economic/environmental relationships with the rest of the world. These relationships include the strictly defined legal and social boundaries that make homes unique places in western societies (e.g., private property and real estate laws; the slow evolution of domestic violence laws, privacy laws etc). Homes are of special interest to me for the ways in which people and homes and the non-human environment interact to simultaneously generate social and bio-physical toxins (e.g. family violence and mental illness; carcinogens in building and decorating materials; environmental pollution), and for the way these interactions can be managed to produce more favourable outcomes.

Homecology

See entry above for **Green building, sustainable residential development and homecology**

house or housing

A house (or apartment or condo or shack or flat etc) consists of certain physical materials and occupies certain quantifiable dimensions in space in relation to other dwellings and settlements and landscapes. It possesses quantifiable qualities (see “space” above). Also like space, you can only remove people from houses rhetorically because people plan and build housing, so the social history of housing as a place (see below) begins with an architect or planner’s conceptions.

identity

short definition – Individuals associate themselves with like individuals as determined by culture, place location, gender, race, language, politics, sexual orientation, customs, ethnicity, religion, income, family background, or any combination of the above or myriad other associations (labour unions, clubs, volunteer organizations, etc.). I would argue (with Harvey) that place-bound identity is the most durable of all.

long definition – Identity is a constantly evolving identification with and attachment to place (Harvey, 1996). Identity reflects the relationship between individuals, and between

individuals and culture, and between individuals and space and place. Identities include sexual orientation, gender, race, class, and language (etc), all of which serve to define identity, as does politics (or belief in certain ideal types of order in the world). Hence, identity can be a way of belonging to a group but also a source of conflict which is inflamed by fictions of homogeneity and myths of origins and “continuity of character, value and custom” (Dubow, 2009). Assertion of identity often includes creation of “others” to reinforce group boundaries, but boundaries and allegiances shift with migration, displacement and diaspora. Hence identity is fluid and boundaries are rarely rigid, leading to the current interest in hybridity.

Identities are created at various scales too: one might identify with one half of the human race (gender), as a resident of Westboro, or as a member of one particular family. Identities flow across various scales and change from situation to situation and may also change according to the vantage point of the subject or viewer

ALSO – I want to include that our identities are in large part associated with and in part defined by work (following Smith, 1991, after Karl Marx who began this discussion 150 years ago). People entrusted with building houses may lack sensitivity to identity formation associated with houses and homes. For example, carpenters (and most other building trades) are men and there’s an element of machismo attached to the work because the work is often dangerous, dirty, noisy, poorly planned, requires physical strength and endurance, is subject to all kinds of weather, and attracts people without a lot of formal education who typically have limited understanding of the social and environmental consequences of their work. Another aspect of work and identity is that trades are losing their negative connotations/associations because there is a shortage of people in the trades. Improving status illustrates identities in flux as supply shrinks and demand increases. This is an example of one group’s identity influencing the formation of another group’s identity.

mid-range theory

I use the term “mid-range” to indicate a focus that holds broader political economy as constant and steps the scale of analysis down from Harvey’s Marxism as I have presented it. The term originated in sociology to describe the translation of grand theory into theory that could more easily be operationalized in social research. In other words, mid-range theory is an epistemological device to facilitate research by enabling the creation of measureable variables. For example, one might profess the theory that capitalism perpetuates itself through uneven development. The statement as it stands can only be tested rhetorically. A researcher might operationalize “uneven development” as measureable variables such as “unequal economic and political advantage”, which could then be stepped down to “ownership of equity in real estate.” At each step the variable becomes more “concrete” and measureable. Despite academic debate about the politics of measurement of social phenomena, social policy depends to a large extent on such quantifications. (See Gregory’s definition of ‘Grand Theory’ in the Dictionary of Human Geography, 5th Edition, pp. 315-316).

“moments of social life” as per David Harvey

(See Harvey, 1996:78) Harvey claims there is nothing static or concrete about social life, and that language, culture, identity, etc. are in constant flux. But some social processes are relatively durable and discrete, and he calls these things “moments” to acknowledge that they exist long enough to be recognized, defined and studied. Moments are distinct from “permanences” which Harvey defines as “crystallized moments” or “things, entities, clearly bounded domains, or systems” (p.78) with relative durability. A home might be a permanence, but given current patterns of mobility, migration, displacement and dispossession, assigning such a term to homes is problematic.

New Urbanism

New Urbanism shares many characteristics with Smart Growth. The focus is on walkability and people rather than car-centred planning and development. The principles of New Urbanism are:

1. **Walkability:** A neighbourhood should have most things required for living in it within a 10 minute walk. The streetscape should reflect this by being pedestrian friendly in design and free of cars as much as possible.
2. **Connectivity:** An interconnected street network disperses traffic and eases walking. A hierarchy of narrow streets, boulevards and alleys also increases the pleasure of walking.
3. **Mixed-use and diversity:** Within buildings, between blocks and within neighbourhoods helps the delivery of the walkability of the neighbourhood. Diverse neighbourhoods make a vibrant community more likely and will support more business activity.
4. **Mixed housing:** A range of types, sizes and prices increases social diversity.
5. **Quality architecture and urban design:** Community pride and a sense of place is enhanced if the living environment is attractive and comfortable. Human scale architecture & beautiful surroundings nourish the human spirit.
6. **Traditional neighbourhood structure:** This means having an edge, public space at the centre, a public realm that is high quality in appearance and is designed as civic art. The neighbourhood should also have a transect that moves from dense in the centre to less dense at the edge, including the consideration of natural habitat into the urban area.
7. **Increased Density:** Having people and services close together increases liveability and walkability in the neighbourhood.
8. **Smart Transportation:** A network of high quality mass transit options connecting towns and neighbourhoods. This in combination with local networks that encourage a greater use of bicycles, rollerblades, scooters, and walking as daily transportation.
9. **Sustainability:** Minimal environmental impact and respect for the value of natural systems.
10. **Quality of Life:** The creation of places that enrich, uplift and inspire the human spirit.

place

Place is space bounded by, and infused with, human desires, creativity, emotions, history, tradition, attachments, economic behaviour and social interaction, which Cresswell identifies as the subjective and experiential elements of place (positionality). Place is typically social although I understand it to be individual as well as social because each individual will have varying definitions of a given place (and I suspect we all try to have private places). Places may include spatial boundaries, and places are influenced by and influence material structure of a landscape. Place is a locus of community: each community has a distinct character with which inhabitants identify (particularity). Place is also a locus of identity: the material environment and social connections are the origins of associations people share with each other (see “community” above). Place is often described as changeable but relatively stable or durable – as pause in a rapidly changing world.

political ecology

Urban Political Ecology (UPE) is a critical theoretical approach that explores human/environment interaction and land management especially in terms of pollution/degradation, and particularly in regards to cities and the built environment. The roots of political ecology lie in marxist tradition, and UPE involves geography, cultural anthropology, ecology, discourse analysis and political economy. UPE also examines dialectical relationships between society and the non-human environment, assuming that local effects are implicated with global processes and vice versa. UPE is therefore a global political project as well as a study of local political economies.

socio-natural hybrid

The concept of hybridity in geography has evolved from Harraway’s (1991) feminist critique of the cyborg (human-machine combination) in popular media and in military technology. More recently, marxist urban geographers such as Harvey (1996), Massey (1993) and Swyngedouw (2004, 2006), and political ecologists such as Castree and Braun (2001) and Cidel (2009) have used the term socio-natural hybrid to contest the historical tendency, particularly in the physical sciences, to artificially separate human society from the non-human world. My use of the term in this paper acknowledges the more recent adaptations of “socio-natural hybridity.” In the body of the paper the term is used to indicate the dialectical relationships between the material and social worlds. A home is built from lumber, labour, dialectical social relationships between the inhabitants and the community, and, eventually, dialectical interaction with the global environment. Homes consist of permeably bounded patterns of biophysical and social interrelations that cannot be examined independently from one another.

space

Space is a rhetorical or heuristic (exploratory) device used to indicate the material world as separate from humans. Although it can be the built environment, it is that environment

with humans and human interactions removed. Space includes landscapes, flora and fauna, physical relationships such as distances and dimensions (height, width, length, volume, heat or electrical conductivity, chemical and mechanical characteristics and reactions over time, insulative capacity), as well as weather and climate. I call it a rhetorical device because according to many geographers there is no place on earth that has not been touched in some way by human activity, hence there can be no real separation of humans from the material world (see entry for “socio-natural hybrid”, above).

stick framing

A building technology developed in the 1940s in North America and popularized in mass-produced suburban housing. The “sticks” are 2” by 4” or 2” by 6” pieces of spruce or pine or fir dimensional framing lumber spaced evenly between a top and bottom plate of the same dimension lumber. The framing is usually sheathed on the outside with plywood, a water barrier and cladding of brick, wood or vinyl siding. Inside, builders install batts of fibreglass insulation in the cavities between the framing members, which are then covered with a plastic vapour barrier and drywall.

sustainability

The ability of earth to support human life – not to be confused with sustainable development which may be an oxymoron until limits to growth are recognized in economic development models.

time-space compression

As per Harvey (1996), social and economic life are speeding up via communication technologies that shuffle capital around the globe, by speed of new communication and transportation technology, and by the increasing speeds at which capital, people, commodities and culture move around globe. Harvey argues that communities are constantly threatened by capital. I interpret this as the commodification of humans for capitalist production and accumulation, but Massey (1993) claims this process has variable impacts on different places depending on community identity, cohesion and resistance.

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