ADAPTATION
ARCHITECTURE FOR ADAPTING COMMUNITIES

by

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Abstract

Canadian society grows and is shaped by a forward acceptance of immigrants and refugees from around the globe. Canada's humanitarian efforts in regards to sponsoring and resettling thousands of 'displaced people' help relieve prolonged refugee situations occurring abroad. Being from a family welcomed to Canada as refugees, through private-sponsorship, served as the inspiration for this thesis which explores how an architect could respond to this humanitarian initiative.

An architect’s involvement in affordable housing initiatives can contribute to the integration of 'sponsored refugees' by helping create suitable housing in hospitable environments and supportive communities. This allows sponsored refugees to focus on establishing a stable livelihood so they can become viable citizens who are able to contribute to society and willing to engage with their new community.

Through the theme of ‘adaptation’, a transitional housing strategy is explored in this thesis that proposes integrating affordable housing on 'greyfield sites' (particularly obsolescent commercial retail developments) to assist in the resettlement process. This thesis explores the idea that the discussion of architecture and urbanism has implications in realizing a more comprehensive approach to resettlement as part of a humanitarian initiative.
Adaptation: Architecture for Adapting Communities

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I would like to take this moment to express my sincere gratitude to all those who helped me realize this thesis.

Thanks to my advisor and colleagues for their guidance, advice, and support during this entire process. It helped me foster a thesis that I am proud to present as part of my contribution to the discussion and study of architecture.

I must also thank my family and friends for their constant encouragement and enthusiasm. Their support reinforced my determination to see this endeavor through.

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Preface: Humanitarian Initiative

"To make design more relevant is to reconsider what ‘design’ issues are. Rejecting the limits we have defined for ourselves, we should instead assume that design can play a positive role in seeking answers to many different kinds of challenges. We have limited our potential by seeing most major human concerns as unrelated to our work."

Bryan Bell

Expanding Design Towards Greater Relevance

The architecture profession dedicates the majority of their expertise towards design challenges for which they are explicitly approached and remunerated. However, I felt this thesis would provide an opportunity to explore the idea of humanitarian initiative which sees beyond the traditional scope of the architecture profession and requires an investment by designers.

I initially found myself compelled towards exploring humanitarian relief as a way to recognize and engage with my family’s history of being refugees themselves. I wanted this particular humanitarian initiative to serve as the inspiration for my thesis which focuses on the implications of architectural design and planning to address the sponsorship and resettlement of refugees in Canada.

To explain my position, allow me to elaborate on the connection to my family’s history to help illustrate the guiding principles and motivations for such an exploration.

1 Bryan Bell and Katie Wakeford Expanding Architecture: Design as Activism (New York Metropolis, 2008), p 15
Southeast Asia has endured a long history of conflict that has resulted in the mass uprooting and displacement of its people. This pressure reached an apex brought on by the communist regimes of Southeast Asia after the fall of Saigon in 1975. Under growing communist rule and corruption, deplorable human rights violations were committed which ultimately spurred a mass exodus of people who fled in fear of persecution. The surge of people fleeing the region became evident during the summer of 1979 and became known to the world as the “boat people crisis”. Those who sought asylum did so in refugee camps in neighboring countries which placed an unsustainable burden on neighbouring countries which required global support to help alleviate such pressure. In light of the growing turmoil, Canada initially announced its intentions to accept 5,000 refugees as part of its global refugee intake. This number would reach 34,000 people who would eventually be resettled across Canada.

Particular initiative was demonstrated in Ottawa and could be credited in part to Ottawa mayor of the time, Marion Dewar. In light of the growing outpour of support to help resettle refugees, Marion Dewar made a commitment in principle to welcome half of the proposed target of refugees which Canada had committed to at the time. Hence project 4000 was born as a grassroots initiative to help resettle refugees in Ottawa. Understandably, there was skepticism whether Ottawa had the ability to provide necessities such as employment or accommodations for such a potentially large influx of newcomers. This however did not deter the movement, going on to becoming a non-profit charitable co-operation and working towards mobilizing support from the Ottawa community that saw the creation of hundreds of sponsorship groups to help integrate newcomers.

2 Reference to facts published in Gift of Freedom: How Ottawa welcomed the Vietnamese, Cambodian, and Laotian refugees by Brian Buckley
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There was a unique difference which could be noticed between government-assisted refugees and their privately-sponsored counterparts of Project 4000. Whereas, government-assisted refugees could be expected to have their immediate physical needs met, they lacked the extensive network of personal contacts and community support that private sponsors could provide to their families. Despite not having extensive South East Asian cultural knowledge they had knowledge of Canadian society. This provided many of the refugees a support system in order to familiarize themselves with the very different culture. This was certainly a catalyst for new arrivals towards becoming self-sufficient. This coupled with the immense generosity of the Ottawa people in the form of accommodations, job opportunities, charitable donations of clothing and such, significantly helped refugees establish themselves in a society in which they came to with practically nothing.

Looking back at this moment, it is difficult to imagine something such as this happening when considering how complex it would be to orchestrate and attempt today. The legacy of Project 4000 is particularly significant to the 3,600 Indochinese refugees which were resettled in the city of Ottawa. More importantly, this action illustrates the ability for people to come together and evoke critical humanitarian relief. Because of this act of humanitarian initiative, I wanted to use this thesis to recognize and honour the influence people can have in the lives of others given the will and conviction to see such humanitarian endeavors through.

I've approached this thesis with a humanitarian outlook to explore how architectural design can respond to helping integrate ‘sponsored refugees’ as part of Canada's global humanitarian initiative. The United Nations defines a ‘refugee’ as: “a person who owing to a well founded fear of persecution for reasons of race, religion, nationality, membership of a particular social group or political opinion, is outside the country of [their] nationality and is unable or, owing to such fear, is unwilling to avail [them self] of that country.” The term itself is too loaded and far overreaching. Essentially, my thesis looks to address those who have
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lived in protracted refugee situations and are sponsored by Canadians to become part of their society. From this point on I will refer to them as 'sponsored refugees' as they are more or less referred to as either government-sponsored or privately-sponsored refugees.

In this respect, my thesis focuses on the integration of sponsored refugees into Canadian society. As proposed by the United Nation's:

Integration is a mutual, dynamic, multifaceted and on-going process. From a refugee's perspective integration requires a preparedness to adapt to the lifestyle of the host society without having to lose one's own cultural identity. From the point of view of the host society, it requires a willingness for communities to be welcoming and responsive to refugees and for public institutions to meet the needs of a diverse population.

Upon arrival, sponsor refugees are assisted with the provision of transitional housing which helps with initial challenges. However, long term reliance on transitional housing for prolonged periods often prevent people from moving forward with family, personal and career objectives. It is not uncommon for refugees to struggle to secure suitable housing arrangements that meet their needs.

Many who followed the housing trajectories of recently sponsored refugees advise that the most important policy priority is to increase the supply of affordable rental housing. Unaffordable housing drains household resources limiting expenditures on other basic necessities like education, health care, clothing and food while poor housing conditions threaten stable family life and contributes to a negative feeling about one's surroundings.

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The dilemma is that many families face this precarious housing state and the question remains: what building form can the city take on to address the concerns of such newly arriving and financially vulnerable people struggling to re-establish a livelihood? Understandably:

"Housing is only part of a complex set of factors that contribute to successful integration including language skills, labour force success, absence of discrimination, access to adequate information and support, neighbourhood characteristics and a host of other issues. Adequate, affordable and suitable housing cannot address all these issues but it can provide the stable basis from which refugees can deal more easily with other challenges."\(^4\)

Before continuing any further I must express a disclaimer. As a designer, my intent in this thesis is to address the design and planning criteria of housing as opposed to validate or debate public policies that drive such endeavors. With this thesis, I am proposing how architectural discourse can respond to the needs of sponsored refugees as part of a more comprehensive approach to resettlement. I have arranged my thesis to elaborate on this perspective.

The first chapter, *Design and Humanitarianism*, briefly discusses architects' involvement in humanitarian initiatives which have mainly addressed people's need for shelter and housing. I have approach the issue of aiding in the resettlement of sponsored refugees by recognizing this need for affordable and sustainable housing options in Canada.

The second chapter, *Resettling the Displaced*, examines the housing concerns of sponsored refugees. The consensus of researchers is that there is a need for affordable housing in more hospitable family oriented neighbourhood environments to help ease the integration process. Because of the gap between policy and programming, stimulating the

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development of social housing has been seen as a way to recognize the responsibility to better align these issues. However, another alternative which could have significantly more benefits is stimulating the development of more community oriented management such as housing co-operatives to help elicit more community engagement. By examining desirable housing models, strategies can be devised which better reflect the needs of struggling families in order to provide them with the support they need to integrate.

The third chapter, Rethinking Prefabrication for Affordable Housing, re-examines the long held belief and potential of prefabrication in creating affordable housing. The mobile home is perhaps the most prevalent example of affordable housing in America, yet it has not been accepted as a durable solution. Manufactured homes, that maintain the appeal of traditional stick-built homes, can become part of a more ‘adaptive’ process to building. Homes that have the ability to be transplanted can allow for a more elaborate urban infill strategy to be developed which comprises the design portion of this thesis.

All this has been taken into consideration in developing a project proposal which is presented in the fourth chapter, Architecture for Adapting Communities. The proposition is to create a hospitable neighbourhood environment by integrating housing on traditional greyfield sites (a term used to describe commercial retail developments) in order to bring more vitality to underutilized areas and help generate benefits for all involved. The project is a speculation on how to generate urban environments that can become a significant part of the resettlement process.

The concluding chapter re-examines the motivations and purpose of this thesis and proposes points for further discussion.
1.0 Design and Humanitarianism

"Architecture and all the design professions are undergoing a major transformation that is both proactive and reactive proactive as a search for roles with greater relevance and reactive as a response to the humanitarian and environmental crises facing the world."

Thomas Fisher

Public-Interest Architecture: A Needed and Inevitable Change

The architect’s role as the ‘master builder’ is reflected in their inherent involvement in addressing issues of housing. These issues span from the need for basic shelter in the developing world and trauma-stricken areas to the lack of sustainable, affordable housing in the industrialized world. There are a growing number of design professionals and architects who have expanded the scope of their design work into the field of humanitarianism. Humanitarian efforts align with dominant ethical traditions such as: virtue ethics, that asks that we look at the well being of others and live modestly and with humility; deontological ethics, that asks us to act with others in mind; and utilitarianism: the goal of maximizing the happiness of as many as possible.

This belief and approach is embodied by such non-profit organizations such as Architecture for Humanity. Their humanitarian work in distressed areas of the world uses design to: “provide access to clean water, sanitation and power; develop shelter during post disaster situations; contribute to rebuilding efforts; mitigate effects of rapid urbanization in unplanned settlements; create space to meet the needs

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6 Thomas Fisher “The Ethics of Housing the Poor” Implications Vol 4, Issue 01
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of the disabled; and reduce the carbon footprint of the built environment to address climate change. These are just some of the fundamental goals that designers, who are interested in humanitarian initiatives, currently work to address.

There is a growing appreciation for designers in disaster mitigation. On the pragmatic side, agencies dealing with disaster relief tend to see an architect's involvement as an opportunistic attempt to generate a design which is more likely impossible to implement. This has been met with skepticism of the ingenuity and persistence of designers. However designers recognize humanitarian endeavors as a process rather than a short-term solution to a problem.

Figure 1: Katrina Cottage designed for expansion

The Katrina Cottage designed by New York architect Marianne Cusato in response to Hurricane Katrina is an interesting example of the relevance of design in humanitarian efforts. The compact portable prefabricated house was designed and fashioned with careful consideration that it would still exist beyond its use as emergency housing and become part of an expandable model. What this demonstrates is that architects are able to devise something more adaptable, durable and sustainable which can be invaluable in the long-term, something which all humanitarian action should consider in order to make meaningful and lasting changes.

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7 Architecture for Humanity <architectureforhumanity.org>
8 Katrina Cottages <katrinacottages.com>
These adaptive principles employed during disaster relief could also be valuable in refugee camps however wartime situations are different. The perceptions of dealing with people who cross boarders require an understanding that, as generous as host governments are to people from a neighboring country, there is an underlying position that repatriation is always imminent. This assumption is undermined by the fact that refugee crises do not have a ‘set time limit’ and usually end up lasting longer than anyone would readily admit. Essentially, this mentality is compounded into the very fabric of such refugee camps which are built on short-term principles yet often serve a long-term role. Refugees are unable to return home because of the severe threat of persecution and are confined and dependent on the camp because no other alternative exists. In such circumstances, industrialized nations have stepped in to help provide a bondable solution to alleviating these protracted refugee situations.

This creates another form of humanitarian initiative, the inspiration for this thesis, which is the sponsorship and resettlement of refugees in a third host nation. The acceptance of sponsored refugees in Canada is primarily a way to increase population and labour market growth. Some may arrive with skills and a notable level of education from their countries of origin. Many face the challenge of learning a new language, having to secure employment, becoming familiar with the city and making social connections, all expected in a short period of time. While their immediate housing needs are initially provided for, some may require additional housing support to help progress given such a demanding expectation to adapt quickly. Programs that can help position them in supportive community environments can serve as both a progressive state of transitional housing and a catalyst which allows them to focus on other challenges beyond their precarious housing arrangement.

Humanitarian design initiatives also address the vulnerable in industrialized nations and have mostly addressed ways of creating

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affordable housing. There are many movements which facilitate this idea; perhaps the most recognized in America is Habitat for Humanity.

Habitat for Humanity was founded in 1976 in Americus, Georgia. The movement pairs those in need with socially conscious volunteers to build simple and decent houses. Habitat for Humanity is a non-profit faith based organization with a mission to mobilize volunteers and community partners to build affordable houses and promote homeownership as a means to break the cycle of poverty. Their belief is:

“As the poverty cycle is broken, and a family’s financial situation improves their dependence on local social services is decreased. In addition, pride of ownership leads to a renewed sense of confidence, and along with their stable, long-term housing arrangement, they become long-term contributors to the community and the local economy.”

Habitat for Humanity

Over tens of thousands of people have volunteered and are from all parts of society spanning over 90 countries and are responsible for placing 225,000 families into new homes around the world. The movement in Canada has resulted in the placement of more than 1400 families. The focus demographic that Habitat assists is working families who live in financially vulnerable situations, who are able to repay an interest-free mortgage, and qualify to become a partner family. Under the condition that they must contribute to “sweat equity” in the form of 500 volunteer hours, the families receive an affordable no-interest mortgage geared to their monthly income which goes into a revolving fund used to build more homes. While supplies are donated, many other purchases are needed such as land and the hiring of licensed trades people to ensure all homes built meet industry safety codes.\(^\text{10}\)

The model which Habitat for Humanity uses is interesting in that it could apply to helping sponsored refugees. However, there are limitations to

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\(^\text{10}\) Habitat for Humanity <habitat.ca>
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taking a grassroots approach to a humanitarian policy that goes far beyond the reasonable scope of such a movement. Fundamentally, housing concerns for such a particular group are more appropriately addressed through the expansion of government sponsored social housing initiatives which is covered in the following chapter.

In summary, the purpose of this chapter is to reinforce the idea that architects can contribute to humanitarian efforts by addressing people’s need for housing. Whether it is the developing world or industrialized nations, there is a great need for decent and dignified housing to help foster a stable livelihood. Although this thesis was inspired to address the particular needs of sponsored refugees, this is not meant to privilege them above many other existing struggling populations who may also require assistance. This thesis can also respond more generally to the need for affordable dignified housing for existing struggling populations of Canadians who also want to contribute to society. The main difference between such groups is the added complexity of having to adapt from very different circumstances. Many sponsored refugees do not have any perception of Canadian culture or society. This can be very unnerving and many of their initial perceptions upon arrival can have an influence on how willing they are to integrate and adapt. These factors are addressed in the following chapter in order to help identify what planning and design considerations can be made to help address their needs and better reflect the humanitarian policies that account for such situations.
2.0 Resettling the Displaced

“Architecture was explicitly scripted into this conventional understanding of migrancy. Its capacities for grounding, delimiting, and accommodating were readily and routinely put to work in the material, social, cultural and emotional reterritorialization of uprooted migrants.”

Stephen Caines

Drifting: Architecture and Migrancy

Newcomers to Canada face considerable challenges in resettling. For many, having to re-establish their livelihoods can be overwhelming giving that the majority of immigrants arriving in Canada are from nations that have considerably different customs than Western society. Their willingness to adapt to Canadian ways of living is imperative in order for them to successfully integrate with the rest of society. The other part of this integration is ensuring that host cities have suitable housing accommodations to help address their particular needs.

‘Sponsored refugees’ arrive in a particularly vulnerable state for obvious reasons including lack of credit, transportation issues, unfamiliarity with their new environment, and language difficulties. Many of them also arrive in large households with many having children, or as part of a multigenerational or even multifamily arrangement. Their immediate housing concerns are addressed with ‘transitional housing’. Transitional housing is government funded (or privately sponsored) with residencies varying up to a year although they can be extended at the resident’s expense. During this time sponsored refugees are taught basic domestic skills and customs and assisted in their search for alternative housing arrangements and securing job opportunities. There is an imperative to

see that they do not become dependant on such housing because it may hinder and deter them from moving forward.

The objective is to see that these people are resettled and preferably working towards home ownership. Home ownership remains particularly significant in North American culture.

"Most commonly, [North] America has been viewed as exceptional because it has for so many decades been a land of opportunity, the place where immigrants could make good. The meaning of home ownership has usually been treated as self-evident for most writers it is the unambiguous indicator of economic well-being, social mobility, and status."

Home ownership has been glorified as an indicator of the success achieved through hard work and diligence but perhaps more importantly; it represents comfort in terms of stability in one's housing situation. With this being said, much of the responsibility falls on people's ability to forge towards financial independence if they wish to command more control in their housing situations and achieve part of the 'American Dream'.

"The American dream is a symbol of security, freedom, and self-sufficiency. The home as a 'symbol of self' is prominent in a society that still glorifies its rugged individualists whose survival was dependent on their ability to house and provide for themselves."

Home ownership remains a long-term personal objective. But many newcomers' housing concerns are constrained by affordability which often compromises the suitability and adequacy of their initial housing arrangement. The term adequacy is used to refer to housing which does not requiring major repairs while suitability refers to having enough

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bedrooms for the size and make-up of resident households. Affordability constitutes costing less than 30% of before-tax household incomes.\textsuperscript{14} The reason this is important is because unaffordable housing arrangements affect other expenses needed to maintain a decent quality of life.

Housing is understandably only part of a complex set of factors that contribute to the integration of any newcomer. Proper language skills, labour force success, absence of discrimination, access to adequate information and support, neighbourhood characteristics are only part of array of issue which must be addressed. Non-profit organizations such as OCISO (Ottawa Community Immigration Services Organization) assist newcomers by offering a number of programs such as language training, job search assistance, and community programs. As important as these aspects are to resettlement, access to adequate, affordable and suitable housing helps establish the stable basis for a livelihood which can allow people to deal more easily with other challenges.

Housing is a central component of the resettlement experience. A positive housing situation can facilitate many aspects of integration whereas unaffordable, crowded, and unsafe housing causes disruptions. Although their precarious financial situation limits their housing options, there is a general lack of affordable alternatives that can foster a positive housing situation. A positive housing situation can help create more viable citizens who want to engage their community because they feel a greater sense of acceptance and inclusion.

Overtime, issues of socio-economics change, such as funding mechanisms, subsidy programmes and political systems, which dedicate resources to affordable housing. Beyond the immense discussion of the socio-economic reasons for the lack of affordable housing, the question

\textsuperscript{14} Sarah Wayland. \textit{The Housing Needs of Immigrants and Refugees in Canada}, p.11.
remains: Is resettlement simply a matter of housing supply with no design or urban planning implications to consider?

Planning strategies are important as they can help strategically position sponsored refugees in contexts where they have better access to economic opportunities and public transportation which creates a sense of inclusion. It is not uncommon for those to search for better living circumstances and move multiple times which is not conducive with integration. Furthermore, the argument has been made that:

“Although home is the central hub of people’s lives, the neighbourhood is a geographical extension of home, reaching into the public sphere. Neighbourhood is a place that offers regular opportunities to interact with others. Newcomers’ perceptions of their neighbourhoods and their neighbours influence their sense of belonging and the extent to which they feel settled.”

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This also contributes to a sense of security. In a study done in Winnipeg on the housing conditions of recent refugees, many express their desire to: live in areas with big parks, green space, and a nice atmosphere which was family-oriented, and where “kids do not have as much exposure to bad influences.” Many expressed that a feeling of security was created by having a safe daycare on the premise; being close to a school; being close to an area that is busy, well-lit, and clean; or simply having a yard that is fenced. 16 Resettlement in an unsafe environment could foster reluctance in engaging with communities.

As humble as affordable housing should be, it requires an architect to design in order to provide dignity and proper space to carry out daily rituals. Design essentially plays a significant role in all housing and is crucial to people’s wellbeing. The design of housing gives shape to the

15 Sarah Wayland The Housing Needs of Immigrants and Refugees in Canada p 120
16 Tom Carter The Housing Circumstances of Recently Arrived Refugees: The Winnipeg Experience (July 2008), p 101
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built environment, which fosters the interaction of people and instills a sense of community pride and dignity for which all people long.

The consensus by those who have followed the housing trajectories of ‘sponsored refugees’ is that there is a need to stimulate supply of affordable housing alternatives in order to help address the needs of larger household demographics.

In the discussion of affordable housing there is often a misconception that, because it is deemed ‘affordable’, it merits doing the absolute minimum and should not be subjected to the same considerations as any market-rate developments. This patronizing mentality has damaged and stigmatized this segment of housing and the residents who inhabit these homes. Such an approach can be detrimental to residents’ ability to adapt to changing circumstances.

The following sections of this chapter present a general discussion on affordable housing and how it affects the resettlement process. The subsequent section discusses the appropriateness of current affordable housing conditions, moving on to discuss the dependence on social housing to help address the gap between the resettlement policy and housing, and finally the growing interest in co-operative communities as a potential alternative. Each option is discussed in order to elaborate on the current predicament which many struggling families face. Case studies are presented to elaborate on the potential form, scale and management model affordable housing developments could potentially take on in order to help better facilitate the resettlement process.
2.1 The Need for Affordable Housing

Presently, many sponsored refugees are entering cities in which there are severe shortages of affordable housing to recognize their needs. ‘Affordable housing’ is built on land that has little or no cost. It is then sold or rented at cost or marginally above cost to those in low to moderate income earning brackets. The current market provides little reward for developers to build affordable housing. There is more interest in constructing condominiums as they are sold to higher income earning brackets to generate a greater profit.

It is not uncommon for financially vulnerable New Canadians to be directed towards renting in high-rise apartment complexes given that they are the most prevalent form of affordable housing stock having been primarily established during the post war period. The ‘segregation’ of those in of the lowest socio-economic bracket within deteriorating high-density buildings in the private market is a continuing phenomenon and is symptomatic of the exploitation of people caught in a vicious cycle of poverty. In ‘gateway cities’ such as Toronto, the immigrant population has been noticeably concentrated in poorly maintained high-rises that are ill-equipped to foster a sense of community and which have become ‘vertical ghettos’; further stigmatizing those that reside in them.

“Housing inequality and segregation limit educational and employment opportunities for low-income and minority families especially as they force the families to pay more of their incomes for declining services.”

High-rise structures, such as the minimalist tower block, have not been particularly well received by families with children compared to traditionally smaller houses. Attempts to recreate the traditional virtues of having secure outdoor space have been made in the form of deck access.

17John Gilderbloom Invisible City: Poverty, Housing, and New Urbanism (Austin University of Texas Press, 2008), p 15
models and ‘streets in the sky’ but have often attracted unwanted delinquent behavior.\textsuperscript{18} This should not be taken to suggest an entirely adverse stance to high-rise structures as they are fairly well suited for smaller households. The issue is that many immigrants, including sponsored refugees, come in large households with young children. The desire for family oriented environments is understandable. High-rise rental housing is tailored for shorter tenancy, however sponsored refugee families rely on housing as an anchor to make community connections and have access to local amenities such as schools, community infrastructure, and social support which can make such arrangements ill-suited. Older rental accommodations are often in poor condition and newer stock is beyond the price range of many sponsored refugee families.

With this being considered, there has been more emphasis put towards creating affordable housing which foster more inclusive family oriented communities. The mixed-income development approach is drawing the increased attention of academics, policy makers and practitioners interested in developing affordable housing. Mixed-income neighbourhoods address three primary motivations: alleviating concentrations of poverty (supposedly to reduce the incident of social ills); producing high-quality developments, and meeting the shortage of affordable units.\textsuperscript{19} This also noticeably coincides with the emergence of ‘New Urbanism’ which has been described as an alternative to the Modernist design theories that under laid much of the post World War II affordable housing stock.

\textsuperscript{18} Graham Towers, \textit{An Introduction to Urban Housing Design: at Home in the City} (Oxford: Architectural, 2005), 89.
\textsuperscript{19} Alastair Smith \textit{Mixed-Income Housing: Promise and Reality} 3
“Within neighborhoods, a broad range of housing types and price levels can bring people of diverse ages, races, and incomes into daily interaction, strengthening the personal and civic bonds essential to an authentic community.”

Charter for the New Urbanism, Principle XIII
Congress for the New Urbanism 2000

In New Urbanism, affordable housing is seen within the context of neighborhood design, where pedestrianism, the provision of public space, and walkable access to services are an essential part of affordability. The opportunity for residents to carry out daily activities, such as shopping or going to school, without needing a car may make life more affordable for low-income families because these amenities are more easily accessible.

Whereas the approach to affordable development is promoted as being more beneficial for low-income families, the scale of such developments creates complexities which may become too contrived to address the overwhelming demand for more affordable housing. Many New Urbanist developments can command higher prices which often tailor such development towards upper middle class households. In the absence of inclusionary zoning bylaws or attractive subsidies and non-profit involvement, the mixed-income approach has many hurdles to overcome.

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20 Jennifer Johnson and Emily Talen Affordable Housing in New Urbanist Communities: A Survey of Developers Housing Policy Debate, Volume 19 Issue 4 (Metropolitan Institute at Virginia Tech 2008), p 583

21 Jennifer Johnson and Emily Talen Affordable Housing in New Urbanist Communities: A Survey of Developers Housing Policy Debate, Volume 19 Issue 4 (Metropolitan Institute at Virginia Tech 2008), p 585
"Mixed-income housing is not a silver bullet to overcoming the difficult challenges faced by families seeking to escape from poverty or the realities of housing markets. Because mixed-income developments are complex, present unique risks, and often house fewer needy families than other types of development, mixed-income approaches must carefully consider the local housing market, the population to be served, financing options, the scale of the project, and the community context.\textsuperscript{22}

Because of the often immense scale of mixed-income neighbourhood developments it is more appropriate to focus on moderately scaled housing developments that compliment existing urban neighbourhoods.

Sponsored refugee’s housing options are often constrained by affordability issues. Given the drive to increase population and labour force growth in Canada through immigration, the reasonable course of action would be to help address the need for housing which reflects the needs of larger immigrant family households which is not reflected in existing affordable housing stocks. Although it is increasingly apparent that market forces will not supply adequate, affordable rental housing, especially in Canada’s largest cities that receive the vast majority of sponsored refugees, attention is being drawn to social housing to reflect the policies.

\textsuperscript{22} Alastair Smith, \textit{Mixed-Income Housing: Promise and Reality} p 3
2.2 A Reliance on Social Housing

Affordable housing is more commonly associated with social housing, which requires ongoing government subsidy. Social housing is a term used by many Europeans synonymous with ‘public housing’ meant for those who cannot afford the fair-market price. The implication of using the term social housing suggests that ‘a responsible and humane society has an obligation to assist those of its members who could not otherwise procure decent housing.’

In Ottawa there are over 10,000 households on a waitlist for social housing that equates to a five to seven year waiting period for households. Because the current housing market is tailored towards a higher income earning bracket, there is a continued dependence on social housing to help meet the needs of those trying to re-establish a livelihood.

Figure 2: Modernist postulates mirrored in early social housing (Le Corbusier’s 1925 Plan Voisin for Paris juxtaposed to the composition of American social housing project Pruitt-Igoe 1955 in St. Louis)

A brief look at the evolution of social housing forms in America can help illustrate many lessons learned in housing financially vulnerable populations. There is somewhat of a stigma associated with high-density structures, such as the tower block or apartment complex, which can be

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attributed to its pervasive use as a response to early approaches to slum clearance and social housing in America. High-rises were believed to be the most cost effective and efficient method of addressing housing strategy and in particular shortages of affordable housing. The high-rise form was facilitated by building innovations of the industrialized age. However, these structures were often constructed in secluded settings with few desirable amenities to address affordability and with the expectation that the length of stay would be short. Many eventually became icons of the segregation of the poor and alienated them from the rest of society.

Canada’s federal government took similar strategies to public housing as their American counterparts coinciding with major urban renewal schemes of the 1950s and 1960s. While these projects alleviated housing pressures, they also created “Ghetto” conditions through the concentration of homogenously low-income populations in high-density neighbourhoods.

Literature produced during the 1960 and 70s brought about a paradigm shift in American social housing. Jane Jacob’s *Death and Life of Great American Cities (1961)* stressed an “eyes on the street” mentality in housing design. High-rises were seen as antisocial and anti-urban because they turned away from city streets making them inappropriate. Adding to this was Oscar Newman’s book *Defensible Space: Crime Prevention through Urban Design (1972)* that identified a relationship between building form and the pathologies around housing projects. His criticism of the inappropriateness of high-rise housing for poor families was supported by his research on the dire conditions of many such projects. Since the 1970s, the favored form for social housing projects has been the low-rise developments. Courtyards housing, townhouses, and garden apartments with as many as fifty units an acre, are considered the dominant type. This change in form recognizes the

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25 Sam Davis *The Architecture of Affordable Housing* (Berkeley University of California, 1995), p 17
need for new development to be more compatible with existing
neighbourhoods.

The expansion of non-profit social housing across Canada was originally
spurred on by the visible re-emergence of the homeless. Instead of
government's direct involvement, public funds and charitable donations
have been increasingly channeled towards non-governmental
organizations. Currently, Canadian cities have a number of non-profit
housing authorities that are responsible for maintaining a portfolio of
public housing across cities. Funding for new development has not been
available in any significant amount for sometime. The question is that if
funding were to be provided, what form of development would be better
suited to deal with the influx of larger immigrant family households?

Figure 3: HOPE VI Example (Broadway Homes public housing redesigned by
Urban Design Associates to become Broadway Overlook community)
illustrating New Urbanist principles

The emphasis on income diversity and New Urbanist design principles
have more recently been used as part of a nation wide strategy in the

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26 Benjamin Insitt  *Housing for All: The Social Economy and Homelessness in British Columbia's Capital Region*. Occasional Paper Series, No 06 (Oct, 2008), p 27
United States under the federal program HOPE VI. HOPE VI is promoted as an innovative approach to what has been viewed as the predictable and uncreative stance government has taken towards social housing in the past.\textsuperscript{26} In Canada, a clear example of a mixed demographic approach to housing is reflected in the 15 year redevelopment of Toronto’s Regent Park.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{regent_park_map.png}
\caption{Urban Renewal Scheme of Regent Park (1954)\textsuperscript{29}}
\end{figure}

In 1949 tenants moved into what was Canada’s first experiment in public housing. Originally produced in phases, Regent Park North began construction in 1947 and was complete by 1954. Designed by J.E. Hoare, the superblock development followed other North American public housing projects of that era. The composition of the neighbourhood was a series of 3-6 story apartments with townhouses in a park-like setting.

In 1950, Regent Park South was developed as a series of mixed-townhouses and five fourteen-storey towers. Designed by Peter Kurt Schmoke. \textit{From Despair to Hope: Hope VI and the New Promise of Public Housing in America’s Cities}. (Washington: Brookings Institution Press, 2009), p.vii

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Dickinson, with Page and Steele Architects, the towers won a Massey Medal for architecture. Among the notable design elements was the skip-stop system creating units with cross ventilation. However, these high-rises were not ideal for tenants with children and maintenance of the buildings was difficult. Furthermore, layout of entire neighborhood was criticized for its ambiguity of who has control of open space and self-contained nature of the development led to a clash of perceptions.

The deterioration of the Regent Park was attributed to housing authority policies that eliminated the income diversity that originally existed in priority of those most in need. With the absence of federal policy and withdrawal of provincial support, proposals for the redevelopment of Regent Park have relied on private sector partnerships.\(^\text{30}\)

\(^{30}\) ‘Regent Park at 50.’ The Canadian Architect; Aug, 1999.
The redevelopment of Regent Park reflects core New Urbanist principles such as: an attempt to introduce more diverse housing types in order to attract a range of households of different incomes; reinforcing a sense of security by introducing more human scale buildings that are street and pedestrian oriented; and promoting a continuity in the street network to reconnect with adjacent neighbourhoods and the city.

The mixed approach (mixed-use, mixed-tenancy, mixed-income, mixed-type) to neighbourhood development promoted by New Urbanists has been dismissed by some as artificial "instant urbanism". This is despite it

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enjoying reasonable mainstream success and being adopted as part of HOPE VI public housing revitalization, which is aimed at dismantling distressed post-war public housing developments.32

Because social housing continues to be heavily relied on by immigrant groups, it can be beneficial to examine models of social housing which anticipates the desires of inhabitants better. One charitable social housing organization that consistently emphasizes the importance of architectural design is the Peabody Trust in London England. Peabody Trust is London's oldest and largest charitable housing foundation, founded in 1862 by philanthropist George Peabody. It currently provides homes for nearly 50,000 people within the capital. The foundation was established with a mission to "provide disadvantaged people with the opportunities they need to live a good life by ensuring as many people as possible have a good home, a real sense of purpose and a strong feeling of belonging."33 Part of this mission is achieved by creating 'quality affordable housing' by working with leading architects. Peabody has distinguished itself by its open-mindedness to architectural innovation, which it believes helps garner the Trust a reputation for providing distinctive homes recognizable as being consciously designed and reliable in space standards.

Coopers Street Regeneration in London is a Peabody Trust project which represents many of the design issues which social housing developments aspire to address. Coopers Road was originally a failing estate which was constructed in the 1960s as a series of high-rise deck access blocks. The high-rise deck-access blocks lent themselves to antisocial behaviour and the open space between buildings was poorly used and lacked surveillance. In 1999, in consultation with the residents, Southwark Housing made the radical decision to demolish the estate and re-develop it in partnership with Peabody Trust.

33 Peabody Trust <peabody.org.uk>
ECD Architects were appointed in 2000 to engage in a process of consultation and prepare a master plan that would address the key urban design issues of scale, identity, security, ownership of public space and the relationship with the surrounding area. The new housing development was designed around four courtyards which encourage a sense of community and identity while creating a clear hierarchy of private, semi-private and public spaces.

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Figure 7  Coopers Street Regeneration  Conceptual drawing of building arrangement 36

Figure 8  Coopers Street Regeneration - Photograph of courtyard garden 36

Coopers Street Regeneration demonstrates how moderately sized housing projects can be designed to better suit the needs of the community they serve. The mixture of housing types (townhouses, maisonettes, and mid-rise deck access flats) recognizes the varying housing tenures and household situations among residents. Courtyard gardens equipped with play structures and subtle landscaping elements provide a welcomed refuge from the city and space for children to play.

Social housing has become common to address immigrant's housing needs in Canada. Sponsored refugees who rent from social housing are usually more satisfied with their housing arrangement than those who rent in the private market because they have fewer suitability problems. They are more satisfied with the management, the safety of their home, the floor plan/design and the condition. However, they are usually less positive about their neighbourhoods having concerns about safety and security because social housing is also the recipients of the hardest-to-house.37

Settlement houses run by non-profits can help address some initial needs, the true success and motivation of such housing is the progression from this form of transitional housing into more integrated housing conditions. The next section explores the notion of co-operatives as an alternative to help sponsored refugees integrate. Co-operatives providing housing which offers regular opportunities to interact and can create a stronger sense of inclusiveness and engagement.

36 “Coopers Road Estate Regeneration” Ritchie, Adam, and Randall Thomas Sustainable Urban Design: an Environmental Approach (London Taylor & Francis, 2009), p 100
37 Tom Carter The Housing Circumstances of Recently Arrived Refugees: The Winnipeg Experience (July 2008), p iv
2.3 Co-operative Communities as an Alternative

An alternative model of affordable housing that might be particularly appropriate for sponsored refugee groups is co-operative housing. Co-operatives can be a form of non-profit housing which can provide the foundation for fostering community engagement that can create a much needed sense of empowerment for newcomers. This can be achieved because co-operatives are democratic communities where the residents make decisions on how the co-op operates. This arrangement requires a degree of self-management which limits this option to those with the ability to contribute to the community. Many of the co-operatives which exist today serve families with children to a much greater extent than rental and condominium housing. Half of the households in regular co-operatives and two-thirds of the households in the family targeted co-operatives are one or two parent families with children.38

Residents often volunteer with the maintenance and community-based projects that occur within the community. Housing co-operatives can range from collections of single unit townhouses and small buildings with 4-12 units to large apartment-style buildings with hundreds of units. Co-operatives can be new developments or even existing developments. All that is required is for organizations to apply to the government for co-operative status for a particular project. In exchange for agreeing to not-for-profit status and to accommodating a certain percentage of affordable units, the project receives subsidies from the government.

Co-operative housing once experienced an impressive expansion in Canada despite being renounced by the Canadian Housing and Mortgage Company as disruptive to the single-family home which was believed to be the pillar of social stability. But co-operative housing flourished in comparison to its public housing counterparts discredited by grandiose urban renewal schemes like Regent Park. This is not to say

that co-operatives did not have their share of upsets, but they have managed to stand out because they strive to meet both “a social objective and an objective to providing security of tenure as an alternative to home ownership”.  

Co-operative housing addresses the quality of building maintenance by sharing duties among residents. More importantly, a co-operative’s management structure helps by controlling anti-social behaviour which also contributes to the likelihood that the integrity of the development will be sustained. Sometimes for that reason alone, co-op management is employed to maintain and upkeep high-quality developments after they are completed.

One notable co-operative housing development is Iroko Coin Street Housing (2002) in London, England. Iroko serves as both a model of urban regeneration and, more importantly, demonstrates an alternative form which high-density social housing can take. Iroko represents one stage in the development of a group of sites totaling approximately 35 hectares on the South Bank of the River Thames in London.

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39 Benjamin Insitt, *Housing for All: The Social Economy and Homelessness in British Columbia’s Capital Region*, Occasional Paper Series, No. 06 (Oct., 2008), 40

40 Graham Towers, *An Introduction to Urban Housing Design: at Home in the City* (Oxford Architectural, 2005), 179-180
The original site had become run down and in 1984, under more radical administration, the Greater London Council transferred ownership of the site to Coin Street Community Builders, a non-profit organization. The site of Iroko was originally a car park, which was redeveloped into an underground parking lot so it could accommodate the four to five storey housing structures above which total 59 dwellings and includes 32 family houses which can each accommodate up to six people. The balance of accommodation is made up of a mix of flats and maisonettes. All are for rent and managed by a housing co-op formed by the residents.

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Figure 10: Iroko Coin Street Housing - Photograph of interior courtyard

The housing is designed around a communal garden shared by occupants and becomes the focus for shared ownership and interaction. It provides a tranquil communal area sheltered from the noise of the street and designed for a range of activities. Pathways, large planting beds and profiled concrete walls divide the space into four main areas: a large sloping lawn area, a seating terrace, a toddlers' play area with play equipment, and a sunken ball game area.

With the completion of the Iroko project the need for community amenities became evident and the Coin Street Neighbourhood center was built to serve the influx of people into the area. The building houses an unusually wide mix of functions including space rented on a commercial basis such to a café and restaurant. Many have questioned why a non-profit would entertain commercial activities such as a high end restaurant and provide underground commuter parking. The answer is purely pragmatic where the money made from the commercial parts of the development is used to subsidize the high cost of building affordable housing in the inner city and rent it out at affordable rates.

The Coin Street case study illustrates the idea of a socially conscious development that can help enrich the urban fabric by bringing with it new amenities and people to reinvigorate the area. The design of the development helps reinforce this idea by creating spaces which fosters

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social interaction and engagement. It also creates a distinct sense of identity for the inhabitants which they can take pride in and appreciate.

Co-operatives serve as an interesting model of affordable housing management because they can potentially bring together those with a shared interest to create more inclusive communities. This can help ease the integration process by fostering more community engagement and empowerment. The form that these developments can potentially take on can also reflect this desire for social interaction by anticipating a need for community space.
3.0 Rethinking Prefabrication for Affordable Housing

"The prefabricated house has been, and continues to be not only a reflection on the house as a replicable object of design but also a critical agent in the discourse of sustainability affordability and design innovation."

Glenn D. Lowry
Director of the Museum of Modern Art

Many contemporary design practitioners today see prefabrication as having a great deal of potential in creating affordable housing, as the method can potentially be both economical and ecological. This chapter explores the perceptions and possibilities of prefabrication techniques in developing affordable housing and has helped guide the design portion of this thesis.

There is always an underlying fear and suspicion that in using any form of industrialized production, individuality, craft, and specificity to local sites and cultural conditions will be sacrificed to drive efficiency and maximize profits. However, to dismiss prefabrication techniques as a superficial design style would be short sighted.

Prefabrication entails that components are created in controlled factory conditions and are transported in reasonable components to be assembled on site. The benefits of this method are translated into higher quality standards as modular components are required to be durable enough to undergo transportation. Where prefabrication techniques have been proposed as a more cost effective approach to building, the reality

45 Home Delivery: Fabricating the Modern Dwelling (New York Museum of Modern Art, 2008), p 7
Adaptation: Architecture for Adapting Communities

is that they are rarely in sufficient quantities to realize significant economies of scale. This however served as part of the reason why designers saw a practical use for such methods in housing which became a matter of urgency during the post world war period.

One form of housing which is notoriously associated with prefabrication is the American mobile home. The mobile home is recognized as being the most successful example of a factory-built building in the world, reaffirmed by its multi-million dollar sale figures more than by any fondness for the building type by design practitioners as a genuine form of housing.\(^{47}\) The acceptance of mobile homes as an avenue of affordable housing has led to an entire subculture of society which is often characterized with uncivil behaviour. This has contributed to the stigmatization of the most adopted form of affordable housing in America.

It is not surprising that the mobile home was demonized with its inception in the 1930s which brought about a threat which destabilized what people believed was the only acceptable approach to building, the stick built home. In this light, the mobile homes industry has made attempts to bridge this gap by developing housing that reflects the market vision of the ideal home rooted in place with a vernacular appearance. Becoming more of a permanent site installed residence and more accurately reflected as manufactured homes.\(^{48}\)


\(^{48}\) Roberta Fiedman “Out of the Box Design Innovations in Manufactured Housing” Expanding Architecture: Design as Activism (New York Metropolis, 2008), p 209
There remains a strong interest in prefabrication techniques seen in more conventional housing projects. Murray Grove Housing (1999) in London designed by Cartwright Pickard Architects for the Peabody Trust demonstrates a renewed interest in the use of prefabrication to create affordable housing. The designers collaborated with a subsidiary of Portakabin UK to build a prototype housing system which utilizing modules for each flat, stair tower, and lift. By doing this, the construction time of the development was significantly reduced, durable and sound housing was created, and the potential remains for even a building of this size and scale to be dismantled and reconstituted elsewhere.
Another practice of building which has grown in popularity is the recycling of old cargo containers for use in building. Cité A Docks located in Le Havre, France and designed by Cattani Architects demonstrates the elegant simplicity of recycling prefabricated shipping containers for compact student housing. Cité A presents the potential for prefabricated dwellings to evolve and adapt at any time because the building elements can be easily dismantled and reassembled. This ability for buildings to adapt to changing circumstances can become part of a process which can recognize a number of housing scenarios overtime.

Figure 13 Cité A Docks

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Although the ability for a building to adapt may seem unorthodox, it does allow greater potential to respond to urgent housing needs. Given that the site of affordable housing ideally should be integrated within existing neighbourhoods, prefabricated dwellings can be introduced with the provision of a framework which allows for buildings to be furthered added on to temporarily and then potentially serve a long-term purpose of establishing new communities elsewhere. This strategy is explored in the following section.
3.1 Adaptable Building Strategies

Prefabricated dwellings can become part of an adaptable building strategy that merges housing with existing buildings. This can be achieved by creating infrastructure which accommodates prefabricated dwellings in unconventional ways. The infrastructure can provide prefabricated dwellings with access to utilities while allowing for them to potentially be removed, altered, upgraded or replaced in order to meet the changing need for housing. This approach has been explored by many designers as the following examples would suggest.

Figure 14: Unite d’Habitation in Marseilles and Le Corbusier’s bottle rack concept

Le Corbusier’s bottle rack concept was the inspiration for his Unite d’Habitation in Marseilles and serves as one of the earliest examples of the plug-in principle. The building’s skeleton was envisioned as a rack where autonomous units could be inserted and removed with ease. It was the inspiration for numerous megastructures proposed in the following decades.

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Tatjana Schneider and Jeremy Till Flexible Housing (Oxford, UK Architectural, 2007) p 168
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This idea was further explored by design collectives such as England's Archigram. The group explored the potential for architecture to function as an organism that adapted to the needs and desires of its inhabitants. They became fascinated with the notion of architecture as a type of scaffolding that could house ephemeral vessels. Their proposals were decidedly unrealistic and Utopian and therefore never fully realized.

Figure 15: Archigram’s proposal for 'Plug-in City'

Figure 16: Nakagin Capsule Tower construction, capsule detail

These ideas coincide with the design work of the Japanese Metabolonists of the late 1960s and early 1970s. The Metabolonists embraced prefabrications as a means to manufacture elements that could be organically inserted and replaced within various superstructures. The Nakagin Capsule Tower designed by Kisho Kurokawa remains the Metabolonist's most emblematic built work and clearly demonstrates a 'plug in' approach. The 'capsules' are equipped with built in furnishings, a concept which is valuable when considering the housing situations of New Canadians starting off with few resources.

Figure 17: Habitat '67

The work of the Japanese Metabolonists inspired Habitat '67 by architect Moshe Safdie. Today, the project remains one of the most familiar landmarks of Montreal and originally served as middle income housing for the growing city. Principally, Safdie envisioned Habitat as individual houses placed in a framework. In built form, the framework became redundant and the units were instead stacked. The result is a mesmerizing image which alludes to a hillside town with open terraces. More importantly, for those who saw housing as a humanitarian

54 The Architecture of Affordable Housing. (Berkeley: University of California, 1995), p31-32.
undertaking. Habitat combined social and technical imperatives to generate significant architecture.\textsuperscript{55}

Prefabricated building methods also lend themselves to rooftop structures. Part of this is due to practical reasons such as minimizing impact during the assembly process on site. More fundamentally, the rooftop serves as a plinth which can be flexible enough to accommodate a range of housing forms and arrangements. Rooftop structures are a continually occurring phenomenon as seen in the building of squatter settlements by migrant populations in order to be close to economic activity. But formal rooftop houses in most western cultures take the form of penthouses which are considered exclusive and desirable. In between these two extremes, there can be interesting developments which occur.

![Figure 18: Leonard Avenue Rooftop Apartments: Rendering of exterior and courtyard concept.](image)

Prefabricated rooftop buildings have recently been garnering attention as a reasonable approach to urban intensification. One example is Leonard Avenue Pre-fab Rooftop Apartments in Toronto designed by Levitt Goodman Architects Limited. This project was commissioned by St.Claire Multifaith Housing which is a private, non-profit organization that has a social goal of providing safe, affordable housing in order to help the homeless stabilize their lives, find work and participate in the community.

\textsuperscript{55} Sam Davis, \textit{The Architecture of Affordable Housing}. (Berkeley University of California, 1995), p 30.
\textsuperscript{56} Levitt Goodman Architects Limited <levittgoodmanarchitects.com>
Although this particular example reflects the more common practice of 'topping up' buildings, the potential for rooftop buildings as an amalgamation of different programs can introduce diversity by overlapping functions on one site.

Figure 19: Loft Cube, designed by Werner Aisslinger, a contemporary example of a manufactured/mobile home.

Rooftop buildings represents an opportunity to help integrate affordable housing into developed urban areas granting greater access to the city amenities and programs which many sponsored refugees can benefit from. This can also help compliment an approach to diversifying existing neighbourhoods in a less obtrusive way. These are some of the principles which are explored in developing a project of architecture that can help provide housing to integrate sponsored refugees into urban areas by imagining a more adaptable approach to urban infill.

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57 Rooftop Architecture: Building on an Elevated Surface (Rotterdam NAI, 2005), p 80
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"In between the extremes of segregation and assimilation were diverse adaptive, syncretic, and hybridized modes of architectural reterritorialization"

Stephen Caines
Residual Scripts 58

Canada welcomes those who can help build on the prosperity which the nation enjoys. This being the case, the government could better anticipate the influx of newcomers by ensuring that there are suitable accommodations that recognize a need for housing in more integrated communities. This would allow them to have better access to resources and opportunities that can help foster progressive housing situations overtime.

My family's experience has informed my thesis and a project proposal. One aspect of their integration into Canadian society was becoming part of a co-operative housing community. I believe community housing can greater assist in the adaptation of newcomers to Canada. Co-operative housing provided my family with affordable housing within a supportive community environment and enabled them to work towards a level of economic wellbeing to be able to move on and realize their aspirations to fully integrate.

The housing strategy being explored in this thesis builds on the growing interest in adapting commercial shopping centres for mixed-use. Within the category of 'greyfields' are economically obsolescent malls that offer large infill redevelopment opportunities without the contamination found

on 'brownfields' that are former industrial sites. The term 'greyfield' refers to the asphalt which covers the majority of these sites.

Underperforming retail spaces often become available for a relatively inexpensive price which is an important aspect for non-profit groups, cultural facilities, and local shops that cannot generally afford new construction or extensive site work. It is also not unheard of for obsolete malls to be converted into housing.

Figure 20: The phased redevelopment of East Gate Town Centre illustrated

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60 Ellen Dunham-Jones and June Williamson Retrofitting Suburbia: Urban Design Solutions for Redesigning Suburbs (Hoboken, NJ John Wiley & Sons, 2009), p 67

61 Greyfields into Goldfields: Dead Malls Become Living Neighborhoods [San Francisco, Calif.] Congress for the New Urbanism, 2002 p70-71
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Redevelopment of obsolescent malls more commonly follow New Urbanist principles to create mixed-use neighbourhoods. By bringing together office, retail, housing, recreational, and civic space these once largely vacant areas can be revitalized and serve a more significant purpose. For instance, the East Gate Town Centre in Tennessee is an example of a massive 40 acre greyfield site planned to undergo long-term redevelopment in phases. East Gate Town Centre demonstrates a common predicament where portions of retail developments are leased as office space in the absence of a suitable commercial retail tenant. The ability to phase in redevelopment plans is also used to honour any remaining lease agreements as they are gradually phased out.

Figure 21: Photographs of the Paseo Calorado after redevelopment

Paseo Calorado in Pasadena, California is an alternate example of how redevelopment can occur for malls that are in dense urban areas. The original 11 acre enclosed mall located in the downtown Pasadena underwent a transformation in order to revitalize the centre that had

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62 Greyfields into Goldfields: Dead Malls Become Living Neighborhoods [San Francisco, Calif.] Congress for the New Urbanism, 2002 p 45,74-75
Adaptation: Architecture for Adapting Communities

become increasingly vacant over the years. Its transformation into a mixed-use centre was achieved by introducing apartments and office space above the existing structure while the enclosed walkways of the mall were removed in favour of an open air pedestrian path. This project is distinct because, unlike many typical redevelopment plans for malls, it avoided undergoing a complete teardown.

The potential to utilize the space above existing commercial centers for housing, as reflected in the previous example, may significantly contribute to housing supply.\(^{63}\) I have chosen to explore the approach as part of a strategy to help integrate affordable housing in the city.

Figure 22: Sectional Perspective of proposal for 'New Suburbanism' Lewis Tsurumaki Lewis Architects \(^{64}\)

Building above large commercial retail centers has been considered in a speculative proposal by Lewis Tsurumaki Lewis Architects who

\(^{63}\) Towers, Graham An Introduction to Urban Housing Design at Home in the City Oxford Architectural, 2005 p 156

\(^{64}\) Lewis, David et al. Lewis Tsurumaki Lewis Opportunistic Architecture New York Princeton Architectural Press, 2008 p 103
imaginatively explored this concept in their proposal for 'New Suburbanism'. The big box store serves as a plinth which re-imagines the relationship between suburban living and mixed-use development. As unorthodox as this concept may seem at first, this strategy of overlapping residential units above a shopping centre has occurred.

Figure 23: Row housing supposedly constructed above a mall in Jakarta, Indonesia 65

As suggested in the previous chapter, I also set out to explore designs which use prefabrication techniques. The methodology, which I am using, is perhaps best described by author John Habraken in his book *Supports: An Alternative to Mass Housing*, who proposed a ‘support structure’ that allows for dwelling which can be built, altered, and taken down independently of others. The support structure is more or less permanent while the dwellings are treated as ‘infill’ and are adaptable. 66 This is the basic premise with which I have approached my project proposal in order to explore these ideas.

65 Deconcrete <http://www.deconcrete.org/2010/02/22/optimal-roof-use/> Published February 22, 2010
One other aspect to consider is the architectural presence which this support system can add to a host structure. Rooftop dwellings have the potential to become lost or hidden above large structures. The use of scaffolding as both a support system for the housing and as an architectural design element can provide commercial centres with a much needed face lift. This can become an intriguing proposal for developers looking to refurbish existing commercial retail structures.

Scaffolding and screens can become a second skin used to envelope existing buildings. The use of a translucent safety screen may add colour, pattern, and shape to the exterior. There is also the potential that this skin can be adapted and manipulated overtime to continue to create some visual interest.

Figure 24: Safety screens used in construction and renovations

Scaffolding and screen systems have been further developed as a way to conceal construction or maintenance in more clever ways. One example is the Hotel Crillon in Paris, France where a printed image of the original structure being refurbished was used as an attempt to maintain the visual character of the existing building. This strategy can also be used to provide a preview and give an early impression of buildings being erected.

Figure 25: Hotel Crillon in Paris, France: example of scaffolding camouflage

Photograph of Hotel Crillon during renovation  author unknown
In some cases, the aesthetics of scaffolding and screens are dominant elements of a building's character. This is demonstrated visually in large projects such as the Pompidou Centre in Paris, France designed by Renzo Piano, Richard Rogers and Sue Rogers. The exterior scaffolding of the museum serves as a significant circulation element which guides the flow of visitors while giving the building a unique character and presence.

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69 Photograph of Pompidou Centre  Author Unknown
Another of Renzo Piano's designs, the office tower of the New York Times, demonstrates the elegant use of a screening element to provide simple and clear signage. This can be an interesting approach for commercial developments to adopt in order to refine exterior signage.

All these precedents, to some degree, serve as inspiration for the project proposal presented in the following section.

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70 Photograph of New York Times Building.  
4.1 Site Strategy: Adaptation of the Marginalized Greyfield

The site chosen to test and explore these ideas is Heron Gate Mall located in South-East Ottawa. The mall rests on a 15 acre site, west of the intersection of Heron and Walkley Road. The property is surrounded by low-density residential to the north, medium-density residential uses and a park to the west, medium-density residential and commercial uses to the south, and commercial usages to the east.

Built in 1981, the mall has seen its tenancy gradually dwindle after losing one of two major anchor stores tenants. Its struggle to maintain an allure...
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has been attributed to its inability to compete with even larger big box
developments.

Figure 29: Exterior image/impression of Heron Gate Mall

The current owners of the property purchased the mall years ago with the
intention of tearing it down and replacing it with even larger box stores. In
order to facilitate this expansion, the property owners also purchased a
number of rental apartments adjacent to the property with plans of tearing
them down for the space. However, plans for the redevelopment of the
mall were never realized leaving it in somewhat of a state of limbo.
There is a high level of vacancy and little way of attracting serious chain
stores tenants to rent partly because the mall is in need of serious repairs.
Furthermore, the mall shows signs of neglect and vacancy of the site
often attracts unwanted delinquent behaviour in the area.

Heron Gate Mall is one of a number of moderately sized commercial
nodes in Ottawa that is well connected to public transit. The existing
accessibility of public transit is favorable when housing those without
automobiles, a scenario quite common for those relatively new to Canada.
Furthermore, many commercial centres may serve existing
neighbourhoods close to schools and other community services while
local amenities are located on site which families can greatly benefit from.
For these simple reasons, affordable housing located on commercial
developments can be ideal for those arriving without a significant amount
of resources.
The proposal to incorporate affordable housing for New Canadians into greyfield sites is meant to create a symbiosis (a mutual benefit) between a co-operative housing community and existing retail centres. Members of the co-operative can enjoy the convenience of commercial infrastructure while the activity generated by the co-operative can help re-animate the area. Provisional refurbishments associated with the housing could help the mall to attract a reasonable anchor tenant while those in the co-operative could leverage low-cost leases to open small businesses in the mall. The case of Heron Gate, the mall is in dire need of retrofitting and the additional construction can help ensure that this occurs. Another benefit to this approach is the immediate availability of utility services such as water and heating which could be shared.

In terms of the financial costs associated with such a project, funding could potentially be channeled through incentives such as tax forgiveness and can be a way of recognizing further investments needed by the government to help foster a positive outcome to resettlement.

Figure 30: Original layout of Heron Gate Mall

One of the many complexities to rooftop development is the challenge of resolving issues of property ownership. The ideal situation would be for a developer to make affordable rental housing part of a redevelopment plan.
Where extensive redevelopment plans may not be necessary are foreseen, an alternative could be to arrange some type of lease for rooftop space. In the case of a lease, however, the owners would most likely be obligated to come to an agreement to relocate the tenants if any plans for redevelopment might necessitate the displacement of the residents. Despite these complexities, I believe that a strong case can be made for this merger. If clearly planned and orchestrated, I believe that the incorporation of housing into greyfield sites can benefit the community at large.

Figure 31: Proposal Overview
Part of this proposal is constructing a low intensive green roof that can help mitigate rainwater that is a particular issue of such large structures. The vegetation can moderate solar heat gain and provide an aesthetic green space for the residents living above the mall.
The rooftop courtyard space is surrounded by the housing units which create a perimeter block around the mall. The rooftop courtyard is a tranquil space that is designed with simple outdoor elements to help orchestrate and welcome community gathering. A series of boardwalks span across the roof and leading to rooftop islands which provide space for gathering. Some of these islands are fitted with play structures for children to enjoy while others serve simply as seating areas. The rooftop courtyard is large enough that it can possibly be fitted with other simple amenities such as outdoor recreational courts.
Steel scaffolding is used to provide the overall framework. It serves as structural support to accommodate the additional loads and provides access to the roof via exterior staircases.

Figure 36: Vignette illustrating one example of potential images appearing on the scaffolding which acts as canvas for the display of art (for instance paintings by the Group of Seven).
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The scaffolding also serves as a relatively inexpensive and simple way of adding a unique character to the mundane nature of the existing structure. The existing elevation of this enclosed mall is simply a blank masonry façade that has little character and sense of identity. The use of textiles intended to envelope the exterior of the scaffolding creates a translucent screen that help diffuse solar rays, delineates a covered walkway, and becomes a surface which can be continuously adapted in creative ways. The screens can serve as giant canvases for the display of art or advertising that celebrates the immense scale of the structure by taking advantage of an opportunity to enhance the urban environment. During the evening, lights from the houses behind the screen animate the surface of the building acting as a lantern.

Figure 37: Modular Housing Exterior View

For this proposal, housing units are envisioned to be comprised of a series prefabricated modules. Modules are designed along typical dimensions that allow for units to be easily transferred on site.

In this scheme, two storey townhouses are intended to be stacked above a single storey flat. The townhouses have three bedrooms to accommodate a household of four while the flat has two bedrooms to
Appropriate for smaller households. There also exists the possibility for units to be joined vertically to create a three story townhouse that can accommodate much larger families or a multi-generational household in need of space.

Figure 38: Floor Plan: Layouts

This proposal for Heron Gate Mall represents a strategy that could potentially be translated and implemented on other commercial centres.
4.2 Re-Adaptation, and Alternative Applications

The initial strategy is to introduce housing as a rooftop addition to commercial retail centres. This could avoid lengthy and unnecessary disruptions to current tenants by using prefabricated building techniques to minimize impact and phase in new additions to the building. While this has been the main premise of the project, the ability for further redevelopment to occur is also imperative. Owners of commercial developments may not necessarily be willing to commit to such a potentially long-term arrangement and would be more inclined to focus on their own interest. By envisioning an arrangement that has the potential to re-adapt, the proposal can become more appealing as a means to provide an ideal temporary housing arrangement while still allowing the owners to keep their options open.

As previously noted, large obsolescent malls are commonly undergoing redevelopment that implements New Urbanist principles in order to create mixed-use neighbourhood developments. In the case of Heron Gate, the mall is currently envisioned to undergo redevelopment to demolish the enclosed portion in the structure in favour of having a composition of smaller buildings scattered around the site closer to existing roads. The two main anchor stores are expected to remain unaltered. This can be seen potentially as a first step towards creating a mixed-use development seeing as the site remains underdeveloped with significant space for further buildings to occur.

With respects to the current redevelopment plan, this project proposal anticipates the change. Parts of the project can be dismantled and reconstituted on site. The houses can be refurbished and used as row houses or become apartments placed above the newly constructed buildings.
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Figure 39 Existing redevelopment plans as proposed

Figure 40 Phase 2 Proposal (anticipating redevelopment)
In the most extreme case, the housing modules could be reconstituted as detached infill houses. Alternate modules can be designed and created and be added or substituted to make unique single family homes if desired. Another humanitarian application which these modular houses could be used to address is emergency housing along the lines of the 'Katrina Cottages'. The most fundamental elements could be part of an initial arrangement and the house could be expanded or altered as situations change and contribute to an incremental approach to rebuilding after disaster.

The adaptability of the dwellings anticipates the changing needs of households while the framework is intended to provide an avenue to make additions to existing structures in the city. Recognizing the potential of commercial centres to serve as mixed-use and mixed-income neighbourhoods can help generate much livelier and significant spaces where all citizens are better served.
5.0 Conclusions

“Humanitarian intervention can bring victims to a place where they can re-imagine their own lives and acquire the skills to forge their own path”

Alex Steffen


This thesis was inspired by a humanitarian initiative the citizens of Ottawa took in resettling nearly 4000 Indochinese refugees back in the 1970's. Because of this profound act, I wanted to honour this outlook and use my thesis as an exploration into the relationship and relevance that architecture can have in humanitarian endeavors.

My focus on resettlement was to engage in a profound aspect of my family's history and the potential intersection with my studies as a designer. This thesis was not done in the interest of validating or debating public policies or trying to propose an agenda to resettle as many refugees in Canada. I was compelled to consider the influence that architectural discourse and ingenuity could have in the prospect of helping sponsored refugees resettle as a more comprehensive approach to this humanitarian initiative.

Part of the resettlement process is reliant on the provision of affordable housing needed to help address the prospect of New Canadians. As stated in this thesis, the importance of a stable housing arrangement can potentially ease the difficulties which many newcomers face in adapting to a foreign society. Their housing situations and impressions of their neighbourhood surroundings influence their emotional feelings of resettlement while poor housing conditions can further stigmatize them.

from the rest of society. The fundamental point that this thesis has strove to address is that the discussion of architecture and urbanism has implications in realizing a more conscious and comprehensive approach to resettlement.

The purpose of this thesis was to maintain focus on its main inspiration which is the prospect of resettling sponsored refugees. This was not meant to dismiss the plight of many existing vulnerable populations who share similar concerns. The premise of this thesis addresses those who are entering Canada as refugees through sponsorship who intend to become contributors to Canadian society and the provision of an additional avenue of affordable housing provides a better opportunity for this to be realized. The emphasis on housing co-operatives was meant to bring together those who share this ambition and provide that opportunity.

While one aspect of the discussion is having an appropriate program to realize this mission, the design and form of housing used to compliment the program is the other. The approach and proposal which was taken in the thesis was not meant to overlook the effectiveness of traditional neighbourhood developments. In some respects, the proposition of the development of housing on commercial retail sites suggests the diminishing amount of urban land for development, but the more fundamental purpose is to better utilize and enhance the infrastructure in existing neighbourhoods.

The use of prefabricated techniques in housing remains significant in regards to addressing the global crises of shelter because of a number of practical considerations. The mobility, relative ease in construction, and economies potentially created from efficiencies in the process continue to intrigue designers as a way of creating decent housing in hopes of fulfilling a profound social undertaking.

There are practical reasons for pursuing prefabrication for affordable housing. Construction and assembly done in a controlled environment can ensure quality construction that recognizes a desire for durable and
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sound homes. On the other hand, the potential for prefabricated homes to be reconstituted in different settings and arrangements provides greater sense of freedom. With this freedom to adapt, buildings can better anticipate change and avoid becoming obsolete. This remains a strong possibility when exploring the potential of prefabricated dwellings. Adaptable dwellings can become part of a system that begins as modest transitional housing strategically placed in the city and then ultimately be relocated and altered to establish new communities.

The title of the project proposal, Architecture for Adapting Communities, is meant to be an allusion to a humanitarian approach that architects can take in order to assist sponsored refugees. This approach draws attention to affordable housing that can become hospitable environments that foster inclusiveness, pride, and wellbeing among residents.

The strategy proposed in this thesis is an alternate approach to greyfield redevelopment. Design can to be used to generate intrigue and appeal to those not necessarily interested in such issues. The rationale is that the approach proposed in this thesis can fundamentally benefit all those involve. Although admittedly unorthodox, it is meant to generate further discussion on how designers can respond in a more comprehensive way to humanitarian initiatives such as the prospect of welcoming sponsored refugees to become part of Canadian society.

The theme of ‘adaptation’ is appropriate for this thesis. While the term reflects the strategy proposed, it also recognizes both the imperative for sponsored refugees to be able to adapt to Canadian ways of living and to the changes which the city can possibly undergo to help recognize a more comprehensive approach to resettlement. In these respects, I believe the discussion of architecture and urbanism is relevant in the discussion of refugee resettlement as a humanitarian initiative.
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Appendices

Project Design Development and Presentation Slides
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The Habitat for Humanity
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SITE / CONTEXT

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Notes

1 The United Nations and Refugee Policy

The origin of refugee policy as we recognize it today is rooted in the aftermath of the Second World War and was in response to the issue of tens of millions of "displaced persons". The major vehicle for establishing a global protocol was realized in the formation of the United Nations. The treaty known as the 1951 Refugee Convention was established to clarify the rights of refugees. The convention guarantees the right to asylum to those fleeing violent conflict because their lives and basic human rights are at risk. Host countries adhering to this protocol understand an obligation to offer protection until refugees are able to safely return to their homes.

Granting amnesty is understood to follow two avenues. Inland refugee claims is the more volatile avenue of immigration because of the unrestricted nature of such an approach and open to abuse which is damaging to the system's creditability. This avenue exists to recognize the fundamental ideas of the Refugee Convention.

The second form of refugee claim is made in the areas of conflict. These claims are made in established refugee camps which recognize the severity of the conflict and resort to resettlement in severe circumstances. Similar to the immigration process, careful consideration must be given to the adaptability of such people into a host nation such as Canada. Age and family makeup are considered, education, professional skills, and language proficiency are all taken into consideration in order to establish the feasibility of resettlement.