



Housing Studies Achievement Award Winners To Be Recognized At NHRC Fall Meeting

Five Canadian university graduate students are the first-ever winners of Canada Mortgage and Housing Corporation's (CMHC's) Housing Studies Achievement Award (HSAA). The Award recognizes academic work that represents a significant contribution to the understanding and advancement of housing in Canada.

The Awards will be presented at the Awards Dinner to be held at the Crowne Plaza Hotel in Ottawa on November 6, 2007 to coincide with the Fall meeting of the National Housing Research Committee (NHRC).

CMHC announced the creation of the HSAA in June 2006. The call for entries went out through a ministerial news release in March 2007 with a deadline for applications of May 18, 2007. There were more than 1,000 downloads of the application package resulting in 48 applications. The applicants represented 18 Canadian universities from across the country and two British universities. Their fields of study included: engineering, architecture, planning, geography, economics, and sociology.

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About the National Housing Research Committee

The National Housing Research Committee (NHRC), established in 1986, is made up of federal, provincial and territorial, municipal, industry, social housing, academic community and consumer representatives. Its objectives include:

- identifying priority areas for housing-related research or demonstration
- fostering greater co-operation, developing partnerships and minimizing overlap in research activities
- encouraging support for housing research
- promoting the dissemination, application and adoption of research results

In addition to the Full Committee, the NHRC also operates through working groups to exchange information, discuss research gaps and undertake research projects. Currently, working groups meet on housing data, homelessness, sustainable housing and communities and distinct needs. NHRC participants also contribute articles to the *NHRC Newsletter*, which is produced twice a year, and network with their online community: www.nhrc-cnrl.ca.

The NHRC co-chairs are John Black of Canada Mortgage and Housing Corporation (CMHC) and Doug Page of the Province of British Columbia. CMHC provides the Secretariat for the Committee and produces this Newsletter.

How to reach us

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 (product no. 65794)

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Two of the five winners were at the Doctoral level and the others were at the Master's level. They are:

Doctoral Theses

Sutama Ghosh, *We Are Not All the Same: Differential Migration, Settlement Patterns, and Housing Trajectories of Indian Bengalis and Bangladeshis in Toronto*

Miljana Horvat, *Protocol and Assessment Tool for Performance Evaluation of Light-Frame Building Envelopes Used in Residential Buildings*

Master's Theses

Oyetope Abe, *Effectiveness of Energy Wheels from Transient Measurements*

Joshua Engel-Yan, *The Integration of Natural Infrastructure in Urban Design: Evaluating the Contribution of the Urban Forest to Neighbourhood Sustainability*

Stephanie Vermeulen, *An Architecture of Daily Life: The Continuing Evolution of Toronto's Residential Fabric*

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The five winners were chosen by an independent selection committee comprised of experts in housing research that met in Ottawa from June 13 to 15, 2007.

The Selection Committee

Elisa Campbell, Director, Design Centre for Sustainability, School of Architecture and Landscape Architecture, University of British Columbia, Vancouver BC (Committee Chair)

Claude Bédard, Doyen, Décanat à la recherche et au transfert technologique, École de technologie supérieure, Montréal QC

Ausra Burns, Director, Aboriginal Community Development Centre, Mount Allison University, Sackville NB (Currently, Senior Policy Manager, Indian and Northern Affairs Canada, Ottawa)

Tom Carter, Canada Research Chair in Urban Change and Adaptation, Professor of Geography, Institute of Urban Studies, University of Winnipeg, Winnipeg MB

Maureen Connelly, Research Program Head, Green Roof Research, British Columbia Institute of Technology, Vancouver BC

Lawrence Deane, Associate Professor, Faculty of Social Work, Inner City Program, University of Manitoba, Winnipeg MB

Paul Fazio, Professor of Building Engineering, Department of Building, Civil & Environmental Engineering, Concordia University, Montreal QC

Laura Johnson, Associate Professor, School of Planning, Faculty of Environmental Studies, University of Waterloo, Waterloo ON

Beth Moore Milroy, Professor Emerita, School of Urban and Regional Planning, Ryerson University, Toronto ON

Robert Murdie, Professor Emeritus and Senior Scholar, Department of Geography, York University, Toronto ON

David Newhouse, Chair of Indigenous Studies, Associate Professor, Indigenous Studies & Business Administration, Trent University, Peterborough ON

Marion Steele, Associate Professor Emerita, Department of Economics, University of Guelph, Guelph ON

Grant Wanzel, Dean of the Faculty of Architecture and Planning, Professor of Architecture, Dalhousie University, Halifax NS

Jacques White, Professeur, agrégé, École d'architecture, Université Laval, Québec QC

HSAA operates every two years with the next cycle set for 2009. Canadian Master's or Doctoral students studying anywhere in the world are eligible. Academic work submitted can address any aspect of housing, whether social, economic, design or technical. The Award is a one-time payment of \$10,000 to each winner. Winning theses will be deposited into the Canadian Housing Information Centre (CHIC) and summaries of the theses posted on CMHC's website.

This newsletter includes an article on each of the winning theses. ■

More information about the HSAA program and the 2007 Award recipients is available on CMHC's web site: www.cmhc-schl.gc.ca
Search keyword: HSAA

News About the NHRC

2007 is the NHRC's twentieth anniversary year, and last fall the members began discussions on future directions. The dialogue focussed on membership and structure and NHRC networking both within and outside Canada. A Full Committee Member Survey was completed in the Spring which explored membership and the topics for working groups. The results of the survey were presented at the Full Committee meeting on May 2, 2007. Since then the NHRC's Administrative Committee has implemented several changes:

New Members

Infrastructure Canada has been invited to join the NHRC Full Committee along with CMHC's Canadian Housing Information Centre. A Task Force was struck to examine ways to supplement the Federation of Canadian Municipalities' municipal voice, and encourage a stronger direct municipal presence on the NHRC. As a result, larger municipalities now have two membership positions on the NHRC—one from the East and the other from the West of Canada, with the representative from each region sitting for a two-year term and liaising with their regional counterparts in advance of the meetings. The existing rotating municipal position has been maintained, and will be used to allow smaller municipalities to attend.

Working Group Line-Up Shuffle

Full Committee members indicated they wanted four working groups instead of five so the Administrative Committee has proposed the following line-up which is being pilot-tested at the Fall 2007 meeting:

- Housing Data, co-chaired by CMHC's John Engeland and StatsCan's Willa Rea;
- Sustainable Housing and Communities, expanded to include the building side of this issue, co-chaired by CMHC's Mark Holzman and NRC's Hans Schleibinger;

- Distinct Needs, incorporating the previous seniors housing working group and expanded to include immigrants, youth, people with disabilities and Aboriginal people, co-chaired by CMHC's Jim Zamprelli and the Province of Newfoundland and Labrador's Kate Moffat;
- Homelessness, with co-chairs Jeff Bullard of HRSDC and Dan Troke of the Province of Nova Scotia.

All Working Groups are reviewing their objectives to incorporate population health and societal outcomes into their work. The attendees of the Aboriginal Housing Research Discussion Group in the Fall of 2006 and the former members of the Housing and Population Health Working Group are being encouraged to join the other groups to bring their perspectives to the table.

Last But Not Least

It is proposed that the Housing Data Working Group always meet last, after the other three so that representatives from the other groups can table data needs and issues which have emerged.

Web-Cast Trial

The Fall 2007 meeting of the Sustainable Housing and Communities Working Group is being video web-cast live as a pilot to increase information dissemination and attract new associate members. ■

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Housing, Household Growth Generally In Synch

Canada's housing industry generally does a good job matching housing production to population growth and household formation, according to the first document in CMHC's series examining the housing content of the 2006 Canadian Census. The release of this report, *2006 Census Housing Series Issue 1: Demographics and Housing Construction, 1971-2006* is pending.

"From 1971 to 2006", the report says, "the total increase in the number of households in Canada (6.4 million) was almost identical to the number of new homes completed (6.5 million)".

Even though household formation and housing construction tend to trace similar paths over the long term, gaps between the two regularly occur. From 2001 to 2006, for example, the number of new homes constructed in Canada surpassed the net change in households by a considerable margin. During this period, builders completed about one million new homes while the net increase in households was just under 900,000.

This gap between construction and households was larger than at any time since 1971, says the report. Although it is difficult to say with precision why this gap occurred, available information

suggests that increased rental vacancies and increasing numbers of vacation and second homes accounted for some of the excess. From 1999 to 2005, the number of Canadian households owning second homes, vacation homes or cottages rose by almost a quarter to about 1.1 million.

The vacancy rate for privately initiated rental buildings of three units or more rose from 1.7 per cent in 2001 to 2.7 per cent in 2006. The change represents about 20,000 vacant rental units. The report speculates that the increase in vacant rental units was probably larger than even this figure indicates. Rental unit surveys exclude the secondary rental market, which includes condominium rentals, freehold row houses, and rental units in structures with fewer than three units.

Across urban housing markets, the rate of household formation varied significantly in the past decade, reflecting large underlying differences in population growth. In turn, population growth differences were often associated with the job creation records of local economies. Most of the cities with high rates of household, population, and employment growth from 1996 to 2006 were located in Alberta, Ontario, and British Columbia.

Net Household Formation and Housing Completions Annual Averages and Cumulative Totals, Canada, 1971-2006 (thousands)		
	Net Household Formation	Housing Completions
Annual Averages		
1971-1976	226.3	235.1
1976-1981	223.1	222.3
1981-1986	142.0	152.1
1986-1991	205.3	208.0
1991-1996	160.4	150.3
1996 - 2001	148.6	139.9
2001- 2006	174.9	200.0
Cumulative totals		
1971-2006	6,403.0	6,538.7

Completions based on totals for the 3rd quarter of the initial year through the 2nd quarter of the last year.

Source: CMHC (Starts and Completions Survey) and adapted from Statistics Canada (Census of Canada)

The rate of home building in urban centres with high rates of household growth is much higher than in markets with comparatively little household formation. From 2001 to 2006, the two metropolitan areas with the highest rates of household growth – Barrie and Calgary – also had the highest number of housing completions per capita. In per capita terms, the number of homes built in slow-growing centres like Thunder Bay and Greater Sudbury was as little as one-sixth the number in high-growth centres. Because of wide variation in the growth rates of urban populations, the volume of residential construction differed a great deal in cities of roughly comparable size. ■

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CMHC's Roger Lewis: rlewis@cmhc-schl.gc.ca;
613-748-2797

Immigrant Settlement Patterns Often Pre-Determined, Study Shows



Where immigrants live within the city and the type of housing they occupy, are closely connected to their reasons for coming to Canada and the processes of migration, according to the 2006 doctoral thesis of Sutama Ghosh.

Dr. Ghosh received a CMHC Housing Studies Achievement Award for her Doctoral thesis titled *We Are Not All The Same: The Differential Migration, Settlement Patterns and Housing Trajectories of Indian Bengalis and Bangladeshis in Toronto*. She carried out this research while doing graduate work in the Geography Department at York University.

In her study Dr. Ghosh challenges erroneous perceptions of homogeneity among diverse immigrant groups such as those commonly labelled "South Asians". Although they speak the same language and share the same colonial memory, Indian Bengalis and Bangladeshis have distinct socio-cultural and political identities. Indian Bengalis are predominantly Hindus from the province of West Bengal, India, while Bangladeshis are mainly Muslims from the nation state, Bangladesh.

The processes that bring these two groups to Canada are also quite different. The Toronto Indian Bengalis she interviewed relied primarily upon institutional networks such as immigration agencies, educational institutions and employers to reach Canada. In contrast, the Bangladeshis relied exclusively on interpersonal networks, such as family and friends.

These distinct processes of migration influenced where they settled in Toronto upon arrival and the type of housing they occupied. In many cases, these aspects were determined before they ever left their country of origin.

Most Indian Bengali households arrive in Toronto with no family or friends in Canada. Because they had institutional help with emigration, many Indian Bengalis initially settled in the outer suburbs of Toronto (such as Mississauga) where accommodation was provided for them. In contrast, because most Bangladeshis come to Toronto to be with family and friends, they tend to settle near them, giving rise to Bangladeshi neighbourhoods. Dr. Ghosh says "these initial housing experiences continue to influence subsequent housing experiences in terms of neighbourhoods and dwellings".

Although most Indian Bengalis and Bangladeshis are well educated when they arrive in Canada, Dr. Ghosh says that: "compared to Indian Bengalis, fewer Bangladeshi men were professionally trained and fewer Bangladeshi women had a university degree. Bangladeshi refugee households were the least qualified. These educational disparities have a direct economic impact. Almost half of Indian Bengali households earn more than \$75,000 a year while a similar portion of Bangladeshi households earn less than \$20,000 a year and most were on welfare."

Not surprisingly, these income differences have a major impact on their housing options. Most Bangladeshi immigrants remain renters, often in poor quality housing, while many Indian Bengalis have become homeowners.

In addition to income however, "culture" also determined the settlement patterns and housing trajectories of Indian Bengalis and Bangladeshis. Most Bangladeshis expressed a strong desire to live near other Bangladeshis, with whom they could speak their mother tongue and practice Islam. In contrast, preferring to live in mixed neighbourhoods, Indian Bengalis tend to disperse in the Toronto CMA.

Dr. Ghosh is currently working at the University of Toronto at Scarborough as an Assistant Professor of Geography in the Division of Social Science. She intends to continue research in this area since she believes that there is a lot that needs to be done. ■

For more information, please contact Dr. Sutama Ghosh, ghosh@utsc.utoronto.ca; 416-514-1481.

New Evaluation Tool Will Aid Building Designers, Builders

A new tool, developed by a Concordia University Doctoral student, can be used to holistically evaluate the performance of light frame building envelopes. Until now, only specific components of building envelopes or specific aspects of their performance could be assessed.

The tool was created by Miljana Horvat, a former student in the Department of Building, Civil and Environmental Engineering as her PhD thesis. Her work, titled *Protocol and Assessment Tool for Performance Evaluation of Light-Frame Building Envelopes Used in Residential Buildings*, earned a CMHC Housing Studies Achievement Award.

Building envelopes are complex systems, exposed to extreme environmental loads in Canada. They protect occupants from cold and heat, noise, pollution and precipitation, directly affect indoor thermal and air quality comfort and, therefore, occupants' health. They influence energy consumption and the heating of the environment. Statistics show that building envelope failures in housing account for 25 per cent of warranty program builder call-backs. There was no tool that designers and builders could use to evaluate envelope performance and incorporate necessary changes at the design stage to not only improve designs but also to avoid costly failures.

The development process had five components:

1. Dr. Horvat established a protocol for a holistic approach to evaluating wood-frame building envelopes. The protocol, which incorporates existing criteria and benchmarks for minimum acceptable performance, integrates different envelope functional requirements that includes air tightness, moisture management, thermal, structural and acoustic performance, fire resistance and, indirectly, design quality and workmanship. Dr. Horvat's protocol was developed for conditions in the Montreal area but could be adapted for other locales.
2. Next, she developed a strategy for employing the protocol at various stages of house envelope construction (from design to in-plant or on-site installation and on into post-occupancy) and for laboratory testing of innovative building envelope systems.

3. A scoring and weighting system, which establishes priorities between individual functional requirements in order to achieve a more accurate overall performance profile, was then developed.
4. Processing the scoring and weighting data was done with a computer application that she developed called BEPAT (Building Performance Evaluation Tool). BEPAT automatically compares values entered to stated criteria and assigns points that reflect how well the values meet the criteria. Weighted scores together establish a building envelope performance profile that can also be used in a quality rating system.
5. Finally, in order to fine-tune the BEPAT tool and scoring and weighting system, Dr. Horvat road-tested the process on five different building envelope assemblies.



The development of a Protocol and the Tool opened the door for new research to:

- establish similar tools for other climate zones,
- improve the weighting and scoring systems,
- further develop more sophisticated user-friendly software.

Dr. Horvat currently holds an Assistant Professor position at the Department of Architectural Science at Ryerson University in Toronto. She intends to continue her research in housing and housing performance and to influence her students to do the same. ■

For more information, please contact Miljana Horvat, mhorvat@ryerson.ca; 416-979-5000, ext 6512

Research Yields Faster, Cheaper Way to Rate Energy Wheels



The challenge for designers of heating, ventilation and air conditioning (HVAC) systems is how to maintain comfortable indoor air under the extreme weather conditions of winter and summer while keeping the capital and operating costs of the systems as low as possible.

Meeting this challenge requires the use of energy wheels, devices that exchange heat and moisture between the supply and exhaust airflows. In hot, sticky summer weather, the wheel removes heat and moisture from incoming air and deposits it into the outgoing air preventing the heat and humidity from getting inside the building. In winter, the wheel can extract warmth and moisture from outgoing air and transfer it to the incoming fresh air supply to raise the temperature and humidity of cold, dry winter air before it circulates inside.

The testing of energy wheels to rate their performance characteristics and economy of operation has proven to be expensive, time consuming and inaccurate, according to Oyetope Abe, who has been awarded a CMHC Housing Studies Achievement Award for devising a less expensive and faster way to obtain performance data on energy wheels. Mr. Abe wrote his Master's thesis, titled *Effectiveness of Energy Wheels from Transient Measurement*, while doing graduate work at the Mechanical Engineering Department at the University of Saskatchewan, Saskatoon.

Traditional testing methods set up for measuring wheel performance required equipment that could cost millions of dollars, carried a price tag of about \$5,000 for each test, and required about three hours of running time to get 30 minutes of test data.

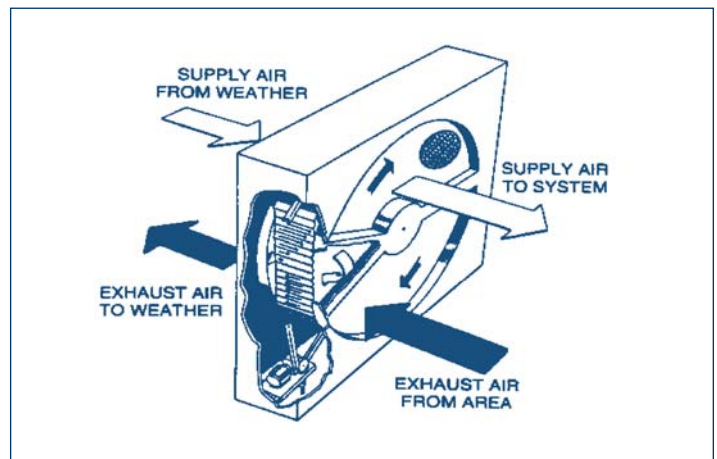
Mr. Abe measured the response when wheels were subjected to a change in humidity or temperature and used this data to develop an equation to calculate how the wheels would perform under conditions of continuous operation. His method requires less expensive equipment and is slightly more accurate than previous testing techniques. He has received a patent for his method.

HVAC engineers can use the model and equations he developed to quickly and effectively optimize their energy wheel designs to improve indoor air quality and to achieve energy and cost savings. This new testing method can also be used for quality control in the manufacture of energy wheels and to field test those already installed.

Oyetope Abe is currently working as a technical professional at Halliburton Energy Services Canada, an oil and gas energy service company, and he intends to continue research in this area. ■

For more information, please contact Oyetope Abe, oyetope_abe@yahoo.com; 780-882-7078

Mr. Abe's thesis can be downloaded at:
<http://library2.usask.ca/theses/available/etd-06222005-121700/unrestricted/Thesis.pdf>



Basic function of an energy wheel

Why Higher Density Neighbourhoods Need Proper Tree Cover

Compact neighbourhoods and higher residential densities are key components of strategies to create sustainable urban communities. These objectives, however, may come at the expense of urban vegetation. Specifically, higher density neighbourhoods may leave less room for trees and the benefits they bring to urban life.

Trees cool the outside air on hot days and they can reduce air conditioning requirements in the buildings they shade. They intercept rainfall and help the soil hold water, thereby reducing storm run-off and the need for infrastructure to handle it. They also act as wind barriers to reduce the amount of convective heat loss in nearby buildings.

The challenge, as Joshua Engel-Yan sees it, is to strike a proper balance between building at higher densities and planting trees to derive the benefits of both. His research, examining the relationships between available tree habitat, potential building energy savings derived from trees, and different approaches to neighbourhood design and residential construction, earned Mr. Engel-Yan a CMHC Housing Studies Achievement Award. His Master's thesis is titled *The Integration of Natural Infrastructure into Urban Design: Evaluating the Contribution of the Urban Forest to Neighbourhood Sustainability*. He did the research and wrote the thesis while doing graduate studies in the Department of Civil Engineering at the University of Toronto.

Mr. Engel-Yan studied the heating and cooling effects of varying tree leaf area densities in three types of Toronto neighbourhoods:

post-war suburban, contemporary suburban and new urbanist. He learned that savings on heating requirements actually begin to decrease for leaf area densities above a certain threshold. As the amount of tree shade increases, its cooling effect offsets and surpasses the amount of warming derived from trees acting as wind breaks. On the other hand, savings on cooling requirements increase in direct proportion with the amount of leaf cover due to the combined influences of shade and leaf transpiration.

Many studies have considered the effect trees have on energy use at the scale of the individual building. Mr. Engel-Yan believes that research at the neighbourhood scale is required to get a clearer picture of these effects. Even though the amount of tree habitat can be lower in higher density neighbourhoods, trees often have the potential to provide higher energy savings in such neighbourhoods because each tree influences the heating and cooling requirements of more buildings. Planting trees in higher density neighbourhoods where leaf cover is deficient is, therefore, the best way to maximize building energy savings. Even better is preserving trees when new developments get underway.

But how many trees are enough? That calculation can be labour intensive and time-consuming as it must factor in building construction characteristics, building orientation, tree types, how far they are from buildings, and climatic variables. Fortunately, others have already done this work and Mr. Engel-Yan adapted look-up tables for two American cities (Detroit and Minneapolis) to the Toronto setting. The same approach could be used for other Canadian cities.

At the present time, Joshua is working for the IBI Group in Toronto in the areas of transportation planning and neighbourhood design, working towards creating more sustainable cities. ■

For more information, please contact Joshua Engel-Yan, j2yan@alumni.uwaterloo.ca; 416- 653-2821.



Trees enhance high density housing.

Credit: Metropolitan Design Center

What Toronto Can Learn from Amsterdam



The City of Toronto needs a new housing vision for the 21st Century, says Stephanie Vermeulen, an architect now working in England. While a graduate student in the School of Architecture at the University of Waterloo, Ms. Vermeulen set out her vision in her Master's thesis, titled *An Architecture of Daily Life: the Continuing Evolution of Toronto's Residential Fabric*. This thesis won her a CMHC Housing Studies Achievement Award.

Toronto prides itself on its cultural and social diversity, writes Ms. Vermeulen, yet architecturally it still struggles to adapt within a century-old fabric of single-family homes. Her vision is founded on a city that has seen immense change over the last century, and faces an even greater rate of change over the next. It serves not only to add the necessary density to the city's existing neighbourhoods, but also to foster strong community life and provoke new ideas about urban living.

Ms. Vermeulen, who lived in the Netherlands for two years, believes the Dutch have developed an urban model that proves that quality of life can be improved by a housing type that Toronto has never been comfortable accepting.

"Amsterdam is consciously planned and developed to be compact," she says, "and the Dutch model proves that quality of life can be improved by development that weaves together housing, commercial space and public space."

Ms. Vermeulen proposes a set of components and principles that can be used to redevelop many of Toronto's existing neighbourhoods. She analysed midtown Toronto's urban fabric to identify opportunities for development and formed a proposal for the area surrounding the intersection of Oakwood Avenue and Vaughan. She believes this location has the potential to become a central hub for the entire community. Right now it lacks the population density to support local businesses and as a result, has some of the most undervalued property in the city.

The transformation would begin with large lots at the Oakwood and Vaughan intersection that could accommodate a large-scale re-development, anchoring the neighbourhood and boosting its population. Ms. Vermeulen proposes rebuilding commercial units at this intersection and putting residential apartments above them. From there, new multi-unit residential properties would then creep out along the side streets to mix with existing housing.

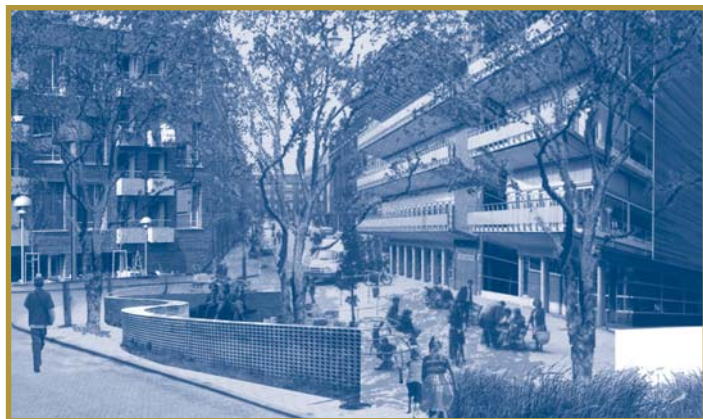
She has designed a set of flexible housing typologies and street sections which can be applied throughout the site. The buildings can be added incrementally and handled by a number of different developers as demand increases, resulting in a hybrid neighbourhood with a great variety of living options and a beautiful, vibrant streetscape.

Ms. Vermeulen knows that bringing her vision to reality would mean a cultural shift for Toronto. In the Netherlands, with its long history of government involvement in housing and city planning, responsibility for evaluating design proposals is done by city staff, not outsourced to the private sector. Toronto, with its culture of private development, would have to find its own way. She suggests this journey could start with a partnership between city officials and professional architects and urban designers to exchange ideas and create the continuity to chart a new course and keep it on track.

Stephanie Vermeulen is currently living in London and working at Grimshaw Architects. She intends to return to Toronto in the new year and hopefully pursue some of the projects that her thesis sets out. ■

For more information, please contact Stephanie Vermeulen, stephanievermeulen@gmail.com; 416-487-6118.

Ms. Vermeulen's thesis can be downloaded at: <http://uwspace.uwaterloo.ca/handle/10012/2889>.



Public Space Collage Oakwood/Vaughan intersection

Quebec's First Transit Village a Hit with Commuters

The first master-planned, transit-oriented housing development in the Province of Quebec appears to be a hit with the people who live there and commute by train. Most residents of Village de la Gare, part of the Town of Mont-Saint-Hilaire, located on the south shore about 40 km east of Montreal, say proximity to rail transit influenced their decision to live there.

Nearly half the residents interviewed in the summer of 2006 said the rail link to downtown Montreal was their number one reason for choosing to live in Village de la Gare. Forty-four per cent of the residents surveyed said that public transit was their main mode of travel to work. This figure compares with just fewer than 22 per cent for the entire Montreal CMA.

Construction at Village de la Gare started in 2002 and is scheduled for completion in 2012 when the community will include 1,000 residential units, commercial establishments, a primary school, public open space, bicycle routes and pedestrian pathways. All of these amenities will be located within 750 metres of the train station, operated by the Metropolitan Transportation Agency (AMT – Agence métropolitaine de transport).

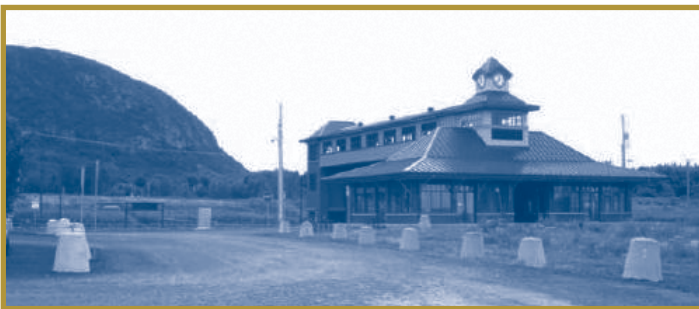
The train station is the central component of the development, and the design for the project—mapped out through close collaboration between the developer, Groupe CBL and the Town—includes the following transit-oriented, pedestrian, and bicycle-friendly elements:

- the highest-density buildings - six-unit multi-family residences - are closest to the train station;
- guidelines are in place to reduce the role of cars, including ample sidewalks, narrow streets, bicycle paths, on-site commercial services and off-street parking. Greenery buffers the sidewalks from passing automobile traffic;
- residential densities are sufficient to support commuter train ridership;
- street layouts with short blocks and buildings with setbacks of three to five metres support a pedestrian-friendly environment;
- parking standards at 1.5 spaces per residential unit are lower than the two spaces per unit, common in conventional subdivisions. Commercial sites near the train station are exempt from parking space requirements because customers can park at the train station. There are even bike racks at the station for those who pedal to the train.

Thus far, the development has achieved the sense of neighbourliness the planners aimed for as people tend to walk to the train station and within the community. This usage pattern is expected to increase as more housing and commercial services are added. The project has attracted families as well as middle-aged and retired couples.

The Village de la Gare project, including the unique collaboration between the developer, the transit authority and the municipality, is described in detail in a CMHC-published report titled: *Transit-Oriented Development Case Study — Village de la Gare, Mont-Saint-Hilaire, Quebec*. It can be downloaded free of charge from www.cmhc-schl.gc.ca. ■

For more information, please contact Lynn Armstrong, CMHC, larmstro@cmhc-schl.gc.ca; 613-748-2317.



The train station of Village de la Gare

NRC-IRC's Ventilation and Wall Research House Brings New Research Opportunities

Upgrades to a research house at the NRC Institute for Research in Construction (NRC-IRC) campus in Ottawa have greatly increased its capability for studying the performance of innovative building systems. Now named the *Ventilation and Wall Research House*, this world-class facility enables research activities that integrate indoor environment & building envelope performance.

The facility has the potential to improve the comfort, healthiness, durability and energy-efficiency of housing by enabling research on topics such as ventilation, heating and cooling, moisture management strategies, and heat, air and moisture transfer in the building envelope.

The facility has been designed to be very flexible and can be reconfigured to allow new series of experiments. Changes to the facility include zone-controlled forced-air heating and cooling systems, fully zoned automated tracer gas sampling, a dosing system with multiple tracer gas capability, and robotic thermal environment measurement systems.

The Ventilation and Wall Research House is rigged with a host of advanced scientific tools. Two of them are automated 3-D robotic systems. Each system permits the computer-controlled placement and movement of sensors in space, providing continuous monitoring of indoor environment parameters such as air velocity, dry-bulb temperature, globe temperature, etc. The facility is equipped with a computer controlled automatic data acquisition and control system (DACS) that can be used to monitor temperatures (air and surface), envelope pressures, duct flow rates, relative humidity, etc. allowing researchers to gauge energy efficiency, thermal comfort conditions and condensation potential on interior surfaces and within wall cavities and around envelope penetrations.

Once the house was commissioned, research in three important areas got underway:

- **Hybrid Heating** — This work seeks to improve heating efficiency by combining the best features of hydronic radiant floor heating and forced-air heating. This research will evaluate the comparative energy and comfort performance of each system as well as explore hybrid approaches to home heating. It could reduce energy consumption and greenhouse gas emissions and help house renovators and builders to make better heating system choices.
- **Hybrid Ventilation** — Ventilation and air conditioning can account for more than 50% of residential energy consumption and directly impact occupants' health and comfort. In parallel with the hybrid heating research, the upgraded test facility is being used to study hybrid combinations of natural and mechanical ventilation for single-family residences. Combining the advantages of both natural and mechanical ventilation may offer a way to reduce energy consumption and peak electric load, and improve ventilation and comfort, while meeting code requirements.
- **Innovative Walls and Windows** — An important component of the upgraded test house is the *Field Exposure of Walls Facility* (FEWF) located on the West side at the first floor of the test house. In this facility researchers conduct field studies to compare the wetting and drying performance of innovative and conventional wall systems as well as windows and wall/window junctions. In wintertime the test specimens are exposed to the natural weathering conditions occurring at the site, and are challenged with exposure to different levels of relative humidity and air pressurisation on the interior side. Initial testing examined the hygrothermal performance of 2" by 6" wood-frame walls subjected to air leakage and high indoor moisture load, and assessed the risk of condensation on the interior face of the sheathing board. ■

Further details about the facility and research capabilities can be found at http://irc.nrc-cnrc.gc.ca/ie/facilities/testhouse3_e.html and at http://irc.nrc-cnrc.gc.ca/bes/hmpe/fieldfewf/index_e.html or by contacting Dr. Boualem Ouazia, (613) 993-9613, Boualem.ouazia@nrc-cnrc.gc.ca or Dr. Wahid Maref (613) 993 5709 (Wahid.maref@nrc-cnrc.gc.ca).



The new Field Exposure of Wall Facility (FEWF) complements IRC enabling research tools to assist the building industry in developing integrated solutions.

Why Visitable Housing Matters — Study Boosts Understanding

Canada lags behind other developed countries in making homes visitable. Why should I care? might be an average Canadian's reaction to this news.

Well, there are lots of reasons to care and the Canadian Centre on Disability Studies (CCDS) in Winnipeg has just completed a project that is a first step in bringing them to our attention and making visitable housing commonplace in this country.

There is nothing exotic about visitable housing. They are homes with no-step entrances, wider doors and a bathroom on the main floor. With these key features, a house can be more functional, safer and useable for any family. It becomes easier to move furniture in and out and easier to get in and out of with a baby carriage, bicycle or cart. It is also easier to have older friends and relatives, especially those with walkers, canes or in wheelchairs, visit such a home, which is where the term, visitable comes from.

In a ground-breaking study, titled *Understanding the Status of Visitability in Canada*, CCDS said this type of home is growing in importance as our population ages. People are in the market for homes with visitable features but there aren't many available in Canada. The research study was funded by CMHC and Manitoba's Department of Housing and Family Services, and generated the first Canadian survey on visitability and staged the first Canadian Think Tank on the subject. It also produced the first Canadian website on visitable housing (www.visitablehousingcanada.com) whose purpose is to create a national dialogue, to collect and share information on national and provincial initiatives and to build resources on visitability for the first time in Canada. The project also served to link visitable housing to liveable communities and to sustainable concepts.

The research team found that there are a few jurisdictions in Canada with visitable housing policies but very few homes have been built. Those that do exist are part of publicly-funded housing projects. The housing industry, planners, designers and renovators are simply not educated on the topic. In contrast, Europe, the United States, Great Britain and Australia are all moving ahead with visitability initiatives.



Think Tank participants tour visitable home in Winnipeg, May 2007

The Think Tank held in Winnipeg in May, 2007, brought together nearly 60 key stakeholders, such as seniors and disability organizations, policy makers, designers, home builders, community developers, real estate professionals and building code specialists. Four of the speakers were from the U.S. and they described initiatives in their country to adopt and promote ordinances requiring that new homes be built to visitable standards. In Bolingbrook, Illinois, for

example, an ordinance passed in 2003 has already produced nearly 4,000 such homes with more planned. There have been no complaints from anyone about this demand.

CCDS says the results of its research will equip CMHC, the federal government, provincial governments, urban planners and policy makers with some of the knowledge they need to make future policy recommendations. ■

For more information, please contact CCDS at ccds@disabilitystudies.ca, 204-287-8411. The study will be available on-line as a Research Highlight from www.cmhc.ca or www.disabilitystudies.ca

What Residents Think of Co-op Conversion

By Dr. Jorge Sousa, Assistant Professor, University of Alberta

Toronto's Alexandra Park was one of Canada's largest public housing projects when it was built in the late 1960s. In April 2003, it became the first public housing project in Canada to convert into a co-operative, now called the Atkinson Housing Co-operative. How does the conversion sit with residents who moved in as public housing tenants and years later found themselves collective owners?

In 2006, I worked with several members to investigate that question. The results are reported in a study titled, *Assessing Member Satisfaction in The Atkinson Housing Co-operative*, which was funded by the Co-operative Development Initiative of the Co-operatives Secretariat, the Toronto Community Housing Corporation, the Atkinson Foundation and Alterna Savings.

Since 1969, there has been a strong active tradition in the form of a residents' association in Alexandra Park. In the 1990s, residents mobilized to deal with growing drug use and other social problems. They wanted greater community-based control in order to develop and implement local solutions that could improve the health of their community. In a referendum, 72 per cent voted to convert their project to a co-operative, which took ten years to complete and relied on the commitment and expertise of the Co-operative Housing Federation of Toronto.

My research reveals that member reaction to the new co-operative has been mixed. Some say they have seen a growing sense of community as people get involved in decision-making while others claim that nothing has changed. To cultivate and involve the broader membership in decision-making, there are active committees and an annual election of the board of directors, options that were not available in the traditional public housing model. People say they are not always happy with many of the decisions, but there is broad agreement that it is democracy in action.

Some members say that efforts to demonstrate the efficacy of community-based control are not always visible, and the outcome of the decision-making process can be controversial. Some attribute this situation to a learning curve as members acquire new skills and deal with conflicting priorities related to managing a housing project.

The members also described different strengths and challenges. In essence, they recognize that the power to get things done is within their means but there are obstacles. For instance, the ethno-cultural diversity of the co-op is a strength as well as an ongoing challenge. There are over 30 different languages spoken so the members must address the multitude of differences in their efforts to ensure broader involvement in all levels of decision-making. The membership and co-op management have successfully implemented different strategies to communicate in multiple languages and to dismantle real and perceived linguistic barriers.

Despite many challenges, Atkinson Co-op is an innovation in public housing. It is premature to declare it a success or failure, but it is evident that members have the commitment and passion to make the community successful. ■

For more information, please contact Dr. Jorge Sousa, sousa@ualberta.ca; (780-492-4905)



CHRA Study Exposes Immigrant Policy Gaps

By Marni Cappe, CHRA Study Project Manager

Immigrants continue to account for about two-thirds of Canada's population growth. But, according to a recent study completed by the Canadian Housing and Renewal Association (CHRA), there are serious gaps between housing policies and newcomer settlement policies.

What emerges from the study, titled *"The Housing Needs of Immigrants and Refugees in Canada"* (May 2007) is a picture of newcomers in serious housing need facing costly housing markets in cities with a range of often-disconnected settlement service organizations.

Dr. Sarah Wayland, a Research Associate at the Joint Centre of Excellence for Research on Immigration and Settlement in Toronto (CERIS), carried out the research for CHRA (funded by CMHC), specifically addressing the following key issues:

- the diverse challenges faced by new immigrants and refugees with respect to housing;
- the implications of such housing issues for successful settlement and integration; and
- the gaps between housing policy programs and immigrant settlement policy and programs/services.

Dr. Wayland's study builds on the extensive body of research available, drawing from existing literature and Census information, including the 2001 Longitudinal Survey of Immigrants to Canada. Her report underscores the disconnect between immigrant settlement policy and housing policy, noting that outside of Québec, immigration policy is primarily a federal responsibility whereas housing policy is provincial and municipal. Each policy area is uniquely complex, making it difficult to harmonize and integrate them.

Immigrant settlement policies focus on orienting newcomers to life in Canada but do not attempt to address housing needs in any systematic way, apart from housing for government assisted refugees. Current housing policies – in their various guises across the country – do not address immigrant settlement needs, the study declares.

The report makes 21 recommendations, grouped into five broad categories:

1. coordinating policy responses (within and between all levels of government; and between governments and non-governmental organizations);
2. improving housing affordability (noting that private sector engagement in the issue is crucial);
3. improving housing-related supports for high-need populations (particularly refugees);
4. better connecting information and services to newcomers (since "friends" sometimes pass along inaccurate information);
5. encouraging partnerships between housing and settlement agencies, including with housing providers (to facilitate newcomer access).

Two basic problems underpin the recommendations that conclude the report: 1) immigrants need better access to employment and labour markets to improve their income levels and access to housing; and 2) more affordable housing is urgently needed.

The study lends support to the maxim that today's public policy problems are "wicked problems": place-based, holistic, inter-jurisdictional, and inter-sectoral. There are no quick fixes and no single fixer. Structures of collaboration are needed to solve these problems and foster a society of inclusion which can be critical to a successful newcomer experience in Canada.

This study has allowed CHRA to develop a better understanding of the non-shelter outcomes of housing investment and to foster a broader inter-sectoral dialogue on housing policy. CHRA is grateful for the support it received from CMHC to make this project possible. ■

This study is available on-line at www.chra-achru.ca. For more information contact Dr. Sarah Wayland, at swwayland@gmail.com

New From CMHC — Fire Prevention in Aboriginal Communities: Manual and DVD

CMHC has a new fire prevention manual and companion DVD for Aboriginal communities as part of a fire prevention program to reduce loss from fires.

There are 2.4 times more fires per capita in First Nations communities than elsewhere in Canada. The death rate from fire is about 10 times greater; the fire injury rate is 2.5 times higher and fire damage per unit is 2.1 times more severe. A CMHC study examined the reasons for these statistics and documented the fire prevention needs and best practices of 10 Aboriginal communities, both on- and off-reserves. Based on this research, CMHC has produced a manual: *Fire Prevention in Aboriginal Communities* for housing managers and volunteer firefighters, and a 20-minute DVD targeted to community residents.

The Aboriginal fire prevention practices described in the manual include these initiatives:

- After battling a stubborn brush fire for three days, the community of Haines Junction in Yukon started the FireSmart program. It hires local workers to clear away brush so any fires that get going lack the fuel to burn out of control.
- Community members of Lower Nicola in B.C. had a similar problem when people set fires to burn grass and yard waste. The volunteer firefighters make themselves available to carry out controlled spring burns that gets rid of this debris.
- The Moose Cree First Nation in Ontario had a rash of fires caused by candles so the fire department instituted a candle safety program that instructed people in their proper use while also encouraging residents not to use them at all.
- Chimney fires were a problem in the Inuit community of Nain in Newfoundland and Labrador, so the fire department bought a chimney cleaning brush for the use of residents. Volunteer firefighters will come by to clean chimneys for residents who cannot do the job themselves.

- The White Cap Dakota First Nation in Saskatchewan has a number of programs that have contributed to a 20-year record with almost no house fires. A team of Saskatoon fire inspectors visits every home in the community once a year to go over a long checklist of potential fire hazards and to advise the residents. They also check fire extinguishers, smoke alarms, clothes dryers, heating sources and the accessibility of candles, matches and lighters to small children.
- The Kahnawake First Nation in Quebec took a decidedly different approach to reducing house fires — home ownership. The fire chief noted with pride that ownership greatly increases residents' interest in fire prevention measures - the community has seen a drop in house fires as a result. The Kahnawake fire department helps people ensure their homes are fire safe, even going over building plans to make sure construction materials are safe and up to code.

Among the many topics covered by the manual are candle safety, chimney maintenance, arson prevention, and the beginning and growth of a volunteer firefighting squad. CMHC hopes that volunteer firefighters and housing managers in Aboriginal communities will identify with many of these stories, drawing inspiration from the experiences of their colleagues. ■

For more information, please contact Ian Melzer, Manager, Housing Needs Policy and Research, CMHC, imelzer@cmhc-schl.gc.ca (613) 748-2328. Both products are available free by calling 1-800-668-2642 or by visiting the CMHC web site www.cmhc.ca.



Homelessness Partnering Secretariat Produces Research Highlights on its Phase II Research



The Homelessness Partnering Strategy (HPS) supports a variety of innovative knowledge activities that aim to prevent and reduce homelessness in Canada. Between 2003 and 2007, Phase II of the former National Homelessness Initiative's National Research Program supported knowledge activities in six priority domains: 1) cycles of homelessness; 2) immigration; 3) education, employment, and income; 4) health; 5) justice; and 6) the North.

The Homelessness Partnering Secretariat will produce six highlight summaries that review the main research findings and knowledge gaps in each of the above six priority domains. Two excerpts from the Cycles of Homelessness Research Highlight are included below. The remaining five highlight summaries will be made available in the Fall of 2007.

"Research Gaps and New Emerging Research

1) Housing, Services, and Mental Health

Despite widespread consensus in the literature that housing is the cornerstone of care, there are diverging opinions on: 1) the type of housing that should be available for particular groups of individuals experiencing homelessness; and 2) the relationship between housing and health and mental health treatments. The main discord is often between agencies with an informal, harm reduction based structure and those with a more regulated and rule-based environment.

Karabanow (2005) notes that some youth respond better to the more structured approaches while others respond to a more flexible approach. Similarly, Serge (2006, 51) et al. recommend that a "client-centred approach that works with the goals set by the client might ultimately be more flexible and responsive to their needs as a way of perhaps ending the cycle of people entering programs,

leaving when they relapse, and trying again". While there seems to be a movement away from the more structured approaches to homelessness, further research is needed to better understand where and when this more flexible approach is most effective.

Reasons for these new programmatic directions also relate to mental health. Proponents of this more flexible approach emphasize that it facilitates normal community roles, social integration, and increased independence and control for the client (Serge et al. 2006). Studies also point to the effectiveness of harm reduction programs that reflect the "realities" faced by those experiencing homelessness (Dhillon 2005; Kraus 2006; McDonald et al. 2006). Indeed, most studies note the importance of mental health on housing stability; however, more research is needed to extend this understanding to include the relationship between the mental health of homeless individuals and housing-related services."

"3) Methodology – The Need for Better Data

Debates on housing programs relate in part to questions about methodology and outcome indicators. Various studies note the challenges in comparing and analyzing these different approaches because of wide variation in what is considered "success." Harm-reduction approaches may have, as their ultimate goal, something quite different than that of more structured approaches, making comparisons between the two problematic. Nevertheless, it is important to develop appropriate research designs and outcome measures that do not undermine these key differences. The longitudinal framework required to study cycles of homelessness is challenging for the various reasons mentioned previously. More innovative approaches need to be developed to better track the movement and experiences of those (often very mobile) individuals subject to homelessness over a longer period of time." ■

For more information, please contact Kareem D. Sadiq, Human Resources and Social Development Canada, Homelessness Partnering Secretariat, kareem.sadiq@hrsdc-rhdsc.gc.ca (819) 934-6054, or visit the HRSDC web-site : www.homelessness.gc.ca

Mental Health Poorer Among Homeless

Homeless individuals in Canada experience higher rates of mental illness, substance abuse and suicidal behaviours than the population at large, according to a report recently released by the Canadian Institute for Health Information (CIHI). The report, titled *Improving the Health of Canadians: Mental Health and Homelessness*, is the first of three reports on the topic of mental health that will be released in the next 18 months.

Although no one knows exactly how many homeless people there are in Canada, Statistics Canada data indicate that more than 15,000 persons were in shelters on the evening of May 15, 2006, the day before Census Day. Current research shows that people without homes have a tendency for compromised mental health compared to people who do have homes.

Mental health is more than the absence of a diagnosed mental illness, the report states. According to the World Health Organization (WHO), it is "a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community."

Individual, social, economic, cultural and other factors can shape patterns of mental health. For example, the genetics that we inherit from our parents and what we learn as children may matter. So too may how and where we live, including our education, income and employment levels, as well as our social relationships, housing and neighbourhoods.

These and other factors can influence mental health in complex ways that are not always well understood, says the report. By focusing on specific groups in the population, such as Canada's homeless, we can further explore these links. A number of individual and broad-level determinants of health, in isolation or in combination, are linked to mental health and homelessness - for example, the amount of income spent on housing, mental illness and addictions, poor mental health, loss of social support and family conflict.

Current research on the homeless population indicates a higher prevalence of mental illness, substance abuse and suicidal behaviours relative to the general population. New analyses of CIHI data indicate that mental disorders are the most common reason for emergency department visits (35%) and inpatient hospitalizations (52%) among a sample of homeless adults in Toronto, Calgary and Vancouver. Among the general population, injuries and poisonings are the most common reason for emergency department visits (25%), while pregnancy and childbirth (13%) are the most common reasons for inpatient hospitalizations.

The report also looks at the effectiveness of two types of related policies and programs — housing and community mental health programs. Published evaluations indicate that various housing and community mental health programs are effective at supporting homeless individuals and helping them find a way out of homelessness.

The report can be downloaded free of charge from www.cihi.ca/cphi. ■

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