



May 2006

BACKGROUND

SKILLS FOR ENERGY EFFICIENT CONSTRUCTION

Introduction

The Clean Air Partnership, the Canadian Urban Institute and the Toronto Training Board are working together to assess the capacity of the construction workforce in Toronto to undertake energy-efficient new construction, energy retrofits of existing buildings, and the integration of renewable energy systems into these buildings. A final report will highlight the strengths and weaknesses in skills for energy efficient buildings and make recommendations for improvements in training. The project will also look at the particular energy efficient skills needs of the social housing sector located in the Toronto area.

Summary

Buildings are the largest consumer of electricity. Rising energy prices, declining air quality and threats of climate change are leading us to reduce our energy use and to consider alternative energy-efficient construction options.

Sustainable building utilize the highest environmental standards for energy efficiency, water saving, material selection and indoor air quality. Energy efficient office buildings can dramatically improve employee productivity and reduce absenteeism due to illness.ⁱ There is a growing demand for energy efficient homes in both the condominium and single-family markets. Governments are looking at adopting higher efficiency standards for new and renovated buildings.

Demand for energy efficient building is growing and there is an urgent need to ensure that we have the ability to deliver on the promise of a cleaner future. As the construction industry develops to meet these new needs, it can only be as effective as the skills of those who design, build, install, operate and maintain the buildings.

Up to now, research has been confined to identifying how the lack of appropriate skills and experience can be a barrier to developing green buildings.ⁱⁱ The Skills for Energy Efficient Construction project will, through consultations with major players in the industry; contractors, unions, construction associations and those involved with skills training including community colleges and the Ministry of Training, Colleges and Universities, assess the current and the needed level of skills and recommend solutions to bridge the gap.

The project will bring together key participants in the construction industry and training institutions to analyze and discuss the skills training needs for energy efficient building. The final report will highlight current strengths and weaknesses in skills and knowledge for energy efficient buildings with recommendations for changes in training, certification, resources and policy development. It will include a follow-up strategy for to ensure recommendations are implemented. The report will be sent to all

partners, contributors, sponsors, government and the media. It will be posted on partner websites and included with related industry publications.

Industry Profile ⁱⁱⁱ

The construction industry is the 2nd largest employer in the Toronto area. It is estimated that up to 50,000 new construction workers will be needed by 2008.

The industry is facing a number of challenges. The long-established apprenticeship and other training programs are experiencing decreased enrolment and high dropout rates. The industry has had difficulty attracting young workers, the average age of trades people is rising. Skills upgrading is needed in math and computers. Seventy five percent (75%) of workers are not accredited in their trade.

The skills and knowledge of designers, construction companies and building operating engineers required for constructing and renovating energy-efficient buildings differ from those for traditional buildings and these new skill requirements have been identified as a barrier for adoption within the industry.^{iv} According to Bill Humber of Seneca College's Centre for the Built Environment, "There is a need to promote the role of trades' people in the context of larger issues, such as the need for sustainable development. The technician, technologist, tradesperson is the lifecycle guarantor of our built environment."^v

Project goals and objectives:

- Identify the skills requirements for energy-efficient construction, energy conservation retrofits and integration of renewable energy systems;
- Assemble a list of training institutions that currently exist to teach these skills;
- Analyze the gaps between the skills and knowledge of training and resources available and the requirements for sustainable construction;
- Identify opportunities and barriers that exist for developing these skills and implementing the programs;
- Foster skills training programs that attracts new skilled trades people and encourages the construction of energy-efficient buildings
- Promote demand for energy efficient building by building public confidence in the ability of contractors and their employees to deliver quality energy efficiency options
- Create a template for studying energy efficiency skills capacity in other industries and regions.

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The **Clean Air Partnership** (CAP) is a registered charity that works in partnership to promote and coordinate actions to improve local air quality and reduce greenhouse gases for healthy communities. For more information visit: www.cleanairpartnership.org

The **Canadian Urban Institute** (CUI) is a non-profit organization dedicated to enhancing the quality of life in urban areas across Canada and internationally.

For more information visit: <http://www.canurb.com/>

The **Toronto Training Board** is a catalyst for training solutions. It is an independent, not-for-profit corporation that represents labour, business, educators/trainers, youth, and women, persons with disabilities, visible/racial minorities, and Francophones.

For more information visit: <http://ttb.on.ca/ttb/e/ehome.htm>

ⁱ “Green Value: Green Buildings, Growing Assets”

ⁱⁱ “Green Value: Green Buildings, Growing Assets”, Royal Institute for Chartered Surveyors, 2005

ⁱⁱⁱ Source - Toronto Labour Force Readiness Plan – Building a Strong Construction Sector, City of Toronto Economic Development Division, 2003

^{iv} ibid

^v Quoted in ReNew Canada: The Infrastructure Renewal Magazine, January/February 2006