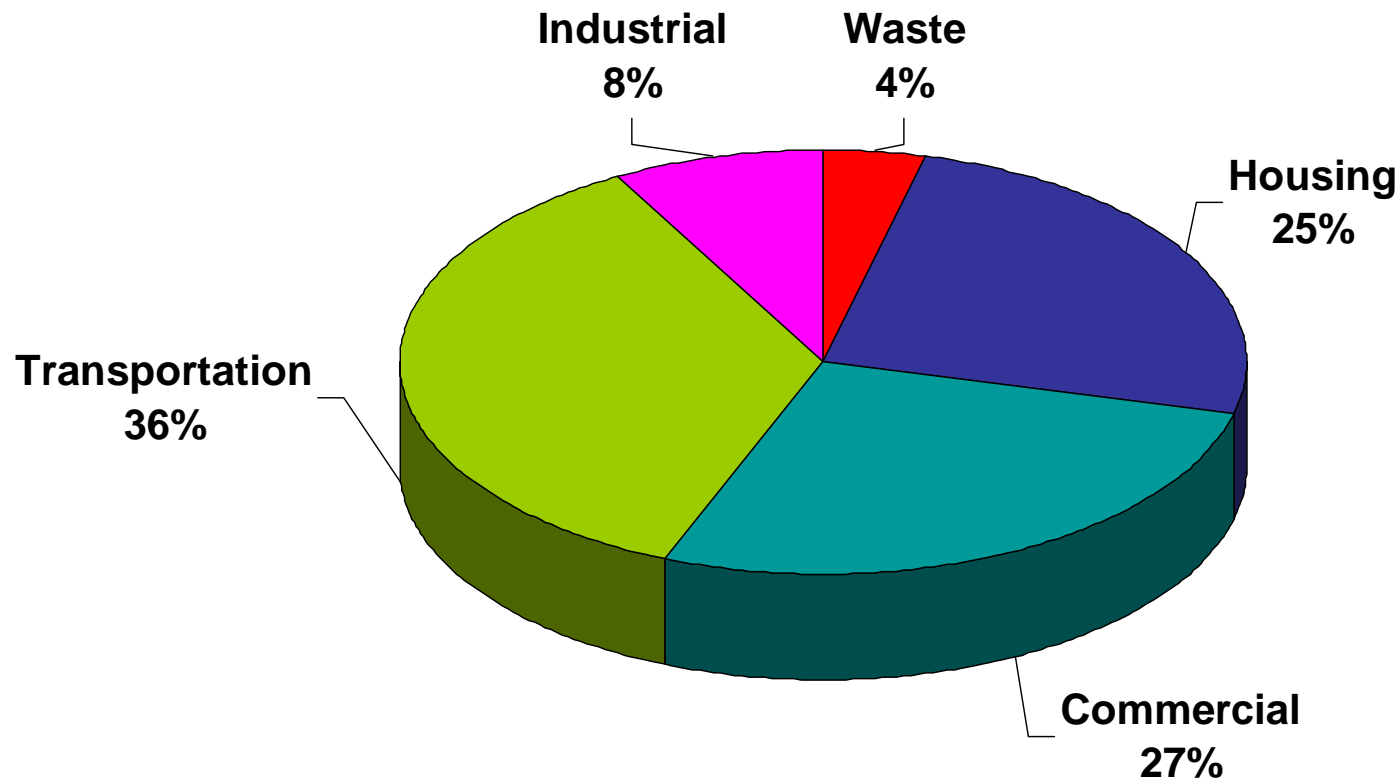


Facilities & Real Estate: Sustainable energy leadership



Toronto's greenhouse gas (GHG) emissions by sector



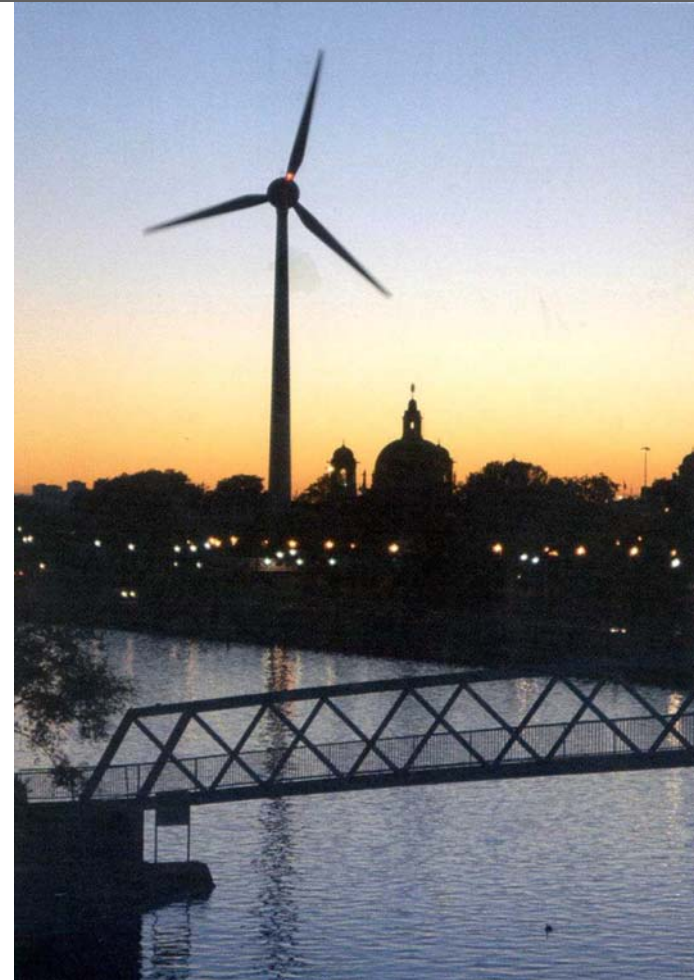
52% of GHG emissions in Toronto comes from buildings

City GHG reduction targets

- Toronto's total 2004 GHG emissions: 24.4 million tonnes
- Council's target for city-wide GHG gas reductions (from 1990 base year):
 - 6% by 2012 (1.5 million tonnes);
 - 30% by 2020 (7.3 million tonnes);
 - 80% by 2050 (19.5 million tonnes)
- Emissions from the City operations represent about 6% of Toronto's total emissions
- The City has reduced emissions from its operations by approximately 30% since 1990

Facilities & Real Estate

- Two units within Business & Strategic Innovation section:
- Internally-focused unit:
Energy and Waste Management Office
- Externally-focused unit:
Energy Efficiency Office



Energy and Waste Management Office

Energy purchase and monitoring

- Purchase City's electricity, natural gas, and district heating and cooling
- Track, monitor and report on monthly energy data for over 9,000 accounts
- Increase use of "green" energy to 25% of total consumption by 2012

Energy Retrofit Program

- \$40 million for retrofits to City buildings
- Eight year payback required for projects

Waste diversion

- Perform waste audits in major City facilities
- City's diversion rate goal of 70% by 2010 – already been exceeded in corporate buildings – 80% diversion in 2007

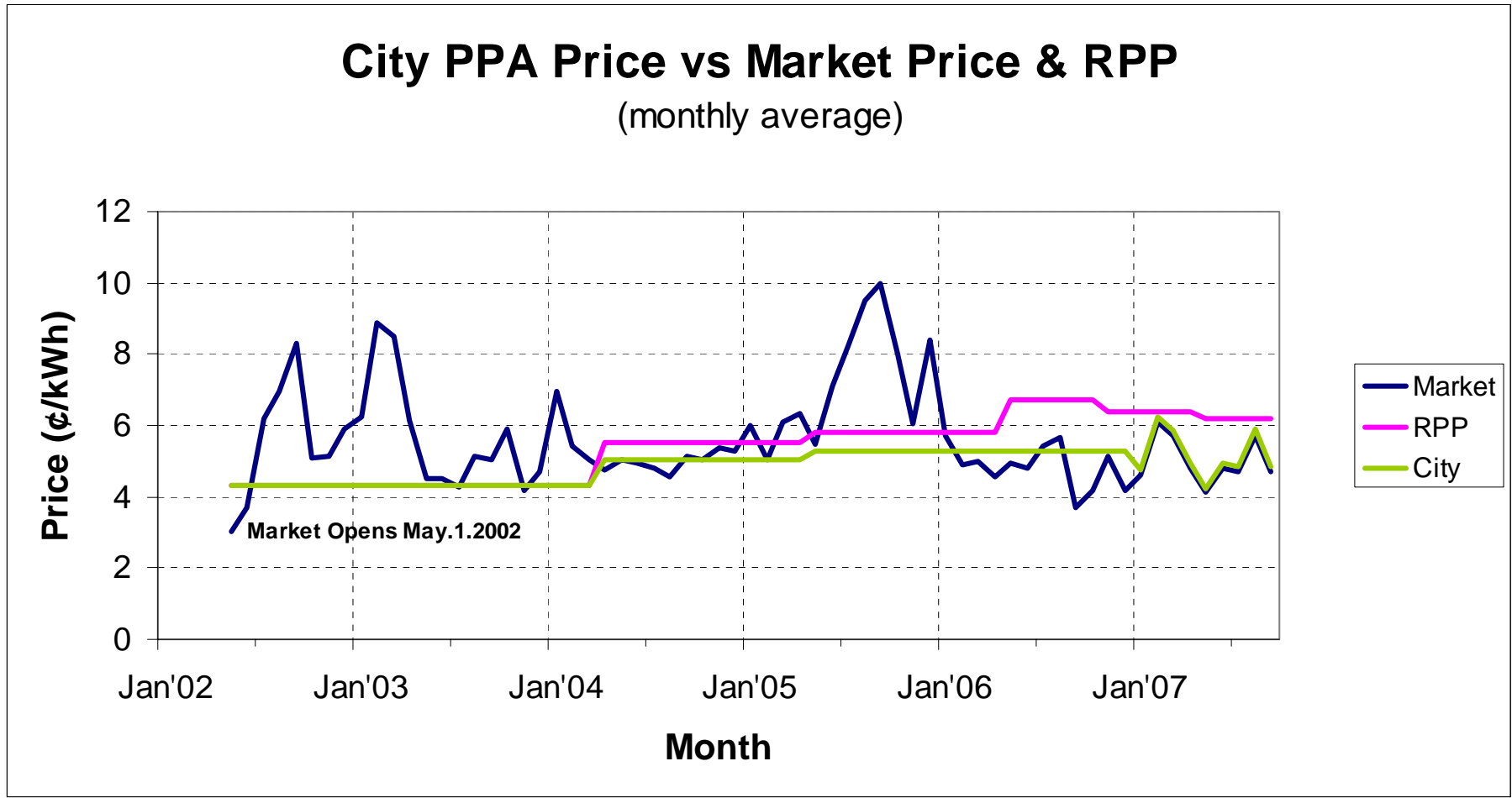
Energy and Waste Management Office

2006 Electricity use

Purchasing Group	kWh	Cost
City Corp	361,309,987	\$37,525,560
Exhibition	35,402,206	\$3,243,905
Library	31,442,226	\$3,156,171
Parking	22,227,449	\$2,035,089
TCHC	403,699,390	\$38,153,136
TTC	417,467,480	\$40,200,422
Water Supply	346,540,942	\$30,347,126
Waste Water	197,235,799	\$17,040,718
Zoo	11,330,574	\$998,202
Streetlights	115,005,174	\$11,178,884
Total	1,941,661,228	\$183,879,212

note: City Corp includes all divisions and small ABCs

Energy and Waste Management Office Electricity purchase price comparison



PPA – Power Purchase Arrangement
RPP – Regulated Price Plan

Energy and Waste Management Office

2006 Natural gas use

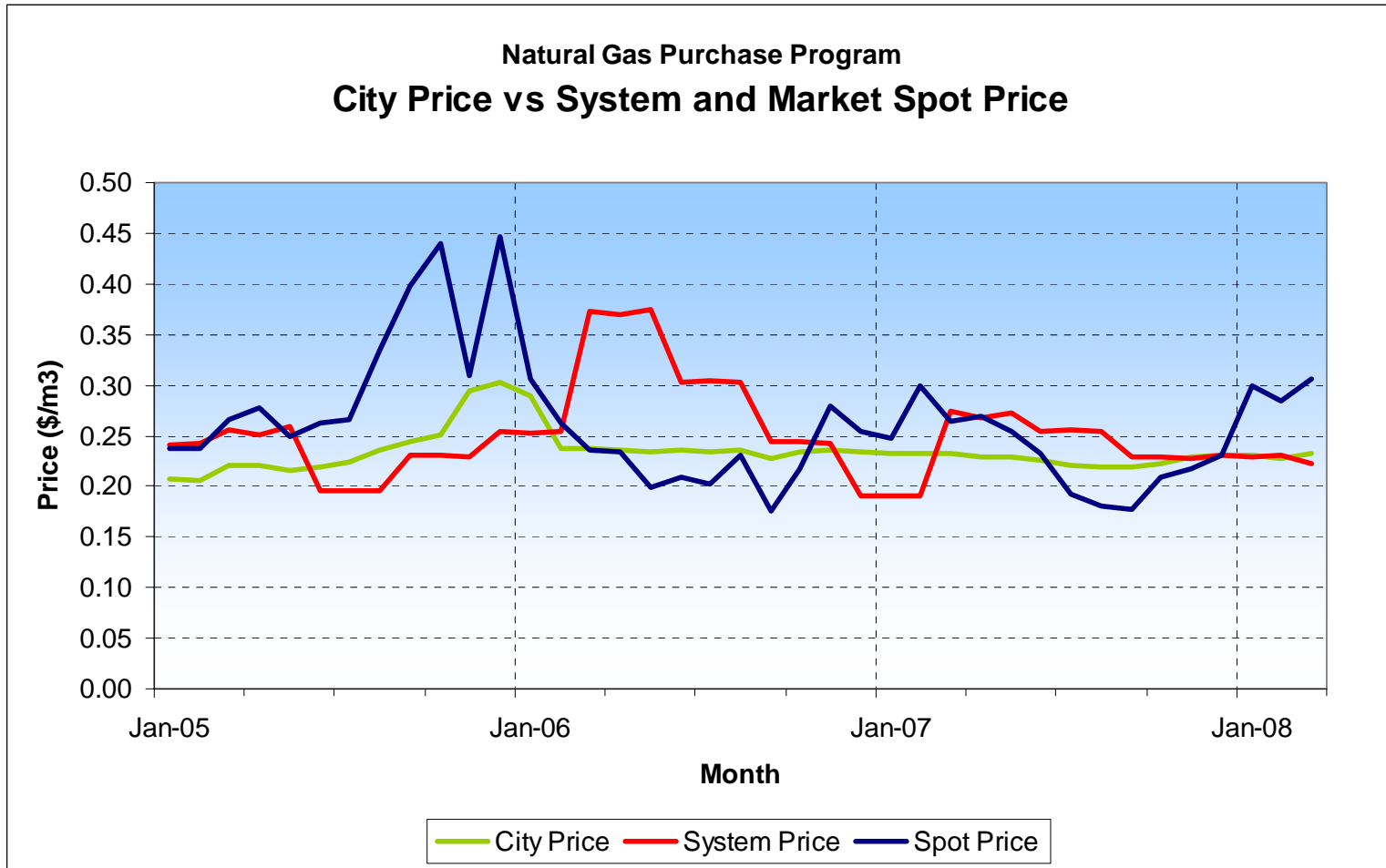
Gas Pool	No. Acct	Cu-m	Cost
City Corp	726	38,851,378	\$18,454,405
Sewage Plants	3	17,647,222	\$7,711,836
TCHC	408	35,666,803	\$16,192,729
Total	1137	92,165,403	\$42,358,969

note 1: City Corp includes all divisions and small ABCs.

note 2: Program excludes TTC, Exhibition and 50% of TCHC volume

Energy and Waste Management Office

Natural gas purchase price comparison



Energy and Waste Management Office

Energy Retrofit Projects Completed

Arena project cost: \$10 million

- CO₂ reduction: 4,300 tonnes (~931 passenger cars)
- Estimated annual cost avoidance: \$1.2 million

Fire Hall project cost: \$2.6 million

- CO₂ reduction: 1,100 tonnes (~238 passenger cars)
- Estimated annual cost avoidance: \$290,000

Civic Centres project cost: \$4.4 million

- CO₂ reduction: 1,750 tonnes (~378 passenger cars)
- Estimated annual cost avoidance: \$550,000



Energy and Waste Management Office Energy Retrofit Projects Underway

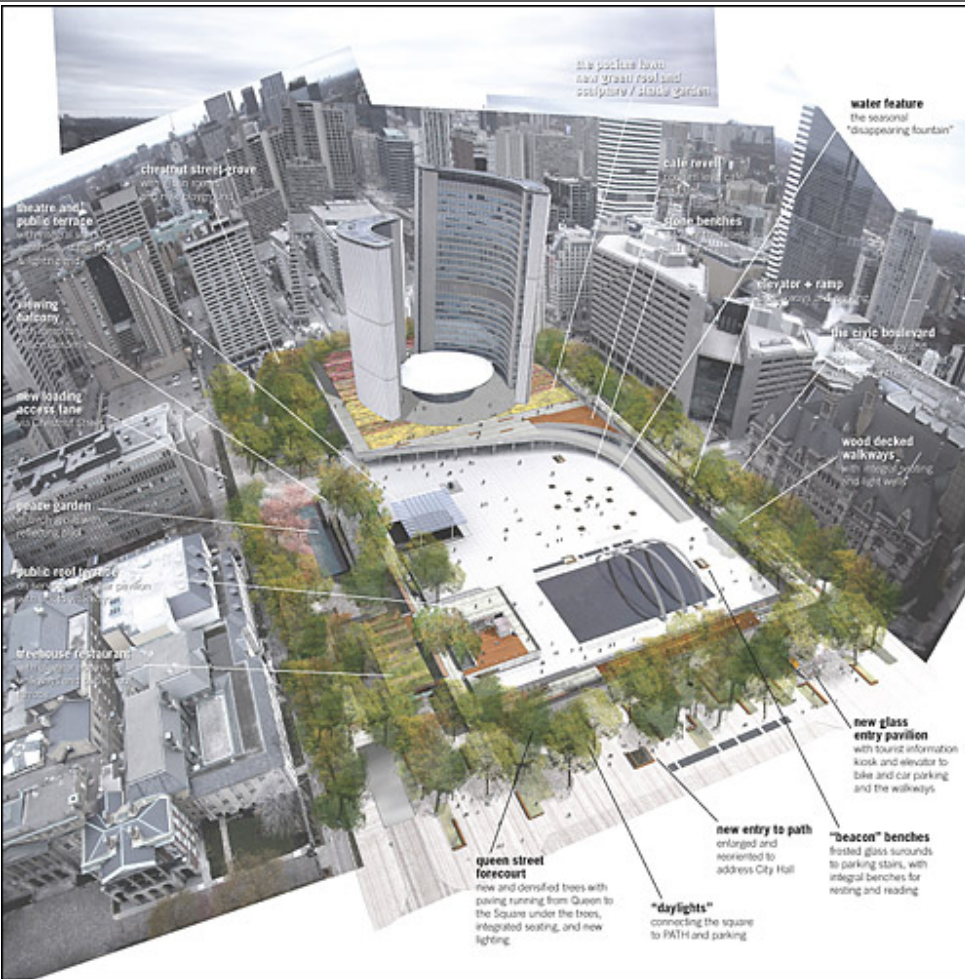
- 97 City buildings undergoing retrofits
- Total project cost of \$12 million
 - Estimated annual cost avoidance of \$1.5 million
 - Estimated CO₂ reduction of 4,500 tonnes (~1,082 cars)
- Over 100 retrofit and renewable projects to begin in 2008, including phase one of making City Hall a sustainability showcase

Renewable energy projects completed

- Solar photovoltaic (2 Fire Stations)
- Solar water heating (6 buildings)
- Solar energy wall (3 buildings)



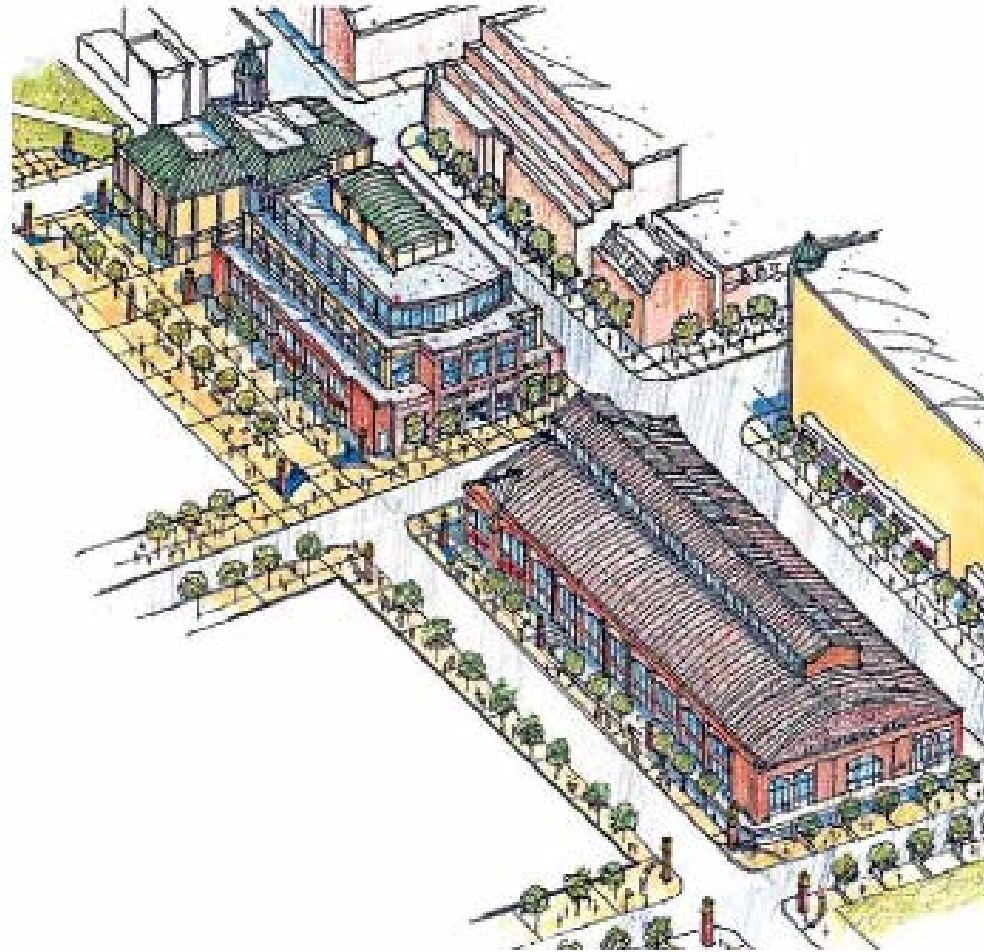
Nathan Phillips Square Revitalization Project



- Aiming for LEED Gold Certification
- Sustainable design elements linked to Toronto's Green Standard:
 - Energy efficient design
 - Renewable energy features
 - Podium green roof
 - Local sourcing of materials
 - Attention to on-site micro climate
 - Improved tree planting conditions, increased biomass and number of trees
 - Controlling light pollution
 - A soil regeneration strategy
 - Facilities for cyclists and promotion of cycling
 - Improved pedestrian environment
 - Opportunities for public education

St. Lawrence Market North

- Will meet the City's Green Development Standard through such measures as:
 - A green roof
 - Energy efficient design
 - Energy efficient lighting
 - High efficiency fixtures and appliances
 - Managing construction activities and storm water flows



Energy Efficiency Office

Better Buildings Partnership – Existing Buildings

- Focused on building renewal and energy efficiency in buildings
- Environmental initiative that supports CO₂ emission reductions
- Job creation and economic development initiative



● Results since 1997:

- Gross floor area retrofitted: 47 million feet²
- Job Creation: 2,500 person years
- Operating Cost Reduction: \$19 million per year
- Economic impact: \$176 million
- CO₂ Emission Reduction: 200,000 tonnes/yr

Energy Efficiency Office

Better Buildings Partnership - New Construction

- Focused on maximizing energy efficiency in all new construction
- Financial support for energy modeling and efficient construction
- 100 buildings in progress



Potential:

- 17,000 new condo units in 2007
- 100,500 residential units in the next 15 years
- Downtown – 423,500 m² of office and 201,400 m² of industrial uses proposed
- 1,300,000 m² commercial and industrial space in the rest of the city

Energy Efficiency Office Electricity Conservation Incentive Program

- Integrated with the BBP-EB and BBP-NC
- Ontario Power Authority (OPA) provides incentives for measures that result in electricity savings
- Part of OPA program to reduce demand in Toronto by 300 megawatts
- Incentives for retrofits in Municipal, Academic, Social Service and Health Care (MASH) sector, and high-rise residential sector - \$400 per kilowatt, or 5¢ per kilowatt hour
- Incentives for new construction in all building sectors - \$350 per kilowatt, or 4¢ per kilowatt hour, plus energy design costs up to \$7,000
- OPA will pay City's overhead program costs



Energy Efficiency Office Sustainable Energy Funds

- Will begin operating in April 2008, in conjunction with electricity conservation incentive program
- Revolving loan fund providing low interest financing for energy efficiency and renewable energy projects
 - \$70 million available in total
 - \$42 million for the Toronto Energy Conservation Fund
 - \$20 million for the Toronto Green Energy Fund
 - \$8 million Better Buildings Partnership loan fund
 - Funds available in 2008 - \$6 million in the Conservation Fund, and \$3 million in the Green Energy Fund
- Projects in Municipal, Academic, Social Service and Healthcare (MASH) sector, and not-for-profit organizations, eligible for financing in 2008
- Council will consider expanding eligibility to other sectors in 2009



Energy Efficiency Office

Renewable Energy

- City's 2000 Environmental Plan – EEO's mandate to include all aspects of sustainable energy production, transmission and use
- Advises on City renewable energy projects
- Developing a solar procurement guide for divisions and agencies, boards and commissions
- Working with community, Toronto Atmospheric Fund and Toronto Hydro on solar domestic hot water pilot project in South Riverdale

Support for Council Initiatives

- Green Development Standard
- Tower Renewal Initiative
- Green Economic Development Strategy
- Renewable Energy Bylaw
- City's intervention in review of Province's Integrated Power System Plan

Facilities & Real Estate: Energy efficiency leadership

