



Toronto the Green

Energy Efficiency Changes in the Ontario Building Code (OBC) SB-10, Toronto Green Standard (TGS)

ECOVERT | Sustainability Consultants

www.ecovert.ca

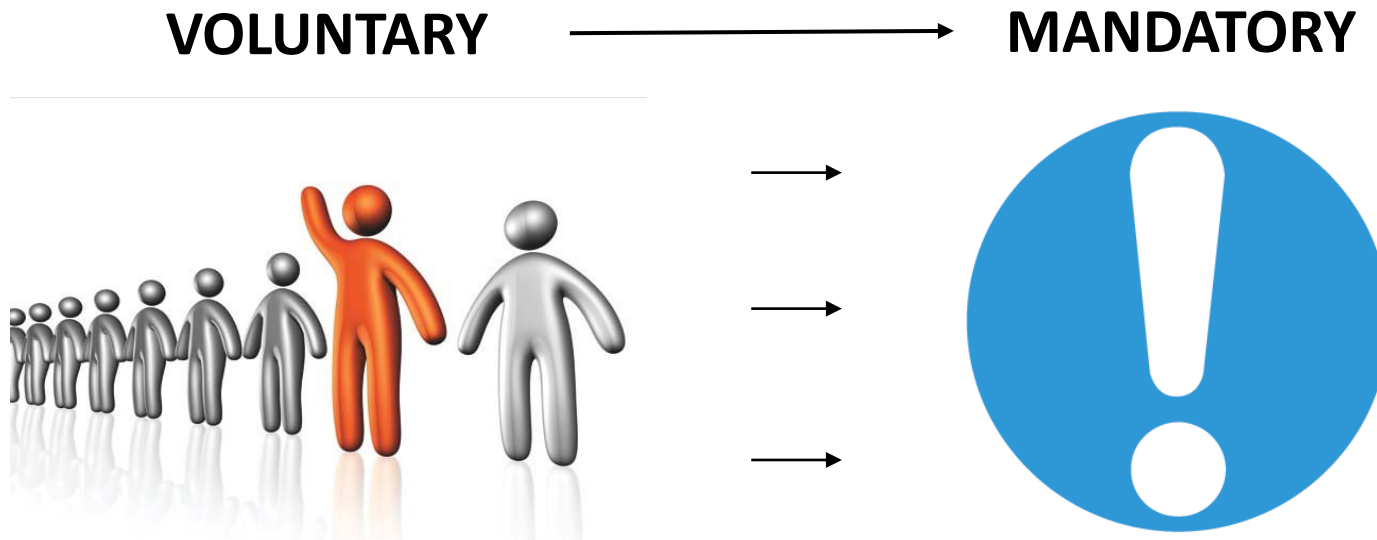


Learning Objectives

- OBC 2012 SB-10 changes
- TGS 2014 changes
 - Tier I requirements and demonstrating compliance
 - Tier II requirements and demonstrating compliance
- Resources available
- Case studies

Energy Modelling

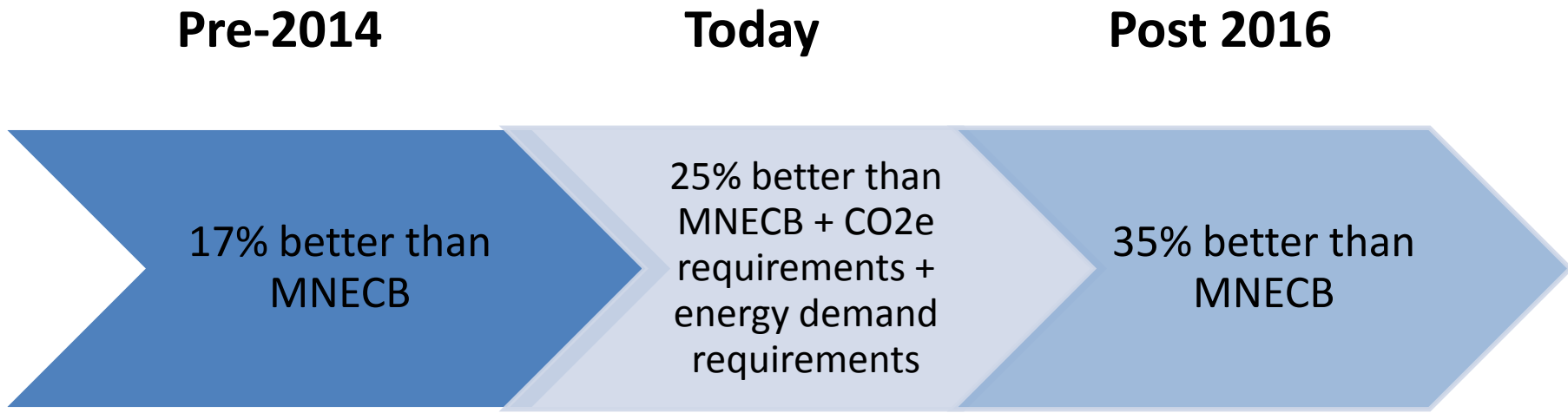
- Energy Modelling no longer only for “High Performance” Buildings





OBC 2012 SB-10 changes

- Prescriptive and Performance path requirements updated





OBC 2012 SB-10 changes

- Performance path requirements updated
 - Exceed MNECB 1997 by no less than 25%
 - Exceed ASHRAE 90.1-2010 by no less than 5%
 - Meet at minimum ASHRAE 90.1 +2010 + OBC SB-10 Chapter 2
 - Meet at minimum NECB 2011 + OBC SB-10 Chapter 3
- Most appropriate path should be selected for the project



OBC 2012 SB-10 changes

- Carbon Requirements
 - Thresholds mimic the energy performance requirements
 - CO₂e Emissions Factors provided in Table 1.1.2.2 of OBC SB-10

Building Energy Source	CO ₂ e (kg/kWh)
Grid Delivered Electricity	0.4
LPG or Propane	0.274
Fuel Oil	0.312
Gasoline	0.309
Natural Gas	0.191



OBC 2012 SB-10 changes

- Electric Demand Requirements
 - Performance:
 - ASHRAE 90.1-2010 + SB-10
 - NECB 2011 + SB-10
 - Prescriptive:
 - Meet prescriptive requirements of ASHRAE 90.1-2010 + Chapter 2 or NECB 2011 + Chapter 3 for the energy efficiency of the cooling equipment, fan power limitations for cooling and ventilation system, and interior light power density.



TGS Tier 1 and 2 Comparisons

Energy Use Index (eKWh/ft²/year)

Code or Requirement	Energy Use Index (eKWh/ft ² /year)
Model National Energy Code for Buildings	25
Ontario Building Code 2006	20.8
LEED 2006 EAp2	19.3
TGS Tier 1 (old) and Ontario Building Code (current)	18.8
TGS Tier 2 (old)	16.6
TGS Tier 1 (new)	16
Toronto Waterfront Mandatory Green Building Requirements v1	15
TGS Tier 2 (new)	14
Toronto Waterfront Mandatory Green Building Requirements v2	12.5



TGS 2014 changes: Tier I and Tier II

- Tier I: 15% energy efficiency improvement over OBC 2012.
 - When : Prior to Site Plan Approval

- Tier II: 25% improvement over OBC 2012 for Tier 2 compliance.
 - When : After construction
 - Development charge rebate



TGS 2014 changes: Resources

- Report requirements:

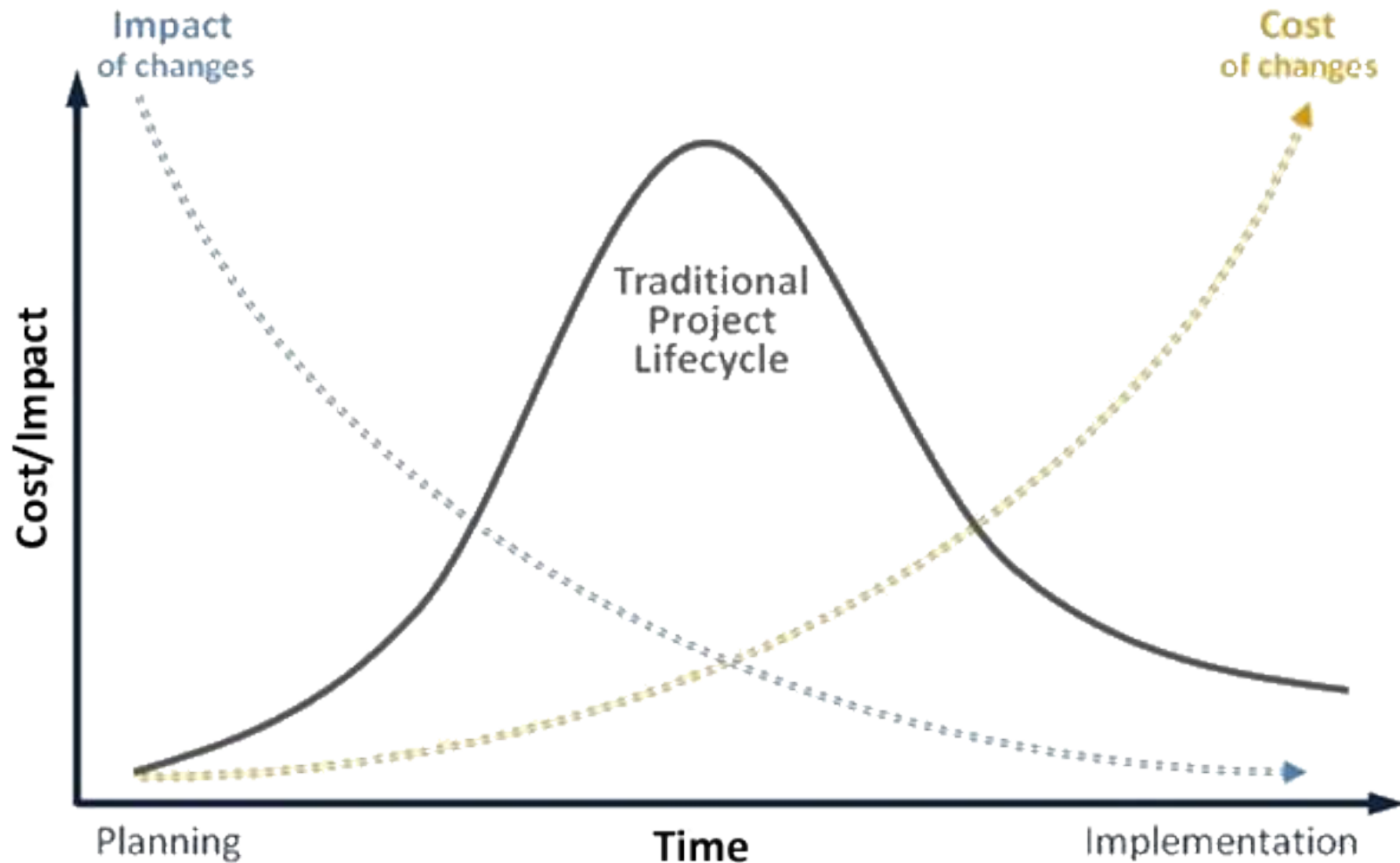
[Terms of Reference and Guidelines](#)

- Energy efficient condominium design:

[‘The Archetype Condominium’](#) by Sustainable Buildings Canada



Cost/Impact





TGS 2014 changes: Resources

- Report requirements:
 - Terms of Reference and Guidelines
- Energy efficient condominium design:
 - ‘The Archetype Condominium’ by Sustainable Buildings Canada
- NRCAN Screening Tool

Queen Richmond Centre West



- 38% better than MNECB
- 17% better than OBC SB-10
- Meets TGS I Tier I, not Tier II



Summary of Keys to Success

- Requirements have changed...and will continue to change
- Consider energy early on and involve the right people
 - P.Eng, CaGBC list, BEMP
- Consider future changes

Contact Us

Ecovert Sustainability Consultants

55 Ormskirk Avenue
Suite 100
Toronto, ON. M6S 4V6

tel: 416 350 2002

fax: 416 766 5021

email: mail@ecovert.ca