efficiency NB

Advice and financial incentives to become more Energy Efficient

Building your Energy Efficient New Home

Learning Objectives:

- The features of an energy efficient house
- How energy efficient homes are rated on the EnerGuide scale
- The features of a highly energy efficient house
- Zero Energy Housing

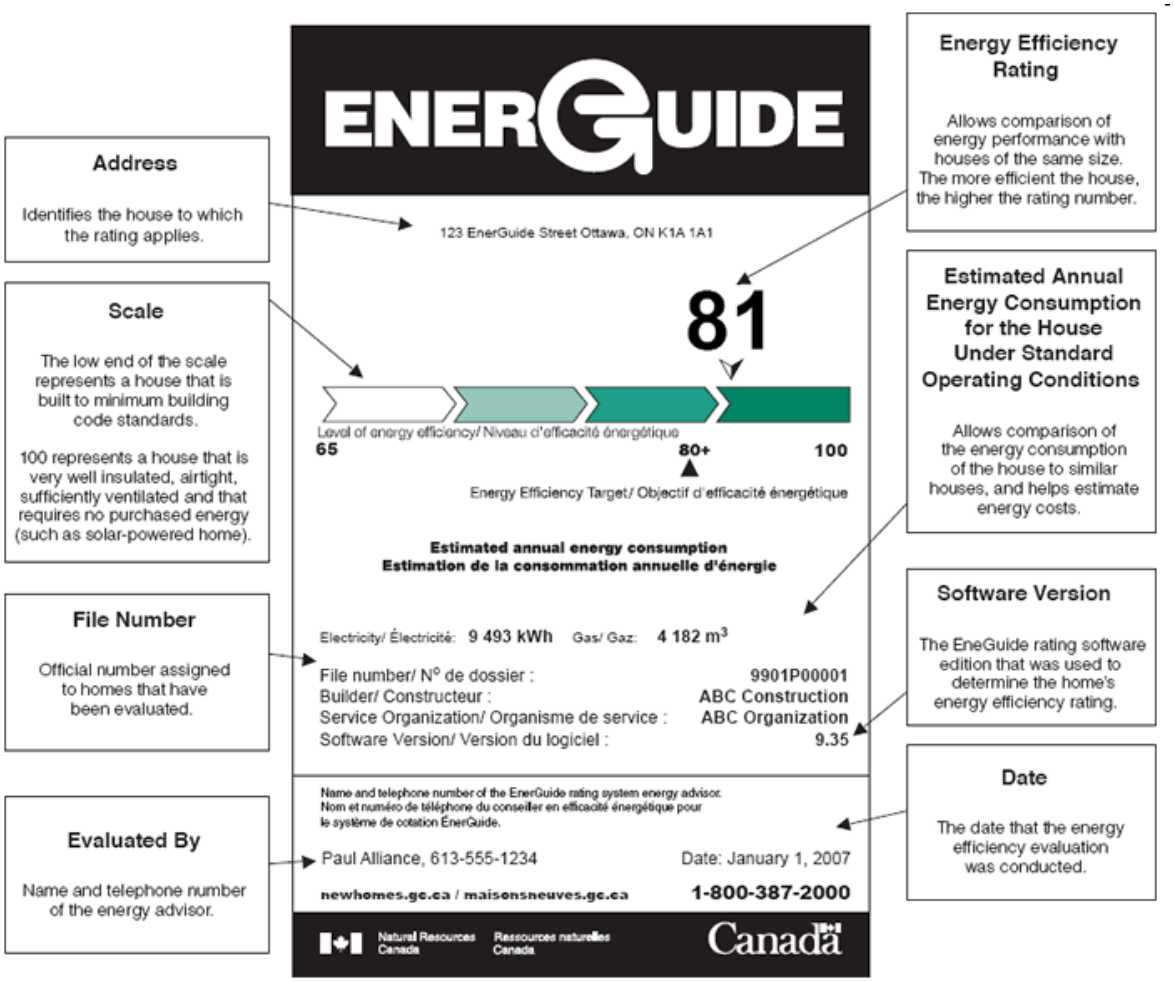
What are the features of an energy efficient house?

- A well-insulated building envelope
- Airtight construction
- Energy efficient windows/doors
- Heat recovery ventilation
- Energy efficient heating system
- ENERGY STAR appliances and lighting

Understanding the Energuide Scale for Homes

- Houses with an EnerGuide rating of 80 or higher are considered to be energy efficient
- All R2000 houses achieve an EnerGuide rating of 80 or higher
- Super efficient houses achieve EnerGuide ratings of 85 or higher
- Zero energy houses achieve an EnerGuide rating of 100

Sample EnerGuide Label



The Home Energy Evaluation

A home energy evaluation provides important design information about energy features and performance to anyone building a new home.

Home energy evaluations are conducted by Service Organizations (SO's)licensed by Natural Resources Canada

Visit our website for a list of licensed new home SO's
(http://www.efficiencynb.ca)

The New Home Energy Evaluation Process

1. House plans and building specifications are reviewed using computer modeling software. An EnerGuide rating is estimated and efficiency upgrades can be evaluated/compared

2. Once construction is completed, a site visit and air tightness test is conducted to determine the actual Energuide rating of the home

3. An EnerGuide label is issued

Mandatory Specification list

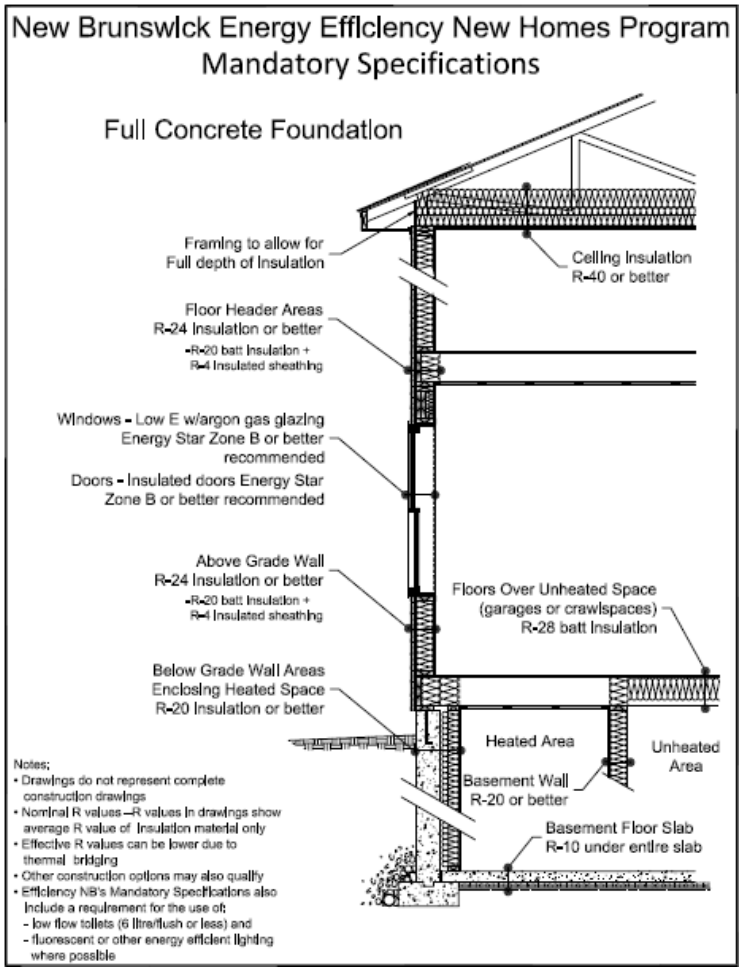
Efficiency NB has developed a “Mandatory Specification” list as a guide to help home owners with their construction planning

Most houses built to these specifications will reach an EnerGuide 80 rating

Houses still require a full EnerGuide evaluation to receive a rating and qualify for provincial rebates

Mandatory Specifications

OPTION 3: Mandatory Specifications (all required)		
Specifications		Minimum Qualifying Specifications
Insulation values	Ceiling Insulation	*R-40
	Above Grade Wall Insulation	R-24
	Walls between Heated and Unheated spaces* (ex: attached garage)	R-20
	Below Grade Wall Areas enclosing heated space	R-20
	Floors over Unheated spaces* (ex: crawlspace or basement garage)	R-28
	Floor Header Areas	R-24
	Slab on grade foundation	R-10 (entire slab)
	Slab on grade foundation with radiant in floor heating	R-10 (entire slab)
	Basement concrete floor with radiant in floor heating	R-10 (entire slab)
	Basement concrete floor without in floor heating	R-10 (entire slab)
Windows		ENERGY STAR zone B or Low E with Argon Gas
Exterior Doors		ENERGY STAR zone B or Insulated Doors
Ventilation Systems - whole house with Heat Recovery Ventilation (HRV)		HVI certified
Lighting		Energy efficient bulbs or fixtures
Water Conservation		6 litre or less flush toilets



For full details, visit
www.efficiencynb.ca/newhomes

Features of Super Energy Efficient Houses

An EnerGuide Rating of 85 to 90+ can be achieved by upgrading a number of features of your house

Options for improving the energy efficiency of your home include:

- Increased wall, ceiling and foundation insulation
- Improved air tightness
- Triple glazed ENERGY STAR windows
- High efficiency heating
  - Maximized passive solar heating
  - Ground source heat pumps
- Solar domestic hot water systems

Zero Energy Houses

Zero Energy Houses - these houses are typically not connected to the electrical utility grid, and provide all of their energy needs from renewable sources. They require a storage system (such as batteries) for renewably generated electricity.

Net Zero Energy Houses – these houses are connected to the electrical utility grid, and do not require a storage system for renewably generated electricity. Instead homeowners buy and sell electricity to the grid as needed.

Equilibrium Net Zero Energy Houses

Equilibrium Housing (EQ) is a initiative of Canadian Mortgage and Housing (CMHC)

More than 12 EQ demonstration houses have been built across Canada.

Technical information on these houses is available at:

http://www.cmhc.ca/en/inpr/su/eqho/eqho_015.cfm

Sources of Information

Canadian Home Builders "Builders Manual"
www.buildermanual.com

Canada Mortgage and Housing
Equilibrium House Program Demo Projects
www.cmhc-schl.gc.ca/en/inpr/su/eqho/eqho_015.cfm

About Your House Series
www.cmhc-schl.gc.ca/en/co/co_001.cfm

Natural Resources Canada – New Homes
http://oee.nrcan.gc.ca/residential/new-houses.cfm

Other Documents in this series:

Visit efficiencynb.ca/learningcenter

- Building Materials Overview
- Introduction to Home Heating
- Heating with Electricity
- Heating with Oil and Gas