Outline

1) What is ‘Sustainability’?
2) Why do we care?
3) And why should you care?
4) How to measure/value ‘it’?
About Brookfield Residential:

- leading North American homebuilding and residential land development company operating in twelve markets
- successful 60+ year track record
- new communities, infill, mixed use and commercial
- single family homes & townhouses to mid-rise apt’s
- sustainability & innovation & continuous improvement

Brand Promise: *The Best Places to Call Home*
What: Does *Sustainability* Mean?

GHG, Greenhouse Gas Emissions
EnerGuide, Energy Star
NGBS, HERS, Built Green
Build It Green, PassiveHaus, Passive House
LEED, LEED

'Sustainable development', 'sustainability'

GHG, Carbon

Smart Growth, location efficiency

'Low Impact Design', ecological footprint

transit-oriented development (TOD)


Green Building, Low Impact Design

ESG: ENVIRONMENTAL, SOCIAL, GOVERNANCE
CSR: Corporate Social Responsibility

Net Zero Energy, ZNE

CDP: Carbon Disclosure Project

United Nations SDG’s: Sustainable Development Goals
A Quick Refresher:

“Sustainable Development meets the needs of the present without compromising the ability of future generations to meet their own needs”

(United Nations - ‘Our Common Future’ 1987)

It’s about the triple bottom line.
A healthy environment, economy and community.
1) **Sustainability** is measurable.

### SUSTAINABLE DEVELOPMENT

#### ENVIRONMENTAL
- Environmental Protection
- Land and Location Efficiency
- Reduced waste
- Reduced Emissions
- Water Efficiency
- Energy Efficiency
- Indoor Air Quality

#### ECONOMIC
- Economic (GDP) contribution
- Job creation / training
- Infrastructure investment
- Development Charges (DC’s)
- Taxes and fees
- Multiplier effect

#### SOCIAL
- Healthy homes/communities
- Community creation
- Place-making
- Quality of Life
- Housing choice
- Housing affordability
3) **Sustainability** is relative.

“There’s no such thing as sustainability. **There are just levels of it.** It’s a process, not a real goal. All you can do is work toward it.”

Yvon Chouinard, Founder, Patagonia
Climate Change - is today’s hot issue.


- Industry: 33%
- Buildings: 39%
- Transportation: 28%
- Commercial: 18%
- Residential: 21%
- Agriculture: 9%
- Commercial & Residential: 12%
- Electricity: 30%
- Industry: 21%
- Transportation: 26%

Source: U.S. Department of Energy (DOE) 2008

Energy and Emissions take centre stage. Homes and Buildings singled out?
Therefore ‘Green’ buildings a priority.
What: does this mean for our business?

We know we can’t do it all. So we asked our people what was most important. Our staff and stakeholders narrowed over thirty issues to ten - and then to ‘Four Pillars’:

- Quality of Life
- Health and Wellness
- Housing Choice and Affordability
- Location Efficiency
- Energy and Emissions
- Water
- Waste
- Design Quality
- Infrastructure investment / economic issues
- Corporate Social Responsibility (CSR) issues

1. Creating Livable Places
2. Using Resources Efficiently
3. Investing in Communities
4. Valuing People & Partners
Using Resources Efficiently (Green Buildings)

Brookfield Seton (Calgary Ab)
LEED certified and 60kW solar pv system

Brookfield PureBlue house (Washington DC)
Standard US house = 100 HERS scale
PureBlue House = minus 1 HERS (feeds energy into grid)
Why: do we care? (about ‘sustainability’)

Reason # 1:

It’s what we stand for.

Our people have always tried to do the right thing for the environment, local economies and communities.
Reason # 2: It’s also the **smart thing** to do.

**Opportunities**

- **Revenue growth**
  - Company *reputation*; Innovative *products*; Innovative *services* & financing
  - +9%

- **Energy costs**
  - -75%

- **Waste costs**
  - -20%

- **Materials & water costs**
  - -10%

- **Employee productivity & innovation**
  - +2%

- **Employee attrition costs**
  - -25%

**Expenses**

- **Revenue**
  - +51% to +81%

- **Expenses**
  - -16% to -36%

**Risks**

- 7 Risks to Revenue
- 7 Risks to Expenses

**Profit**

- -16% to -36%

**Sustainability Capital Reserve**

sustainabilityadvantage.com
Reason # 3

It’s what we promise our customers.

It’s part of our Brand Promise: *The Best Places To Call Home.*

The *best* homes and communities.
Reason # 4

Many of our customers want and expect this.

- **Four of Top 10 “Must Haves”** (energy-efficient appliances, high-efficiency windows, overall energy-efficient home, HRV-ERV)
- LED lighting on steep upwards trend. Solar PV - still low but also upwards trend
- **Certification** (e.g. ENERGY STAR®) “must have” to 52% of respondents
- To save $1,200 / yr on utilities: **58% would invest $3,000 to $5,000 extra** and 18% would invest $10,000 or more. Only 8% would invest nothing extra.
Reason # 5

Our shareholders & partners want and expect this.
Reason # 6

Our staff want and expect this.

- 86% would consider leaving if employer’s performance no longer held up
- It costs 2 to 3 times an employee's salary to replace him / her

(Also: a strong correlation with employee engagement, productivity, and profit)
Reason # 7

Our public (through their Municipal, Provincial/ State and Federal Governments) want and expect this.

Result: a wave of legislation, regulations and Codes.
“Sustainability”? We call it: *The Best Places to Call Home*

- Better designed and built
- Lower operating costs
- Healthier and more comfortable
- Cleaner and quieter
- Smarter and safer
- More durable

“There are just levels of it. It's a process, not a real goal. All you can do is work toward it.” - Yvon Chouinard
Why: should you care?

Reason # 1
It’s what you stand for.

“to advance professionalism and ethics, global standards, methodologies, and practices through the professional development of property economics worldwide.”
(The Appraisal Institute)

“Our Members:
• Maintain the highest level of integrity and professionalism;
• Engage in conduct that will instill confidence and protect the public interest;
• Provide quality services within their areas of competence; and
• Commit themselves to principles that reflect high standards of professionalism.
(The Appraisal Institute of Canada)
Reason # 2

It’s also the smart thing to do.

“Green building makes economic sense. The costs of building materials and energy are soaring, and anything that can be done to make residential and commercial properties more affordable to build and operate is just common sense.

In light of better technology and higher quality construction, I expect that green building will be the norm over the next decade and not a buzzword.

Valuation professionals who can learn the language of green will be much better positioned to recognize change as it happens.

Jim Amorin
2017 President, The Appraisal Institute
Reason # 3

Your clients want and expect this. (It’s about competency.)

"Are your green homes undervalued? Maybe it’s not the market, but the appraiser."

"NAHB is working with many other organizations to institute change and address several issues, including appraiser qualification, that hinder growth in green building.

Builders and remodelers who face green appraisal challenges are encouraged to refer to the NAHBGreen Toolbox: Overcoming Appraisal Challenges for additional ideas."

From: National Association of Home Builders (NAHB ) website
Reason # 4

You now have **the resources** (and the data?)

The Appraisal Institute  
http://www.appraisalinstitute.org/education/education-resources/green-building-resources/
Valuation of Sustainable Buildings Professional Development Program
Valuation Advisories  

The Appraisal Foundation  
https://www.appraisalfoundation.org/imis/TAF/Resources/TAF/Resources.aspx?hkey=d5f434b3-7088-4844-a2b1-878bce7180be

Information Atlas for Green and High Performance Buildings:  
https://sites.google.com/site/appraisinghpbuildings/
Reason # 5

The public (through their Municipal, Provincial/ State and Federal Governments) want and expect this. And governments are defining and regulating ‘it’.

“Right now, somebody, somewhere, is defining what sustainability means for your industry, business…” (and your profession?).


THE HERS INDEX
(Home Energy Rating Service)

The most common energy rating system in N America. A performance measure - neither a label nor brand.

A HERS 65 home is 50% more energy efficient than the average home in the US; and 35% more efficient than the HERS Reference Home (2006 IECC Code).
The Cross Border Builder Challenge

HERS 33 (67% more efficient)

Tiago Moura, Toronto Office

HERS 41 (59% more efficient)

Brian Stamm, Denver Office

HERS 33 (67% more efficient)
Case Study: Denver Passive House

- also 1st for a production builder (and Brookfield)
- Just sold for $615k
- Adjoining comparable home sold for $550k (w. finished basement)
- Buyer: originally paid about $65k premium (recouped this)
- Realtor: selling ‘unique’ factor, comfort, zero defects, energy savings

“The buyer’s Agent selected an Appraiser who was an expert.”
“Our automation-ready spaces will measure overall performance, health metrics like air quality and tell you what’s being used efficiently (and what’s not), with the help of sensors and monitors”

Adrian Foley, COO and President of Brookfield Residential California.
Issues & Opportunities

- More data / open data
- Standardization and simplification
- Legislation / regulation e.g. ‘net zero’ or ‘zero net energy’
- Mandatory labeling – new and resale buildings
- Carbon $ reinvestment?
- Increasing building energy (and water) costs - and revenue?
- Increasing consumer awareness (e.g. indoor air quality)
Where to from here?
Collaboration:

- Residential and Commercial Building Industry
- Valuation Profession
- Utility Companies
- Real Estate Profession
- Federal Mortgage and Housing (Fannie Mae/ Freddie Mac/ CMHC)

Banks and Financial Institutions?
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