




AGENDA

- TAF – who are we and what do we do?
- What is TowerWise? What is TEEECAC?
- Financial Considerations
- Standard tools/calculations
- Case study – comprehensive energy retrofit
- Calculations – IRR –ROI - Cost – of Waiting
- Who are you
- Opportunities
- Summary

 TORONTO Atmospheric Fund

About TAF

- Founded 15 years ago
- City Agency – focused on climate change
- Not on tax base - \$25 million endowment
- Endowment invested to generate funds for expenses and grants
- Investments in public and private entities
- Flexible, innovative, independent –quite unique

TAF – Four Program Areas


- **TowerWise**
Improving energy efficiency in high rise homes
- **Solar City**
Building local solar generation capacity
- **Light Savers**
Advancing low carbon lighting
- **Fleet Wise**
Accelerating hybrid and electric vehicle solutions

TowerWise



- Innovative financing approach
- New Condo development – finances the incremental cost of items that reduce energy
- Those receiving the benefits (the condo-owners) pay for the cost

TowerWise to TEEAAC

- TowerWise Energy Efficiency Education Action Committee (“TEEEAC”) Focuses on Energy
- Efficiency in “high rise homes” (over 5 stories)
- Works with private and public partners for example Tridel, Monarch – Enbridge, Better Buildings Partnership, TCHC and more - 40 member group
- Practical financial and technical energy education – made available at  TORONTO Atmospheric Fund

Financial Considerations

Free Money – we know that there is no such thing as a free lunch - but an energy retrofit has to be close....

Remember one plus one equals three – how about 7 or more?

Today's Challenge:

Find a capital investment that is in the same league as an energy retrofit that delivers all of the following strictly financial elements

Financial Considerations

- The capital invested comes back (whatever your measure)
- and pays for the cost of capital
- and continues to deliver the savings after payback
- and improves Net Operating Income
- and increases the value of the property
- and protects against rising costs

Financial Considerations

Wait, there is more...

and some firms will guarantee the savings estimated

and reduces time spent on maintenance

and can pay for other capital expenditures

and we did not even raise rents (yet)

and nor did we apply incentives to our calculations

Financial and Environmental

And more

➤ **and helps reduce the use of non-renewable sources**

➤ **and AS A RESULT**

reduces the impacts of the burden on future generations in terms of the environment and costs

Financial Considerations

How do we prove those statements?

The tools and the evidence exist

Tools

IRR: Internal rate of return - useful because of the competition for capital - the organization has to achieve an *IRR of x* and the result of the calculations shows a rate of return over that value *X*, the project has positive cash flows and a positive return


ROI: Return on Investment - An investment in capital equipment/assets that improves NOI improves the value of the building – that value improvement will depend on the “CAP” rate – divide the NOI by the cap rate to see the increase in value and calculate the ROI

Cost of Waiting: Opportunity cost of waiting for the lower rates and higher incentives


Evidence - CASE

Measure	Savings	Cost	Pay-back
	\$	\$	Years
1 HVAC	56,448	180,000	3.2
2 High Eff Heating Boiler	24,976	85,000	3.4
3 High Eff DHW Boiler	11,609	61,000	5.3
4 Carbon Monoxide System	6,984	27,000	3.9
5 CW Booster Pumps VFD	6,457	18,800	2.9
6 Cooling Tower Fan Motor VFD	1,922	26,000	13.5
7 Existing Chiller Motor VFD	7,600	85,000	11.2
8 Chilled Water Temp Reset	1,000	5,000	5.0
9 Building Automation System	5,923	70,000	11.8
10 Whirlpool and Pool Covers	771	3,500	4.5
11 Lighting Retrofit	13,068	42,096	3.2
12 Lighting Retrofit: Suites	8,488	6,000	0.7
13 Low Flow Showerheads	8,762	2,261	0.3
14 Pool Heating	8,122	31,000	3.8
15 Training and Education	6,613	5,000	0.8
TOTAL	168,743	647,657	3.8

The TowerWise Program	IRR			
	Capital Investment/ Outflow	Per Annum Savings /Inflow	Years Saved	IRR
	-647,657	168,743	10	22.68%
	-647,657	168,743	8	19.99%
	-647,657	168,743	7	17.76%
	-647,657	168,743	6	14.48%
	-647,657	168,743	5	9.52%

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The TowerWise Program	ROI			
	Cap Rate	Increase In Value - Sales Price	Simple ROI	IRR
	10.00%	1,687,430	160.54%	82.82%
	8.00%	2,109,288	225.68%	101.02%
	7.00%	2,410,614	272.21%	113.02%
	6.00%	2,812,383	334.24%	127.97%
	5.00%	3,374,860	421.09%	147.30%

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Cost of Waiting

Comparative Interest Rate Analysis

Interest rate of immediate financing	7.05	%
Interest rate of a lower financing	6.05	%
Cost of the equipment	\$650,000	
Simple payback	4	year(s)
	4	month(s)
Potential annual savings	\$150,978	
Term of financing	7	year(s)
Lower interest rate savings	\$21,500	
Amount lost in utility bills	\$12,600	/ month
Break-Even Point	1.7	month(s)
Opportunity cost if delayed 12 months*	19.9%	

*The opportunity cost is 12 months of lost savings divided by the original project cost.

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Who Are You?

Different motivations = Different choices

- Strictly business – continuous improvements in cash flow – choose higher IRR hurdle rate
- Motivated to sell – price target – return on the investment made
- Long term player – concerned about the long term protection of top line revenues, control over costs and values - interests lie somewhere 10 - 15 years +

Opportunities???

Opportunities – More Than Green Economy Opportunities

By 2030, the renewable energy and energy efficiency (RE&EE) industry could account for approximately \$95 billion annual revenues and provide 838,000 jobs

A deeper commitment could create about \$180 billion in annual revenues and 1.6 million jobs.

The vast majority of these jobs and revenues would be situated in the Greater Golden Horseshoe region. These are jobs that cannot be outsourced.

TowerWise

The net present value of benefits associated with the Toronto Green Development Standard total \$17.46 billion under the current energy price escalation scenario, and \$21.19 billion under the high energy price scenario for the period 2007-2031

Alternatively, these amounts represent the net present values of future burdens placed on succeeding generations if the 'business as usual' development model persists for the next 25 years.

Future Legacy or Liability?

Summary

Financial Tools are Available

Templates that provide step by step guides

EnergyStar™ [Building Upgrade Value Calculator](#)
[Cash Flow Opportunity Calculator](#) [Financial Value Calculator](#)

Enbridge

TAF – Excel model

Incentives – Energy Efficiency Office – Better
Buildings Partnership

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