

Respect

Excellence

Integrity

Leadership



# Building Portfolio Analysis

Edward Morofsky  
Professional & Technical Services  
Real Property Branch

22 October 2009

McMaster University



Public Works and  
Government Services  
Canada

Travaux publics et  
Services gouvernementaux  
Canada

Canada

# Why do it?

Portfolio Analysis considers the energy reduction possibilities of a group of buildings based on their general characteristics.

The number of buildings can range from hundreds to tens of thousands when national building portfolios are analyzed.

Portfolio Analysis can use minimal information and can be refined as better data is collected. The input of planners, property managers, portfolio managers, financial analysts would be greatest at this stage.

Respect

Excellence

Integrity

Leadership



# Who does it? and When do they do it?

Portfolio Analysis provides critical information for planning, goal setting, bidding, funding or approval to proceed to more detailed analyses. A portfolio analysis would justify detailed examination of individual buildings.



Respect

Excellence

Integrity

Leadership



## A portfolio analysis usually requires:

- number, age, type and location of buildings
- floor area, number of stories, total volume
- current occupancy, and schedule of operation
- building energy usage
- EMCS or BAS?
- types of energy used and end uses
- central or distributed heating / cooling plants
- type of HVAC



Respect

Excellence

Integrity

Leadership



# Recapitalization and incremental costs

Recapitalization is the replacement of building subsystems.

“Capital renewal“ often used. Maintenance and repair are not recapitalization.

Recapitalization is a perfect opportunity to apply incremental costs – to transform BAU into EE options. Examples include energy efficient windows; a cool roof; a full-fledged energy management control system.

The recapitalization rate determines the extent to which incremental costs can be applied.



# Standard Portfolio Management Practice

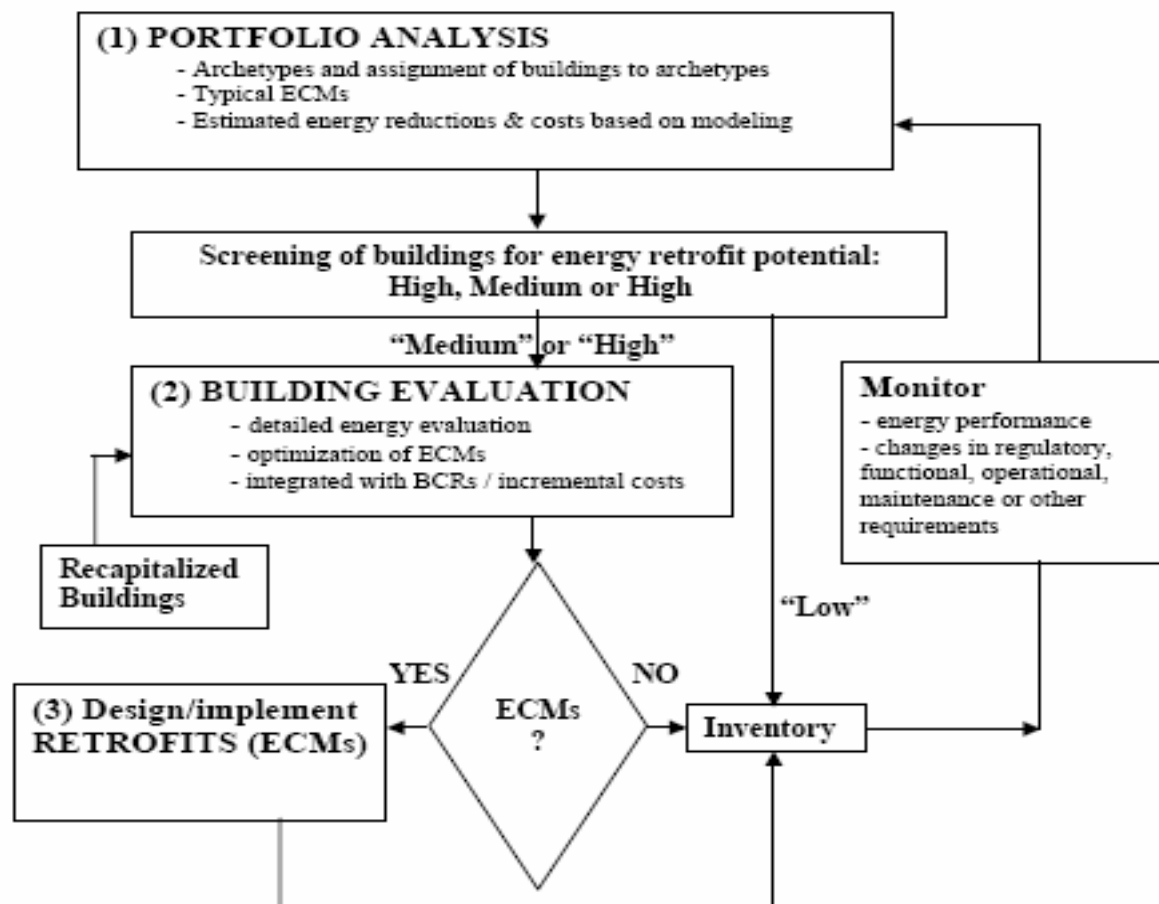


Figure 1 An effective management practice for improving the energy efficiency of building portfolios.

# Conclusions

The outlined methodology provides a consistent and effective approach for building managers to make informed decisions on the retrofit of their buildings and the degree of intervention. Portfolio analysis allows engineers to focus their detailed analysis on the buildings that will benefit by ECMs while providing estimates of costs/benefits to support their efforts with decision makers.