



# LIFE CYCLE COSTING (LCC) FOR GREEN BUILDING DESIGN

## SEMINAR/WORKSHOP

- DATE:** Thursday May 28<sup>th</sup> - Saskatoon  
Friday May 29<sup>th</sup> - Regina
- TIME:** 8:30 AM to 4:30 PM (Sign-In/Coffee 8:15 AM)  
12:00 PM Lunch will also be included
- LOCATION:** Saskatoon – Kelsey Room 312.1  
Idylwyld and 33rd Street  
Regina - Century Plaza 1920 Rose St

### OBJECTIVE:

Introduce ASTM and ISO Building Economics Standards and impart the skills necessary to apply the LCC methodology to the evaluation and analysis of investments in buildings, specifically in the field of energy efficiency and Green Buildings.

### SEMINAR OUTLINE

- ASTM and ISO Building Economics Standards
- Selection of Financial Criteria
- LCC Financial Tables - Present Value Factors (SPV, UPV - SPV\*, UPV\*)
- **Workshop A:** Calculating Present Values
- Data requirements for calculating Life Cycle Costs
- **Workshop B:** Calculating Life Cycle Costs
- Supplementary evaluation measures (NS, SIR, AIRR, DPB)
- **Workshop C:** Evaluation Measures
- Sources of LCC data and software
- Integrating LCC in the design process
- Report on the Costs and Benefits of Green Buildings

**This training seminar includes three progressive workshop sessions to gain experience in using the comprehensive Financial Tables provided and in applying the LCC technique to the evaluation of building systems and energy related problems (calculations are very simple – no prerequisites - only standard calculators required).**

## DOCUMENTATION:

- **A seminar manual** with all slides, workshop problems and related appendices
- **Life Cycle Costing Financial Tables (165 pages)** – these allow the Adjusted Internal Rate of Return (AIRR) to be determined directly from tables in lieu of trial and error calculations
- A summary of the **NIST/DOE Federal Energy Management Program Life Cycle Costing Manual** that is based on ASTM Building Economics standards
- Kats and CaGBC summary reports on the **Costs and Benefits of Green Buildings**
- Answers to all workshop problems

## SEMINAR LEADER:

**Robert P. Charette, P.E., CVS, PQS (F)**, is an associate adjunct professor in the Building Engineering Faculty of Concordia University in Montreal. He is a member of the ISO TC59 Working Group on Life Cycle Costing; member of the ASTM E06.81 Sub-Committee that developed building economics standards; past co-chairman of the ASTM Task Group that initiated the UNIFORMAT II Standard Classification of Building Elements. A past member of ASHRAE TC 1.8 on Owning and Operating Costs, he is also qualified as a Certified Value Specialist (CVS) by the Society of American Value Engineers and as a Professional Quantity Surveyor (PQS-F) by the Canadian Institute of Quantity Surveyors (CIQS).

Mr. Charette has lectured and presented seminars on Life Cycle Costing, Energy Management, Value Engineering, Elemental/Assemblies Estimating, and UNIFORMAT II for Design Management to various organizations and universities in Canada, the U.S., and in Europe. These include AIA/BSA (Boston): the Harvard Green Campus Initiative (HGCI:), the Canada Green Building Council (CaGBC): the Manitoba Environmental Industries Association (MEIA): the International Initiative for a Sustainable Built Environment (iiSBE): the ASHRAE San Diego, Toronto Ottawa and Athens Chapters: the Canadian Institute of Quantity Surveyors: and the Royal Institute of Chartered Surveyors (RICS – UK).

**FEES – ADD 5% GST UNLESS EXEMPT:**

**BEFORE MONDAY MAY 18<sup>TH</sup>:**

**CAGBC-SK MEMBERS \$300**  
**NON-MEMBERS \$350**

**AFTER MONDAY MAY 18<sup>TH</sup>:**

**CAGBC-SK MEMBERS \$350**  
**NON-MEMBERS \$400**

**NOTE: REGISTRATION DEADLINE FRIDAY MAY 22<sup>ND</sup>.**

***Attendee Information:***

Name(s): \_\_\_\_\_ Date: \_\_\_\_\_

Daytime Telephone: \_\_\_\_\_ E-mail: \_\_\_\_\_

Company Name, and Mailing Address:

\_\_\_\_\_  
\_\_\_\_\_

***Method of Payment:***

Please check one: Bill Company ( ) Cheque included ( ) Cheque to follow ( )

Company Name: \_\_\_\_\_ Company reference number (if applicable): \_\_\_\_\_

Company Representative to be billed: \_\_\_\_\_

**PLEASE MAIL, FAX or E-MAIL YOUR REGISTRATION TO:**

CaGBC-SK Chapter  
Attention: Charlene Doell, Administrative Coordinator  
#200 – 642 Broadway Avenue  
Saskatoon, SK. S7N 1A9  
Phone: 306-665.0744 Fax: 306.664.2598  
Email: [cdoell@cagbc.org](mailto:cdoell@cagbc.org)

**NOTE: for a full refund, cancellations must be received by Monday May 25<sup>th</sup>**

# Life Cycle Costing (LCC) Seminar / Workshop Manual

## Table of Contents

### 1. LCC Seminar

- 1.1. The Notion of Life Cycle Costing
- 1.2. Data Requirements for LCC
- 1.3. Present Value Factors SPV, UPV, SPV\*, UPV\* - Workshop A
- 1.4. Calculating Life Cycle Costs - Workshop B
- 1.5. Supplementary Evaluation Measures NS, SIR, AIRR, DPB - Workshop C
- 1.6. Integrating LCC in the Design Process

### 2. LCC Workshop Problems

- 2.1. Workshop A – Present Value Factors
- 2.2. Workshop B – Calculating Life Cycle Costs
- 2.3. Workshop C – Supplementary Evaluation Measures

### 3. Case Histories – LCC Applications

### 4. LCC Video – Saving by Design (optional)

### 5. Open Forum

## Appendices

- A. Summary of LCC Financial Tables (separate document – (16 of 165 p.)
- B. Summary of NIST/DOE Federal Energy Management Program Life Cycle Costing Manual based on ASTM Building Economic Standards
- C. Summary of the Kats and CaGBC Reports on the Costs and Benefits of Green Buildings
- D. FEMP/NIST Building Life Cycle Costing Software (BLCC)
- E. NISTIR 6389 – ASTM UNIFORMAT II Elemental Classification
- F. BEES and Athena Life Cycle Assessment (LCA) Software
- G. Answers to Problems of the Three LCC Workshops