



Standard Guide for Summarizing the Economic Impacts of Building-Related Projects¹

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INTRODUCTION

Quantitative descriptions of economic impacts are a basic requirement in many organizations for evaluating budget requests and the value of a project to the organization. Several measures of economic performance are available for evaluating building-related investments. These measures include, but are not limited to, life-cycle cost, the benefit-to-cost ratio, adjusted internal rate of return, and net benefits. This guide provides a generic format for presenting these economic measures of building-related investments.

1. Scope

1.1 This guide describes a generic format for summarizing the economic impacts of building-related projects.

1.2 The guide provides technical persons, analysts, and researchers a tool for communicating project impacts in a condensed format to management and non-technical persons.

1.3 The generic format described in this guide calls for a description of the significance of the project, the analysis strategy, a listing of data and assumptions, and a presentation of the key economic measures of project impact.

2. Referenced Documents

2.1 ASTM Standards:

E 917 Practice for Measuring Life-Cycle Costs of Buildings and Building Systems²

E 964 Practice for Measuring Benefit-to-Cost and Savings-to-Investment Ratios for Buildings and Building Systems²

E 1057 Practice for Measuring Internal Rate of Return and Adjusted Internal Rate of Return for Investments in Buildings and Building Systems²

E 1074 Practice for Measuring Net Benefits for Investments in Buildings and Building Systems²

E 1121 Practice for Measuring Payback for Investments in Buildings and Building Systems²

E 1699 Practice for Performing Value Analysis (VA) of Buildings and Building Systems²

E 1765 Practice for Applying the Analytical Hierarchy Process (AHP) to Multiattribute Decision Analysis of Investments Related to Buildings and Building Systems³

2.2 ASTM Adjuncts:

Discount Factor Tables, Adjunct to Practice E 917

Computer Program and User's Guide to AHP/Expert Choice for ASTM Building Evaluation, Adjunct to Classifications E 1557, E 1660 through E 1671, E 1693, E 1694, E 1700, and E 1701, and Practices E 917, E 964, E 1057, E 1074, and E 1765

2.3 Other Document:

Chapman, R. E., 2000, *Benefits and Costs of Research: A Case Study of Construction Systems Integration and Automation Technologies in Industrial Facilities*, NISTIR 6501, Gaithersburg, MD: National Institute of Standards and Technology

3. Terminology

3.1 *Definitions*—For definitions of terms used in this guide, refer to Terminology of Building Economics, E 833.

4. Summary of Guide

4.1 This guide presents a standard format for presenting the economic impacts of building-related projects. It includes the entire range of private and public construction projects, as well as research related to those projects.

¹ This guide is under the jurisdiction of ASTM Committee E06 on Performance of Buildings and is the direct responsibility of Subcommittee E06.81 on Building Economics.

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² *Annual Book of ASTM Standards*, Vol 04.11.

³ *Annual Book of ASTM Standards*, Vol 04.12.