



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

This standard is issued under the fixed designation E 2204; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reappraisal. A superscript epsilon (ε) indicates an editorial change since the last revision or reappraisal.

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.

Current edition approved April 10, 2002. Published August 2002.

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

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

