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Sustainability in buildings and civil engineering works — Indicators and benchmarks — Principles, requirements and guidelines

Développement durable dans les bâtiments et ouvrages de génie civil — Indicateurs et référentiels — Principes, exigences et lignes directrices

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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 59, *Buildings and civil engineering works,* Subcommittee SC 17, *Sustainability in buildings and civil engineering works*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

Minimum requirements for sustainability assessment criteria and sustainability indicators for buildings have been developed as have calculation methods and requirements. Whilst current International Standards on sustainability in buildings and civil engineering works[1)] support the assessment and comparison of buildings and other types of construction works, there is no detailed information on the evaluation process. Assessment is typically a two-step approach including calculation and evaluation. To support the evaluation process, this document describes the use of benchmarks, including principles and requirements for their development.

Building projects often need to be changed to significantly lower the negative impacts to the environment, society and economy. This will require significant improvements in cooperation, communication, and the use of design and assessment tools. As the demand for results of sustainability assessments of buildings and other types of construction works continues to grow, benchmarks can be used for tasks such as

— target setting in early design stages (strategic planning, preparation and briefing stages) and for architectural competitions;

— target setting in public procurement;

— evaluation of designs or buildings and civil engineering works to support decision making;

— certification of buildings/other types of construction works;

— communication to third parties about assessment results (for example used in appraisal process or to support funding decisions).

Although sustainability indicators are commonly used, the assessment results often lack transparency about the development of the applied reference levels and their application[8].

The possible sources for benchmarks depend on the type of value. In this document they are described as: a) limit values, b) reference values, c) target values.

Currently understanding of benchmarks has often been developed in parallel with the development of assessment systems. As a result, the assessment ratings depend on the specific systems, calculation and assessment rules, databases and calculation tools.

Benchmarks are important because there is a need to understand and explain the linkage between the economic value of the asset and issues of sustainable development in order to promote sustainable building. Transparent methods and common principles are needed for the development of benchmarks. A range of stakeholders has an interest in receiving a common understanding of benchmarks for buildings and civil engineering works. These include:

— Policy makers, local authorities, building authorities:

  — to monitor and judge the progress of built environment in terms of sustainability indicators;

  — to define targets and regulatory limit values for built environment.

— Owners and investors, portfolio managers:

  — to compare the performance of buildings/premises/civil engineering works with other buildings or construction works;

  — in case of international property portfolios, to compare and assess the potential for new technologies in different countries;

1) Suite of standards developed by ISO/TC 59 SC 17.

  - to set targets.
- Designers and consultants:
  - to compare the performance of design solutions.
- Appraisal specialists and estate agents:
  - to use the benchmarks in comparative valuing;
  - to use the benchmarks in selling/marketing.
- Banks and insurance companies:
  - to use the benchmarks in valuing and assessing financial risks (ISO 14097).

Sustainability in buildings and civil engineering works — Indicators and benchmarks — Principles, requirements and guidelines

1 Scope

This document defines principles, requirements and guidelines for the development and use of benchmarks when assessing the economic, social and/or environmental performance of buildings and civil engineering works by using sustainability indicators.

It complements and supports the application of ISO 21929-1 and ISO/TS 21929-2 by creating principles and requirements for the establishment of benchmarks that support target setting, decision making and communication to third parties. This document is also related to ISO 21931-1 and ISO 21931-2 by creating principles, requirements and guidelines for the establishment and use of benchmarks related to environmental performance and other aspects of sustainability.

This document describes three types of values for benchmarks (performance levels for comparison purposes):

— limit values;

— reference values;

— target values.

This document does not set benchmarks.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 6707-1, *Buildings and civil engineering works — Vocabulary — Part 1: General terms*

ISO 21929-1, *Sustainability in building construction — Sustainability indicators — Part 1: Framework for the development of indicators and a core set of indicators for buildings*

ISO/TS 21929-2, *Sustainability in building construction — Sustainability indicators — Part 2: Framework for the development of indicators for civil engineering works*

ISO 21931-1, *Sustainability in building construction — Framework for methods of assessment of the environmental performance of construction works — Part 1: Buildings*

ISO 21931-2, *Sustainability in buildings and civil engineering works — Framework for methods of assessment of the environmental, social and economic performance of construction works as a basis for sustainability assessment — Part 2: Civil engineering works*

ISO/TR 21932, *Sustainability in buildings and civil engineering works — A review of terminology*

ISO 15392, *Sustainability in buildings and civil engineering works — General principles*

ISO 14050, *Environmental management — Vocabulary*