

# INTEGRATION OF SERVICE LIFE IN THE PROCESS OF MANAGEMENT AND DESIGN OF BUILDINGS

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## Abstract

This article approaches the regulatory framework on the service life of constructed assets and its integration into the management and design process of sustainable buildings. The importance of this study is to be found on the fact that currently, most of the building designers do not apply the integration and planning of service life into the process of management and design of constructions. Because of this, ISO (International Standard Organization) regulations are approached; said regulations are referred to the planning of service life of buildings, explaining and describing their relevance in the process of design. Basic principles of the sustainable planning, derived from *Leadership in Energy and Environmental Design*® method in the United States and Canada, are presented as well as the relation with the aforementioned *International Standard Organization* regulations on the service life of buildings, specifically that of ISO 15686.

**Keywords:** Design process, Regulations, Service life, Sustainable building, Sustainable management.

## REFERENCES

- Architectural Institute of Japan [AIJ]. (1993). *The English Edition of Principal Guide for Service Life Planning of Buildings*, pp. 24-72, AIJ, Japan.
- Building Industry Authority [BIA]. (1992). *New Zealand Building Code*, Clause B2 Durability, BIA, pp. 19-44, Wellington, New Zealand.
- Building Research Establishment's Environmental Assessment Method, [BREEAM]. (2005). *BREEAM® Offices*, BRE, pp. 12-240, UK.
- Canadian Standards Association [CSA]. (2001). Q645-95 (R2001); *Life Cycle Costing*, pp. 34-52, CSA, Canada.
- Canadian Standards Association [CSA]. (2001). S478-95 (R2001), *Guideline on Durability in Buildings*, pp. 9-17, CSA, Canada.
- Chen, X. (2009). Urban planning management system in Los Angeles: an overview, *Theoretical and Empirical Researches in Urban Management*, 2(11), pp. 50-63.
- Frohnsdorff, G. J. and Martin, J. W. (1996). Towards predictions of building service life: the standards imperative, *Durability of Building Materials and Components*, 7 (2), pp. 17-28.

- Hernández-Moreno, S. (2008). El diseño sustentable como herramienta para el desarrollo de la arquitectura y edificación en México, *Acta Universitaria*, 18 (2), pp. 18-23. Retrieved October 17, 2008, from www.redalyc.uaemex.mx.
- Hernández-Moreno, S. (2008). El diseño sustentable como herramienta para el desarrollo de la arquitectura y edificación en México, *Acta Universitaria*, 18 (2), pp. 20. Retrieved October 17, 2008, from www.redalyc.uaemex.mx
- Ingwe, R., Inyang, B., Ering, S. and Adalikwu, R. (2009). Sustainable energy implementation in urban Nigeria, *Management Research and Practice*, 1 (1), pp. 39-57.
- International Standards Organization [ISO]. (2000). *Buildings and constructed assets-Service Life Planning*, part 1: General Principles, ISO 15686-1, pp. 18-49, ISO, Switzerland.
- International Standards Organization [ISO]. (2000). *Buildings and constructed assets-Service Life Planning*, part 3: Whole Life Costing, ISO 15686-3, pp. 4-18, ISO, Switzerland.
- International Standards Organization [ISO]. (2004). 15686-6:2004, *Buildings and constructed assets-Service Life Planning*, part 6: Procedures for considering environmental impacts, pp. 19-21, ISO, Switzerland.
- International Standards Organization [ISO]. (2004). *Buildings and constructed assets-Service Life Planning*, part 6: Procedures for considering environmental impacts, ISO 15686-6, pp. 9-25, ISO, Switzerland.
- Pearce, J. M., Grafman, L., Colledge, T. and Legg, R. (2008). Leveraging information technology, social entrepreneurship and global collaboration for just sustainable development, *Proceedings of the 12<sup>th</sup> Annual National Collegiate Inventors and Innovators Alliance Conference*, pp. 201-210.
- Leadership in Energy and Environmental Design [LEED]. (2003). LEED™ NC- Version 2.1, United States of America, *Green Building Council*, pp. 32-74.
- Leadership in Energy and Environmental Design [LEED]. (2004). Canada™, Version 1.0, p. 275, *Green Building Council*, Canada.
- Leadership in Energy and Environmental Design [LEED]. (2004). Canada™, Version 1.0, p. 47, *Green Building Council*, Canada.
- Leadership in Energy and Environmental Design [LEED]. (2008). LEED™ NC- Version 2.1, United States of America, p. 44, *Green Building Council*, USA.
- Masters, L. W. and Brandt, E. (1989). Systematic methodology for service life prediction of building materials and components, *Materials and Structures*, 22, (131), pp. 92-385.
- Masters, L. W. and Brandt, E. (1989). Systematic methodology for service life prediction of building materials and components, *Materials and Structures*, 22 (131), p. 391.
- Trinius, W. (1999). *Environmental assessment in building and construction – goal and scope definition as key to methodology choices*, Ph. D. diss., University of Stockholm, p. 57, Sweden.