



ARCHITECTS' COUNCIL OF EUROPE
CONSEIL DES ARCHITECTES D'EUROPE

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Architecture and Quality of Life

Environment and Sustainable Architecture: Life Cycle Assessment

Political position

Final

At its meeting of 6 December 2013, the ACE General Assembly has adopted this political position on Life Cycle Assessment.

TARGETS

Energy Efficiency Directive, Energy Performance of Buildings Directive, Construction 2020 Strategy

BACKGROUND

Excerpt from the European Commission Memo published on 8 June 2012, announcing EC Strategy "Construction 2020". One of the five key objectives of which is "Improving resource efficiency and environmental performance":

"The construction sector plays an extremely important role in the European economy, generating almost 10% of GDP, and providing 20 million jobs, mainly in micro and small enterprises. The performance of the construction sector can significantly influence the development of the overall economy. The energy performance of buildings has an important impact on the quality of life of Europeans. In low energy buildings, 80% of the operational costs can be saved through integrated design solutions; however there is still a limited market uptake".

ACE POSITION HIGHLIGHTS

- Buildings have considerable social, environmental and economic impacts on the life of European citizens. 90% of our lives we spend in buildings. We shape our build environment, and then it "shapes" us for decades.
- Work on improving the existing building stock to make it more sustainable and resource – efficient is a key: to accelerate economic recovery, and to make it more competitive; to improve European citizen's life through enhanced comfort and indoor air quality, whilst helping to tackle fuel poverty, a major cause of social exclusion.
- ACE supports European Commission's efforts to stimulate the constructions sector with the "Construction 2020" Strategy. We support the use of public funds in a sustainable way, considering long-term planning rather than prioritising short term goals, applying life-cycle cost analysis and quality-based criteria throughout the construction procurement process.
- The strategy shall ensure that all works in cities infrastructure, new and existing buildings is of a high level of quality (safe and sound); with long service life, low maintenance and operational costs; and environment-friendly. Possible only as a result of an integrated design approach, and based on a comprehensive technical program.

ACE POSITION – SHORT REPORT

When evaluating construction investment process, non-experts are taking into consideration only the **initial cost** and impacts of the construction, while these are only a fraction of the overall effects of buildings on the local environment, economy and society. Since buildings are a long-term investment, for decades (sometimes for centuries) to come, it is crucial to calculate their value in aspect of their impact for a long-term period. It is important **to understand the life cycle performance of buildings** and the integrated and comprehensive, investment evaluation approach.

Life cycle assessment (LCA) **allows understanding** the energy use, the environmental impacts and economic cost associated with all life cycle phases of the building: **Procurement, Construction, Operation, and Decommissioning**. Life cycle assessment considers the building along with its materials and components, from their extraction, manufacture and transport, to their use, reuse, recycling and disposal. The use of LCA for buildings requires a set of guiding principles, which consider the unique character of each building design, the complexity of its systems, and the related decisions.

Important aspect of LCA is the **energy consumed** by a building. There are two types of energy, "Operational" and 'Embodied energy'. In "nearly zero energy building" the majority of the energy impacts will be embodied. Life cycle assessment has to be considered in the energy performance certificates, as well as when evaluating the building carbon dioxide emissions.

To understand and analyze the environmental and economical impact of the constructions, it is **fundamental to use life cycle assessment** as part of a holistic and integrated approach. Standards written by CEN/TC 350 provide a comprehensive system for the sustainability assessment of buildings using a life cycle approach. To encourage sustainable construction and development, we endorse the use of these standards, especially in Public procurement projects.

Considerations for adequate building performance assessment throughout the procurement, construction process and building commissioning is in favor of the citizens health and safety, the quality of life, and the sustainability of the built environment.

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ANNEXES

Link to ACE website: www.ace-cae.eu