

# Implications of Life Cycle Energy Assessment of a new school building, regarding the nearly Zero Energy Buildings targets in EU: A case of Study

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Lately EU has promoted several policies with the aim of reducing buildings energy impact. Despite such policies have successfully contributed to reduce residential buildings (RBs) energy consumption, non-residential buildings (NRBs) have shown an increasing of operational energy demand by 15.7%, during last decade. On the one hand, energy impacts are underestimated since only primary energy consumption (PEC) is considered while other energies, such as those related to the construction phase, replacements, or end-use phase, are missed. On the other hand, policies commonly lack of specific standards regarding NRBs since NRBs heterogeneity makes its standardization difficult. Therefore, with the aim of contributing to literature and in order to show the true impact of the overall energy consumption, this paper assesses a new school building. This was erected in partnership with constructors and energy consumption has been measured for two years. Calculations have been based on the Life cycle energy assessment methodology by taking into account the pre-use phase, the use phase and the estimated post-use phase. It has been concluded that, despite the building was designed for a very low PEC ( $92 \text{ kWh m}^{-2} \text{ year}^{-1}$ ) this consumption only represents 56% of the total demanded energy along the building life cycle. © 2017

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