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From solar building design to Net Zero Energy Buildings: performance insights of an office building

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Abstract

Net Zero-Energy Buildings Performance has gained more attention since the publication in 2010 of the EPBD recast [1]. Successful implementation of such an ambitious target depends on a great variety of factors. With a literature full of theoretical advice and a building industry rife with myths about the value of technologies, the present study intend to unveil an sustainable framework for sharing insights into NetZEB methodology applied in an Portuguese office building, Solar XXI, based on the authors experience in the ongoing research carried out within International Energy Agency SHC Task 40 - ECBCS Annex 52, "Towards Net Zero Energy Solar Buildings"

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1. Introduction

Zero Energy performance buildings have gained more attention since the publication in 2010 of the EPBD recast [1]. Meanwhile the USA promotes "marketable zero energy homes in 2020 and commercial zero energy buildings in 2025" [2]. Japan proposes "carbon neutralized buildings", including existing buildings, by 2050 [3]. The UK government aspires to achieve a zero carbon standard by 2016 [4]. With countries well on the way to putting this new standard into effect, worldwide around three hundred buildings are already claiming Zero Energy or similar

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