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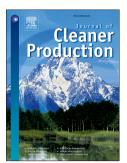
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#### ACCEPTED MANUSCRIPT

# Energy demand and environmental impact of various construction scenarios of an office building in Morocco

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- 14

### 15 Abstract

- 16 This paper assesses the thermal performance of an office building with an intermittent
- 17 occupancy pattern, designed according to three construction scenarios. Annual simulations are
- 18 carried out using TRNSYS software considering a Typical Meteorological Year (TMY) of six
- 19 Moroccan cities referring to the representative zones of the recent Moroccan climatic zoning.
- 20 The energetic and environmental performance of various passive energy efficiency measures
- 21 are evaluated and discussed. The major finding of this work is that these energy measures can
- 22 have a positive influence on reducing carbon footprint of the considered building. Annual
- 23 loads can be reduced by about 20% in Agadir, 48% in Tangier, 53% in Fez 56% in Ifrane,
- 24 31% in Marrakech and 41% in Er-rachidia.
- 25
- 26 Keywords: Office building; energy efficiency; environment; intermittent; TRNSYS.

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