Zero Carbon Hempcrete Construction – An Overview

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ABSTRACT

With growing concern regarding global warming, focus on environmental sustainability is a promising factor throughout the world. Construction industry accounts for almost 40% of the world's energy usage. The possible material with suitable technical properties based on renewable resources is hemp fiber concrete – hempcrete. Carbon confined in hempcrete is not going back to the atmosphere so it is a revolutionary material which is flourishing as carbon alternatives to conventional materials. This paper presents an overview on the material properties and environmental impact of the hempcrete derived from plant extract which is renewable and recyclable. The paper focuses on the mechanical and hygrothermal properties of hempcrete and its use in structures. Hempcrete is thick and porous so it can take in humidity and release it. Temperature will buildup in the wall and slowly radiate so temperature and humidity will be stable throughout the year. Hempcrete are not load bearing materials so it must be associated with supporting structures such as wooden frame or supporting masonry.

Keywords: *hempcrete, hygrothermal, renewable, load-bearing , humidity*