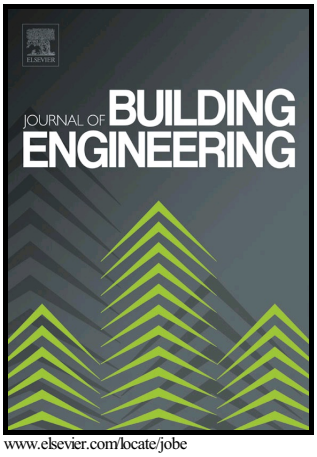

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Vernacular schist farm walls: materials, construction techniques and sustainable rebuilding solutions

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Abstract

To make the territory more usable for farming, rural populations used and perfected masonry walls for centuries to help organize the landscape, to establish boundaries between different landowners and to protect crops and property from animals and other external threats. In recent decades, the rural territory of Northwest Portugal undertook an irreversible transformation from a purely rural into a low-density urban land. In this process, traditional farm walls were faced with contemporary needs and population demands, which in most cases ended with demolition of the walls and their replacement by new ones. In this context, the landscape heritage value and rural identity preservation depend to a large extent on the rebuilding solutions chosen to replace the demolished wall heritage.

This paper addresses the analysis of traditional schist farm walls from Northwest Portugal. The study starts by focusing on their authenticity and by identifying characteristic features, as well as analysing the existing wall typologies, morphologies and main constructive features. The schist stone used for centuries as a building raw material is characterized from the physical and mechanical points of view. A rebuilding methodology was then applied to a case study, for which different local contemporary rebuilding solutions were identified and characterized. A decision-making process was established according to specific intervention guidelines, with implementation of the chosen solution presented in detail.