In this work, a new strategy has been proposed where the waste paper, and their possible emissions are buried into the bricks to induce porosity and reduce the atmospheric pollution. The resulting porous bricks have been proved experimentally to have good durability, low density, low thermal conductivity and acceptable compressive strength comparing with the commonly used bricks. Different mixing percentages of a waste paper weight to wet clay have been tested, and a percentage of 1:10 seems to meet the usual standard for severe weather requirements. Many advantages have been achieved; enchantment the thermal insulation of the brick, increasing number of brick produced per ton of clay, reducing waste and their determinate effects, small reduction in the energy required to produce fired brick and producing homogeneous properties through the brick by properly initial mixing waste paper with wet clay. All these factors result in obtaining good brick characteristics with advantage of reducing waste. The procedures of measuring density, specific heat and thermal conductivity have been verified by obtaining experimental and theoretical values of thermal conductivity of the samples and good