The primary concern of Industry in recent years has been the impact of environmental controls with secondary threats of fuel curtailments. As usual, the first round of Government interference was to produce laws to bring about an optimum solution in a matter of a few short years.

Industry in turn said it was impossible to exist under these new requirements and they would go out of business if required to meet them. Time and circumstances always help to level out both sides of the equation, and though the existing impact of EPA rulings still is of major concern to our Industry, we know of few companies going out of business because of them. In the intervening few years we have been exposed to a broad spectrum of new crises ranging from political in nature to very real; i.e. The Energy Shortage.

It is for this reason we would like to take a few minutes to investigate "Recuperation of Fuel Energy in the Ceramic and Glass Fields." When looking at Ceramics, recuperation dates back many centuries in our industry since even the early direct fire, non-recuperative kilns of Egypt, Mesopotamia, and Crete date back centuries before Christ. The high achievements of the Oriental potters were made possible by the possession of well constructed recuperative hillside kilns. These kilns were used for firing delicate Oriental porcelain at temperatures of 1100° C. or 2012° F. These temperatures at that time were completely out of reach for the more primitive updraft Western-Culture kilns.
Present day kilns are an evolution of American needs. These needs and requirements were different from many European sets of conditions, but as we shall see later on, the two paths are becoming similar in purpose. The most evident differences were the raw materials available and the dynamic marketplace. Looking quickly at structural clay products as an example, we see that historically European brick were considered basically for structural purposes; color, shading, and sizing were not considered that critical. In fact, the shading was considered to have a natural patina, whereas in the American marketplace the brick market was highly oriented around the production of face brick which was shaped and formed by the modern architect to compliment the design or decor of a given theme. Thus size, constant shade, and severe weather capability became the hallmark. These conditions required preheat oxidation potential for raw material dissociation and specific furnace zone configurations for even temperature distribution and soak conditions. Since the degree of vitrification was critical in the furnace zones, the products required cooling zones that became more involved and elaborate.

Each manufacturer saw his product line becoming broader and more involved thus more specific colors were developed based upon different blends of raw materials and admixtures. Fuel was plentiful and the manufacturers catered to the wants and desires of the marketplace and to the architect's wishes. Conversely, European markets were basically assuming a different set of conditions due to shortages of building products. The European brick maker found tremendous demand; shading and size were not the critical factors. Iron and steel were scarce, thus load bearing masonry construction was moving ahead at a fast rate. Kiln-run brick was the call of the day. Selected brick were chosen from the ware produced for the facing, and the rest of the production was utilized in the structure as building brick. The European heat treating facilities were designed primarily for a set of conditions that stressed the following parameters - European raw materials, scarcity of fuel, and production of an acceptable product in bulk quantities.

During the course of the last five years there has been a meeting of the ways, i.e. European Economy and American Flexibility. The American products have moderated away from the rigid shade requirements of the architects. It can be appreciated that this portion of the community still molds