At the present state of the art, the computer approach to engineering design problems does not seem to economically encompass all facets of the engineering profession. The programmable calculator would seem to provide a more feasible alternate to the graphical approach to the design of such items as column base plates than would a time sharing computer terminal.

Rapid Selection of Column Base Plates

Paper by WILLIAM R. BIRD (2nd Quarter, 1976)

Discussion by **William R. Bird**

The Author wishes to thank Mr. R. T. Douty for his comments on the computer oriented approach to the design of column bearing plates (4th Quarter, 1976). Mr. Douty, however, seems to take issue with the statement that "the optimum plate geometry cannot be determined directly." A rather well defined mathematical solution to the design of column bearing plates does exist and can be visualized in the graphical approach presented in the article under discussion. This does not necessarily mean that the solution to the problem is direct.

The role of the computer in the engineering profession as a valuable design service can not be disputed. However, it is the author's opinion that the design of such secondary items as the column base plate is, at this time, outside the realm of the computer inasmuch as economics is concerned. Any variation between the solutions obtained through the computer as compared to the graphical approach would be directly related to the scale in which the charts were prepared. The plate size indicated through the graphical approach for the example problem was, as they say in the profession, "close enough", since the design column loads in a typical structure may vary from the actual loading by 5 percent. It should also be noted that, assuming a singular usage, the savings in the material indicated in Mr. Douty's discussion resulted in a dollar savings figure approximately equal to the cost of the computer run. The option of viewing other solutions to the particular design problem was also lost through the computer approach.

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