5.11 Concluding remarks

The elastic buckling of an ideally straight column pin ended at both ends and subjected to axial compression was considered. The elastic buckling load was shown to be dependent on the slenderness ratio (/r) of the column. Factors affecting the column strengths (viz. initial imperfection, eccentricity of loading, residual stresses and lack of well-defined elastic limit) were all individually considered. Finally a generalized column strength curve (taking account of all these factors) has been suggested, as the basis of column design curves employed in Design Practices. The concept of **"effective length"** of the column has been described, which could be used as the basis of design of columns with differing boundary conditions.

The phenomenon of Elastic Torsional and Torsional-flexural buckling of a perfect column were discussed conceptually. The instability effects due to torsional buckling of slender sections are explained and discussed.

Design of columns using multiple column curves as given in the code; was discussed. Built-up fabricated members frequently employed (when rolled sections are found inadequate) were discussed in detail. Design guidance is provided for laced/battened columns. Steps in the design of axially loaded column were listed.