

### Ram Caddsys : Aiming for state-of-the-art solutions

Ram Caddsys Pvt Ltd, Chennai, are aiming to provide state-of-the-art software solutions for the architecture/engineering/construction industry. With the requisite expertise, they are engaged in developing and distributing software products which meet the diverse needs of growth enterprise. Their emphasis is mainly in the following software.

- *STRAP* - it is used for structural bridge analysis and design optimisation.
- *STRUCAD* - it is a three-dimensional software used for detailing of steel.
- *BEAMD* - it is used for the analysis, design, detailing and scheduling of reinforced concrete beams.
- *ALL Plan FT* - it is high end architectural software.
- *Micro Protocol* - it is an expert system for design of pressure vessel, columns and heat exchanger.
- *Fluid flow* - it is used for the analysis of fluid flow for piping systems.

*STRAP* is a three-dimensional finite element, static and dynamic analysis software with integrated modules for design of steel, concrete, water-retaining structures, cold formed steel bridge

analysis with in-built Indian Road Congress (IRC) loading. It also possesses a special feature for the creation and analysis of transmission towers.

#### Steel design

This module of *STRAP* is unique in a way that it provides a variety of options and flexibility in the design process. The design can be done as per AISC-ASD and LRFD, UBC 1994, BS 5950, EUROCODE3, AASHTO-ASD and LRFD, Canadian, and Indian codes.

Some of the features of the software include : built-up sections of any shape can be developed and designed; selection can be limited to a particular group/shape/size for optimisation; it enables the design of light-gauge and composite sections in addition to the design of regular steel sections.

#### Concrete design

*STRAP* identifies the continuous beams and columns alongwith their span lengths and support widths. Concrete design is available for the latest versions of ACI 319-95 and BS 8110, CSA A23.3-94, Eurocode 2, IS 456 : 2000, IS 1893 and IS 13920. The columns can be designed for any shape such as rectangular, T-shaped, L-shaped, circular and channels. It calculates the exact column capacity. Another feature of the

software is that the safety of the existing/proposed structure can be checked by specifying the reinforcement arrangement.

Like columns, the beams can also be designed for any shapes like, T, L and I. The calculation for moment redistribution and shear reduction is optional. The stirrup detailing is done automatically. *STRAP* automatically does the element generation. Here, the user has the option to specify the use of existing codes when generating the elements, which is very much necessary for the structural stability.

#### Bridge analysis

By using this module, the user can analyse any type of bridges. With the built-in vehicle loading as per IRC, the user needs to specify the lanes and choose the type of vehicle. The program then automatically arranges the vehicle position for the maximum effects on the structure.

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