ABSTRACT

"Life cycle Evaluation of Rehabilitation of Residential Structures, subjected to earthquake." The rehabilitation of any structure is essential, when the potential strength, as on the date, of the structural element or the global strength, found less than the designed, thereby reducing the factor of safety provided. The reduction in factor of safety alarms the danger signal during the event of crises especially like earthquake.

The ageing of the material / s of the building components, environmental effects on the materials, repeated excessive or the change in the pattern of stresses reduces the potential strength. The change of use causing undesired change in nature and or of quantity of loading, change made in seismic zone, by the national authority, are the other factors also contribute in reduction of potential strength of the building.

The estimation of potential strength is thus a cyclic process and in turns the process of rehabilitation. The evaluation of strength, of rehabilitated building, is the process contributed by the materials used, the methodology adapted, the workmanship, and the required rehabilitated strength.

In this paper focus, and emphases, placed on explaining efficient, economical, eco-friendly and optimistic use these factors.

Devastative earthquake that rock the Gujarat region in 2001, selected to collect the information about the current scenario, in respect of above referred factors and the awareness level among the affected citizens.

The information collected from technical professionals, the implementers, and the end users, by method of personal interviews, and analyzed by using IBMSPSS software.

Three case studies conducted, the first one explains the advantage of retrofitted building in the form of higher safety level for users, and extended longevity of the serviceable life of the
building. Further, maintaining lower level of carbon emission, and ratable value for the tax calculation of the building.

The second case study of survey in Gujarat for assessment, of current intensity level of implementation of the changes made in Buy laws, rules, and regulations and in specific acceptance and awareness in the construction industry and end users. The awareness level about the safety of occupants and the building is rising and has come to forth as against in the past.

The third case study reveals how the decision-making governed by the influence of need, availability of manpower, and commercial aspect, and not only by the optimum utilization criteria.

These studies enlighten different aspects, views, requirements, economics, and shortfalls rule and their influence in the decision-making process.

Key words: - 1) Reduction in Potential strength, 2) efficient, economical, eco-friendly and optimistic use, 3) optimum utilization criteria. 4) The decision-making process.