CHAPTER 11: CONCLUSION AND SUGGESTIONS
01. In India two systems are prevalent for green building rating. One is by the Indian Green Building Council (IGBC) through Leadership in Energy and Environmental Design LEEDS (India) & other by the Green Rating for Integrated Habitat Assessment (GRIHA). The former is benchmarked with global standards while the latter is developed locally. It was observed that GRIHA System is more suited to Indian conditions & realities. LEEDS(India) is more appropriate for International accreditation as it is primarily based on per capita energy consumption in the developed countries like the US, Europe etc. which does not work in India since India’s per capita energy consumption is quite low as compared to developed nations. LEEDS(India) has high exposure to the west due to the backing of parent company USGBC & CII, so it is more acceptable to multinationals. GRIHA does not promote usage of certain products like glass & air-conditioning equipment unlike LEEDS(India). In India, the Ministry of Non-Renewable Energy (MNRE) has made GRIHA rating as a pre-condition for getting subsidies & financial assistance for green development. It was observed that since both the systems are based on different parameters, there is a possibility of the two systems rating the same building differently. Hence there is a need to evolve a unitary rating system based on actual ground & local conditions.

02. In the construction of affordable housing the cost of the building materials can be reduced or minimized by various innovative measures, one of them being the use of fly-ash & stone dust in making the bricks (which is a major building component). This has been discussed experimentally & concluded that the use of fly ash cement stone dust bricks are techno-economic feasible and can go a long way in making the buildings affordable. (as discussed at length in chapter 8).
03. Energy savings are maximized when the orientation of the building is done according to the basic aspects of natural lighting. The effect of orientation was tested in the IT tool with a sample apartment (A software for analyzing the best orientation which gives the maximum energy savings) & the building was checked with different orientation at various locations in Rajasthan with fixed building parameters. It was concluded that the particular sample flat gave the maximum cumulative energy savings when its orientation was close to east-west orientation i.e longer axis of the building is along the east-west direction (as discussed at length in chapter 9).

04. Both LEEDS (India) & GRIHA rating systems have parameters applicable for the whole country. India is having climatic diversity and so both the systems have ratings based on any part of India irrespective of the different climatic conditions. Rajasthan in particular having mostly hot & dry climate with some parts having composite climate has different requirements & considerations and to be eligible for green rating require certain different design approaches. After the extensive study of various literature & codes and the experimental analysis & IT testing, various design approaches & criteria were drawn which are more appropriate & suited for the hot & dry climate of Rajasthan. (It has been extensively evolved & drawn in chapter 10)

It is anticipated & concluded that buildings being constructed in the hot & dry climate of Rajasthan if follow the various design approaches & criteria as mentioned, discussed, defined & drawn in Chapter 10 (shown in Annexure II) shall go a long way in making the buildings affordable, sustainable & energy efficient and stand fair chances of being rated as green building by GRIHA & LEEDS(India)/IGBC.
CHAPTER 12: 
FURTHER SCOPE OF RESEARCH
01. Further comparative study of both the rating systems LEEDS(India) & GRIHA can be done to evolve a unified rating system taking the appropriate points from both.

02. The design principles as formulated for Rajasthan may not be applicable for each & every particular city of Rajasthan as climatic conditions, material construction methods vary from place to place. Hence there remains a scope for further research for designing affordable, sustainable Eco Home design approaches for particular city wise.

03. The IT tool has been used for the orientation aspect of the building, whereas there are other parameters also which can be used to draw inferences for calculating maximum energy savings.

04. Affordable & sustainable building materials & techniques have very vast scope and lot of research can be done for new such materials/techniques or the combination of materials.

05. Various other innovative building energy assessment software/programs can further be developed according to the particular regions concerning all the facets of sustainable design such as environmental, social and economical.