

III. METHODOLOGY

The methodology pertaining to the micro level study on “**Adaptive Reuse and Refurbishment of Buildings as Prospects for Sustainability**” is streamlined to include the following two phases eliciting concrete facts about the issue.

Phase I - A. Situation Analysis – Identify Expertise in Refurbishment

B. Field Survey – Locate Excerpts in Adaptive Reuse

Phase II - A. Vignettes on Success Stories

Phase I - A. Situation Analysis – Identify Expertise in Refurbishment

Situational analysis is a method developed by Adele Clarke (2005), to give researchers practical mapping tools for designing qualitative research projects and conducting analysis of qualitative empirical material. It provokes researchers to come into the material more deeply. The International Unit for Conservation of Nature (IUCN) states that a basic Situation Analysis means constructing a basic picture of the bigger context, used mainly for the purpose of understanding the broader context and making choices of intervention areas, strategy and partners, and some basic monitoring of changes (http://cmsdata.iucn.org/downloads/approach_and_method.pdf).

A situation analysis is the systematic collection and evaluation of past and present economical, political, social, and technological data, aimed at the identification of internal and external forces that may influence the organization’s performance and choice of strategies and assessment of the organization’s current and future strengths, weaknesses and opportunities (www.businessdictionary.com/definition/situation-analysis.html).

Adaptive reuse and refurbishment of buildings help revive buildings that have either fallen prey to obsolescence or have landed themselves in front of the demolition ball. To decipher how far the concept has received acceptance among the region under study and the role played by Architects/Interior Designers who are the kingpin in executing such projects a situation analysis was felt necessary. With this backdrop a situation analysis was carried out to identify existing expertise in refurbishment.

1. Selection of Locale: Coimbatore City, being the hub of commercial activity, this locale was selected for conduct of the study using convenience sampling. Sampling is the process of learning about a population on the basis of a sample drawn from it states, Gupta (2008), while convenience sampling refers to the collection of information from members of the population who are conveniently available to provide it (Sekaran and Bougie, 2010). Ease in access as the investigator resides in the city and availability of the required sample were the factors considered in the selection of the locale.

2. Selection of Sample: The topic under consideration being adaptive reuse and refurbishment of buildings, the sample evidently selected was Architects and Interior Designers with rich experience in their field. Further, they assume a major role in effective adaptive reuse of buildings. They act as promoters and actually are the ambassadors for this campaign. While their productivity reflects in the end use of the building, their efficiency is seen through in the sustainability of the building and their creativity shines in the way the building is reused and how well the concept of reuse is applied and executed.

▪ *Adaptive Reuse - the process of adjustment and alteration of a structure or building and / or its environment to fit or suit new conditions*

▪ *Refurbishment of Buildings – a process of giving outdated buildings a new purpose with upgrading and reconfiguration that goes beyond the cosmetic*

Hence, to facilitate collection of reliable data, 30 Architects and Interior Designers who were gainfully practicing for a minimum of five years and had successfully completed refurbishment projects were selected by adopting purposive sampling. Purposive sampling method starts with a purpose in mind and the sample is thus selected to include people of interest and exclude those who do not suit the purpose (Atkinson, 2011).

3. Selection of Method and Tool: To identify expertise in refurbishment and to know the processes followed by them, face-to-face interview method was chosen, as it is the best method. It is a system in which both the investigators as well as the informants discuss the problem under research, the former usually taking the initiative with the object of extracting information from the latter (Sharma, 2007). No other approach enables one to glean much information and yet remain so flexible states, Misra (1989). The tool used was an interview schedule. According to Krist (1999) an interview schedule is a proforma containing a set of questions and is a very useful tool in gathering information. It is a

written list of questions, open ended or close ended, prepared for use by an interviewer in a person-to-person interaction (Khanzode, 2007). The schedule drafted for the study elicited details on the establishment and other data on the firm, their clientele, refurbishment projects undertaken and their views on carbon footprint and eco friendly practices.

A pretesting was done with three architects to correct mistakes in the schedule and add on details left out by the investigator. Pretesting refers to the testing of the schedule on a small sample of respondents to identify and eliminate potential problems (Bajpai, 2015). Based on the light of the pre testing, the schedule was modified. A copy of the schedule used in the study is presented in Appendix I.

4. Conduct of the Study and Interpretation of Data: The architects and interior designers were approached at leisure and after establishing a rapport by explaining the purpose of the study, details were collected and entered in the interview schedule. The data obtained was consolidated, analyzed and the interpretation is presented in Results and Discussion.

Phase I - B. Field Survey - Locate Excerpts in Adaptive Reuse

Collection and gathering of information at the local level by conducting primary surveys is called field survey (Mohan, 2007). To decipher details on the profile of the establishments, type of adaptive reuse, reasons and type of refurbishment, processes followed and green techniques incorporated, a field survey of the buildings that were reused was found necessary.

Residences/houses are spaces where adaptive reuse and refurbishment have been in practice for long. Building obsolescence, cost on maintenance, dearth of labour and the like, force owners to part with traditional massive structures which the needy business tycoons are either ready to buy or rent for commercial purposes. Their need for an expanse of space in a proactive locality luring clientele has added the necessary pep to this type of contract. Hence it was decided to do a study of the realm of the concept.

1. Selection of Locale: Coimbatore, now emerging as a busy hub of real estate business is a fertile milieu for such challenging endeavors. Also known as Kovai, it is the second largest industrial city in Tamil Nadu and is one of the fastest emerging tier-III Cities in

India. Popularly known as the Manchester of South India, has everything it takes, including telecom, power, a highly skilled work force, a rapid pace of infrastructure development and a pro-active Government that is aggressively promoting the city.

According to the Jones Lang LaSalle Meghraj Research Report published in 2009, the evolution of this enigmatic City's real estate market, identifies its numerous market drivers and showcases its indisputable prospects as the perfect South Indian real estate investment destination of the future and is hence rightly phrased as 'An Emerging Real Estate Destination' (<http://www.expresshospitality.com/20090731/market10.shtml>).

Coimbatore City which is famous as a 'business-hub', hence, was the locale selected for the study. Specific areas within the City like R.S.Puram, Gandhipuram, Race Course, Saibaba colony and Avinashi road which house many sophisticated commercial and residential buildings that have fallen prey to disuse for many different reasons and have now become hotspot landmarks in recent years were purposively selected for the study. In these areas lay the treasure houses needed for this specific study – Refurbished buildings which now serve different purposes satisfying the concepts of adaptive reuse, the edifices which justify the trajectory to sustainability in buildings through the 9R's. From the treasure, 30 buildings which served different functions were selected for the study.

2. Selection of sample: Thirty buildings of residential and commercial identity were selected based on purposive sampling method, which advocates deliberate selection of sample units that conform to some predetermined criteria, also known as judgment sampling (Kothari, 2004). In this method the choice of sample items depends exclusively on the selection criteria set by the investigator depending on the study which focused on the following criteria.

Inclusion Criteria:

- φ *Buildings that have been renovated for reuse*
- φ *Buildings which have been refurbished due to change in use*
- φ *Buildings that have lent to adaptability across use*

Exclusion Criteria:

- ϕ *Buildings that have been demolished completely or partially and rebuilt for use*

The owners or tenants who were willing to disclose necessary information on the refurbishment processes executed, need assessment (type of changes preferred) and commitment to cause were alone selected using purposive sampling.

3. Selection of Method and Tool: The personal interview method was espoused to enable the interviewer to collect more reliable data on the type and process for refurbishment and adaptive reuse. Interview method is a face-to-face contact with the person from whom the information is to be obtained (Reddy, 2004). The tool, an unstructured interview schedule, along with a checklist that requested details to judge the scenario of refurbished buildings and adaptive reuse of the building in use aided in the conduct of the study. Unstructured interview are characterised by a flexibility of approach to questioning. They do not follow a system of pre-determined questions and standardized techniques of recording information. The interviewer is allowed much greater freedom to ask, in case of need, supplementary questions or omit certain questions if situation so requires (Daniel and Sam, 2014). A model schedule was tested on three samples. Necessary modifications were effected based on the light of the study and finalized. A checklist was also used to specifically point out the eco friendly techniques incorporated in the project. A checklist is a type of informational job aid used to reduce failure by compensating for potential limits of human memory and attention (Rogers and West, 2014). A sample of the schedule and checklist is presented under Appendix II and IV respectively.

4. Conduct of the Study and Interpretation of Data: Through proper permission sought earlier, the interviewer approached selected owners/tenants at their building sites adapted for reuse. The purpose of the study was explained to them, so that it would be easy for them to answer the questions clearly without any confusion. The investigator created a friendly ambience while interacting with the owner which was very conducive for obtaining desired data. The scenario of the thirty such selected buildings refurbished

and put to adaptive reuse was deduced from the 'users', the findings of which are presented under Chapter IV.

Interpretation is not only necessary but unavoidable as far as research is concerned. In fact, it is an important step in conclusion of research studies (Reddy, 2004). The data collected were consolidated and tabulated. The purpose of a Table being to simplify the presentation and to facilitate comparison (Sharma, 2009), the tabulated data were analyzed, discussed and are presented under Chapter IV-Result and Discussion.

Phase II - A. Vignettes on Success Stories

1. Selection of Locale and Sample: Coimbatore city was the broad area selected for the study. A micro level study around the City focused light on the existence of umpteen numbers of residential and commercial buildings being reused for a purpose other than the original. To comprehend the multiple creative ways practiced in adapting and reusing existing buildings, five buildings brought to light during the field survey was chosen for further study as they were refurbished to be adapted for reuse for operations from different genres. Hence, the sampling method chosen was stratified random sampling. It is a sampling method that involves the division of a population into smaller groups called strata. In stratified random sampling, the strata are formed based on members' shared attributes or characteristics. A random sample from each stratum is taken in a number proportional to the stratum's size when compared to the population. These subsets of the strata are then pooled to form a random sample (Nursing Research and Statistics, 2013 and Sugathan, S. & Benny, P.V., 2015). Five such buildings with a transformed functional strategy and having the repute of being in the locale for a commendable period of time and running an established business were chosen for the study.

2. Selection of Method and Tool: The method selected was the case study. Case study is a systematic way of helping researchers to learn from experience (Bhattacharyya, 2006). It is a detailed investigation of an individual or group. The defining feature of this method is its holistic approach, aiming to capture all of the details of a particular individual or group, which are relevant to the purpose of the study, within a real life context (Kohlbacher, 2006). To facilitate the process an interview guide and a checklist were drafted. Administration of the same was coupled with observation. An interview guide is

a list of topic questions on areas which the interviewer uses merely as a prompter during the interview (Emory, 1976). A checklist is a type of informational job aid used to reduce failure by compensating for potential limits of human memory and attention (<https://en.wikipedia.org/wiki/Checklist>). In the words of Young, observation may be defined as systematic viewing, coupled with consideration of seen phenomena quotes, Mohan (2007). Hence, observation was tied up with interview as it affords accurate watching and noting of phenomena as they occur in nature with regard to cause and effect or mutual relation (Fowler et.al, 2011). These methods helped the investigator get a broad spectrum on the various creative and innovative ways of building reuse indentified by the users and also locate the eco friendly techniques incorporated by them. Both the methods, therefore facilitated in gathering primary data, proving this as a *‘primary research’*, as it is based on data from primary sources (Gaillet and Eble, 2015). The interview guide is presented in Appendix III. Data was collected during their leisure and the details are given as individual narrations under Chapter IV.

The methodology adopted is presented as a diagrammatic representation in Exhibit 4 which gives a bird’s eye view of the course of the study.

