

1. Title:

Rejuvenation and Exhortation of Traditional Constructional Technologies and Techniques in Garhwal Region of Uttarakhand (OLP-2230).

2. One page abstract:

The state of Uttarakhand serves as a symbol of pure and robust ecosystems, showcasing a remarkable natural environment. Its diverse terrain is divided into numerous regions, each fostering a variety of vernacular typologies that adapt to the specific needs and conditions of their respective areas. It is located in the Indian Himalayas, the region of Kumaon and Garhwal are what one might call an incredibly scenic area. These areas are a sanctuary for nature enthusiasts and a retreat for those seeking peace and quiet because of their captivating landscapes, which are interspersed with charming villages and ancient temples. These needs encompass the availability of certain materials, climatic factors, natural disasters, and associated risks, among others. The primary objective of this research is to develop a comprehensive district-wise dataset and performance analysis of Uttarakhand's traditional residential structures. This study specifically covers six districts within the Garhwal region of Uttarakhand: Uttarkashi, Chamoli, Pauri Garhwal, Rudrapur, Tehri Garhwal and Dehradun.

The research involves documenting, inferring, and analyzing architectural designs, building materials, and construction techniques, as well as the thermal and physical building parameters of vernacular houses. By conducting a comparative analysis of such houses in each district, the study highlights both subtle and significant variations in residential typologies and assesses their impact on building performance, including climatic responsiveness and disaster resilience. The investigation includes both habitable and uninhabitable structures, each ranging in age from 100 to 500 years. The study identifies the strengths and weaknesses of these structures, emphasizing which building components and techniques should be preserved and which should be improved or replaced.

This project aims to put forth recommendations and instructions for the selection of traditional and alternative building materials along with composite techniques that are essentially developed through an amalgamation of traditional and contemporary architecture. While this is done to formulate a resilient design since traditional architecture can withstand various natural disasters since the region falls in seismic zones IV and V that have been perfected over eons, the presence of contemporary elements is also necessary so that it can be reinforced further. This process is also important because traditional architecture showcases regional identity and cohesion among the society in that region, hence enriching the cultural value which in turn may increase the economic value by attracting tourism to the region.

The project on 'Rejuvenation and Exhortation of Traditional Constructional Technologies and Techniques in Garhwal Region of Uttarakhand' is a means of highlighting as well as promoting the importance of traditional construction technologies and techniques in the region. The prospect of this project is to present effective guidelines to rejuvenate and exhort the traditional architectural value. The document is prepared to reflect policymakers, government officials, enforcers, engineers, and construction beneficiaries and provide them with an awareness of an ideal model

of infrastructure development in this region. The project will here to adhere by the people who are directly or indirectly connected with traditional construction and housing typologies and also reflect the cultural value and regional identity.

3. Objective:

- To study and understand the traditional building construction technologies and techniques of the Garhwal region of Uttarakhand.
- To prepare effective guidelines to rejuvenate and exhort the traditional architectural value.

4. Funding Agency:

CSIR-CBRI

5. PI & Co-PI:

PI – Ar. Naveen Nishant; Co-PI – Er. Ashish Pippal

6. Duration:

2 Years