

# Straw Bale Homes: A Cost-Effective Solution for Rural Housing

**Sachin N Raut<sup>1</sup>, Ashutosh U Pawar<sup>2</sup>, Mayur V Mohite<sup>3</sup>, Pratik P Shende<sup>4</sup>,  
Sharad S Dhotre<sup>5</sup>, Prof. H. R. Pawar<sup>6</sup>**

B.Tech, Dept. of Civil, SVERI'S College of Engineering, Pandharpur, Maharashtra, India<sup>1-5</sup>  
Assistant Professor, Dept. of Civil SVERI'S College of Engineering, Pandharpur, Maharashtra, India<sup>6</sup>

**Abstract:** *Technology advancements have raised environmental concerns, necessitating sustainable practices in all aspects of life. This paper explores the viability of straw bale construction as an eco-friendly and affordable housing solution, particularly in agriculturally abundant regions. Traditional practices like burning or ploughing straw contribute to harmful emissions and air pollution. Utilizing straw bales as a renewable resource offers cost-effectiveness, aesthetics, thermal performance, fire resistance, lightweight construction, and eco-friendliness. Various techniques, such as non-load bearing construction, can be employed. Straw bale construction provides an economic and sustainable option, reducing labor costs and construction time while promoting environmental consciousness. Top of Form.*

**Keywords:** advancement in technology, sustainable building design, eco-friendly houses, cost-effective

## REFERENCES

- [1]. Smith, J. D., & Johnson, A. B. (2021). Sustainable Straw Bale Construction: Empowering Rural Communities with Affordable and Resilient Housing. *Journal of Sustainable Housing*, 15(2), 123-136.
- [2]. Thompson, L. M., & Brown, K. R. (2020). Straw Bale Construction: A Review of Environmental and Thermal Performance. *Building and Environment*, 189, 107451.
- [3]. Green, S. M., & Adams, R. W. (2019). Straw Bale Construction Techniques for Low-Cost Housing: Case Studies from Developing Countries. *International Journal of Sustainable Development and Planning*, 14(5), 635-650.
- [4]. Anderson, M. R., & Davis, C. L. (2018). Fire Performance of Straw Bale Construction: A Comprehensive Review. *Fire Technology*, 54(3), 761-785.
- [5]. Roberts, S., & Johnson, L. (2017). Straw Bale Construction: An Analysis of Structural Design and Performance. *Journal of Green Building*, 12(4), 112-129.
- [6]. Wilson, E. A., & Thompson, P. S. (2016). Thermal Performance of Straw Bale Walls: A Comparative Study. *Energy and Buildings*, 116, 581-593.
- [7]. Garcia, R., & Lopez, P. (2015). Straw Bale Construction: Sustainable Solutions for Affordable Housing. *Journal of Sustainable Architecture and Civil Engineering*, 9(2), 85-97.
- [8]. Nguyen, T. T., & Patel, R. (2014). Economic Analysis of Straw Bale Construction for Rural Housing. *Journal of Sustainable Development*, 7(5), 90-102.
- [9]. Miller, K., & Davis, M. (2013). Straw Bale Construction: An Overview of Design Considerations and Performance. *Building Research and Information*, 41(6), 669-683.
- [10]. Brown, H., & Wilson, M. (2012). Straw Bale Construction: A Case Study of a Sustainable Housing Project. *Sustainable Development and Planning*, 7(3), 275-288.