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Editors

Sustainable Materials

Proceedings of EGRWSE-23, Volume 2

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ISSN 2366-2557

ISSN 2366-2565 (electronic)

Lecture Notes in Civil Engineering

ISBN 978-981-97-3152-7

ISBN 978-981-97-3153-4 (eBook)

<https://doi.org/10.1007/978-981-97-3153-4>

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Photocatalytic Degradation of 2,4,6-Trichlorophenol Using P-25 TiO₂	111
Shivani Yadav, Harsh Pipil, Sunil Kumar, Krishna R. Reddy, and Anil Kumar Haritash	
Review of Non-potable Water Applications for Sustainable Concrete Development	119
Vishal Puri, Sandeep Ravish, Khushi Grover, Prachi, and Khushi Kumari	
Properties of Geopolymer and Its Utilisation in Construction as a Sustainable Material—A Review	137
Neelam Singh and Vikas Kumar	
Comparative Cost Analysis of Industrial Waste-Based Composite Materials Treated with Lime, Cement, and Alkali Activator in Comparison with Conventional Pavement Material	149
Kuldeep Sharma and Arvind Kumar	
Sustainable Development of Mortar Using Fly-Ash Waste with Incorporation of Carbon Nanomaterials	159
Sameer Kumar Maurya, Kanchna Bhatrola, and N. C. Kothiyal	
Identifying the Infrastructural and Digitalization Development of Jemua Village as a Smart Village	169
Kotal Amit, Roy Shovan, Dutta Subhajit, Prasad Mondal Rohit, and Kumar Ritwick	
Influence of Steel Slag on the Mechanical Properties of Concrete Mix: An Experimental Investigation	193
Kavita Rani and K. Senthil	
Experimental Study on the Influence of Bagasse Ash and Fly Ash on the Durability of Hardened Concrete Properties	201
Manish Khanna and K. Senthil	
Monetisation of Costs and Benefits of Green Versus Conventional Building: A Case Study of LPU, Phagwara	215
Kirti Goyal, S. Manwinder Singh Sandal, Madhvi Mohan, Karan Khokher, and Sahil Tora	
Land Carrying Capacity Assessment: A Significant Tool for Enhancing Regional Economic Sustainability	229
Mitali Madhusmita and Bimal Chandra Roy	
Assessment of Construction Techniques Used to Enhance Sustainability in Affordable Housing in India	239
Vivek Garg and Bimal Chandra Roy	

Identifying the Infrastructural and Digitalization Development of Jemua Village as a Smart Village



Kotal Amit, Roy Shovan, Dutta Subhajit, Prasad Mondal Rohit, and Kumar Ritwick

Abstract Smart village is the concept of rural area development. The modern idea of a “Smart Village” serves as a catalyst for advancement in areas such as environment, environment, health, education, and security. These advancements in turn encourage further advancement. The purpose of sustainable development is to achieve human development goals while allowing natural systems to continue providing humanity with essential natural resources and ecosystem services. The main issues in rural areas are widespread poverty, a lack of education, and restricted access to technology. The village of Jemua is situated at the Faridpur block of the Durgapur subdivision in Paschim Bardhaman district of West Bengal, India. Jemua village is proposed as a smart concept to develop its rural area and digitalized connection to the government. In this paper, it was identified the various gaps between Jemua village and the proposed smart village. To develop a happy society, a special emphasis has been put on increased resource efficiency, local self-government, access to basic facilities, and responsible individual and group behavior. After various literature studies, it is proposed to make a smart village by making smart decisions using smart technologies and services. Therefore, in this work, the global positioning system (GPS), remote sensing, and geographical information systems’ (GISs) technologies were used. Using GIS software, it was proposed a plan for Jemua as a smart village in which we planned a solar power station, RO plant, solar street light, solid waste management plant, biogas plant, and a communication tower for better network coverage. This study demonstrates that many things are still incompletely mapped since using traditional methods requires a lot of time and money. However, this study shows that creating a map using geoinformatics approaches needs very little time and less money.

Keywords GIS · GPS · Smart village · Sustainable development · Jemua village

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