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# Review Paper on Slum Rehabilitation by Public Private Partnership Using Rapid Wall Technology

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**Abstract:** plenty of researches were carried out on topics slum rehabilitation, public private partnership and its feasibility, and rapid wall technology and still going on. Aim of this paper is to study such researches and get information about the challenges, hurdles required to face during working on the project and get lesson from the researches regarding solve such problems. Research papers related to PPP and rapid wall technology are very helpful for future work of the project. Research papers based on case study are helpful in dealing with actual situation. Also all paper aim to achieve social benefit and carryout speedy construction within less cost and time which also aim of this project, hence so useful.

## I. R.R. SORATE , ALKA DHIMAN ISOR-JMCE “SLUM REHABILITATION WITH FAST TRACK TECHNIQUES.” (2014)

This paper reviews slum rehabilitation techniques, rapid wall technology, aluform and tunnel form technique. In this paper author R.R.Sorate,alka dhiman,ashwini Mrunal,manali nimbalkar, nutan dere,andana tiwari carried out study regarding these fast track techniques. rapid wall panels are made up of gypsum which may naturally occurring or manufacturing in factories under name of FACT RCF building products ltd. Rapid wall is low cost fast track technique which save time ,resource and money also it is environmental friendly.it is useful in the areas which are heavily damaged due to natural calamities. It does not need formwork, easy erection process and lead to light weight structure. Other fast track techniques aluform and tunnel form also reduce time and cost of construction. Aluform requires larger number of labors hence suitable in Indian scenario also it is pre planned construction technique but require initial investment and manufacturing. Tunnel form is box type structural system consist shear walls. This method uses mild steel hence has higher salvage value. In this method brick work is required for internal walls and thus creates possibility of leakage problems. These fast track techniques helps n reducing time and cost of slum rehabilitation. In this paper slum rehabilitation is carried out under SRA.

## II. TING LIU, ALBERT CHAN, SHOUQING WANG ASCE “PPP FRAMEWORK FOR PUBLIC RENTAL PROJECTS IN CHINA .” (2014)

As like India housing is a major problem in China. In this paper author Ting Liu,Albert Chan, Shouqing Wang carried out study in order to deal with the housing problem of China studied practice of PPP model enabling shelter in different countries like UK,US, Canada, India in order to connect it with problem of China .In this paper author gave details about practice of PPP in different countries, what are their outputs and also limitations of PPP models and risk associated with it. This paper explains what are the financial crises experienced by Chinese government and gave information about the shelter project carried out by Chinese government under PPP they are,

1)Staff quarters in Industrial park build under BOO in which government provided concession to companies to build own and operate the staff quarters. This housing project provided staff quarters to the workers within their work place. this project was carried out by company and two private developers.

2)Housing project in urban villages under BOL .as urban villages are socially important but with poor management ,this housing project aim to provide better living conditions to people. In this model administration charges is taken by the local authority ,people will have their possession on land with private developers.

3)Housing project in mixed income community under BT. In this model government allow private developers to build the project and transfer it to public freely and get profit through land use regulations and density bonus.

**III. BOUDDHA, CHARUMITRA, SHARMA ANUPAMA RES. J. ENGG. SCI“SLUM REDEVELOPMENT STRATEGY: A WAY FORWARD TO URBAN ENVIRONMENT MANAGEMENT THROUGH INCLUSIVE APPROACH” (2014)**

This paper aims to deal with problem of slum and Its impact on environment and well-being. In this paper author Bouddha, Charumitra, Sharma Anupama carried out detail study about the slums in India. This paper described the reason of slum increment, its impact and problem of slum dwellers, their willingness. Paper gave information about the slum rehabilitation project carried out in India, they are slum networking programme ahmedabad, slum upgrading project pune, dharavi rehabilitation project and also various government schemes available for slum rehabilitation i.e. EWS housing scheme, LIG housing scheme, RAY ,JNNURM etc. along with their aim, objectives and inclusive approach. Paper concluded that all slum are not same so we cannot apply same rehabilitation model everywhere, hence necessary to understand willingness, choice and capability of slum dwellers in rehabilitation project.

**IV. ROBERT OSEI- KYEI& ALBERT P.C CHAN, INTERNATIONAL JOURNAL OF CONSTRUCTION MANAGEMENT, “IMPLEMENTING PUBLIC PRIVATE PARTNERSHIP (PPP) POLICY FOR PUBLIC CONSTRUCTION PROJECTS IN GHANA: CRITICAL SUCCESS FACTORS AND POLICY IMPLICATIONS”**

This paper focus on the critical success factors (CSFs) for construction of PPPs in Ghana by reviewing and analyzing two successful PPP projects, among which one is based on a local market development -the Kojokrom Market Development Project and another is related to construction of water treatment plant-the Asutsuare Water Treatment Plant Project. Authors Robert Osei-Kyei& Albert P.C Chan carried out this project as a case study in which above mentioned two projects are studied in depth and results were compared with global experience.

This study find out five critical success factors for PPP construction in Ghana that are government commitment and support, strong community support and relationship, openness and constant communication, project profitability and capable private partner. The aim of this paper is to guide practitioners who will implement PPP in construction.

**V. OMAR EL-ANWAR, A.M.ASCE1; AND TAMER ABDEL AZIZ2 “INTEGRATED URBAN-CONSTRUCTION PLANNING FRAMEWORK FOR SLUM UPGRADING PROJECTS” (2014)**

This paper focuses to present an integrated urban-construction planning framework for slum upgrading projects. As slum is major challenge for developing countries the author Omar El-Anwar made an attempt to solve this problem by considering all the barriers which are - construction problem, lack of access to site and also social and economic disintegration. Framework is designed to achieve maximum actual benefit from the slum project, provide correct and practical estimation of time and cost in order to reduce overall project cost and to achieve minimum social and economic disintegration. Framework includes data collection, modelling, plan execution and optimization process. Paper consist a framework which is designed for slum upgrading projects to deal with economic, construction and social challenges.

This framework includes social, economic, urban, population, environmental, financial and political data. This framework consist data generation, modelling, planning, optimization. Objective of optimization is to minimize cost and maximize the benefit of slum upgrading projects

**VI. DEVDAS MENON IJSER “RAPID AFFORDABLE MASS HOUSING USING GLASS FIBRE REINFORCED GYPSUM (GFRG) PANELS (2014)”**

GFRG panel also known as rapid wall technology is highly efficient for affordable housing. In this paper author Devdas Menon provided details about size of panels, raw materials used for construction of panels, suitability of panels for high rise buildings. According to author 10 storeys building can be constructed with this technology in low to moderate seismic zone. IIT Madras is involved in rapid wall technology research from last 12 years.

This technology is approved by the BMTPC (Building Material and Technology Promotion Council) government of India. Along with BMPTC IIT Madras developed GFRG design manual. This paper provides mechanical properties of GFRG panels in both unfilled and filled with concrete condition and axial load capacity and shear strength of panel is determined. This paper gives idea about the design of floor/roof slab which is helpful for project. Paper gives reference of 2 storey demo building constructed by IIT Madras within campus by GFRG panels for getting better idea about the feasibility of technology.



## VII. METHODOLOGY

To study various schemes of slum rehabilitation in India in order to know the hurdles occur during the slum rehabilitation. Study Public Private Partnership, its funding decisions and rapid wall technology in detail. Pradhan Mantri Awas Yojana Housing for All Scheme (Urban) will be applied for slum rehabilitation. Rehabilitation project will be carried out by private developers. Slum area will be selected from Kolhapur city after knowing the slum population of particular area cad plan of proposed rehabilitation building will prepared and estimation of this building will be carried out by conventional method, benefit cost ratio will be determined. For same building estimation will be carried out by rapid wall technology along with this scheduling of activities and resource allocation will be carried out for both the conventional and rapid wall method. Purpose of project is to show rapid wall method is best suitable for slum rehabilitation carried out by PPP under Pradhan Mantri Awas Yojana Housing for All Scheme (Urban) w.r.t cost, time and resources.

## VIII. CONCLUSION

It is necessary to get the detail idea about the project before actual starting and in this process research papers are much helpful. Research papers provide a global experience about the topic. Paper related to rapid wall technology written by R.R.Sorate, Alka Dhiman and PPP framework for public rental housing project are much helpful for this project as R.R.Sorate, Alka Dhiman give clear idea about how slum rehabilitation can be done within minimum cost and time effectively with different techniques like rapidwall, aluform, tunnel form. Also PPP framework for public rental housing –project in china is helpful as Chinese government is also facing problem of population and housing like India hence, it is much relevant to Indian scenario and hence helpful for research.

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