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Project Formulation and Appraisal of Construction a Over Head Water Tank in Ganesh Nagar Seerapalaym Village

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ABSTRACT

Building an overhead water tank will help to solve the severe water shortage in Ganesh Nagar, Seerapalayam. In response to the difficulties the community faces resulting from inadequate water supplies, the project seeks to supply enough sustainable water. Important project components include evaluating present water supply problems, designing the capacity and structure of the tank, guaranteeing economic viability and sustainability by means of a cost-benefit analysis, so enhancing water accessibility to so promote public health and socioeconomic development, involving stakeholders and acquiring required licenses, and so evaluating environmental consequences. Constructing the overhead water tank is a crucial first step in helping Seerapalayam people live better and lessen water shortage.

INTRODUCTION

An overhead water tank built in Ganesh Nagar, Seerapalayam is meant to solve the important problem of water shortage, so impacting daily life, public health, and economic development. This sustainable solution will effectively store and provide water, so lessening shortages—especially in dry seasons. The project calls for technical, financial, and environmental feasibility studies as well as research of present water problems and building a tank to satisfy future needs. Support and addressing issues depend on effective communication between stakeholders with the local authorities and community. This project seeks to raise public health standards, guarantee a consistent water supply, and raise living conditions for the residents.

LITERATURE REVIEW

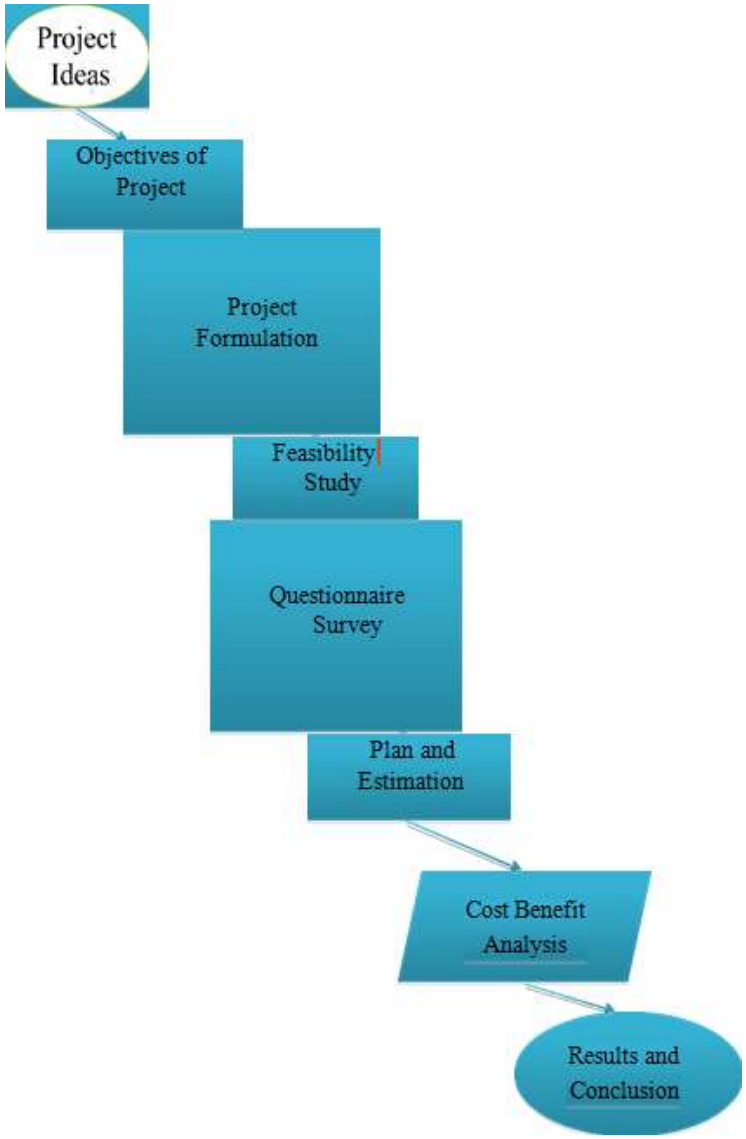
Lalithaet.al (2014) Emphasizing the need of stakeholder involvement in water resource management, the article addresses the important problem of drinking water in rural India. It draws attention to the disparity between water demand and supply, issues with contamination, and the need of integrated management to help to fulfill the Millennium Development Goals. In order to guarantee sustainable water availability and quality, the paper promotes community involvement especially through Panchayat Raj Institutions, so addressing issues including groundwater depletion and waterborne diseases. Effective water governance and the realization of people's right to clean water depend on active participation of stakeholders.

Narain, Balaji L. 2014 Geographic location, inadequate infrastructure, and bad management cause Chennai to suffer extreme water shortage. The city mostly depends on monsoon rain, which has been erratic and aggravating water scarcity. Extensive bore well use has resulted in notable doping round water levels, which makes extraction economically unworkable. Initiatives for rainwater collecting and desalination plant proposals are part of efforts; but, slow project progress and political obstacles impede solutions.

Gilbert Rodrigo (2017) talks on how water sharing with Chennai city causes groundwater exploitation in Palayaseevaram village, TamilNadu to be problematic. Emphasizing the over-dependence on ground water for irrigation and urban needs, it shows the negative effects on local agriculture, ecology, and livelihoods. The study shows that local communities' water availability is significantly declining, which will lower agricultural employment and favor less water-intensive alternative crops.Italsopoints the lack of efficient policies including water recharging and recycling as well as the difficulties rural poor people and women experience because of shifting ownership and access to water supplies. The case study functions as a call to action to handle the urgent water scarcity problem and its effects on peri-urban areas.

2019: Jeet Singh et al. With 17% of the world's population, India has just 4% of fresh water, which causes major water shortage. By 2025 and 2050, water demand is expected to rise by 34% and 78% respectively, so producing a possible 30% shortfall relative to rates of replenishment. Though programs like the National Water Policy of 2012 promote sustainable water management, execution has been lacking and the crisis continues. To save water, the report recommends demand-side and supply-side solutions including re-alignment of cropping patterns and integration of driver basin management.

METHODOLOGY USED



QUESTIONNAIRE SURVEY

By means of data acquired from 86 stakeholders—including residents, companies, and local authorities—the questionnaire survey produced priceless insights on important elements of the proposed project. It exposed serious water scarcity problems and clear community support for the project since it recognized its ability to properly solve shortages. While knowledge of socioeconomic dynamics highlighted the effect of water shortage on livelihoods, concerns about building interruptions and environmental impacts shaped project planning. This guaranteed fit with community needs and informed a comprehensive feasibility study, so promoting inclusive decision-making and improving project sustainability and acceptance.

FEASIBLITY STUDY

Supported by 80% community approval, the technical viability of building a 60,000-liter overhead water tank in Ganesh Nagar, Seerapalayam, to service 500 families is strong. With planned site location, elevation, and structural design guaranteeing effective gravity-fed distribution, the tank size sufficiently meets the water needs of the area. Durability, lifetime, and safety compliance will take front stage among materials and building methods. Perfect integration with current water systems guarantees operational efficiency and simplicity of maintenance. The technical features of the project generally fit the requirements of the community and provide a workable way to alleviate water shortage in Ganesh Nagar. With a Panchayat budget of 18 lakhs, building a 60,000-liter overhead water tank in Ganesh Nagar, Seerapalayam shows financial viability. For labor, tools, building supplies, and contingency costs, accuracy in cost estimate is absolutely vital. Panchayat institutional support guarantees more seamless implementation and regulatory approval. Giving cost-effectiveness and effective resource allocation top priority will help the project have maximum impact. Frequent financial monitoring and open reporting will guarantee that expenses match the budget, so offering value for money.

Evaluating the market viability for building an overhead water tank in Ganesh Nagar, Seerapalayam, means realizing the great demand among people suffering water shortage. Dependency on other water sources makes dependable infrastructure desperately needed. The initiative not only solves immediate needs but also provides chances for community involvement and ownership, so improving sustainability and maybe creating local support.

Examining first costs including land acquisition, design, construction, and operational expenses against long-term benefits helps Ganesh Nagar, Seerapalayam, determine whether building an overhead water tank is financially feasible. These advantages consist in better public health, higher property values, and more socioeconomic development. Ensuring a consistent water supply will help the project lower waterborne disease healthcare expenses and increase output in other industries including agriculture. Moreover, better water access could draw fresh businesses and investments, so promoting more local economic development.

OUTPUT OF MARKET DEMAND ANALYSIS

The market demand analysis from the questionnaire survey for building an overhead water tank in Ganesh Nagar, Seerapalayam, shows a serious demand for better water infrastructure. Water shortage problems are well known to the residents, who also show worries about the dependability and suitability of the present water sources. Driven by its possible to solve shortages, improve water quality, and raise general quality of living, the proposed water tank enjoys great community support. The fact that residents are eager to actively engage in the project shows their dedication to attending to neighborhood water needs. Project planning will be guided by survey findings on preferences for location, capacity, and environmental impact, so ensuring congruence with community priorities and maximizing effectiveness and acceptance. This study emphasizes the great demand for the project and offers necessary direction for its effective execution.

PROJECT FORMULATION AND APPRAISAL

In the planning and financing phase of constructing an overhead water tank in Ganesh Nagar, Seerapalayam, detailed architectural and structural planning is crucial, including site selection, capacity determination, and integration with existing water infrastructure. Stakeholder engagement, involving consultations with local residents, authorities, and potential funders, is essential to garner support and address concerns. By aligning planning efforts with financial considerations and stakeholder input, this phase lays the groundwork for a successful and sustainable project that effectively addresses water scarcity in Ganesh Nagar.

PLANS

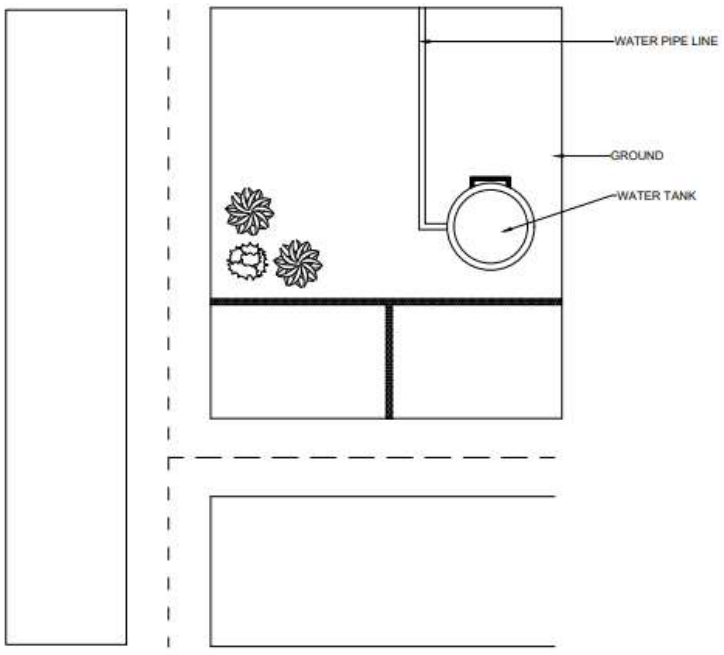


Fig 1.1 LAYOUT PLAN

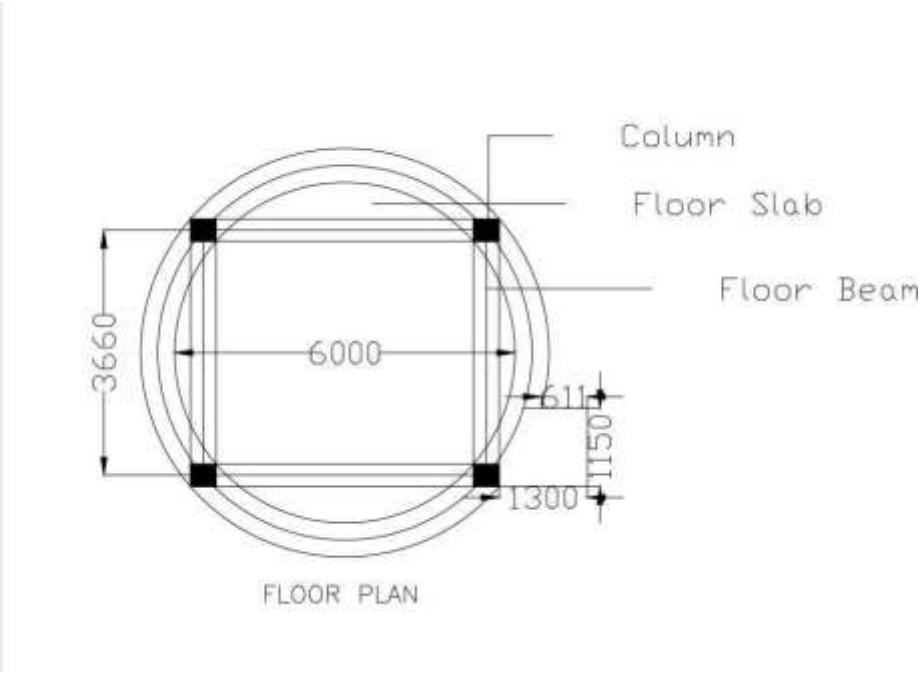


Fig 1.2 FLOOR PLAN

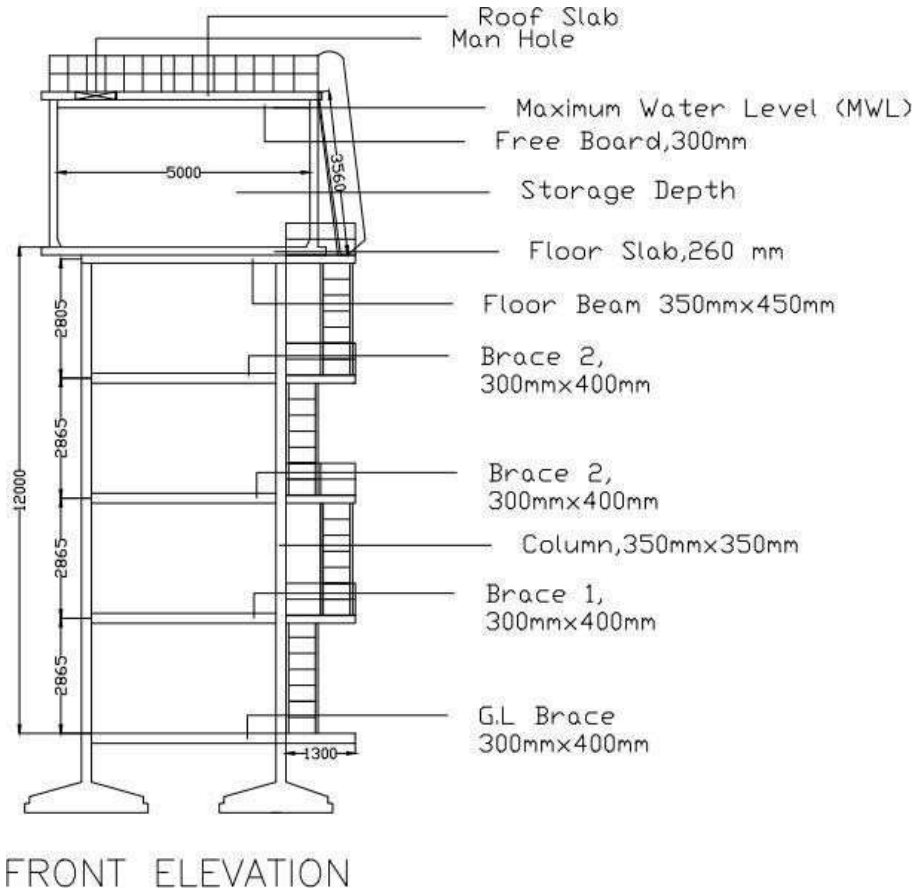


Fig 1.3 ELEVATION OF WATER TANK

ESTIMATION

The allocated budget reflects a comprehensive assessment of the project's scope and requirements, ensuring adequate resources for successful completion while maintaining fiscal responsibility. Moreover, efficient financial management practices will be employed to optimize resource utilization and minimize wastage, maximizing the value derived from the allocated budget. Ultimately, the estimation value of 18 lakhs demonstrates a commitment to

delivering a high-quality water in frastructure project that addresses the pressing needs of the community and contributes to sustainable development in Ganesh Nagar, Seerapalayam

Table no 1.1 ABSTRACT ESTIMATE

ABSTRACT ESTIMATE					
SI NO	**Description of The work**	**Quantity**	**Units**	**Rates per unit (in rs.)**	**Amount (in Rs.)**
1	Site Clearance	9	m2	105	945
2	Earth Work Excavation	91.85	m3	300	27555
3	Sand Filling	2.916	m3	600	1749.6
4	P.C.C	5.374	m3	8600	46216.4
5	Steel	2.83	mt	83000	234890
6	R.C.C for Footing	1.71	m3	30000	51300
7	R.C.C for column	5.586	m3	30000	167580
8	R.C.C for beam	1.778	m3	30000	53340
9	R.C.C for Slab	22.985	m3	30000	689550
10	Floor Finish	24.97	m2	1500	37455
11	Plastering	80.91	m2	250	20227.5
12	Weathering Course	24.97	m2	2800	69916
13	GI Pipes	11.56	rm	900	10404
14	labours	434	nos	930	403620
	Total				**1814748.5**
	Add1.5%miscellaneous				27221.2275
	Grand Total				1841969.728
	Round off				**1841970**

COST BENEFIT ANALYSIS

The cost-benefit analysis for constructing an 18-lakh overhead water tank in Ganesh Nagar, Seerapalayam, shows economic viability and significant returns on investment. Project costs include land acquisition, construction materials, labor, and administrative overhead. Benefits include alleviating water scarcity, improving public health, stimulating economic activities, and enhancing residents' quality of life. Tangible community benefits, such as reduced healthcare costs, increased property values, and higher agricultural productivity, highlight the project's positive value. This analysis is a crucial decision-making tool, demonstrating favorable investment outcomes.

Total revenue for 1 year is **Rs.2, 50,000**. If the maintenance requires **Rs.50, 000**

Total revenue contributing to the initial investment is **Rs.2.00.000**.Total cost for construction **Rs. 18,41,000**

Annual cash flow = Total Annual Revenue - Total Operational Costs

Annual cash flow = ₹2,50,000-₹50,000

Annual cash flow =₹2,00,000

Payback period $= \frac{total\ constructio\ ncost}{annualcashflow}$

Payback period $\frac{18,41,000}{2,00,000}$

Paybackperiod =9.2years

NOI = Total Annual Revenue – Total Operational Costs NOI = ₹2,50,000 - ₹50,000

NOI=₹ 2,00,000

Return on Investment (ROI):

ROI = (Net Operating Income/Total Construction Costs)×100 ROI = (2,00,000 /18,41,000) × 100

ROI=10.86%

RESULTS AND CONCLUSION

The project formulation and appraisal for a 60,000-liter overhead water tank in Ganesh Nagar, Seerapalayam, demonstrate a comprehensive approach to water scarcity. The project's technical and economic feasibility were determined through extensive analysis and stakeholder engagement, with an 18 lakh budget ensuring financial viability. The 120-day timeline was kept on track thanks to effective project management. The tank will ensure a consistent water supply, benefiting public health, socioeconomic development, and community resilience. This strategic investment in sustainable infrastructure demonstrates the importance of proactive initiatives in addressing critical water resource challenges in semi-urban areas, with ongoing monitoring and maintenance required for long-term benefits.

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