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Design of drainage system of a town.

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Abstract--- *This paper presents a thorough study on various available modern design of drainage system and their applications in civil engineering in present scenario. On the basis of long term performance results of various design of drainage system and its analysis, an efficient re-design can be developed and a suitable method of a good drainage system may be adopted for a Patankar park Nallasopara(w). Its consist of different types of buildings like residential and institutional building because of which we will collect different data it will help in designing .Our methodology consists of surveying of a selected location in various ways such as reconnaissance survey. Questionnaire survey, is the method of survey we will be asking the questions to the local people of that area facing problem regarding drainage. Interview with the stakeholders, which includes Businessman, local people, ward commissioners etc. we will study the data and analysis the problem that has faced during our survey. The problems of water logging and water management of the area will be sorted. The water management will be in a systematic way*

Keywords: *Informal settlements; Low-income communities; Drainage; Slums; Solid waste; Stormwater runoff; Urban planning; Urban upgrading*

I. INTRODUCTION

Historically, as urban areas developed, drainage systems were constructed to convey both foul and surface water away from properties. These systems discharged untreated effluent to receiving waters. However, in many locations the drainage systems were very poorly designed, resulting in flooding, which caused human health issues, including cholera. The incessant and torrential rains in the afternoon of 26 July 2005, amounting to 94.4 cm during a span of only 14 h not only caused deluge in Mumbai, but was also a horrifying memory for every Mumbaikars. Recently, it has been brought to the notice that Mumbai is losing its importance in Maharashtra as well as in the country. The economic growth rate in Mumbai has slipped to about 2% compared to the growth rate of 6% in Maharashtra and little over 6% in India during the last decade.

1.1 General:

Many cities in developing countries are typified by large areas of informal settlements. These often do not adhere to official planning guidelines, building regulations and construction standards and, as they are not officially recognised by local authorities, are rarely provided with adequate infrastructure and services. The provision of improved systems for drainage of wastewater and stormwater runoff is an important component of urban upgrading initiatives. This paper focuses on urban drainage as a component of urban upgrading a issues related to the integration of drainage systems serving informal settlements into citywide stormwater management systems. Experiences from urban upgrading schemes in different parts of the world are used to highlight innovative approaches towards planning and design as well as illustrating examples of potential problems that may be encountered during project implementation and subsequent operation.

1.2 Objectives

- Increase the cross-section of drainage pipes.
- Use of trapezoidal shape of sewer for easy and fast discharge of storm water.
- To maintain the drainage system clean and sanitized.
- To reduce the intensity of flood and also the storm water.

1.3 Scope of the project

- The overall scope of the initiative was to assess and improve the sustainability of urban water resources and systems
- However, considering the protective function of the soil for the groundwater system, planning authorities are in need of a decision support system, especially regarding the impact of leaky sewer systems.
- It will help to maintain the drainage system clean and sanitized.

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- It will also help in to reduce the intensity of flood and also the Storm water will be distributed efficiently.

II. PROPOSED WORK

2.1 Introduction:

To understand the drainage and waterlogging problem of the city as a whole and to arrive at a planning solution to alleviate the problem, the following methods were mainly utilized in completing the case study:

2.2 Proposed Project work:

2.2.1 Reconnaissance Survey:

The reconnaissance survey is an extensive study of an entire area that might be used for a road or airfield. Its purpose is to eliminate those routes or sites which are impractical or unfeasible and to identify the more promising routes or sites. Existing maps and aerial photographs may be of great help. Contour maps show the terrain features and the relief of an area. Aerial photographs show up-to-date planimetric details. The reconnaissance survey must include all possible routes and sites. The reconnaissance survey report should summarize all the collected information, including a description of each route or site, a conclusion on the economy of its use, and, where possible, appropriate maps and aerial photographs.

2.2.2 Questionnaire Survey:

- A questionnaire is a set of written questions used for collecting information.
- A questionnaire does not use aggregate data for statistical analysis.
- A survey made by the use of a questionnaire

A questionnaire is a series of questions used for gathering information that is used to benefit a single individual.While more than one individual might complete the questionnaire, the responses aggregated for analysis. A survey, on the other hand, is the process of gathering information for statistical analysis to benefit a group of individuals. The responses are aggregated to draw a conclusion. Put another way, a survey is the process of collecting and analyzing the data, where the questionnaire is the set of questions used to gather the information.

The question we are going to ask are as follows:

- Do you about the drainage system?
- Have you ever seen the drainage system?
- Do you know how a drainage system works?
- Do you know which type of drainage system is used in your area?
- Has water logged in your area every year due to rainfall?
- What are the problems that you have face during rainy season?
- What are the places where we can found water logging?
- Does all the manholes are properly inspected or not?
- How long does it take to clear the water logged?
- Disposal of garbage is done properly or not in your aear?
- Does potholes are fixed in your area?
- Do you have any personal problem related to drainage?
- Do you want us to make some changes in drainage according to you?
- The manholes which are provided in your area are proper or not?
- What is the greatest weakness of this existing drainage system?
- When was the last checking of the drainage system was done?
- What will you do when the existing drainage system fails?
- If someone tried to improve the drainage system will the common people are going to finance them?

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2.2.3 Interview with the stakeholders that includes residents, businessmen, ward commissioners etc:

The most common demand of the residents in all the areas is improving the drainage system , include filling potholes, proper garbage disposal and proper water supply.

Also the problems faced by the local public at that locality.

2.2.4 Literature Survey: includes reviewing of published professional reports, newspaper reports on drainage and water logging with particular reference to Area.

A literature survey or a literature review in a project report is that section which shows the various analyses and research made in the field of your interest and the results already published, taking into account the various parameters of the project and the extent of the project.

It is the most important part of your report as it gives you a direction in the area of your research. It helps you set a goal for your analysis - thus giving you your problem statement. When you write a literature review in respect of your project, you have to write the researches made by various analysts - their methodology (which is basically their abstract) and the conclusions they have arrived at. You should also give an account of how this research has influenced your thesis.

2.3 Summary

For design storm variable intensity, the traditional definition of the design storm needs to be expanded. These are opportunistic developments taking advantage of unused land, both privately and publicly owned. Drainage planning is the most neglected component of our city planning and management activities.

III. CONCLUSION

From this we have concluded that the stormwater will be reduce and the flow of water and sewage will be checked regularly. The above land or area or town will be clean and hygiene also the maintenance will be less as compare to earlier system and the man power will be less. The initial cost of the system is high but it is more beneficial for society to maintain the cleanliness and hygiene.

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