

## SOCIALLY RELATED PROJECTS

### Traffic Studies from NICE Road junction to Banashankari temple based on the work assigned by Government of Karnataka, Traffic Police Department (2019-20)

To reduce the traffic congestion on the major corridors of Bengaluru area for smooth and safe movement of traffic during peak hours was initiated by Traffic Police Department, Government of Karnataka. On this regard, it was also decided to give the technical studies to the nearby areas of the identified corridors for easing the traffic based on the technical solutions. Kumaraswamy layout traffic police station awarded the traffic studies from NICE Road junction to Banashankari temple to KS School of Engineering & Management. The Department of Civil Engineering took up the work and carried out surveys with the help of students and reported the existing problems with short term remedies. The sample report carried out for a stretch of one kilometer is attached for reference.



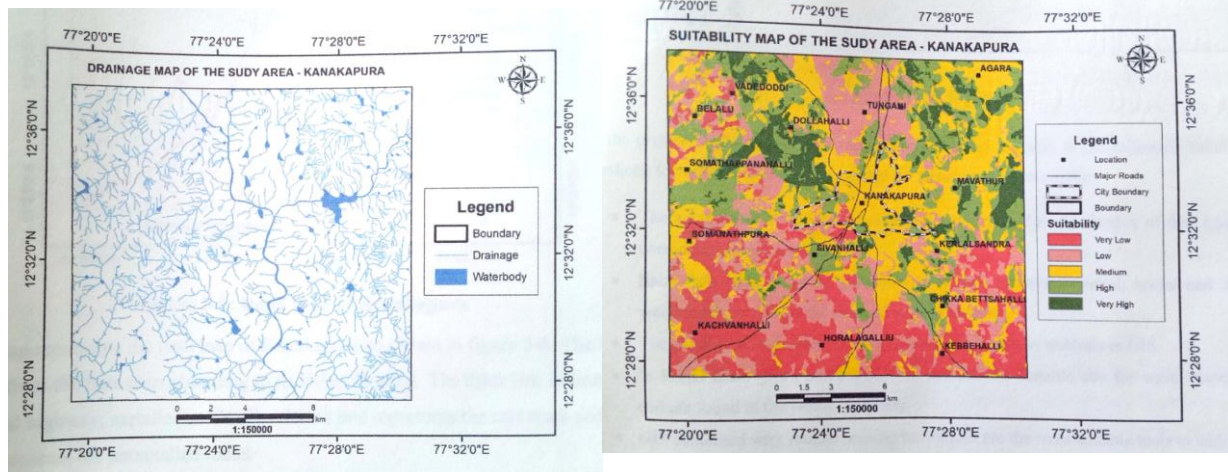
### Pedestrian Management at KIST Junction by Signal Design (2018-19)

Traffic congestion and lack of public space are some problems faced by most urban cities. Rapid industrialization and urbanization in India has resulted in neglecting of pedestrian facilities. Consequently, pedestrians are at a greater risk for their safety especially in commercial zones of large cities. Safety and comfort are the two pans of a balance while considering pedestrian traffic. This study deals with improving pedestrian facilities by analyzing the existing skeleton of selected locations on Kanakapura road, Bangalore considering the above aspects. The adequacy of facility is checked and based on IRC latest guidelines a traffic signal of cycle length 120s and a footpath of 3.5m with guard rails and zebra crossings at junctions have been proposed.



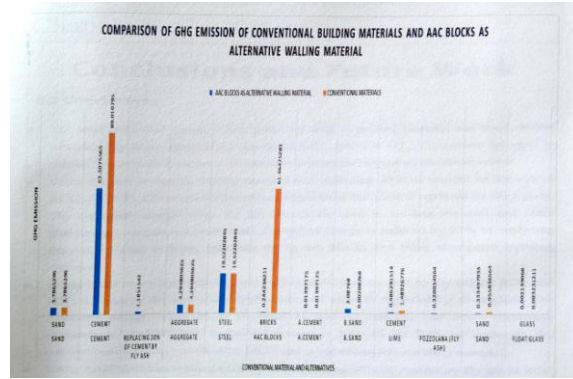
## Suitable Site Selection for Solid Waste Disposal Using RS and GIS Technique in Kanakapura Municipality, Karnataka (2018-19)

Development of thematic maps will help the Government organization to identify and monitor, the maximum waste generated wards. Further studies may be carried out to identify areas close to landfills for promoting waste markets and recycling yards. Further work can be carried out for the large scale.



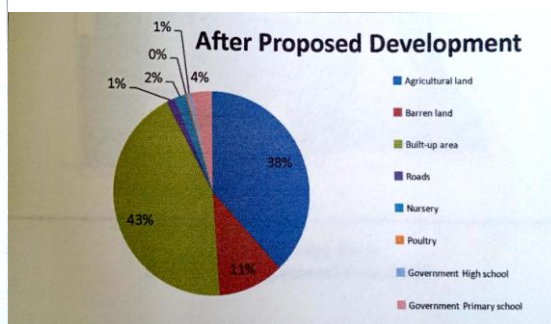
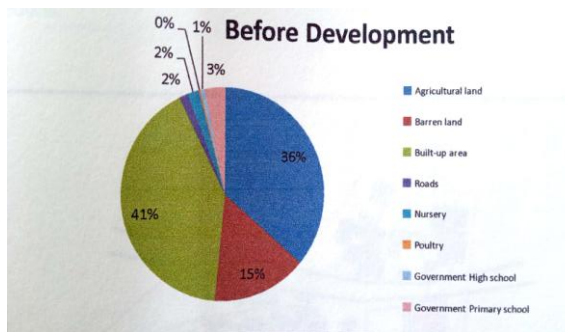
## Reduction in Embodied Energy and Carbon Footprint of Building by Using Alternative Building Materials (2017-18)

Selection of materials and technologies for the building construction should satisfy the felt needs of the user as well as the development needs of the society without causing any adverse impact on environment. Manufacturing processes of building materials contribute greenhouse gases like CO<sub>2</sub> to the atmosphere. There is a greater concern and emphasis in reducing the greenhouse gas emission into the atmosphere in order to control adverse environmental impacts. In this project an attempt was made to evaluate embodied energy and carbon footprint consumed in different building materials. The estimation of embodied energy is based on the energy consumed in the production of material and its transportation. The estimation of carbon footprint was also done in a similar manner and the amount of carbon released into environment was calculated. It was seen that the embodied energy can be reduced by 22-29% and carbon emission can be reduced by 21-48%, by replacing walling material like fire clay with fly ash blocks, mud concrete blocks, aerated autoclaved concrete blocks, by replacing 30% cement by fly ash in RCC, PCC and lime pozzolona mortar for secondary applications and replacing glass by float glass.



### Comprehensive Plan for the Development of Chikkamalluru Village and to Evaluate the Beneficiary Schemes Implemented (2017-18)

The aim of this project was to enhance the comprehensive development of Chikkamalluru village. Sustainable development was undertaken to improve the quality of residence by ensuring that land use requirement of the community for housing, employment, retail, leisure, community facilities and transport are met in a sustainable way and also to conserve and enhance the best features of the natural and built environment. Sustainable development of Chikkamalluru village was done by using QGIS. The project was started by collecting spatial data such as the survey map, population and other required data. The survey map collected is then geo-referenced in QGIS. Then the parcels are created and plots are developed in AutoCAD. The plots are imported to QGIS and developed. The sustainable development of Chikkamalluru village was done by keeping the population to future growth by providing the required facilities such as sanitation, employment opportunities, primary health centre, women welfare, etc, as per the cultural behavior of the people residing in the village.





### **Experimental Study on Compressed Earth Blocks (2017-18)**

In this work, an attempt was made to find out the blocks with maximum strength for different mix proportions. To achieve this objective, compressed earth blocks were manufactured and compressive strength of all manufactured blocks were found. An experimental study was conducted to assess the performance of stabilized earth blocks with interlocks. Similar tests were conducted on conventional burnt brick walls. It was concluded from the experimental results that the performance of the stabilized earth blocks with interlocks was better than conventional burnt bricks. The average compressive strength of CEB was found to be 5.26 MPA which satisfies IS: 2185 PART 1, IS: 1723. The embodied energy involved for the production per block is 4 MJ/kg which was lesser compared to concrete block which is 12.3 MJ/kg.

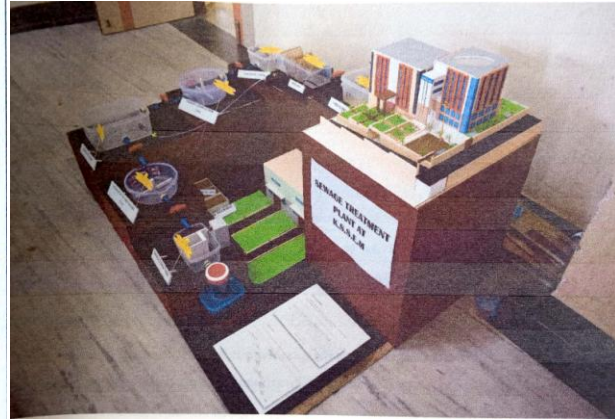
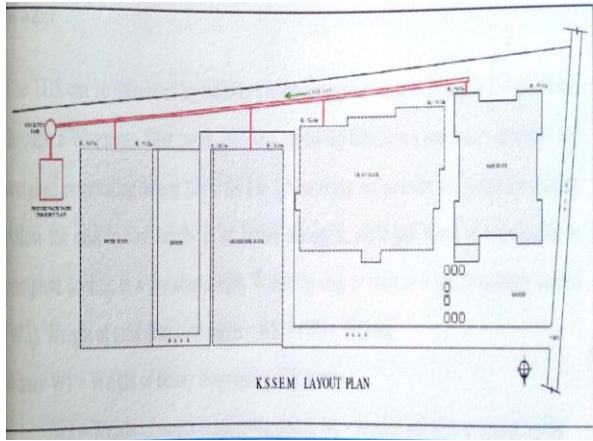


### **Design and Modelling of Sewage Treatment Plant at K.S.S.E.M (2017-18)**

In the study a sewage treatment plant was designed for K.S.School of Engineering and Management located in South Bengaluru. The population considered was 2380. The per capita demand for main building, Sir. M.V building and Architecture building for 8 hours is taken as 90 L/day and for hostel building for 24 hours is taken as 135L/day.

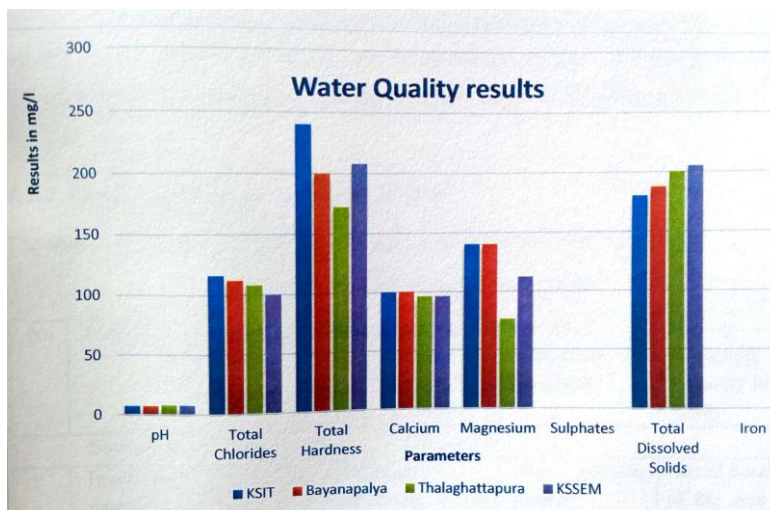
The study involved the analysis of pH value, total suspended solids, bio-chemical oxygen demand, and chemical oxygen demand for the influent and effluent samples. From the analysis it is observed that the effluent test results are applicable for non-potable uses.

A sewage treatment plant was designed with eight treatment units namely collection tank, bar screens, skimming tank, primary sedimentation tank, aeration tank, secondary sedimentation tank and disinfection tank, The results obtained from the design is practically adaptable and the working model was made to a scale of 1m=3cm.



### Environmental Impact Assessment for METRO in Kanakapura Road Phase-II (2017-18)

The impacts of metro construction in Kanakapura road phase-2 has been carried out in this study. Experiments were conducted to identify the frequency and severity of environmental impacts caused by construction process in the study area. Environmental attributes and frequency of Bangalore survey is presented and scoping matrix has been formulated to identify attributes likely to be affected due to the proposed project and its positive and negative impacts summarized. The results of this study are useful for construction managers and other participants in construction sites to become aware of the impact of construction activities on environment.



## **Identification, Analysis & Remedial measures of Black Spots- A Case Study from Madivala to Electronic City, Bangalore (2016-17)**

Accidents on the roads cannot be stopped completely; they can only be reduced to certain extent. The final year students carried out surveys and studies to analyze the causes of road accidents in the stretch from Madivala to Electronic City. Four black-spots were identified and analyzed for the causes of road accidents and were compared with IRC specifications. The technical studies helped to analyze the micro and macro parameters involved in the road accidents. Remedial measures were suggested for improvement of geometric conditions of roads as per IRC to reduce the number of collisions. Simulations before and after studies were carried out using VISSIM software.



## **Implementation of Advance Traffic Management System at Silk Board Junction, Bangalore (2015-16)**

Traffic congestion is a major urban transport problem and there is a possibility of accidents due to poor traffic management. To avoid road accidents it is essential to find solutions to traffic congestion. In this study, the traffic congestion problem is identified and the causes analysed. Using Advanced Traffic Management System i.e. real time monitoring technique, solution has been proposed for silk board junction related traffic congestion.

