

# Innovative Step towards Balancing Green Space and Increasing Social Cohesion in Urban Environment: Smriti Van (Bhuj)

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## Abstract

The main motive of this study to introduce the concept of Smriti Van to make memorial places in memories of people and as an urban planner point of view to balance the green space in urban areas. Natural resources are lungs of urban & rural areas especially green spaces. It includes how urban planner can plan a city in such way that it is a sustainable. Population increases by day to day and hence green area reduces and agricultural land is converted into habitable land. This area can be used for various purposes like to build check dam to store the water and their advantages of increasing ground water storage mainly in areas where water is available in less quantity, it also becomes place of people gathering which increase social cohesion between human being and beautiful nature. Ultimately men understand how nature is important to them such that they try to preserve the natural resources whether it is water body or green parks. Urban planner has to keep certain percentage of land to create Smriti van including total percentage of green space in urban areas as per Urban and Regional Development Plans Formulation & Implementation Guidelines and also as per guidelines of Comprehensive Gujarat Development Control and Regulation. This paper helps to create awareness amongst urban planner / corporate / industrial houses/ IT industries to perform individual social responsibility/ individual environmental responsibility for the sustainable future.

**Keyword-** Smriti Van, Urban Planning, Green Space, Social Cohesion

## I. INTRODUCTION

This study covers the concept of Smriti van in order to memorialize and release the pain from such disasters, natural disaster memorial parks should be built. The sheer scale of the human tragedy brought on by the unpredictable, powerful forces within our earth and by the climates that surround it should incite us all to imagine memorials that reflect our awe, respect and appreciation of nature while remembering and honoring those who died. It includes the field study of Smriti van, Bhuj and project details regarding the museum and also how it is useful to urban planners for planning and designing of urban areas. Natural Disaster Memorial Park; as a special memorial park in which visitors can explore the relationship between humans and nature, seek the meaning of life, and remember the disaster victims, and in which disaster preparedness education can be provided. The concept of Smriti Van is a novel idea of involving society at large in nature conservation.

## II. LITERATURE REVIEW

Mainly three literatures are included which are available in our country like Kulish Smriti Van Jaipur, Smriti van, and Karvenagar and Rajiv Gandhi Smriti van, Delhi.

“Kulish Smriti Van Jaipur”

It is a Bio-Diversity forest developed under green Rajasthan campaign having an area of 54 ha. It is divided into 11 different sections containing Eco – Environment Museum – Photographs of birds and flowers that are found in Smriti Van are displayed in this museum, work on drainage line treatment where slopes have been stabilized by spreading plants and nets in them. There is a Sarovar which has been dug 5 ft deep for storing water. Different varieties of Lotus, Fishes and Ducks have been placed. It increased immigrant birds in good number during winter season. Dhanvanti Van is the largest section of Smriti van developed as a herbal garden. About 250 species of medicinal trees scrubs, herbs and climbers have been planted here.

“Smriti van, Karvenagar”

The concept of Smriti van started in 1987, when the late social worker S.V. Ketkar secured an eight-acre plot from the Jnana Prabhodini to put his concept of “Smriti Sathi Zaada”(trees as a tribute) into practice. Initially, only 18 people adopted trees in the van. But word soon spread and the effort grew into a movement. At Smriti Van, people can adopt a tree against a one-time payment of Rs 1,000. Name plates, with details of those who have adopted the tree and in whose memory it is, are then hung on it. The trees

are protected and nurtured by Nisargasevak trust employees. People adopt trees not only as a tribute to their near and dear ones, but also in memory of things dear to them.

“Rajiv Gandhi Smriti van, Delhi”

It is a park to keep the memories of the departed alive. It is spread over a large area of 19 acres. In the initial years, there was sufficient enthusiasm from public. People would come regularly to plant saplings. This number, however, has drastically fallen since. Today, the park is nothing more than a home for the vagabond, children’s playground. The effort is required to keep it alive on the authorities’ part is visible – grass is regularly pruned, trees well maintained, beautiful shelters and seating arrangements are all present. But at the same time people’s participation is also necessary.

### III. OBJECTIVES

- To plan an eco-friendly green space techniques for victims of disaster
- To create recreational places in urban area & to establish relationship between people and nature

### IV. STUDY AREA

Smriti van is located on hill called Bhujio Dungar, located in the outskirts of the town of Bhuj in the district of Kutch, Gujarat. Elevation of hill is 160 m (520 ft) and Coordinates are 23°14'47.58"N 69°41'26.67" as shown in fig.1 and fig.2.



Fig. 1: Location map of Bhujia Hill

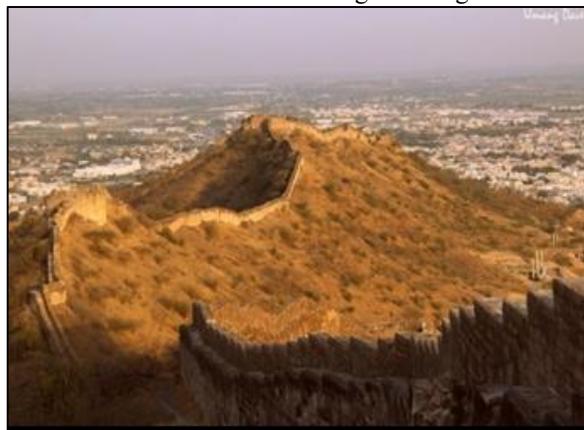


Fig. 2: Bhujia Hill

There was fort on hill construed by Jadeja chiefs in 1715 called Bhujia fort which was deteriorated in Bhuj 2001 earthquake and also there is a temple called Bhujang temple on hill. The greenery on hill is depend upon rain which not consistence in Kutch area.

### V. CONCEPT

In the devastating Gujarat earthquake of 26th January, 2001, 13805 people lost their lives. The earthquake also caused unprecedented damage to property, both public and private. In this respect, it was decided to build a memorial for those who lost their lives during this devastating earthquake. After careful consideration Bhujio Dungar was selected site for establishment of Smriti van the concept of the memorial is to plant one tree for each of the 13805 earthquake victims in the Smriti van.

GSDMA (Gujarat State Disaster Management Authority) will develop the Smriti van memorial and hand over the same to a society for operation & maintenance purpose. After development, Smriti van will become the property of the state government. Master plan and Small reservoirs are as shown in fig.3 & fig.4.



Fig. 3: Small Reservoirs at Smriti



Fig. 4: Master Plan of Smriti Van

The Architect of project is Rajeev Kathpalia, partner at Vastu Shilpa Consultants, Ahmadabad. This van has three major components, (1) Trees which are 13805 in number, each tree representing one victim, (2) 108 Check dam (3) Museum, library and all building. The work of check dams is done and now works of museum buildings are in progress.

## VI. MECHANISM OF PROJECT

Two main purposes of Smriti Van are given below,

1) The family members of victim would come as a pilgrim to remember their loved once.

2) The path of sustenance for trees

Before starting, It is very necessary to understand how natural system works, how land water air birds and insects in conjunction are the agents of the nature to make complex ecological and environmental system it is only necessary there to assist nature and after the first few years it takes over this assistance to identify local species identify the paths that water flows the soil and nutrients that water collects, identify the places where water can be collected to leak into the earth as shown in fig. 5 to fig.8.

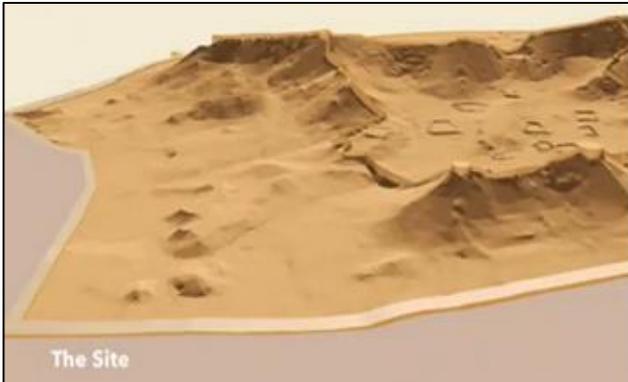


Fig. 5: Site



Fig. 6: Mapping the

The monsoon and its discharge and eventual discharge to feed the trees are one kind of a journey. The other journey is to link the reservoirs where the names of the victims.

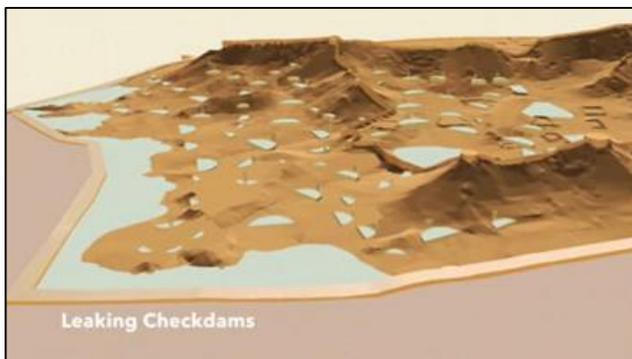


Fig. 7: Leaking Check



Fig. 8: Trees being fed by reservoir

### A. Soft Landscaping

Soft scaping includes the components like trees and soil strata available in this area. Following are the species of plants which are suitable for Kutch as shown in below fig. 9.



Fig. 9: Planted plants in memories of victim

Soil strata available on the site coastal alluvial soils: the coastal alluvial soils are sandy clay loam to clay in texture. The fertility of this type of soil is of medium class. This type of soil occurs in the hilly areas and eastern strip of the mainland Gujarat. The soil profile is not well developed due to steep slope and erosion.

Tree species suggested for plantation on various types of soils by Gujarat state forest department Alluvial soil: shish, shiras, kaigclitl, pinkashia, b.savai, limbdo, kasid, nileari, ashopalav, ambada, kaju, fahuda, shitalfal, garmaro, arduso, shubavai, desi saval, saru, gando saval, sag, kher, sevan, vans, ambo, jambu, ambali, bor, sarae:vo, timbru, jdtildhal, ravan, kothi.

For plants drip irrigation system is laid. Irrigation of plants are done by storm water also which is collected from surface runoff then collected in storm water drain. Total 21 types of plants are planted in this area of 162.5 ha (406 acre).

## B. Hard Landscaping

### 1) Pathways

There are around 2.5 m wide pathway to travel in memorial and also 6 m wide main roads.



Fig. 10: Walkway

### 2) Gates and Entry for the Park



Fig. 11: Entry & Exit

### 3) Signature Structure

These columns have the names of the people who died in earthquake as their memory. Second function of these columns (fig.12) is to measure the water level in the check dams.



Fig. 12: Stone and mesh

#### 4) Check Dams

There are total 108 check dams. They are made of gabions which are entirely without mortar and thus allowing for resting of rain water of the water shades but allow it to dissipate into ground slowly thus allowing root system of tree to draw upon it over the gaps of the stones are filled with the alluvium that stones brings with it. This gabion structure will merge with the landscape structure and become one with the landscape.



Fig. 13: Semicircular & Rectangular Check Dams

These reservoirs (fig.13) collect the runoff of Bhujio Dungar the overflow of each reservoir goes to next and eventually increase the wetland along the periphery of the site.

#### 5) Museum

The proposed museum traces the roots of Kutch, unique culture and it's thematically distributed many galleries house it. These galleries spread along the central spine rising along the 50m from the base where museum is located. Museum building plan was prepared by vastu shilp consultants as shown in fig. 14.



Fig. 14: Museum Building Plan

There are total 8 building going to be constructed which include museum, library, art gallery, auditorium, food court and most specially Geo-Dom bed. This central spine is like a veranda and allows public event to happen even when museum is closed a unique public space. The construction works is taken by cube construction in tender of rupees 47, 22, 26 and 526.

## VII. CONCLUSION

Smriti Van is an innovative idea which is help to develop recreational and social places. Smriti Van creates eco-friendly surroundings which creates comfort to the city people. Green space and water storage can be increased by developing of Smriti Van in different parts of country by provision of it in state or national level planning guidelines. It has been seen that after some period people's attraction becomes less. So to cheer the city people some events (Van Mahotsav) should be organized.

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