

Case Study On Re-Use Of Dismantled Concrete Drain In A Highway Widening Project Of India

Runal Kanti Bhattacharyya

Lea Associates South Asia Pvt. Ltd. New Delhi, India

Monali Bose

Independent Consultant, New Delhi, India

Contact: runal@lasaindia.com; mona.amit0@gmail.com

Abstract

The world needs a sustainable and climate resilient construction practices because of the desire to reduce environmental pollutions, save natural resources, reducing health hazards, minimize waste and save the project cost.

Environment scientists are saying that use of natural resources is one of the greatest sustainability challenges of the 21st century, means a commitment of finding and implementing efficient construction practices are to be developed by the engineers for a sustainable future.

One of such engineering initiative undertaken is narrated as case study of re-using the dismantled concrete drain in a highway widening project of India is thus undertaken to exemplify and motivate the engineers to adopt a smart and environmentally-conscious choice of saving the resources.

Keywords: Highway, Sustainable, Environment, Reuse, RCC U-Drain, (C&D) Waste

1 Introduction

India's focus on upgrading and expanding its road infrastructure is a significant step towards achieving world-class standards in transportation. With the second-largest road network in the world, road transportation plays a crucial role in the country's economy, accounting for 64.5% of all goods transported and serving almost 90% of total passenger traffic. The government's efforts to improve connectivity between cities, towns, and villages by constructing new highways and widening existing ones have resulted in impressive growth rates. Despite the pandemic lockdown, 13,298 km of highways were constructed during

FY 2020-21, with highway construction increasing at a CAGR of 17% between 2016 and 2021.

With the government allocating ₹111 lakh crore (US\$ 1.4 trillion) under the National Infrastructure Pipeline (NIP) for 2019-25, the roads sector is likely to receive 18% capital expenditure out of this allocation. However, with 55% of the National Highways network only two-lane wide and 24% four lanes wide, there is still a massive demand for expansion and widening of roads in India.

Under the Bharatmala Pariyojana Government of India with a target to convert 6500 km of existing 4-lane National Highways into 6-lane National Highways under Phase-V of National Highway