

**PARAMETRIC STUDY ON STRUCTURAL
BEHAVIOUR OF MAST TOWER**

M.Tech Dissertation Phase - II

Submitted in

partial fulfillment of the requirements

for the degree of

MASTERS OF TECHNOLOGY

in

Structural Engineering

by

Amrit Pal Singh

(180303209023)

Under the supervision of

Asst. Prof. Hardik J. Solanki

(PIET, Internal Supervisor)

Mr. Satish Jethwani

(EZSCE, External Co-supervisor)



April 2020

DEPARTMENT OF CIVIL ENGINEERING

PARUL INSTITUTE OF ENGINEERING & TECHNOLOGY

FACULTY OF ENGINEERING & TECHNOLOGY

PARUL UNIVERSITY

P.O. Limda – 391 760, GUJARAT, INDIA

Abstract

Mast tower are generally tall structures, self-supporting structures and in engineering terms cantilever structures, which are designed to support the high-tension wires, testing the other towers and so on.

Further to the parametric study on structural behavior of masts, basic parameters are studied, like axial, compression and tension capacity of the members, deflection behavior etc.

The analysis of the tower testing high mast is carried out in different ways, mainly governs under high tensions due to testing and wind action on exposed area. These mast towers are generally used at tower testing stations. Two masts present to test a tower, one of them is Longitudinal Mast and other one is Transverse Mast. These masts have numbers of columns and beams according to size of tower beds, which are to be tested.

In the analysis, the tower model firstly fixed and then wind pressure applied to the exposed area of the mast. Wind force is the computed with IS875: part-III, in which different categories factors are used according to mast height, locations and other ones.

The design of the tower is done with IS:802 part-1/sec-2 & part-2.

The applications of the mast towers are at each testing stations for testing 132kV to 1200kV gantry, transmission line towers and for reviewing the same.