

Condition assessment, rehabilitation and upgradation of stadia in Delhi using modern technology

BC Roy

RUICPL, New Delhi, India

R Ekambaram

Sastra University, Tirumalaisamudram, Tamil Nadu, India

Contact: bcroy1944@gmail.com

Abstract

India organized the Commonwealth Games in New Delhi in 2010 for which some new stadia were built while some others were renovated. Delhi organized the Asian Games in 1982 successfully building new stadiums. The intervening period of over 25 years had witnessed major advancement in sports technology. Upgrading the stadia using advanced assessment methods and satisfy more stringent requirements were major challenges to ensure that their service lives are extended and that they remain versatile.

The stadia remodelled/retrofitted were Jawaharlal Nehru Stadium (JNS), Dr. S. P. Mukherjee Swimming Pool Complex, (SPM), Indira Gandhi Indoor Stadium Complex (IG), and Major Dhyan Chand Stadium. In JNS, the centrepiece of the Games, the open spectator stands needed to be covered accommodating the constraints imposed by the existing playing field. SPM, which was open to sky, required an indoor facility. The IG indoor stadium, hosting gymnastics, required major repair and retrofitting. The paper details these efforts

Keywords: Post-tensioning; anchors; shear- walls; height restrictions; cable-net roof; repair and retrofit of roof truss.

1 Introduction

The sports infrastructure developed for Asiad '82 had outlived its useful life and needed upgradation as per latest technologies. Additional venues were created due to increased number of events, within available land.

Commonwealth Games 2010 (CWG 2010) had given the opportunity to bring these facilities back into use, not just for the event but beyond, with an eye on legacy use.

The Client, Central Public Works Department (CPWD), came up with proposals of international standards & chose the most suitable & unique designs for different stadia which matched with existing skyline of Delhi.

CPWD appointed consortium of Consulting Engineering Services (I) Pvt Ltd. (CES) and Schlaich Bergermann und Partner (SBP) in association with Gerkan, Marg and Partners (GMP) Germany for 5 stadiums, Jawaharlal Nehru Stadium (JNS), Dr. S. P. Mukherjee Swimming Pool complex (SPM),