https://doi.org/10.2749/cs004.ch08

Chapter 8

Roof of FC Twente Stadium

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This chapter focuses on human and organizational factors that are usually behind the technical cause of failure. In this chapter the focus is on the collapse of the extension of the roof of the Football Club Twente stadium in Enschede (The Netherlands) during construction, resulting in two fatalities.

8.1 Introduction

On July 7th, 2011, an extension of the roof of the FC Twente stadium collapsed during construction. This extension would increase the stadium's capacity with an additional 10.000 seats. Additional capacity was needed because of a successful period for the soccer club.

During the assembly of finishing structures for this new roof, a roof truss failed. This resulted in a progressive collapse. Two fatalities and nine injuries were recorded. A collaboration of the Public Prosecution, the Labour Inspectorate of the Ministry of Social Affairs and Employment, and the Dutch Safety Board [1] started an investigation. The Dutch Safety Board reported the outcomes of this investigation to the public [2].

At first, this chapter reveals the technical causes of the failure. Subsequently, it presents human and organizational factors in the building process that might have played a role in the collapse. This case was analysed with the same framework of human and organizational factors as was used in chapter 4. The analysis of the technical, human, and organizational factors of this case is based on a report of the Dutch Safety Board, an earlier paper on technical causes and various newspaper articles [1-5]. This chapter is an adaption of an IABSE conference paper [6].

8.2 Structural and Technical Cause of Failure Resulting From the Investigation Process

8.2.1 Layout of the Structure

The original FC Twente stadium was constructed in 1998 and extended in 2008. Because of sporting successes, a second similar extension was constructed in 2011.