

Chapter 4

Balconies in Maastricht

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This chapter focuses on human and organisational factors that are usually behind the technical cause of failure. This is illustrated by a case of the collapse of five balconies in 2003 in Maastricht (The Netherlands) resulting in two fatalities.

4.1 Introduction

In 2003 a residential building called Patio Sevilla was completed. In the evening of April 24th, 2003, five balconies of this apartment building collapsed, resulting in two fatalities. Several major investigations were started by insurance companies, police, and the criminal court.

To focus on learning points related to structural safety, it is worthwhile to investigate failure cases with a framework of set parameters.

A framework with possible influencing factors for structural safety has been set up [1, 2]. The framework is based on critical success factors derived from management literature and factors from safety science. In Section 4.3 the framework will be explained.

This chapter will first reveal the technical causes of the failure, and subsequently analyse to what extent human and organizational factors in the building process (as listed in the theoretical framework) might have played a role in the collapse of the balconies of Patio Sevilla in Maastricht. The focus is on the involved parties in the primary building process, like engineers and contractors.

The analysis of the technical, human, and organizational factors of this case is based on: court judgement [3-5], a report from an expert witness [6], various other investigation reports [7, 8], newspaper articles [9, 10], and a book chapter on this incident [11]. This chapter is an adaption of an IABSE conference paper [12].

4.2 Structure and Technical Cause of Failure Resulting from the Investigation Process

4.2.1 Layout of the Structure

The balcony structure was made of prefabricated concrete. On two positions per balcony, a hinged, thermally isolated connection between balcony slab and floor was designed.