

Tropicana Garage Collapse

David B. Peraza, PE

Principal Engineer

Exponent

New York, NY, USA

dperaza@exponent.com



Mr. Peraza has over 40 years of structural and civil engineering experience, which has included design and the investigation of high-profile collapses.

1 Abstract

In 2003, a major collapse occurred during construction of a parking garage at the Tropicana Hotel in Atlantic City, New Jersey. It resulted in four fatalities, dozens of injured workers, and significant delays to the construction project. The legal matter was eventually settled out of court, reportedly for \$100 million US dollars.

The author led the structural investigation into the collapse on behalf of the General Contractor. The investigation included numerous site visits, preservation of structural evidence, review of design drawings and contractor's shop drawings, structural analyses, and litigation support.

The concrete parking garage was being constructed with a proprietary structural floor system, which involved "stay-in-place" precast concrete forms that became composite with the cast-in-place concrete slabs and wide beams.

The investigation presented significant challenges due to the intertwined design responsibilities for the system, the difficulty of preserving perishable evidence during the demolition of the unstable structure, the high-profile nature of the collapse, and the diverse interests of the many involved parties.

The matter settled out of court, so the results of technical investigations and the lessons learned have not been widely disseminated previously.

This paper will describe the engineering investigation and findings, discuss the roles and responsibilities of the designers and others, and present recommendations to reduce future failures of similarly organized projects.

Keywords: collapse, parking garage, Tropicana, precast formwork, concrete

2 Introduction

The structure being constructed was a ten-story, 2400 car parking garage located over a four-story retail complex. At the time of the collapse, the

parking garage structure was completed up through Level P7. Concrete was being placed on Level P8, in the area that collapsed.