



The partial collapse of the 'Palazzo Edilizia' in Salerno

Fabrizio PALMISANO

Adjunct Professor
Politecnico di Bari
Bari, Italy
f.palmisano@poliba.it

Fabrizio Palmisano, born 1972, received his civil engineering degree and his PhD from the Politecnico di Bari where he is Adjunct Professor of Structural Design.

Amedeo VITONE

Associate Professor
Politecnico di Bari
Bari, Italy
a.vitone@vitoneassociati.it

Amedeo Vitone, born 1943, received his civil engineering degree from the University of Bari. He is retired Associate Professor of Structural Design at the Politecnico di Bari.

Summary

On the night of June 15 2007, a side of one of the most important buildings of Salerno (the so called 'Palazzo Edilizia') collapsed 80 years after its construction. Such a ruinous failure did not cause any casualties only thanks to the circumstance that the collapsed side was that of the living rooms.

The aim of the analysis performed by the authors was mainly the search of the causes of such a ruinous collapse. The paper not only deals with the description of the methodology adopted for the analysis, but also discusses the results in order to trace general criteria that could be useful for the reliability assessment of the existing masonry buildings.

Keywords: masonry; buildings; assessment/repair; forensic.

1. The methodology used in the investigation

On June 29 2007 the authors were nominated technical consultants of the investigate Magistrate. Since then, investigations, surveys and tests were carried out to obtain useful information to understand the causes and dynamics of such a ruinous and apparently unexpected collapse. The main steps of the methodology that was used were the following:

- Historical-kinematic reconstruction of the collapse based on questioning, video-photographic documentation and visual inspections of the ruins.
- Acquisition of technical data necessary to create a model using: documentation found in public offices, documentation on the on-going restoration works in the Varese Bar (ground and underground floor), on-site geometrical surveys (also during the works of debris removal), visual sample inspections, laboratory and on-site tests, analysis of video-photographic documentation.
- Re-calculations.
- Identification of design and construction errors and analysis of their influence on the collapse dynamics.

In cases similar to that under study, it is very common that the collapse is disproportionate to the original cause. Hence, in the analysis, a clear distinction between the triggering cause and the causes of the damage evolution has been made.

2. The building construction

The area where Palazzo Edilizia was built was handed over by the Municipality of Salerno to the