

## Chapter 14

# The Leaning Tower of Pisa

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*The Leaning Tower of Pisa was stabilised in the years 1999–2000 by an International Committee appointed by the Italian Government. An analysis of the history of the monument and the results of investigations and monitoring led to the conclusion that the tower was affected by a phenomenon of instability of the equilibrium. The stabilisation intervention, conceived to be totally respectful of the integrity of the monument, consisted of slightly decreasing the inclination of the Tower by removing a small volume of soil beneath the north side of the foundation.*

### 14.1 Introduction

It was in the period of maximum splendour of the maritime republic of Pisa, in the 12<sup>th</sup> and 13<sup>th</sup> centuries, that the cathedral, the Leaning Tower, the baptistery, and the cemetery, were erected in the Piazza dei Miracoli (Figure 14.1). The square is the awesome manifestation of the ideal unity existing at that time among religious, spiritual, and political powers. From the very beginning, the history of art and civil history intertwine in its monuments, giving them an outstanding character of sign and symbol to the city.

The Leaning Tower is one of the world's best-known and most treasured monuments. Its extraordinary inclination turned it very early into a strong attraction.

The tower consists of a hollow cylinder surrounded by six loggias with columns and vaults, merging from the base cylinder and surmounted by a belfry (Figure 14.2). The external surfaces are faced by cut stone masonry. The annulus between the facings is filled by rubble and mortar with frequent voids, probably intended to lighten the structure.

After the collapse of the San Marco bell tower in Venice, in the early 20<sup>th</sup> century, public opinion and the authorities turned their attention to the Tower of Pisa. The Italian government set up several commissions that carried out extensive investigations. A tender was called, but the contract was not assigned. Different stabilisation measures were proposed, but no significant action was taken.

At the end of the 20<sup>th</sup> century, the overhang of the tower had reached a value of almost 5 m and was increasing at a rate of 1.5 mm per year. The sudden and unexpected