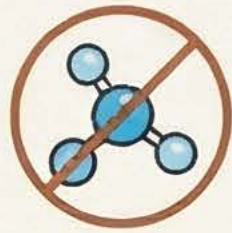


# Seismic Resilience of the Mansourah Enclosure: A Structural Analysis



## WATER-INSENSITIVE COMPOSITION

Soil tests reveal a high calcite content (47.4%) and a material profile insensitive to water.



**0.35 MPa**

## TENSILE LIMIT

Laboratory tests identify low tensile strength as the primary mechanical constraint for the structure.



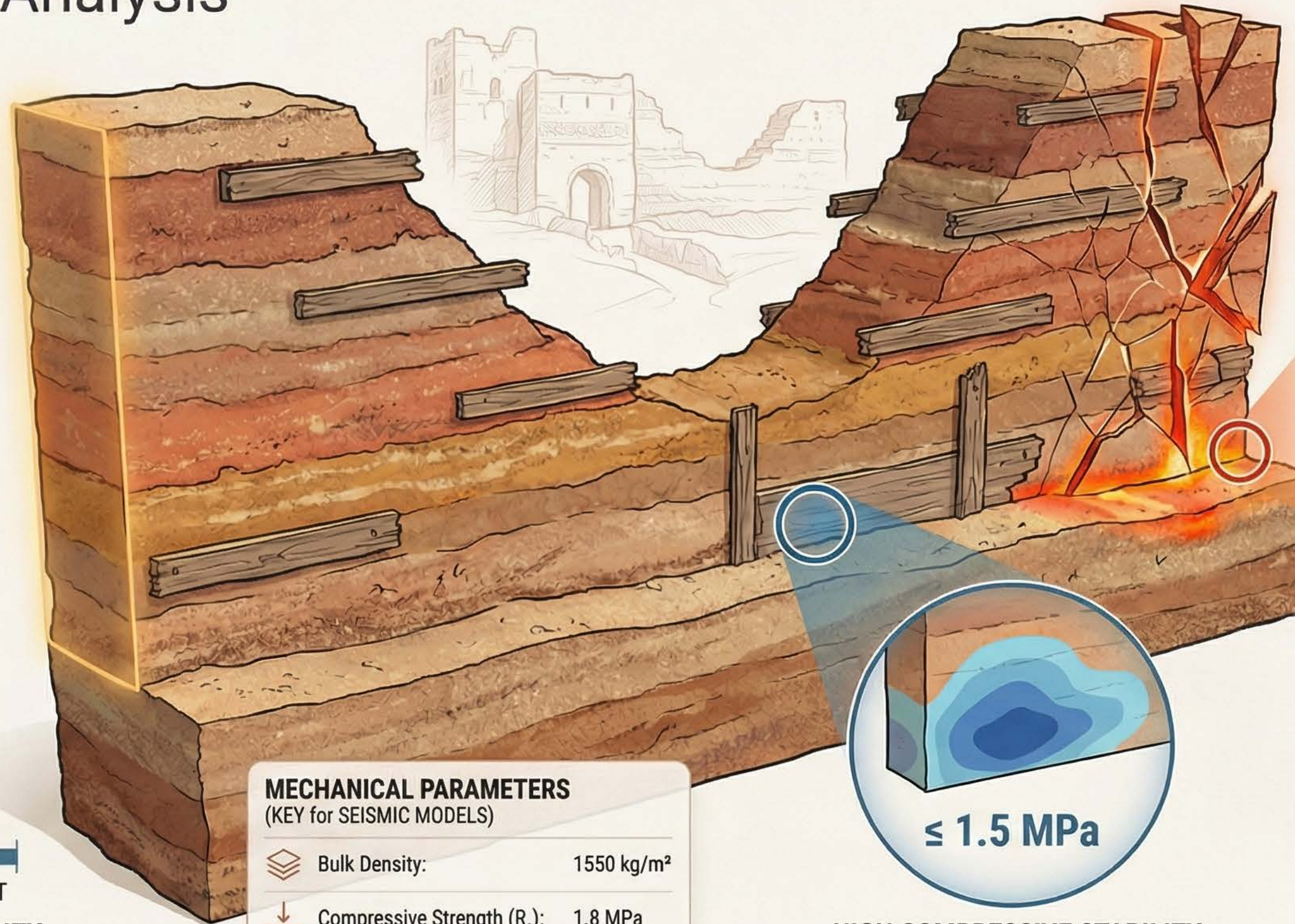
1303-1336



PRESENT

## EIGHT CENTURIES OF STABILITY

The material exhibits homogeneous behaviour due to natural consolidation since its construction.



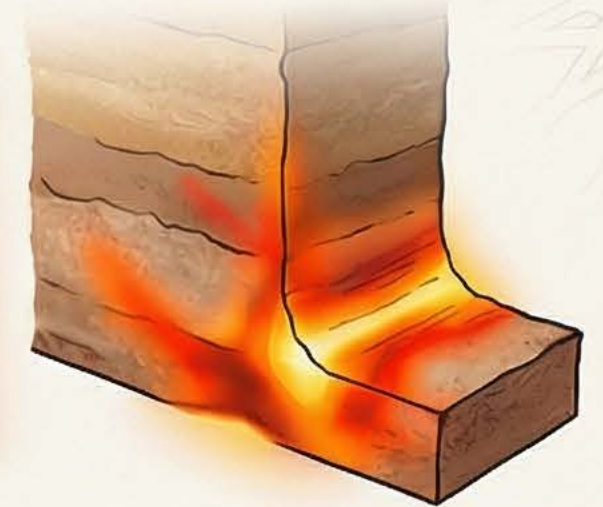
## MECHANICAL PARAMETERS (KEY for SEISMIC MODELS)

	Bulk Density:	1550 kg/m <sup>3</sup>
	Compressive Strength ( $R_c$ ):	1.8 MPa
	Young's Modulus (E):	240 MPa

## HIGH COMPRESSIVE STABILITY

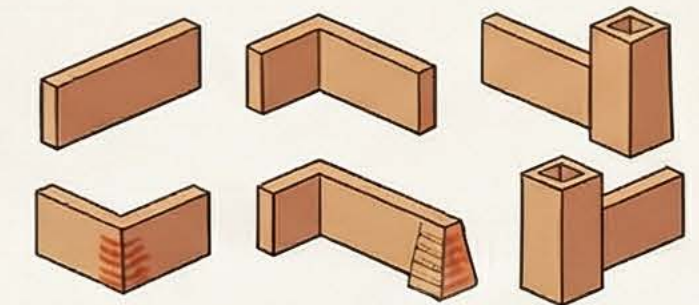
Maximum compressive stresses remain below 1.5 MPa, posing no risk of structural crushing.

## IDENTIFYING SEISMIC VULNERABILITIES



## CRITICAL TENSILE ZONES

Earthquake simulations show tensile stresses exceeding safety limits at well bases and thickness transitions.



## GEOMETRIC INFLUENCE

Six unique configurations were tested to show how towers and corners influence stress distribution.