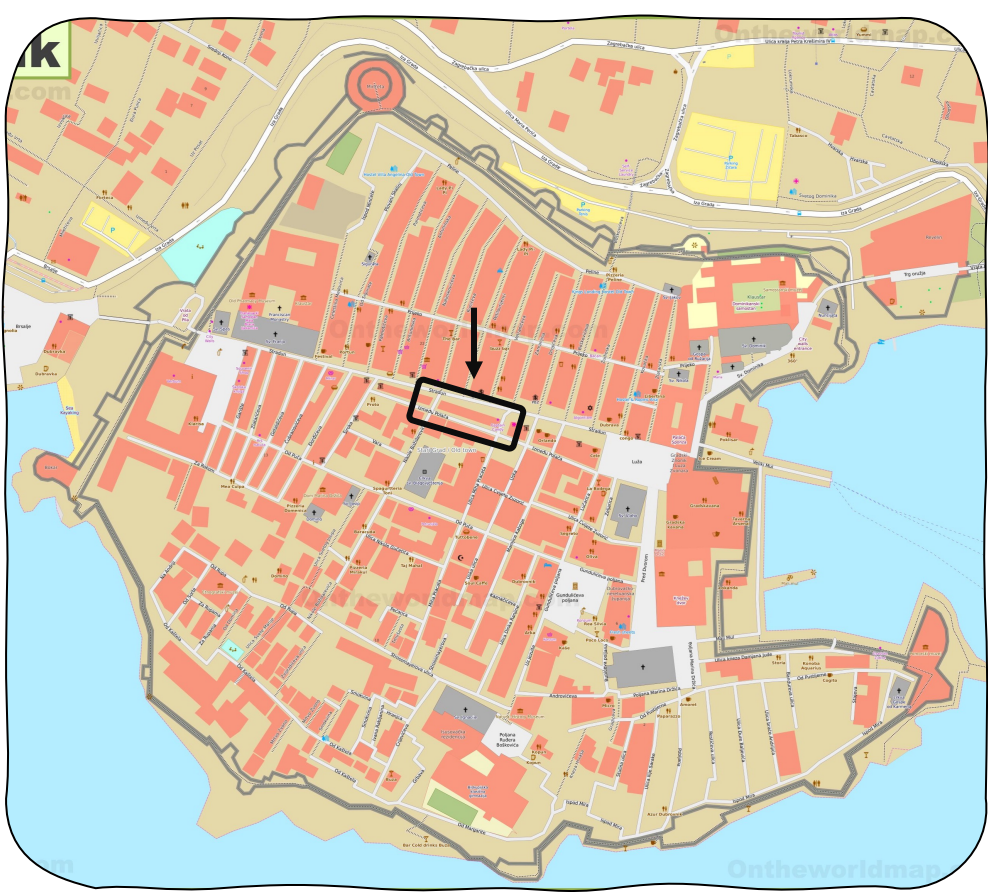


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Lars Abrahamczyk | Aanis Uzair

# Nonlinear Modelling and Analysis of Unreinforced Masonry Structures

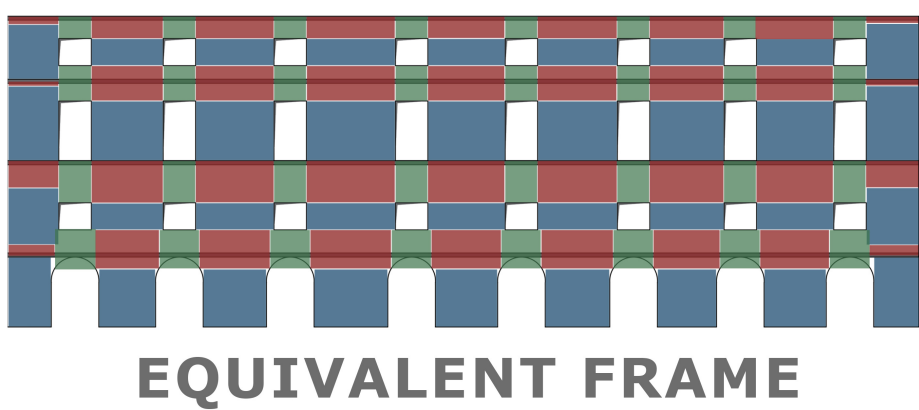
## 1. Case Study

The case study is a historical stone masonry building located in the old city of Dubrovnik, Croatia.

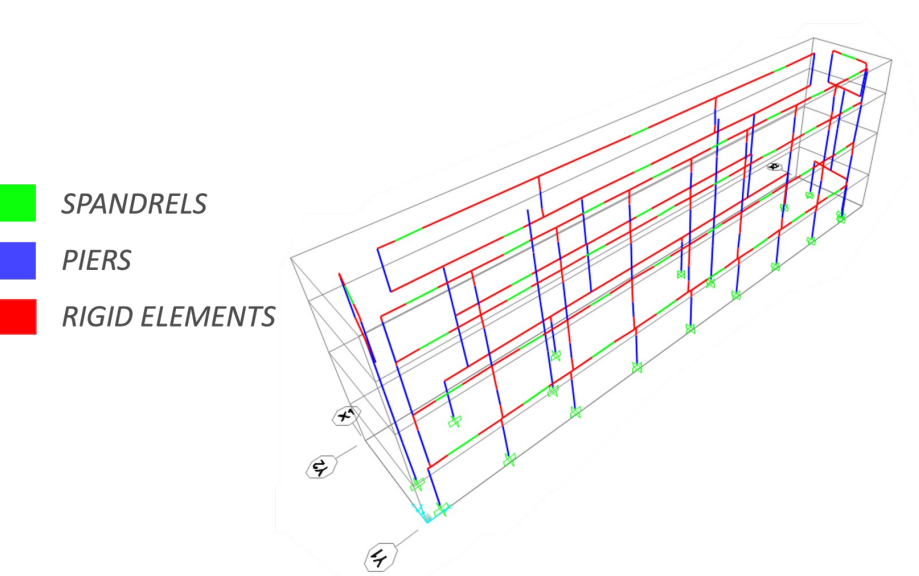


### 2.1. Discretization

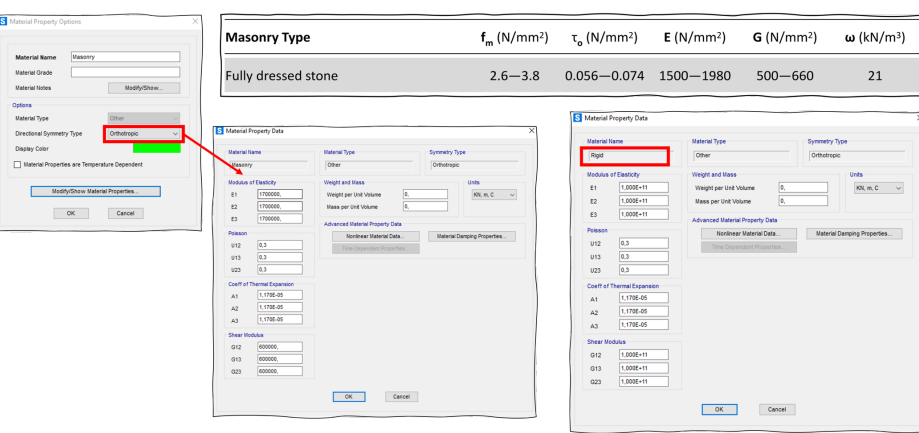
Characterized by effective pier height (at 30° angle).



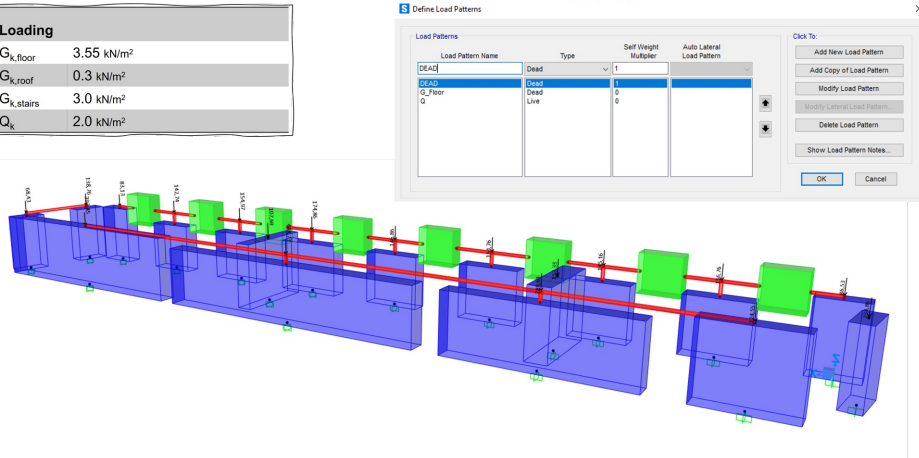
### 2.2. Structural Model



### 2.3. Material Properties

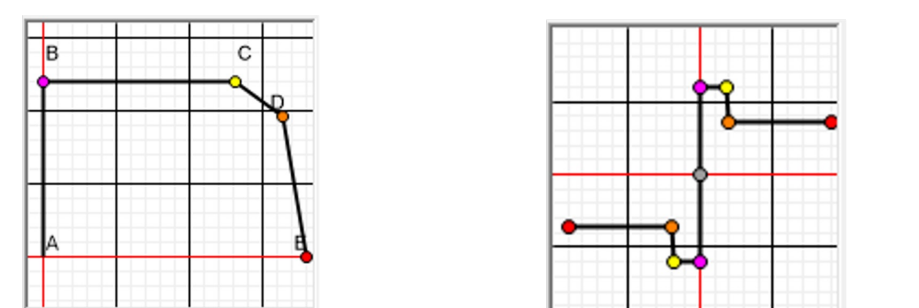
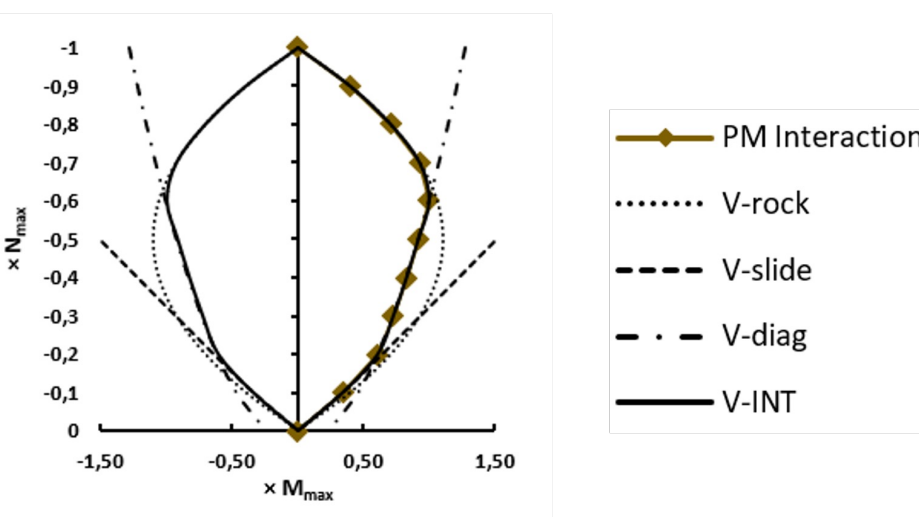


### 2.4. Loading



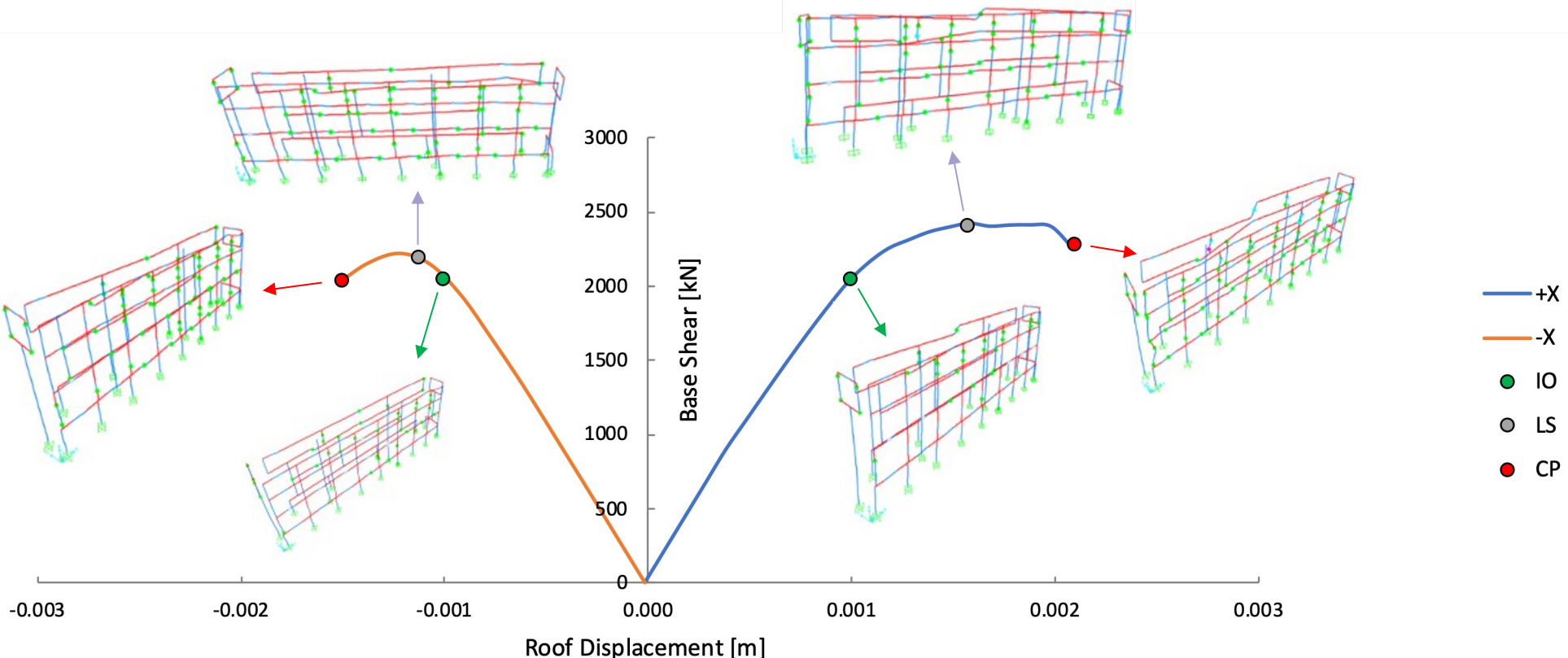
### 2.5. Nonlinear Behaviour

- Elastic perfectly plastic constitutive law(s).
- Consideration of axial force-moment interaction.
- Rocking, diagonal cracking and bed-joint sliding.



Piers (interacting P-M3) Spandrels (shear V2)

## 3. Results (Capacity Curve)



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