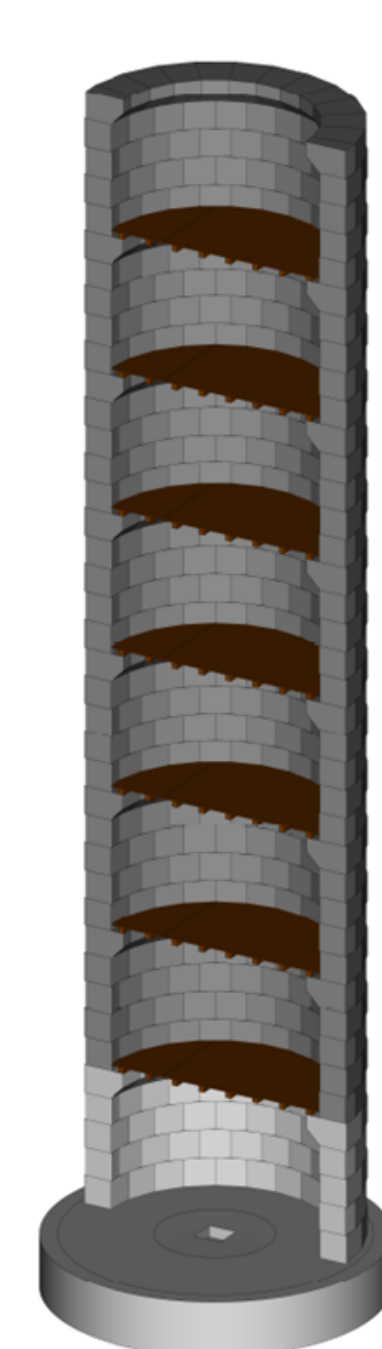
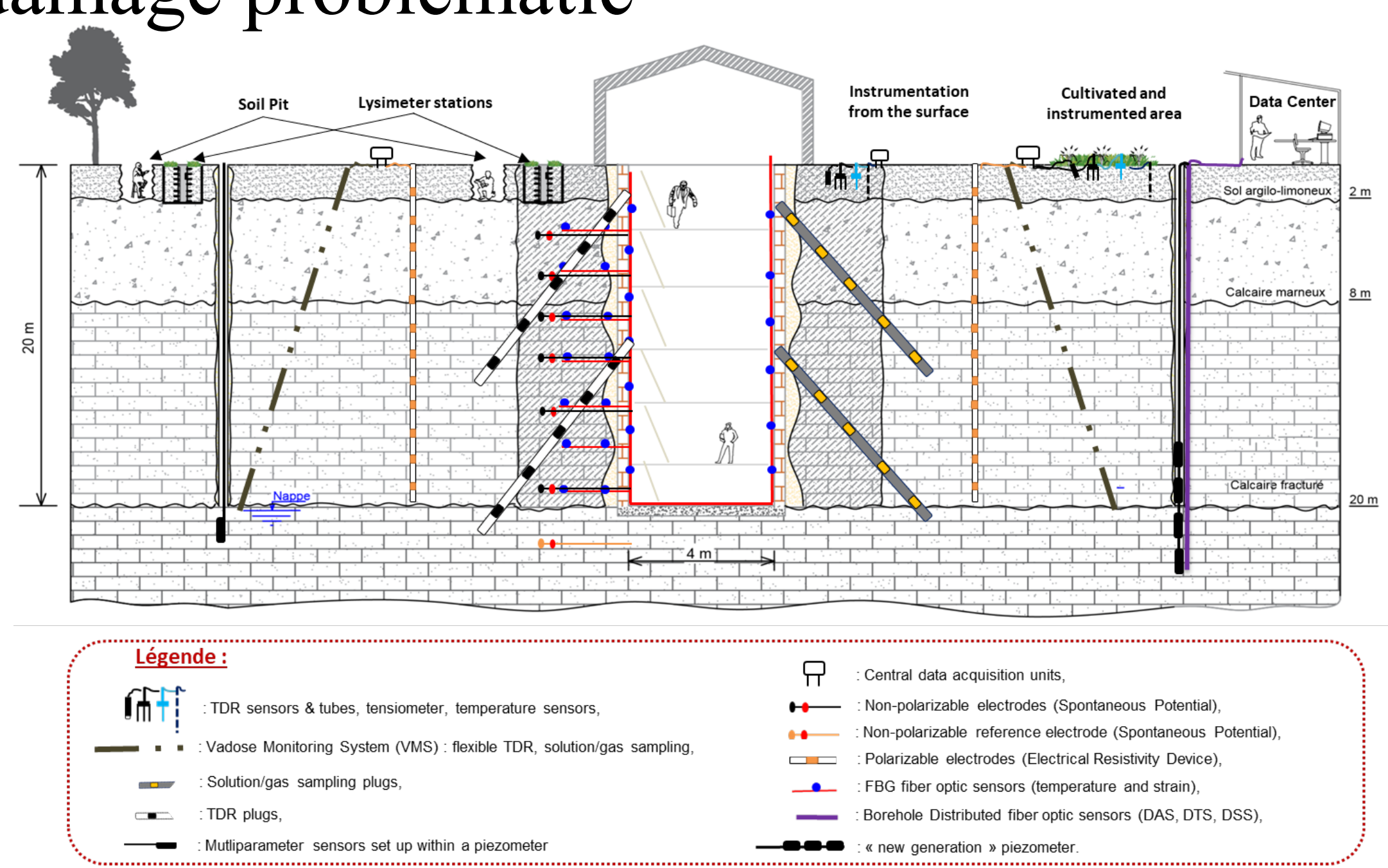
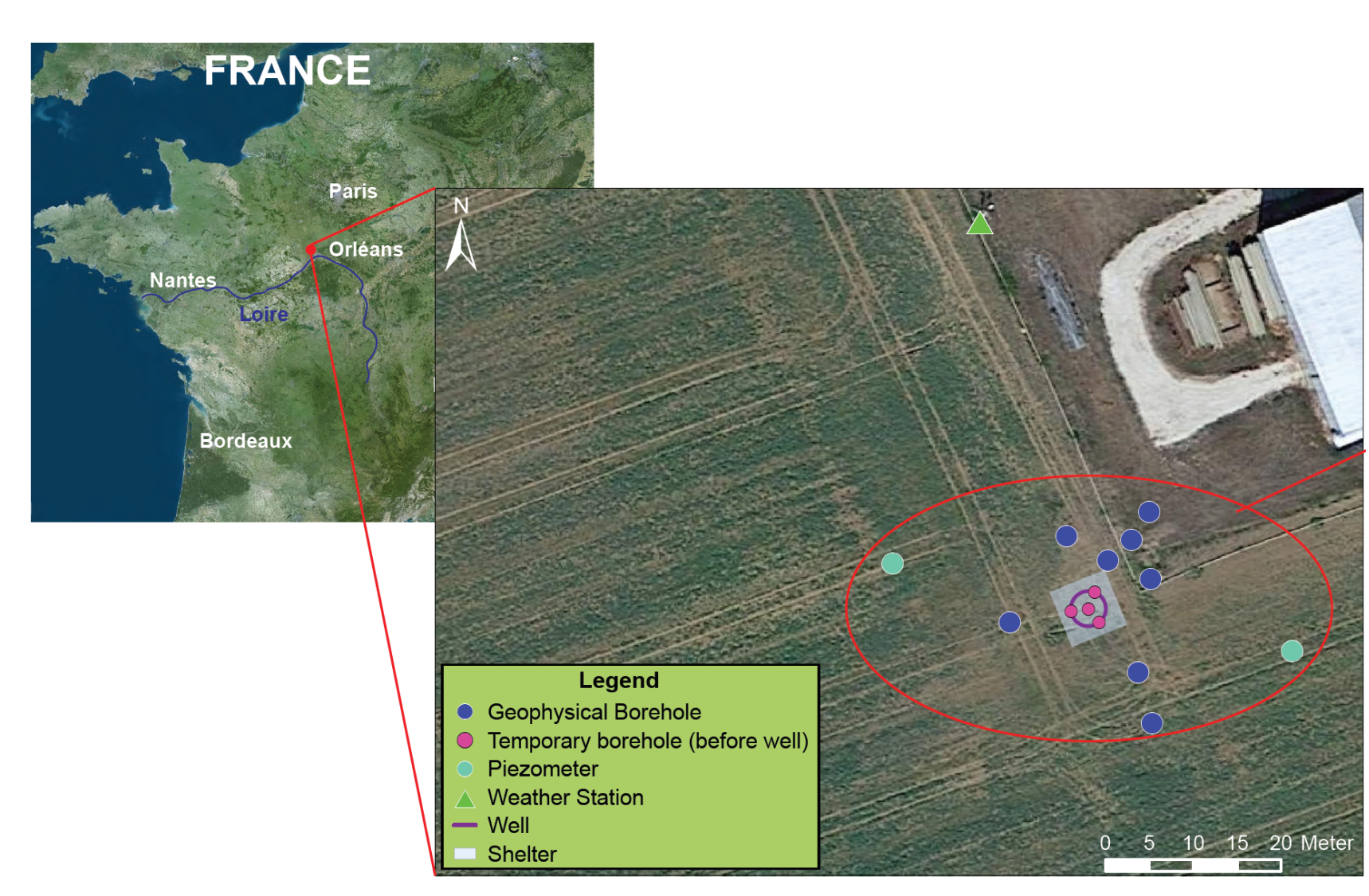
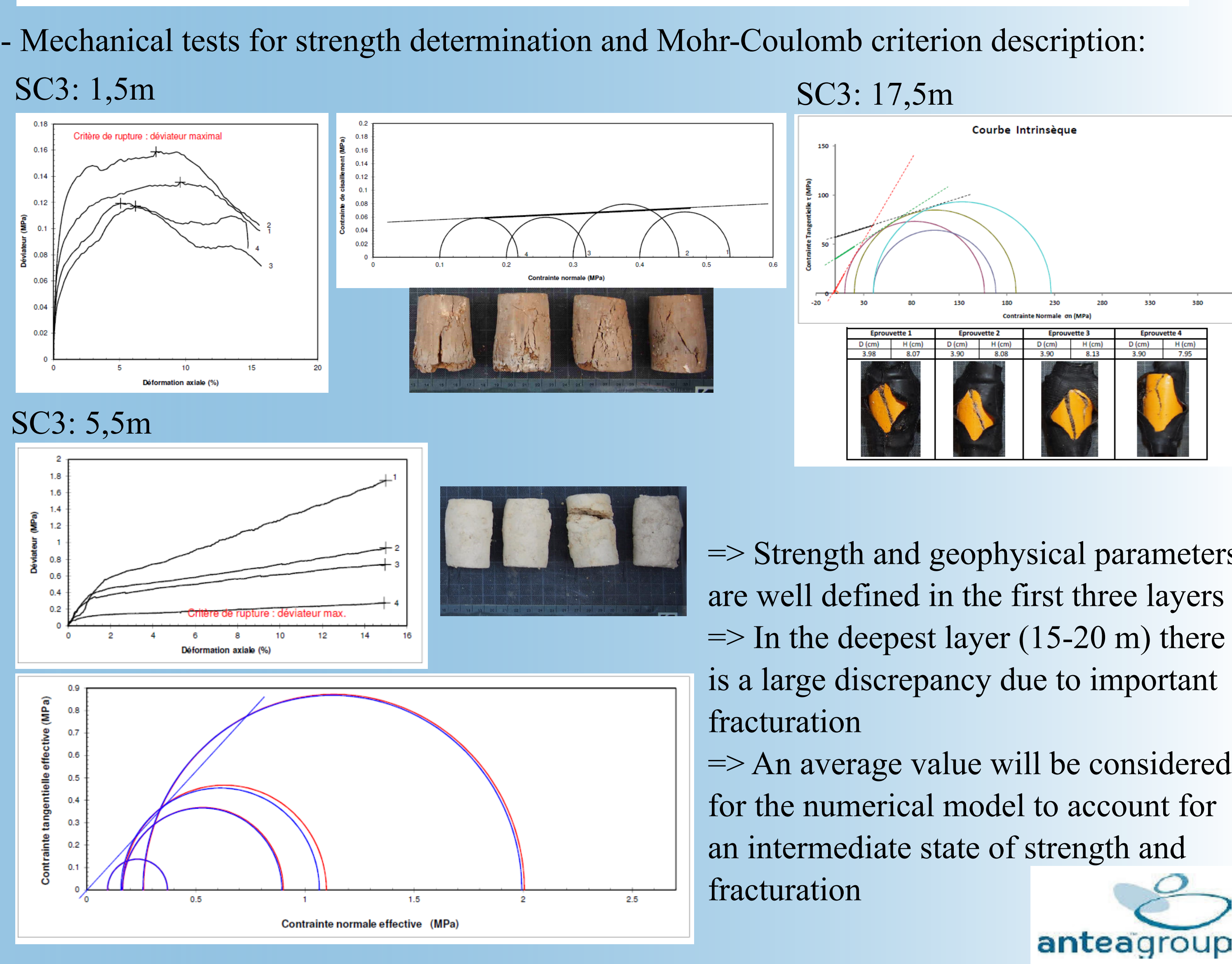
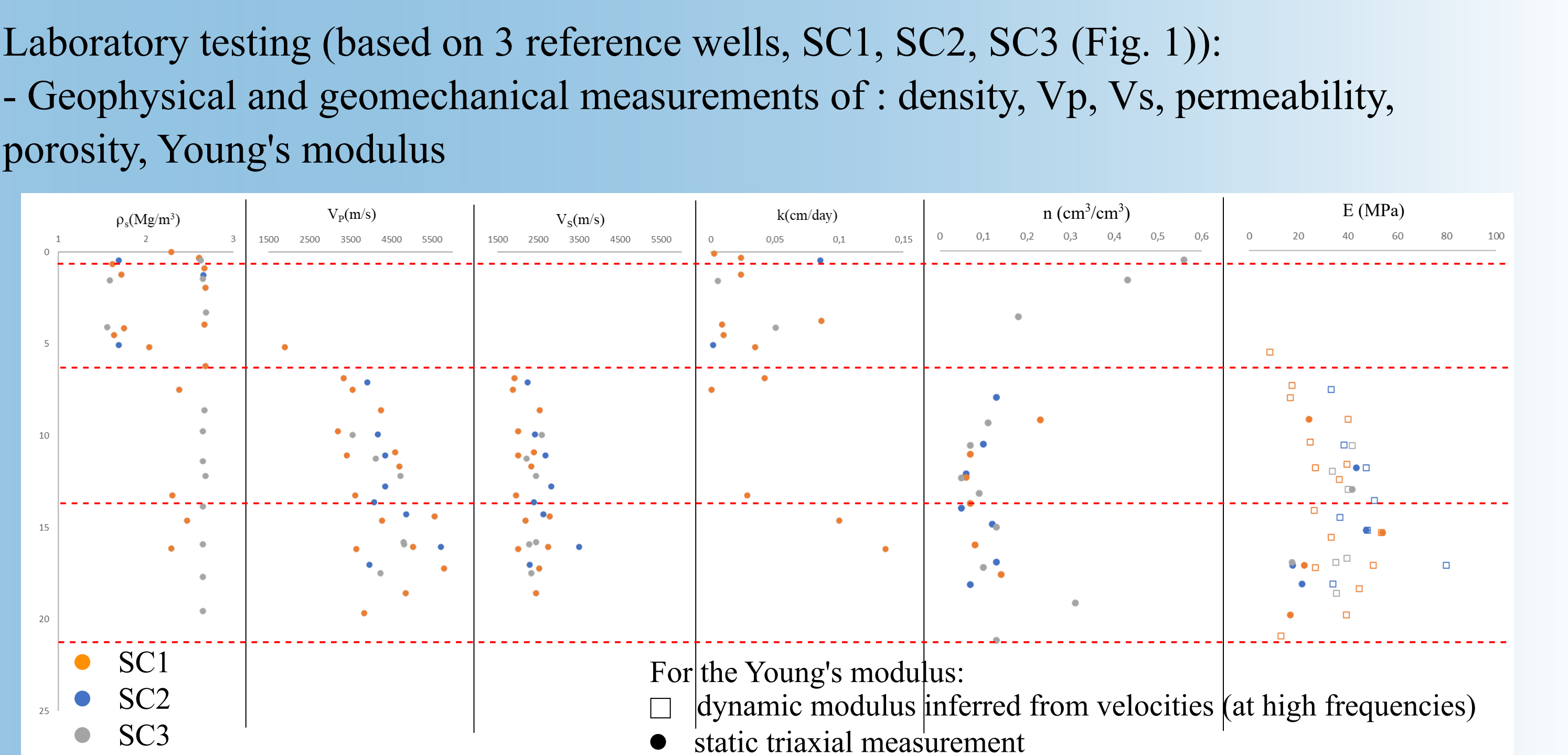


Context: study site, project and damage problematic

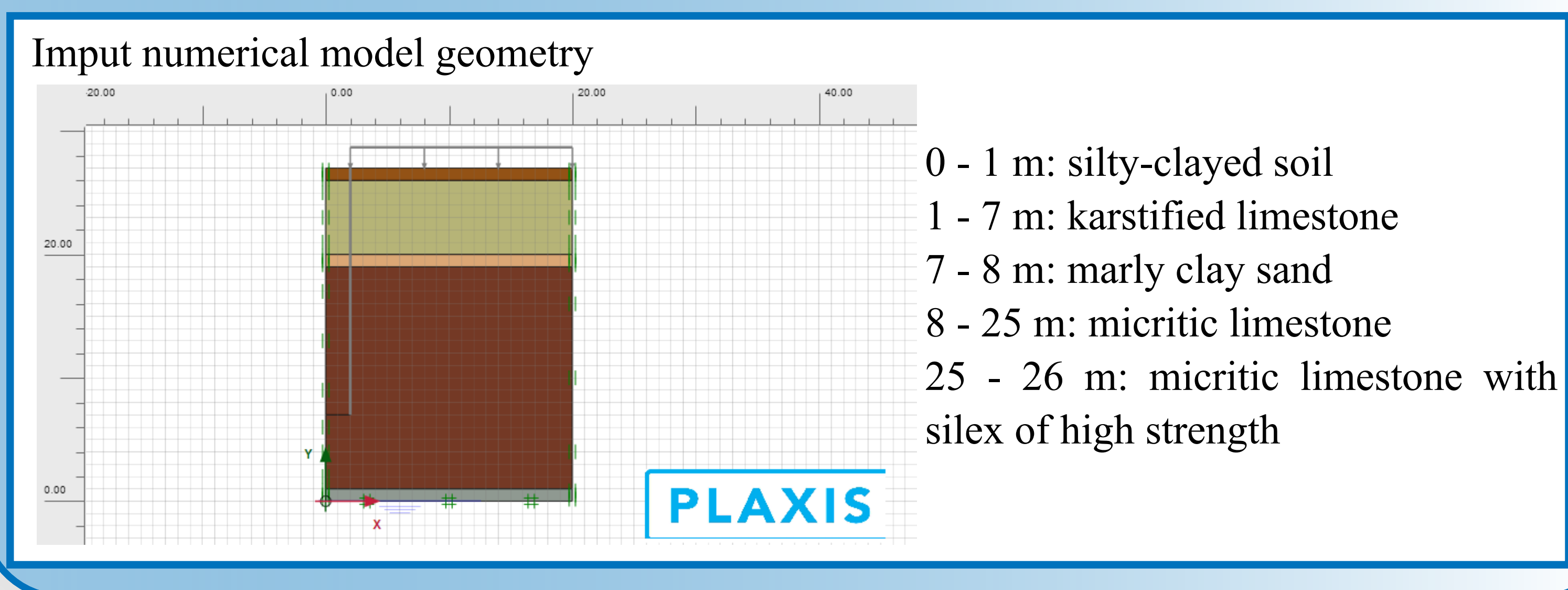
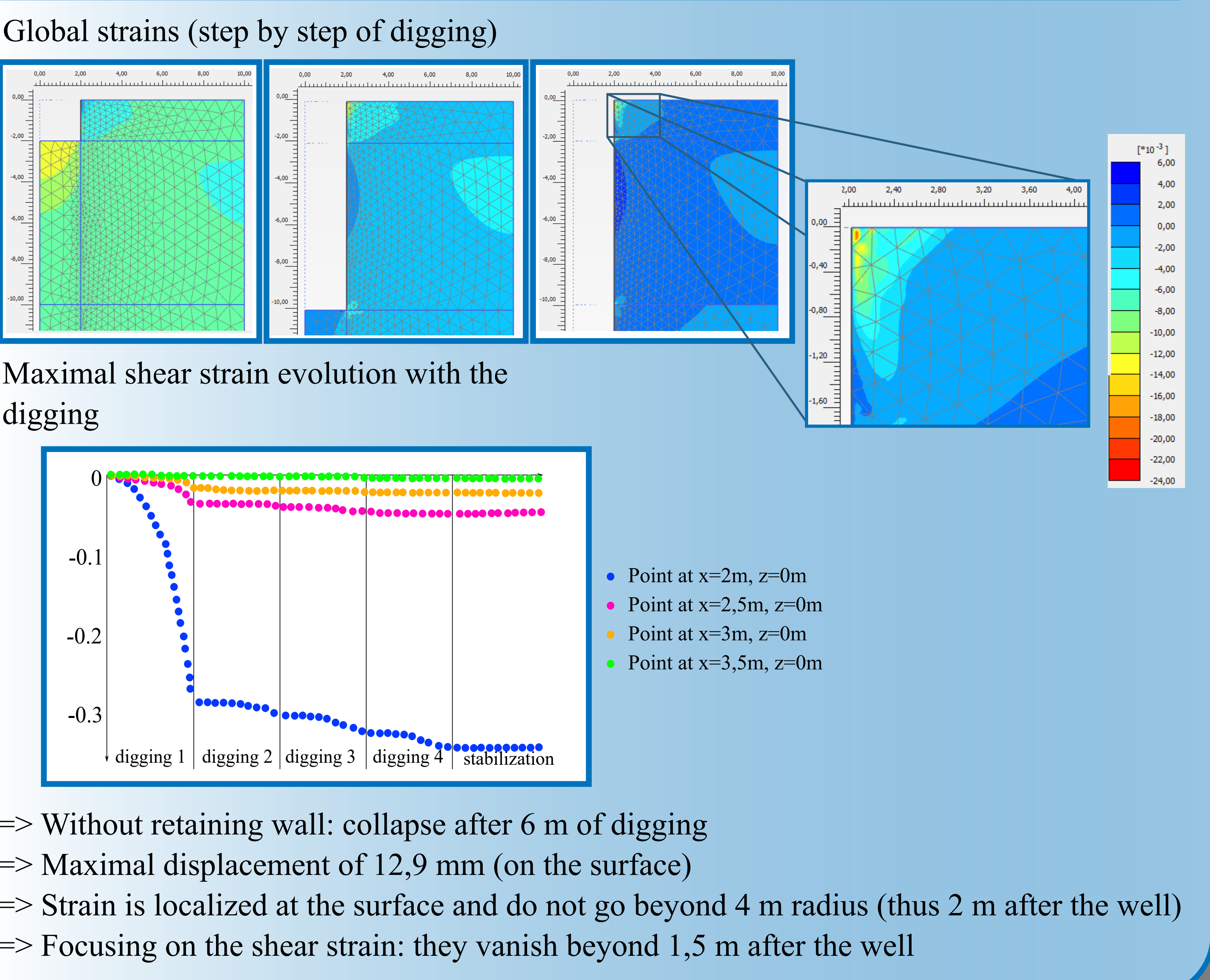
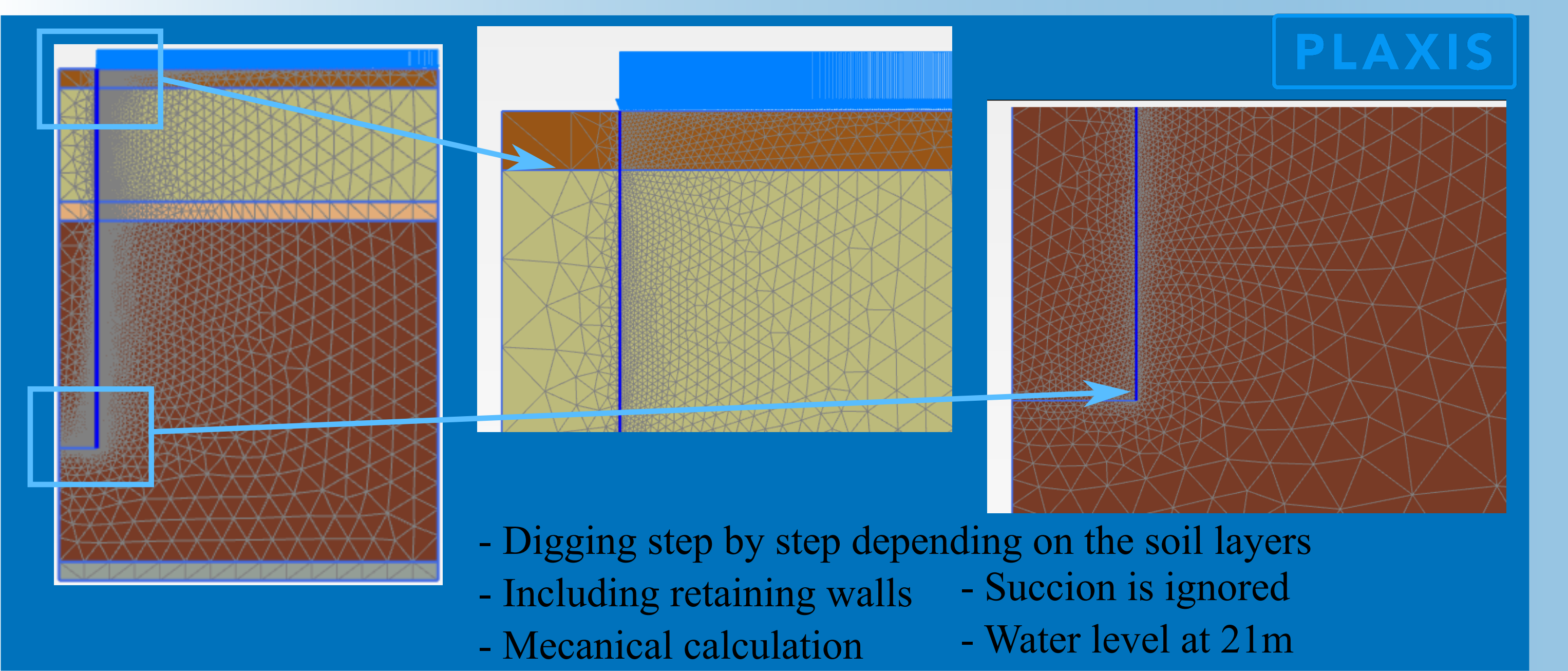


- Overall of the O-ZNS project:**
- Setting: agricultural site
 - O-ZNS platform: Observatory of the Non-Saturated Zone (Vadose Zone)
 - Observation well: 20 m-depth, 4 m-diameter
 - Geological context: continental limestones
 - Objectives:
 - Observe the mass and heat transfert,
 - Image the field cracking,
 - Develop new geophysical tools
- This study:**
- describe and model the soil layers from lab testing and direct observations
 - quantify the induced damage in the host rock

Soil characterization



Numerical model



Conclusion and Outlooks

- Laboratory tests highlighted 4 soil layers with a last one really heterogeneous due to high fracturation
 - The geotechnical Plaxis® software is used to model the induced strain and damage in the host rock
 - 2m after the well damage vanishes (1,5m for the shear strain)
- Outlooks
- The effect of the water table variation will be investigated to model the time evolution
 - It is expected a finer resolution of the deepest heterogeneous soil layer through a developed experimental campaign including geophysical, geomechanical and hydrolic tests

We gratefully acknowledge the financial support provided to the PIVOTS project by the Région Centre – Val de Loire (ARD 2020 program and CPER 2015 -2020) and the French Ministry of Higher Education and Research. This project has been co-funded by the European Union. Europe invests in Centre-Val de Loire with the European Regional Development Fund