

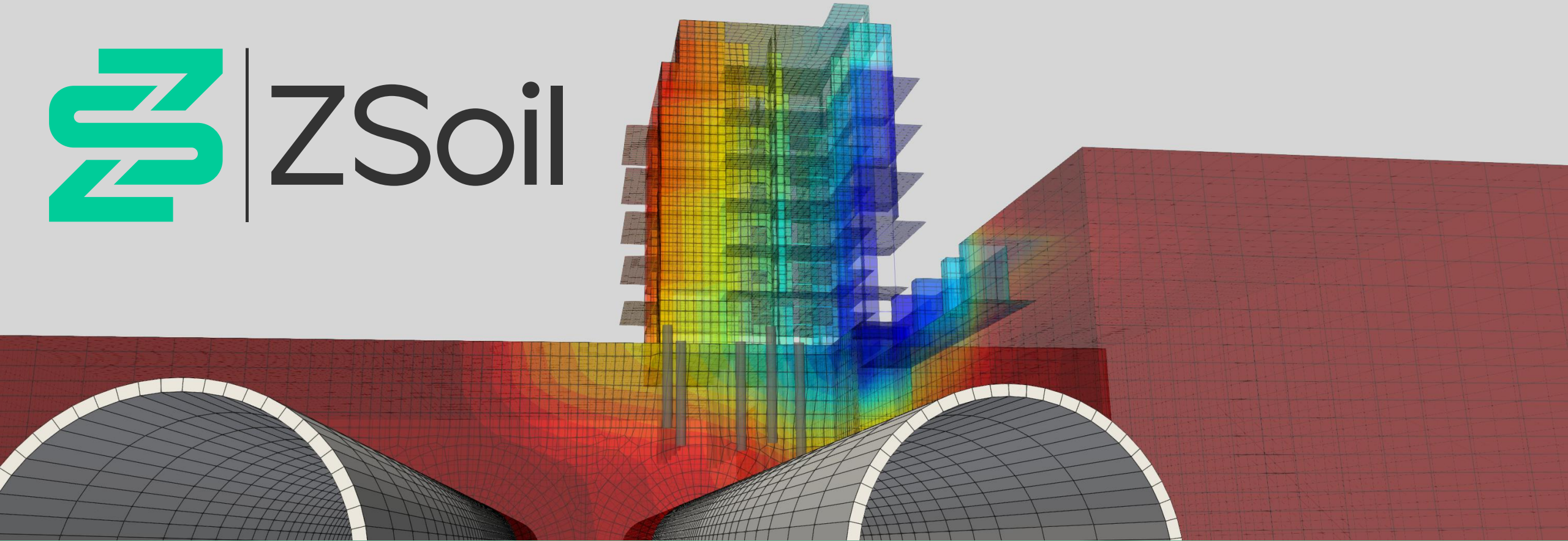


FOR GEOTECHNICS & STRUCTURES

S I N C E 1 9 8 5



ZSoil



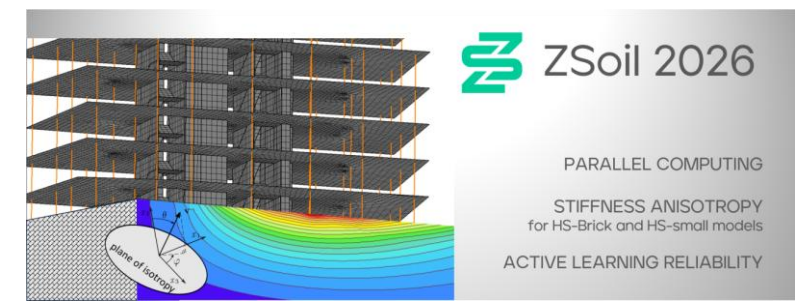
Update from the ZSoil Team

Samuel Kivell, GeoDev Sàrl

ZSoil Day 2026

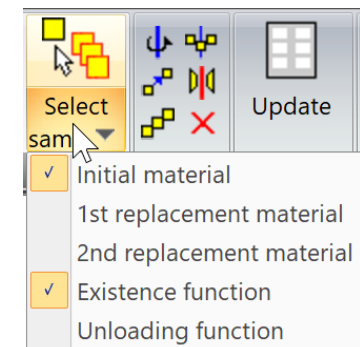
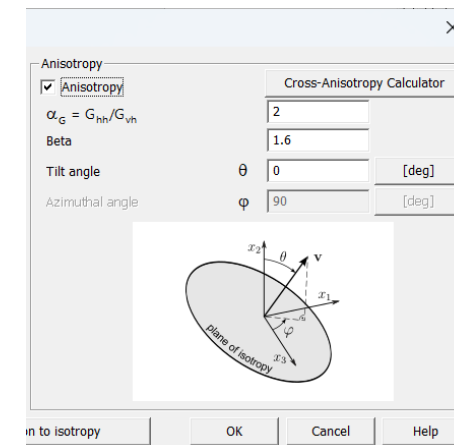
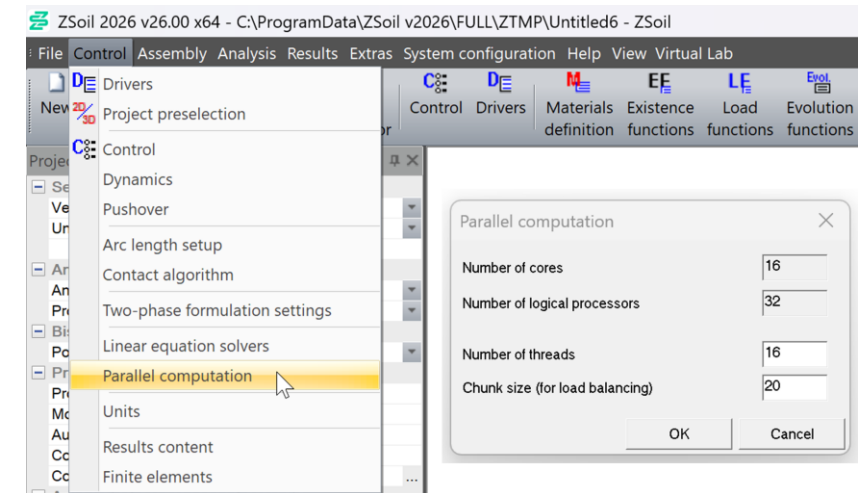
News since ZSoil Day 2025

ZSoil 2026



ZSoil 2026 improved speed, modelling options, and reliability

- Parallelisation of the calculation module
- Anisotropic small-strain stiffness extension to the Hardening Soil model
- Active Learning Reliability (ALR) added to the probabilistic module
- Various pre- and post-processing improvements



Quality assurance / benchmarking

Expanded QA testing to catch defects earlier and improve reliability

ZSoil Unittesting

This is a report of the unit tests carried out for ZSoil using the python "unittest" package together with the third party module "HTMLTestRunner".

Tester: zsoil_tests Start Time: 2026-08-27 11:47:17 Duration: 0:00:09.405849 Status: ALL 85 Pass 83 Failure 2, Passing rate: 97.65%

97.65% 85 tests — 83 passed, 2 failed, 0 errors

BY CATEGORY

Rows are sorted with the most failures/errors first, so problem clusters (a shared element type, material model, or problem type) surface immediately.

CATEGORY	TESTS	PASS	FAIL	ERROR
PROBLEM_TYPE:DEFORMATION	80	78	2	0
ANALYSIS_TYPE:3D	36	34	2	0
MATERIAL:EPL_FIB_B	14	12	2	0
ELEMENT:BEL2	14	13	1	0
ELEMENT:SQ4	3	2	1	0
MATERIAL:LAYERED_S	1	0	1	0
MATERIAL:Elastic	68	68	0	0
ANALYSIS_TYPE:plane strain	28	28	0	0
ELEMENT:Q4	24	24	0	0
ELEMENT:B8	22	22	0	0
ANALYSIS_TYPE:axisymmetric	11	11	0	0
ANALYSIS_TYPE:2D	10	10	0	0
ELEMENT:L2_bond	9	9	0	0
MATERIAL:Drucker Prager	9	9	0	0
ELEMENT:TR52	8	8	0	0
MATERIAL:EPL_TRUSS	8	8	0	0
ELEMENT:C_Q4	6	6	0	0
MACRO_ELEMENTS:anchor	6	6	0	0
ELEMENT:C_L2	5	5	0	0

Berlin Sand benchmark

Benchmark problem "Excavation in Berlin Sand" - well documented in Schweiger (2002).

All 20 checks are within noise tolerance.

Comparing ZSoil version 26.05 build 3263 (tmp) against ZSoil version 26.02 build 3190 (ref).

Check	tmp	ref	Diff	Rel. diff	Tolerance	Status
Anchor force row 1, time history (max diff)	-	-	max(diff) = 0.0007935 kN	-	±0.8484 kN	NOISE
Anchor force row 2, time history (max diff)	-	-	max(diff) = 0.0001831 kN	-	±1.073 kN	NOISE
Anchor force row 3, time history (max diff)	-	-	max(diff) = 0.0001831 kN	-	±1.012 kN	NOISE
Anchor mobilized traction, all steps (max diff)	-	-	max(diff) = 0.00946 kPa	-	±0.6 kPa	NOISE
Max negative bending moment, time history (max diff)	-	-	max(diff) = 0.03345 kNm/m	-	±0.4743 kNm/m	NOISE
Max positive bending moment, time history (max diff)	-	-	max(diff) = 0.01962 kNm/m	-	±0.8535 kNm/m	NOISE
Max settlement behind wall, time history (max diff)	-	-	max(diff) = 0.004617 mm	-	±0.02937 mm	NOISE
Max wall horiz. displacement, time history (max diff)	-	-	max(diff) = 0.001565 mm	-	±0.04355 mm	NOISE
Max. horizontal wall displacement at T=9	-33.55 [mm]	-33.55 [mm]	0.0001155 [mm]	-3.442e-06	±0.04355 [mm]	NOISE
Max. settlement behind wall at T=9	-19.37 [mm]	-19.37 [mm]	-8.941e-05 [mm]	4.617e-06	±0.02937 [mm]	NOISE
Max. wall bending moment at T=9	418.6 [kNm/m]	418.6 [kNm/m]	-0.002061 [kNm/m]	-4.923e-06	±0.4286 [kNm/m]	NOISE
Min. normal interface stress at T=9	-349.9 [kPa]	-349.9 [kPa]	-6.104e-05 [kPa]	1.744e-07	±0.4499 [kPa]	NOISE

► **Displacement map** Nodal displacement field, X (max |diff|): NOISE, Nodal displacement field, Y (max |diff|): NOISE

► **Wall diagrams (moment / shear / displacement)** Wall bending moment, all steps (max |diff|): NOISE, Wall shear force, all steps (max |diff|): NOISE, Wall horizontal displacement, all steps (max |diff|): NOISE

► **Earth pressures on wall** Wall normal interface stress, all steps (max |diff|): NOISE

► **Settlement trough** Settlement trough, all steps (max |diff|): NOISE

Conferences

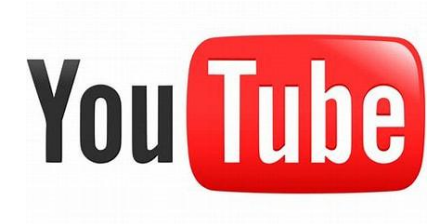
Presence at the ICSMGE in Vienna and CompDSSI Conference in Italy



What's to come ?

What's to come ?

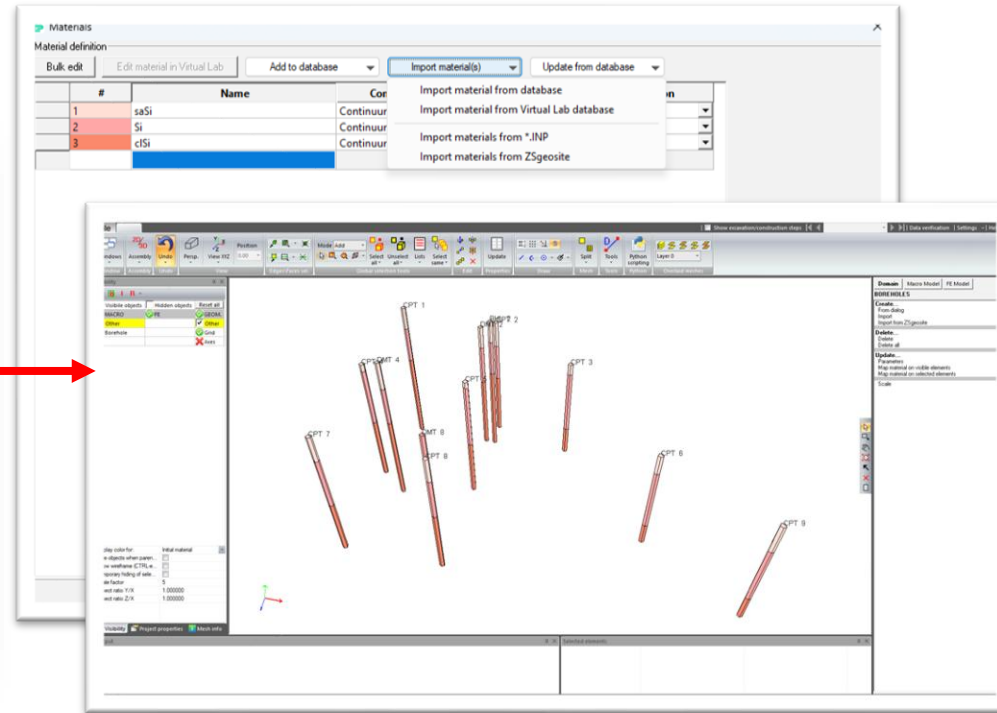
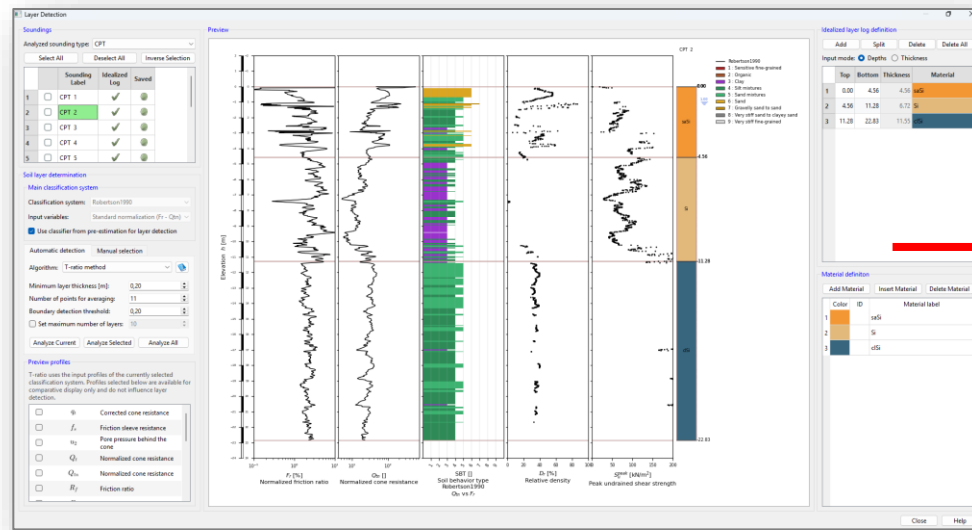
- **Annual releases in Nov/Dec** (v27, v28, etc.) with minor updates during the year.
- **More content** on our **YouTube** channel (ZSoil - @ZSoil-since1985) with a focus on topics for new users.
- Continued visibility/presence on **LinkedIn** and at **conferences**.
- In addition to adding new features, we are continuously working on improving to the **speed** and **user-friendliness** of ZSoil
- Continued high level **customer support**. And please don't hesitate to contact us if you have a wish-list of things you would like implemented in the software no matter how big or small. We welcome your **feedback** and use it to drive new projects !



ZSgeosite



Coming soon



Domain
Macro Model
FE Model

IOREHOLES

Create...

- From dialog
- Import
- Import from ZSgeosite

Delete...

- Delete
- Delete all

Update...

- Parameters
- Map material on visible elements
- Map material on selected elements
- Scale

Complete workflow from Site investigation to Geotechnical model definition and ZSoil model generation.

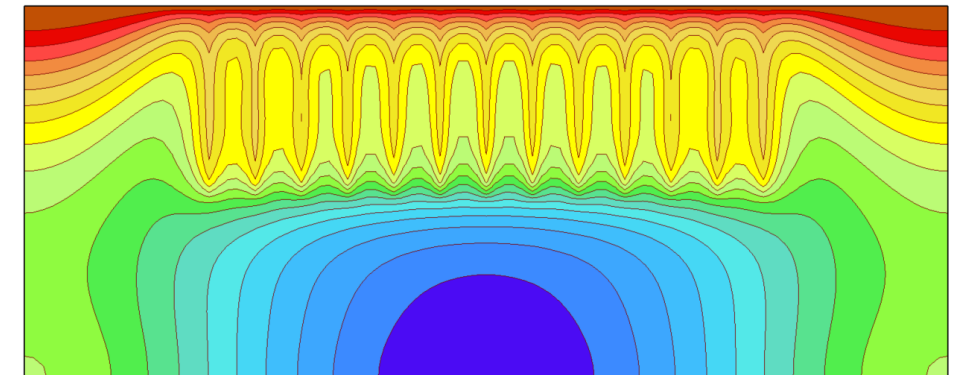
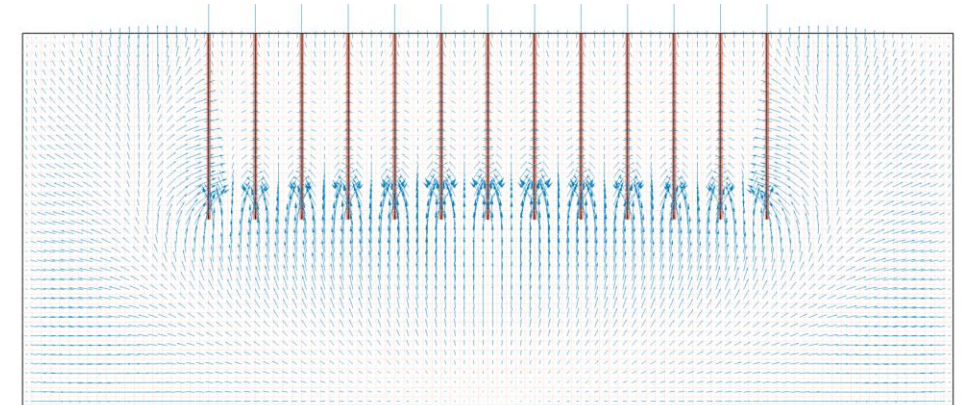
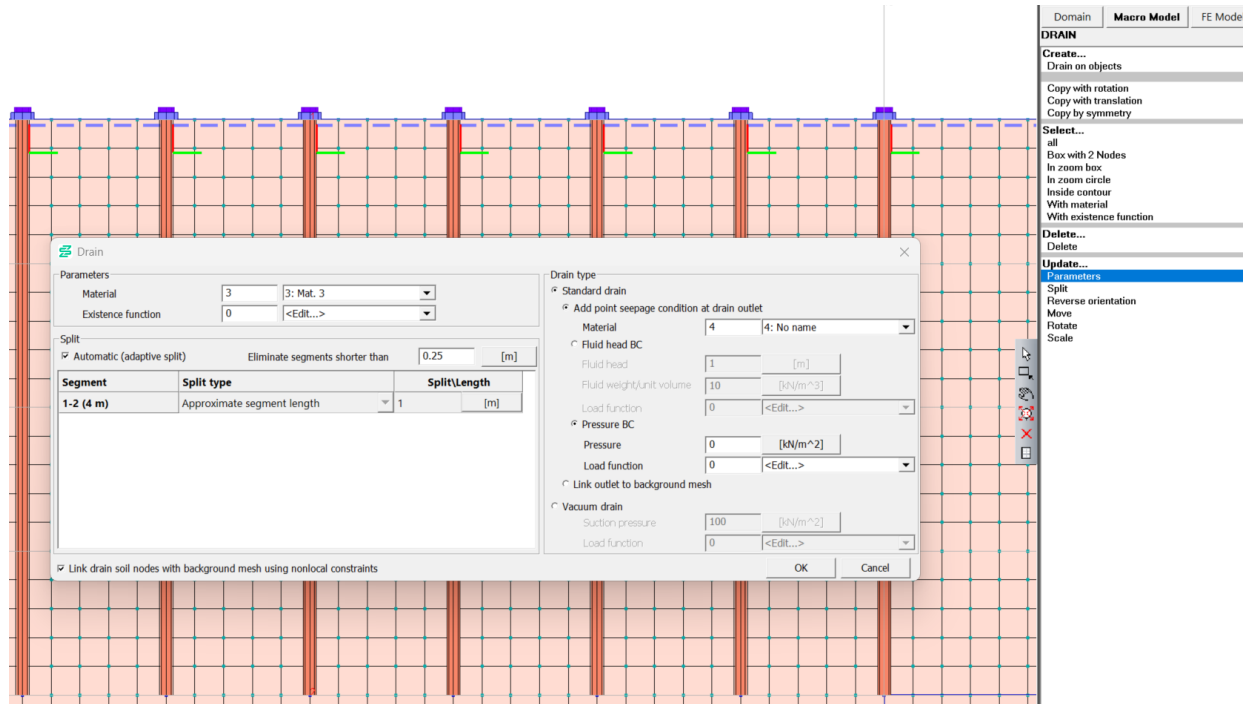
- Beta version available end of September
- Included for ZSoil 27 license holders
- Also available as a standalone

ZSoil 2027

ZSoil 2027 expands modelling and automation workflows

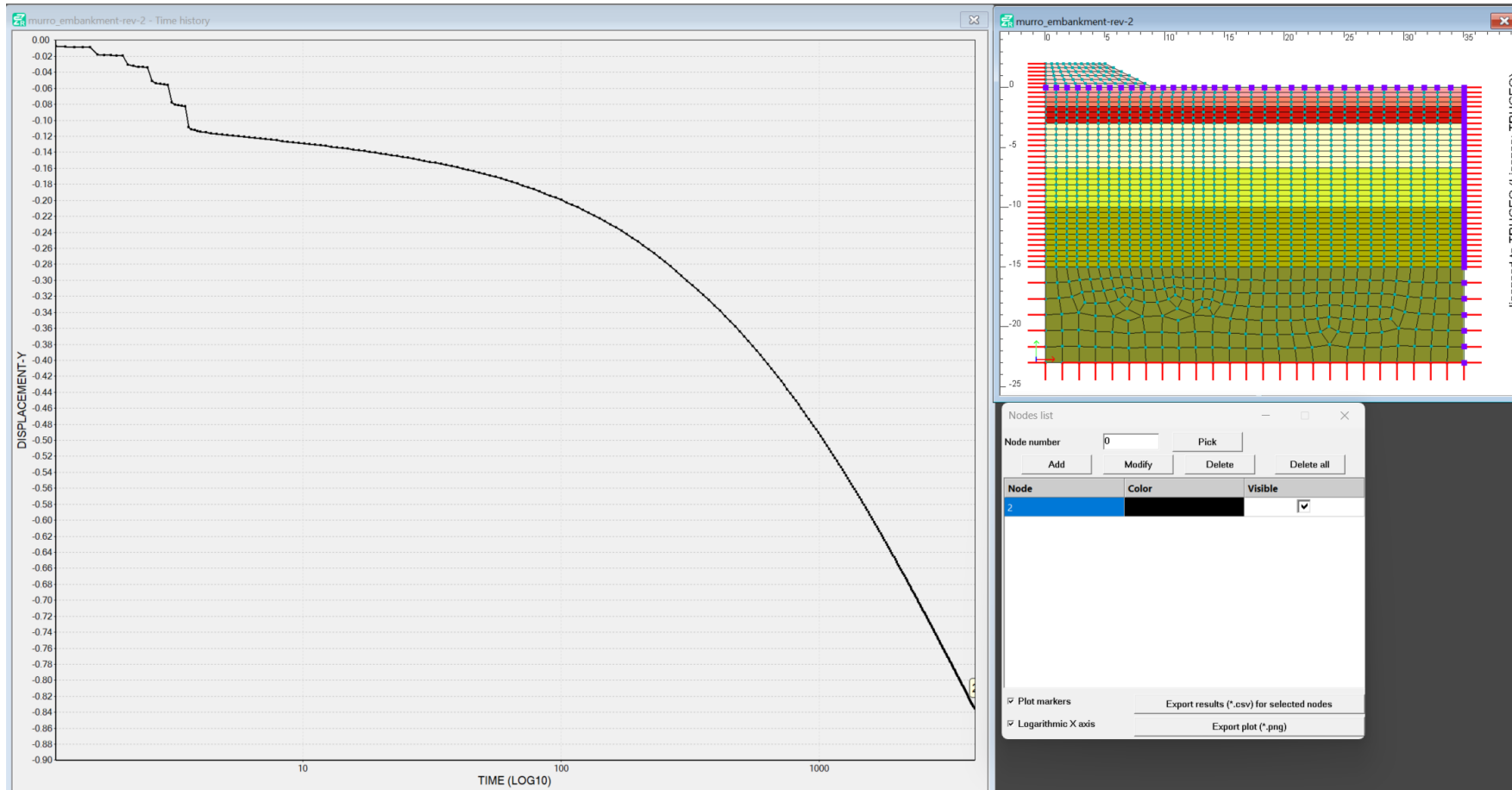
Macro Drain elements

- 1D Macro elements for easy modelling of dewatering or Prefabricated Vertical Drains (PVDs)



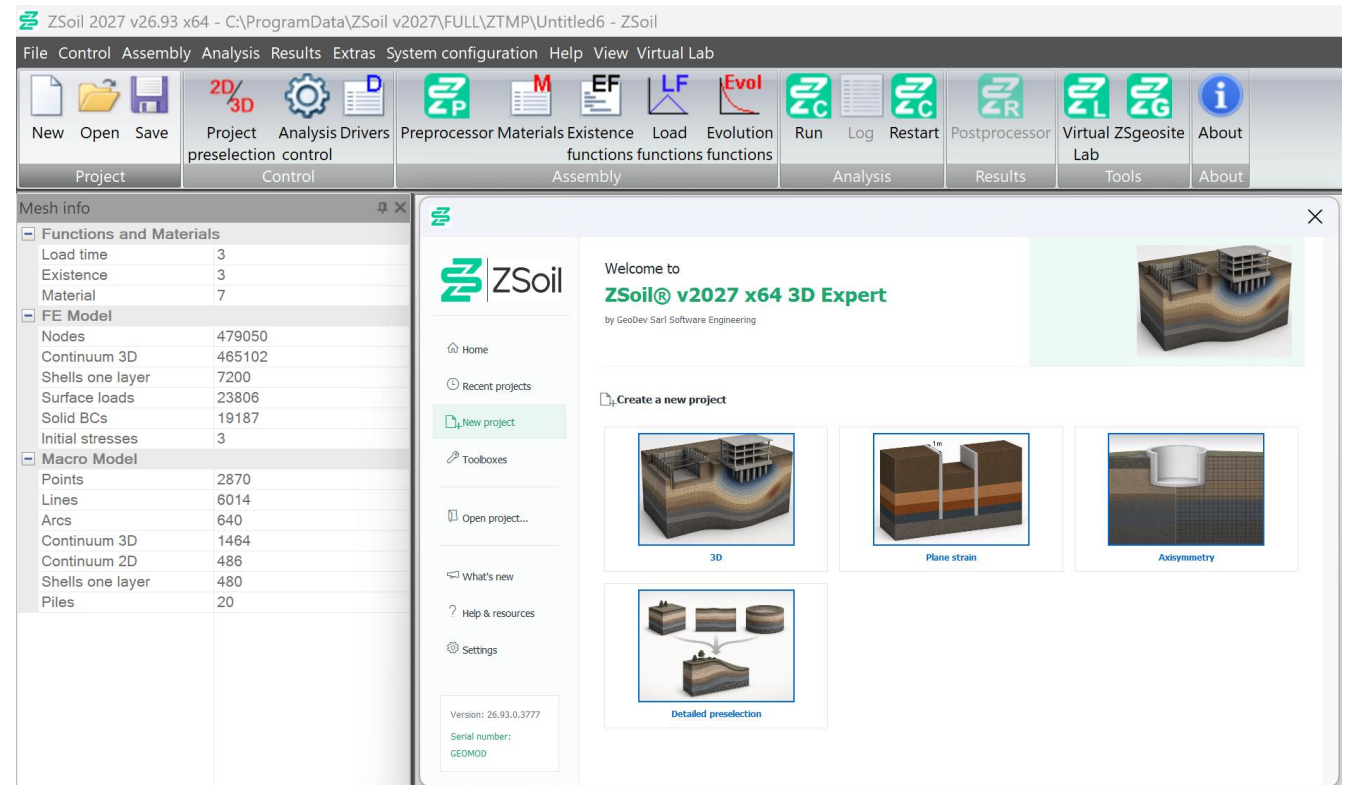
Soft Soil Creep (SSC) model

To complement the Hardening Soil model



General improvements

- Model Operations, Interaction & Manipulation
- Visuals - Refreshed Welcome Screen and Logos
- Documentation (main aim to improve Information Retreivability)



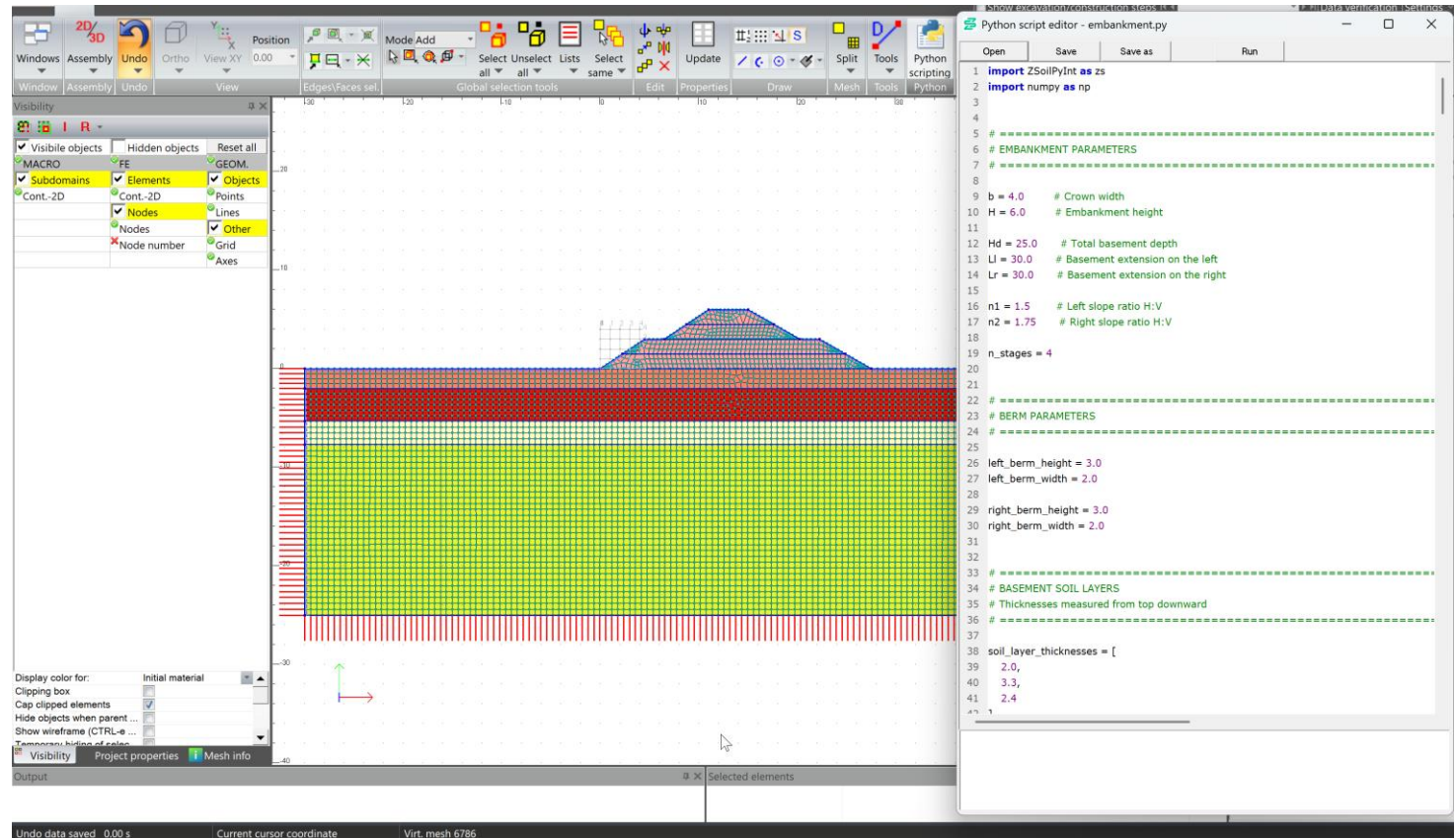
Python scripting

Python scripting enabling automated engineering workflows

- AI is the hot topic. We are focused on tools to accelerate users workflows.

ZSoil Open Source material:

- ZSoil FEM on Github
- Existing Python SDK for postprocessing ZSoilPy3 → **zsoil-output**
- New Python SDK for preprocessing
 - **zsoil-input**



Python scripting

➤ Live demo

THANK YOU !!!

Contact us at : info@geo-dev.ch



zsoil.com