PEYSANJ 3.0

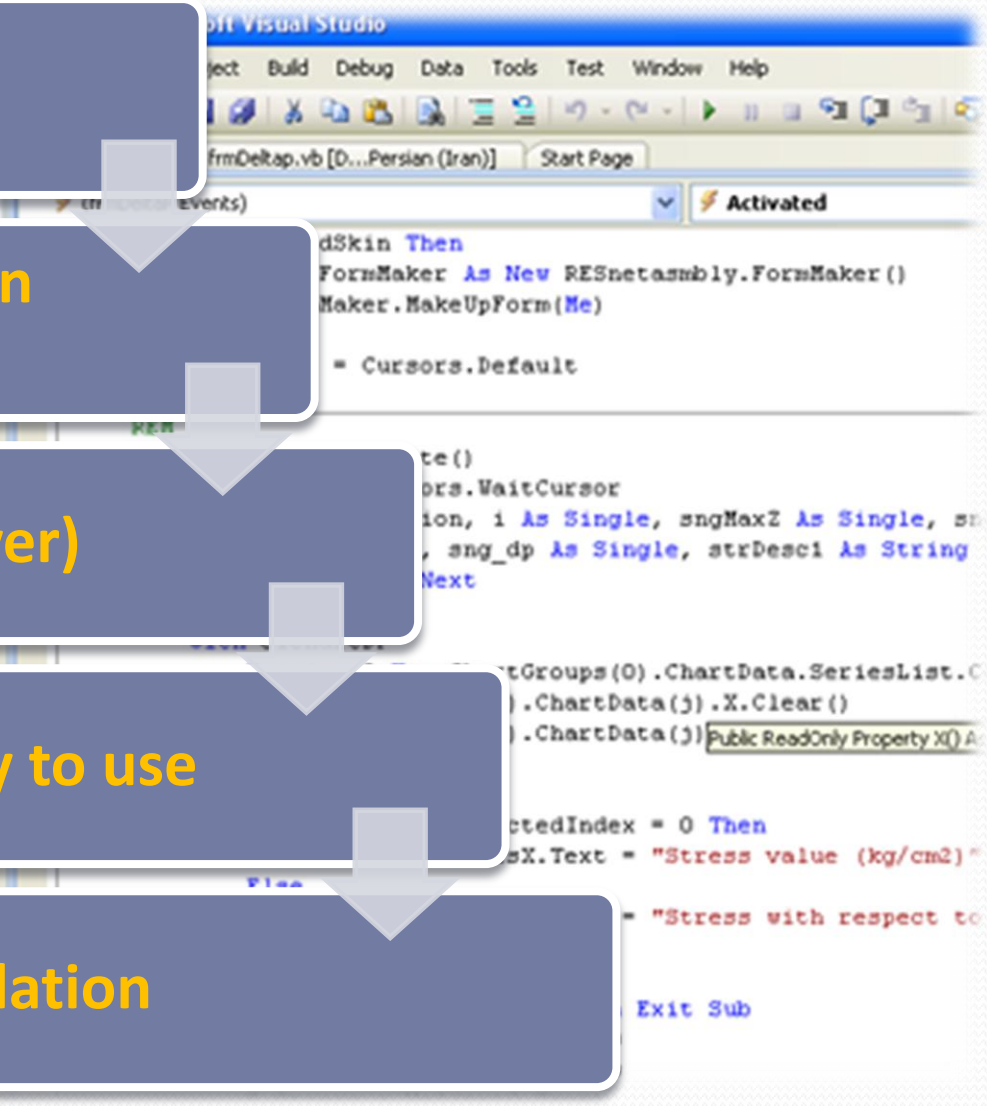
Geotechnical Eng. Software

Designed & Developed by : Novo Tech Software Ltd.

www.novotechSoftware.com

INTRODUCTION

- PEYSANJ Started at 1997 with Bearing Capacity Module
- Current version with more than 5 modules
- Database (Access / SQL Server)
- User friendly design, easy to use
- Single / Network installation



PEYSANJ MODULES:

Shallow Footings

- Shear Failure
- Settlement
- Bearing Capacity
- Stress variation below footing

Retaining Walls

- Lateral earth pressures coefficients
- Stress distribution behind wall

Slope stability

- Limit equilibrium analysis based on Fang handbook' table

Plate Load Test

- Computing Ks30
- Ks30 Correction
- Ks30 Conversion

Pressure Meter Test

- Menard Modulus (Em)
- Limit Pressure (Pl)
- Considering calibration

Liquefaction

- Based on SPT, BPT, Vs
- 6 Methods for CRR
- Considering MSF
- CRR, CSR, Safety factor calculation along depth
- Lateral displacement

REFERENCES :

Soil Shear Failure

- Hansen
- Effect of water level

Liquefaction

Lateral Disp. Method:

- Zhang & Robertson, 2004

CRR methods

- Japan' highway code
- Kokusho 1983
- Chinese code
- Seed 1983
- Shibata 1981
- Tokimatsu/Yushimi 1983
- NCEER workshop 1996
- Vancouver Task Force 2007

Supported tests:

- SPT
- BPT
- Shear Wave Velocity

Settlement

- Goodier & Timoshenko
- Rigid (semi-infinite)
- Average (semi-infinite)
- Saturated/Un-saturated consolidation

Slope stability

- Limit equilibrium analysis
- Fang handbook

Stress below footing

- Westergard
- 2:1 slope

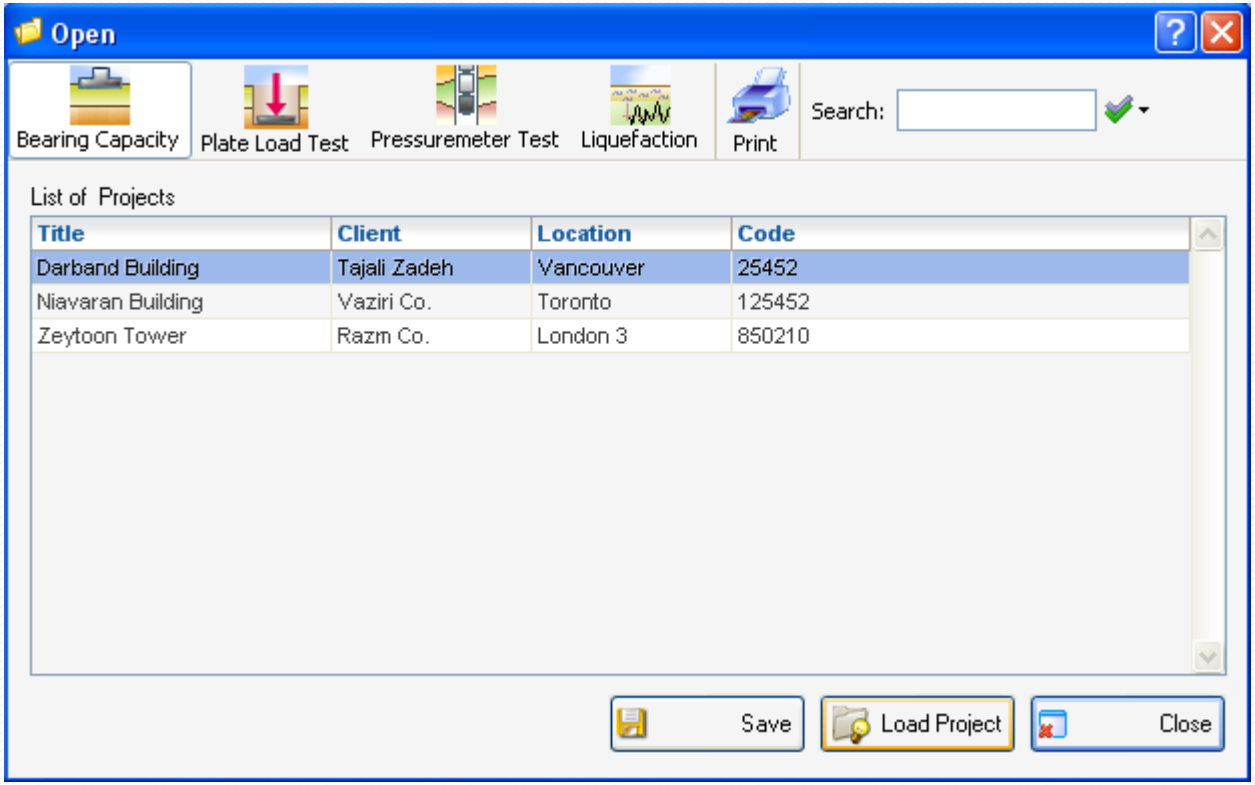
Lateral Earth Press.

- Rankin (Static)
- Columb (Static)
- Mononobe-Okabe

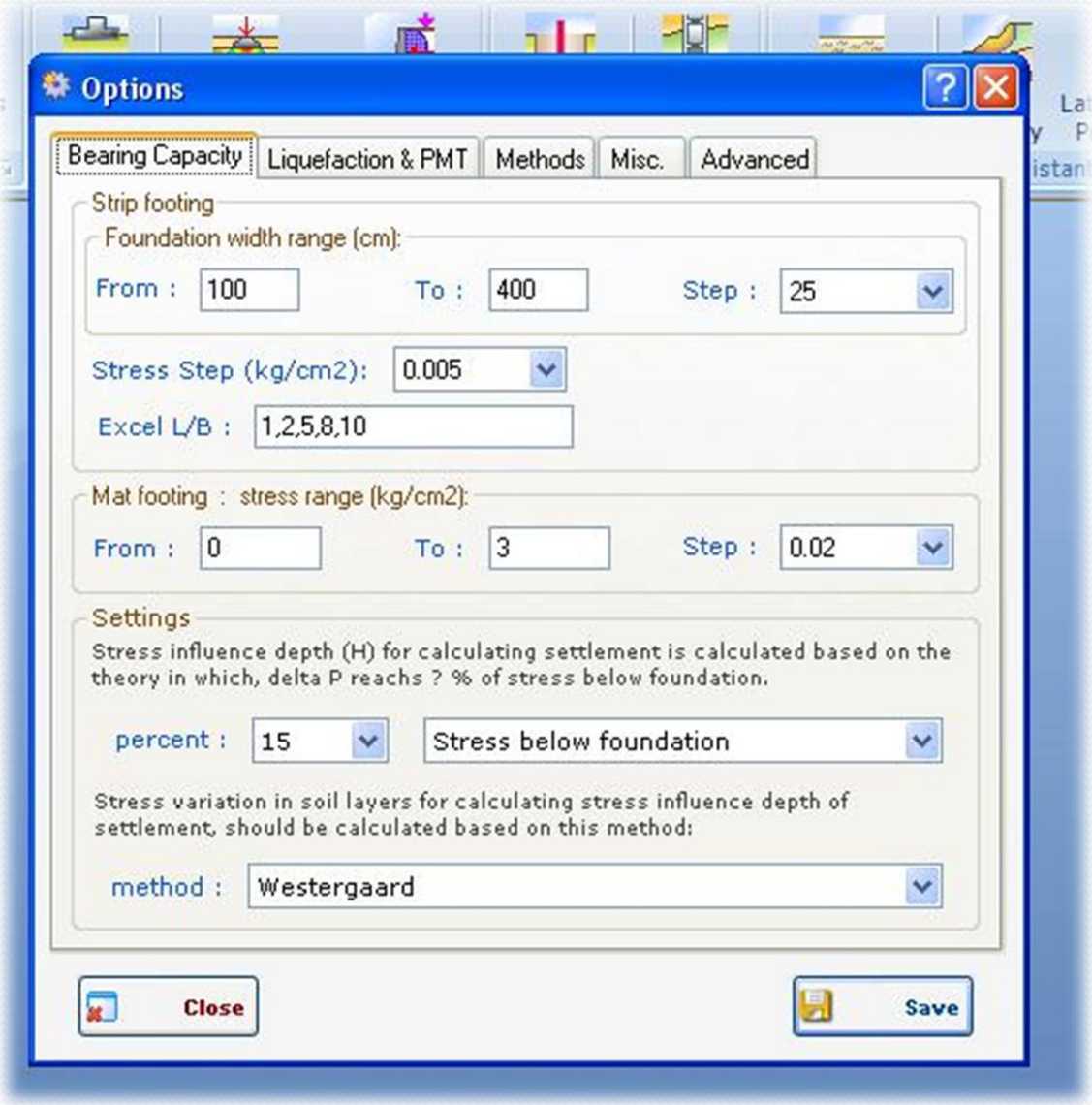
Pressure-meter

- ASTM D4719

PROJECTS LIST

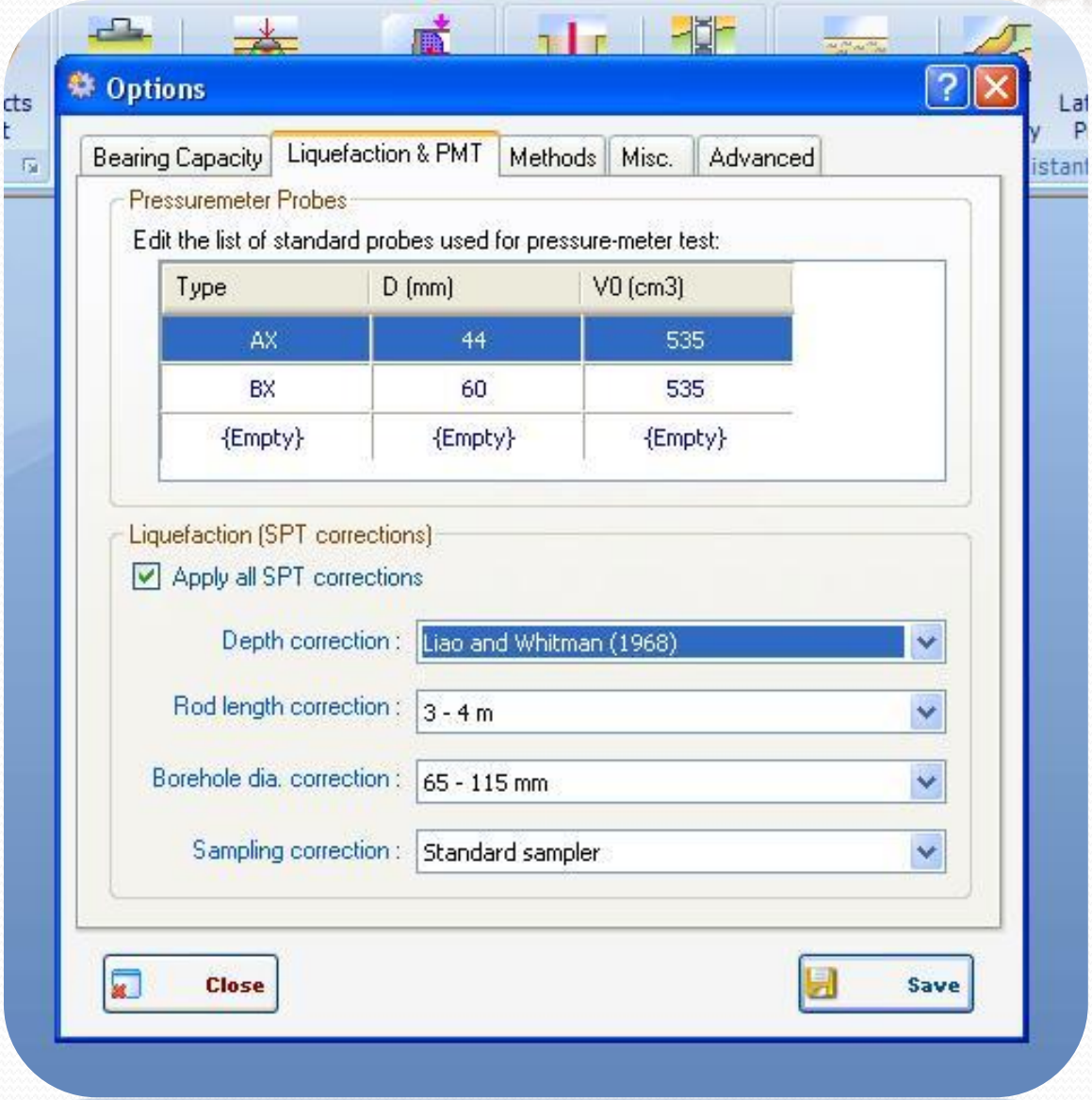


SETTING & PREFERENCES



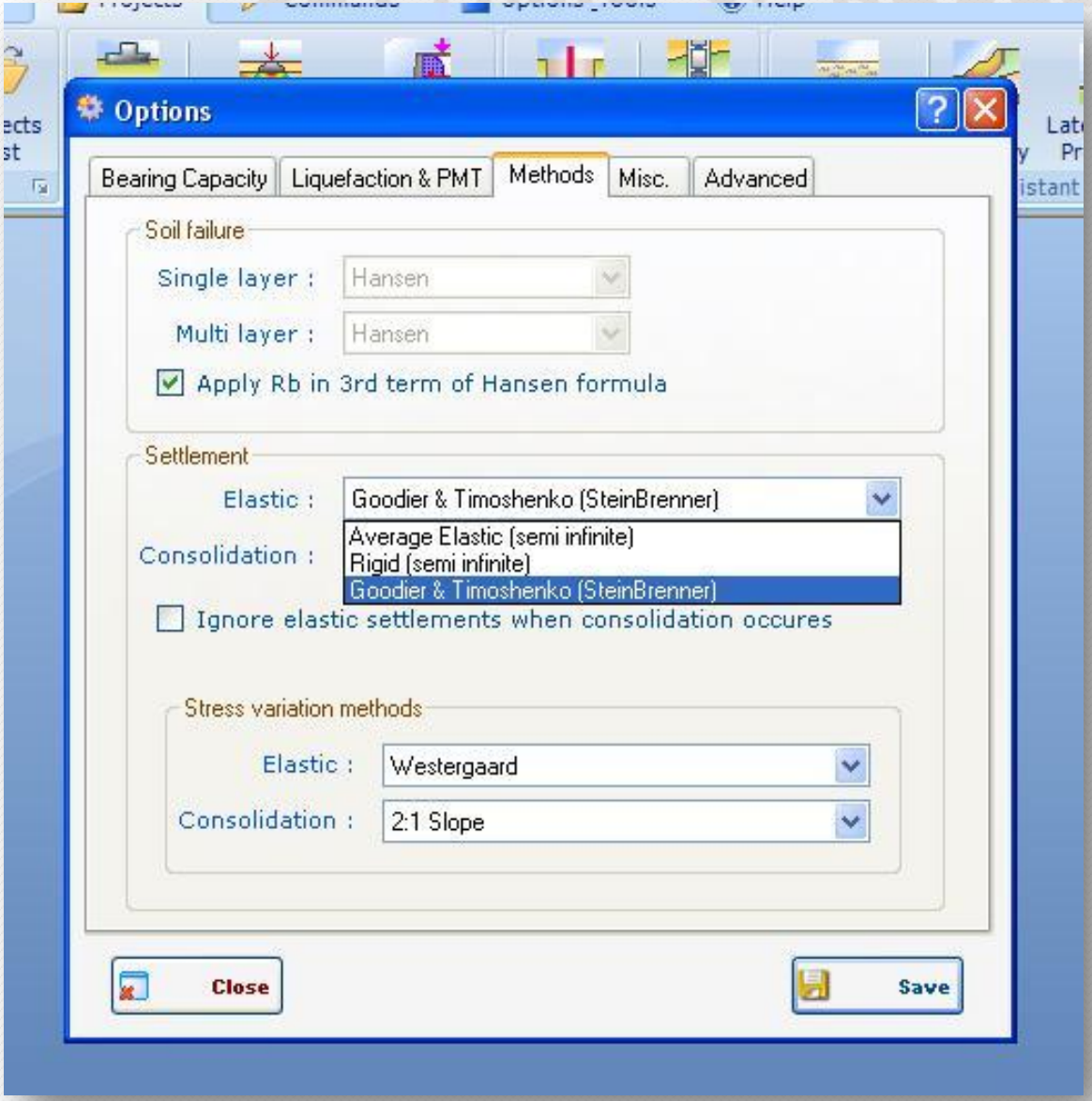
All settings for level of accuracy in bearing capacity analysis of multi-layer soils can be set by user

SETTING & PREFERENCES



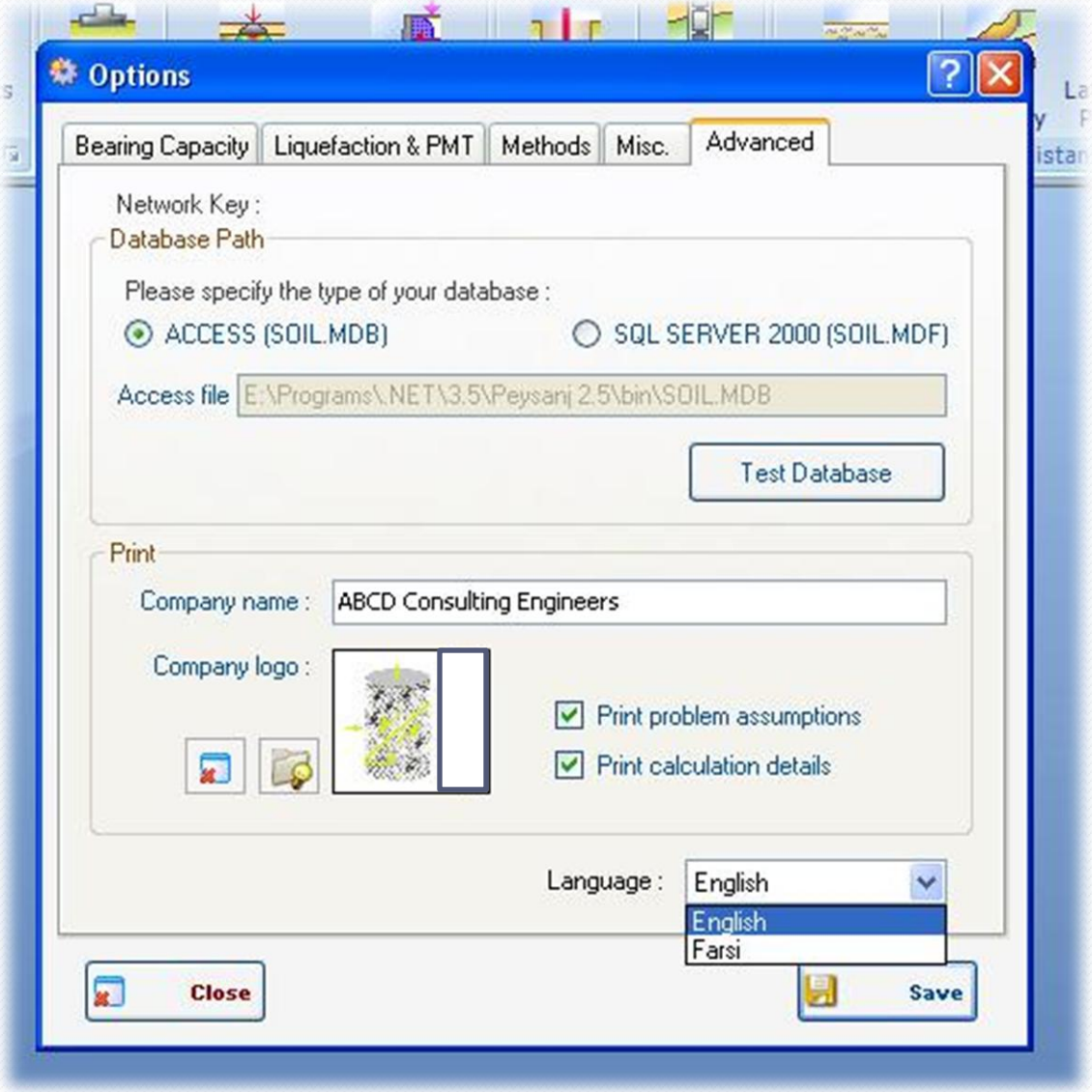
Correction factor for SPT during liquefaction analysis and list of pressure-meter tubes can be defined

SETTING & PREFERENCES



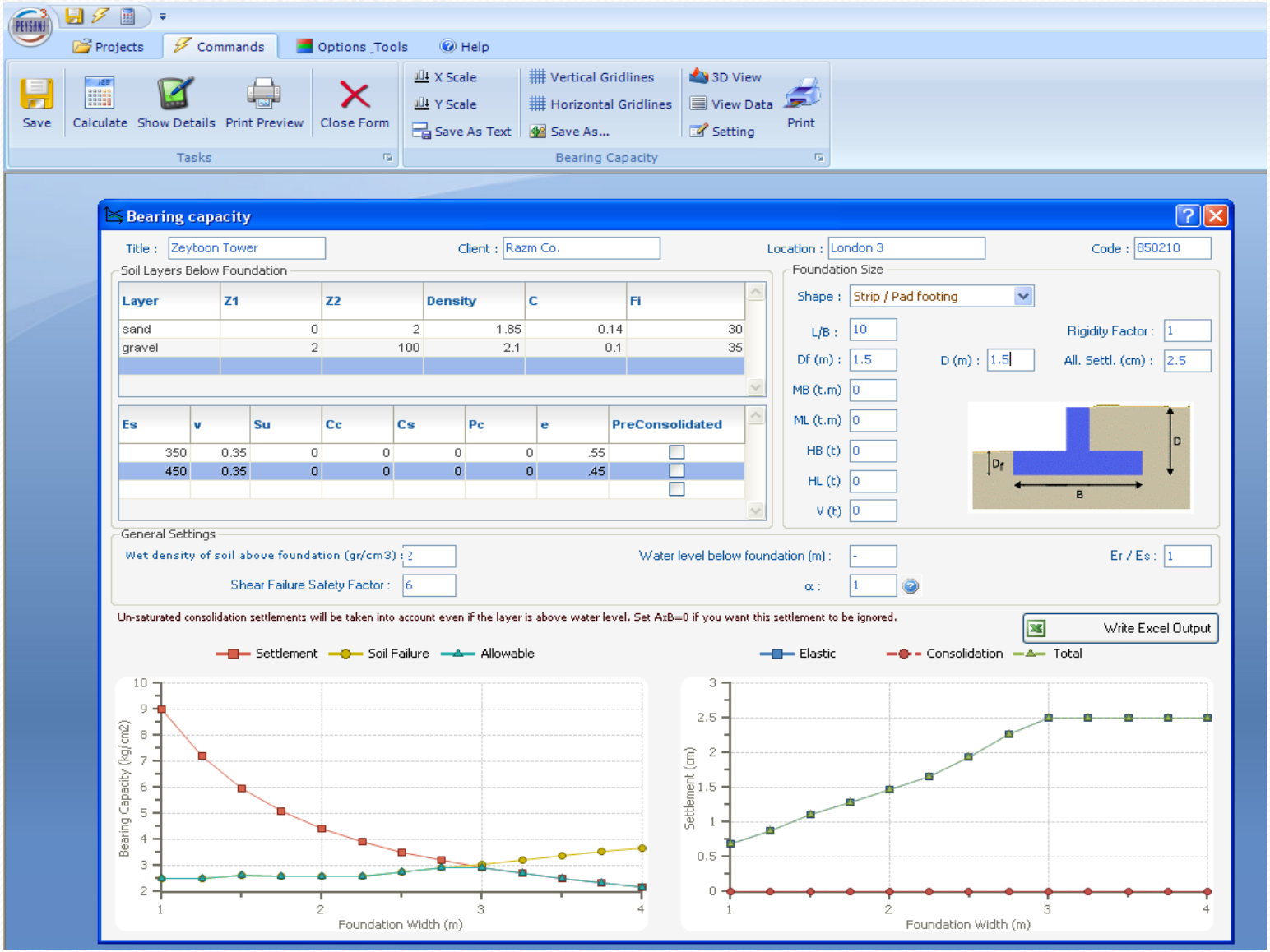
Settlement and soil failure parameters

SETTING & PREFERENCES



BEARING CAPACITY

ALLOWABLE BEARING CAPACITY



BEARING CAPACITY

SETTLEMENTS

Projects | Commands | Options _Tools | Help | Help contents | Exit

Bearing capacity

Title : Shaghayegh #2 Building

Client : Javi construction company

Location : Tehran

Code : 860215

Layer Desc	C (kg/cm2)	Fi (deg)	Es(kg/cm2)	v	g (gr/cm3)	Z1 (m)	Z2 (m)	Su (kg/cm	Cc	Cs	Pc(kg/cm2)	e.	PreCons
Gravel	0.06	32	400	0.35	1.85	0	3.5	0	0	0	0	0.45	☐
Sand	0.1	28	300	0.35	1.75	3.5	100	0	0	0	0	0.5	☐

General

Wet density of soil above foundation (gr/cm3) : 1.85

Water level below foundation (m) : -

Principal

All. Settl. (cm) : 2.5

Rigidity Factor : 1

Safety Factor : 3

Er / Es : 1

A x B : 1

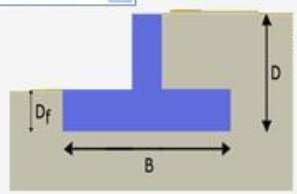
Foundation Size

Shape : Strip / Pad footing

L/B : 10

Df (m) : 1

D (m) : 3



MB (t.m) : 0

ML (t.m) : 0

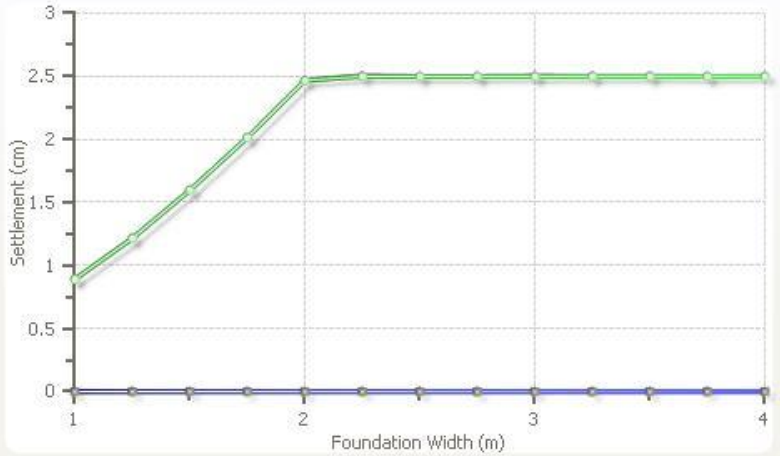
HB (t) : 0

HL (t) : 0

V (t) : 0

Un-saturated consolidation settlements will be taken into account even if the layer is above water level. Set AxB=0 if you want this settlement to be ignored.

Bearing Capacity | Settlement | Export to Excel



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BEARING CAPACITY

CALCULATION DETAILS

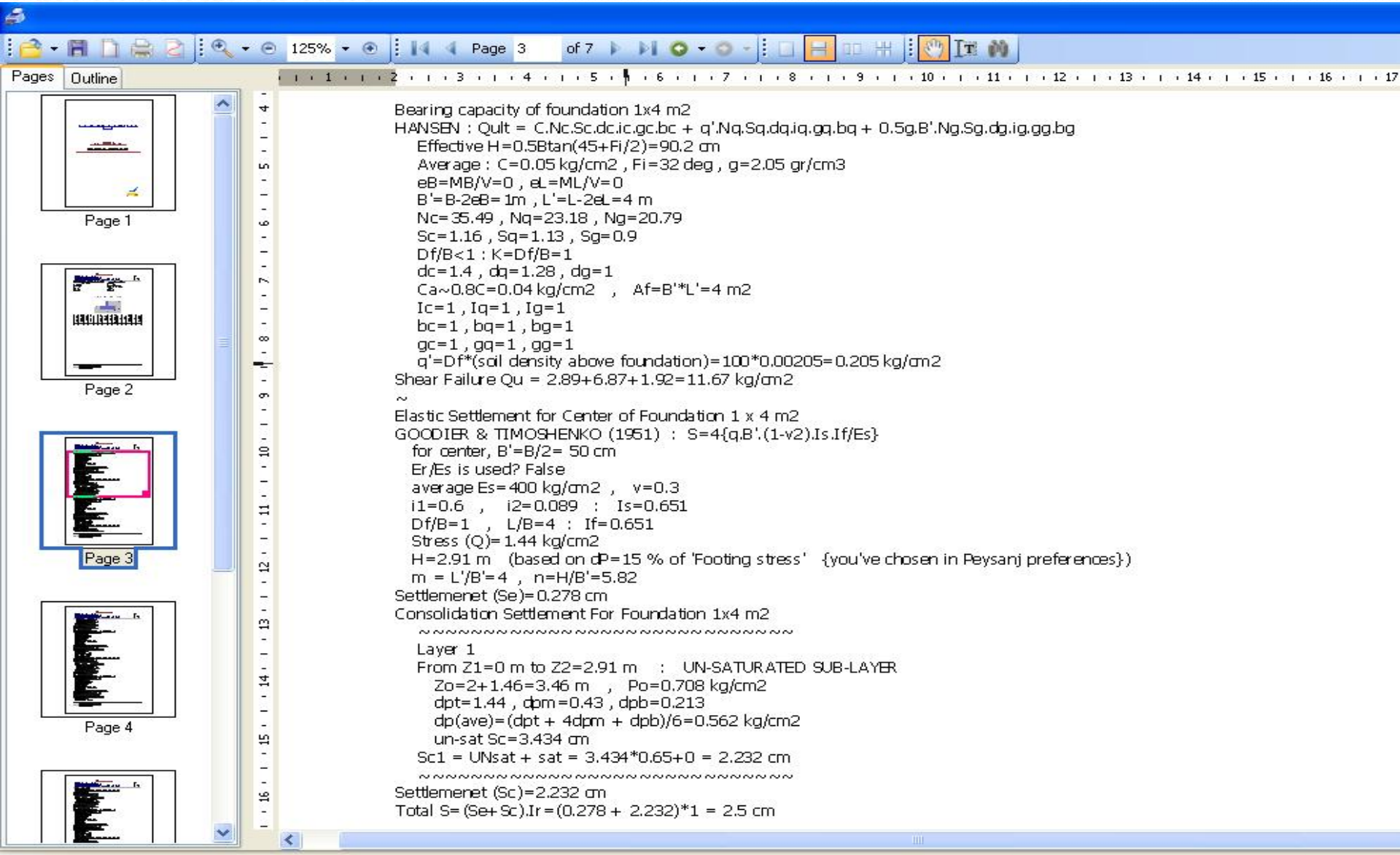


PLATE LOAD TEST

Projects | Commands | Options _Tools | Help | Help contents | Exit

Save | Calculate | Show Details | Print Preview | Close Form — Tasks

X Scale | Y Scale | Save As Text | Vertical Gridlines | Horizontal Gridlines | Save As... | 3D View | View Data | Setting | Print — Charts

Plate Load Test

General | Field Tests

Job Information

Title : Jamalabad Building

Client : Mr. Chizari

Location : Tehran

Code : 831102

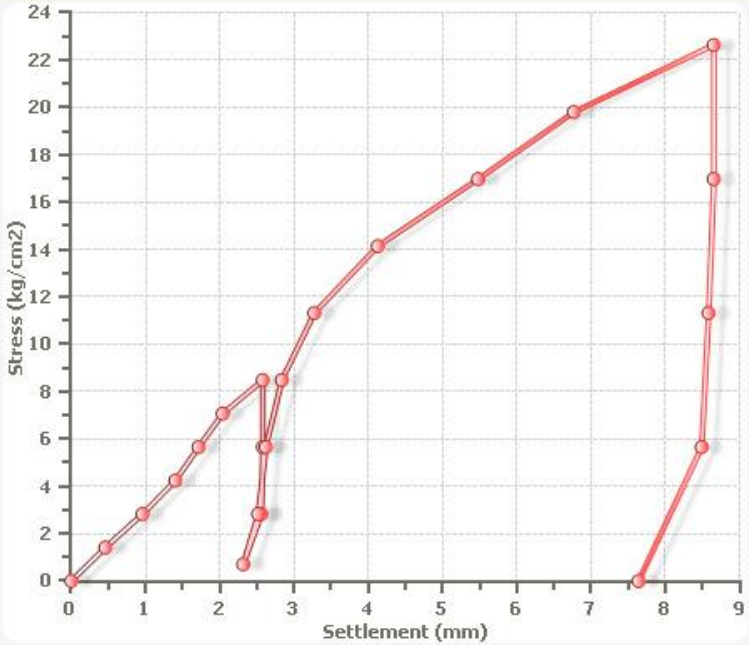
Test

Test Depth (m) : 0

Plate Diameter (cm) : 30

Moisture : Dry

Modify Ks for plate thickness ☑



P1 (kg/cm2)	P2 (kg/cm2)	Calculated Ks (kg/cm3)	Modofied Ks (kg/cm3)
☑ 0	8.49	32.9	19.2
☑ 8.49	22.64	23.3	14.4

Average modified Ks (kg/cm3) : 28.1

Modofied Ks (kg/cm3) = 16.8

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PRESSURE-METER TEST (ASTM D4719)

Projects | Commands | Options _Tools | Help | Help contents | Exit

Save | Calculate | Show Details | Print Preview | Close Form — Tasks

X Scale | Y Scale | Save As Text | Vertical Gridlines | Horizontal Gridlines | Save As... | 3D View | View Data | Setting | Print — Charts

Pressure Meter Test (ASTM D4719)

General | Field Data

Job Information

Title : Assaluyeh Dynamic Compaction

Client : Petrochemical Industries Development Company

Location : Z4-1-BH5

Code : -

Test Condition

Depth (m) : 2 ν : 0.35

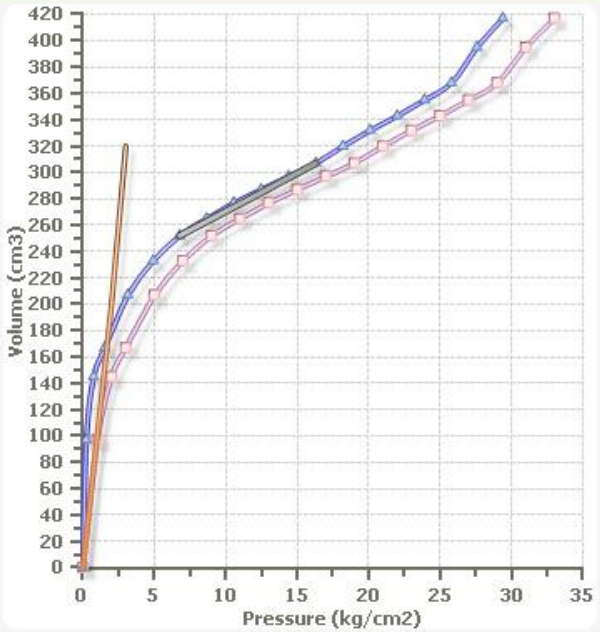
Water Level (m) : -

Probe Type

Type : BX V0 (cm3) : 535

Diameter (mm) =60 Probes

Number of points in elastic phase : 6



Menard modulus (Em) = 383.86 kg/cm2
Limit pressure (Pl) = 53.42 kg/cm2

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SLOPE STABILITY

Projects | Commands | Options _Tools | Help | Help contents | Exit

Save | Calculate | Show Details | Print Preview | Close Form — Tasks

X Scale | Y Scale | Save As Text | Vertical Gridlines | Horizontal Gridlines | Save As... | 3D View | View Data | Setting | Print — Charts

Slope stability analysis (limit equilibrium)

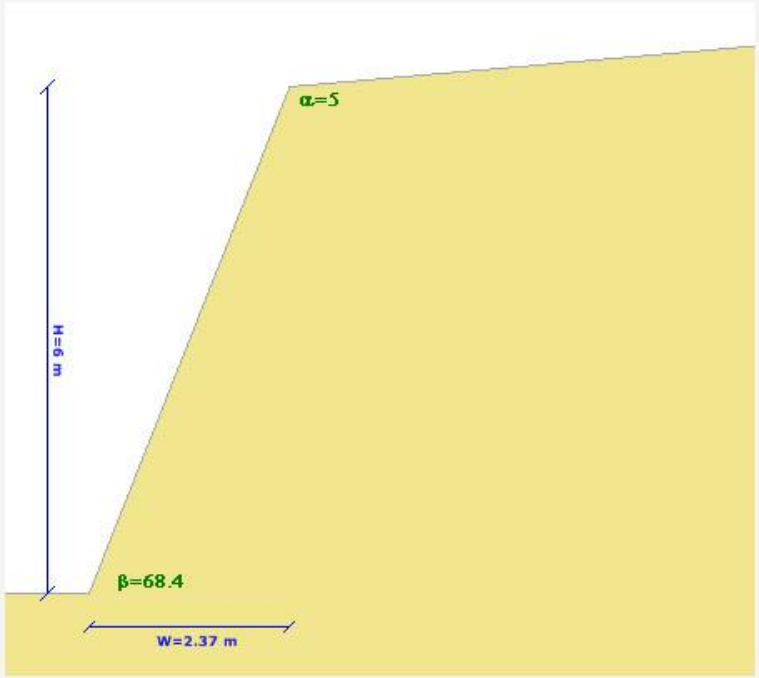
Soil and Slope parameters

Φ =	28
α =	5
S.F=	1
Soil density (gr/cm3) =	1.85
C (kg/cm2) =	0.1
Slope Height (m) =	6

Calculate

Ns = 11.1

β ~ 68.4



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STRESS BEHIND RETAINING WALL

LINEAR LOAD

Projects | Commands | Options _Tools | Help | Help contents | Exit

Projects List | Bearing Capacity | Stress Below Footing | Stress Behind Wall | Plate Load Test | Pressure Meter | Soil Liquefaction | Slope Stability | Lateral Earth Pressures | Ks calculator

File | Bearing Capacity | Field Tests | Assistant

Stress Distribution

Stress below footing | Stress behind wall

Load

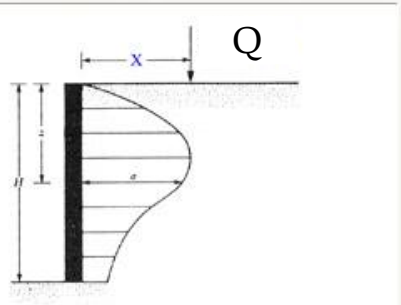
Linear load | Spread load

Wall height (m) : 6 | Q(kg / m) : 5000

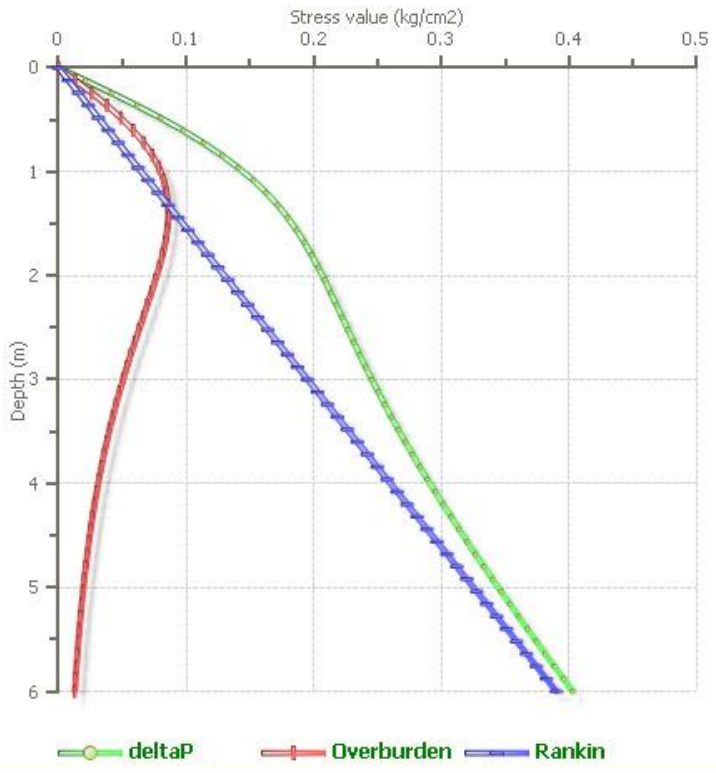
X (m) : 2

Add active earth pressure (Rankin)

Φ = 30 | g (gr/cm3) : 1.95



Close | Calculate



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RETAINING WALL

STRIP LOAD

Projects | Commands | Options _Tools | Help | Help contents | Exit

Projects List | Bearing Capacity | Stress Below Footing | Stress Behind Wall | Plate Load Test | Pressure Meter | Soil Liquefaction | Slope Stability | Lateral Earth Pressures | Ks calculator

File | Bearing Capacity | Field Tests | Assistant

Stress Distribution

Stress below footing | Stress behind wall

Load

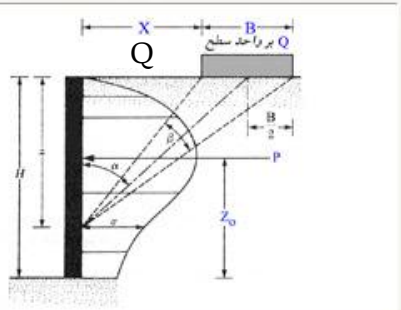
Linear load | Spread load

Wall height (m): 6 | Q(kg / cm2): 2.5

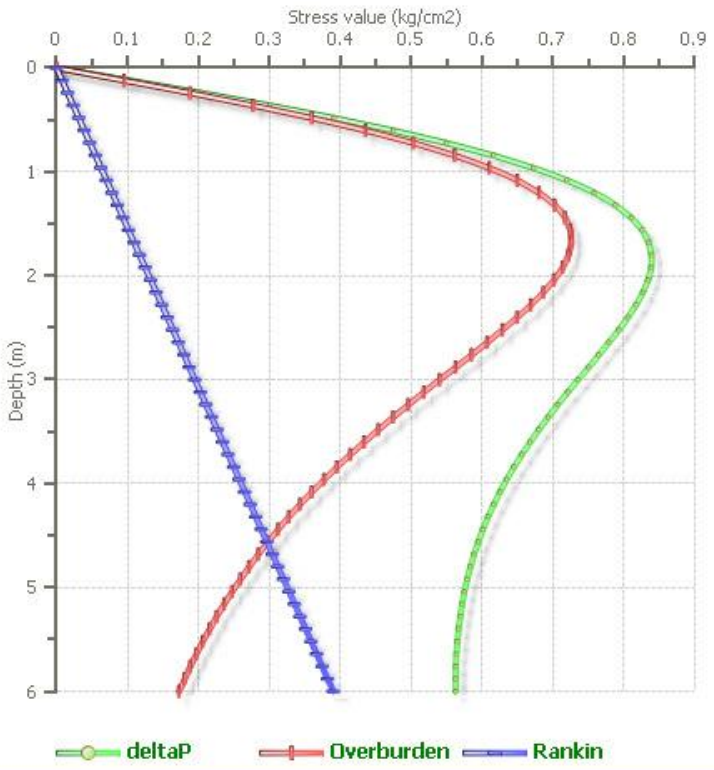
X (m): 2 | B (m): 2

Add active earth pressure (Rankin)

Φ = 30 | g (gr/cm3): 1.95



Close | Calculate



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RETAINING WALL

LATERAL EARTH PRESSURE K (STATIC & EARTHQUAKE)

Projects | Commands | Options _Tools | Help | Help contents | Exit

Projects List | Bearing Capacity | Stress Below Footing | Stress Behind Wall | Plate Load Test | Pressure Meter | Soil Liquefaction | Slope Stability | Lateral Earth Pressures | Ks calculator

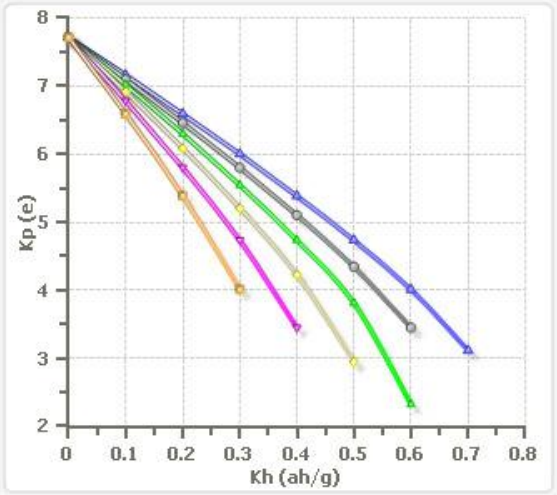
File | Bearing Capacity | Field Tests | Assistant

Lateral earth pressure coefficients

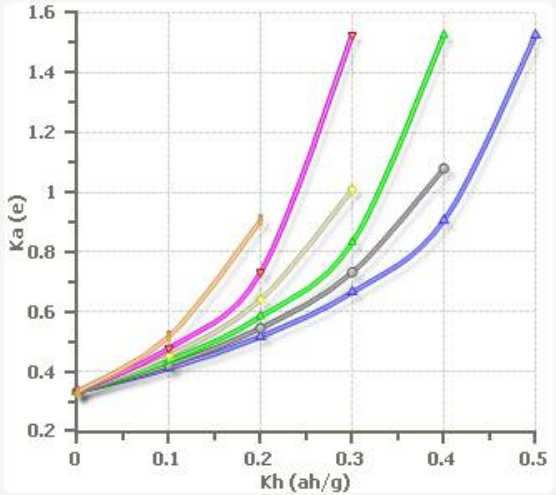
Data

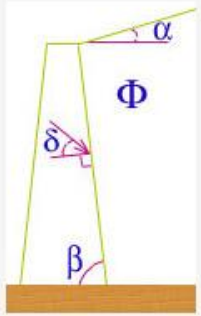
Φ= 32 δ= 0.65 Φ α= 5 β= 85 Calculate

Mononobe-Okabe Kpa



Mononobe-Okabe Kae





Rankin Earth Pressures (static)
Ka=0.311
Kp=3.196

Columnb Earth Pressures (static)
Ka=0.333
Kp=7.718

Close

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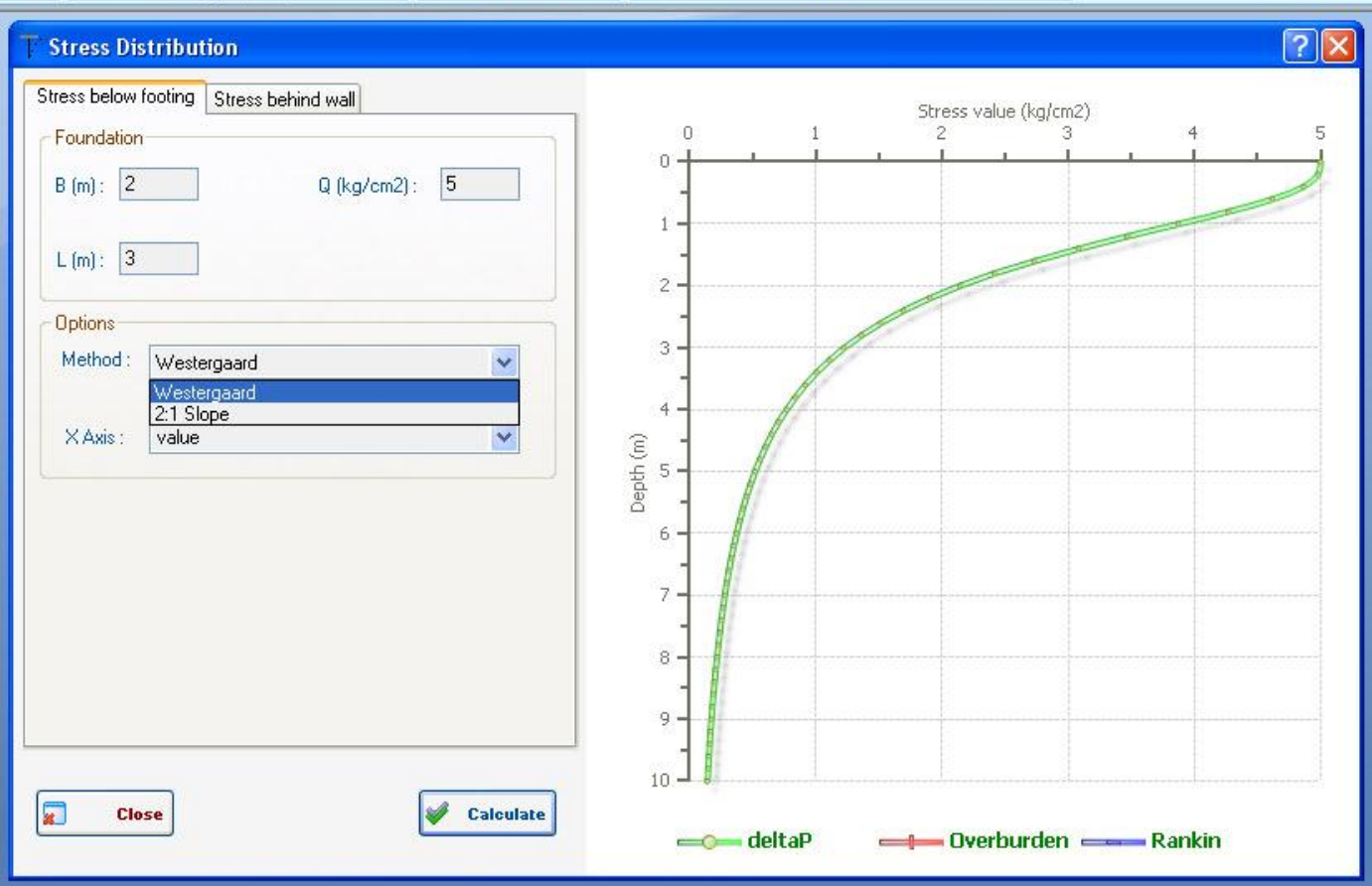
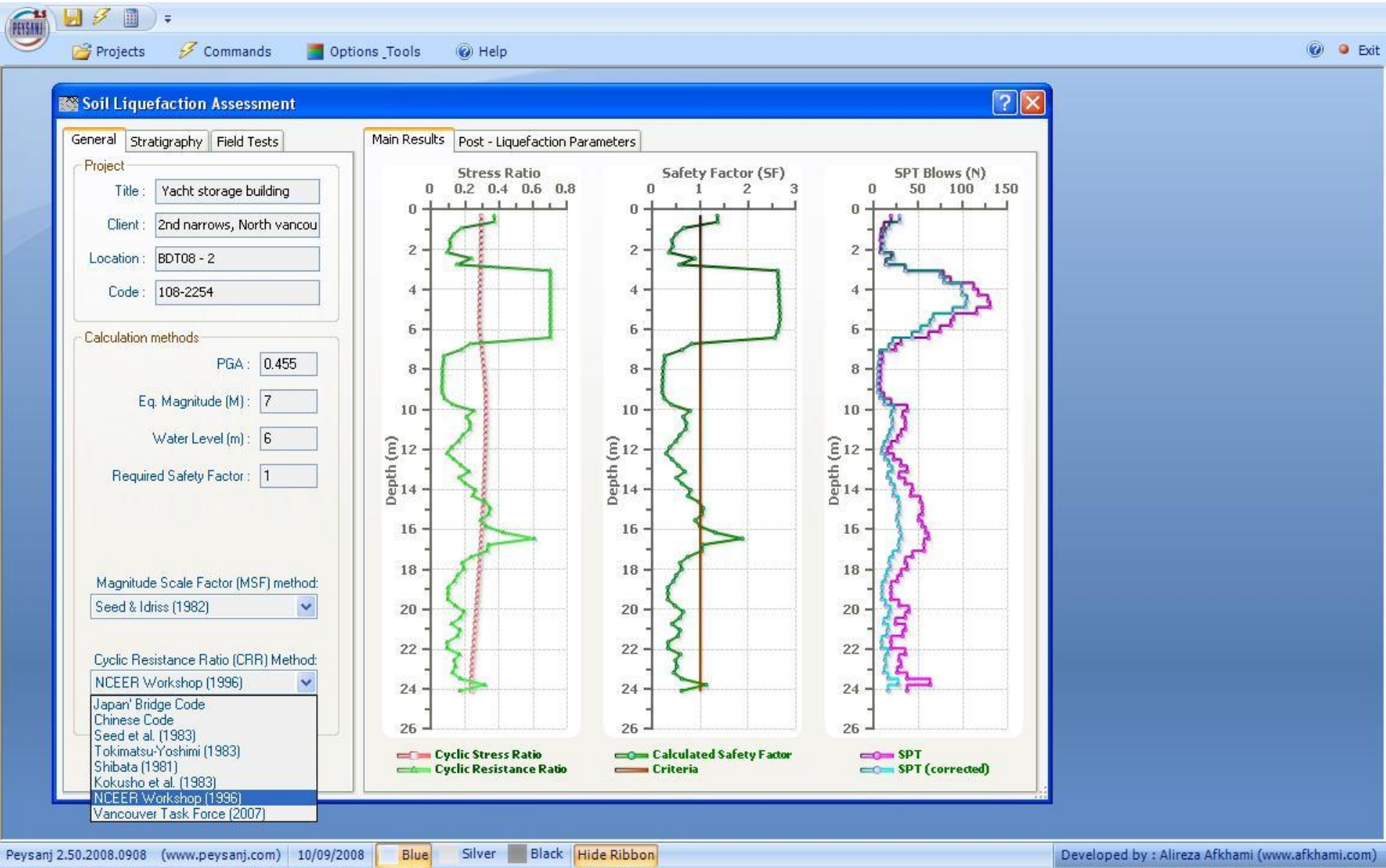
STRESS DISTRIBUTION

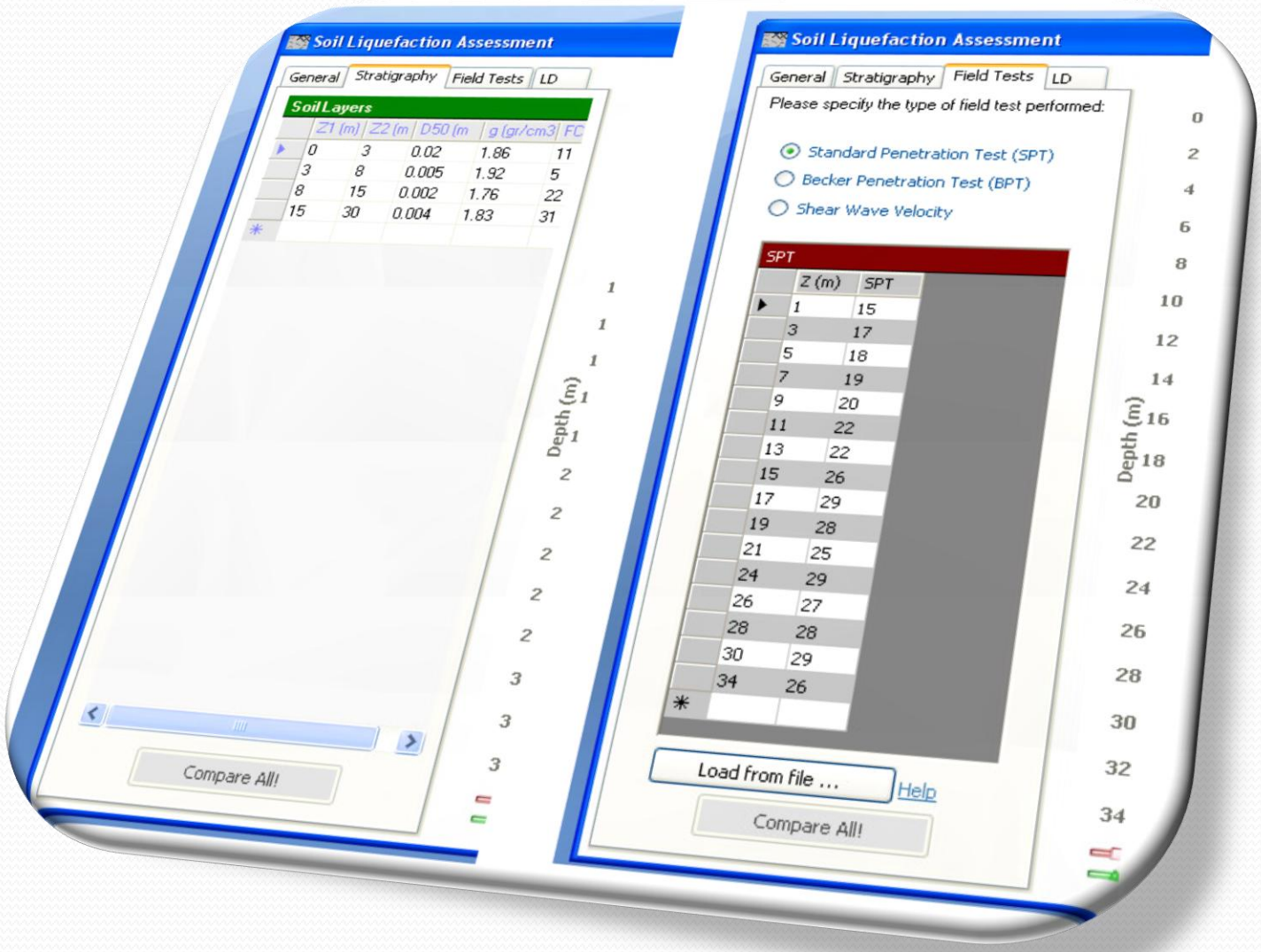


LIQUEFACTION ASSESSMENT



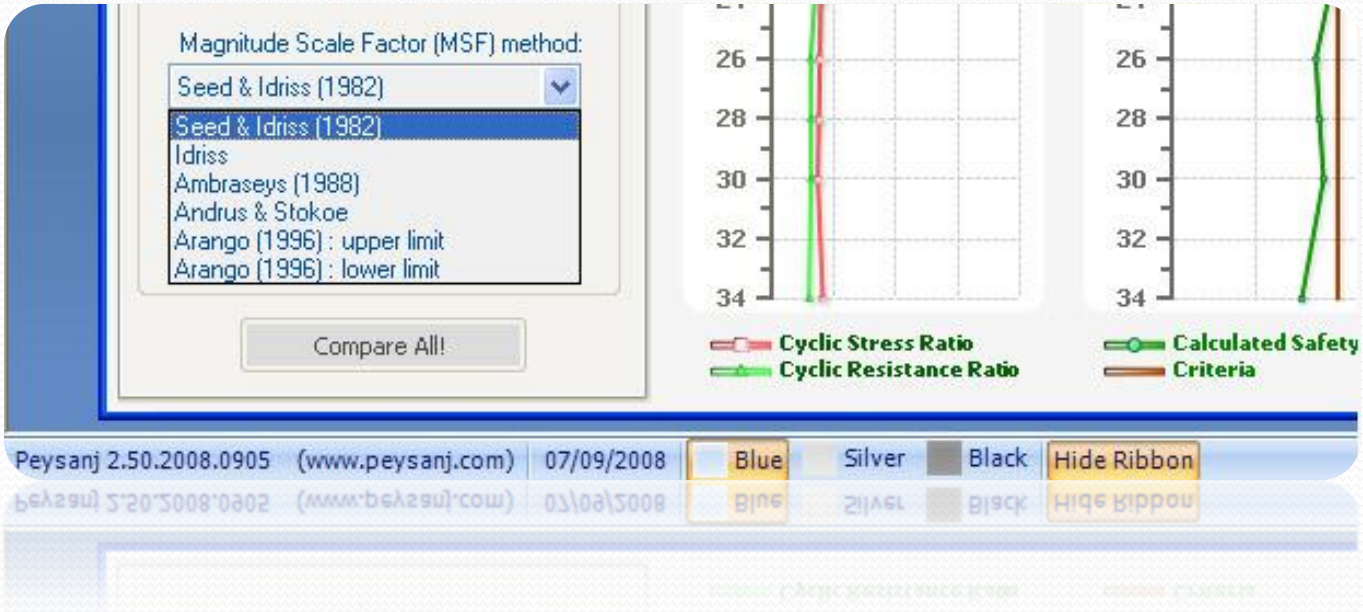
LIQUEFACTION ASSESSMENT

FIELD DATA



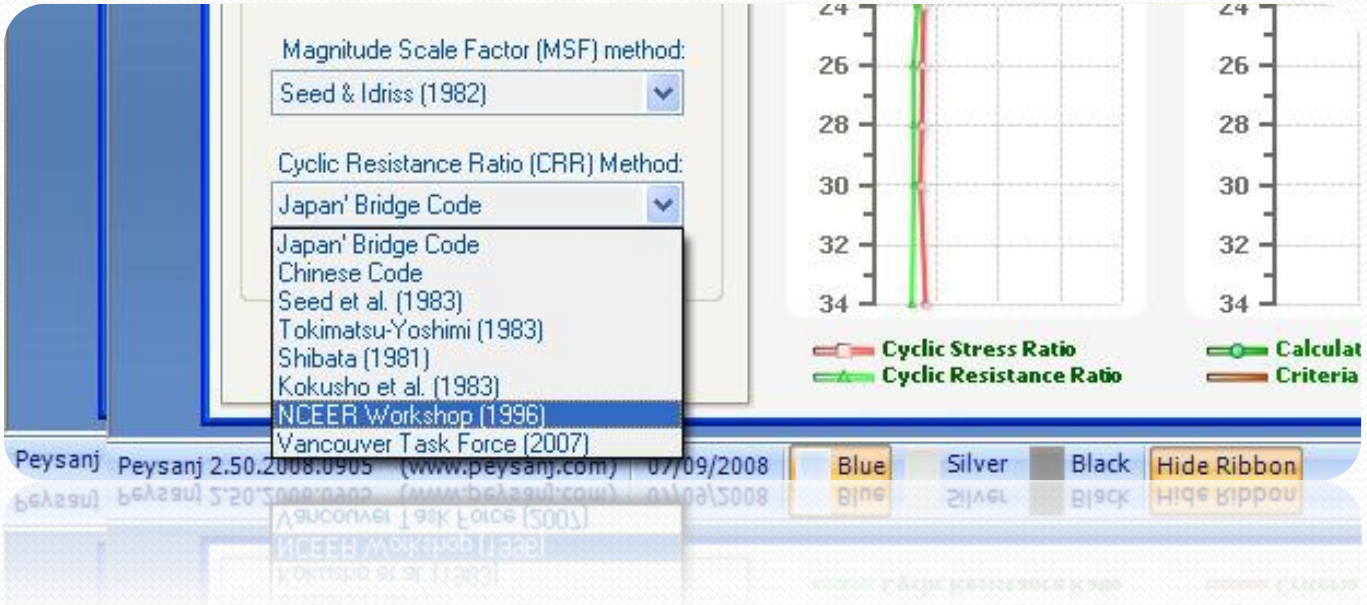
LIQUEFACTION ASSESSMENT

MAGNITUDE SCALE FACTOR (MSF)



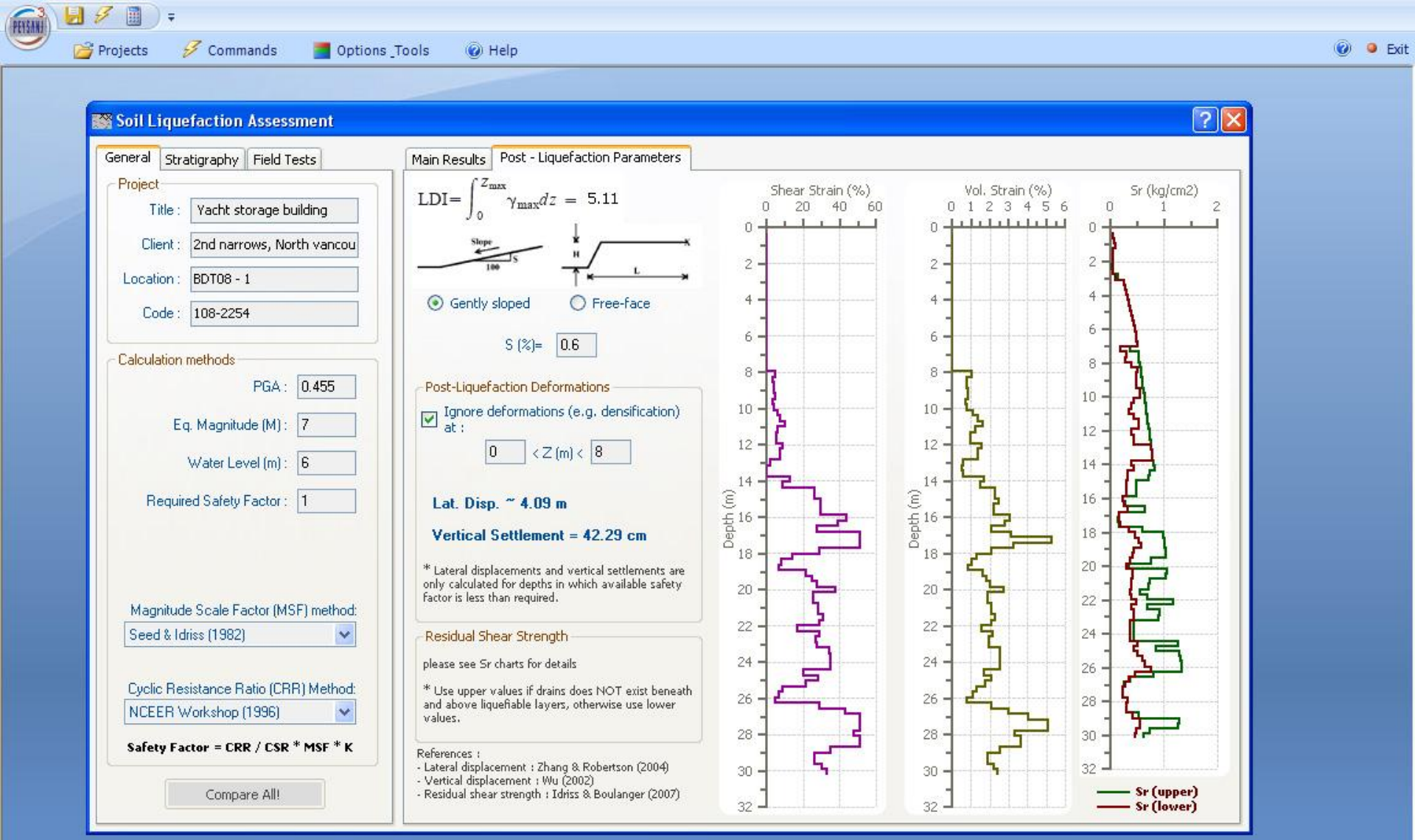
LIQUEFACTION ASSESSMENT

CRR CALCULATION METHODS



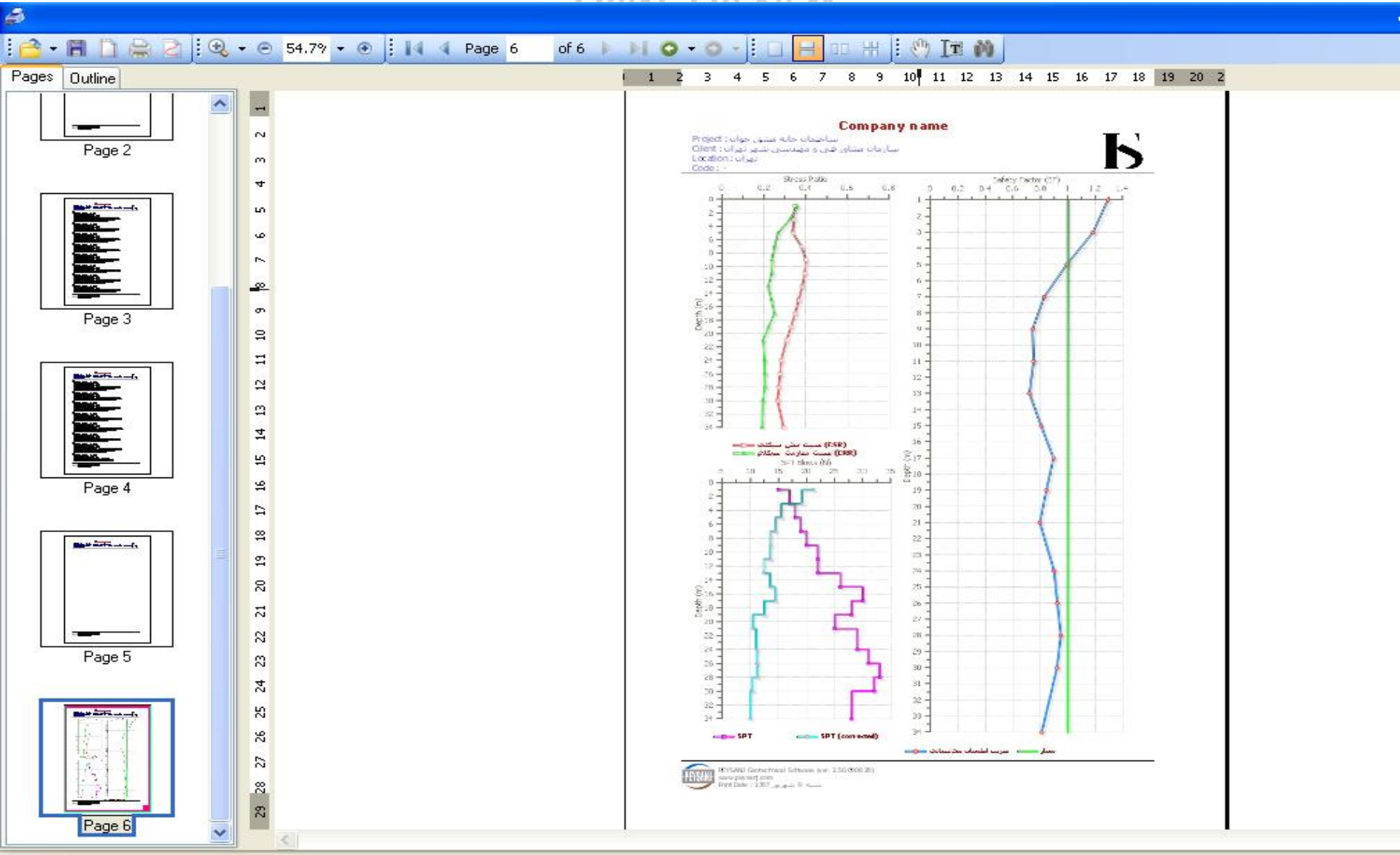
LIQUEFACTION ASSESSMENT

LATERAL DISPLACEMENT, VERT. SETTLEMENT, RESIDUAL SHEAR STRENGTH AFTER LIQUEFACTION



LIQUEFACTION ASSESSMENT

PRINT PREVIEW



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