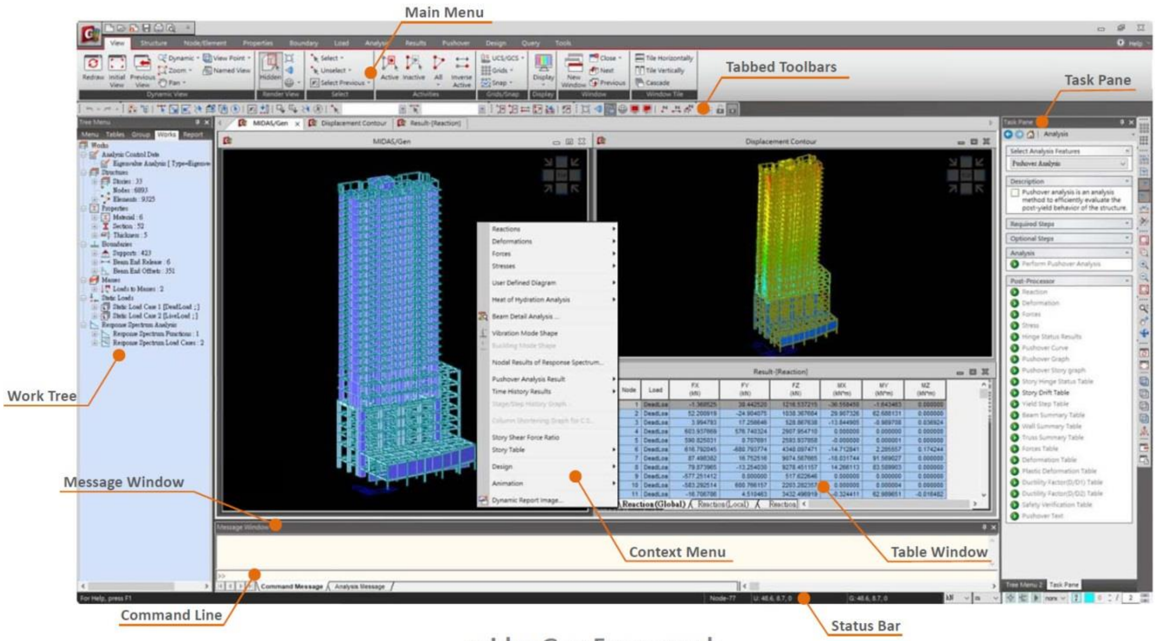
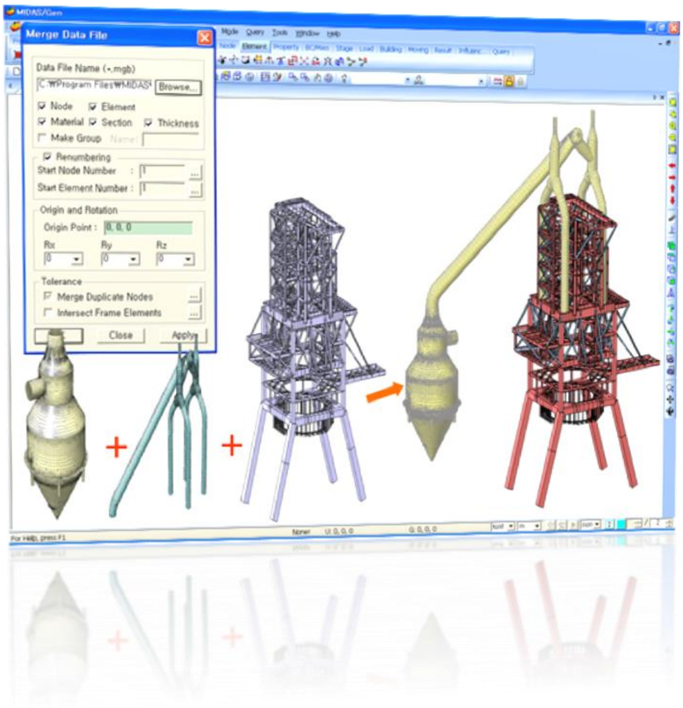
介面功能使用性

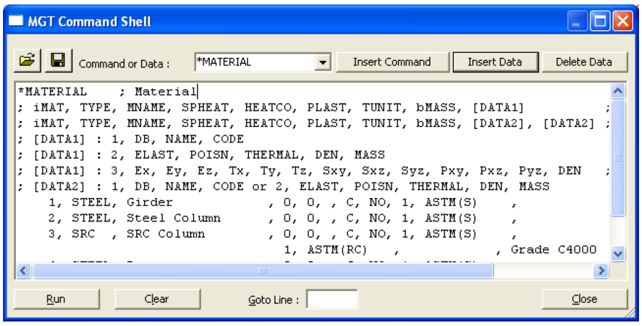
- 方便直觀的工作樹選單系統及拖放指派功能

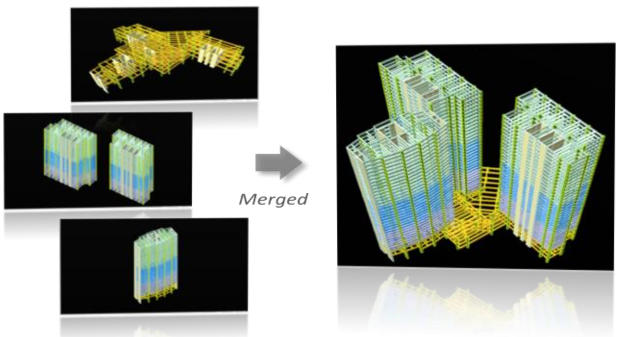


midas Gen Framework

- 視窗介面+MGT Command Shell 輸入，檔案合併功能



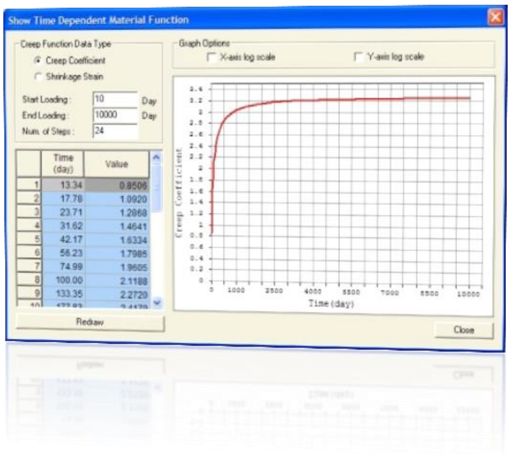




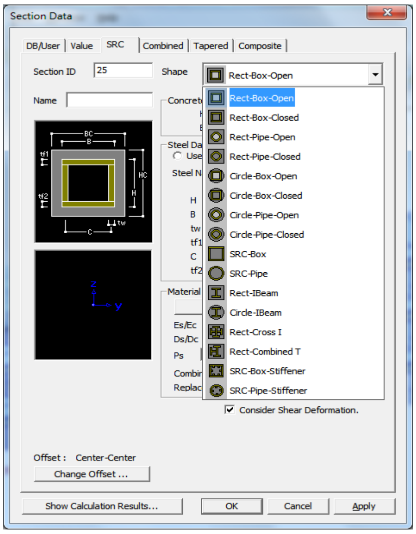
材料斷面模擬

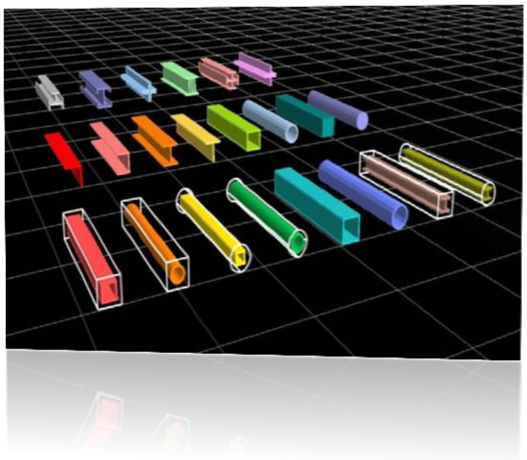
- 依時性材料考慮乾縮、潛變與混凝土抗壓強度的變化

- Creep/Shrinkage
  - Eurocode, ACI, CEB-FIP, PCA...
- Comp. Strength
  - Eurocode, ACI, CEB-FIP, Ohzagi...

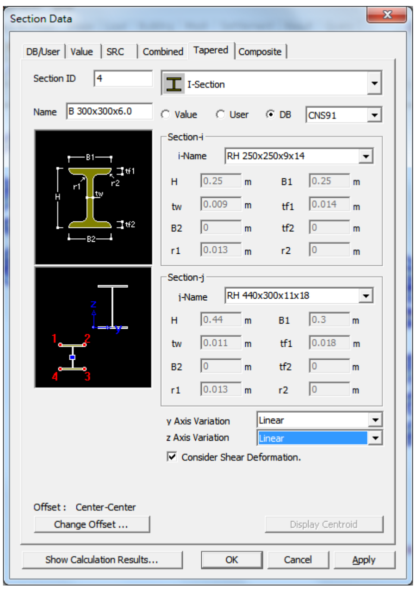


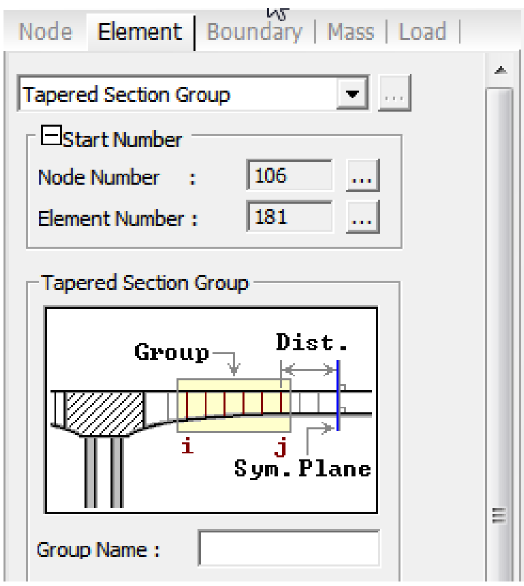
- SRC 鋼骨鋼筋混凝土材料與各式斷面



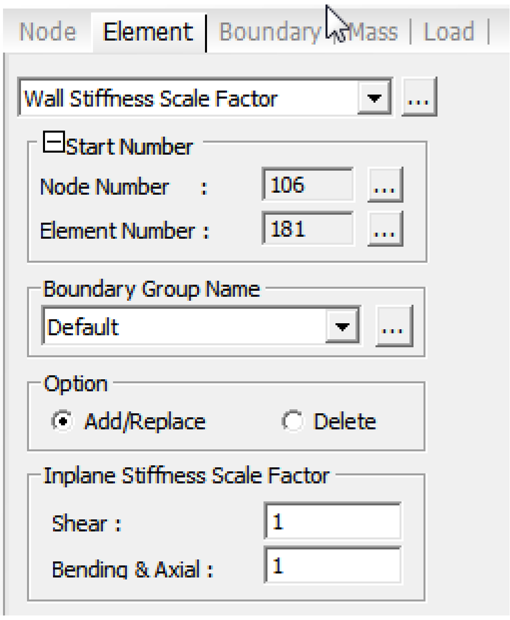


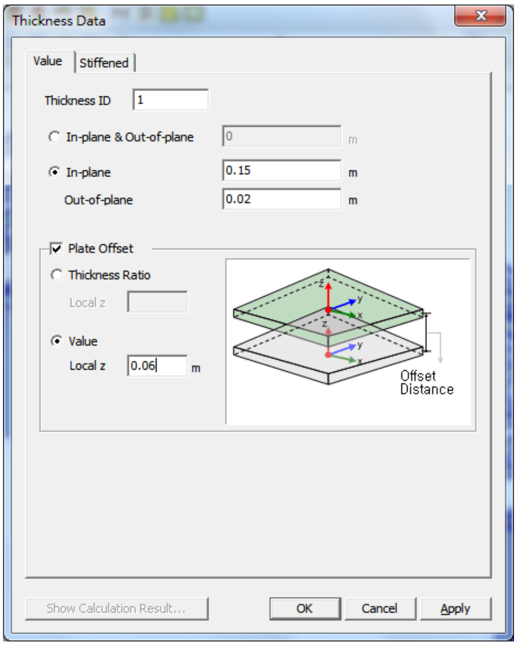
- 漸變斷面&漸變斷面群組功能





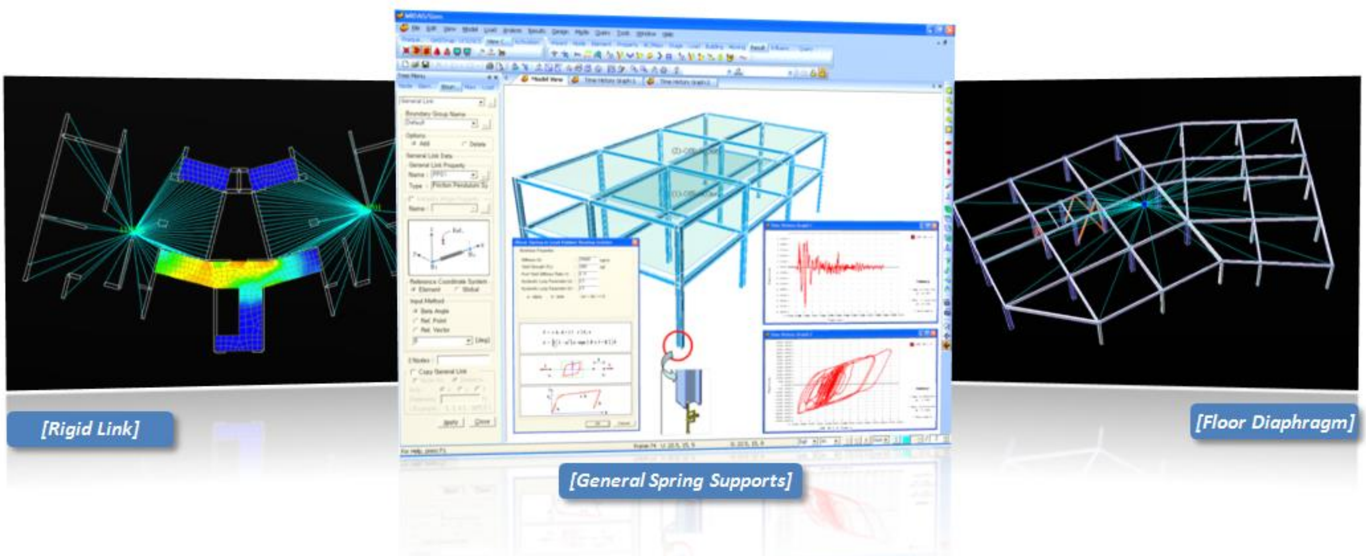
- 牆斷面勁度折減係數考量





邊界條件

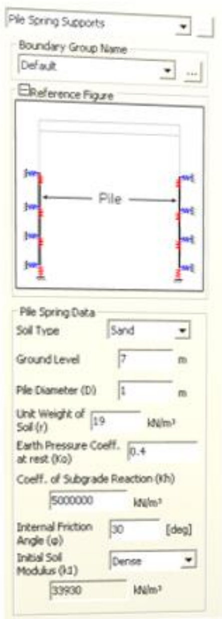
- General Spring Support 一般性彈簧支承條件的模擬



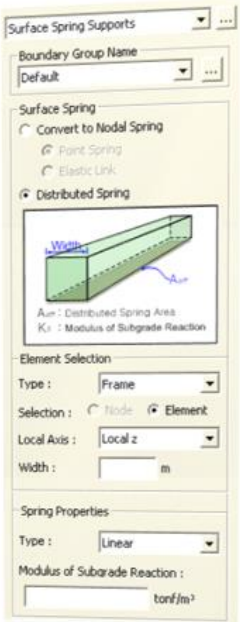
‧Supports 一般支承	‧Elastic Link 彈性連接	‧Linear Constraints 線性束制
‧Point Spring Supports 點彈簧支承	‧Nodal Coordinate System 節點座標	‧Rigid Link 剛性連接
‧General Spring Supports 彈性支承	‧Beam End Release 梁半剛性連接 (Semi-rigid connection)	‧Diaphragm Disconnection 隔版不連續
‧Surface Spring Supports 面彈簧	‧Beam End Offset 梁端偏移	‧Panel Zone Effects 梁柱剛性域
‧Pile Spring Supports 樁身彈簧	‧Plate End Release 版端自由度釋放	

- Pile Spring Support 樁深彈簧支承條件的模擬

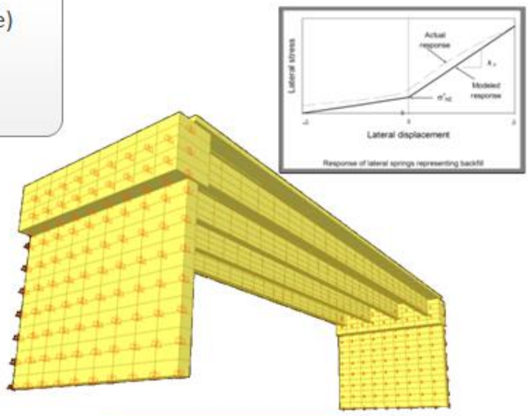
- Point Spring Support (Linear, Comp.-only, Tens.-only, and Multi-linear type)
- Pile Spring Support
- Surface Spring Support (Nodal Spring, and Distributed Spring)



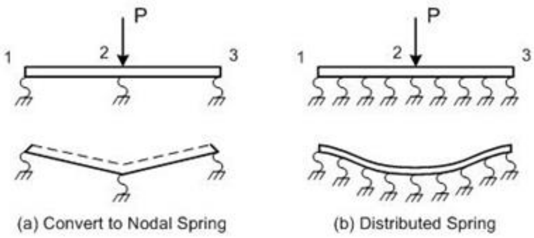
[Pile Spring Support]



[Surface Spring Support]



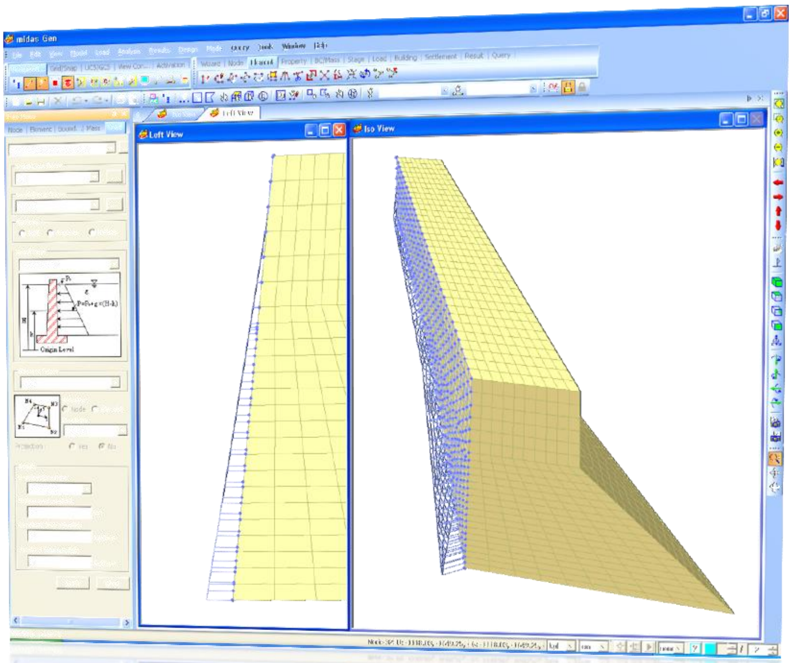
[Nonlinear point spring support]



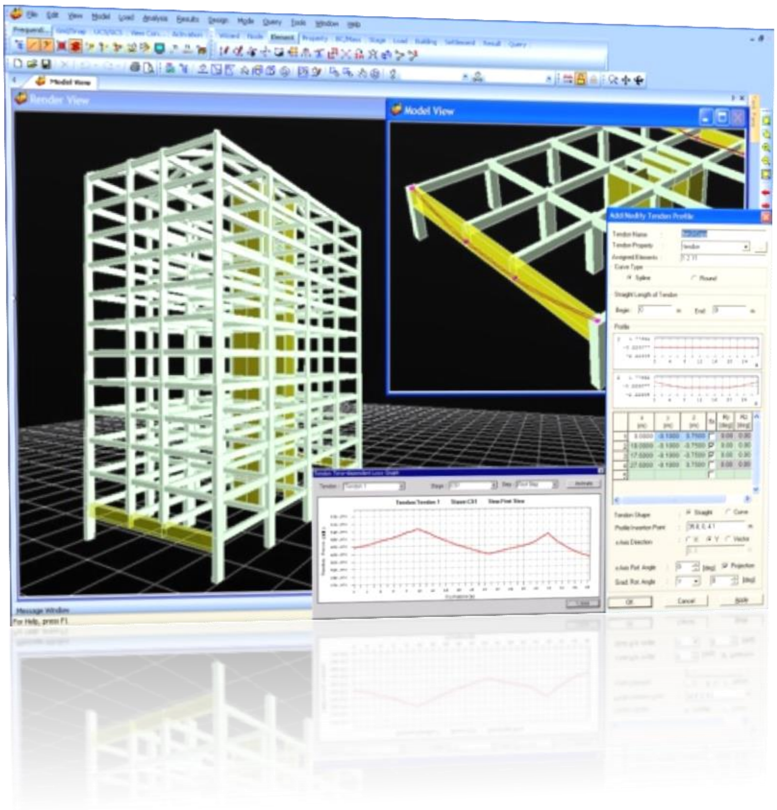
[Nodal Spring and Distributed Spring]

載重條件

- Soil Pressure, Hydrostatic Pressure Load 水土壓力載重模擬

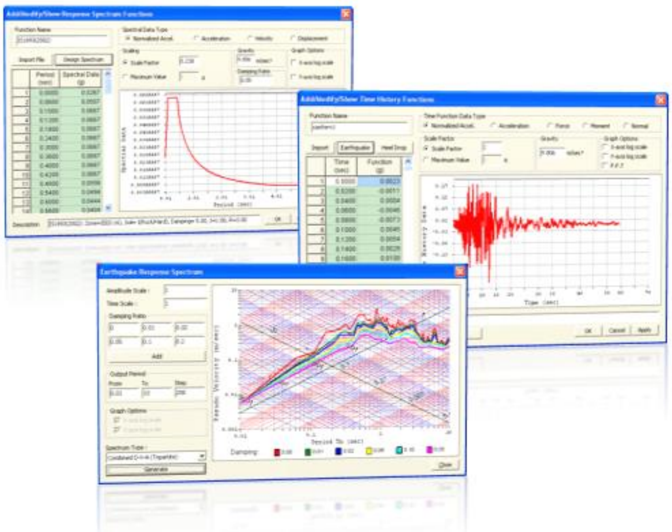


- Prestress Loads, Tendon profile 施拉預力，預力鋼腱模擬

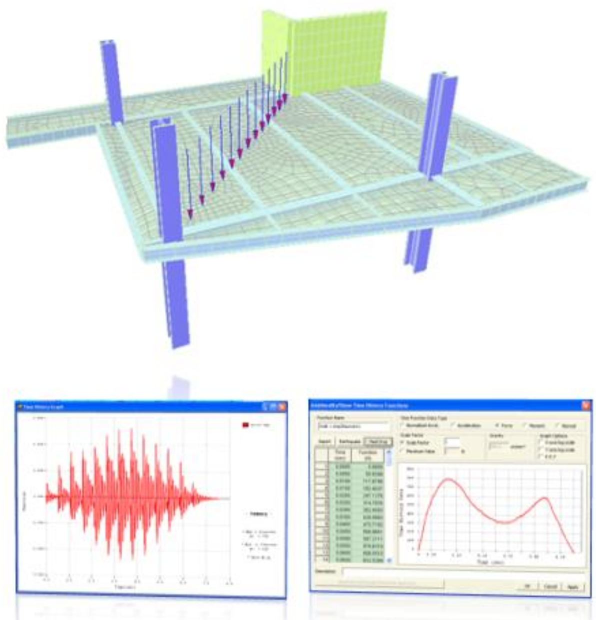


- Dynamic Nodal Load, Multiple Support excitation 動態節點載重與多支承考量及樓版振動分析

- Response spectrum load
- Time history load (earthquake records, Heel drop)



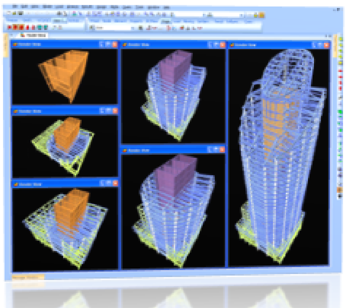
[Earthquake Response spectrum]



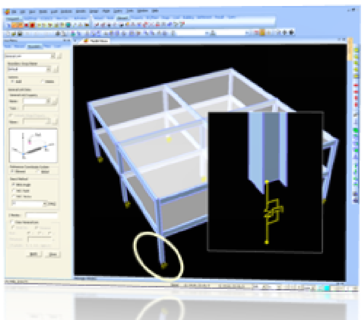
[Time Varying Load: Heel Drop]

分析功能

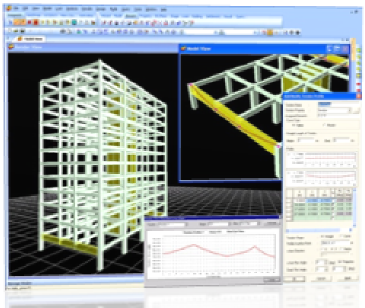
- 分析求解速度快，包含一般線性靜力/動力分析，幾何/材料非線性分析及其它多種分析功能。



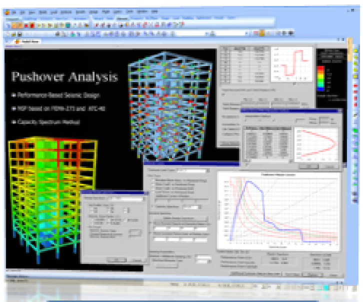
[Construction Stage Analysis]



[Dynamic Boundary Nonlinear]



[Post-tensioning girder analysis]



[Pushover analysis]

❑Static Analysis 靜力分析

❑Dynamic Analysis 動力分析
Free Vibration Analysis
Response Spectrum Analysis
Time History Analysis

❑Geometric Nonlinear Analysis 幾何非線性分析
P-Delta Analysis
Large Displacement Analysis

❑Material Nonlinear Analysis 材料非線性分析
Structural Masonry Analysis

❑Linear Buckling Analysis 線性挫屈分析
Lateral Torsional Buckling

❑Heat Transfer Analysis 熱傳分析
Time Transient Analysis

❑Heat of Hydration Analysis 水化熱分析
Thermo-elastic Analysis
Maturity, Creep, Shrinkage, Pipe Cooling

❑Construction Stage Analysis 施工階段分析
Time Dependent Material
Column Shortening Analysis (Elastic/Inelastic)

❑Pushover Analysis 側推分析
FEMA, Eurocode, Multi-linear hinge properties
RC, Steel, SRC, Masonry material types

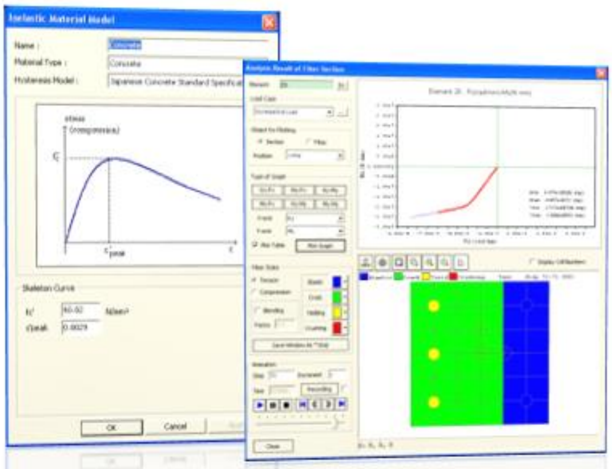
❑Boundary Nonlinear Time History Analysis 非線性歷時
Damper, Isolator, Gap, Hook

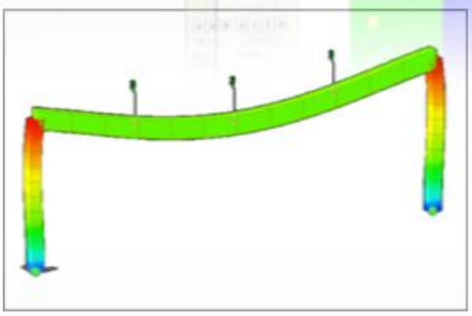
❑Inelastic Time History Analysis 非彈性歷時分析

❑Other Analysis 其他分析
Unknown Forces by Optimization
Moving load analysis
Settlement analysis

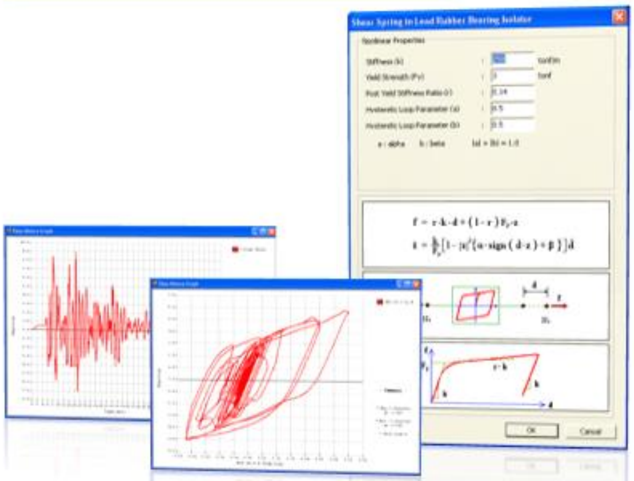
- Boundary Nonlinear Time History Analysis
- Inelastic Time History Analysis (Lumped/Distributed Hinges, Fiber Elements)

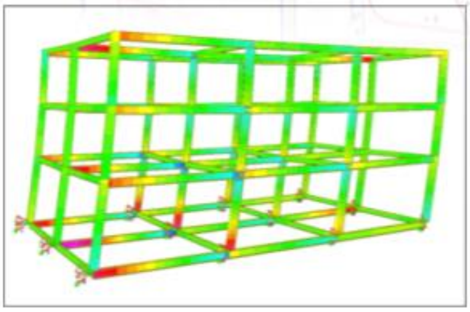
Inelastic Time History Analysis



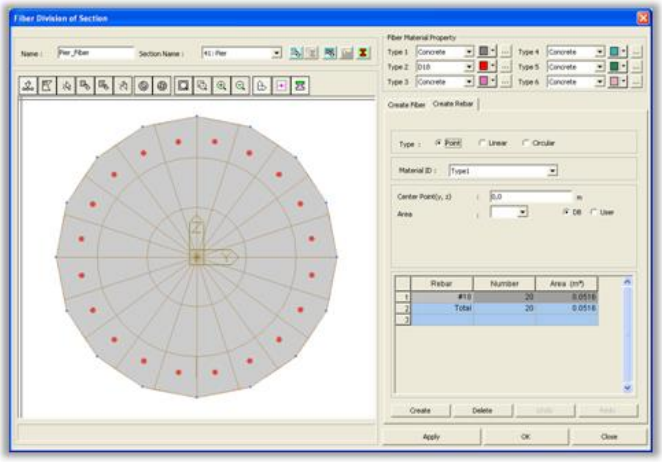


Boundary Nonlinear Time History Analysis

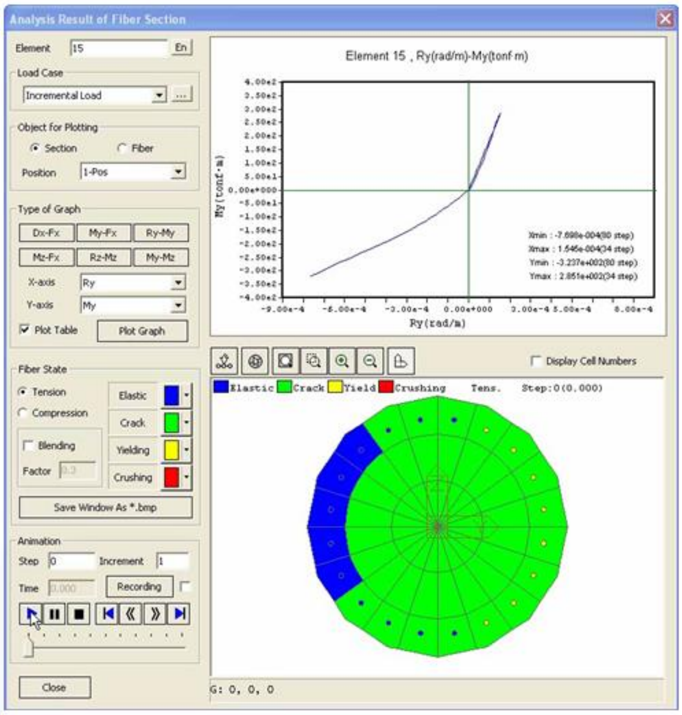




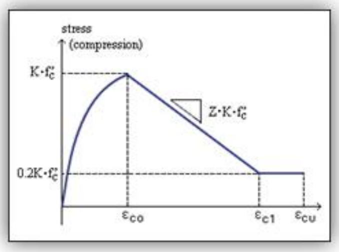
Section division for Fiber Model definition

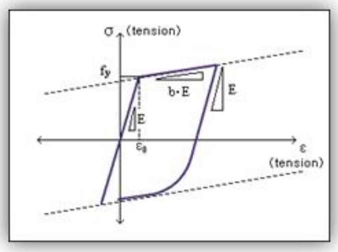


Fiber Cell Result Plotting

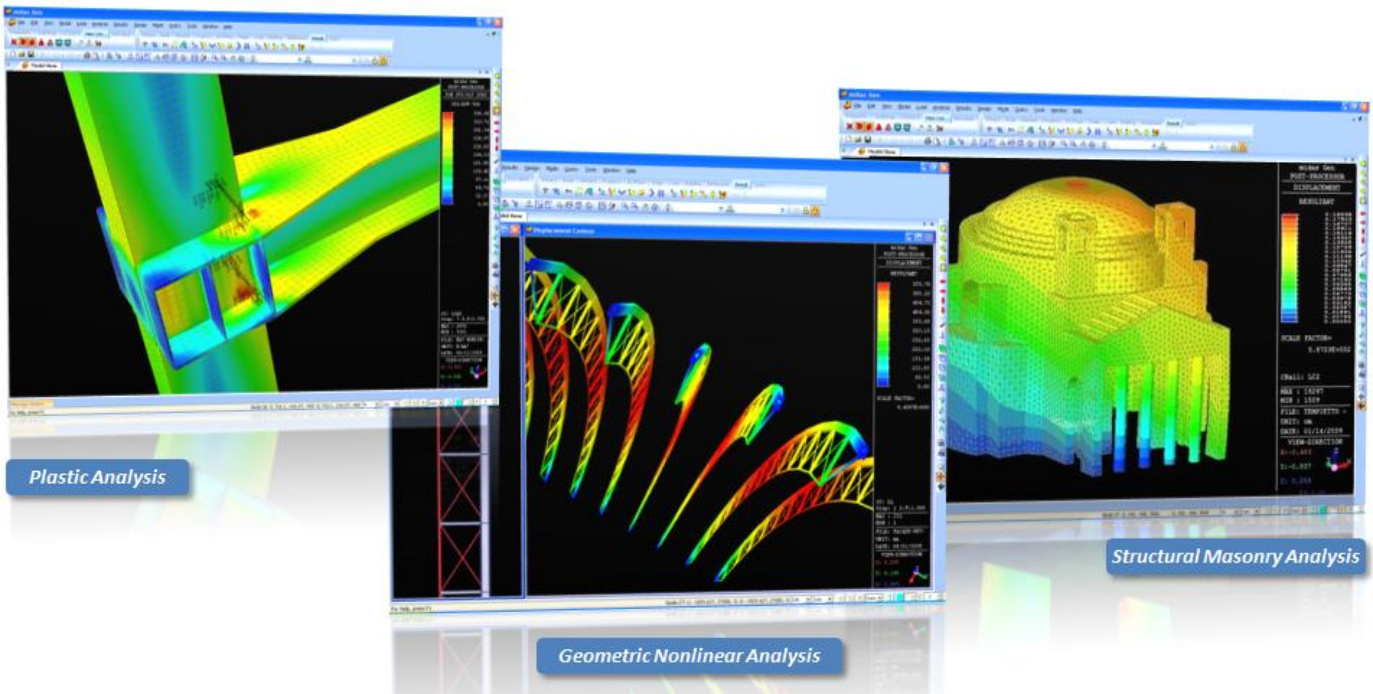


Inelastic Material Properties (Stress-strain curve)



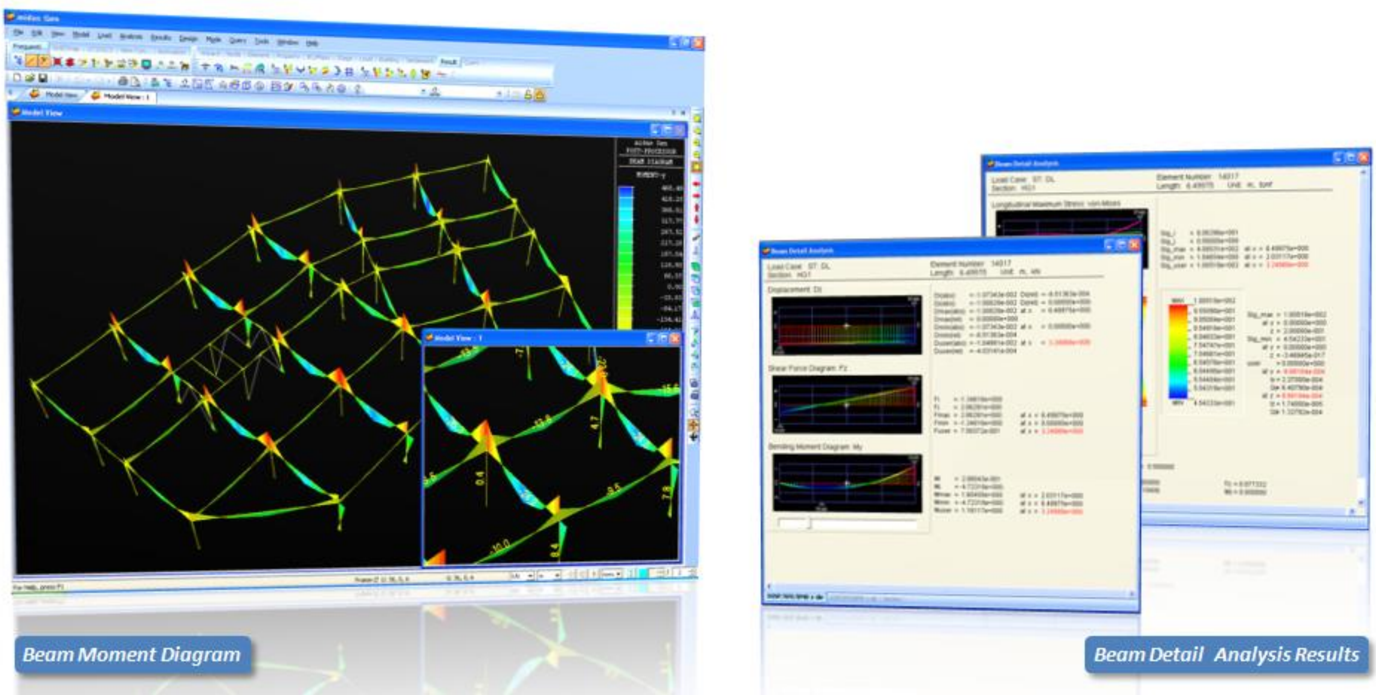


- Material Nonlinear Analysis (Von-Mises, Tresca, Mohr-Coulomb & Drucker-Prager)
- Structural Masonry Analysis
- Analysis for finding Unknown Forces by Optimization

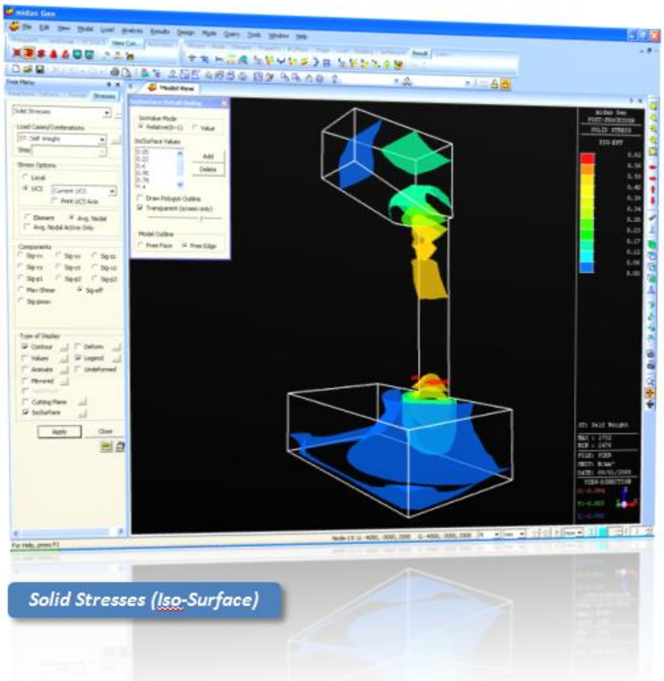


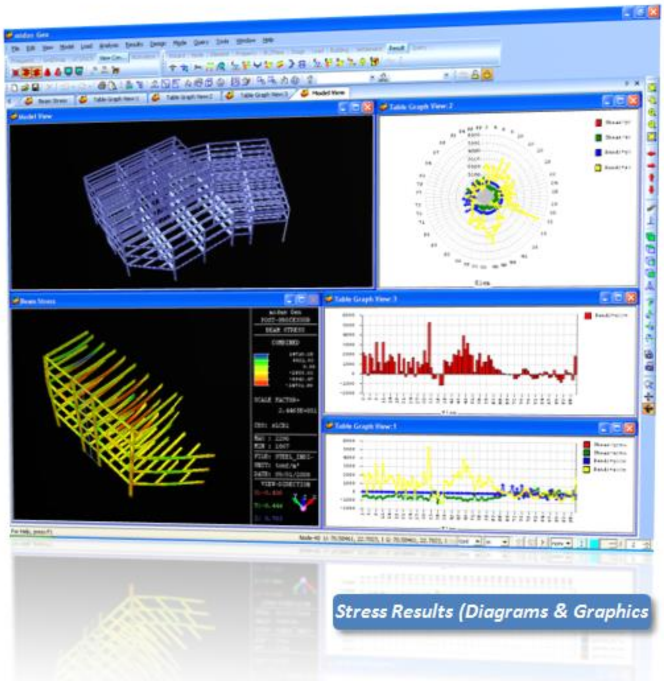
分析結果後處理

- Beam Detail Analysis 梁桿件斷面應力分析

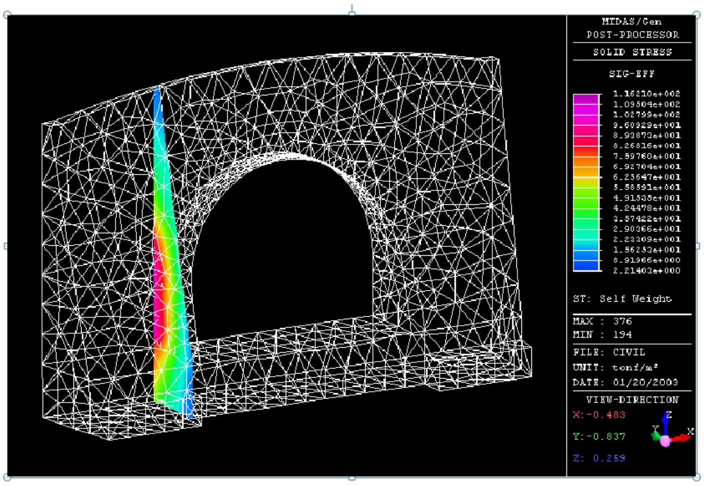


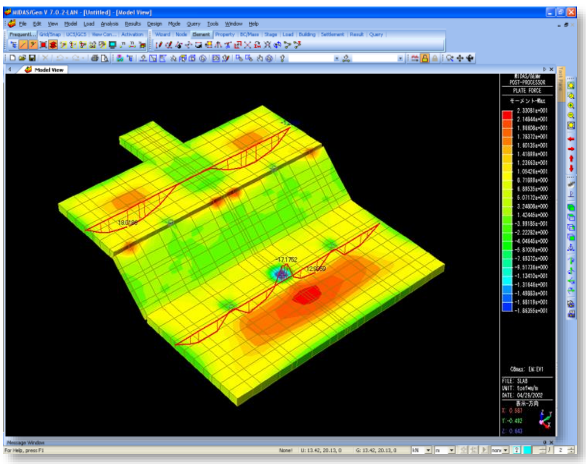
- Solid Iso-surface, Influence Line/Surface 實體元素顯示與多樣圖表結果



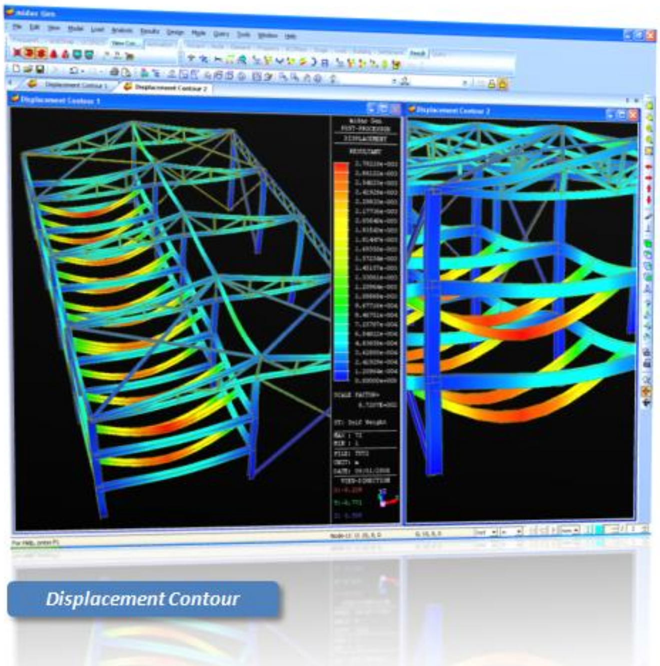


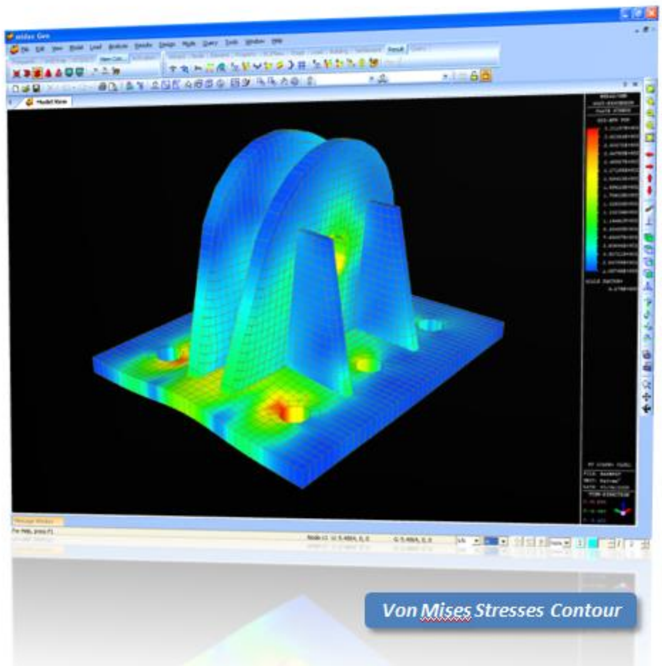
- Plate Cutting Line/Cutting Plane 版元素切線/切面顯示受力圖

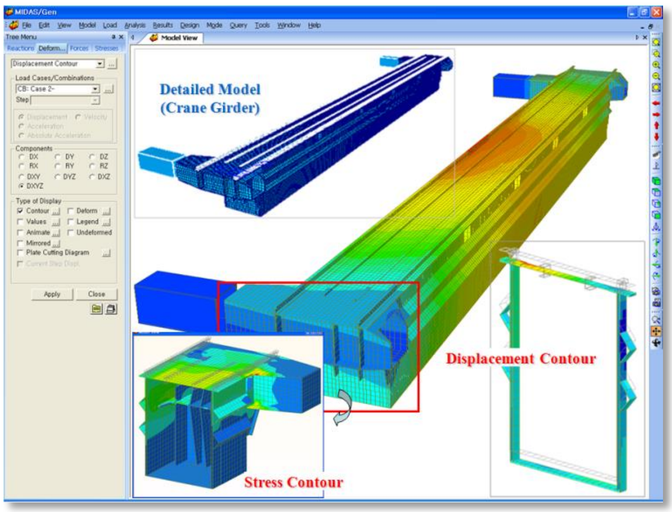




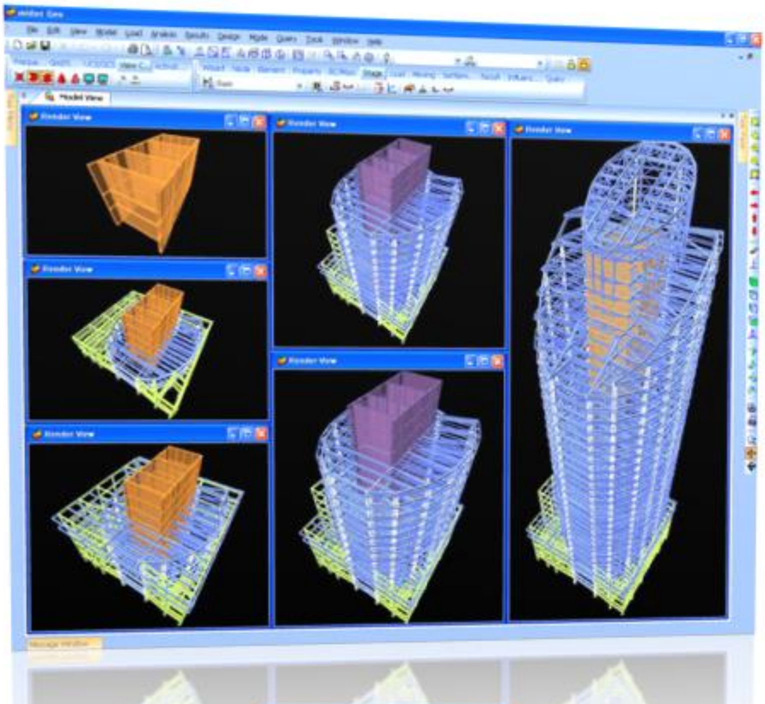
- Contour 色階圖功能、Solid Cutting Plane 實體切平面顯示色階圖



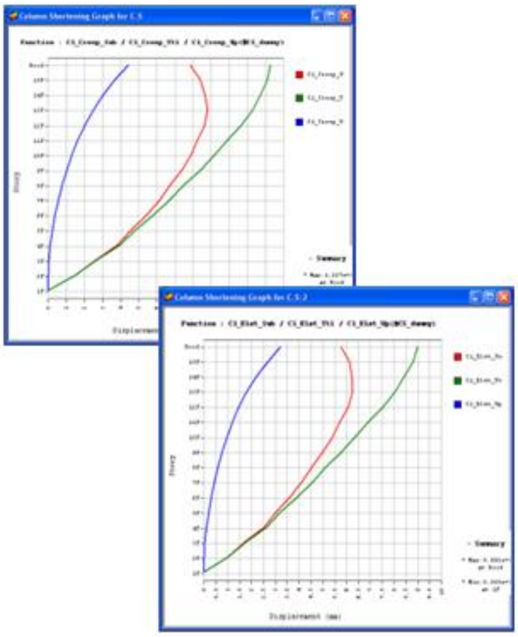




- Column Shortening Graph 施工階段分析柱縮圖



[Stage Simulation]



[Column Shortening Results]

設計功能與設計報表結果

- Steel Design：符合台灣規範的鋼結構設計、撓度檢核

- RC Design：符合台灣規範的鋼筋混凝土設計、強柱弱梁檢討、極限層剪力檢核

- SRC Design：符合台灣規範的鋼骨鋼筋混凝土梁/柱構件設計與斷面檢核

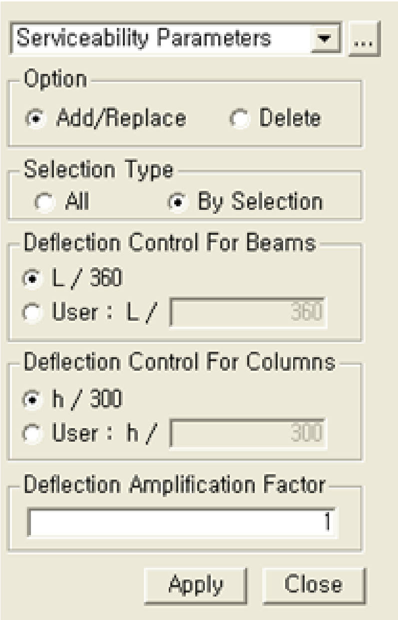
- 獨立基礎(含樁)設計功能

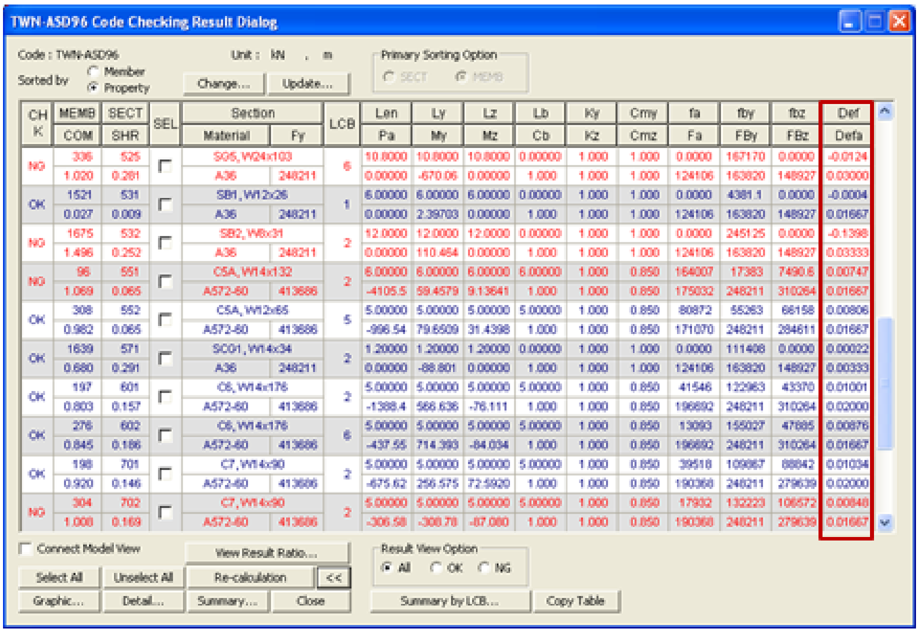
- 多元化的設計報表輸出、詳細計算書

- 樓層分析結果表：

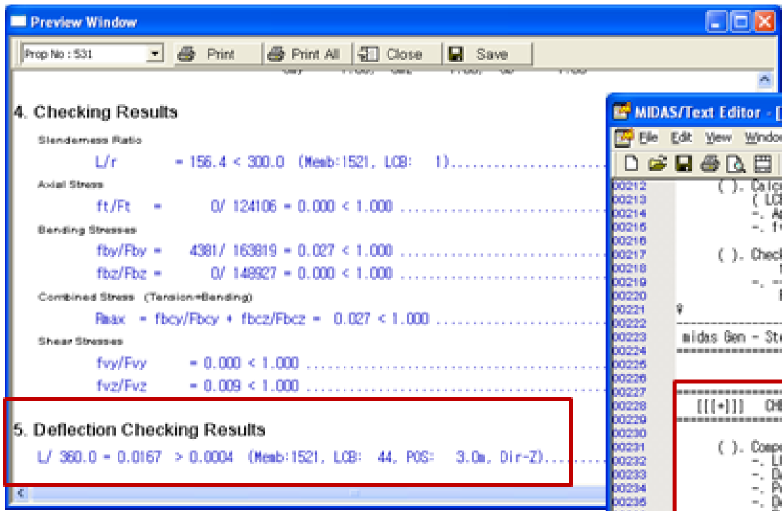
層間變位 Story Drift	模態分析結果 Story Mode Shape
樓層位移量 Story Displacement	扭矩放大係數 Torsional Amplification Factor
樓層加總軸力 Story Axial Force Sum	傾倒彎矩 Overturning Moment
弱層檢討 Capacity Irregularity Check (Weak Story)	穩定係數 Stability Coefficient
極限層剪力檢討 Ultimate Story Shear Force Check	扭矩不規則檢討 Torsional Irregularity Check
重量不規則檢討 Weight Irregularity Check	勁度不規則檢討 Stiffness Irregularity Check (Soft Story)

Design > *Steel Code Check*

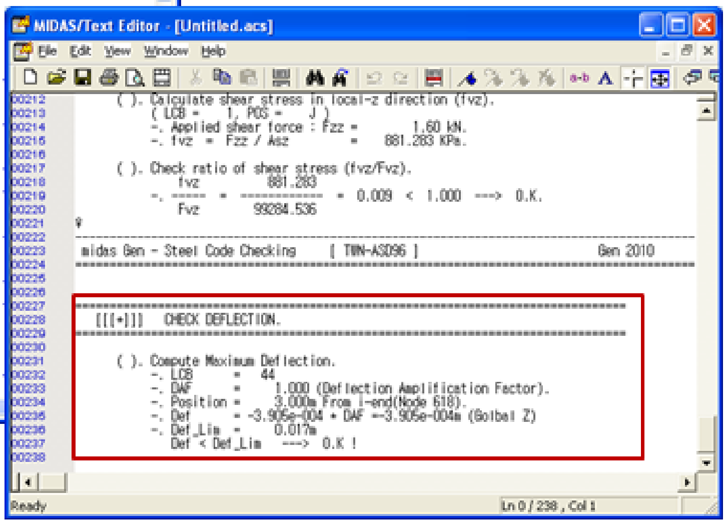




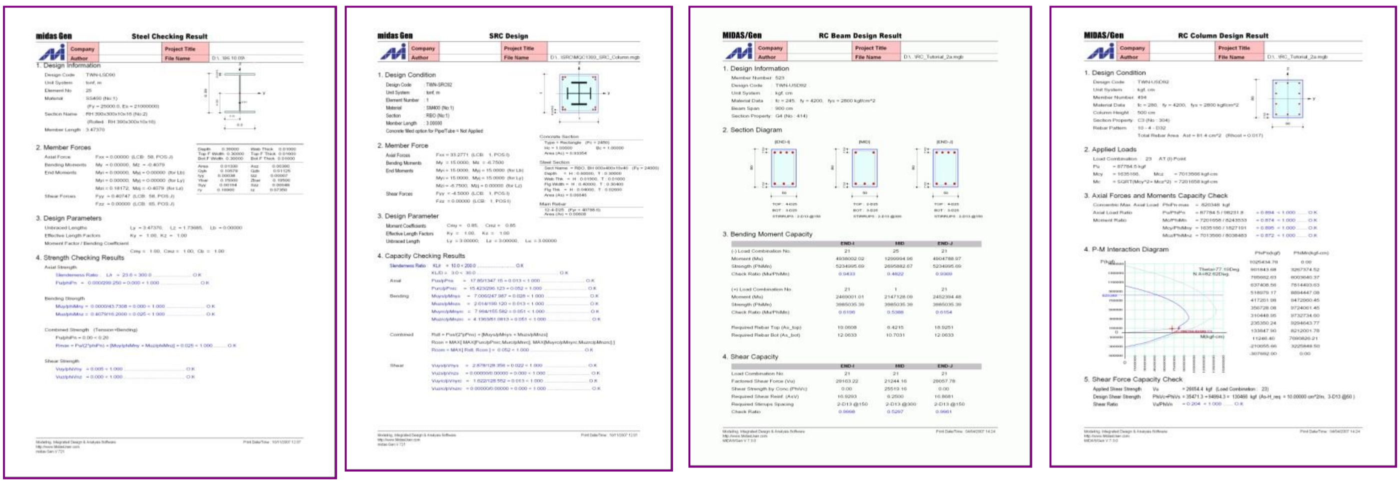
鋼構檢核結果對話框



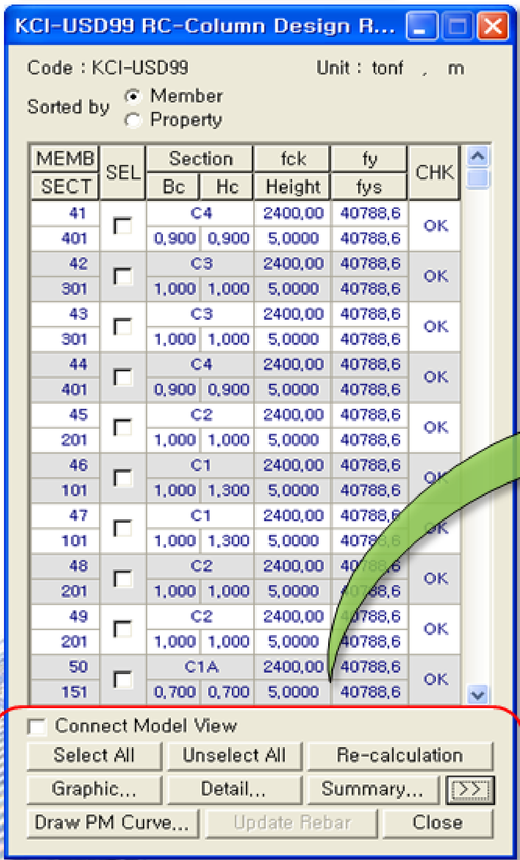
Graphic 報表結果



Detail 詳細報表

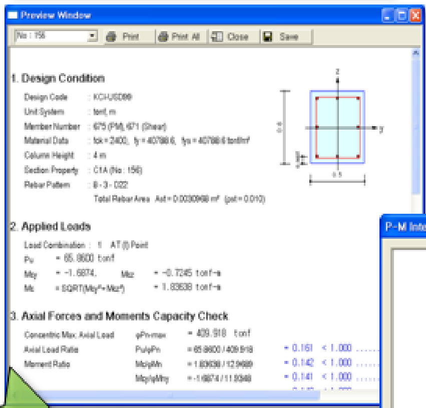


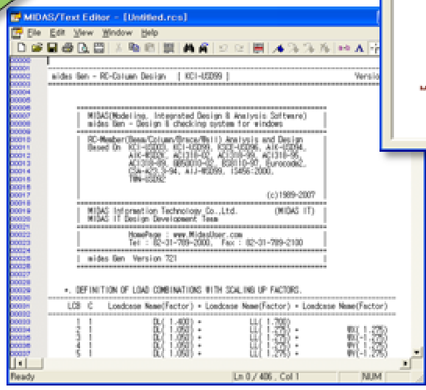
[RC 柱 設計結果]



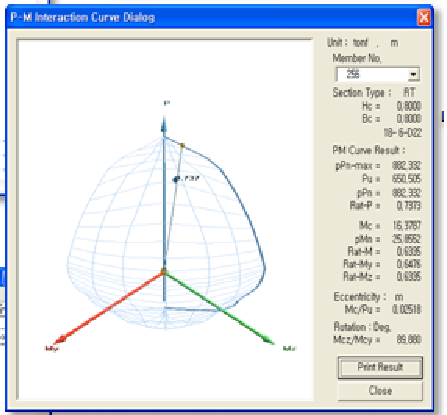
MEMB / SECT	SEL	Section / Bc	Hc	fck / Height	fy / fys	CHK
41 / 401		C4 / 0,900	0,900	2400,00 / 5,0000	40788,6 / 40788,6	OK
42 / 301		C3 / 1,000	1,000	2400,00 / 5,0000	40788,6 / 40788,6	OK
43 / 301		C3 / 1,000	1,000	2400,00 / 5,0000	40788,6 / 40788,6	OK
44 / 401		C4 / 0,900	0,900	2400,00 / 5,0000	40788,6 / 40788,6	OK
45 / 201		C2 / 1,000	1,000	2400,00 / 5,0000	40788,6 / 40788,6	OK
46 / 101		C1 / 1,000	1,300	2400,00 / 5,0000	40788,6 / 40788,6	OK
47 / 101		C1 / 1,000	1,300	2400,00 / 5,0000	40788,6 / 40788,6	OK
48 / 201		C2 / 1,000	1,000	2400,00 / 5,0000	40788,6 / 40788,6	OK
49 / 201		C2 / 1,000	1,000	2400,00 / 5,0000	40788,6 / 40788,6	OK
50 / 151		C1A / 0,700	0,700	2400,00 / 5,0000	40788,6 / 40788,6	OK

[簡圖 設計報表]



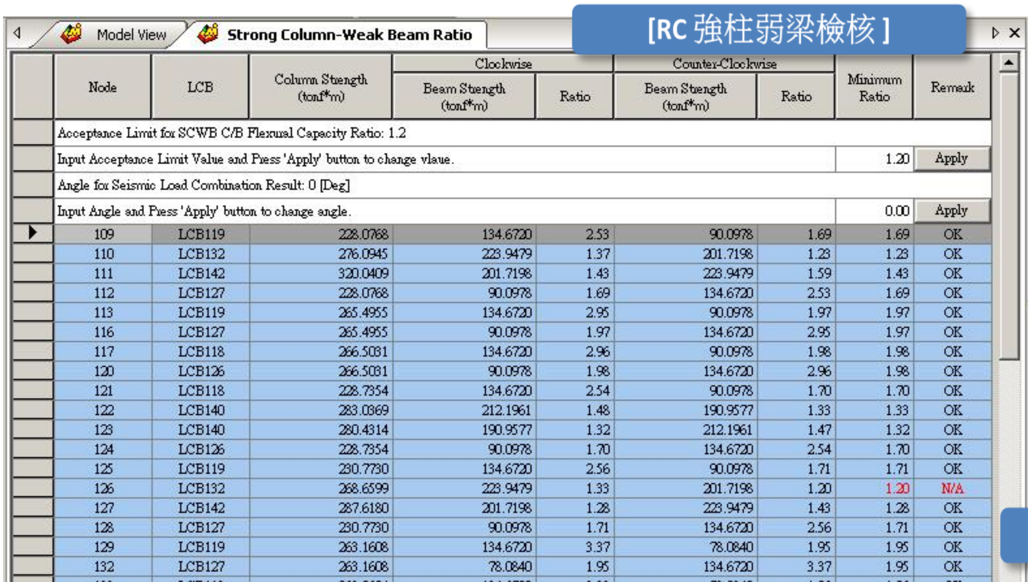


[P-M Curve]



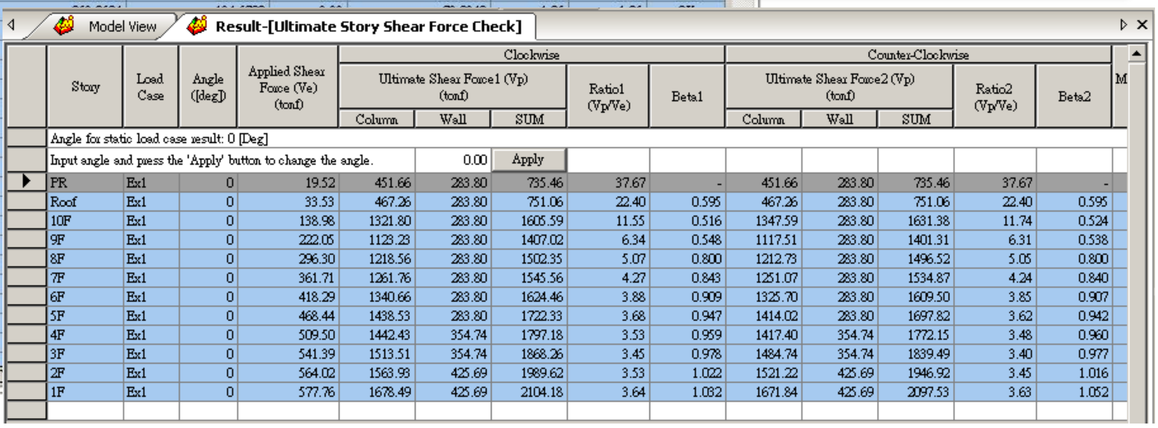
[詳細計算流程]

[RC 強柱弱梁檢核]



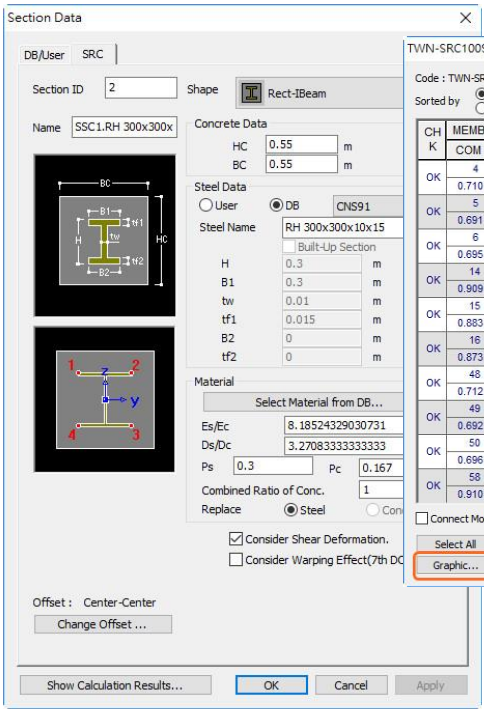
Node	LCB	Column Strength (tonf*m)	Clockwise Beam Strength (tonf*m)	Clockwise Ratio	Counter-Clockwise Beam Strength (tonf*m)	Counter-Clockwise Ratio	Minimum Ratio	Remark
Acceptance Limit for SCWB C/B Flexural Capacity Ratio: 1.2								
Input Acceptance Limit Value and Press 'Apply' button to change vlaue.							1.20	Apply
Angle for Seismic Load Combination Result: 0 [Deg]								
Input Angle and Press 'Apply' button to change angle.							0.00	Apply
109	LCB119	228.0768	134.6720	2.53	90.0978	1.69	1.69	OK
110	LCB132	276.0945	223.9479	1.37	201.7198	1.23	1.23	OK
111	LCB142	320.0409	201.7198	1.43	223.9479	1.59	1.43	OK
112	LCB127	228.0768	90.0978	1.69	134.6720	2.53	1.69	OK
113	LCB119	265.4955	134.6720	2.95	90.0978	1.97	1.97	OK
116	LCB127	265.4955	90.0978	1.97	134.6720	2.95	1.97	OK
117	LCB118	266.5081	134.6720	2.96	90.0978	1.98	1.98	OK
120	LCB126	266.5081	90.0978	1.98	134.6720	2.96	1.98	OK
121	LCB118	228.7354	134.6720	2.54	90.0978	1.70	1.70	OK
122	LCB140	283.0369	212.1961	1.48	190.9577	1.33	1.33	OK
123	LCB140	280.4314	190.9577	1.32	212.1961	1.47	1.32	OK
124	LCB126	228.7354	90.0978	1.70	134.6720	2.54	1.70	OK
125	LCB119	230.7730	134.6720	2.56	90.0978	1.71	1.71	OK
126	LCB132	268.6599	223.9479	1.33	201.7198	1.20	1.20	N/A
127	LCB142	287.6180	201.7198	1.28	223.9479	1.43	1.28	OK
128	LCB127	230.7730	90.0978	1.71	134.6720	2.56	1.71	OK
129	LCB119	263.1608	134.6720	3.37	78.0840	1.95	1.95	OK
132	LCB127	263.1608	78.0840	1.95	134.6720	3.37	1.95	OK
133	LCB118							
136	LCB126							
137	LCB118							
138	LCB140							
139	LCB140							
140	LCB126							
141	LCB119							
142	LCB132							
143	LCB142							
144	LCB127							
145	LCB119							
148	LCB127							
149	LCB118							
152	LCB126							
153	LCB118							
154	LCB140							
155	LCB140							
156	LCB126							
157	LCB119							

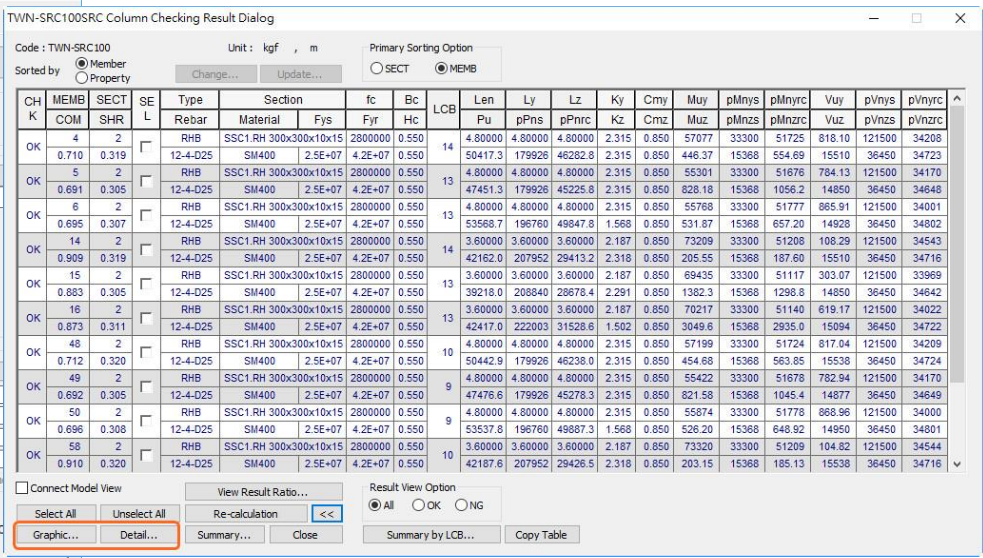
[RC 極限層剪力檢討]



Story	Load Case	Angle ([deg])	Applied Shear Force (Ve) (tonf)	Clockwise Ultimate Shear Force1 (Vp) (tonf) Column	Wall	SUM	Ratio1 (Vp/Ve)	Beta1	Counter-Clockwise Ultimate Shear Force2 (Vp) (tonf) Column	Wall	SUM	Ratio2 (Vp/Ve)	Beta2
Angle for static load case result: 0 [Deg]													
Input angle and press the 'Apply' button to change the angle.			0.00	Apply									
PR	Ex1	0	19.52	451.66	283.80	735.46	37.67	-	451.66	283.80	735.46	37.67	-
Roof	Ex1	0	33.53	467.26	283.80	751.06	22.40	0.595	467.26	283.80	751.06	22.40	0.595
10F	Ex1	0	138.98	1321.80	283.80	1605.59	11.55	0.516	1347.59	283.80	1631.38	11.74	0.524
9F	Ex1	0	222.05	1123.23	283.80	1407.02	6.34	0.548	1117.51	283.80	1401.31	6.31	0.538
8F	Ex1	0	296.30	1218.56	283.80	1502.35	5.07	0.800	1212.73	283.80	1496.52	5.05	0.800
7F	Ex1	0	361.71	1261.76	283.80	1545.56	4.27	0.843	1251.07	283.80	1534.87	4.24	0.840
6F	Ex1	0	418.29	1340.66	283.80	1624.46	3.88	0.909	1325.70	283.80	1609.50	3.85	0.907
5F	Ex1	0	468.44	1438.53	283.80	1722.33	3.68	0.947	1414.02	283.80	1697.82	3.62	0.942
4F	Ex1	0	509.50	1442.43	354.74	1797.18	3.53	0.959	1417.40	354.74	1772.15	3.48	0.960
3F	Ex1	0	541.39	1513.51	354.74	1868.26	3.45	0.978	1484.74	354.74	1839.49	3.40	0.977
2F	Ex1	0	564.02	1563.93	425.69	1989.62	3.53	1.022	1521.22	425.69	1946.92	3.45	1.016
1F	Ex1	0	577.76	1678.49	425.69	2104.18	3.64	1.032	1671.84	425.69	2097.53	3.63	1.052

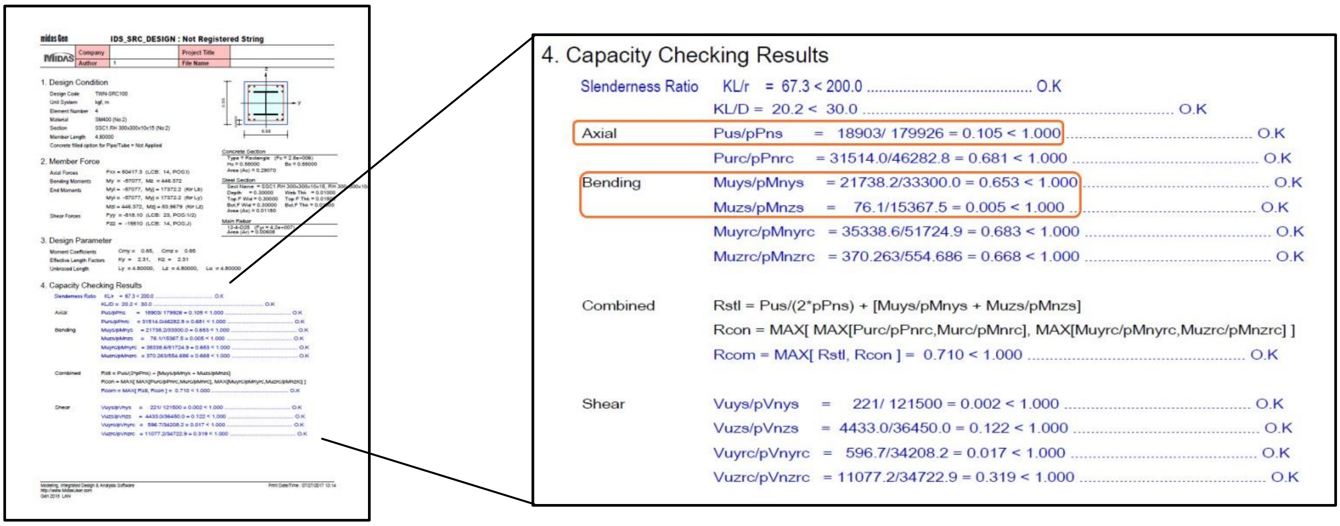
Design > SRC Code Check



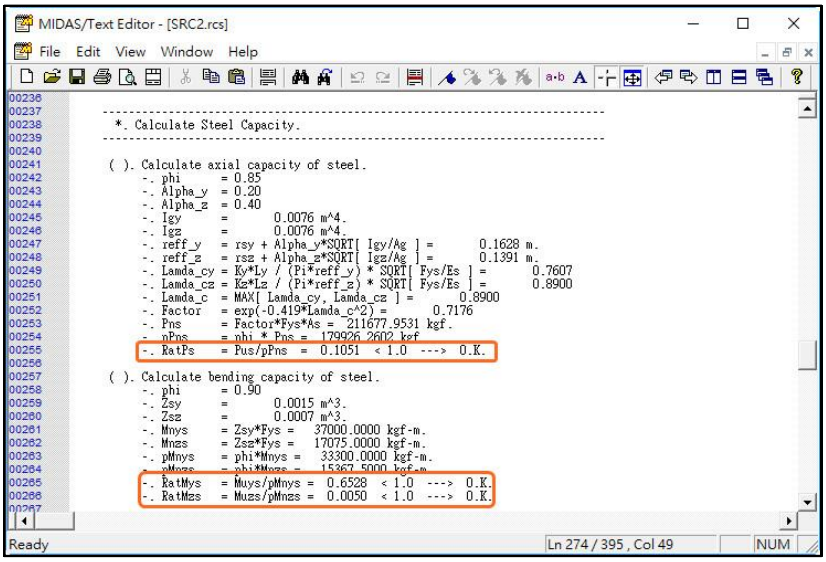


SRC 檢核結果對話框

Graphic 報表

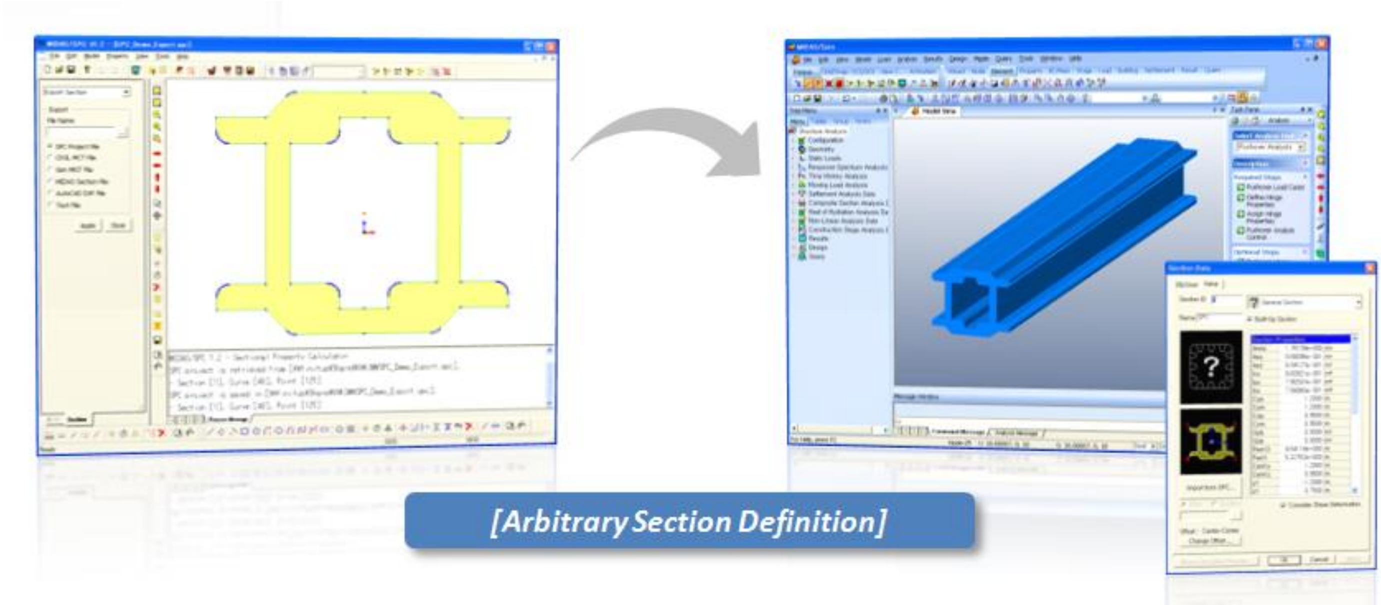


Detail 詳細計算報表

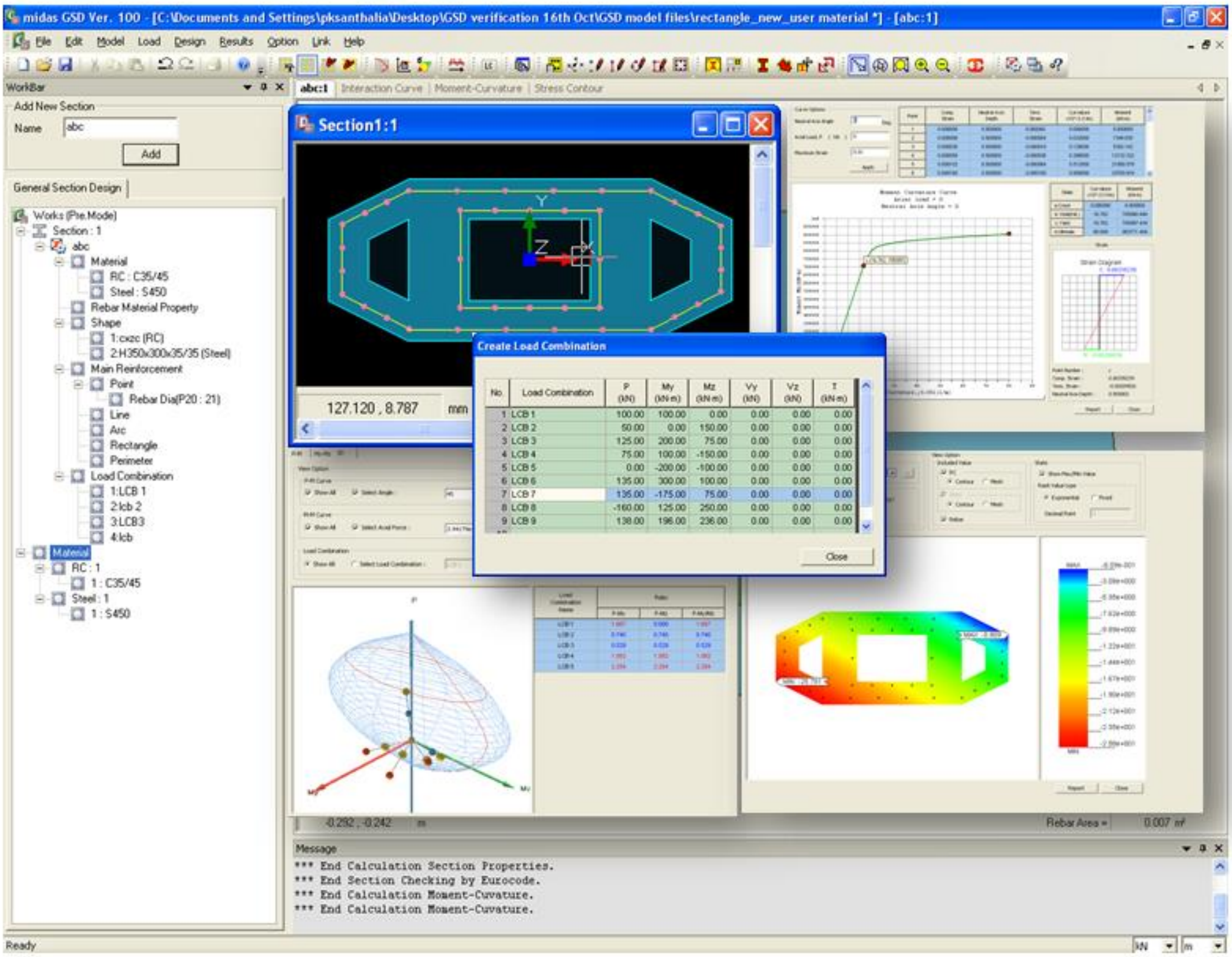


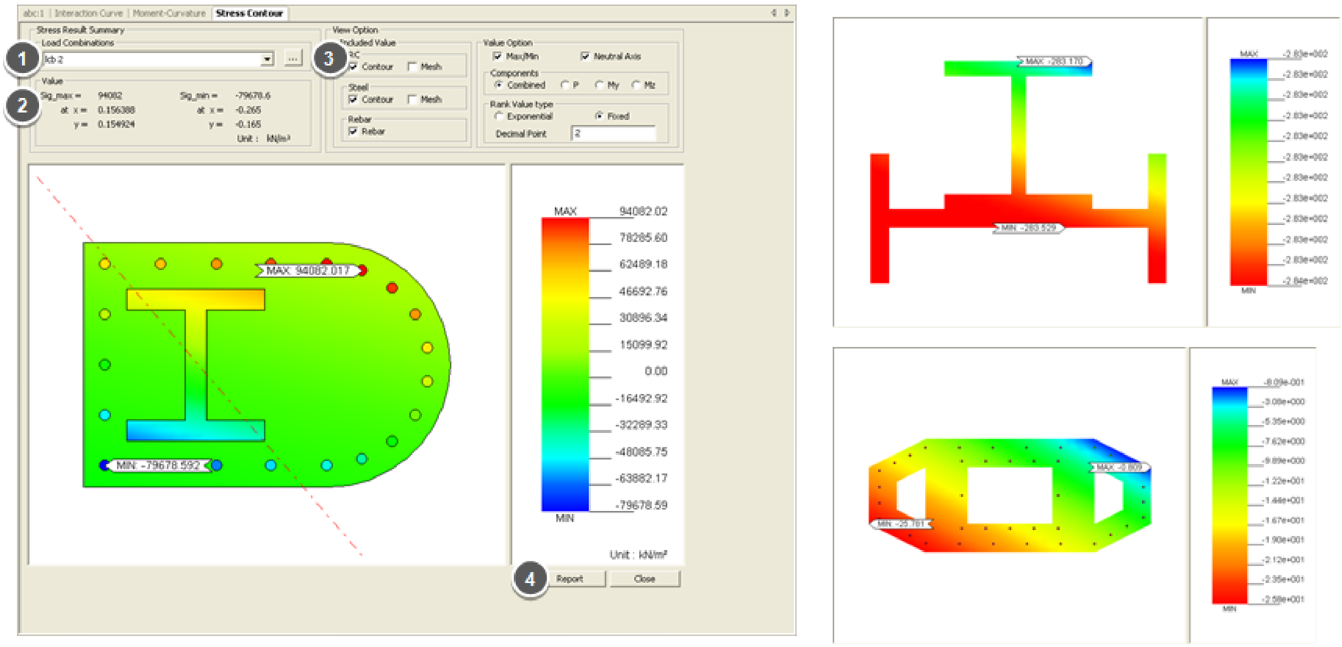
其他功能

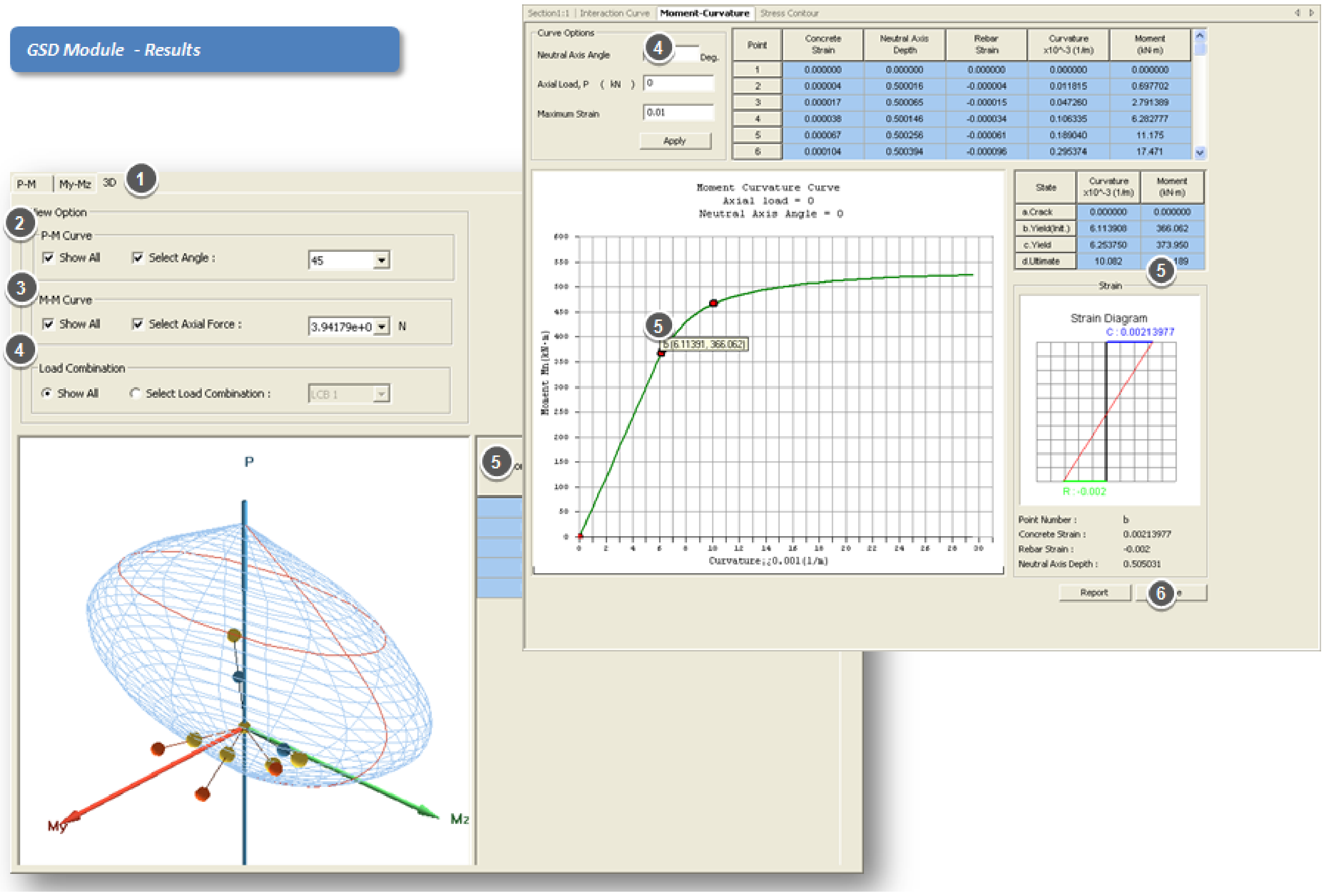
- Sectional Property Calculator 任意斷面性質計算器，斷面計算結果直接匯入 Value Type 斷面。



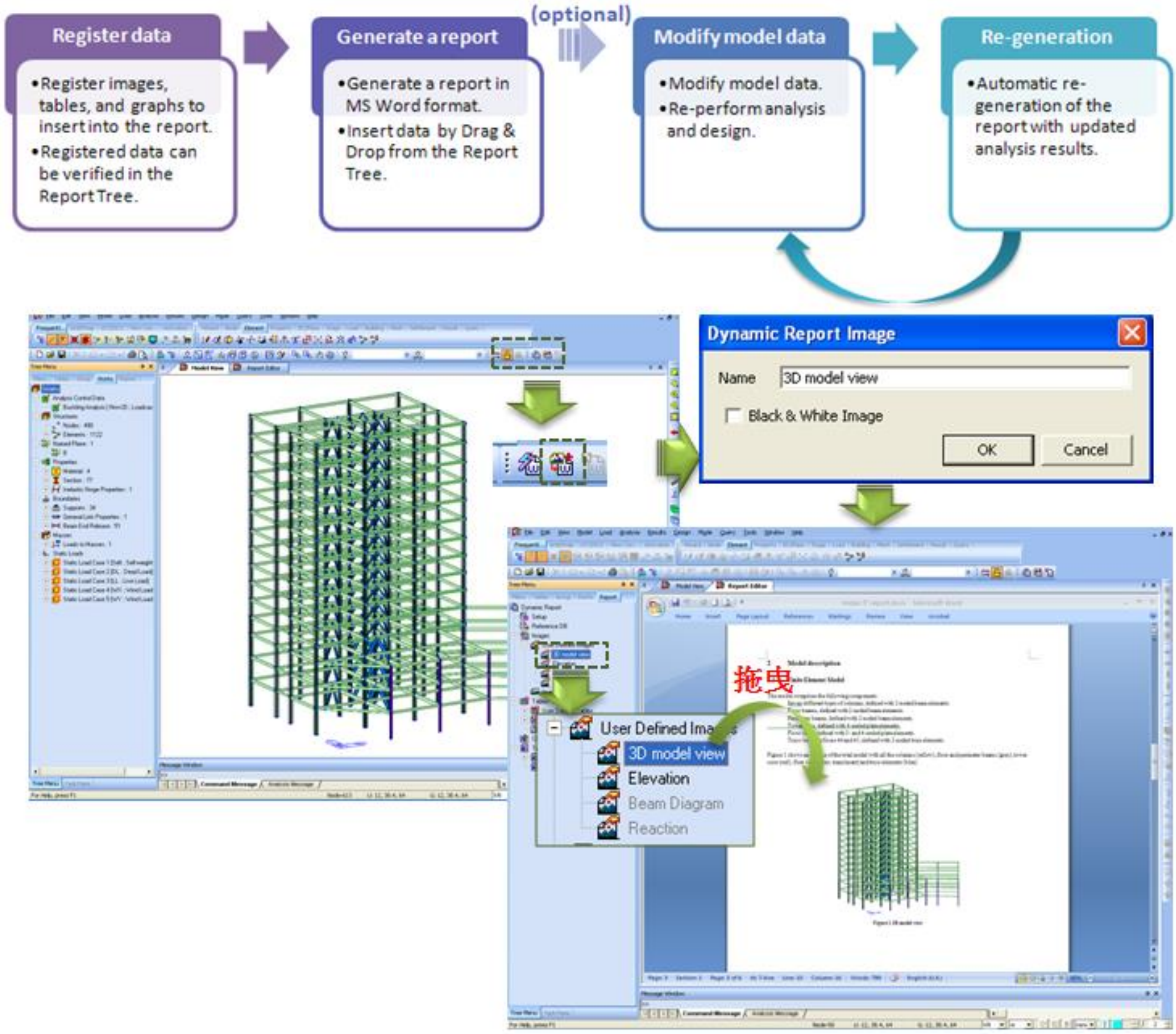
- General Section Designer 非線性材料斷面性質設計工具





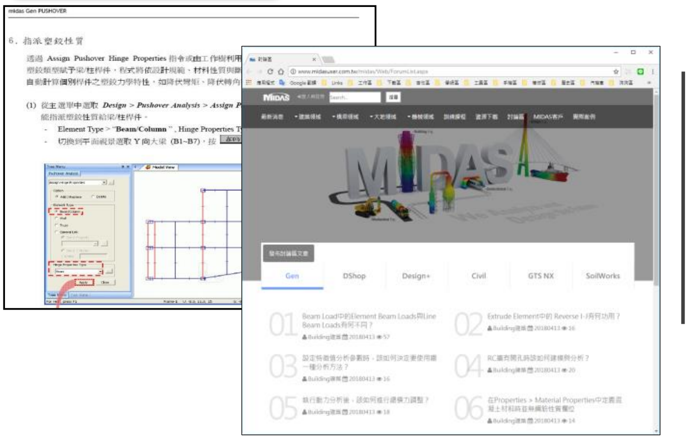


- Dynamic Report Generator 動態 Word 報表產生器，修改模型自動更新 Word 計算書報表。



- Services：台灣邁達斯在地化的技術服務

[中文手冊 技術文件]



[教育訓練 諮詢服務]