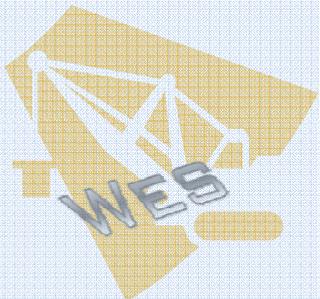


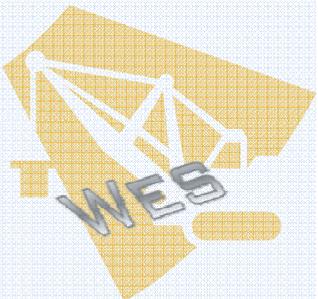
槽接式挫屈束制斜撐 超高層住宅應用實例

張育銘



案例概要

- 地上42F住辦大樓，地下室為B5F。
- 建築物總高度 約為163.4m，地下開挖深度約為19.80m。
- 地震分區：台北一區(新莊)



結構系統說明

◆ 上部結構:

X向 : SS柱、SS梁韌性抗彎矩系統

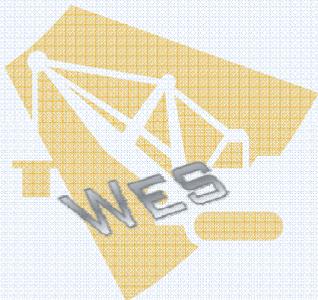
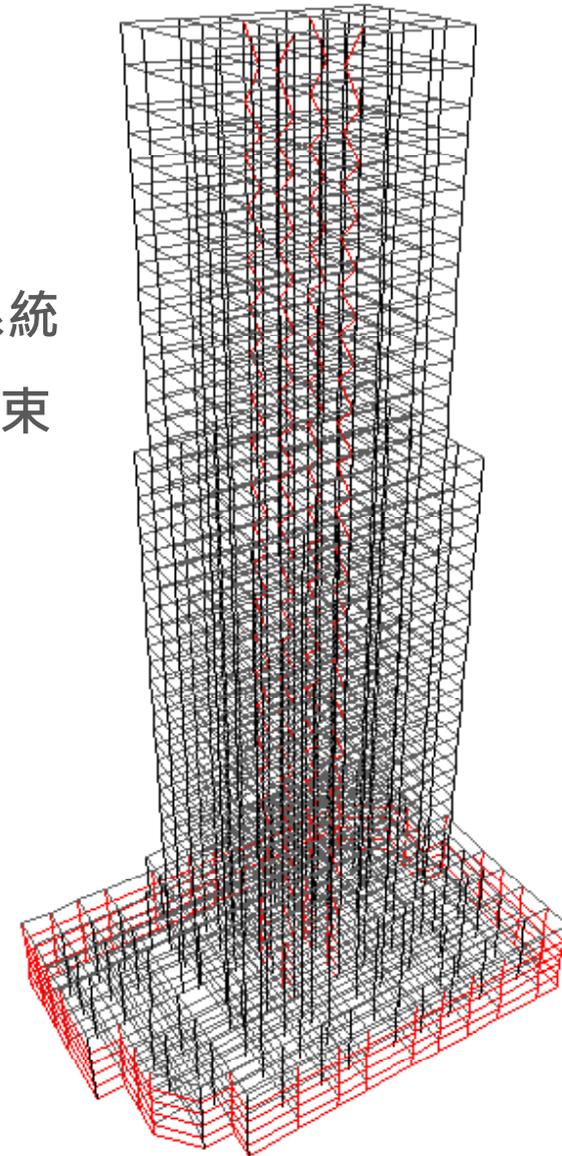
Y向 : SS柱、SS梁加槽接式挫屈束
制斜撐之二元系統

◆ 地下室結構:

R.C.結構系統

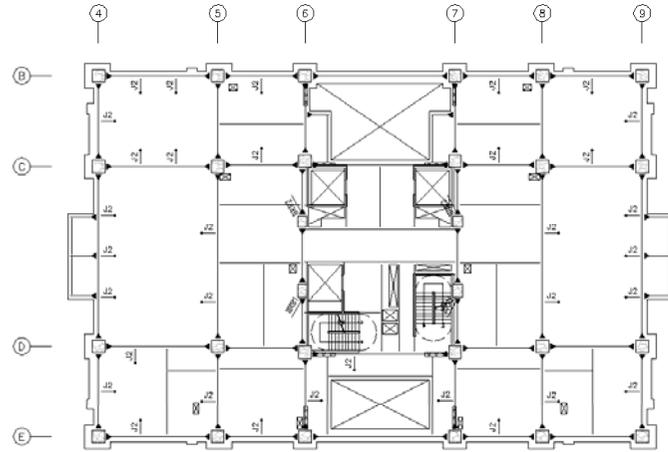
◆ 基礎型式:

樁基礎

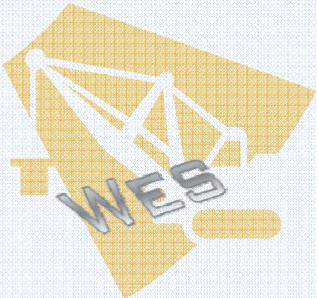
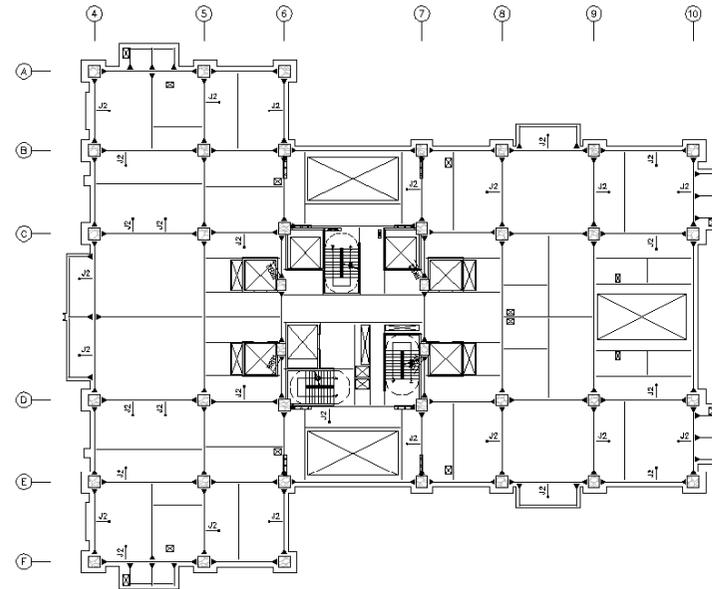


結構平面

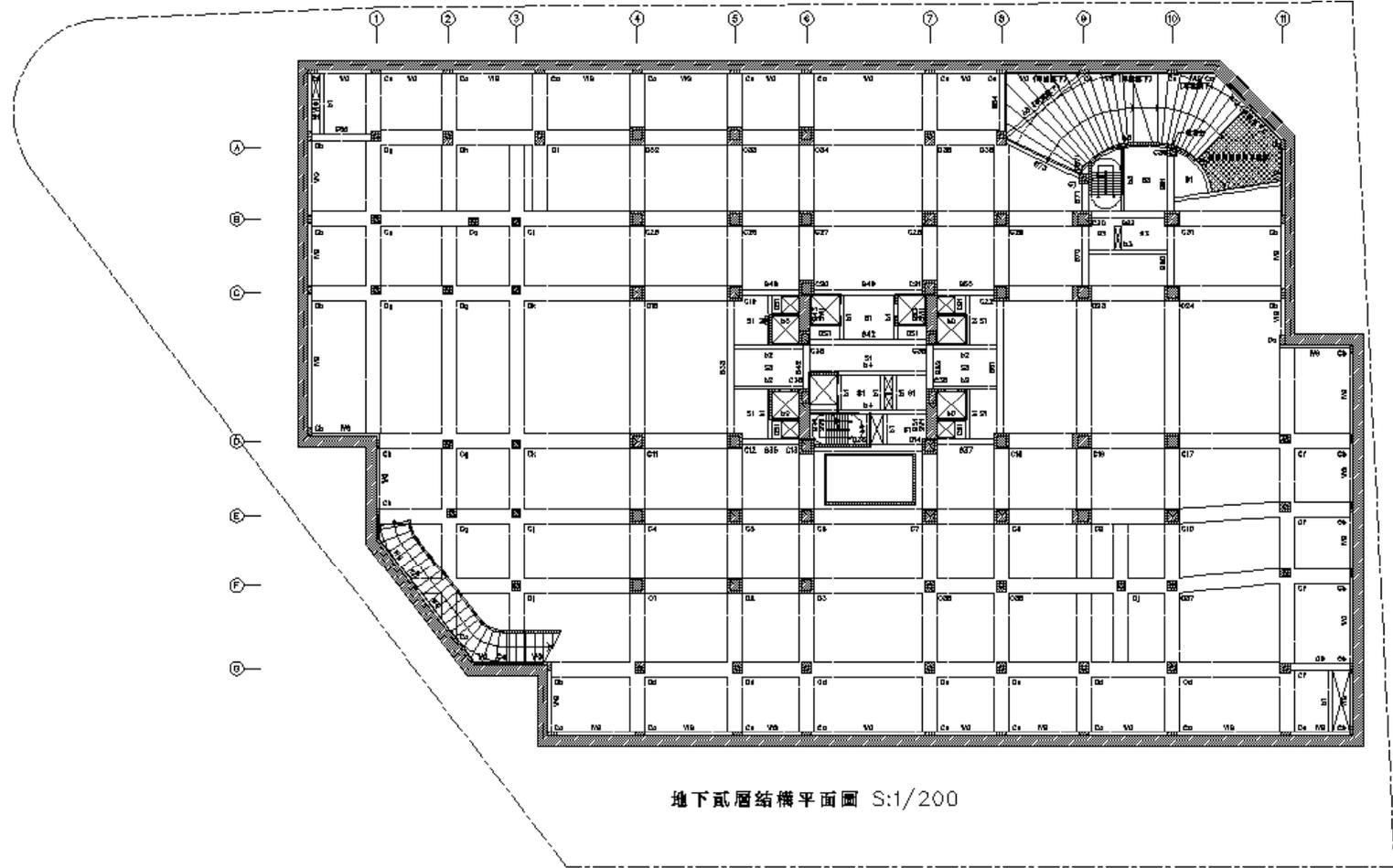
高樓層



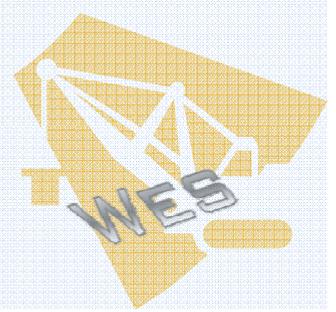
低樓層



結構平面

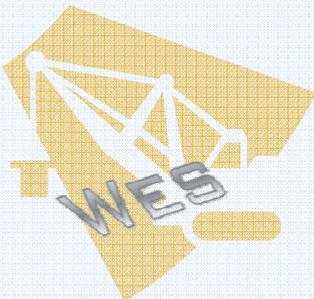
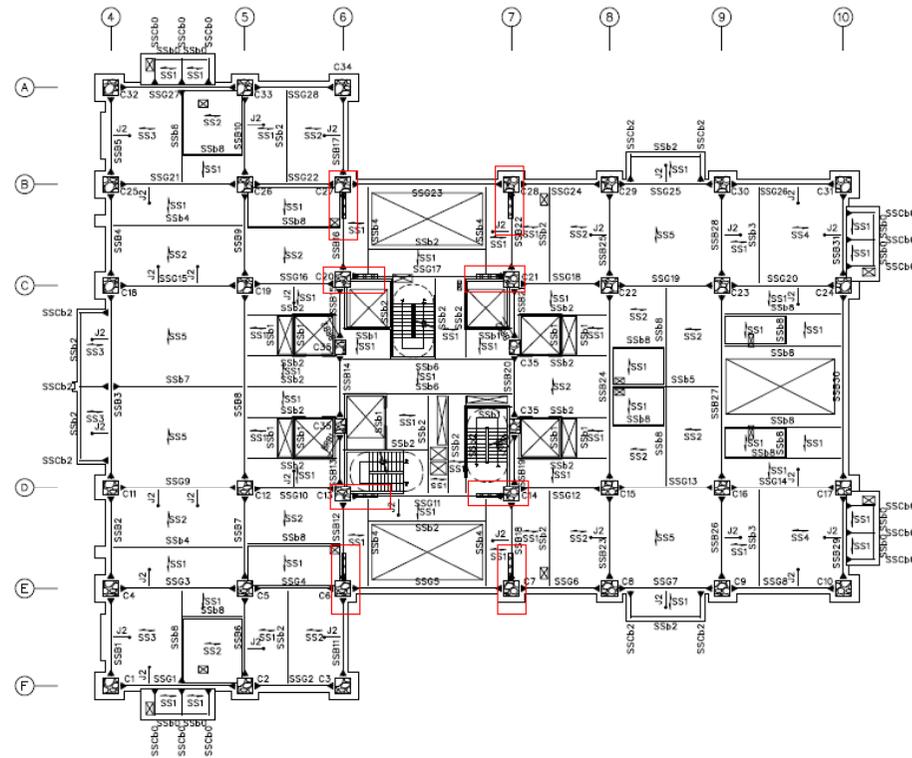


地下室層結構平面圖 S:1/200



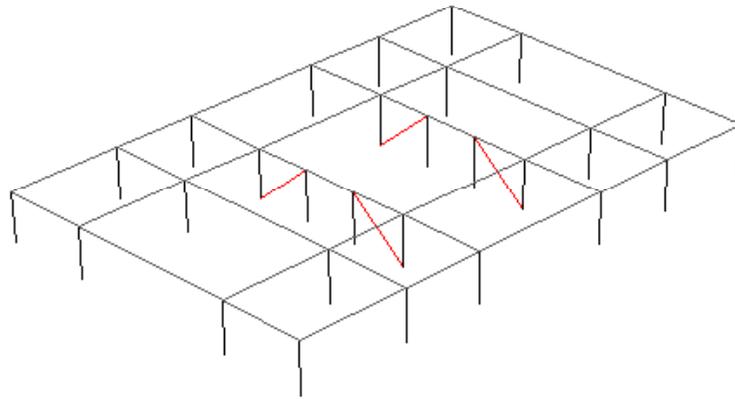
制震系統說明(Viscous Damper)

◆配置位置(288組)

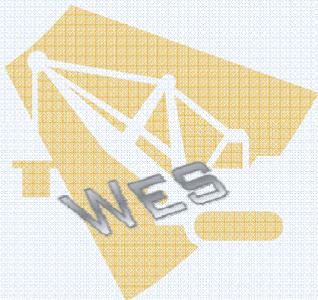
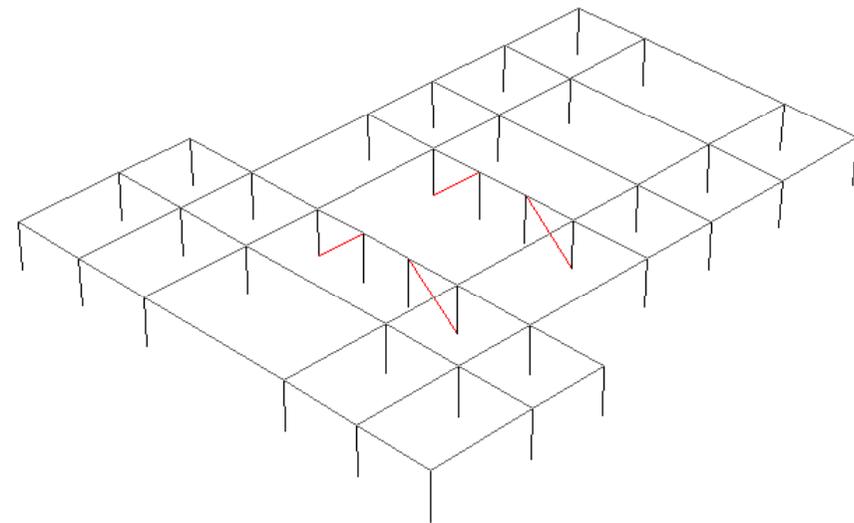


結構模型

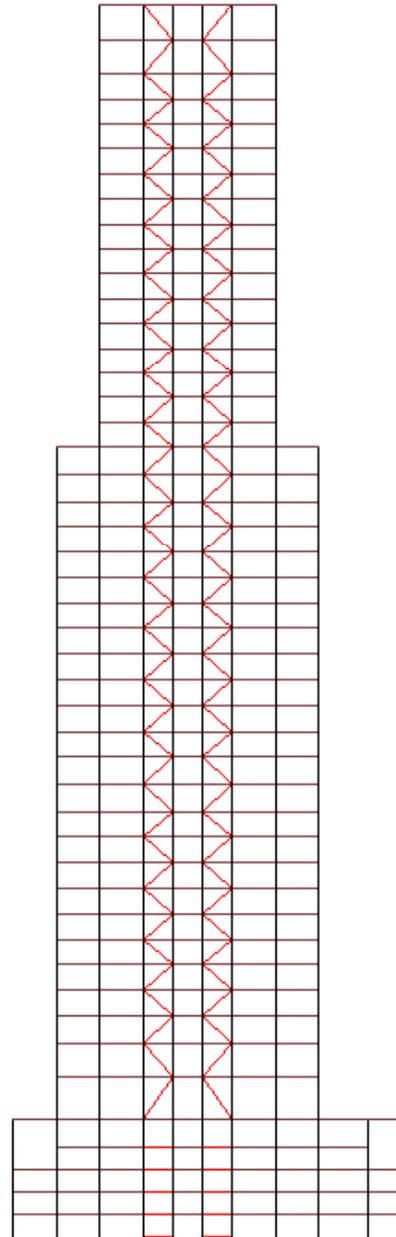
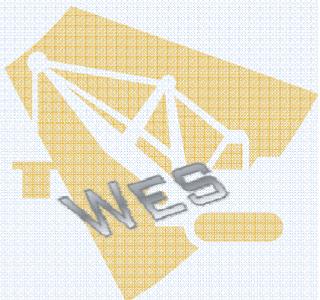
高樓層



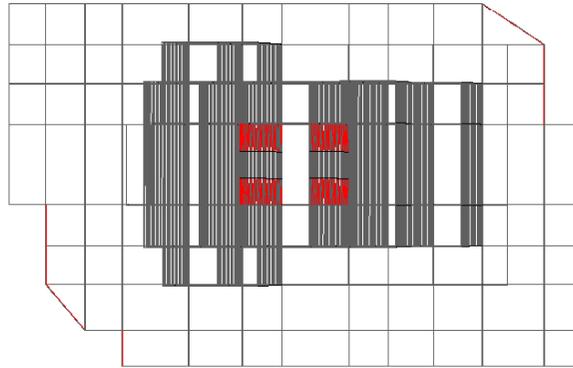
低樓層



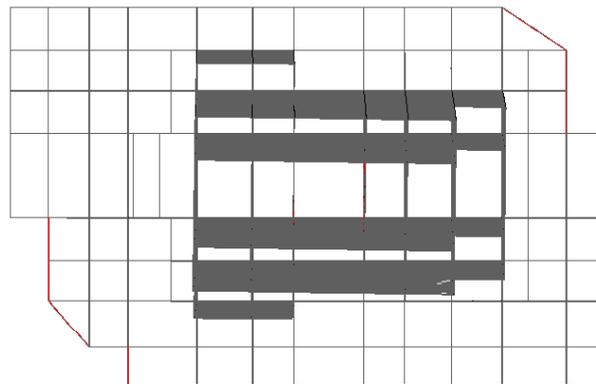
結構模型



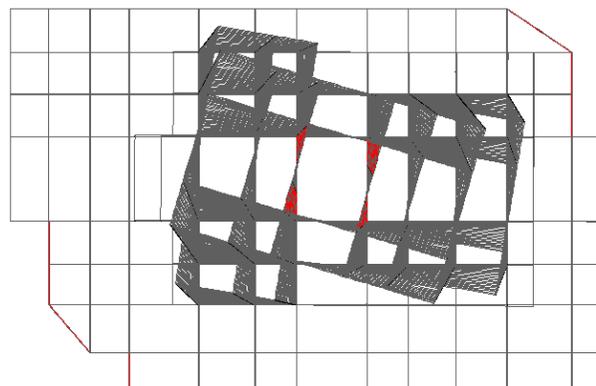
基本振態與週期(具槽接式挫屈束制斜撐)



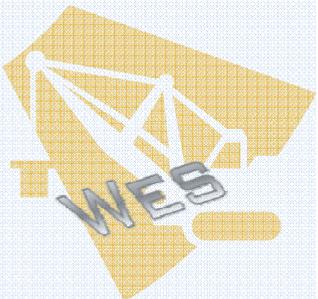
Mode 1
 $T_x=4.51$ sec



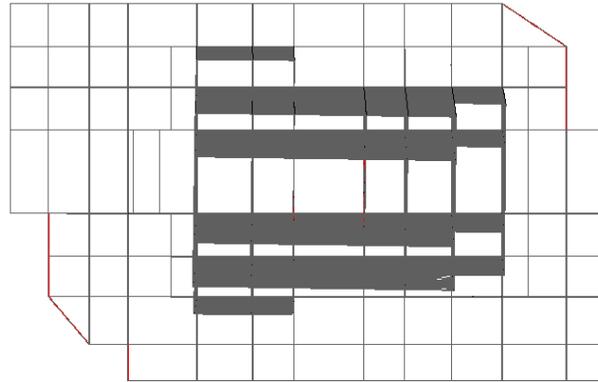
Mode 2
 $T_y=4.10$ sec



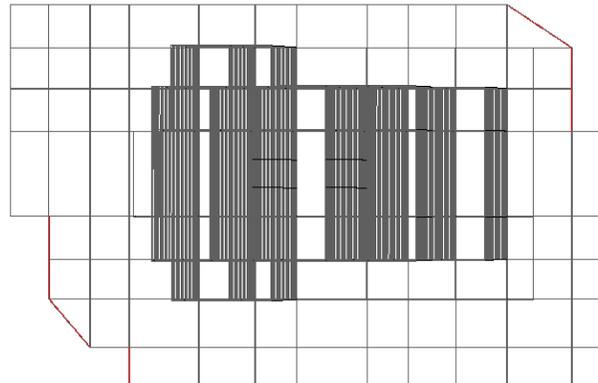
Mode 3
 $T_y=3.48$ sec



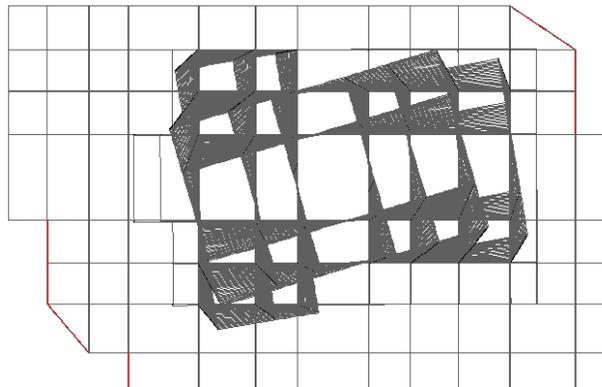
基本振態與週期(純韌性抗彎矩構架系統)



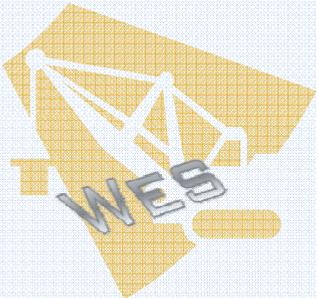
Mode 1
 $T_y=4.67$ sec



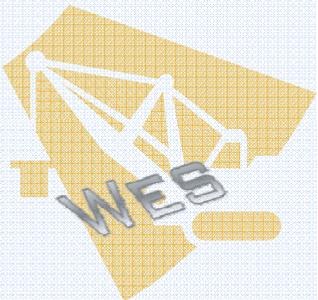
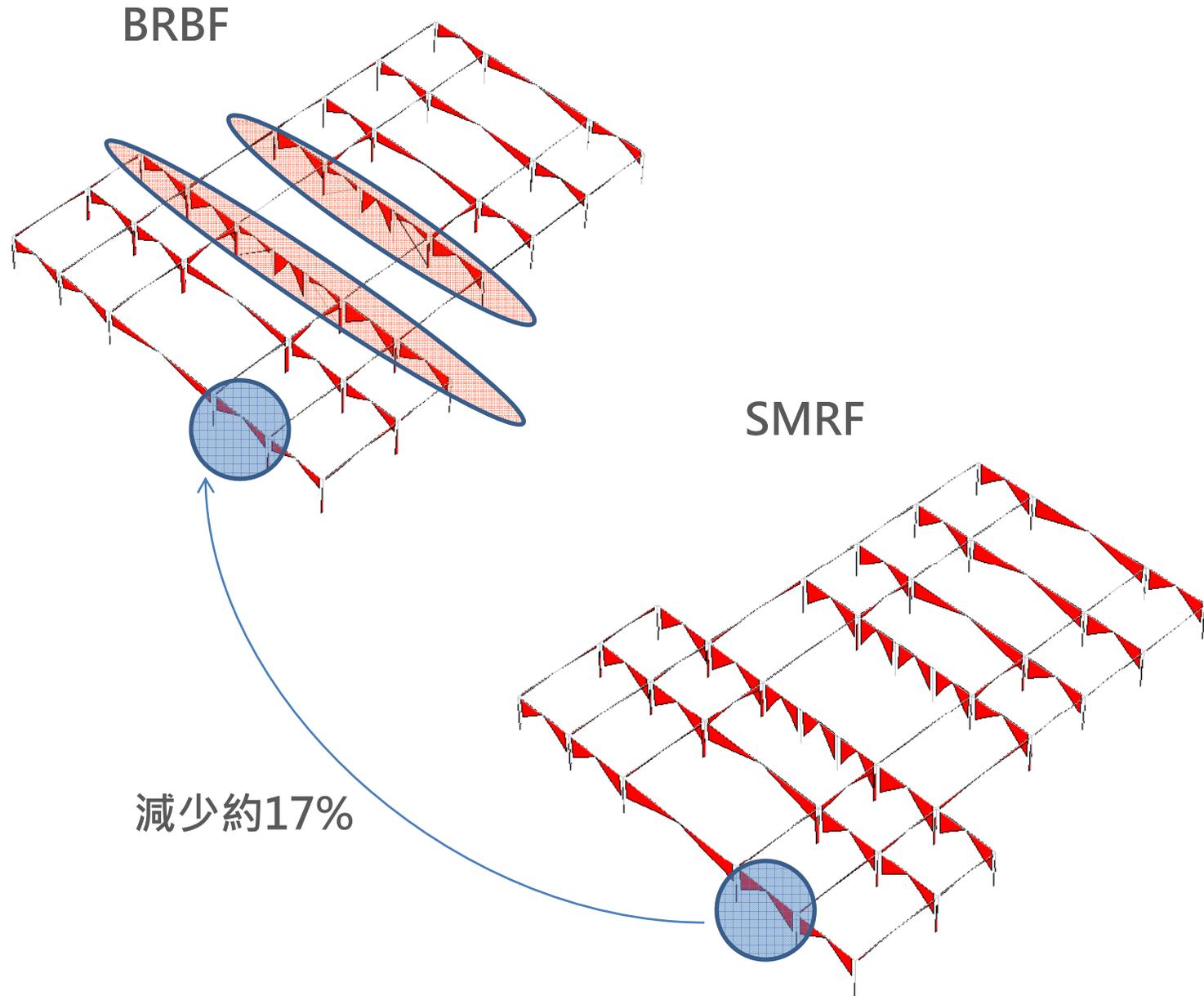
Mode 2
 $T_x=4.51$ sec



Mode 3
 $T_y=3.85$ sec

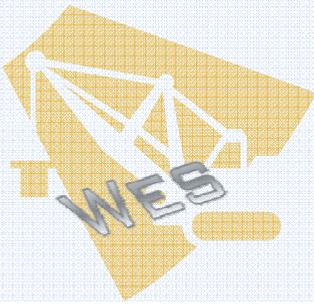
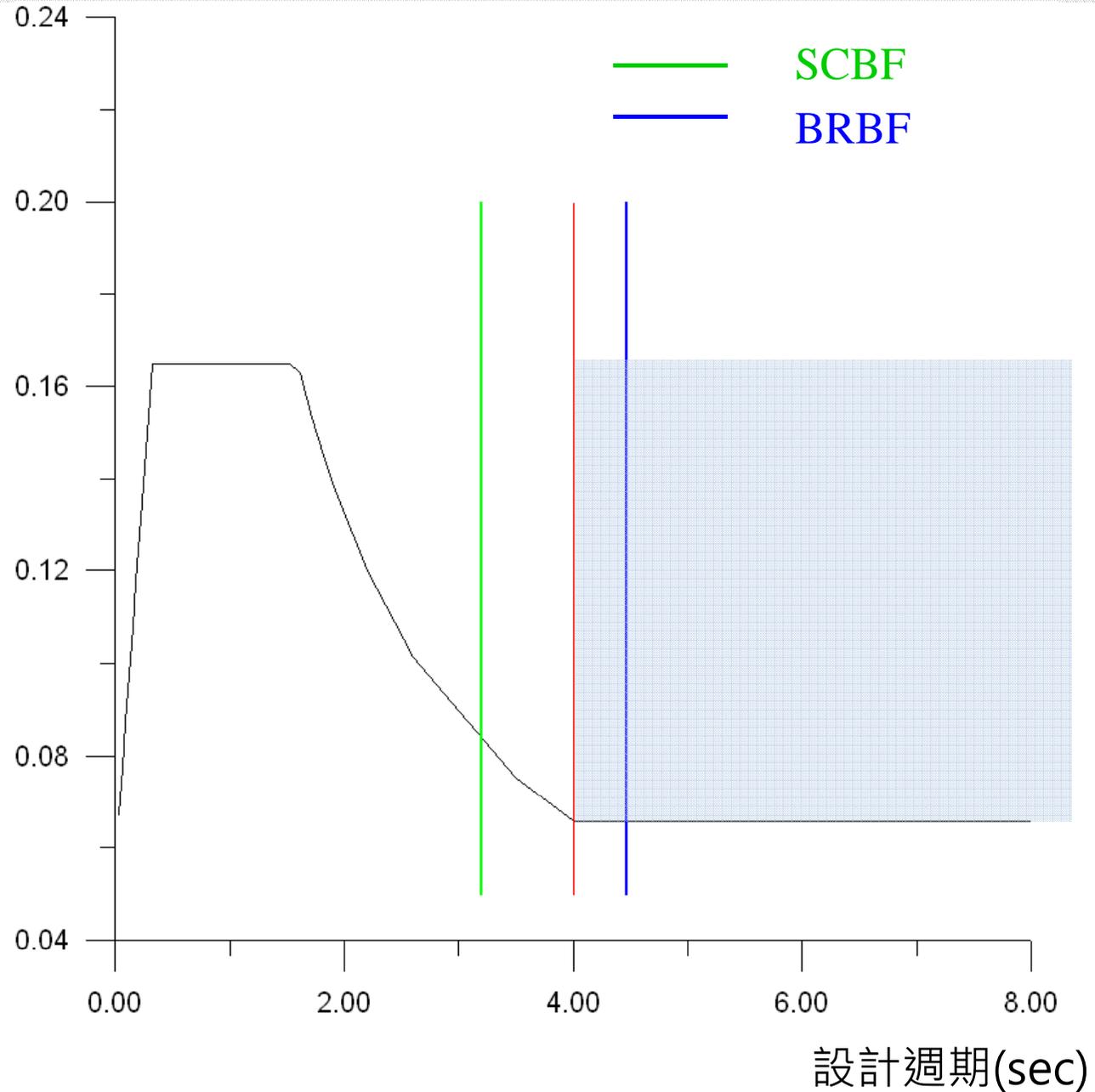


梁彎矩比較(Y-dir Eqy)



設計地震力差異

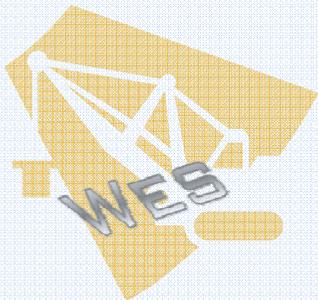
地震橫力係數(W)



最高居室加速度

基本設計風速 $V_{10}(C)$	半年迴歸期風速	無外加阻尼之結構阻尼比 (鋼構)				
37.5 m/s	11.2 m/s	0.010				

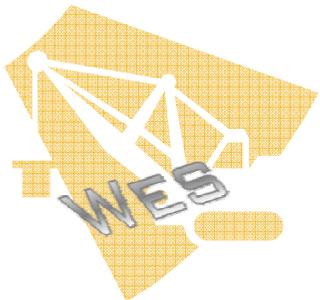
結構阻 尼比	最高居室樓層尖峰加速度(m/s^2)					
	σ_{a_x}	σ_{a_y}	σ_{a_θ}	A_{xc}	A_{yc}	A
0.010	0.0030	0.0042	0.0002	0.0142	0.0248	0.029
0.015	0.0026	0.0033	0.0002	0.0117	0.0201	0.023
0.020	0.0023	0.0029	0.0002	0.0102	0.0174	0.020
0.025	0.0020	0.0026	0.0001	0.0092	0.0156	0.018
0.030	0.0019	0.0023	0.0001	0.0084	0.0142	0.017
0.035	0.0017	0.0022	0.0001	0.0078	0.0132	0.015



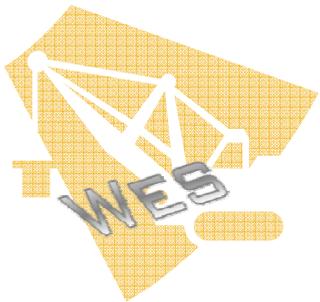
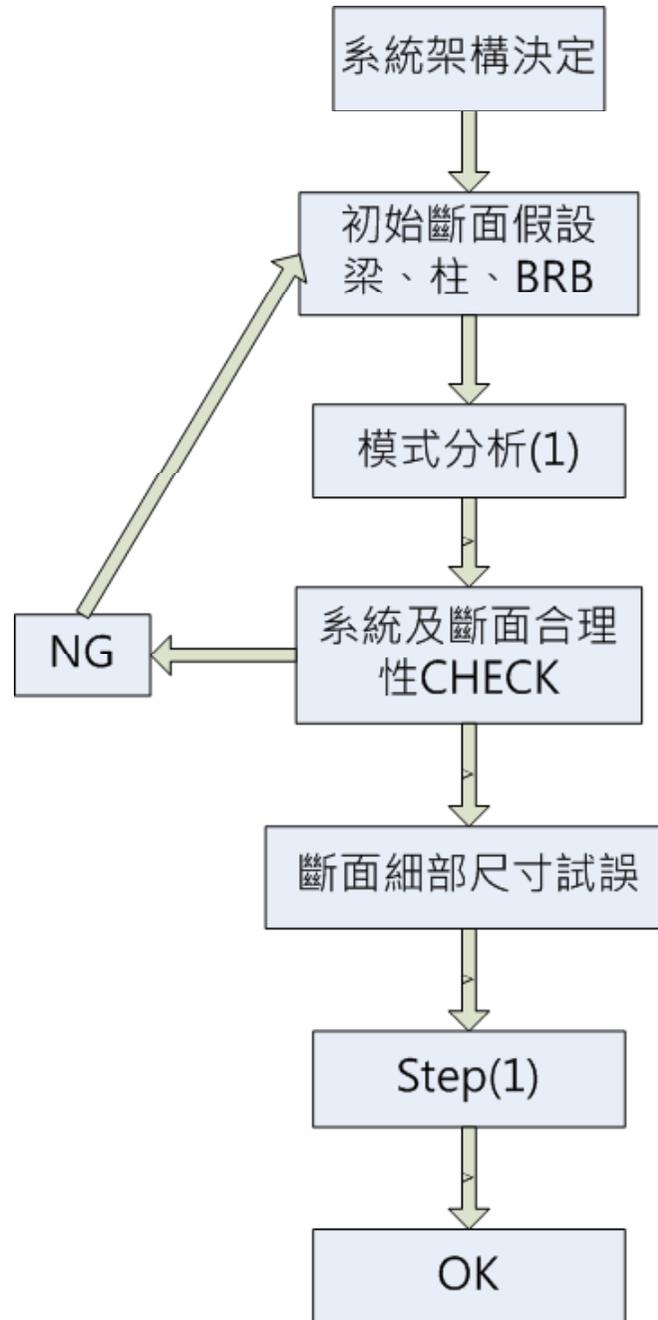
槽接式挫屈斜撐設計

- 構架基本幾何關係。
- 確認鋼材規格。
- 模式分析所需之標稱降伏強度
- BOD雲端系統
- 等效勁度 K_{eff} 回饋分析
- 確認週期、地震力及變位之合理性

梁柱斷面安全性
檢討



設計流程



槽接式挫屈斜撐設計



BOD
Brace On Demand

F C B G L DONE

Find your BRB

F B G A

Frame

Height&Width(mm)

Hcol **4000** Lbeam **5000**

Beam Section (H-Beam)

Type

Upper **H594x302x14x23**

Lower **H594x302x14x23**

Material:

Fy,beam **0.033** Ry,beam **1.2**

Column Depth(mm)

Left **dc,left 500** Right **dc,right 500**

Slab thickness(mm)

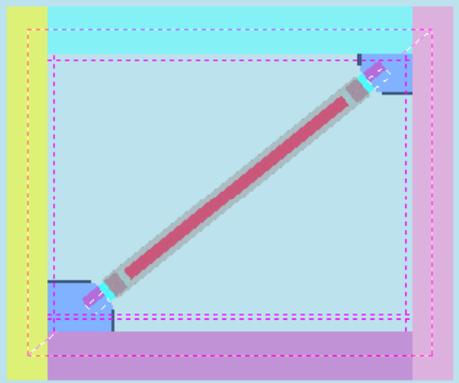
ts **150**

Clouds

B L D A

All

DCR-1	0.65
DCR-2	0.86
DCR-3-Upper	0.99
DCR-3-Lower	0.99
DCR-4	0.83
DCR-5-Upper	0.76
DCR-5-Lower	0.76
DCR-6-Upper	0.87
DCR-6-Lower	0.89
DCR-7-1-Upper	0.89
DCR-7-2-Upper	0.10
DCR-7-3-Upper	0.75
DCR-7-4-Upper	0.61
DCR-7-5-Upper	0.07
DCR-7-6-Upper	0.52
DCR-7-1-Lower	0.78
DCR-7-2-Lower	0.04
DCR-7-3-Lower	0.66
DCR-7-4-Lower	0.60
DCR-7-5-Lower	0.09
DCR-7-6-Lower	0.51





9%

19%

33%

76%

76%

87%

89%

89%

10%

75%

61%

7%

52%

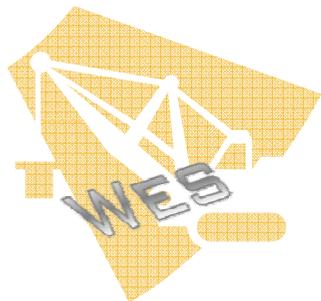
78%

4%

16%

10%





簡報結束

