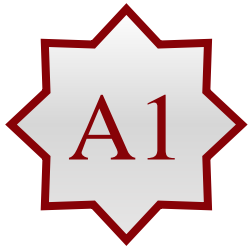


# Q1

在操作範例中只有提到程式有強柱弱梁及極限層剪力檢核功能，若遇到檢核不過時有  
 哪些調整的做法？

Node	LCB	Column Strength (tonf-cm)	Clockwise		Counter-Clockwise		Minimum Ratio	Remark
			Beam Strength (tonf-cm)	Ratio	Beam Strength (tonf-cm)	Ratio		
Acceptance Limit for SCWB C/B Flexural Capacity Ratio: 1.2								
Input Acceptance Limit Value and Press 'Apply' button to change value.							1.20	Apply
Angle for Seismic Load Combination Result: 0 [Deg]								
Input Angle and Press 'Apply' button to change angle.							0.00	Apply
2	cLCB19	7127.5947	6148.8066	1.16	5171.4577	1.38	1.16	N/A
4	cLCB23	7127.5947	5171.4577	1.38	6148.8066	1.16	1.16	N/A
6	cLCB19	7523.9849	5644.3425	1.33	4132.5255	1.82	1.33	OK
8	cLCB23	7523.9849	4132.5255	1.82	5644.3425	1.33	1.33	OK
10	cLCB20	6124.1639	4640.9412	1.32	3662.8194	1.67	1.32	OK
12	cLCB24	6124.1639	3662.8194	1.67	4640.9412	1.32	1.32	OK
14	cLCB20	6370.1970	4640.9412	1.37	3662.8194	1.74	1.37	OK
16	cLCB24	6370.1970	3662.8194	1.74	4640.9412	1.37	1.37	OK
18	cLCB20	4613.3026	4640.9412	0.99	3662.8194	1.26	0.99	N/A
20	cLCB24	4613.3026	3662.8194	1.26	4640.9412	0.99	0.99	N/A
27	cLCB20	1962.5324	1030.1446	1.91	1030.1446	1.91	1.91	OK
28	cLCB24	1962.5324	1030.1446	1.91	1030.1446	1.91	1.91	OK

Story	Load Case	Angle ([deg])	Applied Shear Force (Ve) (kgf)	Clockwise			Ratio1 (Vp/Ve)	Beta1	Counter-Clockwise			Ratio2 (Vp/Ve)	Beta2	MIN (Beta1, Beta2)	Remark
				Ultimate Shear Force1 (Vp) (kgf)					Ultimate Shear Force2 (Vp) (kgf)						
				Column	Wall	SUM			Column	Wall	SUM				
Angle for static load case result: 0 [Deg]															
Input angle and press the 'Apply' button to change the angle.				0.00	Apply										
4F	EX	0	82688.81	482225.25	0.00	482225.25	5.83	-	482540.36	0.00	482540.36	5.84	-	-	OK
3F	EX	0	184142.15	936103.04	0.00	936103.04	5.08	0.872	939146.35	0.00	939146.35	5.10	0.874	0.872	OK
2F	EX	0	255530.90	1029308.1	0.00	1029308.1	4.03	0.792	1032405.8	0.00	1032405.8	4.04	0.792	0.792	NG
1F	EX	0	294368.05	951028.56	0.00	951028.56	3.23	0.802	951478.44	0.00	951478.44	3.23	0.800	0.800	OK
4F	EY	0	0.00	482225.25	0.00	482225.25	0.00	-	482540.36	0.00	482540.36	0.00	-	-	OK
3F	EY	0	0.00	936103.04	0.00	936103.04	0.00	-	939146.35	0.00	939146.35	0.00	-	-	-
2F	EY	0	0.00	1029308.1	0.00	1029308.1	0.00	-	1032405.8	0.00	1032405.8	0.00	-	-	-
1F	EY	0	0.00	951028.56	0.00	951028.56	0.00	-	951478.44	0.00	951478.44	0.00	-	-	-



您可以在設計後執行Update Column Rebar (在Tree Menu 可以看到增加一個Rebar Data: Column) , 利用Modify Column Rebar Data功能增加調整Column Main Rebar , 之後進行Column Code Checking , 提高柱強度 , 在進一步確認SCWB Ratio與Vp/Ve結果。

1. 您可以調整您的配筋 by member 或 property. (e.g. Property)

請選擇需要跟改的斷面 , 然後按 Update Rebar 。

1. TWN-USD111 RC-Column Design Result Dialog For Ductile Design

Code : TWN-USD111 Unit : tonf , cm Primary Sorting Option

Sorted by  Member  Property  SECT  MEMB

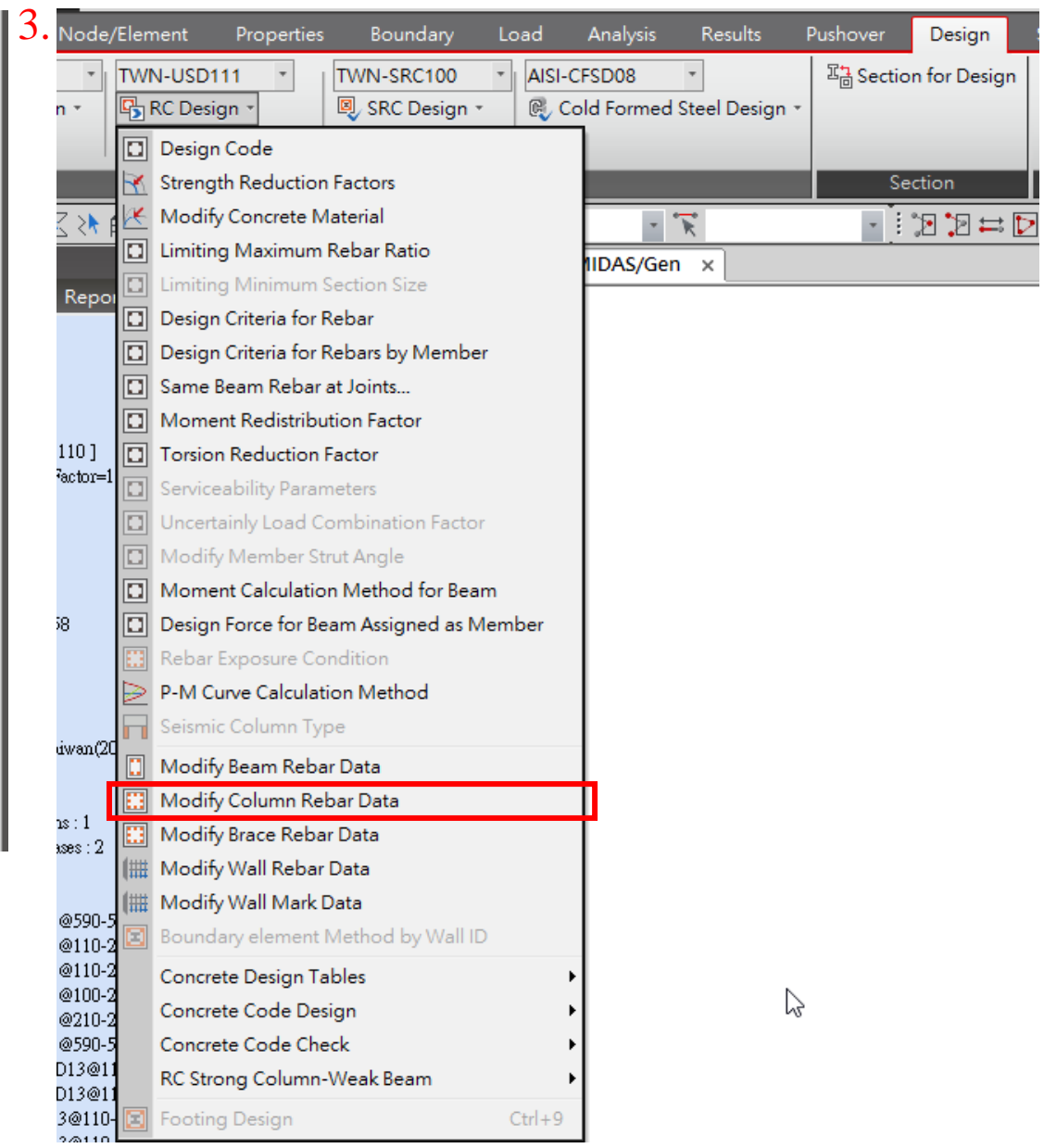
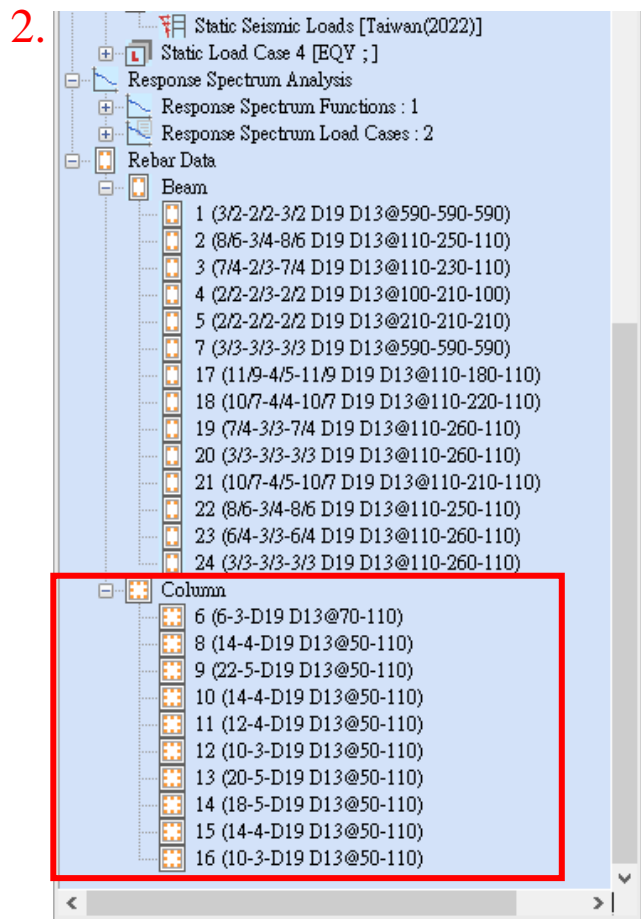
MEMB	SECT	Section		fc	fy	LCB	Pu	Mc	Ast	V-Rebar	LCB	Vu.end	Rat-V.end	As-H.end	H-Rebar.end
		Bc	Hc												
0	<input checked="" type="checkbox"/>	C35X35-D		0.28000	4.20000	7	9.91619	572.697	17.220	6-3-D19	6	8.24734	0.309	9.1386	2-D13 @70
6	<input checked="" type="checkbox"/>	35.00	35.00	360.00	4.20000		0.528	0.528			4	8.18951	0.309	2.9167	2-D13 @110
0	<input checked="" type="checkbox"/>	C40X60-D		0.28000	4.20000	9	127.439	3193.66	40.180	14-4-D19	9	16.9509	0.316	15.992	2-D13 @50
8	<input checked="" type="checkbox"/>	60.00	40.00	360.00	4.20000		0.997	0.997			17	28.1615	0.504	6.6957	2-D13 @110
0	<input checked="" type="checkbox"/>	C1-1		0.28000	4.20000	4	157.384	3392.79	63.140	22-5-D19	16	24.6605	0.459	23.265	2-D13 @50
9	<input checked="" type="checkbox"/>	60.00	40.00	400.00	4.20000		0.974	0.973			12	24.6605	0.627	9.2765	2-D13 @110
0	<input checked="" type="checkbox"/>	C1-2		0.28000	4.20000	16	26.5078	2400.08	40.180	14-4-D19	17	22.1839	0.413	20.929	2-D13 @50
10	<input checked="" type="checkbox"/>	60.00	40.00	360.00	4.20000		0.917	0.910			12	21.9972	0.584	8.2823	2-D13 @110
0	<input checked="" type="checkbox"/>	C1-3		0.28000	4.20000	16	20.3960	2023.72	34.440	12-4-D19	17	17.9408	0.334	16.926	2-D13 @50
11	<input checked="" type="checkbox"/>	60.00	40.00	360.00	4.20000		0.887	0.882			16	17.8410	0.491	5.6660	2-D13 @110
0	<input checked="" type="checkbox"/>	C1-4		0.28000	4.20000	8	28.1821	1077.69	28.700	10-3-D19	16	10.3297	0.192	9.7452	2-D13 @50
12	<input checked="" type="checkbox"/>	60.00	40.00	360.00	4.20000		0.421	0.420			16	10.3297	0.301	5.0000	2-D13 @110
0	<input checked="" type="checkbox"/>	C2-1		0.28000	4.20000	8	159.589	3281.68	57.400	20-5-D19	16	31.9112	0.434	9.1783	2-D13 @50
13	<input checked="" type="checkbox"/>	60.00	40.00	400.00	4.20000		0.972	0.971			12	31.9112	0.575	9.1065	2-D13 @110
0	<input checked="" type="checkbox"/>	C2-2		0.28000	4.20000	4	112.611	3242.85	51.660	18-5-D19	16	19.9396	0.371	18.811	2-D13 @50
14	<input checked="" type="checkbox"/>	60.00	40.00	360.00	4.20000		0.967	0.966			16	19.9396	0.504	5.0000	2-D13 @110
0	<input checked="" type="checkbox"/>	C2-3		0.28000	4.20000	16	23.6076	3106.72	40.180	14-4-D19	17	15.8972	0.296	14.998	2-D13 @50
15	<input checked="" type="checkbox"/>	60.00	40.00	360.00	4.20000		0.979	0.979			12	15.8524	0.424	5.0000	2-D13 @110
0	<input checked="" type="checkbox"/>	C2-4		0.28000	4.20000	4	29.4781	1347.37	28.700	10-3-D19	17	15.9895	0.280	9.4614	2-D13 @50
16	<input checked="" type="checkbox"/>	60.00	40.00	360.00	4.20000		0.508	0.507			16	9.88776	0.287	5.0000	2-D13 @110

Connect Model View

Result View Option  All  OK  NG

2. 按Update Rebar 之後，  
在Tree Menu 可以看到  
Rebar Data

3. 在RC Design > Modify  
Column Rebar 可以調  
整您的配筋。



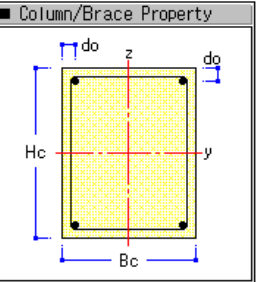
4. 要修改配筋，請先選擇您的斷面。  
然後在Rebar Main Data您可以調整配筋已調整配筋，請安Add/Replace。

4. Modify Column Rebar Data

SECT	Name	Bar
6	C35X35-D	In
8	C40X60-D	In
9	C1-1	In
10	C1-2	In
11	C1-3	In
12	C1-4	In
13	C2-1	In
14	C2-2	In
15	C2-3	In
16	C2-4	In

Element List : 9 10

Column/Brace Property



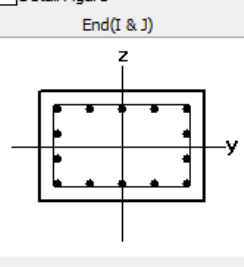
Rebar		Data			
Main	Numbers	14		D19	
	Rows	4			
	Corner	<input type="checkbox"/>		D19	
Ties/ Spirals	End(I & J)	y	2	D13	@ 50
		z	2		
	Center(M)	y	2	D13	@ 110
		z	2		

Concrete Face to Center of Rebar(do) : 6.35 cm

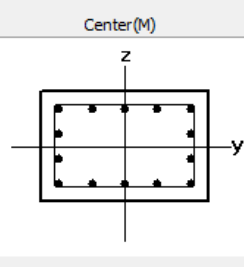
Type of Hoop Rebar :  Ties  Spirals

Detail Figure

End(I & J)



Center(M)



Same Ties/Spirals Rebar Space at End and Center

**Add/Replace** Delete Close

5. 配筋調整之後，您可以確認您的配筋，請在Design > RC Design > Concrete Code Check > Column Checking 然後您可以再確認SCWB與Vp/Ve 結果。

5. Design

Design Code

- Strength Reduction Factors
- Modify Concrete Material
- Limiting Maximum Rebar Ratio
- Limiting Minimum Section Size
- Design Criteria for Rebar
- Design Criteria for Rebars by Member
- Same Beam Rebar at Joints...
- Moment Redistribution Factor
- Torsion Reduction Factor
- Serviceability Parameters
- Uncertainly Load Combination Factor
- Modify Member Strut Angle
- Moment Calculation Method for Beam
- Design Force for Beam Assigned as Member
- Rebar Exposure Condition
- P-M Curve Calculation Method
- Seismic Column Type
- Modify Beam Rebar Data
- Modify Column Rebar Data
- Modify Brace Rebar Data
- Modify Wall Rebar Data
- Modify Wall Mark Data
- Boundary element Method by Wall ID
- Concrete Design Tables
- Concrete Code Design
- Concrete Code Check**
  - Beam Checking Ctrl+Shift+1
  - Column Checking Ctrl+Shift+2**
  - Brace Checking
  - Wall Checking Ctrl+Shift+3
- RC Strong Column-Weak Beam
- Footing Design Ctrl+9