

內政部營建署
九十七年度鄉村地區住宅標準圖樣及說明書

結構計算書
(退休夫婦型)

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地域別：桃竹苗

編號： 01

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0、建築概要

0.1 基地概況：

本工程無特定基地，為桃竹苗地區鄉村住宅方案，僅適用於堅實地盤且無近斷層效應(中央地質調查所調查第一類活動斷層性質)之地點，基地略呈長方形，地勢平坦。規劃興建地上 3 層之鋼筋混凝土造結構物。

0.2 建築物用途

本基地規劃興建地上 3 層之鋼筋混凝土造結構物，詳細高度詳建築圖。各層主要用途如下：

層 別	用 途
屋突層	屋突、頂蓋
三層	梯間、機械室
二層	住宅
一層	住宅

0.3 建築材料

外牆：15cm RC 牆

隔間牆：12cm 磚牆、15 cm RC 牆

樓梯、電梯牆：RC 牆

地板：花崗石、地磚

詳細建築材料另詳建築圖

1、結構系統概要及設計依據

一、結構系統概要

本工程無特定基地，為桃竹苗地區鄉村住宅方案，僅適用於堅實地盤且無近斷層效應(中央地質調查所調查第一類活動斷層性質)之地點，基地略呈長方形，地勢平坦。規劃興建地上3層之鋼筋混凝土造結構物。

系統概述如下：

(1)結構系統：

X、Y向採用梁柱韌性抗彎矩構架系統。

(2)基礎：基礎型式採用獨立與聯合基礎，基礎版厚為30、40 cm。

(3)開挖方式：本基地開挖採用明挖工法。鄰房基礎面如在本基地基礎範圍內，應進行托底工程計劃。

二、設計依據

(一)結構材料強度

本工程使用之材料強度，除特別註明者外，應符合下列之規定：

1. 混凝土

混凝土材料品質及施工應符合『建築技術規則』建築構造編第338~340條及第346~350條，並應符合第408條耐震特別規定。

(1) 主結構

$$F_c' = 210 \text{ kg/cm}^2$$

(2) 基礎打底

$$F_c' = 140 \text{ kg/cm}^2$$

2. 竹節鋼筋

鋼筋材料品質應符合『建築技術規則』建築構造編第341條、415條，且符合第418條耐震特別規定。初步規劃鋼筋強度為：

(1) #5 以下 (含#5)

$$F_y = 2800 \text{ kg/cm}^2$$

(2) #6 以上 (含#6)

$$F_y = 4200 \text{ kg/cm}^2$$

(二)設計荷重

1. 靜載重

考慮之靜載重計有結構構材重量、非結構構材重量、裝修材料重量及位置固定之設備重量、水箱等各部份永久性之重量按實計算。建築物所用各種材料之單位體積重量如下：

(1)地版

A. 屋突層

a. 1:3 水泥砂漿鋪面磚	36	kg/m ²
b. 2.0cm 水泥砂漿粉刷	40	kg/m ²
c. 6cm 泡沫混凝土	60	kg/m ²
d. 防水膜	4	kg/m ²
e. 2cm 水泥砂漿整平	40	kg/m ²
f. 天花板或水泥砂漿粉光(1.0cm)	20	kg/m ²
tot	200	kg/m ²

B. 各層使用空間

a. 梯廳：

a-1. 花崗石地磚	: 0.03×2.5	=	75	kg/m ²
a-2. 樓版雙面粉光	: 0.02×2.0	=	40	kg/m ²
a-3. 管線		=	5	kg/m ²
tot :			120	kg/m ²

b. 一般區域

b-1. 高架地板			55	kg/m ²
b-2. 樓版雙面粉光	: 0.02×2.0	=	40	kg/m ²
b-3. 管線			5	kg/m ²
tot :			100	kg/m ²

c. 浴廁上方置物層

c-1. 輕型鋼夾層 50 kg/m²

(2) 牆

A. 磚牆： 1B 厚 $440 + 20 \times 2$ 面 = 480 kg/m²

B/2 $220 + 20 \times 2$ 面 = 260 kg/m²

B. RC 內牆： a. 內牆 $tw + 1.0cm \times 2$ 面

12cm： $(0.12 \times 2400 + 20 \times 2.0) = 328$ kg/m²

15cm： $(0.15 \times 2400 + 20 \times 2.0) = 400$ kg/m²

C. 內牆：輕隔間牆

8cm： $(0.08 \times 1070) = 85$ kg/m²

D. 外牆：

a. 12cm RC 外牆 $tw + 1.5cm \times 2$ 面 + 外貼磁磚

12cm： $(0.12 \times 2400 + 30 \times 2.0 + 20) = 368$ kg/m²

b. 15cm RC 外牆 $tw + 1.5cm \times 2$ 面 + 外貼磁磚

15cm： $(0.15 \times 2400 + 30 \times 2.0 + 20) = 440$ kg/m²

c. RCW 加天然石材(乾式外牆) $tw + 3cm$ 石材
(外) + 1.5cm(內面) + 支架

12cm： $0.12 \times 2400 + 30 \times 2.5 + 15 \times 2.0 + 30 = 423$ kg/m²

本棟各面外牆採用材料可參考建築立面圖

2. 活載重

活載重的考慮依據係依建築規劃之樓版用途而不同，本案基地依其用途規劃其活載重參照規範訂定如下：

樓層	用 途	活荷重 (kg/m ²)	樓高(m)
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屋突層	屋突、頂蓋	300	
三層	梯間、機械室	1000	3.00
二層	住宅	300	3.00
一層	住宅	500	3.00

(三)地震力

依內政部 94 年 12 月 21 日台內營字第 0940087319 號文頒布“建築物耐震設計規範及解說”之規定，本案基本上考慮第二章靜力分析方法，步驟如下：

1. 靜力分析步驟

(1)求取基面以上之法規地震力

依 94 年 12 月 21 日內政部函（發文字號：台內營字第 0940087319 號）修訂之“建築物耐震設計規範及解說”中第二章 2.2 規定之靜力公式求得之基面剪力（最小地震總橫力），做為結構體地震力之設計依據。所參照之法規設計地震力各項係數及計算方式另詳本計算書第四章。

(2)設計地震力及豎向分配皆採用法規之總橫力與修正動力

反應譜之基底剪力與法規相同之包絡線作為設計側向力。

(3)偏心扭矩取 5%乘放大係數 A_x 之尺度偏心加上結構動力偏心扭矩。

垂直地震力：依第二章 2.18 之規定計算垂直地震力 V_z 。

→載重組合依據最新之規定，而在分析與設計時放入第 3 組載重中。

2. 建築物地下部份設計水平力

建築物地下部份設計水平地震力係參照法規 2.12 建築物地下部份之設計水平地震力之規定。

$$V_2 = K \cdot W'$$

$$K \geq 0.1 (1 - H / 40) S_{DS} I \quad (\text{水平震度})$$

S_{DS} = 工址短週期設計水平譜加速度係數

I = 用途係數

H = 公尺，地下建築物各部份距地盤面之深度超過 20 公尺時，
以 20 公尺計

W' : 地下室該層靜載重

(四)結構分析模式之模擬

1.分析程式之應用

本工程結構系統係採用樑柱韌性立體剛性構架，結構分析採用三向度立體剛性構架，假設樓版為剛性體且依實際情形定義一塊、兩塊或以上之剛性樓板，於承受水平力後，再傳給梁、柱構件。設計時利用電腦程式“ETABS”作動力分析、水平力分析和垂直荷重之桿件分析。動力分析係採用 CQC (COMPLETE QUADRATIC COMBINATION) 法，假設阻尼比 (DAMPING RATIO) 為 0.05，進行動力分析時所需疊加振態數應使 X 向、Y 向及扭轉方向之有效振態質量和均達到總質量的 90% 以上。

(五)風力

設計風壓力，依 95 年 9 月 22 日內政部函（發文字號：台內營字第 0950805664 號）訂定之“建築物耐風設計規範及解說”中第二章之規定求得設計風力。

另依建築技術規則：

風力區：150 級

最小設計風力：

0~9m	110 kg/m ²
9~15m	150 kg/m ²
15~30m	190 kg/m ²
30~150m	230 kg/m ²

經計算結果，最大設計風力(詳第 3 章)<地震力(詳第 4 章)，故設計水平力由地震力控制。

(六)結構系統規劃尺寸

基礎版厚： 30、40cm

柱尺寸：主要為 35×35、40×40、45×45 等

梁尺寸：主要為 30×50、40×50 等

版尺寸：15cm

牆尺寸：主要為 15cm

(七)設計應用程式

	應用程式
主構架分析	ETABS 6.11
筏基礎設計	CONBD*
小梁設計	CONBD*
版設計	SLABD*

*自行發展程式

(八)設計規範與參考資料

1.設計規範

(1)內政部營建署 “建築技術規則”，中華民國 94 年 7 月。

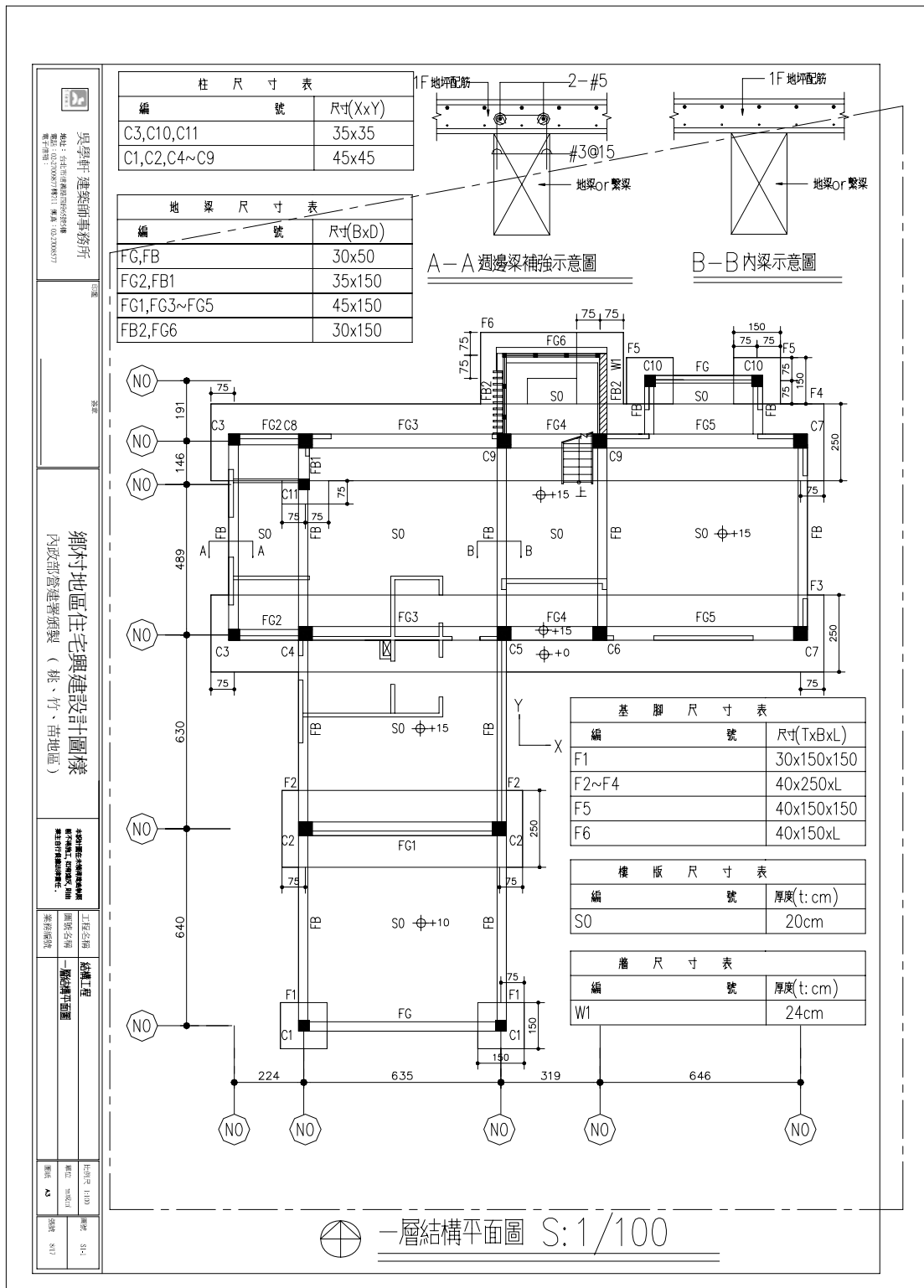
(2)內政部營建署 ” 結構混凝土設計規範”，中華民國 91 年 11 月。(發文字號：內政部台內營字第 0910084633 號，發文日期：中華民國 91 年 6 月 27 日)

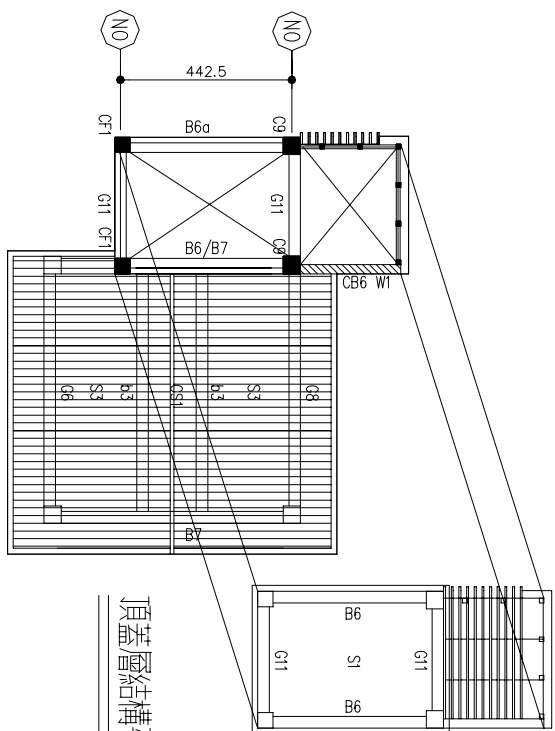
(3)內政部營建署 ” 結構混凝土施工規範”，中華民國 91 年 11 月。(發文字號：內政部台內營字第 0910084735 號，發文日期：中華民國 91 年 7 月 8 日)

(4)內政部營建署 ” 鋼構造建築物鋼結構設計技術規範(一) 鋼結構容許應力設計法規及解說”，中華民國 90 年元月。

- (5)內部政營建署 ” 鋼構造建築物鋼結構設計技術規範(二)
鋼結構極限設計法規及解說” ， 中華民國 90 年元月。
- (6)內部政營建署 ” 鋼骨鋼筋混凝土構造設計規範與解
說” ， 中華民國 93 年 6 月。
- (7)內部政營建署 ” 建築物耐震設計規範及解說” ， 中華民國
95 年 1 月。(發文字號：台內營字第 0940087319 號函 “修
正「建築物耐震設計規範及解說」” ， 發文日期：中華民
國 94 年 12 月 21 日)
- (8)內部政營建署 ” 建築物耐風設計規範及解說” ， 中華民國
95 年 10 月。(發文字號：台內營字第 0950805664 號函 “訂
定「建築物耐風設計規範及解說」” ， 發文日期：中華民
國 95 年 9 月 22 日)
- (9)內部政營建署 ” 建築物基礎構造設計規範” ， 中華民國
90 年 10 月。(發文字號：台(90)內營字第 9085629 號函，
發文日期：中華民國 90 年 10 月 2 日)
- (10)ACI Code 318-95 ， “BUILDING CODE
REQUIREMENTS FOR REINFORCED CONCRETE
AND COMMENTARY“ ， 1995
EDITION。
- (11)UBC Code ， “UNIFORM BUILDING CODE” ， 1994
EDITION。

2、結構平面圖





頂蓋層結構平面圖

屋架層結構平面圖 S:1/100

Y
X

柱 尺 寸 表		
編號	號	尺寸(X×Y)
CF1		40×40
C9		45×45

屋架二層大梁尺寸表		
編號	號	尺寸(B×D)
G6,G8,G11,B7		30×50
B6,B6a		40×50
CB6		24×50

頂蓋層大梁尺寸表		
編號	號	尺寸(B×D)
G11,B6		30×50

小 梁 尺 寸 表		
編號	號	尺寸(B×D)
b3		30×50

樓 版 尺 寸 表		
編號	號	厚度(t:cm)
S1,S3,CS1		15cm

港 尺 寸 表		
編號	號	厚度(t:cm)
W1		24cm

☐	吳學軒 建築師事務所 地址：台北市復興南路二段106號4樓 電話：(02)27086778 傳真：(02)27086777 電子郵件：	圖號 卷數	鄉村地區住宅興建設計圖樣 內政部營建署頒製（桃、竹、苗地區）	本圖係根據本所與委託人簽訂之設計契約書及相關圖說繪製，其內容與設計契約書及相關圖說一致，如有任何變更，應經委託人同意後方可進行。	工程名稱 圖說名稱 圖說編號	結構工程 屋架層結構平面圖、頂蓋層結構平面圖	比例尺 1:100 圖位 cm/1:1 圖號 A1	圖號 S1-5 圖號 12/17

3、質量及荷重計算（含梁間垂直載重計算、設計靜載重及活載重）、設計風力

質量中心計算：

SECTION PROPERTIES OF 2FL (

AREA = 241.840 ,Xc = -.69 ,Yc = -6.63

AXIS-X I = -.8139E+04 r = 5.80
CT = 8.93 CB = 12.77
ST = -.9118E+03 SB = -.6372E+03

AXIS-Y I = .5833E+04 r = 4.91
CT = 10.79 CB = 8.41
ST = .5404E+03 SB = .6938E+03

surrounding length = 85.80
ROTATIONAL INERTIA = 57.77

SECTION PROPERTIES OF 3FL

AREA = 112.020 ,Xc = 2.06 ,Yc = -3.03

AXIS-X I = -.5295E+03 r = 2.17
CT = 5.33 CB = 3.67
ST = -.9935E+02 SB = -.1442E+03

AXIS-Y I = .2545E+04 r = 4.77
CT = 8.04 CB = 8.96
ST = .3165E+03 SB = .2841E+03

surrounding length = 55.60
ROTATIONAL INERTIA = 27.45

SECTION PROPERTIES OF RFL

AREA = 74.640 ,Xc = 4.84 ,Yc = -2.54

AXIS-X I = -.3808E+03 r = 2.26
CT = 4.84 CB = 4.16
ST = -.7866E+02 SB = -.9157E+02

AXIS-Y I = .6683E+03 r = 2.99
CT = 5.26 CB = 5.14
ST = .1271E+03 SB = .1300E+03

surrounding length = 38.80
ROTATIONAL INERTIA = 14.06

SECTION PROPERTIES OF RFL(ROOF)

AREA = 79.120 ,Xc = -3.30 ,Yc = -9.70

AXIS-X I = -.4876E+03 r = 2.48
 CT = 10.00 CB = 4.30
 ST = -.4876E+02 SB = -.1134E+03

AXIS-Y I = .5581E+03 r = 2.66
 CT = 4.60 CB = 4.60
 ST = .1213E+03 SB = .1213E+03

surrounding length = 47.00
 ROTATIONAL INERTIA = 13.22

SECTION PROPERTIES OF PRFL

AREA = 19.760 ,Xc = 1.60 ,Yc = -2.30

AXIS-X I = -.4453E+02 r = 1.50
 CT = 2.60 CB = 2.60
 ST = -.1713E+02 SB = -.1713E+02

AXIS-Y I = .2378E+02 r = 1.10
 CT = 1.90 CB = 1.90
 ST = .1251E+02 SB = .1251E+02

surrounding length = 18.00
 ROTATIONAL INERTIA = 3.46

** 樓層質量計算 **

NFLOOR = 5

FLNAME	COL (T)	GIRDER (T)	BRACE (T)	PANEL (T)	FLOOR (T)	小梁牆及其他 (T)	樓層質量 (T)	平均樓層質量 (T/m2)
PRFL	.96	3.50	.00	.00	.00	11.36	15.82	.799
RFL	12.51	17.01	.00	.76	.00	127.11	157.39	1.024
3FL	14.72	20.22	.00	1.51	.00	113.05	149.49	1.335
2FL	17.95	28.55	.00	1.51	.00	198.02	246.04	1.018

大樑載重計算：(含設計靜載重及活載重)

STORY	D.L. (KG/M/M)	L.L. (KG/M/M)
PRFL	610.00	300.00
RFL	640.00	300.00
3FL	640.00	300.00
2FL	640.00	300.00

bay = 25 PRFL.. PRFL dead load = 610.00 KG/M/M
 No. of beam span loading = 1 W = 576.85
 X1 = -0.50 P1 =976.00
 bay = 25 PRFL.. PRFL live load = 300.00 KG/M/M
 No. of beam span loading = 2 W = 283.70
 X1 = -0.50 P1 =480.00

bay = 27 PRFL.. PRFL dead load = 610.00 KG/M/M
 No. of beam span loading = 3 W = 576.85
 X1 = -0.50 P1 =976.00
 bay = 27 PRFL.. PRFL live load = 300.00 KG/M/M
 No. of beam span loading = 4 W = 283.70
 X1 = -0.50 P1 =480.00

bay = 31 PRFL.. PRFL dead load = 610.00 KG/M/M

No. of beam span loading = 5 W = 640.50
 bay = 31 PRFL.. PRFL live load = 300.00 KG/M/M
 No. of beam span loading = 6 W = 315.00

 bay = 32 PRFL.. PRFL dead load = 610.00 KG/M/M
 No. of beam span loading = 7 W = 640.50
 bay = 32 PRFL.. PRFL live load = 300.00 KG/M/M
 No. of beam span loading = 8 W = 315.00

 bay = 2 RFL.. RFL dead load = 640.00 KG/M/M
 No. of beam span loading = 25 W = 1522.55
 X1 = -0.50 P1 =2318.40
 bay = 2 RFL.. RFL live load = 300.00 KG/M/M
 No. of beam span loading = 26 W = 479.32
 X1 = -0.50 P1 =1086.75

 bay = 4 RFL.. RFL dead load = 640.00 KG/M/M
 No. of beam span loading = 27 W = 1522.55
 X1 = -0.50 P1 =2318.40
 bay = 4 RFL.. RFL live load = 300.00 KG/M/M
 No. of beam span loading = 28 W = 479.32
 X1 = -0.50 P1 =1086.75

 bay = 6 RFL.. RFL dead load = 850.00 KG/M/M
 No. of beam span loading = 29 W = 1646.64
 X1 = -0.50 P1 =3082.67
 bay = 6 RFL.. RFL live load =1000.00 KG/M/M
 No. of beam span loading = 30 W = 1348.99
 X1 = -0.50 P1 =3626.67

 bay = 9 RFL.. RFL dead load = 850.00 KG/M/M
 No. of beam span loading = 31 W = 1646.64
 X1 = -0.50 P1 =3082.67
 bay = 9 RFL.. RFL live load =1000.00 KG/M/M
 No. of beam span loading = 32 W = 1348.99
 X1 = -0.50 P1 =3626.67

 bay = 13 RFL.. RFL dead load = 640.00 KG/M/M
 No. of beam span loading = 33 W = 820.00
 X1 = -0.25 P1 =2116.80 X2 = -0.50 P2 =2116.80 X3 = -0.75 P3 =2116.80
 bay = 13 RFL.. RFL live load = 300.00 KG/M/M
 No. of beam span loading = 34 W = 150.00
 X1 = -0.25 P1 =992.25 X2 = -0.50 P2 =992.25 X3 = -0.75 P3 =992.25

 bay = 17 RFL.. RFL dead load = 640.00 KG/M/M
 No. of beam span loading = 35 W = 820.00
 X1 = -0.25 P1 =2116.80 X2 = -0.50 P2 =2116.80 X3 = -0.75 P3 =2116.80
 bay = 17 RFL.. RFL live load = 300.00 KG/M/M
 No. of beam span loading = 36 W = 150.00
 X1 = -0.25 P1 =992.25 X2 = -0.50 P2 =992.25 X3 = -0.75 P3 =992.25

 bay = 20 RFL.. RFL dead load = 850.00 KG/M/M
 No. of beam span loading = 37 W = 1392.50
 X1 = -0.50 P1 =6800.00
 bay = 20 RFL.. RFL live load =1000.00 KG/M/M
 No. of beam span loading = 38 W = 1050.00
 X1 = -0.50 P1 =8000.00

 bay = 25 RFL.. RFL dead load = 640.00 KG/M/M
 No. of beam span loading = 39 W = 1328.00
 X1 = -0.50 P1 =1508.80
 bay = 25 RFL.. RFL live load = 300.00 KG/M/M
 No. of beam span loading = 40 W = 247.50
 X1 = -0.50 P1 =707.25

 bay = 26 RFL.. RFL dead load = 850.00 KG/M/M
 No. of beam span loading = 41 W = 1377.15
 bay = 26 RFL.. RFL live load =1000.00 KG/M/M
 No. of beam span loading = 42 W = 679.00

 bay = 27 RFL.. RFL dead load = 850.00 KG/M/M

No. of beam span loading = 43 W = 1477.50
 X1 = -0.50 P1 =7331.25
 bay = 27 RFL.. RFL live load =1000.00 KG/M/M
 No. of beam span loading = 44 W = 1150.00
 X1 = -0.50 P1 =8625.00

bay = 28 RFL.. RFL dead load = 640.00 KG/M/M
 No. of beam span loading = 45 W = 470.40
 bay = 28 RFL.. RFL live load = 300.00 KG/M/M
 No. of beam span loading = 46 W = 220.50

bay = 29 RFL.. RFL dead load = 640.00 KG/M/M
 No. of beam span loading = 47 W = 470.40
 bay = 29 RFL.. RFL live load = 300.00 KG/M/M
 No. of beam span loading = 48 W = 220.50

bay = 30 RFL.. RFL dead load = 640.00 KG/M/M
 No. of beam span loading = 49 W = 648.96
 bay = 30 RFL.. RFL live load = 300.00 KG/M/M
 No. of beam span loading = 50 W = 304.20

bay = 31 RFL.. RFL dead load = 640.00 KG/M/M
 No. of beam span loading = 51 W = 1301.00
 X1 = -0.50 P1 =545.60
 bay = 31 RFL.. RFL live load = 300.00 KG/M/M
 No. of beam span loading = 52 W = 234.84
 X1 = -0.50 P1 =255.75

bay = 32 RFL.. RFL dead load = 640.00 KG/M/M
 No. of beam span loading = 53 W = 886.40
 bay = 32 RFL.. RFL live load = 300.00 KG/M/M
 No. of beam span loading = 54 W = 415.50

bay = 2 3FL.. 3FL dead load = 640.00 KG/M/M
 No. of beam span loading = 55 W = 1120.00
 bay = 2 3FL.. 3FL live load = 300.00 KG/M/M
 No. of beam span loading = 56 W = 150.00

bay = 4 3FL.. 3FL dead load = 640.00 KG/M/M
 No. of beam span loading = 57 W = 1617.29
 X1 = -0.50 P1 =2169.07
 bay = 4 3FL.. 3FL live load = 300.00 KG/M/M
 No. of beam span loading = 58 W = 383.11
 X1 = -0.50 P1 =1016.75

bay = 6 3FL.. 3FL dead load = 640.00 KG/M/M
 No. of beam span loading = 59 W = 1663.35
 X1 = -0.50 P1 =2321.07
 bay = 6 3FL.. 3FL live load = 300.00 KG/M/M
 No. of beam span loading = 60 W = 404.70
 X1 = -0.50 P1 =1088.00

bay = 9 3FL.. 3FL dead load = 640.00 KG/M/M
 No. of beam span loading = 61 W = 1663.35
 X1 = -0.50 P1 =2321.07
 bay = 9 3FL.. 3FL live load = 300.00 KG/M/M
 No. of beam span loading = 62 W = 404.70
 X1 = -0.50 P1 =1088.00

bay = 13 3FL.. 3FL dead load = 640.00 KG/M/M
 No. of beam span loading = 63 W = 1120.00
 bay = 13 3FL.. 3FL live load = 300.00 KG/M/M
 No. of beam span loading = 64 W = 150.00

bay = 14 3FL.. 3FL dead load = 640.00 KG/M/M
 No. of beam span loading = 65 W = 160.00
 X1 = -0.25 P1 =1280.53 X2 = -0.50 P2 =1280.53 X3 = -0.75 P3 =1280.53
 bay = 14 3FL.. 3FL live load = 300.00 KG/M/M
 No. of beam span loading = 66 W = 75.00
 X1 = -0.25 P1 =600.25 X2 = -0.50 P2 =600.25 X3 = -0.75 P3 =600.25

bay = 17 3FL.. 3FL dead load = 640.00 KG/M/M
 No. of beam span loading = 67 W = 1120.00
 bay = 17 3FL.. 3FL live load = 300.00 KG/M/M
 No. of beam span loading = 68 W = 150.00

bay = 20 3FL.. 3FL dead load = 640.00 KG/M/M
 No. of beam span loading = 69 W = 960.00
 X1 = -0.25 P1 =2184.53 X2 = -0.50 P2 =2184.53 X3 = -0.75 P3 =2184.53
 bay = 20 3FL.. 3FL live load = 300.00 KG/M/M
 No. of beam span loading = 70 W = 75.00
 X1 = -0.25 P1 =1024.00 X2 = -0.50 P2 =1024.00 X3 = -0.75 P3 =1024.00

bay = 23 3FL.. 3FL dead load = 640.00 KG/M/M
 No. of beam span loading = 71 W = 817.29
 X1 = -0.50 P1 =2169.07
 bay = 23 3FL.. 3FL live load = 300.00 KG/M/M
 No. of beam span loading = 72 W = 383.11
 X1 = -0.50 P1 =1016.75

bay = 24 3FL.. 3FL dead load = 640.00 KG/M/M
 No. of beam span loading = 73 W = 934.56
 bay = 24 3FL.. 3FL live load = 300.00 KG/M/M
 No. of beam span loading = 74 W = 203.70

bay = 25 3FL.. 3FL dead load = 640.00 KG/M/M
 No. of beam span loading = 75 W = 368.00
 X1 = -0.25 P1 =1128.53 X2 = -0.50 P2 =2637.33 X3 = -0.75 P3 =1128.53
 bay = 25 3FL.. 3FL live load = 300.00 KG/M/M
 No. of beam span loading = 76 W = 172.50
 X1 = -0.25 P1 =529.00 X2 = -0.50 P2 =1236.25 X3 = -0.75 P3 =529.00

bay = 26 3FL.. 3FL dead load = 640.00 KG/M/M
 No. of beam span loading = 77 W = 934.56
 bay = 26 3FL.. 3FL live load = 300.00 KG/M/M
 No. of beam span loading = 78 W = 203.70

bay = 27 3FL.. 3FL dead load = 640.00 KG/M/M
 No. of beam span loading = 79 W = 368.00
 X1 = -0.25 P1 =1128.53 X2 = -0.50 P2 =2637.33 X3 = -0.75 P3 =1128.53
 bay = 27 3FL.. 3FL live load = 300.00 KG/M/M
 No. of beam span loading = 80 W = 172.50
 X1 = -0.25 P1 =529.00 X2 = -0.50 P2 =1236.25 X3 = -0.75 P3 =529.00

bay = 28 3FL.. 3FL dead load = 640.00 KG/M/M
 No. of beam span loading = 81 W = 470.40
 bay = 28 3FL.. 3FL live load = 300.00 KG/M/M
 No. of beam span loading = 82 W = 220.50

bay = 29 3FL.. 3FL dead load = 640.00 KG/M/M
 No. of beam span loading = 83 W = 470.40
 bay = 29 3FL.. 3FL live load = 300.00 KG/M/M
 No. of beam span loading = 84 W = 220.50

bay = 30 3FL.. 3FL dead load = 640.00 KG/M/M
 No. of beam span loading = 85 W = 648.96
 bay = 30 3FL.. 3FL live load = 300.00 KG/M/M
 No. of beam span loading = 86 W = 304.20

bay = 31 3FL.. 3FL dead load = 640.00 KG/M/M
 No. of beam span loading = 87 W = 1001.00
 X1 = -0.50 P1 =545.60
 bay = 31 3FL.. 3FL live load = 300.00 KG/M/M
 No. of beam span loading = 88 W = 234.84
 X1 = -0.50 P1 =255.75

bay = 32 3FL.. 3FL dead load = 640.00 KG/M/M
 No. of beam span loading = 89 W = 886.40
 bay = 32 3FL.. 3FL live load = 300.00 KG/M/M
 No. of beam span loading = 90 W = 415.50

bay = 1 2FL.. 2FL dead load = 640.00 KG/M/M

No. of beam span loading = 91 W = 863.35
 X1 = -0.50 P1 =2321.07
 bay = 1 2FL.. 2FL live load = 300.00 KG/M/M
 No. of beam span loading = 92 W = 404.70
 X1 = -0.50 P1 =1088.00

bay = 2 2FL.. 2FL dead load = 640.00 KG/M/M
 No. of beam span loading = 93 W = 2405.90
 X1 = -0.50 P1 =4639.47
 bay = 2 2FL.. 2FL live load = 300.00 KG/M/M
 No. of beam span loading = 94 W = 659.02
 X1 = -0.50 P1 =2174.75

bay = 3 2FL.. 2FL dead load = 640.00 KG/M/M
 No. of beam span loading = 95 W = 506.24
 bay = 3 2FL.. 2FL live load = 300.00 KG/M/M
 No. of beam span loading = 96 W = 237.30

bay = 4 2FL.. 2FL dead load = 640.00 KG/M/M
 No. of beam span loading = 97 W = 1405.90
 X1 = -0.50 P1 =4639.47
 bay = 4 2FL.. 2FL live load = 300.00 KG/M/M
 No. of beam span loading = 98 W = 659.02
 X1 = -0.50 P1 =2174.75

bay = 5 2FL.. 2FL dead load = 640.00 KG/M/M
 No. of beam span loading = 99 W = 672.00
 bay = 5 2FL.. 2FL live load = 300.00 KG/M/M
 No. of beam span loading = 100 W = 315.00

bay = 6 2FL.. 2FL dead load = 640.00 KG/M/M
 No. of beam span loading = 101 W = 2278.07
 X1 = -0.50 P1 =2321.07
 bay = 6 2FL.. 2FL live load = 300.00 KG/M/M
 No. of beam span loading = 102 W = 599.10
 X1 = -0.50 P1 =1088.00

bay = 7 2FL.. 2FL dead load = 640.00 KG/M/M
 No. of beam span loading = 103 W = 506.24
 bay = 7 2FL.. 2FL live load = 300.00 KG/M/M
 No. of beam span loading = 104 W = 237.30

bay = 8 2FL.. 2FL dead load = 640.00 KG/M/M
 No. of beam span loading = 105 W = 863.35
 X1 = -0.50 P1 =2321.07
 bay = 8 2FL.. 2FL live load = 300.00 KG/M/M
 No. of beam span loading = 106 W = 404.70
 X1 = -0.50 P1 =1088.00

bay = 9 2FL.. 2FL dead load = 640.00 KG/M/M
 No. of beam span loading = 107 W = 2078.07
 X1 = -0.50 P1 =2321.07
 bay = 9 2FL.. 2FL live load = 300.00 KG/M/M
 No. of beam span loading = 108 W = 599.10
 X1 = -0.50 P1 =1088.00

bay = 10 2FL.. 2FL dead load = 640.00 KG/M/M
 No. of beam span loading = 109 W = 666.88
 bay = 10 2FL.. 2FL live load = 300.00 KG/M/M
 No. of beam span loading = 110 W = 312.60

bay = 11 2FL.. 2FL dead load = 640.00 KG/M/M
 No. of beam span loading = 111 W = 775.68
 bay = 11 2FL.. 2FL live load = 300.00 KG/M/M
 No. of beam span loading = 112 W = 363.60

bay = 12 2FL.. 2FL dead load = 640.00 KG/M/M
 No. of beam span loading = 113 W = 160.00
 X1 = -0.25 P1 =2184.53 X2 = -0.50 P2 =2184.53 X3 = -0.75 P3 =2184.53
 bay = 12 2FL.. 2FL live load = 300.00 KG/M/M
 No. of beam span loading = 114 W = 75.00

X1 = -0.25 P1 =1024.00 X2 = -0.50 P2 =1024.00 X3 = -0.75 P3 =1024.00

bay = 13 2FL.. 2FL dead load = 640.00 KG/M/M
No. of beam span loading = 115 W = 960.00
X1 = -0.25 P1 =2116.80 X2 = -0.50 P2 =2116.80 X3 = -0.75 P3 =2116.80
bay = 13 2FL.. 2FL live load = 300.00 KG/M/M
No. of beam span loading = 116 W = 75.00
X1 = -0.25 P1 =992.25 X2 = -0.50 P2 =992.25 X3 = -0.75 P3 =992.25

bay = 14 2FL.. 2FL dead load = 640.00 KG/M/M
No. of beam span loading = 117 W = 586.88
X1 = -0.25 P1 =1280.53 X2 = -0.50 P2 =1280.53 X3 = -0.75 P3 =1280.53
bay = 14 2FL.. 2FL live load = 300.00 KG/M/M
No. of beam span loading = 118 W = 275.10
X1 = -0.25 P1 =600.25 X2 = -0.50 P2 =600.25 X3 = -0.75 P3 =600.25

bay = 15 2FL.. 2FL dead load = 640.00 KG/M/M
No. of beam span loading = 119 W = 480.00
bay = 15 2FL.. 2FL live load = 300.00 KG/M/M
No. of beam span loading = 120 W = 225.00

bay = 16 2FL.. 2FL dead load = 640.00 KG/M/M
No. of beam span loading = 121 W = 160.00
X1 = -0.25 P1 =2184.53 X2 = -0.50 P2 =2184.53 X3 = -0.75 P3 =2184.53
bay = 16 2FL.. 2FL live load = 300.00 KG/M/M
No. of beam span loading = 122 W = 75.00
X1 = -0.25 P1 =1024.00 X2 = -0.50 P2 =1024.00 X3 = -0.75 P3 =1024.00

bay = 17 2FL.. 2FL dead load = 640.00 KG/M/M
No. of beam span loading = 123 W = 960.00
X1 = -0.25 P1 =2116.80 X2 = -0.50 P2 =2116.80 X3 = -0.75 P3 =2116.80
bay = 17 2FL.. 2FL live load = 300.00 KG/M/M
No. of beam span loading = 124 W = 75.00
X1 = -0.25 P1 =992.25 X2 = -0.50 P2 =992.25 X3 = -0.75 P3 =992.25

bay = 18 2FL.. 2FL dead load = 640.00 KG/M/M
No. of beam span loading = 125 W = 1312.00
X1 = -0.25 P1 =2184.53 X2 = -0.50 P2 =3822.93 X3 = -0.75 P3 =2184.53
bay = 18 2FL.. 2FL live load = 300.00 KG/M/M
No. of beam span loading = 126 W = 240.00
X1 = -0.25 P1 =1024.00 X2 = -0.50 P2 =1792.00 X3 = -0.75 P3 =1024.00

bay = 19 2FL.. 2FL dead load = 640.00 KG/M/M
No. of beam span loading = 127 W = 1312.00
X1 = -0.25 P1 =2184.53 X2 = -0.50 P2 =3822.93 X3 = -0.75 P3 =2184.53
bay = 19 2FL.. 2FL live load = 300.00 KG/M/M
No. of beam span loading = 128 W = 240.00
X1 = -0.25 P1 =1024.00 X2 = -0.50 P2 =1792.00 X3 = -0.75 P3 =1024.00

bay = 20 2FL.. 2FL dead load = 640.00 KG/M/M
No. of beam span loading = 129 W = 960.00
X1 = -0.25 P1 =2184.53 X2 = -0.50 P2 =2184.53 X3 = -0.75 P3 =2184.53
bay = 20 2FL.. 2FL live load = 300.00 KG/M/M
No. of beam span loading = 130 W = 75.00
X1 = -0.25 P1 =1024.00 X2 = -0.50 P2 =1024.00 X3 = -0.75 P3 =1024.00

bay = 21 2FL.. 2FL dead load = 640.00 KG/M/M
No. of beam span loading = 131 W = 470.40
bay = 21 2FL.. 2FL live load = 300.00 KG/M/M
No. of beam span loading = 132 W = 220.50

bay = 22 2FL.. 2FL dead load = 640.00 KG/M/M
No. of beam span loading = 133 W = 470.40
bay = 22 2FL.. 2FL live load = 300.00 KG/M/M
No. of beam span loading = 134 W = 220.50

bay = 28 2FL.. 2FL dead load = 640.00 KG/M/M
No. of beam span loading = 135 W = 470.40
bay = 28 2FL.. 2FL live load = 300.00 KG/M/M
No. of beam span loading = 136 W = 220.50

bay = 29 2FL.. 2FL dead load = 640.00 KG/M/M
 No. of beam span loading = 137 W = 470.40
 bay = 29 2FL.. 2FL live load = 300.00 KG/M/M
 No. of beam span loading = 138 W = 220.50

 bay = 30 2FL.. 2FL dead load = 640.00 KG/M/M
 No. of beam span loading = 139 W = 648.96
 bay = 30 2FL.. 2FL live load = 300.00 KG/M/M
 No. of beam span loading = 140 W = 304.20

 bay = 32 2FL.. 2FL dead load = 640.00 KG/M/M
 No. of beam span loading = 141 W = 886.40
 bay = 32 2FL.. 2FL live load = 300.00 KG/M/M
 No. of beam span loading = 142 W = 415.50

**** 設計風力計算 ****

※ 依建築技術規則

..... X-DIRECTION

WIND ZONE (100=1/150=2/200=3/250=4) 2
 SHAPE FACTOR 1.0

F -- lateral wind loads
 V -- story shears
 M -- story overturning moments

STORY	DH (m)	H (m)	DD (m)	P (T/M/M)	F (t)	V (t)	M (t-m)
PRFL	1.1	13.1	5.0	.150	.8	.8	1.
RFL	3.0	9.0	14.5	.150	6.5	11.4	50.
3FL	3.0	6.0	14.5	.110	4.8	16.2	98.
2FL	3.0	3.0	22.0	.110	7.3	23.4	169.

X-BASE SHEAR = 23. t
 X-OVERTURNING MOMENT = 169. t-m

..... Y-DIRECTION

WIND ZONE (100=1/150=2/200=3/250=4) 2
 SHAPE FACTOR 1.0

F -- lateral wind loads
 V -- story shears
 M -- story overturning moments

STORY	DH (m)	H (m)	DD (m)	P (T/M/M)	F (t)	V (t)	M (t-m)
PRFL	1.1	13.1	4.0	.150	.7	.7	1.
RFL	3.0	9.0	16.5	.150	7.4	13.0	57.
3FL	3.0	6.0	16.5	.110	5.4	18.5	112.
2FL	3.0	3.0	19.0	.110	6.3	24.8	186.

Y-BASE SHEAR = 25. t
 Y-OVERTURNING MOMENT = 186. t-m

※ 依耐風設計規範

GROUND CONDITION (A=1/B=2/C=3/) 2
 IMPORTANCE FACTOR I 1.0
 WIND VELOCITY V10(C) (m/sec) 35.81
 AVERAGE BUILDING HEIGHT H (m) 13.1

K = LATERAL DISPLACEMENT RATIO OF ROOF
 = $0.013/H * 1.128 * G(H) / (1.128 * G(H) - 1) * T * T$ (0.001 <= K <= 0.003)
 Kx = .00100 Ky = .00100 Tx = .582 sec Ty = .482 sec

G(H) = GUST RESPONSE FACTORS = 1.99

Q(Z) = VELOCITY PRESSURE (T/M/M)

$= 0.0625 * K(Z) * (I * V_{10}(C))^{**2}$
 CP1= PRESSURE COEFFICIENT
 CP2= PRESSURE COEFFICIENT
 $F1 = Q(Z) * G(H) * CP1 \quad (T/M/M)$
 $F2 = Q(H) * G(H) * CP2 \quad (T/M/M)$
 $F = (F1 + F2) * DD * DH \quad (T/M/M)$
 = lateral wind loads
 V = story shears
 M = story overturning moments

..... X-DIRECTION

STORY	DH (m)	H (m)	DD (m)	QZ (T/M/M)	CP1	CP2	F1	F2	F (t)	V (t)	M (t-m)
PRFL	1.1	13.1	5.0	.040	.800	.500	.064	.040	.6	1.	1.
RFL	3.0	9.0	14.5	.033	.800	.472	.053	.038	4.0	7.	32.
3FL	3.0	6.0	14.5	.027	.800	.472	.043	.038	3.5	11.	64.
2FL	3.0	3.0	22.0	.019	.800	.500	.031	.040	4.7	15.	110.

X-BASE SHEAR = 15. t
 X-OVERTURNING MOMENT = 110. t-m

..... Y-DIRECTION

STORY	DH (m)	H (m)	DD (m)	QZ (T/M/M)	CP1	CP2	F1	F2	F (t)	V (t)	M (t-m)
PRFL	1.1	13.1	4.0	.040	.800	.450	.064	.036	.4	0.	0.
RFL	3.0	9.0	16.5	.033	.800	.500	.053	.040	4.6	8.	37.
3FL	3.0	6.0	16.5	.027	.800	.500	.043	.040	4.1	13.	75.
2FL	3.0	3.0	19.0	.019	.800	.468	.031	.037	3.9	16.	124.

Y-BASE SHEAR = 16. t
 Y-OVERTURNING MOMENT = 124. t-m

4、地震力分析結果(含最大層間變位角、最大樓層位移及碰撞距離)

A. 設計地震力

a. 設計地震力係數計算：

Design Seismic Forces (Taiwan Code, 2005)

Project Name :

Basic Information

	Import. Factor	I =	1	Design Method =	RC		$\alpha_y = 1.5$
	新竹市	香山區			台北盆地外		
Soil Type :	堅實地盤		$V_s =$	堅實地盤	$N =$	堅實地盤	$S_u =$ 堅實地盤
$N_{ad} =$	---		$N_{vd} =$	---	$N_{am} =$	---	$N_{vm} =$ ---
$S_S^D =$	0.7		$S_1^D =$	0.4	$S_S^M =$	0.9	$S_1^M =$ 0.5
$F_{ad} =$	1		$F_{vd} =$	1	$F_{am} =$	1	$F_{vm} =$ 1
$S_{DS} =$	0.7000		$S_{D1} =$	0.4000	$S_{MS} =$	0.9000	$S_{M1} =$ 0.5000
$T_0^D =$	0.5714		$T_0^M =$	0.5556	$H_n (m) =$	9.0000	$W (t) =$ 636.4
Near Fault	$0.8N_a =$	--	$0.45N_v =$	--	$F_{aMe} =$	--	$F_{vMe} =$ --
Med. E.Q.	$S_{MeS} =$	--	$S_{Me1} =$	--	$T_0^{Me} =$	--	
Frame Type :		MRF (RC)		Frame Type :		shear wall	
	$T_{xc} = 0.070h_n^{3/4}$				$T_{yc} = 0.050h_n^{3/4}$		
	=	0.3637			=	0.2598	
	$T_{x,dyn} =$	0.5820			$T_{y,dyn} =$	0.4820	
$C_u =$ 1.2	$C_u T_{xc} =$	0.4365			$C_u T_{yc} =$	0.3118	
	$T_{x,des} =$	0.4365			$T_{y,des} =$	0.3118	

Seismic Force above Ground

1. At Design EQ Level

$$V_D = \frac{I}{1.4 \alpha_y} \left(\frac{S_{aD}}{F_u} \right)_m W$$

$R_{ax} =$	3.0000	$F_{ux} =$	2.5490	$R_{ay} =$	3.0000	$F_{uy} =$	2.2361
$S_{aDx} =$	0.7000			$S_{aDy} =$	0.7000		
$(S_{aD}/F_u)_x =$	0.2746	$(S_{aD}/F_u)_{xm} =$	0.2746	$(S_{aD}/F_u)_y =$	0.3130	$(S_{aD}/F_u)_{ym} =$	0.3068
$V_{Dx} =$	0.1308	$W =$	83.2	$V_{Dy} =$	0.1461	$W =$	93.0

2. At Maximum EQ Level

$$V_M = \frac{I}{1.4 \alpha_y} \left(\frac{S_{aD}}{F_u} \right)_m W$$

$R_{ax} =$	4.0000	$F_{ux} =$	3.2743	$R_{ay} =$	4.0000	$F_{uy} =$	2.6458
$S_{aMx} =$	0.9000			$S_{aMy} =$	0.9000		
$(S_{aM}/F_u)_x =$	0.2749	$(S_{aM}/F_u)_{xm} =$	0.2749	$(S_{aM}/F_u)_y =$	0.3402	$(S_{aM}/F_u)_{ym} =$	0.3209
$V_{Mx} =$	0.1309	$W =$	83.3	$V_{My} =$	0.1528	$W =$	97.2

3. At Medium & Small EQ Level

$$V^* = \frac{IF_u}{4.2 \alpha_y} \left(\frac{S_{aD}}{F_u} \right)_m W$$

$R_{ax} =$	3.0000	$F_{ux} =$	2.5490	$R_{ay} =$	3.0000	$F_{uy} =$	2.2361
$S_{aMex} =$	0.7000			$S_{aMey} =$	0.7000		
$(S_{aS}/F_u)_x =$	0.2746	$(S_{aS}/F_u)_{xm} =$	0.2746	$(S_{aS}/F_u)_y =$	0.3130	$(S_{aS}/F_u)_{ym} =$	0.3068
$V_{Mex} =$	0.1111	$W =$	70.7	$V_{Mey} =$	0.1089	$W =$	69.3

Seismic Force under Ground

1. At Design EQ Level $K_d W = 0.1 S_{DS} I \left(1 - \frac{H}{40} \right) W = 0.0700 \left(1 - \frac{H}{40} \right) W$

2. At Maximum EQ Level $K_M W = 0.1 S_{MS} I \left(1 - \frac{H}{40} \right) W = 0.0900 \left(1 - \frac{H}{40} \right) W$

3. At Medium EQ Level $K^* W = \frac{0.1 S_{DS} I}{4.2} \left(1 - \frac{H}{40} \right) W = 0.0167 \left(1 - \frac{H}{40} \right) W$

b. 法規地震力及地震力豎向分配

*** DIR - X ***

STORY	STORY HEIGHT	BASE HEIGHT	WEIGHT [T]	LAT-F [T]	V [T]	MOMENT [T-M]
4	1.10	13.20	.01	.00	.00	.00
3	3.00	9.10	240.90	47.22	47.22	141.69
2	3.00	6.10	149.50	19.64	66.87	342.30
1	3.00	3.10	246.00	16.43	83.29	592.18

BASE SHEAR = 83.29 T
OVERTURNING MOMENT = 592.18 T-M

*** DIR - Y ***

STORY	STORY HEIGHT	BASE HEIGHT	WEIGHT [T]	LAT-F [T]	V [T]	MOMENT [T-M]
4	1.10	13.20	.01	.00	.00	.00
3	3.00	9.10	240.90	55.13	55.14	165.43
2	3.00	6.10	149.50	22.93	78.07	399.65

1	3.00	3.10	246.00	19.18	97.25	691.40
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BASE SHEAR = 97.25 T
OVERTURNING MOMENT = 691.40 T-M

c. 設計地震力

X-DIRECTION RESPONSE SPECTRUM AND CODE LATERAL STORY SHEARS

----- STORY SHEARS -----							--LATERAL FORCES--		
STORY	DYN1	DYN2	CODE	MOD-DYN1	MOD-2	COMPARE	EX	DESIGN-FX	FY
4	3.72	.95	.00	5.00	1.28	5.00	.31	5.00	1.28
3	39.56	9.44	47.22	53.21	12.70	53.21	.91	29.67	5.37
2	53.22	12.28	66.87	71.59	16.52	71.59	1.54	18.38	3.82
1	61.92	13.82	83.29	83.29	18.59	83.29	2.78	11.70	2.07

Y-DIRECTION RESPONSE SPECTRUM AND CODE LATERAL STORY SHEARS

----- STORY SHEARS -----							--LATERAL FORCES--		
STORY	DYN2	DYN1	CODE	MOD-DYN2	MOD-1	COMPARE	EY	DESIGN-FY	FX
4	3.21	.80	.00	5.88	1.47	5.88	.63	5.88	1.47
3	33.34	9.39	55.14	60.99	17.17	60.99	2.34	32.74	10.17
2	43.44	10.87	78.07	79.48	19.88	79.48	3.35	18.49	2.71
1	53.15	13.82	97.25	97.25	25.28	97.25	3.82	17.77	5.40

B. 動力周期

STRUCTURAL TIME PERIODS AND FREQUENCIES

MODE NUMBER	PERIOD (TIME)	FREQUENCY (CYCLES/UNIT TIME)	CIRCULAR/FREQ (RADIAN/UNIT TIME)
1	0.58208	1.71797	10.79432
2	0.48174	2.07580	13.04260
3	0.37453	2.67002	16.77626
4	0.28980	3.45063	21.68094
5	0.21316	4.69127	29.47613
6	0.19371	5.16244	32.43660
7	0.16231	6.16087	38.70992
8	0.14631	6.83470	42.94371
9	0.13136	7.61260	47.83141
10	0.10378	9.63576	60.54329
11	0.08887	11.25245	70.70121
12	0.07569	13.21198	83.01334
13	0.07085	14.11476	88.68564
14	0.06133	16.30510	102.44797
15	0.04876	20.50964	128.86589

MODAL PARTICIPATION FACTORS

MODE NUMBER	X-TRANS DIRECTION	Y-TRANS DIRECTION	Z-ROTN DIRECTION
1	200.90942	-19.19100	-189.82200
2	55.02034	141.26169	464.59616
3	-33.99792	152.65448	-481.64745
4	-40.03301	-45.40286	113.87957
5	-43.14217	26.49204	154.55192
6	46.43104	14.35133	-413.73074
7	86.80947	2.99117	250.28497
8	33.05922	-11.49271	1005.42375
9	7.81367	-104.32992	102.54955
10	63.90939	18.75109	-348.95716

11	4.77694	-31.26721	-369.50267
12	-1.13651	59.96681	356.26075
13	-20.05739	4.02210	219.87872
14	-0.82292	10.59659	160.45354
15	-0.89973	26.35048	144.32464

MODAL DIRECTION FACTORS

MODE NUMBER	X-TRANS DIRECTION	Y-TRANS DIRECTION	Z-ROTN DIRECTION
1	94.24200	2.72049	3.03752
2	10.71475	69.21861	20.06664
3	19.69536	62.25693	18.04771
4	66.83201	19.78139	13.38661
5	19.55360	28.80540	51.64099
6	28.90254	31.73837	39.35910
7	62.85195	0.24062	36.90743
8	8.13367	19.57311	72.29322
9	0.79013	88.89454	10.31533
10	89.32837	3.82390	6.84773
11	3.54895	22.84567	73.60538
12	1.03165	79.21658	19.75177
13	94.99363	1.16430	3.84207
14	0.73764	6.73154	92.53082
15	0.12157	90.73526	9.14318

EFFECTIVE MASS FACTORS

MODE NUMBER	/-X TRANSLATION-//--Y		TRANSLATION-//---Z		ROTATION----/	
	%-MASS	<%-SUM>	%-MASS	<%-SUM>	%-MASS	<%-SUM>
1	63.70	< 63.7>	0.58	< 0.6>	1.58	< 1.6>
2	4.78	< 68.5>	31.49	< 32.1>	9.47	< 11.1>
3	1.82	< 70.3>	36.77	< 68.8>	10.18	< 21.2>
4	2.53	< 72.8>	3.25	< 72.1>	0.57	< 21.8>
5	2.94	< 75.8>	1.11	< 73.2>	1.05	< 22.9>
6	3.40	< 79.2>	0.33	< 73.5>	7.51	< 30.4>
7	11.89	< 91.1>	0.01	< 73.5>	2.75	< 33.1>
8	1.72	< 92.8>	0.21	< 73.8>	44.37	< 77.5>
9	0.10	< 92.9>	17.18	< 90.9>	0.46	< 77.9>
10	6.45	< 99.3>	0.55	< 91.5>	5.34	< 83.3>
11	0.04	< 99.4>	1.54	< 93.0>	5.99	< 89.3>
12	0.00	< 99.4>	5.67	< 98.7>	5.57	< 94.9>
13	0.63	<100.0>	0.03	< 98.7>	2.12	< 97.0>
14	0.00	<100.0>	0.18	< 98.9>	1.13	< 98.1>
15	0.00	<100.0>	1.10	<100.0>	0.91	< 99.0>

C. 設計載重組合

1. 4DL + 1.7H + 1.7LL
2. 1.05DL + 1.275H ±1.403Ex, y±0.3×1.403Ez)
3. 1.05DL + 1.275H ±0.3×1.403Ex, y±1.403Ez)
4. 0.9DL ±1.40Ex, y±0.3×1.40Ez
5. 0.9DL ±0.3×1.40Ex, y±1.40Ez
6. 0.9DL + 1.7H

H：土壓力

DL：靜載重

LL：活載重

Ex, y：兩向設計地震力

Ez：垂直向地震力

$$E_z = \frac{I}{1.4 \alpha_y} \left(\frac{S_{aD} v}{F_u V} \right)_m W$$

D.最大層間變位角、最大樓層位移及碰撞距離

最大層間變位角 X 向 = 0.00263
Y 向 = 0.00173 均小於 0.005 O.K.

*** X-DIR DRIFT RATIO ***
(VALUES ARE AT CENTER OF MASS)
STORY 8033E.STR 8033ER.STR
4 .00118 .00082
3 .00253 .00243
2 .00263 .00250
1 .00103 .00107

*** Y-DIR DRIFT RATIO ***
(VALUES ARE AT CENTER OF MASS)
STORY 8033E.STR 8033ER.STR
4 .00455 .00345
3 .00173 .00150
2 .00127 .00120
1 .00060 .00060

最大樓層位移(不含屋突層) X 向 = 1.86 cm
Y 向 = 1.08 cm

X-DIR DISP.
(VALUES ARE AT CENTER OF MASS)
STORY 8033E.STR 8033ER.STR
4 .0242 .0234
3 .0186 .0180
2 .0110 .0107
1 .0031 .0032

Y-DIR DISP.
(VALUES ARE AT CENTER OF MASS)
STORY 8033E.STR 8033ER.STR
4 .0103 .0107
3 .0108 .0099
2 .0056 .0054
1 .0018 .0018

碰撞距離 X 向 = $1.86 \times 0.6 \times 1.4 \times 1.5 \times 3.0 = 7.03$ cm
Y 向 = $1.08 \times 0.6 \times 1.4 \times 1.5 \times 3.0 = 4.08$ cm

5. ETABS 輸入資料

```

ETABS 6.1
PROJECT : RFL/3FL/ RC. BUILDING (JOB NO. : 8033)
DATE : 2008/05/21 ; UNIT : KG/M/SEC ; (DL+LL+Vz) LOAD ANALYSIS
5 2 1 1 0 3 15 3 3 2 0 0 1 0 0 2 0 1 0 1 2
    9.81 0.0001 0.0 1.0
PRFL 1.1 1
    1 0 11.4E3/9.8 11.4E3/9.8*3.46 1.60 -2.30
RFL 3.0 1
    1 0 52.7E3/9.8 52.7E3/9.8*12.62 6.69 -3.34
3FL 3.0 1
    1 0 113.1E3/9.8 113.1E3/9.8*27.45 2.06 -3.03
2FL 3.0 1
    1 0 198.0E3/9.8 198.0E3/9.8*57.77 -0.69 -6.63
    1 C .2170E+10 .20 2400 2400/9.81 0.
    2 C .2170E+10 .20 1680 1680/9.81 0. $ (.50-.15/.50)*2.4
    3 W .2170E+10 .20 1680 1680/9.81 0.
        1 RECT 1 0.35 0.35
        2 RECT 1 0.45 0.45
        3 RECT 1 0.40 0.40
        1 RECT 2 0.50 0. 0.30 $
        2 RECT 2 0.50 0. 0.40 $
        1 MEMB 3 0.15
RFL/3F RC. BUILDING (Job NO. : 8033)
1 21 32 0 0 142 0 1 0 3 0 8
    1 -6.6 -19.1
    2 0.0 -19.1
    3 -6.6 -12.7
    4 0.0 -12.7
    5 -8.8 -6.4
    6 -6.6 -6.4
    7 0.0 -6.4
    8 3.2 -6.4
    9 9.8 -6.4
    10 -8.8 0.0
    11 -6.6 0.0
    12 0.0 0.0
    13 3.2 0.0
    14 9.8 0.0
    15 4.7 2.0
    16 8.3 2.0
    17 0.0 2.0
    18 3.2 2.0
    19 0.0 -4.6
    20 3.2 -4.6
    21 -6.6 -1.5
    1 1 2
    2 3 4
    3 5 6
    4 6 7
    5 7 8
    6 8 9
    7 10 11
    8 11 12
    9 13 14
    10 15 16
    11 5 10
    12 1 3
    13 3 6
    14 6 21
    15 21 11
    16 2 4
    17 4 7
    18 7 12
    19 8 13

```

	20	9	14
	21	13	15
	22	14	16
	23	21	12
	24	7	19
	25	19	12
	26	8	20
	27	20	13
	28	12	17
	29	13	18
	30	17	18
	31	19	20
	32	12	13

1 1 576.85
-0.50 976.00
2 1 283.70
-0.50 480.00
3 1 576.85
-0.50 976.00
4 1 283.70
-0.50 480.00
5 0 640.50
6 0 315.00
7 0 640.50
8 0 315.00
9 1 1523.35
-0.50 2321.07
10 1 479.70
-0.50 1088.00
11 1 1523.35
-0.50 2321.07
12 1 479.70
-0.50 1088.00
13 3 820.00
-0.25 2184.53 -0.50 2184.53 -0.75 2184.53
14 3 150.00
-0.25 1024.00 -0.50 1024.00 -0.75 1024.00
15 0 820.00
16 0 150.00
17 0 1041.44
18 0 253.80
19 3 660.00
-0.25 1128.53 -0.50 1128.53 -0.75 1128.53
20 3 75.00
-0.25 529.00 -0.50 529.00 -0.75 529.00
21 0 945.44
22 0 208.80
23 0 320.00
24 0 150.00
25 1 1522.55
-0.50 2318.40
26 1 479.32
-0.50 1086.75
27 1 1522.55
-0.50 2318.40
28 1 479.32
-0.50 1086.75
29 1 1646.64
-0.50 3082.67
30 1 1348.99
-0.50 3626.67
31 1 1646.64
-0.50 3082.67
32 1 1348.99
-0.50 3626.67
33 3 820.00
-0.25 2116.80 -0.50 2116.80 -0.75 2116.80
34 3 150.00
-0.25 992.25 -0.50 992.25 -0.75 992.25
35 3 820.00

-0.25 2116.80 -0.50 2116.80 -0.75 2116.80
 36 3 150.00
 -0.25 992.25 -0.50 992.25 -0.75 992.25
 37 1 1392.50
 -0.50 6800.00
 38 1 1050.00
 -0.50 8000.00
 39 1 1328.00
 -0.50 1508.80
 40 1 247.50
 -0.50 707.25
 41 0 1377.15
 42 0 679.00
 43 1 1477.50
 -0.50 7331.25
 44 1 1150.00
 -0.50 8625.00
 45 0 470.40
 46 0 220.50
 47 0 470.40
 48 0 220.50
 49 0 648.96
 50 0 304.20
 51 1 1301.00
 -0.50 545.60
 52 1 234.84
 -0.50 255.75
 53 0 886.40
 54 0 415.50
 55 0 1120.00
 56 0 150.00
 57 1 1617.29
 -0.50 2169.07
 58 1 383.11
 -0.50 1016.75
 59 1 1663.35
 -0.50 2321.07
 60 1 404.70
 -0.50 1088.00
 61 1 1663.35
 -0.50 2321.07
 62 1 404.70
 -0.50 1088.00
 63 0 1120.00
 64 0 150.00
 65 3 160.00
 -0.25 1280.53 -0.50 1280.53 -0.75 1280.53
 66 3 75.00
 -0.25 600.25 -0.50 600.25 -0.75 600.25
 67 0 1120.00
 68 0 150.00
 69 3 960.00
 -0.25 2184.53 -0.50 2184.53 -0.75 2184.53
 70 3 75.00
 -0.25 1024.00 -0.50 1024.00 -0.75 1024.00
 71 1 817.29
 -0.50 2169.07
 72 1 383.11
 -0.50 1016.75
 73 0 934.56
 74 0 203.70
 75 3 368.00
 -0.25 1128.53 -0.50 2637.33 -0.75 1128.53
 76 3 172.50
 -0.25 529.00 -0.50 1236.25 -0.75 529.00
 77 0 934.56
 78 0 203.70
 79 3 368.00
 -0.25 1128.53 -0.50 2637.33 -0.75 1128.53
 80 3 172.50

-0.25 529.00 -0.50 1236.25 -0.75 529.00
 81 0 470.40
 82 0 220.50
 83 0 470.40
 84 0 220.50
 85 0 648.96
 86 0 304.20
 87 1 1001.00
 -0.50 545.60
 88 1 234.84
 -0.50 255.75
 89 0 886.40
 90 0 415.50
 91 1 863.35
 -0.50 2321.07
 92 1 404.70
 -0.50 1088.00
 93 1 2405.90
 -0.50 4639.47
 94 1 659.02
 -0.50 2174.75
 95 0 506.24
 96 0 237.30
 97 1 1405.90
 -0.50 4639.47
 98 1 659.02
 -0.50 2174.75
 99 0 672.00
 100 0 315.00
 101 1 2278.07
 -0.50 2321.07
 102 1 599.10
 -0.50 1088.00
 103 0 506.24
 104 0 237.30
 105 1 863.35
 -0.50 2321.07
 106 1 404.70
 -0.50 1088.00
 107 1 2078.07
 -0.50 2321.07
 108 1 599.10
 -0.50 1088.00
 109 0 666.88
 110 0 312.60
 111 0 775.68
 112 0 363.60
 113 3 160.00
 -0.25 2184.53 -0.50 2184.53 -0.75 2184.53
 114 3 75.00
 -0.25 1024.00 -0.50 1024.00 -0.75 1024.00
 115 3 960.00
 -0.25 2116.80 -0.50 2116.80 -0.75 2116.80
 116 3 75.00
 -0.25 992.25 -0.50 992.25 -0.75 992.25
 117 3 586.88
 -0.25 1280.53 -0.50 1280.53 -0.75 1280.53
 118 3 275.10
 -0.25 600.25 -0.50 600.25 -0.75 600.25
 119 0 480.00
 120 0 225.00
 121 3 160.00
 -0.25 2184.53 -0.50 2184.53 -0.75 2184.53
 122 3 75.00
 -0.25 1024.00 -0.50 1024.00 -0.75 1024.00
 123 3 960.00
 -0.25 2116.80 -0.50 2116.80 -0.75 2116.80
 124 3 75.00
 -0.25 992.25 -0.50 992.25 -0.75 992.25
 125 3 1312.00

-0.25 2184.53 -0.50 3822.93 -0.75 2184.53
 126 3 240.00
 -0.25 1024.00 -0.50 1792.00 -0.75 1024.00
 127 3 1312.00
 -0.25 2184.53 -0.50 3822.93 -0.75 2184.53
 128 3 240.00
 -0.25 1024.00 -0.50 1792.00 -0.75 1024.00
 129 3 960.00
 -0.25 2184.53 -0.50 2184.53 -0.75 2184.53
 130 3 75.00
 -0.25 1024.00 -0.50 1024.00 -0.75 1024.00
 131 0 470.40
 132 0 220.50
 133 0 470.40
 134 0 220.50
 135 0 470.40
 136 0 220.50
 137 0 470.40
 138 0 220.50
 139 0 648.96
 140 0 304.20
 141 0 886.40
 142 0 415.50

1	21	0	PRFL	2FL	0
12	13	0	PRFL	PRFL	1
19	20	0	PRFL	PRFL	1
8	9	0	RFL	PRFL	1
12	12	0	RFL	PRFL	0
13	13	0	RFL	PRFL	1
14	14	0	RFL	PRFL	1
19	19	0	RFL	PRFL	0
20	20	0	RFL	PRFL	1
3	4	0	3FL	3FL	0
6	9	0	3FL	3FL	1
12	14	0	3FL	3FL	1
19	20	0	3FL	3FL	1
21	21	0	3FL	3FL	1
1	4	0	2FL	2FL	1
5	5	0	2FL	2FL	1
6	9	0	2FL	2FL	1
10	10	0	2FL	2FL	1
11	14	0	2FL	2FL	1
15	16	0	2FL	2FL	1
21	21	0	2FL	2FL	1
12	13	0	PRFL	PRFL	2
19	20	0	PRFL	PRFL	3
8	9	0	RFL	PRFL	2
12	14	0	RFL	PRFL	2
19	20	0	RFL	PRFL	3
3	4	0	3FL	3FL	2
6	9	0	3FL	3FL	2
12	14	0	3FL	3FL	2
21	21	0	3FL	3FL	1
1	4	0	2FL	2FL	2
5	5	0	2FL	2FL	1
6	9	0	2FL	2FL	2
10	10	0	2FL	2FL	1
11	14	0	2FL	2FL	2
15	16	0	2FL	2FL	1
21	21	0	2FL	2FL	1
25	25	0	PRFL	PRFL	1
27	27	0	PRFL	PRFL	1
31	31	0	PRFL	PRFL	1
32	32	0	PRFL	PRFL	1
6	6	0	RFL	PRFL	1
9	9	0	RFL	PRFL	1
20	20	0	RFL	PRFL	1

25	27	0	RFL	R1FL	2		
31	32	0	RFL	R1FL	1		
2	2	0	3FL	3FL	1		
4	4	0	3FL	3FL	1		
6	6	0	3FL	3FL	1		
9	9	0	3FL	3FL	1		
13	14	0	3FL	3FL	1		
17	17	0	3FL	3FL	1		
20	20	0	3FL	3FL	1		
23	23	0	3FL	3FL	1	2	2
24	27	0	3FL	3FL	2		
28	29	0	3FL	3FL	1	2	2
30	30	0	3FL	3FL	1	3	3
31	31	0	3FL	3FL	1		
32	32	0	3FL	3FL	1	3	3
1	10	0	2FL	2FL	1		
11	20	0	2FL	2FL	1		
21	22	0	2FL	2FL	1	1	1
28	29	0	2FL	2FL	1	2	2
30	30	0	2FL	2FL	1	3	3
32	32	0	2FL	2FL	1	3	3
1	RFL	2FL	13	18	1		
25	25	0	PRFL	PRFL	1	2	0
27	27	0	PRFL	PRFL	3	4	0
31	31	0	PRFL	PRFL	5	6	0
32	32	0	PRFL	PRFL	7	8	0
6	6	0	RFL	RFL	9	10	0
9	9	0	RFL	RFL	11	12	0
20	20	0	RFL	RFL	13	14	0
25	25	0	RFL	RFL	15	16	0
26	26	0	RFL	RFL	19	20	0
31	31	0	RFL	RFL	21	22	0
32	32	0	RFL	RFL	23	24	0
2	2	0	3FL	3FL	55	56	0
4	4	0	3FL	3FL	57	58	0
6	6	0	3FL	3FL	59	60	0
9	9	0	3FL	3FL	61	62	0
13	13	0	3FL	3FL	63	64	0
14	14	0	3FL	3FL	65	66	0
17	17	0	3FL	3FL	67	68	0
20	20	0	3FL	3FL	69	70	0
23	23	0	3FL	3FL	71	72	0
24	24	0	3FL	3FL	73	74	0
25	25	0	3FL	3FL	75	76	0
26	26	0	3FL	3FL	77	78	0
27	27	0	3FL	3FL	79	80	0
28	28	0	3FL	3FL	81	82	0
29	29	0	3FL	3FL	83	84	0
30	30	0	3FL	3FL	85	86	0
31	31	0	3FL	3FL	87	88	0
32	32	0	3FL	3FL	89	90	0
1	1	0	2FL	2FL	91	92	0
2	2	0	2FL	2FL	93	94	0
3	3	0	2FL	2FL	95	96	0
4	4	0	2FL	2FL	97	98	0
5	5	0	2FL	2FL	99	100	0
6	6	0	2FL	2FL	101	102	0
7	7	0	2FL	2FL	103	104	0
8	8	0	2FL	2FL	105	106	0
9	9	0	2FL	2FL	107	108	0
10	10	0	2FL	2FL	109	110	0
11	11	0	2FL	2FL	111	112	0
12	12	0	2FL	2FL	113	114	0
13	13	0	2FL	2FL	115	116	0
14	14	0	2FL	2FL	117	118	0
15	15	0	2FL	2FL	119	120	0
16	16	0	2FL	2FL	121	122	0

17	17	0	2FL	2FL	123	124	0
18	18	0	2FL	2FL	125	126	0
19	19	0	2FL	2FL	127	128	0
20	20	0	2FL	2FL	129	130	0
21	21	0	2FL	2FL	131	132	0
22	22	0	2FL	2FL	133	134	0
28	28	0	2FL	2FL	135	136	0
29	29	0	2FL	2FL	137	138	0
30	30	0	2FL	2FL	139	140	0
32	32	0	2FL	2FL	141	142	0

1 0.00 0.00 0.00 RFL/3F RC. (JOB:8033)

Taiwan Response Spectrum

0 CQC 0.05

ZONE-1 1.00/1.4/1.5*9.81*1.0000 1 0

ZONE-1 1.00/1.4/1.5*9.81*1.0000 1 0

1	0	1/1000	0	0	0	0	0	0
2	0	0	1/1000	0	0	0	0	0
3	0	.0810/1000	0	0	0	0	0	0

1 0.00 0.00 0.00 RFL/3F RC. (JOB:8033)

PRFL 1 A 5.00E3 0 1.60 0.23+0.00-2.30

RFL 1 A 18.54E3 0 6.69 0.32+0.00-3.34

3FL 1 A 18.38E3 0 2.06 0.74+0.00-3.03

2FL 1 A 11.70E3 0 -0.69 1.06+0.00-6.63

PRFL 1 B 0 5.88E3 0.16+0.00+1.60 -2.30

RFL 1 B 0 22.37E3 0.49+0.00+6.69 -3.34

3FL 1 B 0 18.49E3 0.82+0.00+2.06 -3.03

2FL 1 B 0 17.77E3 0.93+0.00-0.69 -6.63

1 0 0 0 0 1/1000 0 0 0 0

2 0 0 0 0 0 1/1000 0 0 0

1 0.00 0.00 0.00 RFL/3F RC. (JOB:8033)

PRFL 1 A 5.00E3 0 1.60 -0.23+0.00-2.30

RFL 1 A 18.54E3 0 6.69 -0.32+0.00-3.34

3FL 1 A 18.38E3 0 2.06 -0.74+0.00-3.03

2FL 1 A 11.70E3 0 -0.69 -1.06+0.00-6.63

PRFL 1 B 0 5.88E3 -0.16+0.00+1.60 -2.30

RFL 1 B 0 22.37E3 -0.49+0.00+6.69 -3.34

3FL 1 B 0 18.49E3 -0.82+0.00+2.06 -3.03

2FL 1 B 0 17.77E3 -0.93+0.00-0.69 -6.63

1 0 0 0 0 1/1000 0 0 0 0

2 0 0 0 0 0 1/1000 0 0 0

6、大梁設計

BAY 1												
LV	V1	V2	V3	V4	MTL	MBL	MTM	MBM	MTR	MBR	MTOR	APP
2FL	9.5	7.6	7.6	9.5	16.6	5.4	3.7	8.9	16.6	5.4	.0	.0
BAY 2												
LV	V1	V2	V3	V4	MTL	MBL	MTM	MBM	MTR	MBR	MTOR	APP
RFL	12.5	9.7	10.0	12.8	21.2	7.2	4.9	11.1	22.1	6.7	.0	.0
3FL	9.5	7.6	8.0	9.8	21.2	12.8	8.0	8.7	22.3	12.2	.0	2.7
2FL	17.8	13.6	13.7	17.9	28.5	3.2	4.6	17.4	28.7	3.1	.0	.0
BAY 3												
LV	V1	V2	V3	V4	MTL	MBL	MTM	MBM	MTR	MBR	MTOR	APP
2FL	18.6	18.6	19.6	19.8	12.0	11.0	14.9	12.8	23.8	20.8	.0	.0
BAY 4												
LV	V1	V2	V3	V4	MTL	MBL	MTM	MBM	MTR	MBR	MTOR	APP
RFL	12.4	9.6	9.4	12.2	21.3	5.7	4.5	10.7	20.8	6.1	.0	.0
3FL	15.2	12.5	12.5	15.3	31.3	15.1	9.9	11.9	31.3	15.0	.0	.0
2FL	14.4	11.4	11.4	14.3	24.2	3.6	4.4	14.4	24.0	3.8	.0	.0
BAY 5												
LV	V1	V2	V3	V4	MTL	MBL	MTM	MBM	MTR	MBR	MTOR	APP
2FL	17.2	16.8	16.5	16.7	24.9	20.6	13.0	10.2	23.6	20.1	.0	.0
BAY 6												
LV	V1	V2	V3	V4	MTL	MBL	MTM	MBM	MTR	MBR	MTOR	APP
RFL	19.4	15.2	15.3	19.4	33.7	10.1	7.6	17.3	33.8	10.4	.0	.0
3FL	15.8	12.9	13.1	16.0	32.5	16.0	10.3	12.6	32.8	15.6	.0	.0
2FL	15.3	11.4	11.4	15.2	24.8	3.9	5.8	12.4	26.4	5.8	.0	.0
BAY 7												
LV	V1	V2	V3	V4	MTL	MBL	MTM	MBM	MTR	MBR	MTOR	APP
2FL	16.6	16.9	17.9	18.1	11.7	12.1	11.1	8.1	19.3	14.5	.0	.0
BAY 8												
LV	V1	V2	V3	V4	MTL	MBL	MTM	MBM	MTR	MBR	MTOR	APP
2FL	10.6	8.7	8.2	10.1	19.0	6.0	6.7	9.1	20.5	9.9	.0	.0
BAY 9												
LV	V1	V2	V3	V4	MTL	MBL	MTM	MBM	MTR	MBR	MTOR	APP
RFL	20.5	16.3	16.4	20.5	37.3	13.9	9.6	17.3	36.9	13.7	.0	.0
3FL	16.7	13.8	14.0	16.9	35.0	18.6	11.7	13.7	35.8	18.7	.0	.0
2FL	16.0	12.4	12.4	16.1	28.9	9.7	7.1	12.0	29.1	9.5	.0	.0
BAY 10												
LV	V1	V2	V3	V4	MTL	MBL	MTM	MBM	MTR	MBR	MTOR	APP
2FL	8.0	7.5	7.3	7.8	11.7	10.0	5.4	5.7	10.7	9.6	.0	.0
BAY 11												
LV	V1	V2	V3	V4	MTL	MBL	MTM	MBM	MTR	MBR	MTOR	APP
2FL	5.7	4.0	4.2	5.9	8.6	3.4	1.6	4.7	8.9	3.1	.0	.0
BAY 12												
LV	V1	V2	V3	V4	MTL	MBL	MTM	MBM	MTR	MBR	MTOR	APP
2FL	8.0	4.9	6.0	9.2	14.5	5.3	3.7	6.9	17.7	3.1	.0	.0
BAY 13												
LV	V1	V2	V3	V4	MTL	MBL	MTM	MBM	MTR	MBR	MTOR	APP
RFL	10.8	6.9	7.4	11.3	17.8	5.3	3.8	9.2	19.6	4.9	.0	.0
3FL	7.2	5.5	6.4	8.1	14.4	8.3	5.0	6.7	15.9	5.8	.0	7.7
2FL	10.6	6.6	6.7	10.6	18.2	2.3	3.2	7.7	18.5	2.4	.0	.0
BAY 14												
LV	V1	V2	V3	V4	MTL	MBL	MTM	MBM	MTR	MBR	MTOR	APP
3FL	7.4	5.7	6.7	8.4	12.6	9.7	4.7	7.4	14.2	7.4	.0	.0

2FL	8.3	6.1	5.4	7.6	14.2	5.7	4.8	5.5	10.1	3.8	.0	.0
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BAY 15

LV	V1	V2	V3	V4	MTL	MBL	MTM	MBM	MTR	MBR	MTOR	APP
2FL	20.4	20.3	20.6	20.7	9.1	7.9	9.2	7.8	14.8	13.3	.0	.0

BAY 16

LV	V1	V2	V3	V4	MTL	MBL	MTM	MBM	MTR	MBR	MTOR	APP
2FL	9.1	5.9	7.1	10.3	17.6	8.5	5.4	8.4	21.1	6.5	.0	.0

BAY 17

LV	V1	V2	V3	V4	MTL	MBL	MTM	MBM	MTR	MBR	MTOR	APP
RFL	10.3	6.4	6.7	10.6	15.9	3.4	2.8	9.5	17.5	3.5	.0	.0
3FL	7.5	5.8	7.8	9.5	16.2	11.9	7.0	8.6	20.2	6.4	.0	11.5
2FL	11.8	7.9	8.3	12.2	21.9	6.6	5.7	7.9	23.5	6.4	.0	.0

BAY 18

LV	V1	V2	V3	V4	MTL	MBL	MTM	MBM	MTR	MBR	MTOR	APP
2FL	15.5	10.8	10.7	15.4	27.8	5.2	6.0	12.0	28.1	6.1	.0	.0

BAY 19

LV	V1	V2	V3	V4	MTL	MBL	MTM	MBM	MTR	MBR	MTOR	APP
2FL	16.3	11.6	12.2	16.9	29.9	10.0	7.3	12.7	31.6	8.8	.0	.0

BAY 20

LV	V1	V2	V3	V4	MTL	MBL	MTM	MBM	MTR	MBR	MTOR	APP
RFL	23.3	20.0	21.0	24.3	40.3	14.4	10.2	25.3	43.4	12.6	.0	.0
3FL	16.6	12.6	13.6	17.7	36.1	22.5	13.1	16.4	39.3	20.7	.0	.0
2FL	15.1	11.0	11.6	15.6	31.1	16.8	9.9	13.9	32.6	15.9	.0	.0

BAY 21

LV	V1	V2	V3	V4	MTL	MBL	MTM	MBM	MTR	MBR	MTOR	APP
2FL	4.4	4.6	5.8	6.0	.0	.0	7.8	6.1	10.9	7.8	.0	.0

BAY 22

LV	V1	V2	V3	V4	MTL	MBL	MTM	MBM	MTR	MBR	MTOR	APP
2FL	5.9	6.1	7.2	7.4	.0	.0	10.0	8.8	13.9	11.4	.0	.0

BAY 23

LV	V1	V2	V3	V4	MTL	MBL	MTM	MBM	MTR	MBR	MTOR	APP
3FL	10.0	7.5	4.6	6.6	17.6	4.9	5.5	14.6	.0	.0	.0	.0

BAY 24

LV	V1	V2	V3	V4	MTL	MBL	MTM	MBM	MTR	MBR	MTOR	APP
3FL	42.9	42.7	41.6	41.4	35.2	10.8	23.1	13.3	9.5	27.5	.0	.0

BAY 25

LV	V1	V2	V3	V4	MTL	MBL	MTM	MBM	MTR	MBR	MTOR	APP
PRFL	3.2	2.5	4.8	5.6	3.2	3.2	2.4	3.1	8.1	.3	.0	.0
RFL	7.4	6.4	13.2	14.5	12.4	16.0	9.5	10.7	24.4	5.2	.0	.0
3FL	7.4	9.1	15.6	17.3	5.1	22.4	14.2	16.8	32.8	7.6	.0	.0

BAY 26

LV	V1	V2	V3	V4	MTL	MBL	MTM	MBM	MTR	MBR	MTOR	APP
RFL	25.9	25.6	23.7	23.3	22.0	5.4	13.1	5.4	2.1	11.8	.0	.0
3FL	32.4	32.1	31.0	30.8	36.1	17.2	25.0	15.1	.9	16.2	.0	.0

BAY 27

LV	V1	V2	V3	V4	MTL	MBL	MTM	MBM	MTR	MBR	MTOR	APP
PRFL	4.7	3.9	4.2	5.0	6.5	2.6	2.1	2.3	7.2	2.6	.0	.0
RFL	20.7	18.7	25.8	27.8	23.9	18.5	11.4	19.1	39.5	11.1	.0	.0
3FL	10.3	11.9	18.4	20.1	12.5	23.5	18.1	13.4	39.6	17.5	.0	.0

BAY 28

LV	V1	V2	V3	V4	MTL	MBL	MTM	MBM	MTR	MBR	MTOR	APP
RFL	4.9	4.7	3.5	2.8	7.2	.0	5.0	.0	.0	.0	.0	.0
3FL	4.9	4.7	3.5	2.8	7.2	.0	5.0	.0	.0	.0	.0	.0
2FL	4.9	4.7	3.5	2.8	7.2	.0	5.0	.0	.0	.0	.0	.0

BAY 29

LV	V1	V2	V3	V4	MTL	MBL	MTM	MBM	MTR	MBR	MTOR	APP
RFL	4.9	4.7	3.5	2.8	7.2	.0	5.0	.0	.0	.0	.0	.0
3FL	4.9	4.7	3.5	2.8	7.2	.0	5.0	.0	.0	.0	.0	.0
2FL	4.9	4.7	3.5	2.8	7.2	.0	5.0	.0	.0	.0	.0	.0

BAY 30

LV	V1	V2	V3	V4	MTL	MBL	MTM	MBM	MTR	MBR	MTOR	APP
RFL	2.8	1.4	1.4	2.8	.0	.0	.0	2.3	.0	.0	.0	.0
3FL	2.8	1.4	1.4	2.8	.0	.0	.0	2.3	.0	.0	.0	.0
2FL	2.8	1.4	1.4	2.8	.0	.0	.0	2.3	.0	.0	.0	.0

BAY 31

LV	V1	V2	V3	V4	MTL	MBL	MTM	MBM	MTR	MBR	MTOR	APP
PRFL	1.5	1.1	2.8	3.2	1.1	1.8	1.1	1.5	3.4	.1	.0	.0
RFL	15.5	15.0	15.8	16.4	19.9	19.1	9.7	10.3	21.1	17.9	.0	.0
3FL	13.3	12.8	13.1	13.5	16.6	16.0	8.0	8.7	17.4	15.1	.0	.0

BAY 32

LV	V1	V2	V3	V4	MTL	MBL	MTM	MBM	MTR	MBR	MTOR	APP
PRFL	6.7	6.3	4.6	4.9	8.1	5.2	3.5	3.9	6.0	6.6	.0	.0
RFL	2.2	1.6	1.6	2.2	.0	.0	.0	2.2	.0	.0	.0	.0
3FL	2.2	1.6	1.6	2.2	.0	.0	.0	2.2	.0	.0	.0	.0
2FL	2.2	1.6	1.6	2.2	.0	.0	.0	2.2	.0	.0	.0	.0

BEAM DESIGN DATA :

CONCRETE STRENGTH (kg/cm2) , NFL ... = 210.00 5
 STEEL BAR (kg/cm2) = 4200.00
 STEEL SHAPE (kg/cm2) = 3500.00
 EXTREME FIBER TO CENTROID BAR (cm).. = 7.50
 NO. OF LOADING COMBINATION = 65
 LK 0>RC , 1>SRC , 2>SC = 0
 KP 0>DUCTILE , 1>NONDUCTILE = 0

LOADING COMBINATION

IL	L 1	L 2	L 3	L 4	L 5	L 6	L 7
1	1.40	1.70	.00	.00	.00	.00	.00
2	1.05	1.27	.42	1.40	.00	.00	.00
3	1.05	1.27	.42	-1.40	.00	.00	.00
4	1.05	1.27	.42	.00	1.40	.00	.00
5	1.05	1.27	.42	.00	-1.40	.00	.00
6	1.05	1.27	.42	.00	.00	1.40	.00
7	1.05	1.27	.42	.00	.00	-1.40	.00
8	1.05	1.27	.42	.00	.00	.00	1.40
9	1.05	1.27	.42	.00	.00	.00	-1.40
10	1.05	1.27	1.40	.42	.00	.00	.00
11	1.05	1.27	1.40	-.42	.00	.00	.00
12	1.05	1.27	1.40	.00	.42	.00	.00
13	1.05	1.27	1.40	.00	-.42	.00	.00
14	1.05	1.27	1.40	.00	.00	.42	.00
15	1.05	1.27	1.40	.00	.00	-.42	.00
16	1.05	1.27	1.40	.00	.00	.00	.42
17	1.05	1.27	1.40	.00	.00	.00	-.42
18	1.05	1.27	-.42	1.40	.00	.00	.00
19	1.05	1.27	-.42	-1.40	.00	.00	.00
20	1.05	1.27	-.42	.00	1.40	.00	.00
21	1.05	1.27	-.42	.00	-1.40	.00	.00
22	1.05	1.27	-.42	.00	.00	1.40	.00
23	1.05	1.27	-.42	.00	.00	-1.40	.00
24	1.05	1.27	-.42	.00	.00	.00	1.40
25	1.05	1.27	-.42	.00	.00	.00	-1.40
26	1.05	1.27	-1.40	.42	.00	.00	.00
27	1.05	1.27	-1.40	-.42	.00	.00	.00
28	1.05	1.27	-1.40	.00	.42	.00	.00
29	1.05	1.27	-1.40	.00	-.42	.00	.00
30	1.05	1.27	-1.40	.00	.00	.42	.00
31	1.05	1.27	-1.40	.00	.00	-.42	.00
32	1.05	1.27	-1.40	.00	.00	.00	.42
33	1.05	1.27	-1.40	.00	.00	.00	-.42
34	.90	.00	.43	1.43	.00	.00	.00

35	.90	.00	.43	-1.43	.00	.00	.00							
36	.90	.00	.43	.00	1.43	.00	.00							
37	.90	.00	.43	.00	-1.43	.00	.00							
38	.90	.00	.43	.00	.00	1.43	.00							
39	.90	.00	.43	.00	.00	-1.43	.00							
40	.90	.00	.43	.00	.00	.00	1.43							
41	.90	.00	.43	.00	.00	.00	-1.43							
42	.90	.00	1.43	.43	.00	.00	.00							
43	.90	.00	1.43	-.43	.00	.00	.00							
44	.90	.00	1.43	.00	.43	.00	.00							
45	.90	.00	1.43	.00	-.43	.00	.00							
46	.90	.00	1.43	.00	.00	.43	.00							
47	.90	.00	1.43	.00	.00	-.43	.00							
48	.90	.00	1.43	.00	.00	.00	.43							
49	.90	.00	1.43	.00	.00	.00	-.43							
50	.90	.00	-.43	1.43	.00	.00	.00							
51	.90	.00	-.43	-1.43	.00	.00	.00							
52	.90	.00	-.43	.00	1.43	.00	.00							
53	.90	.00	-.43	.00	-1.43	.00	.00							
54	.90	.00	-.43	.00	.00	1.43	.00							
55	.90	.00	-.43	.00	.00	-1.43	.00							
56	.90	.00	-.43	.00	.00	.00	1.43							
57	.90	.00	-.43	.00	.00	.00	-1.43							
58	.90	.00	-1.43	.43	.00	.00	.00							
59	.90	.00	-1.43	-.43	.00	.00	.00							
60	.90	.00	-1.43	.00	.43	.00	.00							
61	.90	.00	-1.43	.00	-.43	.00	.00							
62	.90	.00	-1.43	.00	.00	.43	.00							
63	.90	.00	-1.43	.00	.00	-.43	.00							
64	.90	.00	-1.43	.00	.00	.00	.43							
65	.90	.00	-1.43	.00	.00	.00	-.43							

BAY 1

LV	#N	@V1	@V2	@V3	ASTL	ASBL	ASTM	ASBM	ASTR	ASBR	ATOR	BW	BH
2FL	3	10.9	12.6	10.9	11.2	5.3	4.4	5.7	11.2	5.3	.0	30.	50.

BAY 2

LV	#N	@V1	@V2	@V3	ASTL	ASBL	ASTM	ASBM	ASTR	ASBR	ATOR	BW	BH
RFL	3	9.5	11.3	9.3	14.8	6.9	4.4	7.2	15.4	7.2	.0	30.	50.
3FL	3	10.9	14.9	10.9	14.9	8.6	5.3	5.8	15.7	8.2	.0	30.	50.
2FL	4	10.9	15.8	10.9	20.0	9.5	4.4	11.9	20.1	9.5	.0	30.	50.

BAY 3

LV	#N	@V1	@V2	@V3	ASTL	ASBL	ASTM	ASBM	ASTR	ASBR	ATOR	BW	BH
2FL	4	5.8	5.6	5.6	7.8	7.2	9.9	8.4	16.6	14.5	.0	30.	50.

BAY 4

LV	#N	@V1	@V2	@V3	ASTL	ASBL	ASTM	ASBM	ASTR	ASBR	ATOR	BW	BH
RFL	3	9.4	11.3	9.5	14.8	6.9	4.4	7.0	14.5	6.7	.0	30.	50.
3FL	4	10.9	20.5	10.9	22.0	11.1	6.4	7.8	22.0	11.0	.0	30.	50.
2FL	3	8.3	9.8	8.3	16.9	7.9	4.4	9.6	16.8	7.9	.0	30.	50.

BAY 5

LV	#N	@V1	@V2	@V3	ASTL	ASBL	ASTM	ASBM	ASTR	ASBR	ATOR	BW	BH
2FL	4	9.3	9.4	9.5	17.4	14.3	8.5	6.6	16.5	14.0	.0	30.	50.

BAY 6

LV	#N	@V1	@V2	@V3	ASTL	ASBL	ASTM	ASBM	ASTR	ASBR	ATOR	BW	BH
RFL	4	10.9	15.6	10.9	23.7	13.4	4.8	11.8	23.8	13.5	.0	30.	50.
3FL	4	10.9	20.0	10.9	22.8	12.2	6.6	8.3	23.1	12.6	.0	30.	50.
2FL	4	10.9	18.2	10.9	17.3	8.1	4.4	8.1	18.5	8.7	.0	30.	50.

BAY 7

LV	#N	@V1	@V2	@V3	ASTL	ASBL	ASTM	ASBM	ASTR	ASBR	ATOR	BW	BH
2FL	4	5.6	5.5	5.5	7.7	7.9	7.2	5.2	13.3	9.6	.0	30.	50.

BAY 8

LV	#N	@V1	@V2	@V3	ASTL	ASBL	ASTM	ASBM	ASTR	ASBR	ATOR	BW	BH
2FL	3	10.7	12.3	10.9	13.1	6.1	4.4	5.8	14.3	6.6	.0	30.	50.

BAY 9													
LV	#N	@V1	@V2	@V3	ASTL	ASBL	ASTM	ASBM	ASTR	ASBR	ATOR	BW	BH
RFL	4	10.9	13.5	10.9	26.3	17.0	6.2	11.8	26.0	16.7	.0	30.	50.
3FL	4	10.9	16.8	10.9	24.6	14.8	7.7	9.0	25.2	15.5	.0	30.	50.
2FL	4	10.9	18.6	10.9	20.2	9.6	4.5	7.8	20.4	9.7	.0	30.	50.
BAY 10													
LV	#N	@V1	@V2	@V3	ASTL	ASBL	ASTM	ASBM	ASTR	ASBR	ATOR	BW	BH
2FL	3	6.4	6.6	6.5	7.6	6.5	4.4	4.4	7.0	6.2	.0	30.	50.
BAY 11													
LV	#N	@V1	@V2	@V3	ASTL	ASBL	ASTM	ASBM	ASTR	ASBR	ATOR	BW	BH
2FL	3	10.9	14.9	10.9	5.5	4.4	4.4	4.4	5.7	4.4	.0	30.	50.
BAY 12													
LV	#N	@V1	@V2	@V3	ASTL	ASBL	ASTM	ASBM	ASTR	ASBR	ATOR	BW	BH
2FL	3	10.9	13.5	10.5	9.6	4.6	4.4	4.4	12.1	5.7	.0	30.	50.
BAY 13													
LV	#N	@V1	@V2	@V3	ASTL	ASBL	ASTM	ASBM	ASTR	ASBR	ATOR	BW	BH
RFL	3	9.7	12.4	9.4	12.1	5.7	4.4	5.9	13.5	6.3	.0	30.	50.
3FL	3	10.9	13.6	10.9	10.1	5.8	4.4	4.7	11.2	5.6	.0	30.	50.
2FL	3	9.5	12.5	9.4	12.4	5.8	4.4	4.9	12.7	5.9	.0	30.	50.
BAY 14													
LV	#N	@V1	@V2	@V3	ASTL	ASBL	ASTM	ASBM	ASTR	ASBR	ATOR	BW	BH
3FL	3	9.3	9.7	8.8	8.3	6.3	4.4	4.7	9.4	4.7	.0	30.	50.
2FL	3	8.2	9.4	8.6	9.4	4.5	4.4	4.4	6.5	4.4	.0	30.	50.
BAY 15													
LV	#N	@V1	@V2	@V3	ASTL	ASBL	ASTM	ASBM	ASTR	ASBR	ATOR	BW	BH
2FL	4	3.3	3.3	3.3	5.9	5.0	5.9	5.0	9.9	8.8	.0	30.	50.
BAY 16													
LV	#N	@V1	@V2	@V3	ASTL	ASBL	ASTM	ASBM	ASTR	ASBR	ATOR	BW	BH
2FL	3	10.9	13.5	10.5	12.0	5.6	4.4	5.4	14.7	6.8	.0	30.	50.
BAY 17													
LV	#N	@V1	@V2	@V3	ASTL	ASBL	ASTM	ASBM	ASTR	ASBR	ATOR	BW	BH
RFL	3	9.6	12.4	9.4	10.7	5.1	4.4	6.1	11.9	5.6	.0	30.	50.
3FL	3	10.9	13.0	10.9	11.7	8.6	5.2	6.3	14.8	7.3	.0	30.	50.
2FL	3	9.6	12.3	9.3	15.3	7.1	4.4	5.0	16.4	7.7	.0	30.	50.
BAY 18													
LV	#N	@V1	@V2	@V3	ASTL	ASBL	ASTM	ASBM	ASTR	ASBR	ATOR	BW	BH
2FL	4	10.9	19.0	10.9	19.5	9.2	4.4	7.9	19.7	9.3	.0	30.	50.
BAY 19													
LV	#N	@V1	@V2	@V3	ASTL	ASBL	ASTM	ASBM	ASTR	ASBR	ATOR	BW	BH
2FL	4	10.9	18.6	10.9	21.0	10.0	4.7	8.3	22.2	11.4	.0	30.	50.
BAY 20													
LV	#N	@V1	@V2	@V3	ASTL	ASBL	ASTM	ASBM	ASTR	ASBR	ATOR	BW	BH
RFL	4	10.0	10.9	9.6	28.4	20.0	6.6	17.7	30.6	23.0	.0	30.	50.
3FL	4	10.9	17.8	10.9	25.4	15.9	8.6	11.1	27.7	19.0	.0	30.	50.
2FL	4	10.9	21.7	10.9	21.9	11.4	6.4	9.2	22.9	12.4	.0	30.	50.
BAY 21													
LV	#N	@V1	@V2	@V3	ASTL	ASBL	ASTM	ASBM	ASTR	ASBR	ATOR	BW	BH
2FL	3	10.9	21.7	10.9	4.4	4.4	4.9	4.4	7.1	4.9	.0	30.	50.
BAY 22													
LV	#N	@V1	@V2	@V3	ASTL	ASBL	ASTM	ASBM	ASTR	ASBR	ATOR	BW	BH
2FL	3	10.9	20.5	10.9	4.4	4.4	6.5	5.6	9.2	7.4	.0	30.	50.
BAY 23													
LV	#N	@V1	@V2	@V3	ASTL	ASBL	ASTM	ASBM	ASTR	ASBR	ATOR	BW	BH
3FL	3	10.9	19.7	10.9	12.0	5.6	4.4	9.7	4.4	4.4	.0	30.	50.

BAY 24

LV	#N	@V1	@V2	@V3	ASTL	ASBL	ASTM	ASBM	ASTR	ASBR	ATOR	BW	BH
3FL	4	5.4	5.4	5.4	24.7	11.6	15.7	8.6	6.0	19.2	.0	40.	50.

BAY 25

LV	#N	@V1	@V2	@V3	ASTL	ASBL	ASTM	ASBM	ASTR	ASBR	ATOR	BW	BH
PRFL	3	9.0	8.2	7.9	4.4	4.4	4.4	4.4	5.2	4.4	.0	30.	50.
RFL	3	10.9	7.9	7.4	7.9	10.5	6.0	6.8	16.7	7.8	.0	40.	50.
3FL	4	10.9	15.5	10.9	5.8	15.2	9.2	11.1	22.9	10.7	.0	40.	50.

BAY 26

LV	#N	@V1	@V2	@V3	ASTL	ASBL	ASTM	ASBM	ASTR	ASBR	ATOR	BW	BH
RFL	4	10.1	10.3	10.9	14.9	7.0	8.4	5.8	5.8	7.6	.0	40.	50.
3FL	5	10.9	10.9	10.9	25.3	11.9	17.2	9.9	5.8	10.6	.0	40.	50.

BAY 27

LV	#N	@V1	@V2	@V3	ASTL	ASBL	ASTM	ASBM	ASTR	ASBR	ATOR	BW	BH
PRFL	3	8.5	8.7	8.4	4.4	4.4	4.4	4.4	4.5	4.4	.0	30.	50.
RFL	3	5.4	5.4	5.3	16.3	12.3	7.3	12.7	27.8	13.2	.0	40.	50.
3FL	4	10.9	14.3	10.9	8.0	16.0	12.0	8.7	27.8	13.2	.0	40.	50.

BAY 28

LV	#N	@V1	@V2	@V3	ASTL	ASBL	ASTM	ASBM	ASTR	ASBR	ATOR	BW	BH
RFL	3	10.9	21.7	10.9	4.6	4.4	4.4	4.4	4.4	4.4	.0	30.	50.
3FL	3	10.9	21.7	10.9	4.6	4.4	4.4	4.4	4.4	4.4	.0	30.	50.
2FL	3	10.9	21.7	10.9	4.6	4.4	4.4	4.4	4.4	4.4	.0	30.	50.

BAY 29

LV	#N	@V1	@V2	@V3	ASTL	ASBL	ASTM	ASBM	ASTR	ASBR	ATOR	BW	BH
RFL	3	10.9	21.7	10.9	4.6	4.4	4.4	4.4	4.4	4.4	.0	30.	50.
3FL	3	10.9	21.7	10.9	4.6	4.4	4.4	4.4	4.4	4.4	.0	30.	50.
2FL	3	10.9	21.7	10.9	4.6	4.4	4.4	4.4	4.4	4.4	.0	30.	50.

BAY 30

LV	#N	@V1	@V2	@V3	ASTL	ASBL	ASTM	ASBM	ASTR	ASBR	ATOR	BW	BH
RFL	3	10.9	21.7	10.9	4.4	4.4	4.4	4.4	4.4	4.4	.0	30.	50.
3FL	3	10.9	21.7	10.9	4.4	4.4	4.4	4.4	4.4	4.4	.0	30.	50.
2FL	3	10.9	21.7	10.9	4.4	4.4	4.4	4.4	4.4	4.4	.0	30.	50.

BAY 31

LV	#N	@V1	@V2	@V3	ASTL	ASBL	ASTM	ASBM	ASTR	ASBR	ATOR	BW	BH
PRFL	3	5.6	5.3	5.2	4.4	4.4	4.4	4.4	4.4	4.4	.0	30.	50.
RFL	4	9.4	9.3	9.1	13.8	13.2	6.3	6.7	14.7	12.2	.0	30.	50.
3FL	3	5.3	5.3	5.2	11.2	10.7	5.1	5.5	11.8	10.1	.0	30.	50.

BAY 32

LV	#N	@V1	@V2	@V3	ASTL	ASBL	ASTM	ASBM	ASTR	ASBR	ATOR	BW	BH
PRFL	3	5.1	5.2	5.5	5.2	4.4	4.4	4.4	4.4	4.4	.0	30.	50.
RFL	3	10.9	21.7	10.9	4.4	4.4	4.4	4.4	4.4	4.4	.0	30.	50.
3FL	3	10.9	21.7	10.9	4.4	4.4	4.4	4.4	4.4	4.4	.0	30.	50.
2FL	3	10.9	21.7	10.9	4.4	4.4	4.4	4.4	4.4	4.4	.0	30.	50.

7、柱設計

COL 1									
LV	Mx	My	APP	IL	IS	VX	IVX	VY	IVY
2FL	15.43	14.09	-18.07	5	2	15.30	7	13.45	9
COL 2									
LV	Mx	My	APP	IL	IS	VX	IVX	VY	IVY
2FL	7.46	19.91	-13.96	21	2	15.28	6	17.36	5
COL 3									
LV	Mx	My	APP	IL	IS	VX	IVX	VY	IVY
RFL	17.62	5.59	-16.02	39	1	14.24	7	12.48	9
3FL	15.09	3.28	-39.20	3	2	12.41	7	6.24	41
2FL	11.71	8.84	-68.95	5	1	13.55	7	11.71	41
COL 4									
LV	Mx	My	APP	IL	IS	VX	IVX	VY	IVY
RFL	18.06	5.89	-16.39	38	1	14.79	6	8.61	5
3FL	5.36	13.31	-16.31	40	2	12.97	6	13.60	41
2FL	10.81	17.21	-57.06	4	2	13.16	6	14.48	37
COL 5									
LV	Mx	My	APP	IL	IS	VX	IVX	VY	IVY
2FL	11.75	2.27	14.14	6	1	12.05	39	6.37	9
COL 6									
LV	Mx	My	APP	IL	IS	VX	IVX	VY	IVY
RFL	20.51	7.15	-19.44	19	1	12.72	3	14.84	8
3FL	28.63	2.32	-48.32	3	2	25.53	7	11.17	40
2FL	19.66	1.69	-59.20	23	2	17.17	3	11.70	8
COL 7									
LV	Mx	My	APP	IL	IS	VX	IVX	VY	IVY
RFL	20.11	6.98	-19.21	18	1	12.50	2	11.15	4
3FL	2.42	34.59	-61.06	9	1	26.43	6	27.93	9
2FL	18.26	1.87	-38.94	34	2	16.48	2	11.78	36
COL 8									
LV	Mx	My	APP	IL	IS	VX	IVX	VY	IVY
RFL	22.32	1.34	-47.00	7	1	16.39	7	11.73	9
3FL	27.24	1.83	-47.79	39	2	23.59	3	23.48	5
2FL	19.29	1.41	-49.41	51	2	18.29	7	12.39	5
COL 9									
LV	Mx	My	APP	IL	IS	VX	IVX	VY	IVY
RFL	21.47	13.46	-55.15	2	1	16.64	6	19.68	5
3FL	5.63	15.84	-26.75	36	2	19.29	2	21.09	5
2FL	2.37	18.47	-31.41	52	2	8.57	6	15.07	5
COL 10									
LV	Mx	My	APP	IL	IS	VX	IVX	VY	IVY
2FL	12.53	3.91	11.84	18	1	12.30	34	7.02	8
COL 11									
LV	Mx	My	APP	IL	IS	VX	IVX	VY	IVY
2FL	26.49	1.69	7.21	51	2	26.75	3	16.90	8
COL 12									
LV	Mx	My	APP	IL	IS	VX	IVX	VY	IVY
PRFL	8.33	3.31	-11.90	3	1	23.04	3	10.68	8
RFL	1.21	12.59	-42.61	8	1	2.45	2	8.29	8
3FL	1.61	19.79	-56.40	36	1	9.54	2	18.54	4
2FL	5.35	4.47	-104.61	1	1	9.58	2	10.18	4
COL 13									
LV	Mx	My	APP	IL	IS	VX	IVX	VY	IVY
PRFL	.86	.93	-1.78	43	2	18.71	2	20.29	24

RFL	11.67	20.94	-74.12	4	1	18.10	3	14.64	8
3FL	9.87	20.35	-114.81	4	2	20.86	3	20.75	4
2FL	8.34	5.63	-152.85	1	1	10.44	3	11.89	4

COL 14

LV	Mx	My	APP	IL	IS	VX	IVX	VY	IVY
RFL	25.40	9.75	-56.67	6	1	20.38	2	20.99	4
3FL	1.78	23.58	-62.56	36	2	20.41	2	22.57	4
2FL	6.29	18.51	-40.63	53	2	10.63	2	15.44	4

COL 15

LV	Mx	My	APP	IL	IS	VX	IVX	VY	IVY
2FL	9.70	3.23	1.56	2	1	10.68	35	8.66	4

COL 16

LV	Mx	My	APP	IL	IS	VX	IVX	VY	IVY
2FL	10.90	3.45	1.08	35	2	11.43	34	10.89	4

COL 19

LV	Mx	My	APP	IL	IS	VX	IVX	VY	IVY
PRFL	2.14	1.21	-1.78	55	1	6.97	23	7.01	9
RFL	17.06	11.69	-29.23	3	2	15.62	7	13.95	9

COL 20

LV	Mx	My	APP	IL	IS	VX	IVX	VY	IVY
PRFL	1.43	11.21	-4.39	8	2	7.64	38	28.66	8
RFL	.63	28.69	-13.09	5	2	15.86	38	24.24	5

COL 21

LV	Mx	My	APP	IL	IS	VX	IVX	VY	IVY
3FL	15.03	.64	-12.04	3	1	11.02	3	10.27	8
2FL	1.35	9.73	-6.06	8	1	2.61	3	9.09	8

COLUMN DESIGN DATA :

FC' (kg/cm2) , NFL	 =	210.00	5
STEEL BAR Fy (kg/cm2)	=	4200.00	
STEEL SHAPE Fy (kg/cm2)	=	3500.00	
CONCRETE COVER + TIE DIAMETER (cm)..	=	5.30	
MAXIMUM L.L.2 REDUCE FACTOR	=	.60	
MAXIMUM L.L.3 REDUCE FACTOR	=	1.00	
NO. OF LOADING COMBINATION	=	65	
# OF MAIN BAR	=	6	
NUMBER OF COLUMNS TO CALCULATED	=	21	
KF 0>RC ,SRC ,SC BEAM			
OTHER SS BEAM	=	0	
LK 0>RC , 1>SRC , 2>SRC(LRFD)			
3>SC(LRFD)	=	0	
KP 0>DUCTILE , 1>NONDUCTILE	=	0	

LOADING COMBINATION

IL	L 1	L 2	L 3	L 4	L 5	L 6	L 7
1	1.40	1.70	.00	.00	.00	.00	.00
2	1.05	1.27	.42	1.40	.00	.00	.00
3	1.05	1.27	.42	-1.40	.00	.00	.00
4	1.05	1.27	.42	.00	1.40	.00	.00
5	1.05	1.27	.42	.00	-1.40	.00	.00
6	1.05	1.27	.42	.00	.00	1.40	.00
7	1.05	1.27	.42	.00	.00	-1.40	.00
8	1.05	1.27	.42	.00	.00	.00	1.40
9	1.05	1.27	.42	.00	.00	.00	-1.40
10	1.05	1.27	1.40	.42	.00	.00	.00
11	1.05	1.27	1.40	-.42	.00	.00	.00
12	1.05	1.27	1.40	.00	.42	.00	.00
13	1.05	1.27	1.40	.00	-.42	.00	.00
14	1.05	1.27	1.40	.00	.00	.42	.00
15	1.05	1.27	1.40	.00	.00	-.42	.00
16	1.05	1.27	1.40	.00	.00	.00	.42

17	1.05	1.27	1.40	.00	.00	.00	-.42	
18	1.05	1.27	-.42	1.40	.00	.00	.00	
19	1.05	1.27	-.42	-1.40	.00	.00	.00	
20	1.05	1.27	-.42	.00	1.40	.00	.00	
21	1.05	1.27	-.42	.00	-1.40	.00	.00	
22	1.05	1.27	-.42	.00	.00	1.40	.00	
23	1.05	1.27	-.42	.00	.00	-1.40	.00	
24	1.05	1.27	-.42	.00	.00	.00	1.40	
25	1.05	1.27	-.42	.00	.00	.00	-1.40	
26	1.05	1.27	-1.40	.42	.00	.00	.00	
27	1.05	1.27	-1.40	-.42	.00	.00	.00	
28	1.05	1.27	-1.40	.00	.42	.00	.00	
29	1.05	1.27	-1.40	.00	-.42	.00	.00	
30	1.05	1.27	-1.40	.00	.00	.42	.00	
31	1.05	1.27	-1.40	.00	.00	-.42	.00	
32	1.05	1.27	-1.40	.00	.00	.00	.42	
33	1.05	1.27	-1.40	.00	.00	.00	-.42	
34	.90	.00	.43	1.43	.00	.00	.00	
35	.90	.00	.43	-1.43	.00	.00	.00	
36	.90	.00	.43	.00	1.43	.00	.00	
37	.90	.00	.43	.00	-1.43	.00	.00	
38	.90	.00	.43	.00	.00	1.43	.00	
39	.90	.00	.43	.00	.00	-1.43	.00	
40	.90	.00	.43	.00	.00	.00	1.43	
41	.90	.00	.43	.00	.00	.00	-1.43	
42	.90	.00	1.43	.43	.00	.00	.00	
43	.90	.00	1.43	-.43	.00	.00	.00	
44	.90	.00	1.43	.00	.43	.00	.00	
45	.90	.00	1.43	.00	-.43	.00	.00	
46	.90	.00	1.43	.00	.00	.43	.00	
47	.90	.00	1.43	.00	.00	-.43	.00	
48	.90	.00	1.43	.00	.00	.00	.43	
49	.90	.00	1.43	.00	.00	.00	-.43	
50	.90	.00	-.43	1.43	.00	.00	.00	
51	.90	.00	-.43	-1.43	.00	.00	.00	
52	.90	.00	-.43	.00	1.43	.00	.00	
53	.90	.00	-.43	.00	-1.43	.00	.00	
54	.90	.00	-.43	.00	.00	1.43	.00	
55	.90	.00	-.43	.00	.00	-1.43	.00	
56	.90	.00	-.43	.00	.00	.00	1.43	
57	.90	.00	-.43	.00	.00	.00	-1.43	
58	.90	.00	-1.43	.43	.00	.00	.00	
59	.90	.00	-1.43	-.43	.00	.00	.00	
60	.90	.00	-1.43	.00	.43	.00	.00	
61	.90	.00	-1.43	.00	-.43	.00	.00	
62	.90	.00	-1.43	.00	.00	.43	.00	
63	.90	.00	-1.43	.00	.00	-.43	.00	
64	.90	.00	-1.43	.00	.00	.00	.43	
65	.90	.00	-1.43	.00	.00	.00	-.43	

COL 1

LV	Pt	Ass	Ase	Ast	Ax10	Ay10	DX	DY
2FL	1.59	8.04	8.04	32.16	.57	.57	45.00	45.00

COL 2

LV	Pt	Ass	Ase	Ast	Ax10	Ay10	DX	DY
2FL	2.08	10.55	10.55	42.21	.57	.57	45.00	45.00

COL 3

LV	Pt	Ass	Ase	Ast	Ax10	Ay10	DX	DY
RFL	1.70	8.58	8.58	34.33	.57	.57	45.00	45.00
3FL	1.16	5.86	5.86	23.43	.57	.57	45.00	45.00
2FL	1.00	5.06	5.06	20.25	.57	.57	45.00	45.00

COL 4

LV	Pt	Ass	Ase	Ast	Ax10	Ay10	DX	DY
RFL	1.76	8.93	8.93	35.72	.57	.57	45.00	45.00
3FL	1.27	6.44	6.44	25.77	.57	.57	45.00	45.00
2FL	1.46	7.40	7.40	29.61	.57	.57	45.00	45.00

COL 5								
LV	Pt	Ass	Ase	Ast	Ax10	Ay10	DX	DY
2FL	2.69	8.22	8.22	32.90	1.02	.44	35.00	35.00
COL 6								
LV	Pt	Ass	Ase	Ast	Ax10	Ay10	DX	DY
RFL	2.12	10.75	10.75	42.99	.57	.57	45.00	45.00
3FL	2.62	13.28	13.28	53.12	1.24	.57	45.00	45.00
2FL	1.32	6.70	6.70	26.82	.57	.57	45.00	45.00
COL 7								
LV	Pt	Ass	Ase	Ast	Ax10	Ay10	DX	DY
RFL	2.07	10.47	10.47	41.87	.57	.57	45.00	45.00
3FL	3.32	16.81	16.81	67.25	1.22	1.40	45.00	45.00
2FL	1.35	6.85	6.85	27.41	.57	.57	45.00	45.00
COL 8								
LV	Pt	Ass	Ase	Ast	Ax10	Ay10	DX	DY
RFL	1.73	8.75	8.75	34.99	.57	.57	45.00	45.00
3FL	2.39	12.11	12.11	48.43	1.01	.91	45.00	45.00
2FL	1.34	6.80	6.80	27.19	.57	.57	45.00	45.00
COL 9								
LV	Pt	Ass	Ase	Ast	Ax10	Ay10	DX	DY
RFL	2.27	11.48	11.48	45.90	.57	.65	45.00	45.00
3FL	1.51	7.67	7.67	30.67	.57	.78	45.00	45.00
2FL	1.44	7.30	7.30	29.19	.58	.57	45.00	45.00
COL 10								
LV	Pt	Ass	Ase	Ast	Ax10	Ay10	DX	DY
2FL	3.12	9.55	9.55	38.19	.97	.44	35.00	35.00
COL 11								
LV	Pt	Ass	Ase	Ast	Ax10	Ay10	DX	DY
2FL	2.21	11.21	11.21	44.83	1.46	.57	45.00	45.00
COL 12								
LV	Pt	Ass	Ase	Ast	Ax10	Ay10	DX	DY
PRFL	1.00	5.06	5.06	20.25	1.74	.57	45.00	45.00
RFL	1.00	5.06	5.06	20.25	.57	.57	45.00	45.00
3FL	1.36	6.88	6.88	27.52	.57	.57	45.00	45.00
2FL	1.00	5.06	5.06	20.25	.57	.57	45.00	45.00
COL 13								
LV	Pt	Ass	Ase	Ast	Ax10	Ay10	DX	DY
PRFL	2.02	10.24	10.24	40.97	1.34	1.21	45.00	45.00
RFL	1.92	9.71	9.71	38.85	.57	.57	45.00	45.00
3FL	1.56	7.92	7.92	31.67	.58	.60	45.00	45.00
2FL	1.00	5.06	5.06	20.25	.57	.57	45.00	45.00
COL 14								
LV	Pt	Ass	Ase	Ast	Ax10	Ay10	DX	DY
RFL	2.17	10.98	10.98	43.93	.73	.70	45.00	45.00
3FL	1.80	9.10	9.10	36.39	.62	.75	45.00	45.00
2FL	1.12	5.68	5.68	22.74	.57	.57	45.00	45.00
COL 15								
LV	Pt	Ass	Ase	Ast	Ax10	Ay10	DX	DY
2FL	2.23	6.83	6.83	27.32	.55	.44	35.00	35.00
COL 16								
LV	Pt	Ass	Ase	Ast	Ax10	Ay10	DX	DY
2FL	2.50	7.66	7.66	30.64	.62	.59	35.00	35.00
COL 19								
LV	Pt	Ass	Ase	Ast	Ax10	Ay10	DX	DY
PRFL	1.00	4.00	4.00	16.00	.57	.50	40.00	40.00
RFL	3.04	12.16	12.16	48.65	.84	.50	40.00	40.00

COL 20

LV	Pt	Ass	Ase	Ast	Ax10	Ay10	DX	DY
PRFL	1.29	5.15	5.15	20.60	.59	2.38	40.00	40.00
RFL	3.64	14.55	14.55	58.20	.77	1.73	40.00	40.00

COL 21

LV	Pt	Ass	Ase	Ast	Ax10	Ay10	DX	DY
3FL	2.90	8.89	8.89	35.57	.49	.45	35.00	35.00
2FL	1.84	5.63	5.63	22.51	.44	.44	35.00	35.00

8、小梁設計

CONTINUED BEAM DESIGN DATA :

CONCRETE STRENGTH (kg/cm²) = 210.00
 MAIN STEEL BAR (kg/cm²) = 4200.00
 EXTREME FIBER TO CENTROID BAR (cm).. = 7.50
 0>BEAM , 1>FBEAM = 0
 CHECK DEEP BEAM 0>NO 1>YES = 0
 STEEL TRIED FOR STIRRUP # = 3 4
 STEEL TRIED FOR WEB STEEL # = 5
 STEEL TRIED FOR MAIN BAR # = 6

2F-RFL

	BAY	1	b0				
Ln=	3.400M	B=	30.	De=	50.	COB=	7.5
				Fc=	210.0	Fy=	4200.0
				VC=			9.79T
DIST(M)	.43	.85	2.55	2.98			
Vu (T)	3.68	2.45	2.45	3.68	Asweb :		
#3@S	21.25	21.25	21.25	21.25			
	LEFT	CENTER	RIGHT		LEFT	CENTER	RIGHT
Mtop	.00	.00	.00	Ast	.00	.00	.00
Mbot	.00	5.32	.00	Asb	.00	4.25	.00

2F-RFL

	BAY	1	b1				
Ln=	2.200M	B=	25.	De=	50.	COB=	7.5
				Fc=	210.0	Fy=	4200.0
				VC=			8.16T
DIST(M)	.33	.55	1.65	1.87	DEEP BEAM	VC=	14.53T
Vu (T)	1.33	.95	.95	1.33	Asweb :	1-#5	
#3@S	21.25	21.25	21.25	21.25	STIRRUP:	#3@25.0	
	LEFT	CENTER	RIGHT		LEFT	CENTER	RIGHT
Mtop	.00	.00	.00	Ast	.00	.00	.00
Mbot	.00	1.27	.00	Asb	.00	1.06	.00

2F-RFL

	BAY	1	cb1				
Ln=	2.000M	B=	25.	De=	50.	COB=	7.5
				Fc=	210.0	Fy=	4200.0
				VC=			8.16T
DIST(M)	.30	.50	1.50	1.70	DEEP BEAM	VC=	15.79T
Vu (T)	1.15	.82	.82	1.15	Asweb :	1-#5	
#3@S	21.25	21.25	21.25	21.25	STIRRUP:	#3@25.0	
	LEFT	CENTER	RIGHT		LEFT	CENTER	RIGHT
Mtop	.00	.00	.00	Ast	.00	.00	.00
Mbot	.00	1.00	.00	Asb	.00	.83	.00

RFL

	BAY	1	b2				
Ln=	6.400M	B=	35.	De=	50.	COB=	7.5
				Fc=	210.0	Fy=	4200.0
				VC=			11.42T
DIST(M)	.43	1.60	4.80	5.97			
Vu (T)	14.72	8.49	8.49	14.72	Asweb :		
#3@S	21.25	21.25	21.25	21.25			
	LEFT	CENTER	RIGHT		LEFT	CENTER	RIGHT
Mtop	.00	.00	.00	Ast	.00	1.60	.00
Mbot	.00	32.54	.00	Asb	.00	24.96	.00

R-PRFL

	BAY	1	b3				
Ln= 6.400M	B= 30.	De= 50.	COB= 7.5	Fc=210.0	Fy=4200.0	VC=	9.79T
DIST(M)	.43	1.60	4.80	5.97			
Vu (T)	10.74	6.19	6.19	10.74	Asweb :		
#3@S	21.25	21.25	21.25	21.25			
	LEFT	CENTER	RIGHT		LEFT	CENTER	RIGHT
Mtop	.00	.00	.00	Ast	.00	.00	.00
Mbot	.00	23.65	.00	Asb	.00	17.57	.00

9、樓版設計

S1(2-3FL)

```

*****
SLAB SHORT SPAN LENGTH = 6.40 M      *      *
SLAB LONG SPAN LENGTH = 6.50 M      *      2      *
A/B RATIO = .985                      *      *
BOUNDARY CASE = 2                     *****
SLAB THICK = 15.00 CM  COVER= 4.00 CM  EFFECTIVE DEPTH= 11.00 CM
DEAD LOAD = .6400 T  LIVE LOAD = .3000 T
Fy= 2800.00 KG/CM^2  Fc'= 210.00 KG/CM^2  Es= 2040000.00 KG/CM^2
CAneg = .0465  CBneg = .0438
CA11 = .0186  CB11 = .0174
CA11 = .0279  CB11 = .0264
WA = .5154  WB = .4846

```

```

=====
MANeg = 2.68 T-M  ASneg = 10.45 CM^2
MBneg = 2.60 T-M  ASneg = 10.11 CM^2
MApos = 1.27 T-M  ASpos = 4.73 CM^2
MBpos = 1.23 T-M  ASpos = 4.57 CM^2
Mmax = 6.64 T-M  ASmax = 30.67 CM^2
VA = 2.24 T  VB = 2.14 T  VC = 7.18 T

```

S2(2-RF)

```

*****
SLAB SHORT SPAN LENGTH = 3.00 M      *      *
SLAB LONG SPAN LENGTH = 4.60 M      *      2      *
A/B RATIO = .652                      *      *
BOUNDARY CASE = 2                     *****
SLAB THICK = 15.00 CM  COVER= 4.00 CM  EFFECTIVE DEPTH= 11.00 CM
DEAD LOAD = .6400 T  LIVE LOAD = .3000 T
Fy= 2800.00 KG/CM^2  Fc'= 210.00 KG/CM^2  Es= 2040000.00 KG/CM^2
CAneg = .0769  CBneg = .0141
CA11 = .0319  CB11 = .0060
CA11 = .0528  CB11 = .0101
WA = .8483  WB = .1517

```

```

=====
MANeg = .97 T-M  ASneg = 3.60 CM^2
MBneg = .42 T-M  ASneg = 1.53 CM^2
MApos = .50 T-M  ASpos = 1.83 CM^2
MBpos = .22 T-M  ASpos = 1.50 CM^2
Mmax = 6.64 T-M  ASmax = 30.67 CM^2
VA = 1.66 T  VB = .47 T  VC = 7.18 T

```

S2(2-RF)

```

*****
SLAB SHORT SPAN LENGTH = 2.00 M      *      *
SLAB LONG SPAN LENGTH = 6.40 M      *      2      *
A/B RATIO = .313                      *      *
BOUNDARY CASE = 2                     *****
SLAB THICK = 15.00 CM  COVER= 4.00 CM  EFFECTIVE DEPTH= 11.00 CM
DEAD LOAD = .6400 T  LIVE LOAD = .3000 T
Fy= 2800.00 KG/CM^2  Fc'= 210.00 KG/CM^2  Es= 2040000.00 KG/CM^2
CAneg = .0909  CBneg = .0000
CA11 = .0625  CB11 = .0000
CA11 = .0625  CB11 = .0000
WA = 1.1500  WB = .0000

```

```

=====
MANeg = .51 T-M  ASneg = 1.87 CM^2
MBneg = .00 T-M  ASneg = 1.50 CM^2
MApos = .35 T-M  ASpos = 1.50 CM^2

```

MBpos = .00 T-M ASpos = 1.50 CM^2
Mmax = 6.64 T-M ASmax = 30.67 CM^2
VA = 1.44 T VB = .00 T VC = 7.18 T

S3(2FL)

```

*****
SLAB SHORT SPAN LENGTH = 1.60 M      *      *
SLAB LONG SPAN LENGTH = 3.20 M      *      2      *
A/B RATIO = .500                      *      *
BOUNDARY CASE = 2                     *****
SLAB THICK = 15.00 CM  COVER= 4.00 CM  EFFECTIVE DEPTH= 11.00 CM
DEAD LOAD = .6400 T  LIVE LOAD = .3000 T
Fy= 2800.00 KG/CM^2  Fc'= 210.00 KG/CM^2  Es= 2040000.00 KG/CM^2
CAneg = .0909  CBneg = .0000
CA11 = .0625  CB11 = .0000
CA11 = .0625  CB11 = .0000
WA = 1.1500  WB = .0000

```

```

=====
MANeg = .33 T-M  ASneg = 1.50 CM^2
MBneg = .00 T-M  ASneg = 1.50 CM^2
MApos = .22 T-M  ASpos = 1.50 CM^2
MBpos = .00 T-M  ASpos = 1.50 CM^2
Mmax = 6.64 T-M  ASmax = 30.67 CM^2
VA = 1.12 T  VB = .00 T  VC = 7.18 T

```

CS1(2FL)

```

.      .
SLAB SHORT SPAN LENGTH = 1.50 M      .      .
SLAB LONG SPAN LENGTH = 3.00 M      .      10      .
A/B RATIO = .500                      .      .
BOUNDARY CASE =10                     *****
SLAB THICK = 15.00 CM  COVER= 4.00 CM  EFFECTIVE DEPTH= 11.00 CM
DEAD LOAD = .6400 T  LIVE LOAD = .3000 T
Fy= 2800.00 KG/CM^2  Fc'= 210.00 KG/CM^2  Es= 2040000.00 KG/CM^2
CAneg = .5000  CBneg = .0000
CA11 = .0000  CB11 = .0000
CA11 = .0000  CB11 = .0000
WA = 2.0000  WB = .0000

```

```

=====
MANeg = 1.58 T-M  ASneg = 5.96 CM^2
MBneg = .00 T-M  ASneg = 1.50 CM^2
MApos = .00 T-M  ASpos = 1.50 CM^2
MBpos = .00 T-M  ASpos = 1.50 CM^2
Mmax = 6.64 T-M  ASmax = 30.67 CM^2
VA = 1.80 T  VB = .00 T  VC = 7.18 T

```

S1(RFL)

```

*****
SLAB SHORT SPAN LENGTH = 3.00 M      *      *
SLAB LONG SPAN LENGTH = 6.20 M      *      2      *
A/B RATIO = .484                      *      *
BOUNDARY CASE = 2                     *****
SLAB THICK = 15.00 CM  COVER= 4.00 CM  EFFECTIVE DEPTH= 11.00 CM
DEAD LOAD = .8000 T  LIVE LOAD = 1.0000 T
Fy= 2800.00 KG/CM^2  Fc'= 210.00 KG/CM^2  Es= 2040000.00 KG/CM^2
CAneg = .0909  CBneg = .0000
CA11 = .0625  CB11 = .0000
CA11 = .0625  CB11 = .0000
WA = 1.1500  WB = .0000

```

```

=====
MANeg = 2.31 T-M  ASneg = 8.89 CM^2
MBneg = .00 T-M  ASneg = 1.50 CM^2
MApos = 1.59 T-M  ASpos = 5.98 CM^2

```

MBpos = .00 T-M ASpos = 1.50 CM^2
Mmax = 6.64 T-M ASmax = 30.67 CM^2
VA = 4.51 T VB = .00 T VC = 7.18 T

S3(R-PR)

```

*****
SLAB SHORT SPAN LENGTH = 3.00 M      *      *
SLAB LONG SPAN LENGTH = 6.40 M      *      2      *
A/B RATIO = .469                    *      *
BOUNDARY CASE = 2                   *****
SLAB THICK = 15.00 CM  COVER= 4.00 CM  EFFECTIVE DEPTH= 11.00 CM
DEAD LOAD = .6400 T  LIVE LOAD = .3000 T
Fy= 2800.00 KG/CM^2  Fc'= 210.00 KG/CM^2  Es= 2040000.00 KG/CM^2
CAneg = .0909  CBneg = .0000
CA11 = .0625  CB11 = .0000
CA11 = .0625  CB11 = .0000
WA = 1.1500  WB = .0000

```

MAneg = 1.15 T-M ASneg = 4.28 CM^2
MBneg = .00 T-M ASneg = 1.50 CM^2
MApos = .79 T-M ASpos = 2.91 CM^2
MBpos = .00 T-M ASpos = 1.50 CM^2
Mmax = 6.64 T-M ASmax = 30.67 CM^2
VA = 2.25 T VB = .00 T VC = 7.18 T

S1(PRFL)

```

*****
SLAB SHORT SPAN LENGTH = 3.00 M      *      *
SLAB LONG SPAN LENGTH = 4.80 M      *      2      *
A/B RATIO = .625                    *      *
BOUNDARY CASE = 2                   *****
SLAB THICK = 15.00 CM  COVER= 4.00 CM  EFFECTIVE DEPTH= 11.00 CM
DEAD LOAD = .6400 T  LIVE LOAD = .3000 T
Fy= 2800.00 KG/CM^2  Fc'= 210.00 KG/CM^2  Es= 2040000.00 KG/CM^2
CAneg = .0790  CBneg = .0120
CA11 = .0330  CB11 = .0050
CA11 = .0555  CB11 = .0085
WA = .8700  WB = .1300

```

MAneg = 1.00 T-M ASneg = 3.70 CM^2
MBneg = .39 T-M ASneg = 1.50 CM^2
MApos = .52 T-M ASpos = 1.90 CM^2
MBpos = .20 T-M ASpos = 1.50 CM^2
Mmax = 6.64 T-M ASmax = 30.67 CM^2
VA = 1.70 T VB = .42 T VC = 7.18 T