

Summary Report

Model File: COLEGIO, Revision 0
09/07/2018

General Data

Property Name: COLUMNA40X40

Material: CONCRETO3000Psi

Notional Size Data: Modify/Show Notional Size...

Display Color: Change...

Notes: Modify/Show Notes...

Shape

Section Shape: Concrete Rectangular

Section Property Source

Source: User Defined

Section Dimensions

Depth: 0,4 m

Width: 0,4 m

Property Modifiers

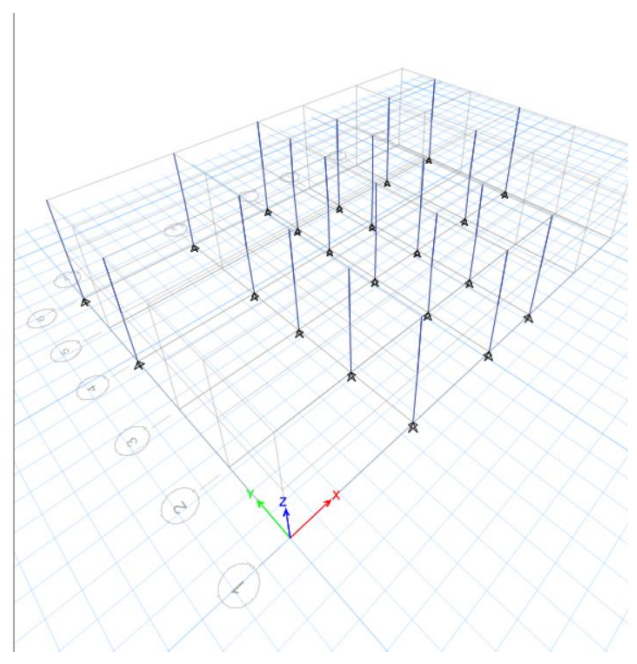
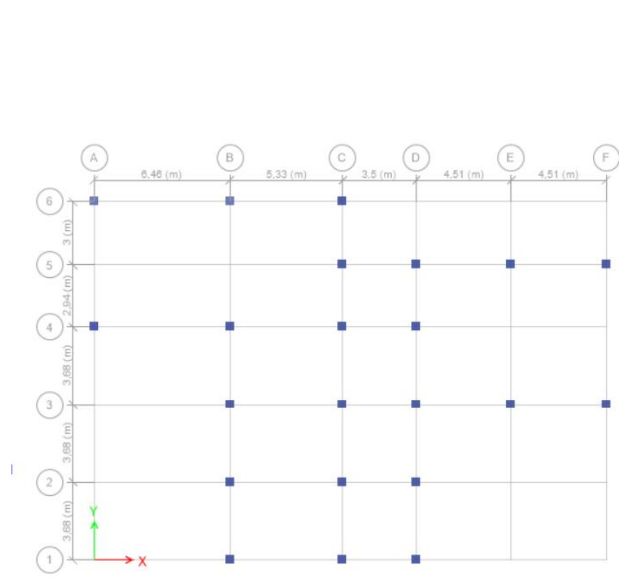
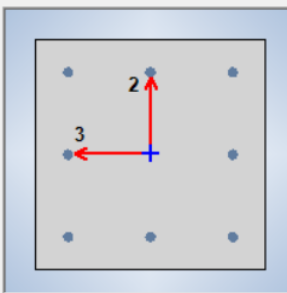
Modify/Show Modifiers...
Currently Default

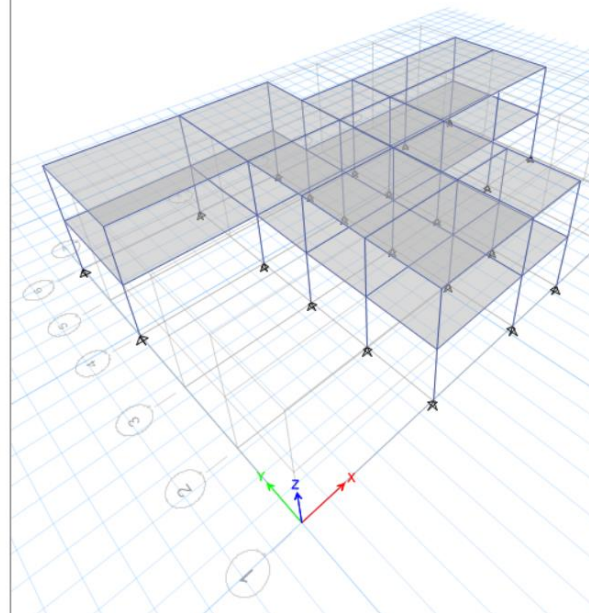
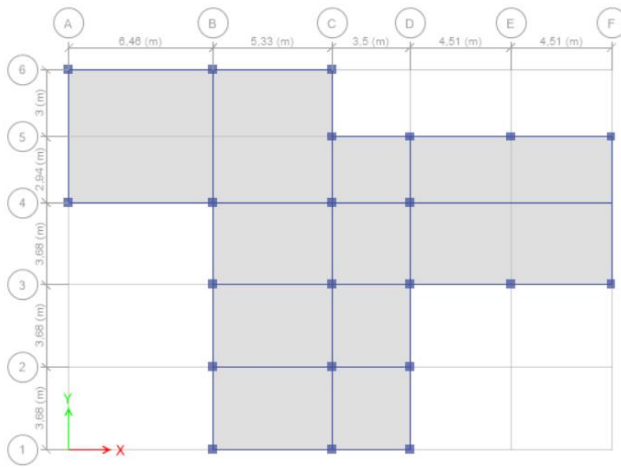
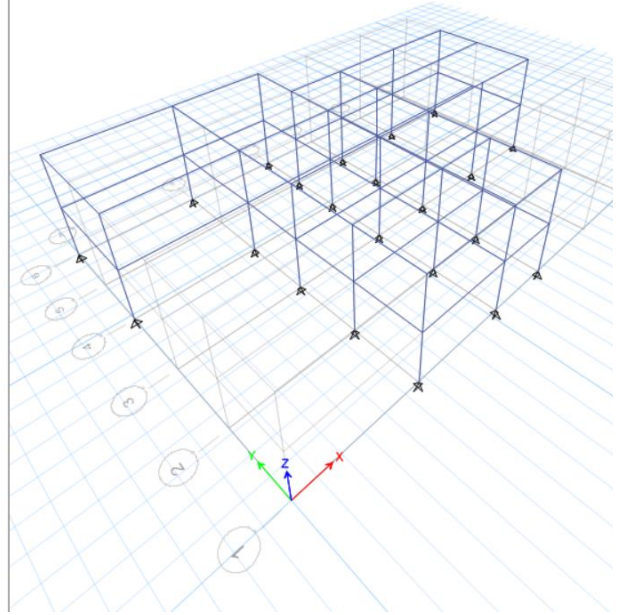
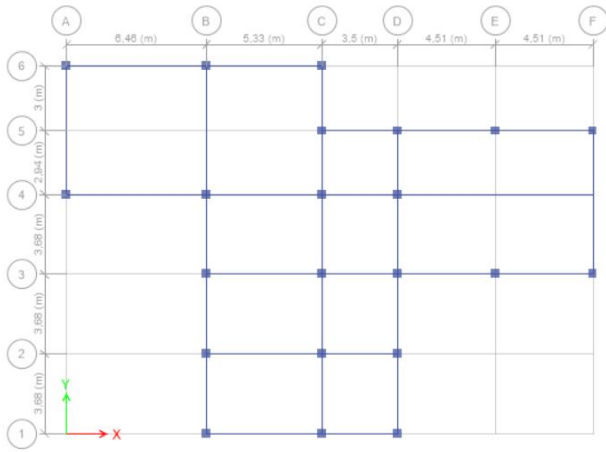
Reinforcement

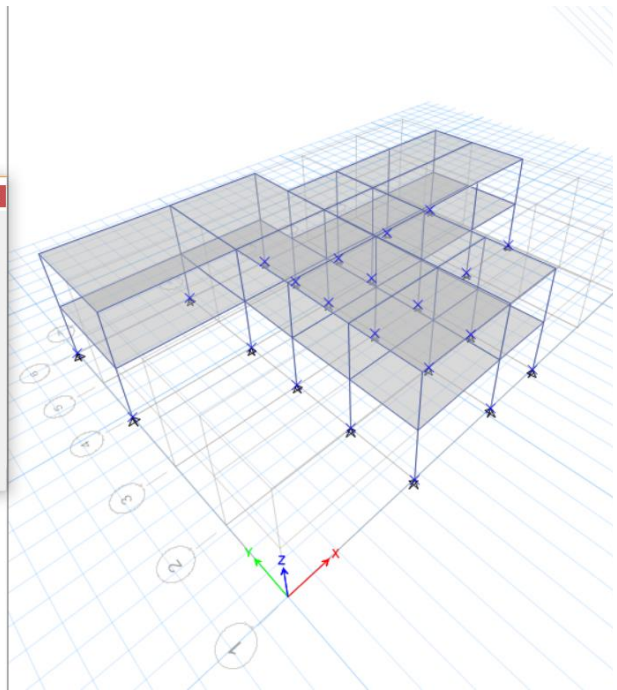
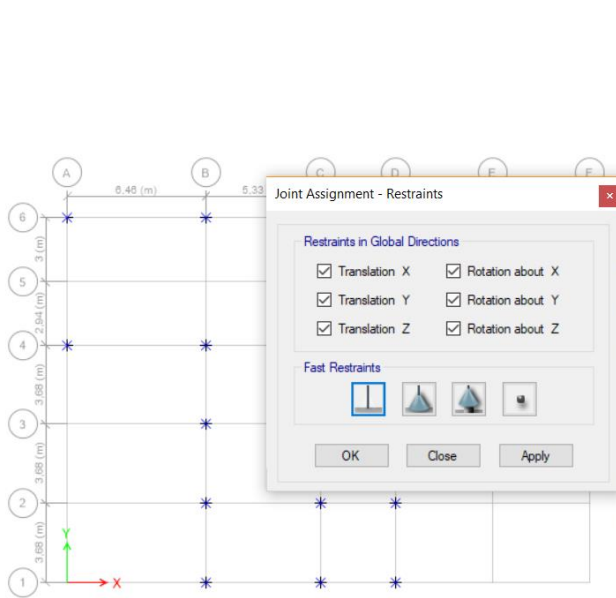
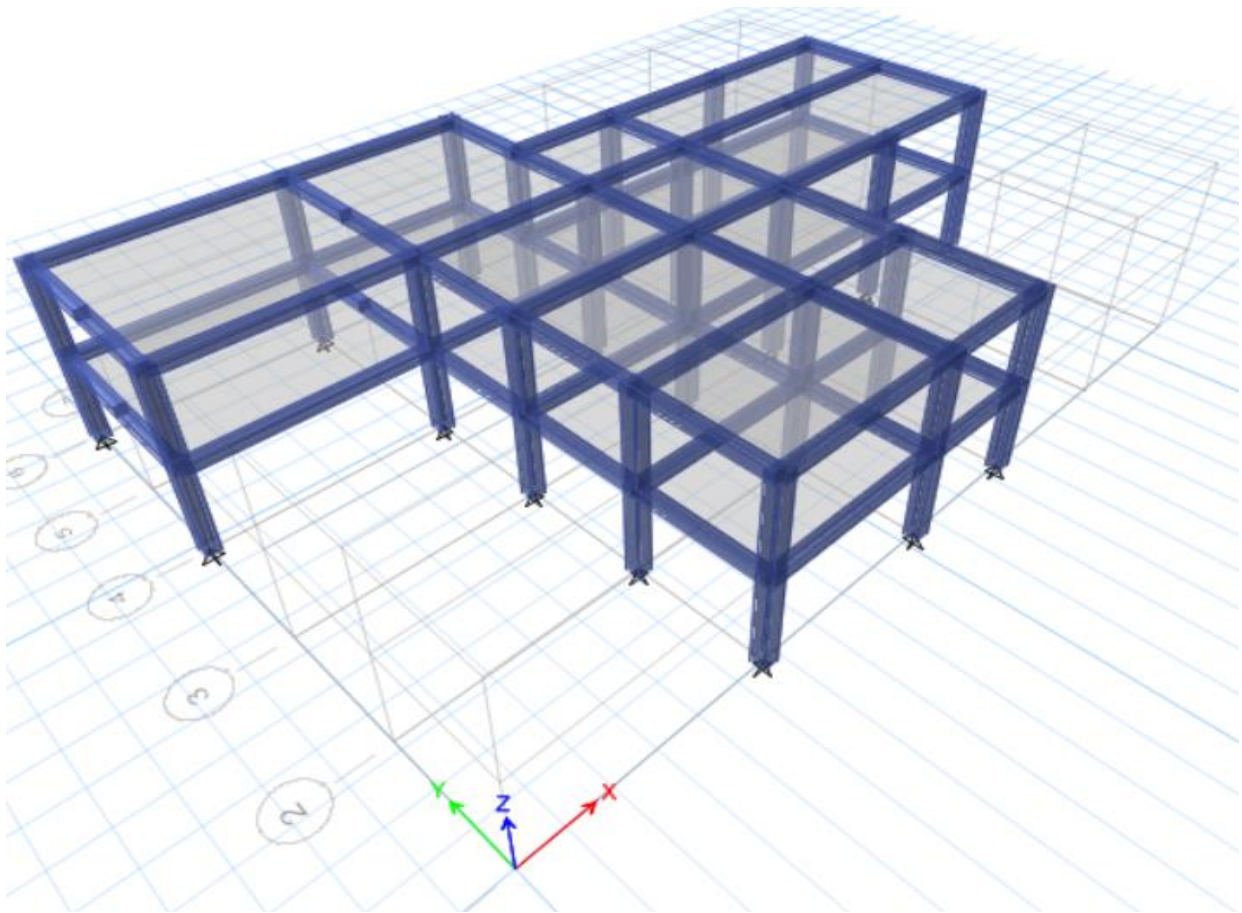
Modify/Show Rebar...

OK
Cancel

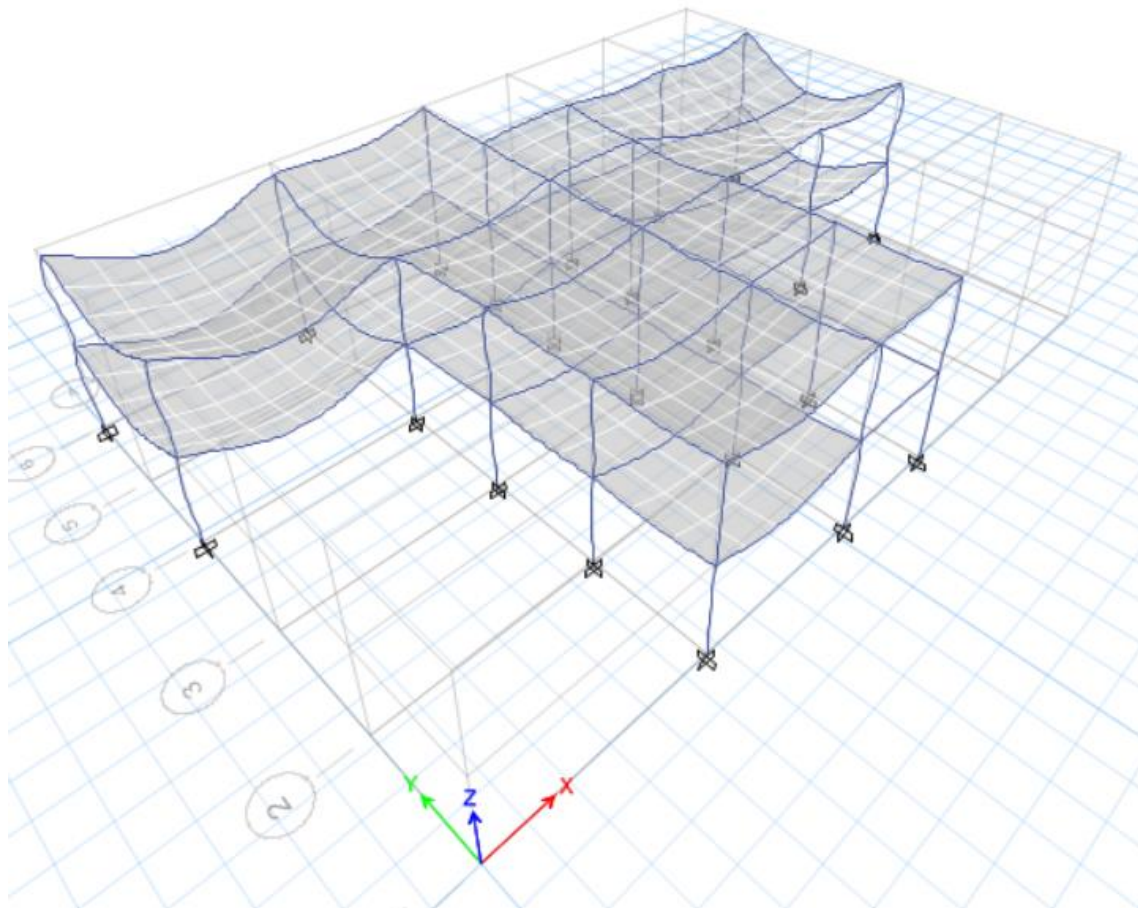
Show Section Properties...







Deformación por peso propio



1 Structure Data

This chapter provides model geometry information, including items such as story levels, point coordinates, and element connectivity.

1.1 Story Data

Table 1.1 - Story Data

Name	Height m	Elevation m	Master Story	Similar To	Splice Story
Story2	3	6	Yes	None	No
Story1	3	3	No	Story2	No
Base	0	0	No	None	No

2 Loads

This chapter provides loading information as applied to the model.

2.1 Load Patterns

Table 2.1 - Load Patterns

Name	Type	Self Weight Multiplier
Dead	Dead	1
Live	Live	0
Sobrecarga	Dead	1
CargaTecho	Dead	1

2.2 Load Cases

Table 2.2 - Load Cases - Summary

Name	Type
Dead	Linear Static
Live	Linear Static
Sobrecarga	Linear Static
CargaTecho	Linear Static
SDx	Response Spectrum

3 Analysis Results

This chapter provides analysis results.

3.1 Structure Results

Table 3.1 - Base Reactions

Load Case/Combo	FX tonf	FY tonf	FZ tonf	MX tonf-m	MY tonf-m	MZ tonf-m	X m	Y m	Z m
Dead	0	0	505,4425	4899,8582	-5967,3357	0	0	0	0
Live	0	0	44,9276	452,2848	-524,0418	0	0	0	0
Sobrecarga	0	0	595,2978	5804,4278	-7015,4192	0	0	0	0
CargaTecho	0	0	539,1382	5239,0718	-6360,367	0	0	0	0
SDx Max	266,2805	22,6923	0	111,2489	1312,4183	2959,0758	0	0	0

Table 3.2 - Centers of Mass and Rigidity

Story	Diaphragm	Mass X tonf-s ² /m	Mass Y tonf-s ² /m	XCM m	YCM m	Cumulative X tonf-s ² /m	Cumulative Y tonf-s ² /m	XCCM m	YCCM m	XCR m	YCR m
Story2	D1	25,02984	25,02984	11,8252	9,5549	25,02984	25,02984	11,8252	9,5549		
Story1	D1	25,21877	25,21877	11,7678	9,8659	50,24861	50,24861	11,7964	9,711		

Table 3.3 - Diaphragm Center of Mass Displacements

Story	Diaphragm	Load Case/Combo	UX m	UY m	RZ rad	Point	X m	Y m	Z m
Story2	D1	Dead	9,2E-05	-3,7E-05	3E-06	9	11,8252	9,5549	6
Story2	D1	Live	1,2E-05	-4E-06	3,725E-07	9	11,8252	9,5549	6
Story2	D1	Sobrecarga	0,000116	-4,6E-05	4E-06	9	11,8252	9,5549	6
Story2	D1	CargaTecho	0,000101	-4,1E-05	3E-06	9	11,8252	9,5549	6
Story2	D1	SDx Max	0,017035	0,001409	0,000759	9	11,8252	9,5549	6
Story1	D1	Dead	2,8E-05	-1,2E-05	1E-06	10	11,7678	9,8659	3
Story1	D1	Live	7E-06	-2E-06	2,366E-07	10	11,7678	9,8659	3
Story1	D1	Sobrecarga	4,2E-05	-1,7E-05	1E-06	10	11,7678	9,8659	3
Story1	D1	CargaTecho	3,3E-05	-1,4E-05	1E-06	10	11,7678	9,8659	3
Story1	D1	SDx Max	0,009106	0,000753	0,00039	10	11,7678	9,8659	3

Table 3.4 - Diaphragm Accelerations

Story	Diaphragm	Load Case/Combo	UX m/sec ²	UY m/sec ²	UZ m/sec ²	RX rad/sec ²	RY rad/sec ²	RZ rad/sec ²
Story2	D1	SDx Max	8,1057	4,1625	0,0915	0,574	1,022	0,326
Story1	D1	SDx Max	4,9169	2,5801	0,0768	0,563	1,195	0,2

Table 3.5 - Response Spectrum Modal Information

Response Spectrum Case	Modal case	Mode	Period sec	Damping Ratio	U1 Acceleration m/sec ²	U2 Acceleration m/sec ²	U3 Acceleration m/sec ²	U1 Amplitude m	U2 Amplitude m	U3 Amplitude m
SDx	Modal	1	0,316	0,05	6,1292	0	0	-0,278379	0	0
SDx	Modal	2	0,309	0,05	6,1292	0	0	-0,1173	0	0
SDx	Modal	3	0,29	0,05	6,1292	0	0	-0,105817	0	0
SDx	Modal	4	0,106	0,05	6,1292	0	0	-0,009623	0	0
SDx	Modal	5	0,103	0,05	6,1292	0	0	-0,004252	0	0
SDx	Modal	6	0,092	0,05	6,1292	0	0	0,003164	0	0

3.2 Story Results

Table 3.6 - Story Max/Avg Displacements

Story	Load Case/Combo	Direction	Maximum m	Average m	Ratio
Story2	Dead	X	0,000119	9,5E-05	1,256

Story	Load Case/Combo	Direction	Maximum m	Average m	Ratio
Story2	Dead	Y	7,1E-05	3,6E-05	1,954
Story1	Dead	X	3,7E-05	2,9E-05	1,269
Story1	Dead	Y	2,3E-05	1,2E-05	1,92
Story2	Live	X	1,5E-05	1,2E-05	1,257
Story2	Live	Y	9E-06	4E-06	2,049
Story1	Live	X	9E-06	7E-06	1,276
Story1	Live	Y	5E-06	2E-06	2,235
Story2	Sobrecarga	X	0,00015	0,00012	1,256
Story2	Sobrecarga	Y	8,9E-05	4,5E-05	1,972
Story1	Sobrecarga	X	5,5E-05	4,4E-05	1,271
Story1	Sobrecarga	Y	3,4E-05	1,7E-05	2,007
Story2	CargaTecho	X	0,000131	0,000104	1,256
Story2	CargaTecho	Y	7,8E-05	4E-05	1,961
Story1	CargaTecho	X	4,4E-05	3,4E-05	1,27
Story1	CargaTecho	Y	2,7E-05	1,4E-05	1,959
Story2	SDx Max	X	0,020419	0,017634	1,158
Story2	SDx Max	Y	0,009542	0,005476	1,743
Story1	SDx Max	X	0,01079	0,009328	1,157
Story1	SDx Max	Y	0,004896	0,002824	1,733

Table 3.7 - Story Drifts

Story	Load Case/Combo	Direction	Drift	Label	X m	Y m	Z m
Story2	Dead	X	2,7E-05	22	15,29	0	6
Story2	Dead	Y	1,6E-05	10	0	11,04	6
Story2	Live	X	2E-06	22	15,29	0	6
Story2	Live	Y	1E-06	10	0	11,04	6
Story2	Sobrecarga	X	3,2E-05	22	15,29	0	6
Story2	Sobrecarga	Y	1,8E-05	10	0	11,04	6
Story2	CargaTecho	X	2,9E-05	22	15,29	0	6
Story2	CargaTecho	Y	1,7E-05	10	0	11,04	6
Story2	SDx Max	X	0,003238	5	11,79	16,98	6
Story2	SDx Max	Y	0,001565	24	24,31	7,36	6
Story1	Dead	X	1,2E-05	22	15,29	0	3
Story1	Dead	Y	8E-06	10	0	11,04	3
Story1	Live	X	3E-06	22	15,29	0	3
Story1	Live	Y	2E-06	10	0	11,04	3
Story1	Sobrecarga	X	1,8E-05	22	15,29	0	3
Story1	Sobrecarga	Y	1,1E-05	10	0	11,04	3
Story1	CargaTecho	X	1,5E-05	22	15,29	0	3
Story1	CargaTecho	Y	9E-06	1	0	16,98	3
Story1	SDx Max	X	0,003597	5	11,79	16,98	3
Story1	SDx Max	Y	0,001632	24	24,31	7,36	3

Table 3.8 - Story Forces

Story	Load Case/Combo	Location	P tonf	VX tonf	VY tonf	T tonf-m	MX tonf-m	MY tonf-m
Story2	Dead	Top	232,7868	0	0	0	2230,7961	-2748,5119
Story2	Dead	Bottom	258,1308	0	0	0	2459,8828	-3056,9138
Story2	Live	Top	0	0	0	0	0	0
Story2	Live	Bottom	0	0	0	0	0	0
Story2	Sobrecarga	Top	232,7868	0	0	0	2230,7961	-2748,5119
Story2	Sobrecarga	Bottom	258,1308	0	0	0	2459,8828	-3056,9138
Story2	CargaTecho	Top	232,7868	0	0	0	2230,7961	-2748,5119
Story2	CargaTecho	Bottom	258,1308	0	0	0	2459,8828	-3056,9138
Story2	SDx Max	Top	0	174,4566	15,1054	1925,1665	0	0
Story2	SDx Max	Bottom	0	174,4566	15,1054	1925,1665	45,3163	523,3697
Story1	Dead	Top	480,0985	0	0	0	4670,7715	-5658,9337

Story	Load Case/Combo	Location	P tonf	VX tonf	VY tonf	T tonf-m	MX tonf-m	MY tonf-m
Story1	Dead	Bottom	505,4425	0	0	0	4899,8582	-5967,3357
Story1	Live	Top	44,9276	0	0	0	452,2848	-524,0418
Story1	Live	Bottom	44,9276	0	0	0	452,2848	-524,0418
Story1	Sobrecarga	Top	569,9538	0	0	0	5575,3411	-6707,0173
Story1	Sobrecarga	Bottom	595,2978	0	0	0	5804,4278	-7015,4192
Story1	CargaTecho	Top	513,7942	0	0	0	5009,9851	-6051,9651
Story1	CargaTecho	Bottom	539,1382	0	0	0	5239,0718	-6360,367
Story1	SDx Max	Top	0	266,2805	22,6923	2959,0758	45,3163	523,3697
Story1	SDx Max	Bottom	0	266,2805	22,6923	2959,0758	111,2489	1312,4183

Table 3.9 - Story Stiffness

Story	Load Case	Shear X tonf	Drift X m	Stiffness X tonf/m	Shear Y tonf	Drift Y m	Stiffness Y tonf/m
Story2	SDx	174,4566	0,008372	20838,159	15,1054	0,002682	0
Story1	SDx	266,2805	0,009328	28547,522	22,6923	0,002824	0

3.3 Modal Results

Table 3.10 - Modal Periods and Frequencies

Case	Mode	Period sec	Frequency cyc/sec	Circular Frequency rad/sec	Eigenvalue rad ² /sec ²
Modal	1	0,316	3,163	19,8736	394,9608
Modal	2	0,309	3,231	20,3035	412,2302
Modal	3	0,29	3,454	21,6999	470,8843
Modal	4	0,106	9,421	59,1947	3504,0155
Modal	5	0,103	9,68	60,8214	3699,2383
Modal	6	0,092	10,869	68,294	4664,0746

Table 3.11 - Modal Participating Mass Ratios (Part 1 of 2)

Case	Mode	Period sec	UX	UY	UZ	Sum UX	Sum UY	Sum UZ
Modal	1	0,316	0,653	0,094	0	0,653	0,094	0
Modal	2	0,309	0,1263	0,7863	0	0,7793	0,8802	0
Modal	3	0,29	0,1341	0,0339	0	0,9135	0,9141	0
Modal	4	0,106	0,0614	0,0107	0	0,9749	0,9249	0
Modal	5	0,103	0,0134	0,0726	0	0,9882	0,9975	0
Modal	6	0,092	0,0118	0,0025	0	1	1	0

Table 3.11 - Modal Participating Mass Ratios (Part 2 of 2)

Case	Mode	RX	RY	RZ	Sum RX	Sum RY	Sum RZ
Modal	1	0,0132	0,0906	0,1663	0,0132	0,0906	0,1663
Modal	2	0,1137	0,0186	0,0015	0,1269	0,1092	0,1678
Modal	3	0,0055	0,0242	0,7366	0,1324	0,1335	0,9044
Modal	4	0,1101	0,6174	0,0163	0,2425	0,7508	0,9207
Modal	5	0,7335	0,1339	2,412E-06	0,976	0,8847	0,9207
Modal	6	0,024	0,1153	0,0793	1	1	1

Table 3.12 - Modal Load Participation Ratios

Case	Item Type	Item	Static %	Dynamic %
Modal	Acceleration	UX	100	100
Modal	Acceleration	UY	100	100
Modal	Acceleration	UZ	0	0

Table 3.13 - Modal Direction Factors

Case	Mode	Period sec	UX	UY	UZ	RZ
Modal	1	0,316	0,711	0,102	0	0,186
Modal	2	0,309	0,138	0,86	0	0,002
Modal	3	0,29	0,151	0,038	0	0,812
Modal	4	0,106	0,712	0,127	0	0,161
Modal	5	0,103	0,154	0,845	0	0
Modal	6	0,092	0,133	0,028	0	0,839