ULTIMATE LOADS FOR ROBUST COLUMNS
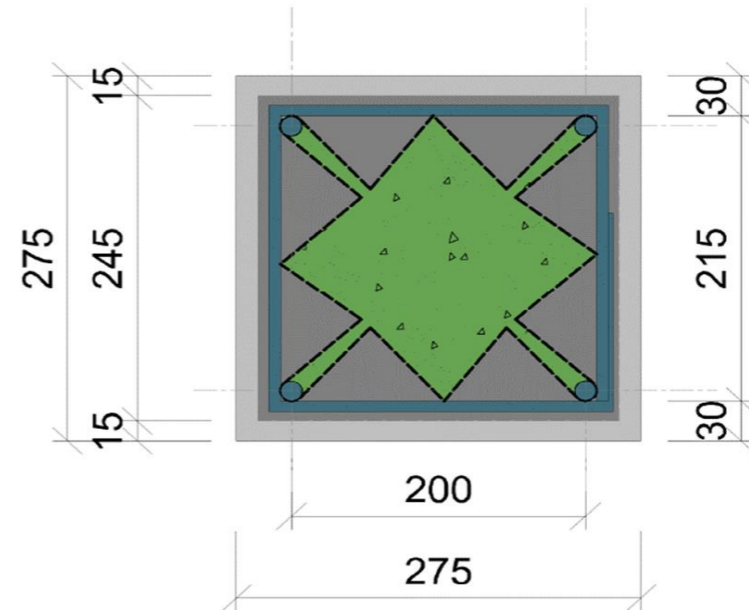
Using 25Mpa Concrete

ULTIMATE COLUMN LOAD CHART - 2 Panel Column

$u_w=$ 25 Mpa $f_y=$ 450 Mpa

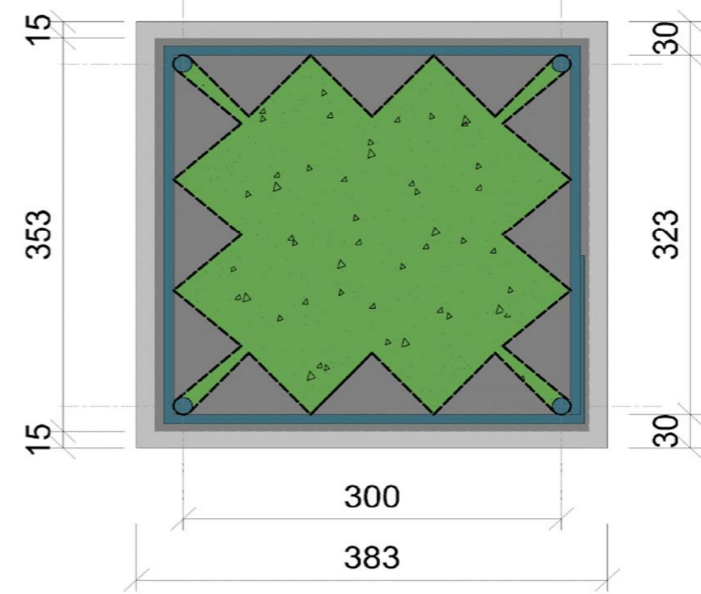| COL SIZE (mm)	HEIGHT (mm)	DESIGN SIZE (mm)	REINFORCEMENT (bar diam)	ULTIMATE LOAD P_u (kN)
275x275	2700	160x160	4 Y16	510
"	"	"	4Y20	650
"	3100	"	4 Y16	510
"	"	"	4Y20	650
"	3600	"	4 Y16	500
"	"	"	4Y20	640
"	4000	"	4 Y16	500
"	"	"	4Y20	640

NOTES:
1) Columns designed as supporting axial loads only
2) Allowance for excentricity as per the Code
3) Columns designed as partially fixed at both ends
4) Efective length factors in both directions 0.85
5) Columns considered braced in both directions

ULTIMATE COLUMN LOAD CHART - 3 Panel Column

$u_w=$ 25 Mpa $f_y=$ 450 Mpa

COL SIZE (mm)	HEIGHT (mm)	DESIGN SIZE (mm)	REINFORCEMENT (bar diam)	ULTIMATE LOAD P_u (kN)
383x383	2700	267x267	4 Y16	980
"	"	"	4Y20	1120
"	3100	"	4 Y16	980
"	"	"	4Y20	1120
"	3600	"	4 Y16	980
"	"	"	4Y20	1120
"	4000	"	4 Y16	980
"	"	"	4Y20	1120

NOTES:
1) Columns designed as supporting axial loads only
2) Allowance for excentricity as per the Code
3) Columns designed as partially fixed at both ends
4) Efective length factors in both directions 0.85
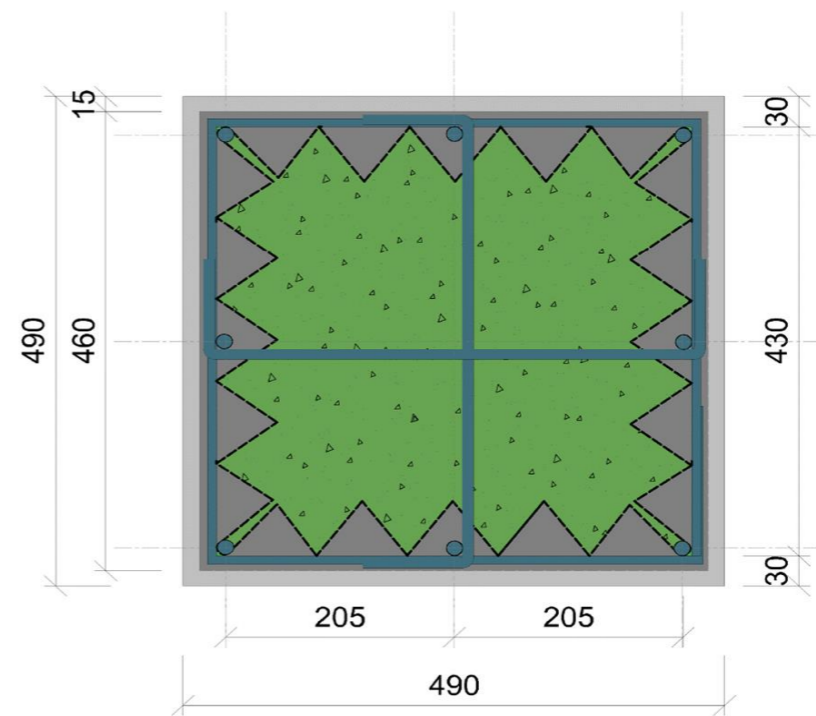5) Columns considered braced in both directions

ULTIMATE COLUMN LOAD CHART - 4 Panel Column

$u_w=$ 25 Mpa $f_y=$ 450 Mpa

COL SIZE (mm)	HEIGHT (mm)	DESIGN SIZE (mm)	REINFORCEMENT (bar diam)	ULTIMATE LOAD P_u (kN)
490x490	2700	375x375	4Y16+4Y12	1600
"	"	"	4Y20+4Y12	1800
"	3100	"	4Y16+4Y12	1600
"	"	"	4Y20+4Y12	1800
"	3600	"	4Y16+4Y12	1600
"	"	"	4Y20+4Y12	1800
"	4000	"	4Y16+4Y12	1600
"	"	"	4Y20+4Y12	1800

12mm bars to avoid spacing between bars bigger than 300mm

NOTES:
1) Columns designed as supporting axial loads only
2) Allowance for excentricity as per the Code
3) Columns designed as partially fixed at both ends
4) Efective length factors in both directions 0.85
5) Columns considered braced in both directions

ULTIMATE LOADS FOR ROBUST COLUMNS

Using 30Mpa Concrete

ULTIMATE COLUMN LOAD CHART - 2 Panel Column

u_w= 30 Mpa f_y= 450 Mpa

COL SIZE (mm)	HEIGHT (mm)	DESIGN SIZE (mm)	REINFORCEMENT (bar diam)	ULTIMATE LOAD P_u (kN)
275x275	2700	160x160	4Y16	560
"	"	"	4Y20	700
"	3100	"	4Y16	560
"	"	"	4Y20	700
"	3600	"	4Y16	540
"	"	"	4Y20	690
"	4000	"	4Y16	540
"	"	"	4Y20	690

NOTES:
1) Columns designed as supporting axial loads only
2) Allowance for excentricity as per the Code
3) Columns designed as partially fixed at both ends
4) Efective length factors in both directions 0.85
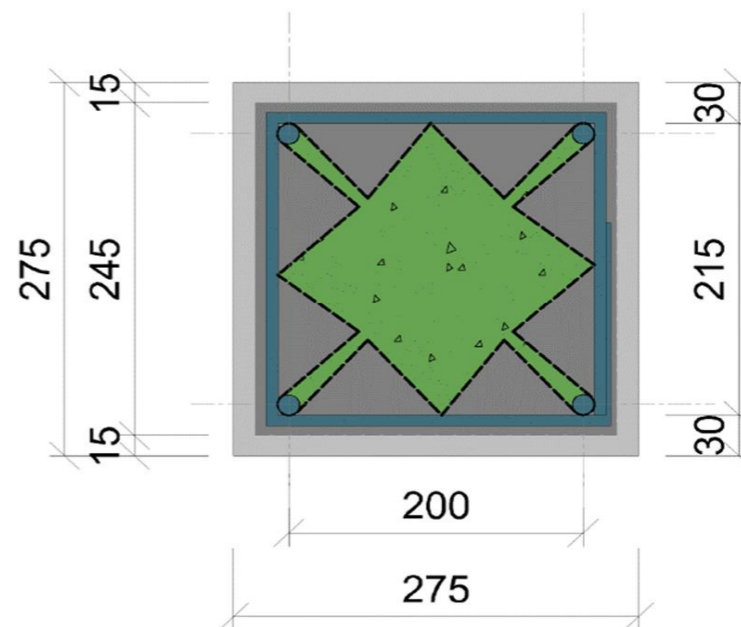5) Columns considered braced in both directions

ULTIMATE COLUMN LOAD CHART - 3 Panel Column

u_w= 30 Mpa f_y= 450 Mpa

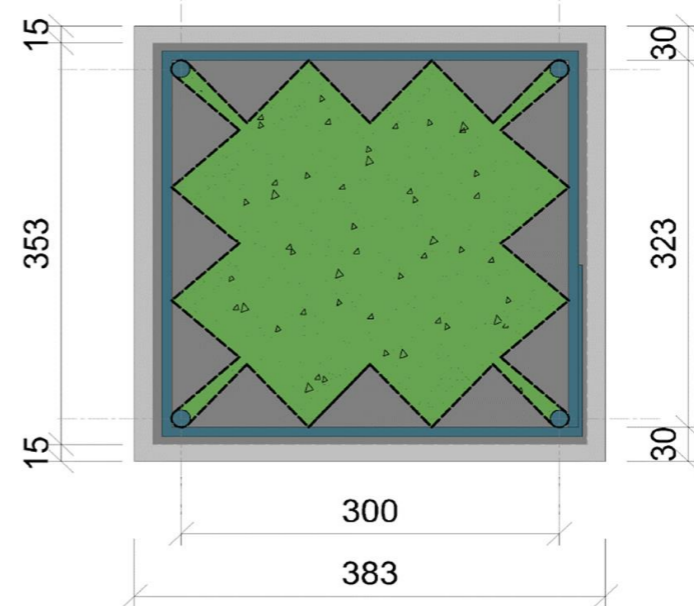| COL SIZE (mm)	HEIGHT (mm)	DESIGN SIZE (mm)	REINFORCEMENT (bar diam)	ULTIMATE LOAD P_u (kN)
383x383	2700	267x267	4Y16	1120
"	"	"	4Y20	1270
"	3100	"	4Y16	1120
"	"	"	4Y20	1270
"	3600	"	4Y16	1120
"	"	"	4Y20	1270
"	4000	"	4Y16	1120
"	"	"	4Y20	1270

NOTES:
1) Columns designed as supporting axial loads only
2) Allowance for excentricity as per the Code
3) Columns designed as partially fixed at both ends
4) Efective length factors in both directions 0.85
5) Columns considered braced in both directions

ULTIMATE COLUMN LOAD CHART - 4 Panel Column

u_w= 30 Mpa f_y= 450 Mpa

COL SIZE (mm)	HEIGHT (mm)	DESIGN SIZE (mm)	REINFORCEMENT (bar diam)	ULTIMATE LOAD P_u (kN)
490x490	2700	375x375	4Y16+4Y12	1950
"	"	"	4Y20+4Y12	2110
"	3100	"	4Y16+4Y12	1950
"	"	"	4Y20+4Y12	2110
"	3600	"	4Y16+4Y12	1950
"	"	"	4Y20+4Y12	2110
"	4000	"	4Y16+4Y12	1950
"	"	"	4Y20+4Y12	2110

12mm bars to avoid spacing between bars bigger than 300mm

NOTES:
1) Columns designed as supporting axial loads only
2) Allowance for excentricity as per the Code
3) Columns designed as partially fixed at both ends
4) Efective length factors in both directions 0.85
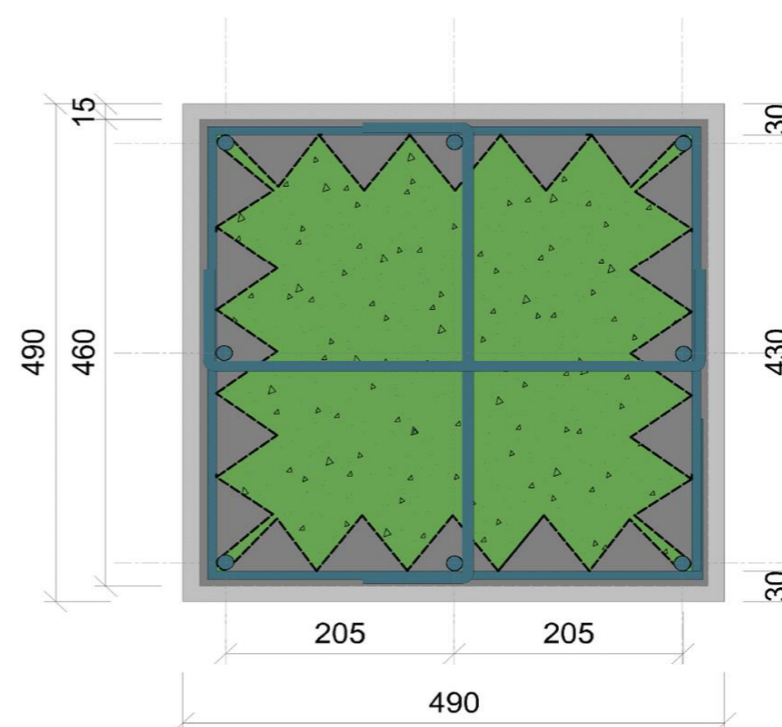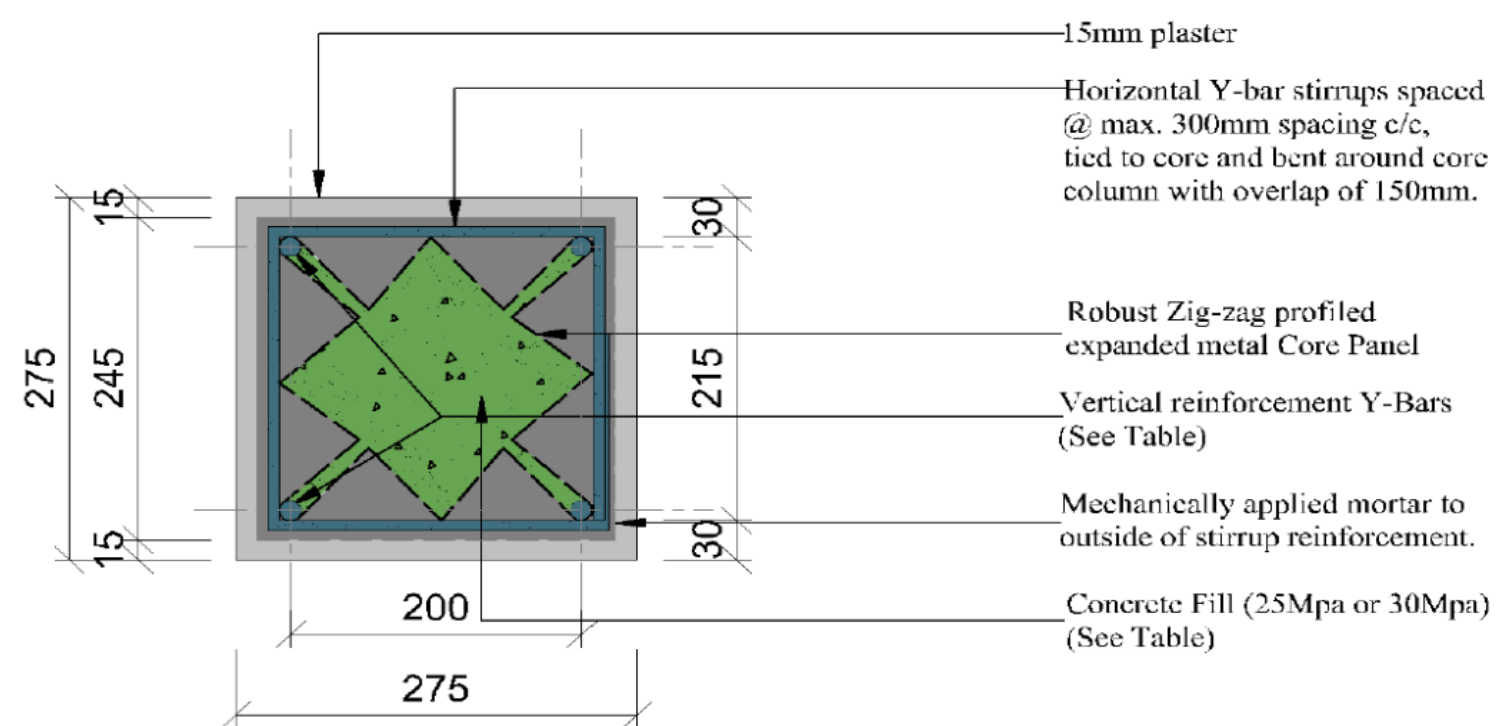5) Columns considered braced in both directions

SECTIONAL DETAILS THROUGH ROBUST COLUMNS

15mm plaster

Horizontal Y-bar stirrups spaced @ max. 300mm spacing c/c, tied to core and bent around core column with overlap of 150mm.

Robust Zig-zag profiled expanded metal Core Panel

Vertical reinforcement Y-Bars (See Table)

12mm Vertical reinforcement Y-Bars to avoid spacing between bars bigger than 300mm

Concrete Fill (25Mpa or 30Mpa) (See Table)

Mechanically applied mortar to outside of stirrup reinforcement.

15mm plaster

Horizontal Y-bar stirrups spaced @ max. 300mm spacing c/c, tied to core and bent around core column with overlap of 150mm.

Concrete Fill (25Mpa or 30Mpa) (See Table)

Robust Zig-zag profiled expanded metal Core Panel

Vertical reinforcement Y-Bars (See Table)

Mechanically applied mortar to outside of stirrup reinforcement.

15mm plaster

Horizontal Y-bar stirrups spaced @ max. 300mm spacing c/c, tied to core and bent around core column with overlap of 150mm.

Robust Zig-zag profiled expanded metal Core Panel

Vertical reinforcement Y-Bars (See Table)

Mechanically applied mortar to outside of stirrup reinforcement.

Concrete Fill (25Mpa or 30Mpa) (See Table)