

# BUCKLING RESTRAINED BRACE FRAME (BRBF) VS. SIDEPLATE® MOMENT FRAME

5-Story hospital in high seismic

AREA: 158,000 S.F.

## Braced Frames

EARTHWORK					
Shoring	8800 sf	@	\$ 48 /sf	\$	422,400
Underpinning	150 lf	@	\$ 1,500 /lf	\$	225,000
Mass Excavation	8400 cy	@	\$ 30 /cy	\$	252,000
Engineered Fill	13430 cy	@	\$ 40 /cy	\$	537,000
<b>Subtotal Earthwork</b>				<b>\$</b>	<b>1,436,000</b>

## CONCRETE

Pad Footings	0 cy	@	\$ 375 /cy	\$	-
Grade Beams	2128 cy	@	\$ 450 /cy	\$	957,600
Rebar - Foundations	0 lb	@	\$ 0.95 /lb	\$	-
Rebar - Grade beams	118205 lb	@	\$ 0.95 /lb	\$	112,295
<b>Subtotal Concrete</b>				<b>\$</b>	<b>1,069,895</b>

## STEEL

Steel - Hospital	1307 ton	@	\$ 2,600 /ton	\$	3,398,200
Steel - Connector	25 ton	@	\$ 3,000 /ton	\$	75,000
Steel - Exit Corridor	34 ton	@	\$ 2,800 /ton	\$	95,200
Steel - Tie Beams	0 ton	@	\$ - /ton	\$	-
Braces	1 ls	@	\$ 360,000 /ls	\$	360,000
Brace Install	132 ea	@	\$ 1,750 /ea	\$	231,000
Total Building PSF	17.8 psf				

## PROFESSIONAL FEES

License	0 lf	@	\$ - /lf	\$	-
<b>Subtotal Steel</b>				<b>\$</b>	<b>4,159,400</b>

## ARCHITECTURAL

Furring - Brace Frames (At toilet in PR)	0 lf	@	\$ 95 /lf	\$	-
Furring - Gusset Plates	0 ea	@	\$ 95 /ea	\$	-
Paint	0 sf	@	\$ 0.75 /sf	\$	-
Wrap Braces	0 ea	@	\$ 2.00 /ea	\$	-
<b>Subtotal Architectural</b>				<b>\$</b>	<b>-</b>

## BENEFITS OF SIDEPLATE

- Larger patient rooms or larger toilet area at patient rooms
- There will be no braces to obstruct views and/or window placement
- Faster erection time
- Less foundation work

## SidePlate® Moment Frames

EARTHWORK					
Shoring	8800 sf	@	\$ 48 /sf	\$	422,400
Underpinning	150 lf	@	\$ 1,500 /lf	\$	225,000
Mass Excavation	8400 cy	@	\$ 30 /cy	\$	252,000
Engineered Fill	13430 cy	@	\$ 40 /cy	\$	537,000
<b>Subtotal Earthwork</b>				<b>\$</b>	<b>1,436,000</b>

## CONCRETE

Pad Footings	311 cy	@	\$ 375 /cy	\$	116,625
Grade Beams	1525 cy	@	\$ 450 /cy	\$	686,250
Rebar - Foundations	26770 lb	@	\$ 0.95 /lb	\$	25,432
Rebar - Grade beams	94564 lb	@	\$ 0.95 /lb	\$	89,836
<b>Subtotal Concrete</b>				<b>\$</b>	<b>918,142</b>

## STEEL

Steel - Hospital	1350 ton	@	\$ 2,600 /ton	\$	3,510,000
Steel - Connector	25 ton	@	\$ 3,000 /ton	\$	75,000
Steel - Exit Corridor	34 ton	@	\$ 2,800 /ton	\$	95,200
Steel - Tie Beams	112 ton	@	\$ 3,000 /ton	\$	336,000
Braces	0 ls	@	\$ - /ls	\$	-
Brace Install	0 ea	@	\$ - /ea	\$	-
Total Building PSF	19.2 psf				

## PROFESSIONAL FEES

License	1 ls	@	\$ 150,000 /ls	\$	150,000
<b>Subtotal Steel</b>				<b>\$</b>	<b>4,166,200</b>

## ARCHITECTURAL

Furring - Brace Frames (At toilet in PR)	-336 lf	@	\$ 95 /lf	\$	(31,920)
Furring - Gusset Plates	-485 ea	@	\$ 95 /ea	\$	(46,075)
Paint	-14333 sf	@	\$ 0.75 /sf	\$	(10,750)
Wrap Braces	-6944 sf	@	\$ 2.00 /sf	\$	(13,888)
<b>Subtotal Architectural</b>				<b>\$</b>	<b>(102,633)</b>

## Delta

Shoring	\$	-
Underpinning	\$	-
Mass Excavation	\$	-
Engineered Fill	\$	-
<b>Subtotal Earthwork</b>	<b>\$</b>	<b>-</b>

Pad Footings	\$	(116,625)
Grade Beams	\$	271,350
Rebar - Foundations	\$	(25,432)
Rebar - Grade beams	\$	22,459
<b>Subtotal Concrete</b>	<b>\$</b>	<b>151,752</b>

Steel - Hospital	\$	(111,800)
Steel - Connector	\$	-
Steel - Exit Corridor	\$	-
Steel - Tie Beams	\$	(336,000)
Braces	\$	360,000
Brace Install	\$	231,000

License	\$	(150,000)
<b>Subtotal Steel</b>	<b>\$</b>	<b>(6,800)</b>

Furring - Brace Frames (At toilet in PR)	\$	31,920
Furring - Gusset Plates	\$	46,075
Paint	\$	10,750
Wrap Braces	\$	13,888
<b>Subtotal Architectural</b>	<b>\$</b>	<b>102,633</b>

**TOTAL SAVINGS \$ 240,785**

**ADDITIONAL SAVINGS FOR DRILLED PIERS (TUBEX)**