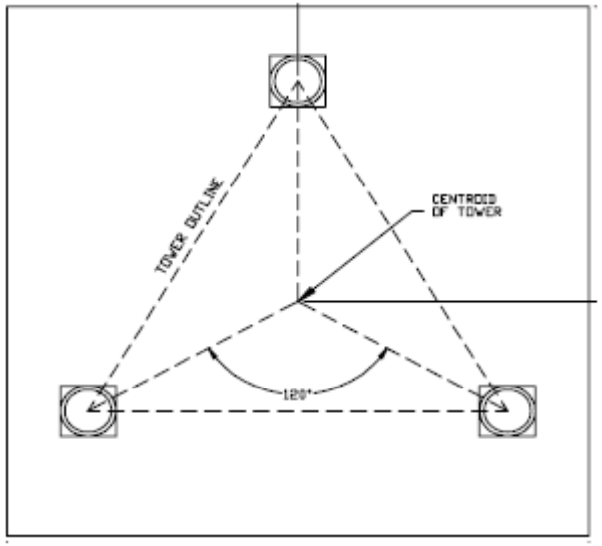
Project Profile: ADAPT-MAT

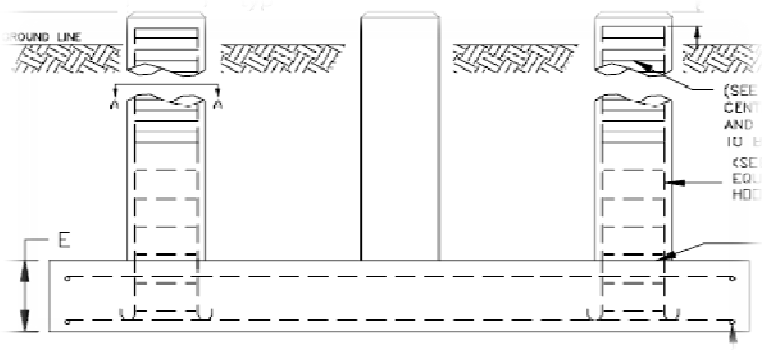
Project: Design of reinforced concrete tower foundations (communications, electrical, wind power, tanks)

Software: ADAPT-MAT

Solution: Intuitive modeling, analysis and design tool for reinforced concrete or post-tensioned mat foundations of any geometry or with any loading



Typical Plan View



Typical Elevation

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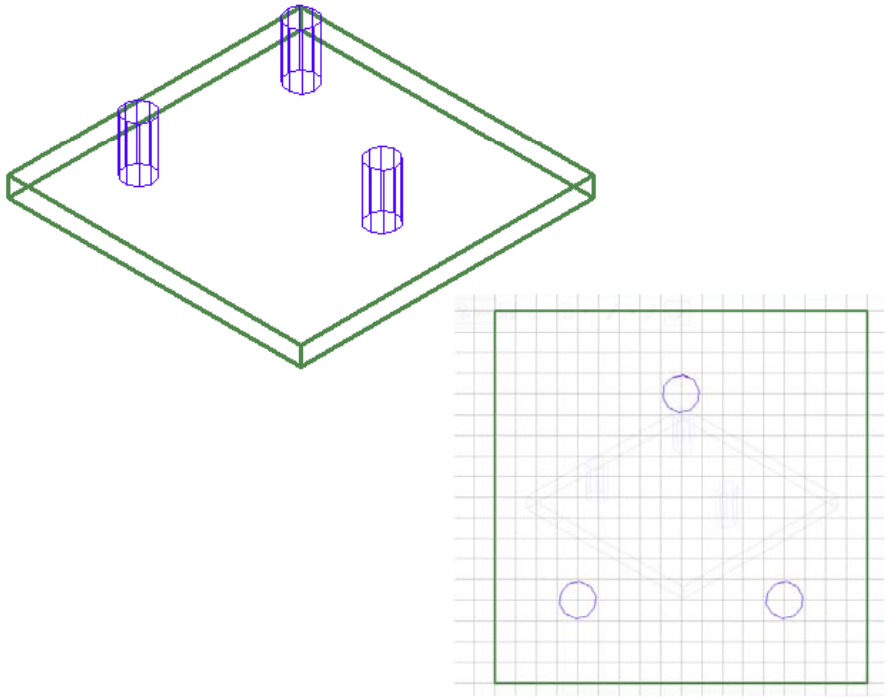
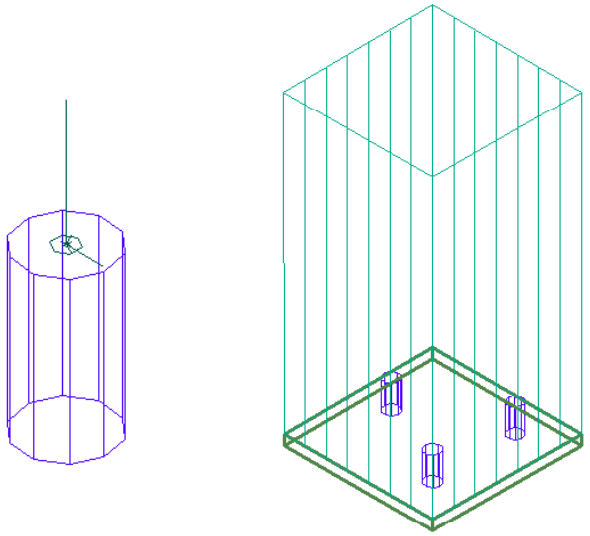
Import CAD file and quickly model true 3D geometry



Apply loads to pedestals, columns, and/or slab surface



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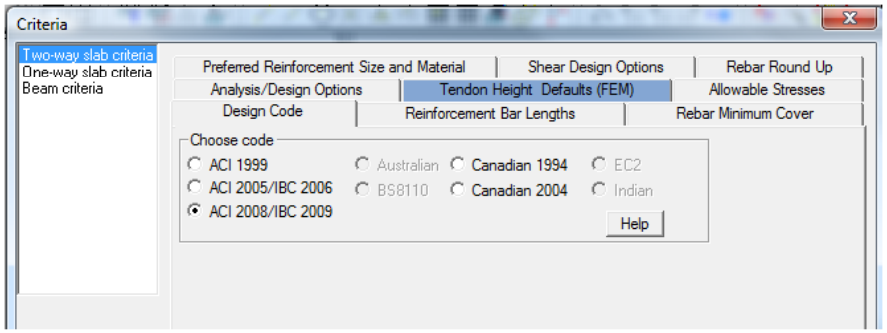
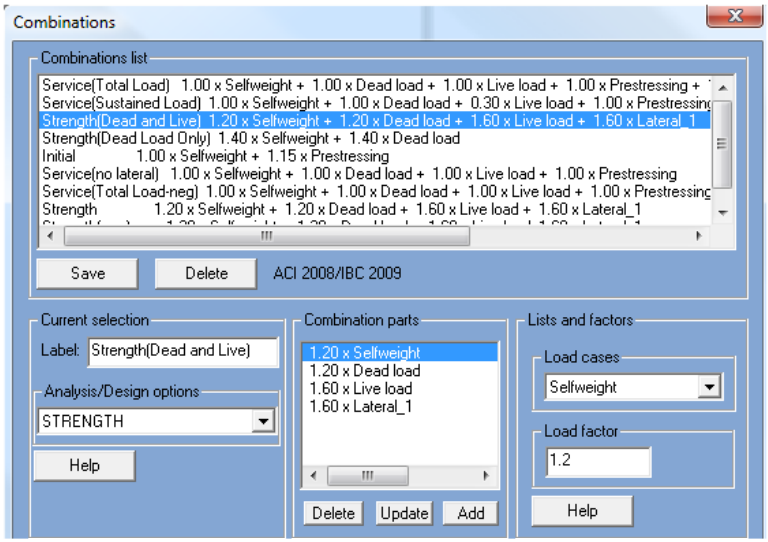


Select from latest design codes and fine-tune project design parameters



Create load combinations for service and strength conditions

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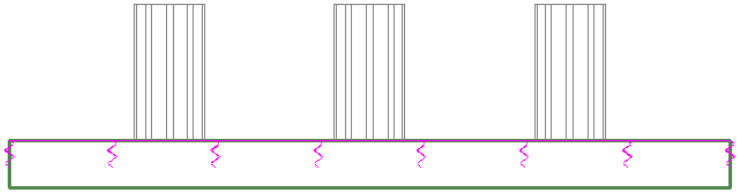
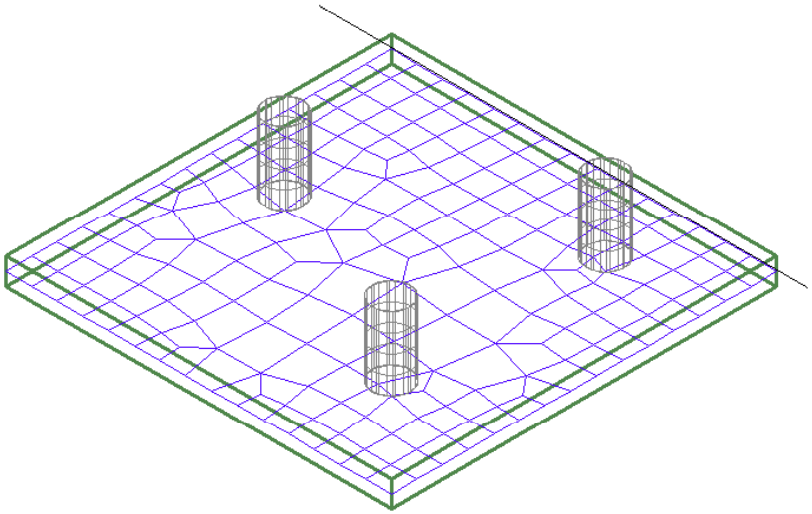
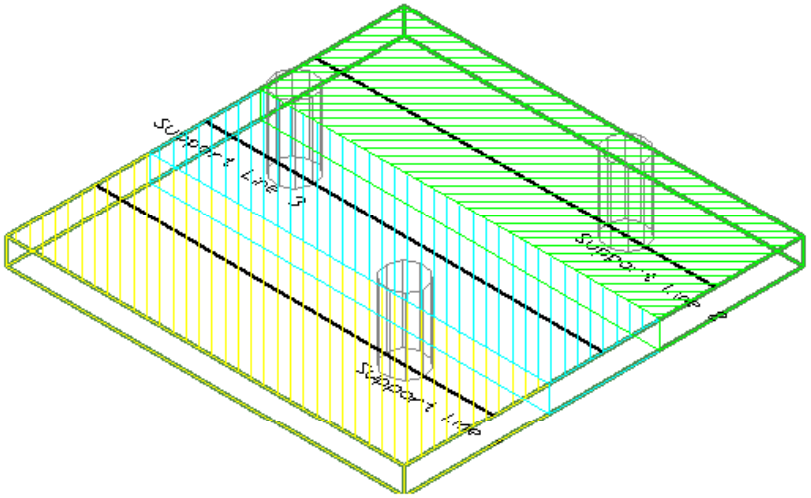


Model any configuration of soil support

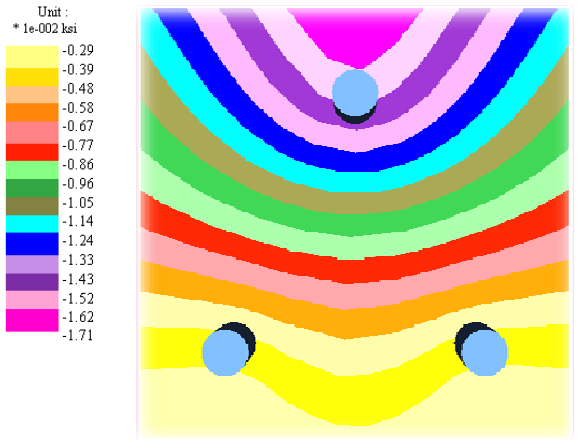


ADAPT-MAT automatically generates accurate Finite Element mesh

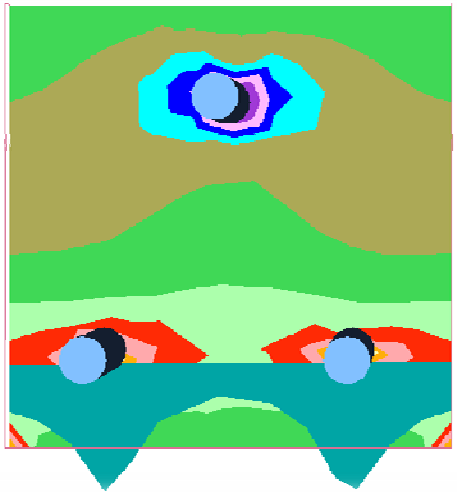


Design strips are used to determine placement of reinforcement

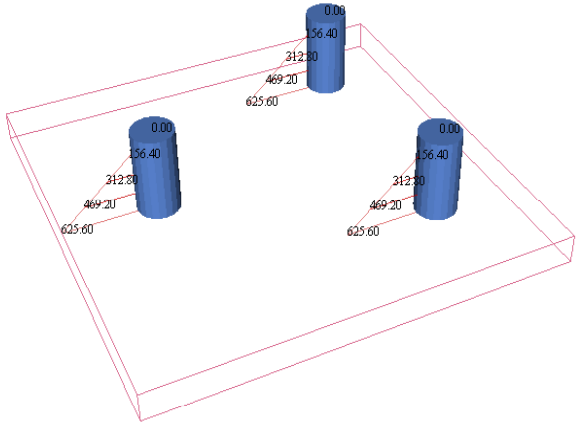
Project Profile: ADAPT-MAT



Check soil pressures for different load conditions



Review moment distributions



Visualize actions in pedestal, columns

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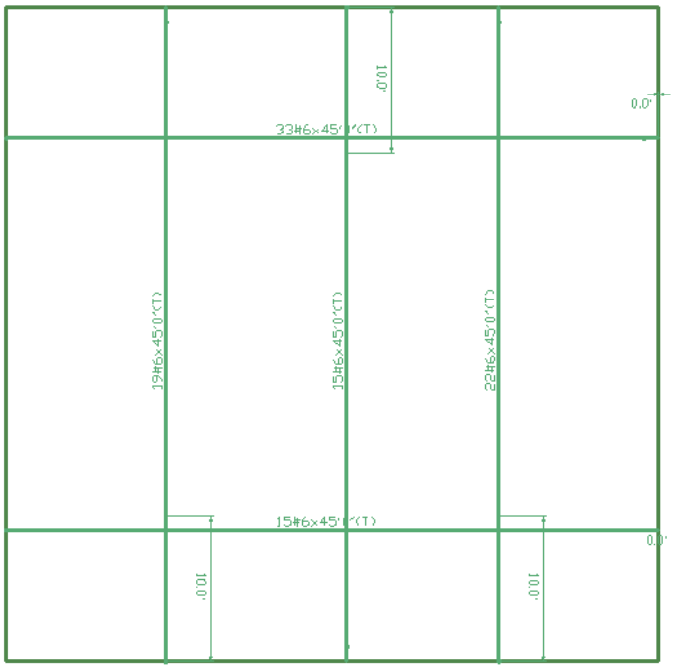

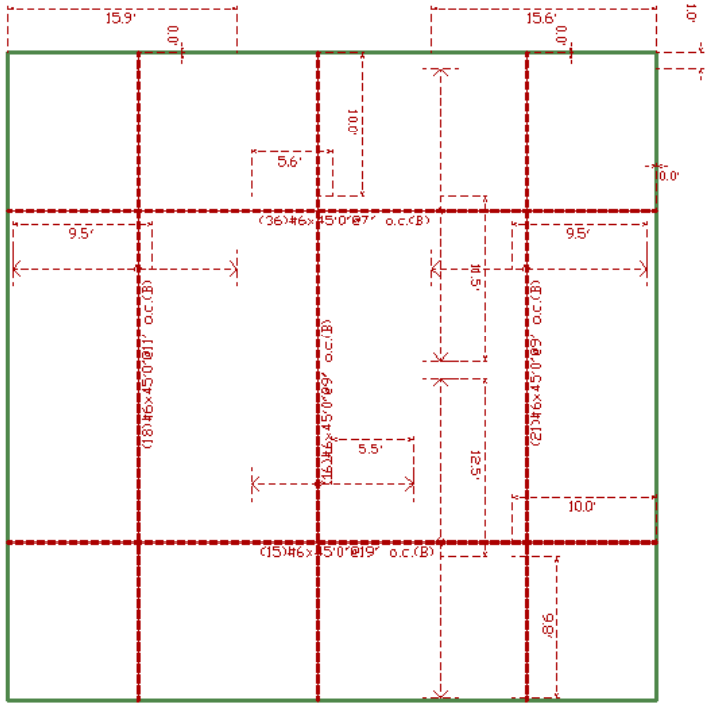

Generate top and bottom reinforcement drawings

- Can specify and check against typical reinforcement in foundation
- Rebar layout exportable as dwg /dxf files

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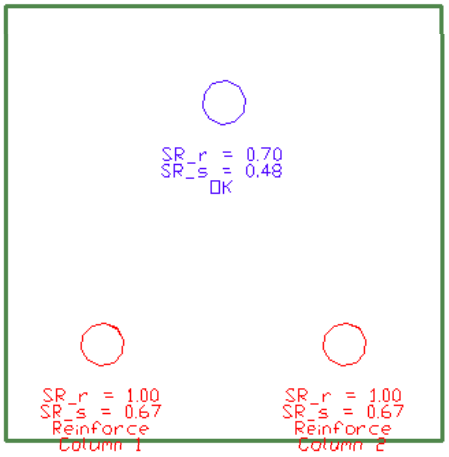

Load Combination: Strength(neg)
Number of rails per side: 2

Column ID	Number of studs/rail	Stud diameter (in)	Studs	1	2	3	4	5	6
1	20	0.50	Distance	4.00	8.00	12.00	16.00	20.00	24.00
				(7)28.00	(8)32.00	(9)36.00	(10)40.00	(11)44.00	(12)48.00
				(13)52.00	(14)56.00	(15)60.00	(16)64.00	(17)68.00	(18)72.00
				(19)76.00	(20)80.00				

Punching shear check and report of required shear reinforcement

Software automatically generates quantity takeoff

210.00 REBAR TOTALS

Bar Reinforcement (calculated and user defined base reinforcement)
Load combination: Envelope

Group	Quantity	Size	Length/ bar	Length	Weight	Unit cost	Total cost
	bars		ft	ft	lb	$/lb	$
1	210	#6	45.00	9450.00	14194.32	3.00	42582.95
Total				9450.00	14194.32		42582.95

Total volume of concrete = 6075.00 ft^3 (225.00/cu yd)
Total surface of floor slabs = 2025.00 ft^2
Average rebar usage = 7.01 lb/ft^2, 2.34 lb/ft^3 (0.09 lb/cu yd)
Total cost of reinforcement = 42582.95 $